SUPERFUND STANDBY PROGRAM New York State Department of Environmental Conservation 50 Wolf Road Albany, New York 12233-7010

# FINAL REMEDIAL INVESTIGATION REPORT Hexagon Laboratories Site No. 2-03-003

## **VOLUME II**

Work Assignment Number D003060-13.3A



Prepared by

TAMS Consultants, Inc.

The TAMS Building 655 Third Avenue New York, NY 10017-5617

August 1999

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## CONTENTS

VOLU	JME I	PAGE
EXEC	CUTIVE	E SUMMARY ES-1
1.0	INTR	ODUCTION 1-1
	1.1	Site Description and Surroundings1-21.1.1Facility Description1-21.1.2Site Surroundings1-2
	1.2	Site History
	1.3	Previous Investigations 1-5
	1.4	Interim Remedial Measure 1-7
2.0	SITE	INVESTIGATION
	2.1	Surface Features
	2.2	Geophysical Survey 2-2
	2.3	Geological Investigation
	2.4	Soils Investigation
		2.4.1 Surface Soil Sampling 2-4
		2.4.2 Subsurface Soil Sampling 2-5
		2.4.3 Soil Sampling from UST Excavations 2-7
	2.5	Hydrogeologic Investigations 2-8
		2.5.1 Shallow Monitoring Well Installation 2-8
		2.5.2 Deep Bedrock Monitoring Well Installation 2-9
		2.5.3 Well Development 2-10
		2.5.4 Groundwater Sampling 2-11
	2.6	Waste Sampling (Oily Waste and Miscellaneous) 2-12
	2.7	Concrete Floor Slab Sampling 2-13
	2.8	Ecological Investigation 2-13
3.0	PHY	SICAL CHARACTERISTICS OF THE STUDY AREA
	3.1	Surface Features
	3.2	Surface Water Hydrology 3-2
	3.3	Climate
	3.4	Geology and Soils
		3.4.1 Regional Geology
		3.4.2 Site-Specific Geology

## CONTENTS

VOLU	IME I		PAGE
	3.5	3.5.1	geology
	3.6	3.5.2 Geoph	Hydraulic Gradients    3-6      hysical Survey Results    3-6
4.0	NATU	JRE AN	D EXTENT OF CONTAMINATION 4-1
	4.1	Evalua	ation Criteria
		4.1.1	Regulatory Criteria 4-1
		4.1.2	Background Concentrations 4-4
	4.2	Surfac	e Soil
		4.2.1	Volatile Organic Compounds 4-4
		4.2.2	Semivolatile Organic Compounds 4-5
		4.2.3	Pesticides/PCBs 4-6
		4.2.4	Inorganic Compounds 4-6
		4.2.5	Total Organic Carbon 4-8
		4.2.6	Total Petroleum Hydrocarbons    4-8
		4.2.7	Hazardous Characteristic 4-9
	4.3	Subsu	rface Soil
		4.3.1	Volatile Organic Compounds 4-9
		4.3.2	Semivolatile Organic Compounds 4-14
		4.3.3	Pesticides/PCBs 4-17
		4.3.4	Inorganic Compounds 4-19
		4.3.5	Total Organic Carbon 4-22
		4.3.6	Total Petroleum Hydrocarbons    4-22
		4.3.7	Hazardous Characteristic 4-22
	4.4	Grour	ndwater
		4.4.1	Volatile Organic Compounds 4-23
		4.4.2	Semivolatile Organic Compounds 4-25
		4.4.3	Pesticides/PCBs 4-26
		4.4.4	Inorganics
		4.4.5	Total Dissolved Solids and Total Suspended Solids
		4.4.6	Total Organic Carbon 4-29
	4.5	Misce	ellaneous Samples
		4.5.1	Oily Material
		4.5.2	Old Plant and New Plant Concrete Floor Slabs 4-31

l

Ł

ii

## CONTENTS

VOLUM	AE I PAGE
5.0 0	CONTAMINANT FATE AND TRANSPORT
5	5.1Potential Routes of Migration5-15.2Contaminant Distribution and Observed Migration5-15.2.1Volatile Organic Compounds5-25.2.2Semivolatile Organic Compounds5-75.2.3Pesticides and PCBs5-115.2.4Inorganics5-11
5	5.3 Summary 5-12
6.0 I	BASELINE RISK ASSESSMENT 6-1
e	6.1Identification of Contaminants of Concern (COCs)6.16.1.1Risk-Based Concentration (RBC) Screening6-3
(	6.2Exposure Assessment
(	6.3Exposure Factors6-76.3.1Trespasser Exposure Assumptions6-86.3.2Site Workers Exposure Assumptions6-96.3.3Construction Worker Exposure Assumptions6-9
	6.4 Estimation of Exposure Point Concentrations
	6.5Toxicity Assessment6-116.5.1Health Effects Criteria for Noncarcinogens6-116.5.2Health Effects Criteria for Carcinogens6-116.5.3Lead Toxicity Assessment6-126.5.4Uncertainties in the Toxicity Assessment6-14
(	6.6       Risk Characterization       6-14         6.6.1       Calculation of Exposure Risks       6-16         6.6.2       Current-Use Exposure Scenarios       6-16         6.6.3       Future-Use Exposure Scenarios       6-16
(	6.7 Uncertainties in the Risk Assessment
(	6.8 Summary of Risk Assessment

## CONTENTS

VOL	UME I		PAGE
7.0	ECOL	OGICAL	ASSESSMENT
	7.1	-	of Ecological Assessment
	7.2	•	cal Assessment
	7.3	Results	of the Ecological Assessment
8.0	DATA	A QUALI	TY AND USABILITY
	8.1	Data Va	lidation
	8.2	Analyti	cal Methods
		8.2.1	ASP-CLP Methods
		8.2.2	Waste Characterization Methods
		8.2.3	Miscellaneous and Wet Chemistry Methods
		8.2.4	Field Measurements
		8.2.5	Subcontractor IRM Analyses 8-4
	8.3	Quality	Assurance Objectives
		8.3.1	Sensitivity
		8.3.2	Accuracy
		8.3.3	Precision
		8.3.4	Representativeness
		8.3.5	Comparability
			Completeness
	8.4		ter-Specific Data Usability Review
			Volatile Organics
			Semivolatile Organics
			Pesticides/PCBs 8-14
		8.4.4	Inorganics
			Toxicity Characteristic Leaching Procedure (TCLP) Data
			Wet Chemistry and Miscellaneous Data
			Field Data
			IRM (Demolition/Tank Excavation) Data 8-22
9.0	SUM	MARY A	ND CONCLUSIONS
	9.1	Summa	ıry
	- • •		Site History
			Physical Characteristics
		1.1.4	1 1 June - 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

TAMS/ August 20, 1999

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#### CONTENTS

#### VOLUME I

#### PAGE

		9.1.3	Nature of Contamination
		9.1.4	Extent of Contamination
		9.1.5	Contaminant Fate and Transport
		9.1.6	Summary of the Human Health Risk Assessment
		9.1.7	Summary of the Ecological Assessment
	9.2	Concl	usions
		9.2.1	Recommendations for Future Work
		9.2.2	Recommended Remedial Action Objective Considerations
10.0	DEEE	DENCI	ES 10-1
10.0			

#### LIST OF TABLES

1-1	Underground and	Above G	round Storage	Tank Inventory
-----	-----------------	---------	---------------	----------------

- 2-1 Analytical Parameters Surface Soil
- 2-2 Analytical Parameters Subsurface Soil
- 2-3 Analytical Parameters Groundwater
- 2-4 Analytical Parameters Miscellaneous Samples
- 2-5 Analytical Parameters Miscellaneous IRM Samples
- 3-1 Groundwater Elevation Measurements
- 4-1 Sample Evaluation Criteria
- 4-2 Summary of Background Metals Concentrations
- 4-3 Surface Soil and Miscellaneous Sample Analytical Data Summary- Volatile Organics
- 4-4 Surface Soil and Miscellaneous Sample Analytical Data Summary Semivolatile Organics
- 4-5 Surface Soil and Miscellaneous Sample Analytical Data Summary Pesticides/PCBs
- 4-6 Surface Soil and Miscellaneous Sample Analytical Data Summary Inorganics
- 4-7 Surface Soil and Miscellaneous Sample Analytical Data Summary Total Organic Carbon and Total Petroleum Hydrocarbons
- 4-8 Subsurface Boring Analytical Data Summary- Volatile Organics
- 4-9 Subsurface Boring Analytical Data Summary Semivolatile Organics
- 4-10 Subsurface Boring Analytical Data Summary Pesticides/PCBs
- 4-11 Subsurface Boring Analytical Data Summary Inorganics

#### CONTENTS

#### VOLUME I

#### LIST OF TABLES (CONTINUED)

- 4-12 Subsurface Boring Analytical Data Summary Total Organic Carbon and Total Petroleum Hydrocarbons
- 4-13 Subsurface UST Analytical Data Summary- Volatile Organics
- 4-14 Subsurface UST Analytical Data Summary Semivolatile Organics
- 4-15 Subsurface UST Analytical Data Summary Pesticides/PCBs
- 4-16 Subsurface UST Analytical Data Summary Inorganics
- 4-17 Subsurface UST Analytical Data Summary Total Organic Carbon
- 4-18 Groundwater Analytical Data Summary- Volatile Organics
- 4-19 Groundwater Analytical Data Summary Semivolatile Organics
- 4-20 Groundwater Analytical Data Summary Pesticides/PCBs
- 4-21 Groundwater Analytical Data Summary Inorganics
- 4-22 Groundwater Analytical Data Summary Total Organic Carbon, Total Dissolved Solids, and Total Suspended Solids
- 4-23 IRM UST Excavated Soil Analytical Data Summary- Volatile Organics
- 4-24 IRM UST Excavated Soil Analytical Data Summary Semivolatile Organics
- 4-25 IRM UST Excavated Soil Analytical Data Summary Pesticides/PCBs
- 4-26 IRM UST Excavated Soil Analytical Data Summary Inorganics
- 4-27 IRM Floor Slab Analytical Data Summary- Volatile Organics
- 4-28 IRM Floor Slab Analytical Data Summary Semivolatile Organics
- 5-1 Physical Constants of Organic Chemicals
- 6-1 Receptor Populations and Complete Exposure Pathways
- 6-2 Exposure Assumptions
- 6-3 Site Surface Soil Exposure Pathways High End Exposure Scenarios
- 6-4 Site Surface Soil Exposure Pathways Central Tendency Exposure Scenarios
- 8-1 Phase I Remedial Investigation: Data Quality Summary Statistics
- 8-2 Phase II Remedial Investigation: Data Quality Summary Statistics
- 8-3 Combined Phase I and Phase II Remedial Investigation: Data Quality Summary Statistics

#### LIST OF FIGURES

- 1-1 Site Location Map
- 1-2 Topographic Base Map

#### CONTENTS

#### VOLUME I

#### LIST OF FIGURES (CONTINUED)

#### 2-1 Sampling Locations

- 3-1 Overburden Soil Isopach Map
- 3-2 Bedrock Surface Contour Map
- 3-3 Geologic Cross Sections
- 3-4 Groundwater Table Contour Elevation Map January 2, 1998
- 3-5 Groundwater Table Contour Elevation Map February 18, 1998
- 3-6 Groundwater Table Contour Elevation Map March 5, 1998
- 4-1: Selected Volatile Organic Compound Distribution Surface Soil
- 4-2: Selected Semivolatile Organic Compound Distribution Surface Soil
- 4-3: PCB Distribution Surface Soil
- 4-4: Selected Inorganic Compound Distribution Surface Soil
- 4-5: Selected Volatile Organic Compound Distribution Subsurface Soil
- 4-6: Selected Semivolatile Organic Compound Distribution Subsurface Soil
- 4-7: PCB Distribution Subsurface Soil
- 4-8: Selected Inorganic Compound Distribution Subsurface Soil
- 4-9: Selected Volatile Organic Compound Distribution Groundwater
- 4-10: Selected Semivolatile Organic Compound Distribution Groundwater
- 4-11: PCB Distribution Groundwater
- 4-12: Selected Inorganic Compound Distribution Groundwater

VOLUME II

#### APPENDICES

Appendix A - Geophysical Survey Results

Appendix B - Field Logs

Appendix C - Geotechnical Analysis Results

Appendix D - Analytical Data

- Appendix E Risk Quantification Calculations
- Appendix F Toxicological Profiles of Contaminants of Concern

## APPENDICES

## APPENDIX A

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# GEOPHYSICAL SURVEY RESULTS

## GEOPHYSICAL SURVEY HEXAGON LABORATORIES SITE BRONX, NEW YORK

Prepared for:

TAMS Consultants, Inc. 300 Broadacres Drive Bloomfield, New Jersey 07003

Prepared by:

Hager-Richter Geoscience, Inc. 8 Industrial Way - D10 Salem, New Hampshire 03079

File 97J114 December, 1997

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CONSULTANTS IN GEOLOGY & GEOPHYSICS 8 INDUSTRIAL WAY - D10 SALEM, NEW HAMPSHIRE 03079 TELEPHONE (603) 893-9944 FAX (603) 893-8313

December 4, 1997 File 97J114

Mr. Bruce Fidler TAMS Consultants, Inc. 300 Broadacres Drive Bloomfield, New Jersey 07003

HAGER-RICHTER

GEOSCIENCE, INC.

RE: Geophysical Survey Hexagon Laboratories Site Bronx, New York

Dear Mr. Fidler:

In this letter, we briefly report the results of a geophysical survey conducted by Hager-Richter Geoscience, Inc. at the Hexagon Laboratories Site in Bronx, New York for TAMS Consultants, Inc. (TAMS) on November 25, 1997. The scope of the project and area of interest were specified by TAMS. The geophysical survey is part of an environmental investigation of the site by TAMS for the New York State Department of Environmental Conservation (NYSDEC).

#### Introduction

The subject site is a former chemical plant located in an industrial section of the Bronx. Figure 1 shows the general location of the Site. According to information provided by TAMS, several USTs were discovered during demolition activities at the Site. At the time of the geophysical survey, all buildings on site had been demolished, and several concrete debris piles were present. Portions of the floor slabs for the buildings were in place.

#### Objective

The objective of the geophysical survey was to detect possible additional USTs in the accessible portions of the Site.

#### The Survey

Roger Yang and Christopher Kujawa of Hager-Richter conducted the field operations on November 25, 1997. The project was coordinated with Mr. Paul Kareth of TAMS. Mr. Christopher Purkiss, also of TAMS, was present and assisted with the field effort. Mr. Purkiss specified the area of interest for the survey as the accessible portions of the Site. Geophysical Survey Hexagon Laboratories Site Bronx, New York File 97J114 November, 1997

Two complementary geophysical methods were used: ground penetrating radar (GPR) and precision utility location (PUL). The GPR survey was conducted using a Geophysical Survey Systems SIR-2 digital GPR system with a 500 MHz antenna and an 60 nsec time window. The PUL survey was conducted using a Radiodetection RD400 electromagnetic utility locator and a Chicago Steel Tape FT-70 magnetic pipe and cable locator.

#### Results

Figure 2 is a sketch plan of the Site showing the locations of GPR traverses and our interpretation of the data. The GPR traverses were spaced no greater than 5 feet apart and oriented in two mutually perpendicular directions in the area of interest. This traverse spacing is sufficient to detect USTs with capacities of 500 gallons or greater with a high degree of confidence.

GPR signal penetration was limited at the Hexagon Laboratories Site due to site soil conditions. Based on handbook time-to-depth conversions for the GPR signal in average soils, the GPR signal penetration is estimated to be no more than approximately 3 to 4 feet.

GPR reflections similar to that of USTs were detected in the GPR records for two locations, and we infer that two possible USTs are present, however, the interpretation is tentative. The locations of the possible USTs are shown on Figure 2. Three areas exhibited magnetic anomalies based on the PUL survey and, we infer that buried metal is present at these locations. No GPR reflections consistent with USTs were not detected in the areas of magnetic anomalies. If present, USTs are at depths greater than the GPR signal penetration. Figure 2 shows the locations possible buried metal.

#### Conclusions

Based on the geophysical survey conducted at Hexagon Laboratories Site in Bronx, New York, we conclude:

- Two possible USTs were detected at the Site.
- No other USTs with (a) electrical properties sufficiently contrasting with the surrounding soils to produce GPR reflections, (b) a capacity of 500 gallons or greater, or (c) magnetic properties sufficient to produce a detectable magnetic anomaly was detected in the accessible portions of the area of interest at the Site and in the effective depth of penetration of the GPR signal (no more than approximately 3 to 4 feet).

#### Limitations

This letter report was prepared for the exclusive use of TAMS Consultants, Inc. and

F

### Geophysical Survey 2779 Main Street North Conway, New Hampshire File 97J106 December, 1997

NYSDEC (Client). No other party shall be entitled to rely on this Report or any information, documents, records, data, interpretations, advice or opinions given to Client by Hager-Richter Geoscience, Inc. (H-R) in the performance of its work. The Report relates solely to the specific project for which H-R has been retained and shall not be used or relied upon by Client or any third party for any variation or extension of this project, any other project or any other purpose without the express written permission of H-R. Any unpermitted use by Client or any third party shall be at Client's or such third party's own risk and without any liability to H-R.

The detection of subsurface utilities and/or other subsurface objects was not an objective of this survey, and the survey was not designed to detect such. However, some utilities and/or other subsurface objects were detected, and their locations are provided as a courtesy. Other utilities and/or other buried objects may be present, and the Client or any third party shall not rely on this report for information on such.

H-R has used reasonable care, skill, competence and judgment in the performance of its services for this project consistent with professional standards for those providing similar services at the same time, in the same locale, and under like circumstances. Unless otherwise stated, the work performed by H-R should be understood to be exploratory and interpretational in character and any results, findings or recommendations contained in this Report or resulting from the work proposed may include decisions which are judgmental in nature and not necessarily based solely on pure science or engineering. It should be noted that our conclusions might be modified if subsurface conditions were better delineated with additional subsurface exploration including, but not limited to, test pits, soil borings with collection of soil and water samples, and laboratory testing.

Except as expressly provided in this limitations section, H-R makes no other representation or warranty of any kind whatsoever, oral or written, expressed or implied; and all implied warranties of merchantability and fitness for a particular purpose, are hereby disclaimed.

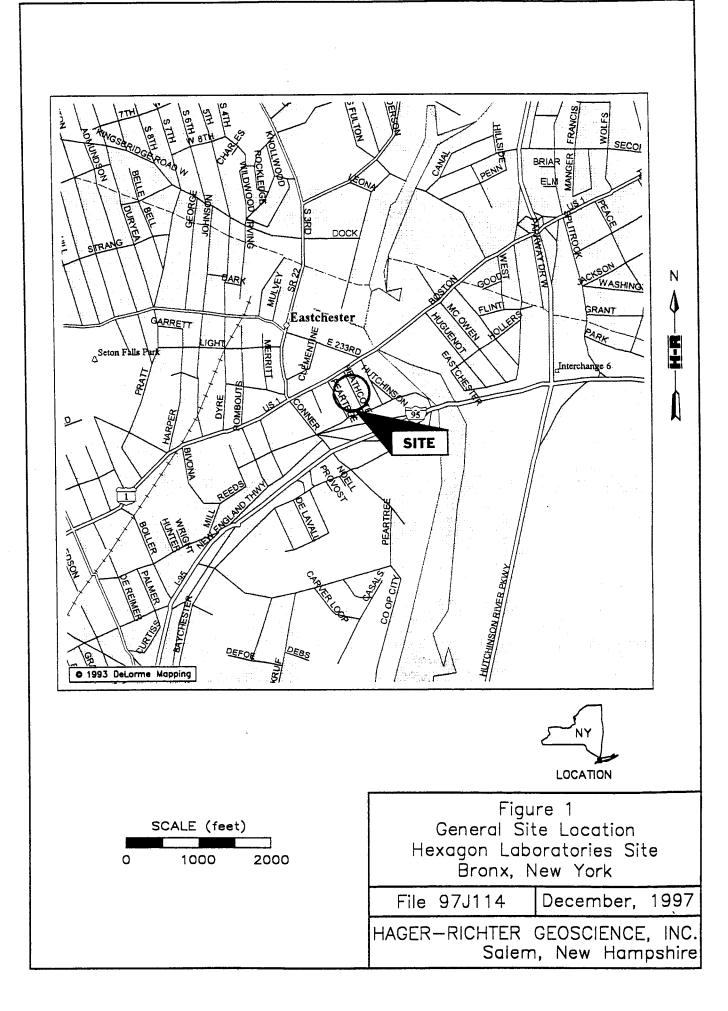
Sincerely yours, HAGER-RICHTER GEOSCIENCE, INC.

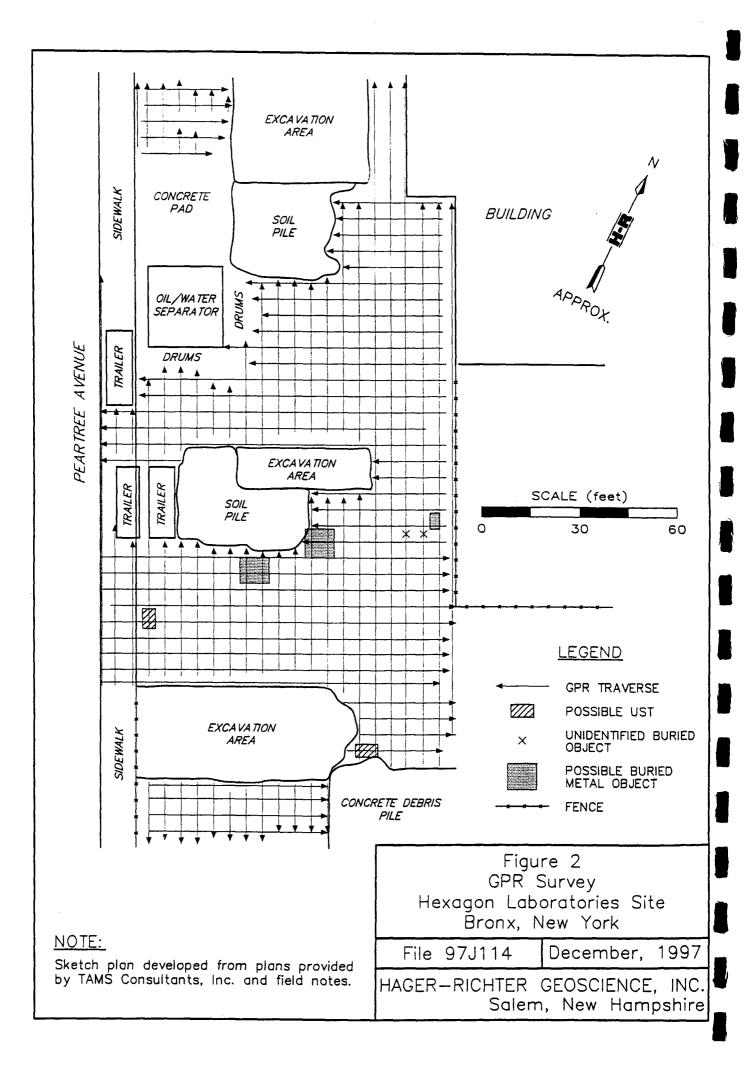
orathy Richter

Dorothy Richter President

Attachments: Figures 1 & 2

If you have any questions or comments on this letter report, please contact us at your convenience. It has been a pleasure to work with TAMS on this project. We look forward to working with you again in the future.





## **APPENDIX B**

## FIELD LOGS

Soil Boring Logs Monitoring Well Installation Logs Monitoring Well Development Logs Groundwater Sampling Logs

## SOIL BORING LOGS

PROJE	CT: He	xagon Lab	oratories	CONTRACTOR: Aquifer Drilling & Testing			PAGE 1 OF 1		
	CT NO.:			LOCATION: Bronx, New York			DATE: 11/19/97		
SURFA	CE ELEV	ATION:		DATUM:	DRILLER:	Steve Wolf	TAMS REP.:	P. Kareth	
V	ATER LE	VELS				DRILLING AND SAI	MPLING		
DATE	ТІМЕ	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE	
		DEPTIT	070110	TYPE	Steel	split spoon	-		
<u></u>				I.D.	3¾-inch	1 3/8-inch			
				WT./Fall		140 lbs.			
Depth (ft)	Sample Number & Time	Blows per/6''	Recovery (feet)	HNu Readings (ppm)	SAMPLE DESCRIP	TION, REMARKS, A	ND STRATUM	CHANGES	
	S-1				Blacktop				
1	9:30	17 - 28 5 - 5	0.4	0.6	SM - Dark brown si	Ity coarse to fine SA	ND, glass, cind	ers.	
2 3	S-2	5 - 5	0.4	0.1	SM - Black silty SA	ND, some gravel, cir	iders, dry.		
	9:40	8 - 6							
4	S-3	7 - 7	0.4	1.5	•	arse to fine SAND, so	ome gravel, tip	is wet.	
- <del>-</del> 5 6	9:50	9 - 9	0.4	1.5	Faint odor. HXB1S3 (TCL/TAL, TOC, TCLP) Slough, water in spoon.				
7	S-4	14 - 18		NR					
	10:00	22 - 42							
8 9	S-5	41 - 50/2	0.4	1.0	Same As Above Spoon refusal at 9f	t auger out to 9 ft			
10	S-6	14 - 14	0.4	0.7		arse to fine SAND, we	<b>&gt;</b> t		
11	10:15	20 - 28			om odnigita, oot				
	S-7	21 - 21	_		•	arse to fine SAND, m	ica noted,		
12 13	10:20	28 - 30	0.4	1.5	very weathere HXB1S7 (TC	ed schist. L/TAL, TOC, TCLP)			
	S-8	19 - 21			SM - Same As Abo	ve			
14	10:30	36 - 30	0.4	1.0					
15					SM - Same As Abo	ve, mostly slough, s	ooon is blown d	out	
16	S-9 10:40	100/6	0.4	2.0	with sand. To	op of weathered rock aterial is getting hard	at 16 ft.		
17						End of Boring At 1	6.5 ft.		
18					Install monitoring w	vell MW-1			
19									
20									

u:\project.33\5851hexl.dec\drilling\LOGB1.XLS

TAMS C	ONSULTA	ANTS, INC	;		BORING LO	G	Boring No	о.: B-2(MW-2
PROJE	CT: He	xagon Lal	ooratories	CONTRACTOR: Aquifer Drilling & Testing			PAGE 1 OI	F 3
PROJE	PROJECT NO.: 5851-300				N:	Bronx, New York	DATE:	11/19/97
SURFA				DATUM:	DRILLER:		TAMS REP.:	P. Kareth
N	ATER LE	VELS	r		· · · ·	DRILLING AND SAI	MPLING	
DATE	ТІМЕ	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE
				TYPE	Steel	split spoon		
				I.D. WT./Fall	6-inch	1 3/8 inch 140 lbs.		
	Sample			HNu			1	L
Depth (ft)	Number & Time	Blows per/6"	Recovery (feet)		SAMPLE DESCRIF	PTION, REMARKS, A	ND STRATUM	CHANGES
1					Blacktop			****
1					For soil description	ns 0 ft to 16.5 ft, see b	oring log B-1	
2					Augorod to 17 8	ith 6 1/4 inch 404-		
3					End of day 11/19/9	ith 6 1/4-inch HSAs 97		
4					Start of day 11/20/			
5					Ream borehole with	th 8 1/4-inch HSAs to	17 ft	
6								
7								
8								
9								
10								
11								
12 13								
13		**=======						
15								
-16								16 ft
17					Top of weathered I HSAs to 17 ft	bedrock, SCHIST		
18						ft using 7 7/8-inch trid	cone bit	
19								
20								
-20								

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## TAMS CONSULTANTS, INC

BORING LOG

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Boring No.: B-2 (MW-2)

PROJECT: Hexagon Laboratories

Denth	Sample #	Blows	Recovery	HNu	
(ft)	& Time	per/6"	(feet)	(ppm)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
20					Install 6-inch ID steel casing to 21 ft. Grout casing in place. End of day 11/20/97
21					
22	R-1				Start of day 11/21/97 Continue drilling inside the 6-inch casing using a NQ core barrel. Start of Day 12/8/97 - Ream borehole from 21 ft to 53 ft using an
23					air rotary 6-inch percussion bit.
24				·	MANHATTAN SCHIST 7 Pieces: 7, 7, 6, 2, 2, 2 <sup>1</sup> / <sub>2</sub> , 21
25				:	Recovery: 47½ inches, 79% RQD: 41 inches, 68%
26					Drilling time: 23 minutes
27	R-2				MANHATTAN SCHIST, chlorite noted on some cracks, fine sand noted in some cracks.
28					10 Pieces: 6½, 7½, 2, 10, 5, 11, 8, 2½, 3, 3 Recovery: 58½ inches, 98%
29					RQD: 48 inches, 80%
30					Drilling time: 30 minutes
31				*******	-
32	R-3				MANHATTAN SCHIST
					9 Pieces: 10, 6, 21/2, 21/2, 3, 3, 19, 9, 9 (last piece broke during
33					removal, broke into 4 pieces) Recovery: 64 inches, 107%
34					RQD: 53 inches, 88% Drilling time: 20 minutes
35			i i		
36					-
37	R-4				MANHATTAN SCHIST, biotite content increased significantly
38					near the bottom of the core run, 38 - 41 ft very fast drilling, no recovery for bottom 3 ft of core run.
39					3 Pieces: 15, 8, 3 Recovery: 26 inches, 43%
40					RQD: 23 inches, 38% Drilling time: 16 minutes

#### TAMS CONSULTANTS, INC

BORING LOG

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Boring No.: B-2 (MW-2)

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PROJECT: Hexagon Laboratories

PROJE	CT NO.:	58 <b>5-30</b> 0			PAGE 3 OF 3
1 .	Sample #	Blows	Recovery	HNu	
(ft)	& Time	per/6"	(feet)	(ppm)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
-40 -41	R-4 (Cont.)				
-42	R-5				MANHATTAN SCHIST - Very soft from 41 - 43 ft, uneven drilling
-43					for the rest of the core run. Driller noted a significant amount of formation water from 40 - 45 ft during air hammer reaming, several clay coated fractures noted, condition of core is poor.
-44					6 Pieces: rubble, 4, 5, 5, 5, 4, 4 Recovery: 27 inches, 45%
-45					RQD: 27 inches, 45% Drilling time: 26 minutes
-46					
-47	R-6				MANHATTAN SCHIST - Several rubble zones recovered, drilling advance slowed below 49 ft, driller noted less formation
-48					water below 49 ft during air hammer reaming. 6 Pieces: rubble, 3, 3, 5, rubble, 2½, 3, 3, rubble
-49					Recovery: 19½ inches, 33% RQD: 5 inches, 8%
-50					Drilling time: 25 minutes
-51					End of Day 11/21/97
-52					
-53					End of Boring at 53.0 Ft
-54					Install monitoring well MW-2 on 12/8/97
-55					
-56					
-57					
-58					
-59					
-60					

PROJE	CT: He	kagon Lab	oratories	CONTRACTOR: Aquifer Drilling & Testing			PAGE 1 OF 1	
PROJE	CT NO.:	5851-300		LOCATION: Bronx, New York			DATE: 11/11/97	
SURFA		ATION:		DATUM:	DRILLER:	Steve Wolf	TAMS REP.:	P. Kareth
N	ATER LE	VELS			······································	DRILLING AND SA	MPLING	
DATE	TIME	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE
0/112				TYPE	Steel	split spoon	HQ	
				I.D.	4-inch	1 3/8-inch		
				WT./Fall		140 lbs/30-inch		
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HNu Readings (ppm)		TION, REMARKS, A	ND STRATUN	I CHANGE
1	S-1		NR	1.0	10-inch thick concre 6-inch thick layer of 8-inch thick concre	f very wet fill materia	4	
2	 S-2	17-18			SM. Dork groonich	arey to block sith, or	orno to fina C	
3		20-29	0.9	1.0		gray to black silty connoted, weathered so , TCLP)		AND,
4					Soft rock, auger do			
5	S-3 13:30	 50/6		1.0	-	schist, quart pocket	S	
6						at 6 ft through HSA		on
7					End of Day 11/11/9 Start of Day 11/12/	97		
8					Set 4-inch spin cas		core barrel ker	ot iammino
9					-	sing, pulling it loose,		
10	R-1				Start of Day 11/13/		7/8-inch tricor	ne bit to 10 f
11					MANHATTAN SCH			
12					3 Pieces: 2½, con Recovery: 2½ inch	e split up the side - 2 nes, 28 %	2 more pieces	
-13					RQD: 0 inches, 0 Core barrel is jamn	% ning in the hole, coul	d not complete	e the run,
14					core run terminateo			
15						using a 5 7/8-inch trie inch piezometer to e		to water
16						/ piezometer was rer		
17						vith #1 sand. A 1 ft th of the sandpack pric		
18 19								
20								
21					Install monitoring w	vell M\\/_3		
					matan monitoring w			
23						End of Boring at 2		

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TAMSC	ONSULT	ANTS, INC	;		BORING LO	G	Bori	ng No.: B-4-
PROJE	CT: He	xagon Lal	ooratories	CONTRACTOR: Aquifer Drilling & Testing			PAGE 1 O	F 1
PROJE	CT NO.:	5851-300	I	LOCATIO	LOCATION: Bronx, New York DATE:			
SURFA	CE ELEV	ATION:		DATUM:	DRILLER	Steve Wolf	TAMS REP.:	P. Kareth
M		VELS	r		·	DRILLING AND SAI	MPLING	
DATE	TIME	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE
				TYPE	HSA	split spoon		
				I.D. WT./Fall	4 1/4 -inch 	1 3/8 inch 140 lbs./30 inch		
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HNu Readings (ppm)		PTION, REMARKS, A	ND STRATUM	CHANGES
1	S 1	10.14		paak	6-inch thick concre	ete slab		
1	S-1 8:45	10-14 15-30	1.1	peak 50-60				
2		***********			Split spoon is bou	-		
3					Use augers to drill Concrete slab 2.0	to greater than 4.5 ft.,	possible footir	ng
4					Abandon borehole	9		
5					~=========	End of Boring at 4	.5 Ft	
6						Ŭ		
7								
8								
9								
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PROJE	ECT: He	xagon Lai	oratories	CONTRAC	CTOR: Aquife	r Drilling & Testing	PAGE 1 OF	: 1
	CT NO.:			LOCATIO		Bronx, New York	DATE:	11/18/97
SURFA	CE ELEV	ATION:		DATUM:	DRILLER:	Steve Wolf	TAMS REP .: P. Kareth	
V	VATER LE	VELS				DRILLING AND SA	MPLING	
DATE	TIME	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE
DAIL				TYPE	HSA	split spoon	HQ	
				I.D.	6¼-inch	1 3/8-inch	2½-inch	
				WT./Fall		140 lbs / 30-inch		
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HNu Readings (ppm)	SAMPLE DESCRIP	TION, REMARKS, A	ND STRATUM	CHANGE
1	S-1				Auger to 2 ft. (See I No sample.	boring log B-4-1)		
2 3	S-2	15-14		 peak	SM - Black silty coa HXB4S2 (TCL, TAI	arse to fine SAND, so	ome fine gravel.	, moist.
4	9:40	28-28		15	DUP HXB54	L, 100)		
5	S-3	15-14	1.1	peak		IST - Greenish black sily broken up, solve		9
6	9:55	18-20		-5 		<b>,</b>		
7					Drill out to 8 ft with Drill out to 8 ft with	5 7/8-inch tricone bit 6 1/4-inch HSAs		
8	 R-1					IIST - Dark green, so	me rust on	
9					fracture surfaces. 4 Pieces: 5, 6½, 2,	41/2		
10					Recovery: 18 inche RQD: 16 inches, 6	7%		
11					Drilling time: 9 min			
12					Loosing seal in mu	d tub, stop core run a		
13						End of Borehole at	: 10 ft	
14					_	/-4 installed in an ad	jacent borehole	
15 16					on 12/8/97			
17								
19								
20								

TAMS C	ONSULTA	ANTS, INC	<u> </u>		BORING LOC	<u>}</u>	Boring No.	: B-5 (MW-5)
PROJE	CT: He	xagon Lal	boratories	CONTRA	CTOR: Aquife	er Drilling & Testing	PAGE 1 OF	1
PROJE	CT NO.:	5851-300	)	LOCATIO	N:	Bronx, New York	DATE:	11/14/97
SURFA		ATION:		DATUM:	DRILLER:	Steve Wolf	TAMS REP .: 1	P. Kareth
v	ATER LE	VELS				DRILLING AND SAI	MPLING	
DATE	TIME	DEPTH	CASING				0005	71 ID C
DATE		DEPIN	CASING	TYPE	CASING 6 1/4 -inch	SAMPLER split spoon	CORE HQ	TUBE
				I.D.		1 3/8 inch	21/2-inch	
				WT./Fall		140 lbs./30 in.		
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HNu Readings (ppm)	SAMPLE DESCRIP	TION, REMARKS, A	ND STRATUM	CHANGES
	S-1	10-11	]	rain	SM - Yellowish bro	wn silty coarse to fine	e SAND, trace g	gravel,
1   2	12:00	10-9	1.0	fogging	mica noted,ve	ery weathered schist.		
3	S-2	28-29	0.9	fogging	SM - Gray silty coa schist in tip, s	rse to fine SAND, tra trong odor.	ce gravel, mica	noted,
4	12:05 	50/4				., TOC, TCLP, GS)		
5					Drill out using a 5 3	3/4-inch tricone to 5 ft		
6	R-1				MANHATTAN SCH	lIST rubble, 2½, 2, 5, 2, 3,	2 2 0 2 10	
7					Recovery: 49 inches, RQD: 29½ inches,	es, 82%	, 3, 2, 9, 3, 10	
8					Running time: 32 m			
9								
10								
12								
13						7/8-inch tricone bit, b	•	
14					-	nd, End of Day 11/14,	/97.	
15						97 1/4-inch HSAs, adva 7/8-inch tricone bit. E		
16						End of Boring at 1		
17							- · -	
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						r Drilling & Testing	PAGE 1 OF 1	
PROJE			ooratories	CONTRAC		r Drilling & Testing		
	CT NO.:			LOCATIO		Bronx, New York	DATE: 1/16/98	
	CE ELEV			DATUM:		Steve Wolf	TAMS REP.: C. Purkiss	
N	IATER LE	VELS				DRILLING AND SAI		
DATE	TIME	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE
				TYPE I.D.		split spoon 2 1/2-inch	PQ 2 1/2-inch	
		······································		WT./Fall	<u> </u>	140 lbs.	2 1/2-inch	
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HÑu	SAMPLE DESCRIP	TION, REMARKS, A	ND STRATUM	CHANGES
			· · · · · · · · · · · ·		6-inch thick concret	e sidewalk, 6-inch th	nick stone base	
1 2	S-1	18 - 56	0.9	0.2	some silt, trac		SAND,	
3	Run 1				HXB6S1 (TCL/TAL	-		
4							4	
5					11 Pieces: 2, 3, 4, Recovery: 43 inche RQD: 34 inches, 5		·, <del>4</del>	
6								
7					First water noted at	6.5 to 7 ft		
8 9						n 6-inch percussion a advance to 15.5 ft wi	-	
10								
11								
12								
13								
14								
15								
16						End of Boring at 15	5.5 Ft.	
17								
18								
19								
20			1					

	ONSULIA	ANTS, INC	;		BORI	NG LOG		Bori	ng No.: B-12
PROJE	CT: He	xagon Lal	ooratories	CONTRAC		Aquifer	Drilling & Testing	PAGE 1 O	F 1
PROJE	CT NO.:	5851-300		LOCATIO	N:		Bronx, New York	DATE:	11/12/97
SURFA	CE ELEV	ATION:		DATUM:	DR	ILLER:	Steve Wolf	TAMS REP.:	P. Kareth
		VELS	·			[	DRILLING AND SAI	MPLING	
DATE	TIME	DEPTH	CASING		CASIN	G	SAMPLER	CORE	TUBE
				TYPE	HSA		split spoon		1002
				I.D.	4 1/4 -in	ch	1 3/8 -inch		
	Sample			WT./Fall HNu			140 lbs./30 in.	<u> </u>	]
Depth (ft)	Number & Time	Blows per/6"	Recovery (feet)	Readings (ppm)	SAMPLE D	ESCRIPT	ION, REMARKS, A	ND STRATUM	I CHANGES
	S-1		<u>(</u> )	peak	6 inches of	dirt.	····		• <u></u>
1				of			).5-2 ft. auger to 2 ft		
<u> </u>				2	No sample	collected			
2	 S-2		 	peak	SM Dodel	brown ait	y coarse to fine SAI		
3	5-2	7-0	0.7	of			L, TAL, TPH, TCLP		
	12:10	8-28		20			nells like paint thinn		
4									
_	S-3	14-20		peak		-	rse to fine SAND, w	/et.	
5	12:20	28-50	0.3	of 20+	Rock in tip,	weathere	ea schist.		
6							*======	+	·····
						1	End of Boring at 6.0	ft.	
7					1 IN 1				
8							breathing zone @ t ings peaking at 100		eis,
Ŭ						go or out		•	
9	÷								
10			-						
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PROJE		vagon Lat	oratories	CONTRA	CTOR: Aquife	er Drilling & Testing	PAGE 1 C	)F 1
	CT NO.:			LOCATIO	······································	Bronx, New York	DATE:	11/11/97
				DATUM:		Steve Wolf	TAMS REP .: P. Kareth	
						DRILLING AND SAI		
		VELS						
DATE	TIME	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE
				TYPE I.D.		split spoon 1 3/8 inch		+
				WT./Fall	·····	140 lbs./30 in.		
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HNu Readings (ppm)	SAMPLE DESCRIP	TION, REMARKS, A	ND STRATU	M CHANGE
	S-1	50/6	0.2	0.2	Blacktop	a coorso to fino SANI	D. somo fino d	roual dry
1 2	8:30		0.2	0.2		y coarse to fine SAN 5 ft, auger down to 2		graver ury.
2	S-2	4-9			SM - Dark greenist	n gray coarse to fine	SAND,	
3			0.9	2.0	some silty gra			
4	8:45	13-16			HXB7S2 (TCL/TAI	_, GS)		
4	S-3	14-13			SM - Dark greenisl	n gray coarse to fine	SAND, some	silt, fine
5			0.4	0.2		z, mica noted, weathe	ered schist, po	or recovery
0	9:10	22-55			Very hard au	gering at 6 ft.		
6	S-4	15-15			SM - Dark gray to	black some silt, fine g	gravel, mica n	oted,
7			1.1	0.6	weathered so			,
_	9:20	14-29			HXB7S4 (TC			
8	S-5	17-28			Auger obstruction	at 6-7 π. arse to fine SAND, se	ome gravel we	eathered
9			0.9	0.4		noted, spoon tip show	-	
	9:30	38-56						
10						End of Boring at 10		
11						End of Bonny at 10		
12								
13								
			1					
14								
15								
16			·					
17								
18			.					
19								
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PROJECT:         Hexagon Laboratories         CONTRACTOR:         Aquifer Drilling & Testing         PAGE 1         OF           PROJECT NO:         5851-300         LOCATION:         Bronx, New York         DATE:         1           SURFACE ELEVATION:         DATUM.         DRILLIR:         Steve Wolf         TAMS REF:         P           WATER LEVELS         DRILLING AND SAMPLING         DATE         TME         CASING         SAMPLER         CORE           DATE         TIME         DEPTH         CASING         CASING         SAMPLER         CORE           Number         Blows         Recovery         Readings         SAMPLE DESCRIPTION, REMARKS, AND STRATUM C         0           1         13:0         -         -         -         6         inch thick concrete slab (surface)           -1         1         -         -         -         -         -         10           2         S:2         -         -         -         -         -         10         -         10         -         10         -         -         12         inch thick concrete slab (surface)         -         12         -         13         -         -         -         12         Inch thick concrete slab at 3	AMS CC	ONSULTA	NTS, INC	;		BORING LO	G	Bo	ring No.: B-8
SURFACE ELEVATION:         DATUM:         DRILLER:         Steve Wolf         TAMS REP.         P           WATER LEVELS         ORILLING AND SAMPLING         CASING         CASING         CARING SAMPLING         CORE	PROJEC	<u>CT: He</u>	xagon Lal	ooratories	CONTRA	CTOR: Aquif	er Drilling & Testing	PAGE 1 O	= 1
WATER LEVELS         DRILLING AN:: SAMPLING           DATE         TIME         DEPTH         CASING         CASING         SAMPLER         CORE           Image: Construction of the second seco	PROJEC	<u>CT NO.:</u>	5851-300		LOCATIO	N:	Bronx, New York	DATE:	11/17/97
DATE         TIME         DEPTH         CASING         CASING         SAMPLER         CORE           Image: Construction of the system of	SURFAC		ATION:		DATUM:	DRILLER:	Steve Wolf	TAMS REP.:	P. Kareth
Image: Sample spon         TYPE         4 1/4 -inch HSA         split spon           Depth         Number         Blows         Recovery         Readings         SAMPLE DESCRIPTION, REMARKS, AND STRATUM C           (ft)         8.11me         -         -         -         6         inch thick concrete slab         sufface)           -1         -         -         -         -         -         6         inch thick concrete slab           -2         -         -         -         -         -         6         inch thick concrete slab           -2         -         -         -         -         -         6         inch thick concrete slab           -3         -         -         -         -         -         12 inch thick concrete slab           -4         -         -         -         -         -         Ntempted a split spon, hit more concrete, no recovery           -3         -         -         -         -         -         -         -           -4         -         -         -         -         -         -         -           -53         0.8         -         -         -         -         -         -	WA	ATER LE	VELS						
ID.         -         1 3/8 -inch           Sample         WT /Fail         140 lbs /30 in.           Depth         Number         Blows         Recovery           8 Time         per/6"         (teet)         SAMPLE DESCRIPTION, REMARKS, AND STRATUM C           -1            6 inch thick concrete slab (surface)           -1            6 inch thick concrete slab         6 inch thick concrete slab           -2            6 inch thick concrete slab         6 inch thick concrete slab           -3             6 inch thick concrete slab           -3              12 inch thick concrete slab           -4              12 inch thick concrete slab at 3 ft           -5         0.8           HXB853 (GS)         SM - Gray and black slity fine to coarse SAND, some coarse to fine gravel, slit, mica noted, dry, no odor.           -7         13:40         0.7           End of Boring at 7.0 ft           -10           <	DATE	тіме	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE
Sample         WT/Fail         140 lbs/30 in           Depth         Number         Blows         Recovery         Readings         SAMPLE DESCRIPTION, REMARKS, AND STRATUM C           (ft)         & Time         per/6"         (feet)         (ppm)         6 inch thick concrete slab (surface)           -1            6 inch thick concrete slab (surface)           -2            6 inch thick concrete slab           -3            6 inch thick concrete slab           -3            6 inch thick concrete slab           -3             12 inch thick concrete slab at 3 ft           -4                 -4                 -5         13:30         18-24               -7         13:40         0.7           End of Boring at 7.0 ft           -11									
Sample Number     Blows Number     Recovery (feet)     HNu Readings (ppm)     SAMPLE DESCRIPTION, REMARKS, AND STRATUM C       -1     5-1     -     -     6     7     7     12     10     12     10     12     10     12     10     12     10     12     10     10     12     10     10     12     10     10     12     10     10     12     10     10     12     10     10     12     10     10     12     10     10     12     10     12     10     10     12     10     10     12     10     10     12     10     12     10     12     10     12     10     12     10     12     10     12     10     12     10     12     12     10     12     12     10     12     12     12     12     13     10 <t< td=""><td></td><td></td><td><u> </u></td><td>ļ</td><td></td><td></td><td></td><td></td><td></td></t<>			<u> </u>	ļ					
S-1          6 inch thick concrete slab (surface)         -1       13:10         6 inch thick concrete slab         -2          6 inch thick concrete slab         -3          6 inch thick concrete slab         -3             -3             -3             -3             -3             -3             -3             -3             -3              -3              -5       13:30       18-24         End of Boring at 7.0 ft         -8            End of Boring at 7.0 ft         -11 <td< td=""><td>Depth 🛛</td><td>Number</td><td></td><td>•</td><td>HNu Readings</td><td>SAMPLE DESCRIF</td><td>- <b>4</b></td><td>ND STRATUM</td><td>CHANGES</td></td<>	Depth 🛛	Number		•	HNu Readings	SAMPLE DESCRIF	- <b>4</b>	ND STRATUM	CHANGES
-3       S-2       -       -       -       -       Attempted a split spoon, hit more concrete, no recovery 12 inch thick concrete slab at 3 ft         -4       -       -       -       -       -       SM - Gray and black sity fine to coarse SAND, some coarse to fine gravel, silt, mica noted, dry, no odor.         -5       13:30       18-24       -       -       HXB8S3 (GS)         -7       -       13:40       -       -       -         -8       -       -       -       -       -         -9       -       0.7       -       -       -         -10       -       -       -       -       -         -11       -       -       -       -       -         -11       -       -       -       -       -         -11       -       -       -       -       -         -11       -       -       -       -       -       -         -11       -       -       -       -       -       -         -11       -       -       -       -       -       -         -114       -       -       -       -       -       -     <	- 1	S-1				6 inch thick soil lay	/er		
S-3       4-6       0.8        coarse to fine gravel, silt, mica noted, dry, no odor.         -6       13:30       18-24        HXB8S3 (GS)         -7         HXB8S3 (TCL, TAL)         -7       13:40           13:40            -8         End of Boring at 7.0 ft         -9            -10            -11            -12            -13            -14            -15            -16            -18	- 3	S-2				12 inch thick conc	rete slab at 3 ft		y
S-4     38-50     0.7     HXB8S3 (TCL, TAL)      8				0.8		coarse to fine			pr.
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			38-50	0.7			\L)		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	- 8 -	13:40	*				End of Boring at 7	.υ π	
11      12          13           14           15           16           17           18	- 9								
12          13          14          15          16          17          18	-10 -								
13 14 15 16 17 18	{								
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	ONSULTA				BORING LOG			ing No.: E	
PROJE			ooratories	CONTRAC		r Drilling & Testing	PAGE 1 OI		
PROJE	CT NO.:	5851-300		LOCATIO	N:	Bronx, New York	DATE: 11/11/97		
SURFA	CE ELEV	ATION:		DATUM:	DRILLER:	Steve Wolf	TAMS REP.: P. Kareth		
V	ATER LE	VELS				DRILLING AND SAI	MPLING		
DATE	тіме	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE	
				TYPE	HSA	split spoon			
				I.D.	4 1/4 -inch	1 3/8 -inch			
	Sampla			WT./Fall HNu		140 lbs./30 in.	<u> </u>		
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	Readings (ppm)	SAMPLE DESCRIP	TION, REMARKS, A	ND STRATUM	CHANGE	
(14)	S-1	7-10			Break through conc	rete slab with auger	S.		
1	10:45	11-16	0.7	0.6	SM/SP - Brown coa	ace silt, trace g	ravel dry.		
2 3	S-2	7-7	1.0	0.6	SM - Brown silty co weathered sc	arse to fine SAND, r hist. drv.	nica noted,		
Ũ	10:50	8-7							
4	S-3	7-8		peak	SM - Dark brown si	ND, mica note	d, dry.		
5	11:00	12-12	0.6	of 6	HXB9S3 (TCL, TAL)				
6	 S-4	21-50		peak					
7			0.5	of			,		
8	11:10			1	Spoon refusal at 7	ft, auger out to 8 ft.			
0	S-5	29-39		peak	SM - Greenish blac	k silty coarse to fine	SAND, trace g	iravel,	
9			1.1	of	weathered sc				
10	11:25	15-11		15	HXB9S5 (TCL, TA	L)			
	S-6	28-50			SM - Black silty coa	arse to fine SAND, s	ome gravel, sa	turated.	
11	11:35		0.3	0.6		End of Boring at 1	1.0 Ft		
12						_			
13									
14				·					
15									
16			.						
17									
18			-						
19									
20									

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PROJE		ANTS, INC		CONTRA	BORING LOG			ng No.: B-
	CT: He		ooratories	LOCATIO	<u> </u>	er Drilling & Testing Bronx, New York	PAGE 1 O DATE:	<u>- 1</u> 11/12/97
				DATUM:		Steve Wolf	TAMS REP.: P. Kareth	
						MPLING		
DATE	TIME	DEPTH	CASING	TYPE	CASING HSA	SAMPLER split spoon	CORE	TUBE
				I.D.	4 1/4 -inch	1 3/8 -inch		<u>-</u>
				WT./Fall	••	140 lbs./30 in.		
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HNu Readings (ppm)	SAMPLE DESCRIP	TION, REMARKS, A	ND STRATUM	CHANGE
	S-1	7-8		peak		arse to fine SAND, s	ome gravel, m	oist.
1	10:20	9-8	0.6	of 150	•	collected from 0-2 ft;		
2	S-2	12-12		peak		a composite of 0-2 f sample collected from		-
3	10:25	21-28	0.5	of 120	SM - Same as abov	/e.		
4						• • • • •		
5	S-3	20-50/6	0.3	1.0	Very weathered sch	nist. top of rock		5.0 ft
	10:35				Auger to 6 ft			0.0 10
6	 S-4	50/4	*		Weathered schist.			
7			0.2	1.0	No sample co	llected.		
8	10:45				Auger to 8 ft			
-	S-5	10 - 10			Weathered schist, v	water noted at 8.5 ft.		
9	11:00	50/0	0.2			End of Boring at 8	.5 Ft	
10								
11								
12			 					
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PROJE		xagon Lab	oratories	CONTRA	CTOR Aquife	er Drilling & Testing	PAGE 1 OF	= 1	
	CT NO.:			LOCATIO		Bronx, New York		11/12/97	
				DATUM:		Steve Wolf	TAMS REP.: P. Kareth		
						DRILLING AND SAI			
		VELO							
DATE	TIME	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE	
				TYPE I.D.	4 1/4 -inch HSA 4 1/4 -inch	split spoon 1 3/8 -inch			
			·	WT./Fall		140 lbs./30 in.			
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HNu Readings (ppm)	SAMPLE DESCRIF	TION, REMARKS, A	ND STRATUM	CHANGE	
	S-1				2 ft thick concrete s	slab.			
1					No sample.				
2						parse to fine SAND, r			
~	S-2	50/5		peak	•	readings in borehole		) ppm,	
3	13:55		0.2	of 15-20	HXB11S2 (TCL, T	aint thinner (methylen AL, TOC)	le chionde?)		
4									
5	S-3	48-52/6	0.7	peak of	Weathered schist, quartz				
5	14:10			15		End of Boring at 5	5.0 Ft		
6									
7									
8	S-5								
9									
10									
10									
11									
12									
13									
14				.					
15									
16				-					
17									
18									
19									
20									

PROJE	ECT: He	xagon Lal	boratories	CONTRAC	CTOR: Aquife	er Drilling & Testing	PAGE 1 OF	1	
PROJE	CT NO.:	5851-300		LOCATIO		Bronx, New York		12/9/97	
SURFA		ATION:		DATUM:	DRILLER:	Jerry Heller	TAMS REP.: I	P. Kareth	
v	VATER LE	VELS				DRILLING AND SAM	1PLING		
	TIME	OFOTU	CASING				00.75		
DATE	TIME	DEPTH	CASING	TYPE	CASING	SAMPLER split spoon	CORE	TUBE	
				I.D.		1 3/8-inch			
				WT./Fall	· —,	sledge hammer			
	Sample			HNu					
Depth	Number	Blows	Recovery	Readings	SAMPLE DESCRIP	TION, REMARKS, A	ND STRATUM	CHANGES	
_(ft)	& Time	per/6"	(feet)	(ppm)					
	S-1					te slab, used a jackha		through.	
1			0.4	0.2		ft. (by hand) sledgeh			
n	11:30					weathered schist, foli			
2					•	CL, TAL, TPH, TCLP			
3					conected addi	itional soil volume by	nanu		
J	}		Į						
4									
	j l								
5									
			[						
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PROJE		vagon I al	poratories	CONTRAC	CTOR Aquife	er Drilling & Testing	PAGE 1 OF	· 1	
· · · · ·	CT NO.:			LOCATIO		Bronx, New York		11/19/97	
				DATUM:	DRILLER:	Steve Wolf	TAMS REP .: P. Kareth		
	/ATER LE					DRILLING AND SAI	***************************************		
							CORE	TUBI	
DATE	TIME	DEPTH	CASING	TYPE	CASING	SAMPLER	CORE		
				I.D.					
				WT./Fail					
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HNu Readings (ppm)	SAMPLE DESCRIF	TION, REMARKS, A	ND STRATUM	CHANGE	
1	S-1	21-28	1.3	0.4	6 inch thick concre SM - Yellowish bro gravel, highly		ar fine		
2	8:35	30-32	1.5	0.4	HXB15S1 (TCL, T	, ury.			
3	S-2	21-19	0.7	0.4	SM - Same as abo				
4	8:45	38-58			Tip is greenish bla				
5						End of Boring at 4	.5 Ft		
6									
7									
8									
9									
10									
11									
12									
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17									
18			.						
19									
20									

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				CONTRACTOR: Aquifer Drilling & Testing			Boring No.: E		
PROJE			boratories				PAGE 1 OF	= 1	
PROJE	CT NO.:	5851-300	·	LOCATIO	N:	Bronx, New York	DATE:	12/9/97	
SURFA	CE ELEV	ATION:		DATUM:	DRILLER:	Jerry Heller	TAMS REP .:	P. Kareth	
N	ATER LE	VELS				DRILLING AND SAM	/PLING		
DATE	TIME	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE	
	1 11Vilum		0,000	TYPE		split spoon			
				I.D.		1 3/8-inch			
			ļ	WT./Fall		sledge hammer			
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HNu Readings (ppm)	SAMPLE DESCRIF	TION, REMARKS, A	ND STRATUM	CHANGES	
	S-1			<u>112 F7</u>	4 inch thick concre	te slab, used jack har	nmer to break	through.	
- 1			0.3	0.2	Few inches of redd	lish brown coarse to f	ine SAND, dry,	, some	
<u>^</u>	9:45					veathered schist. Spo	oon refusal at C	).8 ft.	
2					HXB16S1 (T Collected add	CL, TAL) litional soil volume by	hand		
3							nana		
4									
5									
6									
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PROJE			ooratories	CONTRAC		uifer Drilling & Testing	PAGE 1 OF	· 1	
	CT NO.:			LOCATION	······································	Bronx, New York		 11/17/97	
	CE ELEVA			DATUM:	DRILLER:	Steve Wolf	TAMS REP.: P. Kareth		
N		/ELS				DRILLING AND SAMP	PLING		
DATE	TIME	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE	
				TYPE		split spoon			
				I.D. WT./Fall		1 3/8-inch 140 lbs / 30-inches			
Depth (ft)	Sample Number & Time	Blows per/6"	Recovery (feet)	HNu Readings (ppm)	SAMPLE DESCRI	PTION, REMARKS, AN	ND STRATUM (	CHANGES	
1					Parking Lot, 4-inch Auger to 2.5 ft with			<u></u>	
2						11			
3	S-1		1.1	0.2	<ul> <li>SM - Green and yellow silty coarse to fine SAND, some grav weathered schist.</li> <li>Last 0.7 ft is black, fuel oil odor.</li> </ul>				
4	11:30				HXBK-1 (TCL/TAL				
5						End of Boring at 4.	5 Ft		
6									
7									
8									
9 10									
11									
12									
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PROJE	ECT: He	xagon Lal	boratories	CONTRAC	CTOR: Aquife	r Drilling & Testing	PAGE 1 O	F 1	
PROJE	CT NO.:			LOCATION		Bronx, New York	DATE:	11/17/97	
SURFA		ATION:		DATUM:	DRILLER:	Steve Wolf	TAMS REP.: P. Kareth		
v		/ELS	<b></b>			DRILLING AND SAI	······································		
DATE	TIME	DEPTH	CASING	TYPE	CASING	SAMPLER	CORE	TUBE	
				I.D.		split spoon 1 3/8-inch			
·		···		WT./Fall	······································	140 lbs./30 in.	<u> </u>		
	Sample			HNu			L	L	
Depth (ft)	Number & Time	Blows per/6"	Recovery (feet)	Readings (ppm)	SAMPLE DESCRIP	TION, REMARKS, A	ND STRATUM	I CHANGES	
<u> </u>					Grass	<u></u>		····	
1					Auger to 2.5 ft using	g 4¼-inch HSAs			
~									
2									
3	S-1				SM - Brown silty co	arse to fine SAND, s	everal schist n	ieces dry	
-			1.6	0.2	HXBK2 (TCL, TAL,		erorar somer p	autos, ury.	
4	12:00				,				
				-					
5						End of Boring at 4	.5 Ft		
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9 10						v			
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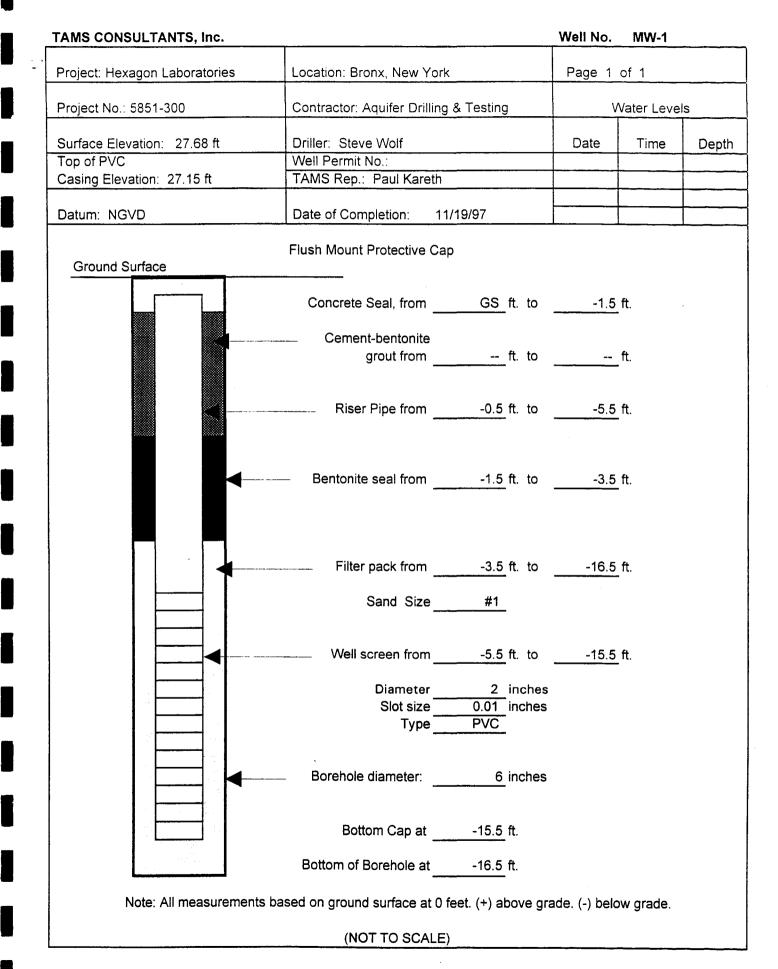
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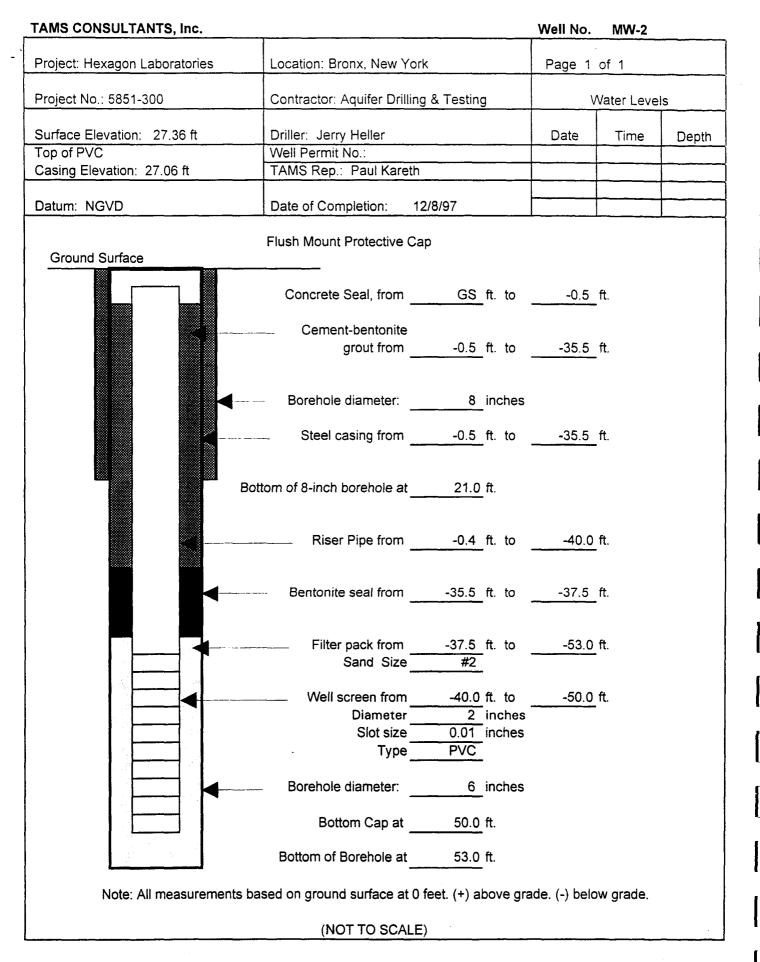
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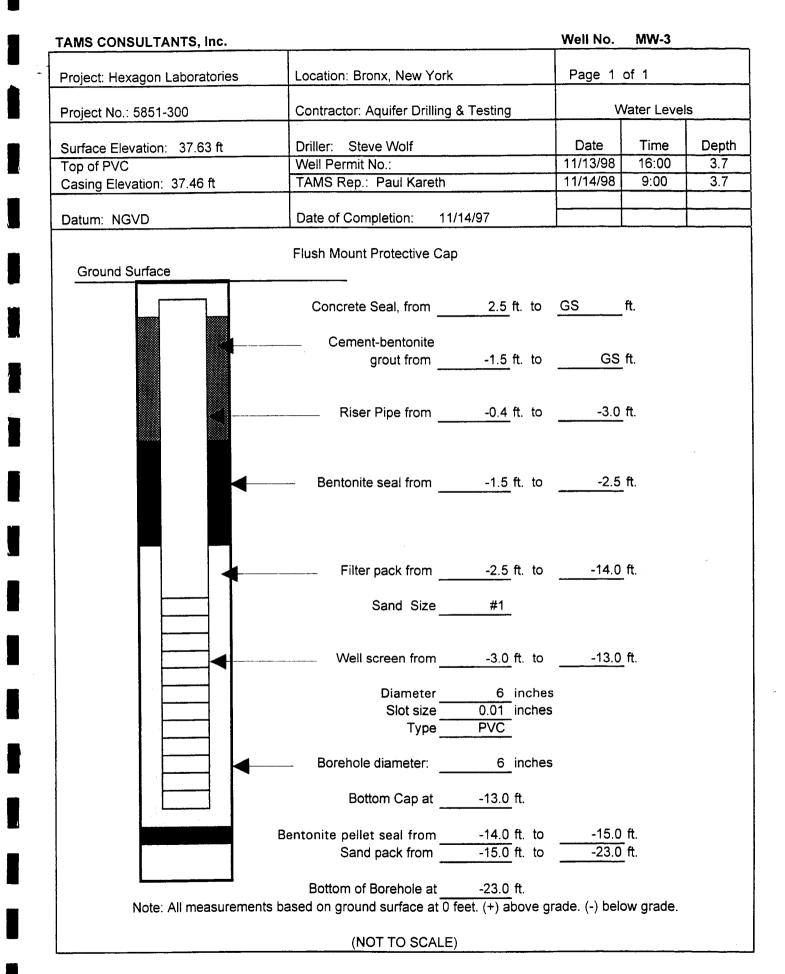
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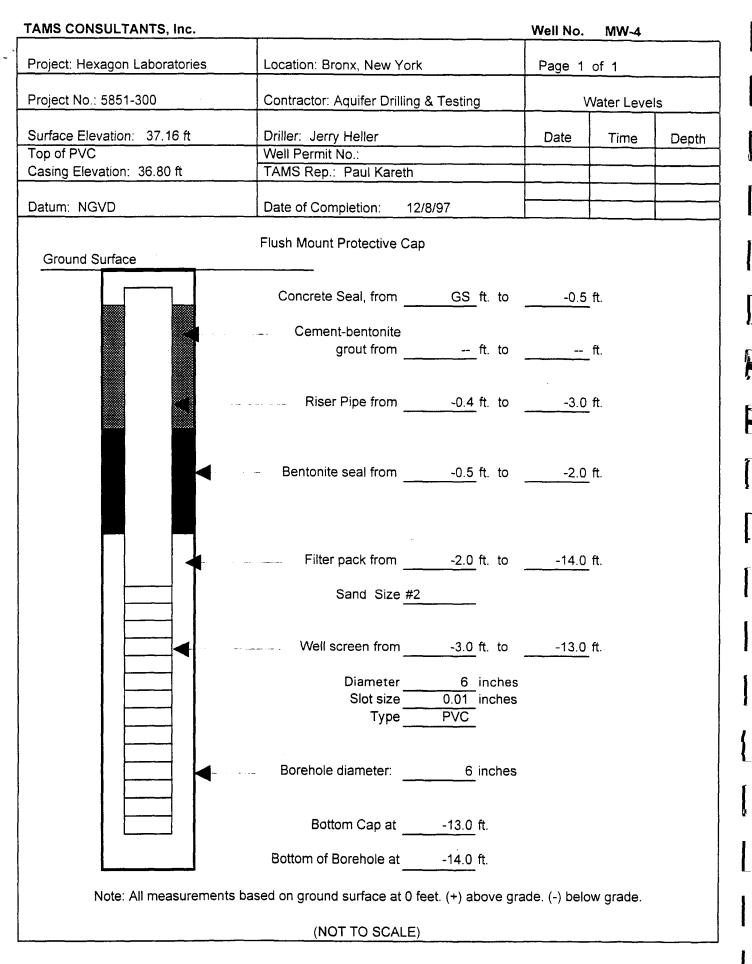
PROJE	PROJECT: Hexagon Laboratories					PAGE 1 OF 1			
				LOCATIO		fer Drilling & Testing Bronx, New York	DATE:	11/17/97	
	CT NO.:					<u>, 19, 9, 19, 19, 19, 19, 19, 19, 19, 19,</u>			
SURFA	CE ELEV	ATION:		DATUM:		: Steve Wolf	TAMS REP.: P. Kareth		
W	ATER LE	VELS				DRILLING AND SA	MPLING	I	
DATE	TIME	DEPTH	CASING		CASING	SAMPLER	CORE	TUBE	
				TYPE		split spoon			
				I.D. WT./Fail	······································	21/2-inch 140 lbs / 30 inches			
	Sample			HNu		140 103 / 00 110100		L	
Depth (ft)	Number & Time	Blows per/6"	Recovery (feet)	1	SAMPLE DESCR	IPTION, REMARKS, A	ND STRATUN	1 CHANGE	
(14)	<u> </u>					ar gate to junk yard.	· · · · · · · · · · · · · · · · · · ·		
1					Auger to 2.5 ft us	ing 4¼-inch HSAs			
2									
					OM Deer ""				
3	S-1		1.0	0.7	SM - Brown silty of rock in sp	coarse to fine SAND, s boon, drv.	some gravel, la	ige piece	
4	11:00		1.0	0.7	HXBK2 (TCL, TA				
5						End of Boring at 4	4.5 Ht		
6									
7									
8									
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10			.						
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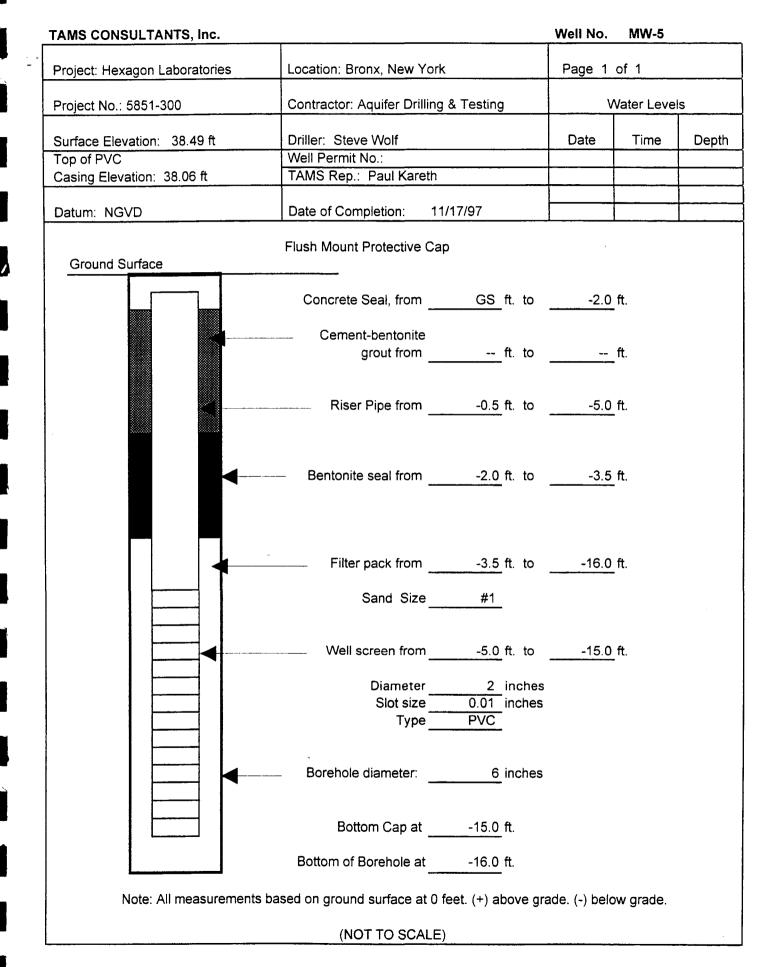
MONITORING WELL INSTALLATION LOGS

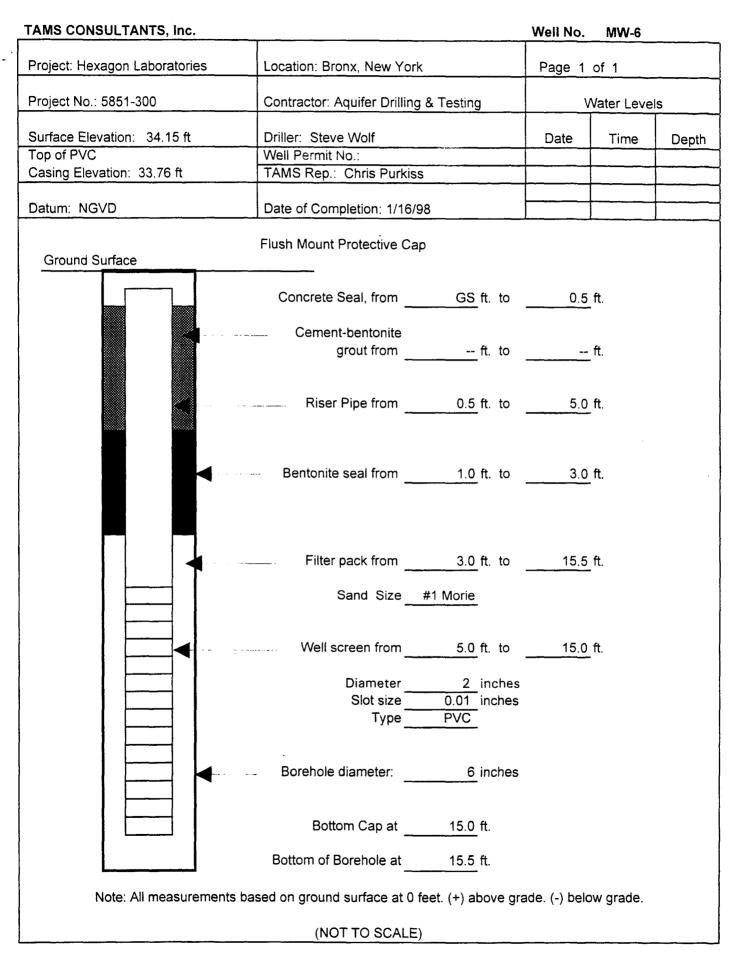












MONITORING WELL DEVELOPMENT LOGS

# HEXAGON SITE

Monitoring well number:MW-1date:12/15/97Time: 9:20water level:9.36 ftTotal depth of well:0ne casing volume:0.9 gallons

	Gallons			uctivity			
Time	Purged	pН	Value	scale	Temp	NTU	Comments
9:25	1	7.11	100	10x	13	>200	dark gray, silty
9:35	2	7.11	90	10x	10	>200	silty, dark gray,
9.55	2	1.22		10	1 4	-200	well went dry
14:45							WL - 9.50 ft
14:49							begin pumping
14:50	2	7.17	95	10x	8	>200	silty, dark gray
14:51	2.5						well went dry
	total of 4	.5 gallons					

## HEXAGON SITE \_`MONITORING WELL DEVELOPMENT DATA SHEET

Monitoring well number:MW-2date:12/15/97Time: 8:15water level:10.56 ftTotal depth of well:One casing volume:6.53 gallons

	Gallons		Condu	uctivity			
Time	Purged	pН	Value	scale	Temp	NTU	Comments
8:27	6	6.81	110	10x	14	59.2	
8:35	12	6.77	82	10x	13	96.9	
8:47	19	6.74	70	10x	13	>200	
9:00	26	6.73	80	10x	13	>200	
9:15	31	6.71	80	10x	13	>200	well went dry
							pumping depth
							at 20.4 ft
9:40							pump on
9:47	36	6.74	70	10x	13	>200	well went dry after
							5 minutes
13:40		 					WL - 11.26
13:41							pump on
13:45	6	6.81	82	10x	11	>200	
13:50	13	6.83	85	10x	12	>200	
13:56	27	6.79	82	10x	11	>200	
14:08	36	6.83	80	10x	10	>200	
14:15		 					WL - 27.8 ft
14:16	42	6.81	81	10x	9	>200	
14:26	50	6.77	81	10x	10	>200	
14:36	56	6.80	70	10x	11	>200	
14:40	58						end purging
	total of 96	6 gallons	removed				
Type of p	oump:	2 stage V	Whale pun	np			

## HEXAGON SITE MONITORING WELL DEVELOPMENT DATA SHEET

Monitoring well number:MW-3date:12/15/97Time:water level:3.85 ftTotal depth of well:0ne casing volume:1.61 gallons

	Gallons		Condu	•			
Time	Purged	рН	Value	scale	Temp	NTU	Comments
13:12		7.04	400	40		> 000	pump on
13:13	2	7.01	138	10x	8	>200	
13:15	6	6.98	150	10x	11	>200	
13:17	8	7.26	140	10x	12	>200	
13:19	10	7	130	10x	11	>200	flow fluctuating
13:22	13	7.01	130	10x	9	>200	
13:27	15	6.97	125	10x	10	>200	
13:32	17	6.93	129	10x	11	>200	pump off
15:25							WL - 4.22
15:30							pump on
15:32	3	7.04	89	10x	6	>200	
15:34	7						pump is cycling
15:37	9	6.99	90	10x	6	>200	۰ 
15:40	10						pump off
	total of 2	7 gallons	removed				
ype of	_L pump:	2 stage V	l Vhale pui	np	l	L	<u> </u>

## HEXAGON SITE MONITORING WELL DEVELOPMENT DATA SHEET

Monitoring well number:MW-4date:12/15/97Time:water level:3.08 ftTotal depth of well:0ne casing volume:1.71 gallons

	Gallons		Condu	uctivity			
Time	Purged	рΗ	Value	scale	Temp	NTU	Comments
10:00	2	6.99	110	10x	9	>200	dark gray, odor
10:11	23	7.04	100	10x	11	>200	dark gray
10:15	28	7.02	115	10x	11	>200	
10:20	37	7.05	110	10x	11	>200	
10:25	62	7.05	105	10x	11	>200	
10:32	76	6.98	120	10x	12	>200	
10:38	91	7.03	120	10x	11	>200	
11:06	131	7.08	110	10x	11	>200	clearing up
11:15	145	7.00	125	10x	13	76	
11:31	170	7.01	120	10x	10	68	pumping level 8.6 ft
11:46	187	7.02	125	10x	11	99.8	
12:00	224	7.04	125	10x	11	86.3	
12:08	235						end pumping
	total of 2	35 gallons	s removed				
						- 	
Type of p	oump:	2 stage V	Vhale pun	np	•	∟	
			to 15 ppr			<u> </u>	
			ater level		d pump ho	ose	
					<u> </u>		
					·····		

### HEXAGON SITE MONITORING WELL DEVELOPMENT DATA SHEET

Monitoring well number:MW-5date:12/15/97Time:uater level:2.04 ftTotal depth of well:1.91 gallons

	Gallons			uctivity			
Time	Purged	рН	Value	scale	Temp	NTU	Comments
12:23							pump on
12:28	10	6.83	429	1x	8	>200	gray, odor
12:32	15	6.82	89	10x	9	>200	
12:36	18	6.82	90	10x	10	50.7	
12:43	20						flow fluctuating
12:46	21	6.93	89	10x	7	135.7	
13:55	30						pump off, dry
14:45							WL - 2.38 ft
15:00	5	7.08	89	10x	9	>200	
15:10	10	7.05	89	10x	10	>200	pump is cycling
15:15	13	7.07	89	10x	8	>200	dry
	total of 4	3 gallons	removed				
	-						
	_						
ype of	pump:	2 stage	Whale pu	mp			

## HEXAGON SITE

Monitoring well number:MW-6date:1/21/98Time: 7:45water level:6.30 ftTotal depth of well:One casing volume:1.58 gallons

	Gallons		Condu	uctivity			
Time	Purged	рН	Value	scale	Temp	NTU	Comments
8:27							pump on
8:29	1	7	68	10x	5	6.2	
8:37	8	7.56	355	1x	2	1.8	
8:43	13	7.74	65	10x	3		
8:50	26	7.77	65	10x	3	0.98	
8:56	37	7.78	65	10x	3	122	lifted pump and
							broke suction,
							cloudy
9:05	54	7.8	60	10x	3	4.1	cleared quickly
9:13	69	7.8	62	10x	3.5	3.68	
9:26	94	7.83	435	1x	3	1.6	
9:34	106	7.82	60	10x	3	1.8	
9:38							pump off
	total of 10	08 gallons	s removed				
		~					
				<u> </u>			
Type of p	oump:	2 stage V	Vhale pun	np		······	

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**GROUNDWATER SAMPLING LOGS** 

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Monitoring well number:MW-1Date:1/2/98Time:7:55Weather:sunnyTemperature:20s to low 40sWater level:8.56 ftTotal depth of well:1.03 gallons

	Gallons		Condu	uctivity	Temp		
Time	Purged	рН	Value	scale	°C	NTU	Comments
9:10							begin purging
9:11	0.5	6.73	69	10	13	>200	
9:30	4	6.7	60	10	11	>200	end purging
11.00		0 70	65	10		16	
11:30		6.73	65	10	9	16	sample collection
			-				
						·	
			· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	
	· · · · · · · · · · · · · · · · · · ·				-		
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	A4 A1						
						·	
			L	L	l	<u> </u>	
Type of	pump:		using a de				
						osdable bailer	
Dissolve	d metals s	sample fil	tered usin	g dedicat	ea aispos	able 45 micro	
						motole (dia - h	und and total)
Sample	and the second sec				UBS, TAL	metais (disol	ved and total),
	lotal cya	nues, 133	S, TDS, T				

Monitoring well number:MW-2Date:1/2/98Time:8:15Weather:sunnyTemperature:20s to low 40sWater level:9.61 ftTotal depth of well:50.5 ftOne casing volume:6.7 gallons6.7 gallons

<u>.</u> .	Gallons			ictivity	Temp		
Time	Purged	pH	Value	scale	°C	NTU	Comments
			·				
9:45							begin purging
9:46	0.5	5.52	59	10	12	>200	
10:05	10	6.64	79	10	13	>200	
10:30	20	6.97	72	10	12	59.4	end purging
13:00		6.81	80	10	10	61.0	
13.00		0.01	00	10	12	61.2	sample collection
							Floating precipitate
							in total cyanides
							sample bottle
<u></u>							
		Honda a	ntrifuce		dadiasta		
Type of p	oump:					d black po sdable bai	
Discoluce	d motola a	and the second		the second se		sdable bai able 45 mic	
DISSUIVE	u metals s	ampie int		Jucuicale	u uisposa		
Sample	analyses.		s SVOC	Peet/Pr	Be TAL	metale (die	olved and total),
	total cyar						
	total oyal		,,				
			· <u> </u>				

Monitoring well number:MW-3Date:1/2/98Time:8:30Weather:sunnyTemperature:20s to low 40sWater level:3.07 ftTotal depth of well:12.7 ftOne casing volume:1.6 gallons1.6 gallons

	Gallons		Condu	uctivity	Temp		
Time	Purged	pН	Value	scale	°C	NTU	Comments
10:45							begin purging
10:46	0.5	7.3	132	10	9.4	>200	
10:48	6	6.9	125	10	9	46.5	end purging
14:10							collect field blank
14:50		7.1	85	10	8	143.4	collect sample
							collected field
							duplicate sample
							MW-53
		····· , ····					
	· · · · · · · · · · · · · · · · · · ·			· ·····			
	······						
Type of p	اــــــا مىسە:	Honda c	entrifugal	numn witt	l 1 dedicate	d black poly	tubing
1,00 011	samp.					sdable baile	
Dissolve	d metale e				·····	able 45 micro	
D13301VE	u metais s			y ucuical			
Sample	analyzac:			Deat/Dr		motale (disal	ved and total),
Sample					505, TAL		
	iotal cyar	iiues, 133	S, TDS, TO				
					· · · · · · · · · · · · · · · · · · ·		
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Monitoring well number:MW-4Date:1/2/98Time:9:25Weather:sunnyTemperature:20s to low 40sWater level:2.30 ftTotal depth of well:1.63 gallons

	Gallons		Condu	uctivity	Temp		
Time	Purged	pН	Value	scale	°C	NTU	Comments
		···					
12:25							begin purging
12:26	1	7.7	112	10	8	>200	brown oily sheen
							noted on water
12:35	6	7.05	121	10	9	>200	end purging
16:20		7.35	118	10	7	>200	sample collected
10.20		1.00	110	10		-200	
<u></u>							
	· · · · · · · · · · · · · · · · · · ·						
	· · · · · · · · · · · · · · · · · · ·						
Type of	oump:	Honda ce	entrifugal	pump with	n dedicate	d black poly t	ubing
						sdable bailer	
Dissolve	d metals s	ample filt	ered using	g dedicate	ed disposa	able 45 micror	n filters
Sample					Bs, TAL	metals (disolv	ed and total),
	total cyar	nides,TSS	, TDS, TO	DC.			

Monitoring well number:MW-5Date:1/2/98Time:9:35Weather:sunnyWeather:sunnyTemperature:20s to low 40sTotal depth of well:1.82 ftTotal depth of well:1.96 gallons

	Gallons			uctivity	Temp		
Time	Purged	рН	Value	scale	°C	NTU	Comments
40.45							begin purging
16:45 16:46	1	6.81	92	10	9	>200	
16:55	6	6.91	99	10	10	>200	end purging
		6.85	89	10	9	66.4	collected sample
Type of	pump:					ed black poly	
	-1					osdable bailer	
DISSOIVE	a metals s	sample fil	lerea usin	y uedicat	eu uispos	able 45 micro	
Sample	analyses.	TCL VOC	SVOC	s Pest/Pi	CBs TAI	metals (disolv	ved and total),
Jample			5, TDS, T				
······································							

Monitoring well number:MW-6Date:2/18/98Time:10:50Weather:light rainTemperature:low 40sWater level:5.79 ftTotal depth of well:14.8 ftOne casing volume:1.5 gallons1.5 gallons

	Gallons		Condu	uctivity	Temp		
Time	Purged	pН	Value	scale	°C	NTU	Comments
11:10	0.5	7.68	55	10x	10	120	begin purging
11:14	3	7.71	65	10x	10	29.8	
11:17	5	7.73	65	10x	10	17.5	
11:20	7.5	7.75	75	10x	10	16.2	end purging
							1.3 gpm
11:50		7.58	50	10x	9	1.94	initial sample reading
11:58		7.65	55	10x	9	low bat	final sample reading
		······					
					· · · · · · · · · · · · · · · · · · ·		
Type of p	oump:	Honda ce	entrifugal	pump with	n dedicate	d black pol	y tubing
<u> </u>		sampled	with dedic	cated disp	osable ba	ailer	· · · · · · · · · · · · · · · · · · ·

Monitoring well number: MW-1Date: 3/5/98Time: 8:15Weather: partly sunnyTemperature: upper 30s to upper 40sWater level: 7.60 ftTotal depth of well: 14.8 ftOne casing volume: 1.17 gallons

	Gallons			uctivity	Temp		
Time	Purged	pН	Value	scale	°C	NTU	Comments
0.45							HNu: 0.2
8:15							begin purging
9:10			100	10.		> 000	
9:11	1	7.74	100	10x	9	>200	
9:20	4	7.61	110	10x	10	>200	end purging
10:30		7.67	107.5	10x	13	61	Sample - initial
		7.79	102.5	10x	13	>200	Sample - final
<u> </u>							
			<u> </u>				·
			<u> </u>				
ype of	pump:	Honda c	entrifugal	pump wit	h dedicat	ed black poly	tubing
		sampled	with ded	cated dis	posable b	ailer	
							······································

Monitoring well number:MW-2Date:3/5/98Time:8:17Weather:partly sunnyWater level:8.18 ftTotal depth of well:50.5 ftOne casing volume:6.9 gallons

	Gallons		Condu	uctivity	Temp		
Time	Purged	pH_	Value	scale	°C	NTU	Comments
8:17							HNu: Background
9:30							
9:31	1.5	7.25	800	10x	12	>200	begin purging
9:33	3	7.2	800	10x	13	35	
9:35	6	7.28	850	10x	12	>200	
9:38	8	7.32	850	10x	12	>200	lost suction
9:43	11	7.28	850	10x	12	>200	
9:45	14	7.31	860	10x	13	>200	
9:47	16	7.32	830	10x	13	60	
9:50	18	7.33	840	10x	13	53	Well Dropped Below
10:06	21	7.29	820	10x	12	46	20 ft-10 min. recharge
10:10	24	7.35	830	10x	13	125	(only 20 ft of hose)
10:13	27	7.36	850	10x	13	100	
10:17	30	7.33	830	10x	13	44	
10:20	33						
11:00		7.46	820	10x	12	36	Sample - initial
		7.44	810	10x	12	100	Sample - final
Type of p	oump:	Honda ce	entrifugal	pump with	n dedicate	d black poly	tubing
			with dedic				

# HEXAGON SITE

Monitoring well number:MW-3Date:3/5/98Time:8:45Weather:partly sunnyWater level:3.32 ftTotal depth of well:1.54 gallons

	Gallons	1	Condu	uctivity	Temp		
Time	Purged	pH	Value	scale	°C	NTU	Comments
8:45							HNu: 1.2 BG 0.2
11:30							
11:31	1	8.27	1000	10x	9	56	begin purging
11:33	3	8.21	1200	10x	9	40	
11:36	5	7.64	750	10x	9	61	
11:38	6	7.63	1250	10x	10	60	
11:40	8	7.66	1250	10x	9	55	
12:03		7.66	1200	10x	9	24	Sample - initial
		7.6	1200	10x	9	137	Sample - final
	MV	<b>V-3 @ 1</b> 1	:45				
	DUP H	X MW-53	@ 1200				
Tune of		Honda			h dodiact	ed black poly	tubing
Type of	pump:						
	<u> </u>	sampieu	with deal	caleu dis	posable b	aller	<u></u>

.

Monitoring well number:MW-4Date:3/5/98Time:8:51Weather:partly sunnyTemperature:upper30s to upper40sWater level:2.07 ftTotal depth of well:12.3 ftOne casing volume:4.66 gallons

	Gallons		Condu	uctivity	Temp		
Time	Purged	pH	Value	scale	°C	NTU	Comments
15:00				 			HNu: Peak 15 ppm
							Strong odor
15:20							
15:22	3	7.18	1450	10x	9	>200	begin purging
15:25	6	7.1	1450	10x	9	>200	
15:27	8	7.3	1350	10x	9	>200	
15:29	9	7.29	1500	10x	9	>200	stop purging
· · · · · · · · · · · · · · · · · · ·							
16:00		7.57	1500	10x	9	>200	Sample - initial
		7.7	1475	10x	9	>200	Sample - final
				· · · · · · · · · · · · · · · · · · ·			
Dischar	ge Water i	s buff wh	ite, oily sh	een, verv	small oil	alobules	
	1						
	Filtered V	Vater is b	luish				
			]				
. <u> </u>	<u> </u>						
							· · · · · · · · · · · · · · · · · · ·
Type of	jump:	Honda co	entrifugal	pump wit	h dedicate	ed black poly	tubing
			with dedi			the second s	
			······································	······			

.

Monitoring well number:MW-5Date:3/5/98Time:8:55Weather:partly sunnyTemperature:upper30s to upperWater level:1.57 ftTotal depth of well:13.7 ftOne casing volume:2 gallons

Gallons			Condu	uctivity	Temp		
Time	Purged	pН	Value	scale	°C	NTU	Comments
8:55							
- <u> </u>							
15:20							
16:31	3	7.38	1050	10x	10	>200	begin purging
16:33	6	7.34	1000	10x	10	>200	
16:37	9	7.37	1000	10x	10	>200	
16:41	10	7.48	1000	10x	10	>200	stop purging
17:00		7.52	1000	10x	10	137	Sample - initial
		7.57	900	10x	10	>200	Sample - final
					· · · · · · · · · · · · · · · · · · ·		
Dischar	ge Water i	s buff wh	ite, oily sl	neen, ver	y small oi	globules	
	1						
	Filtered V	Nater is b	pluish				
						·	
					ļ		
				<u> </u>		1	
Type of	pump:					ed black poly t	ubing
		sampled	with ded	cated dis	nosahle h	hailer	

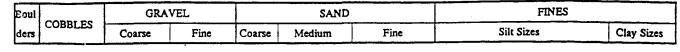
## HEXAGON SITE

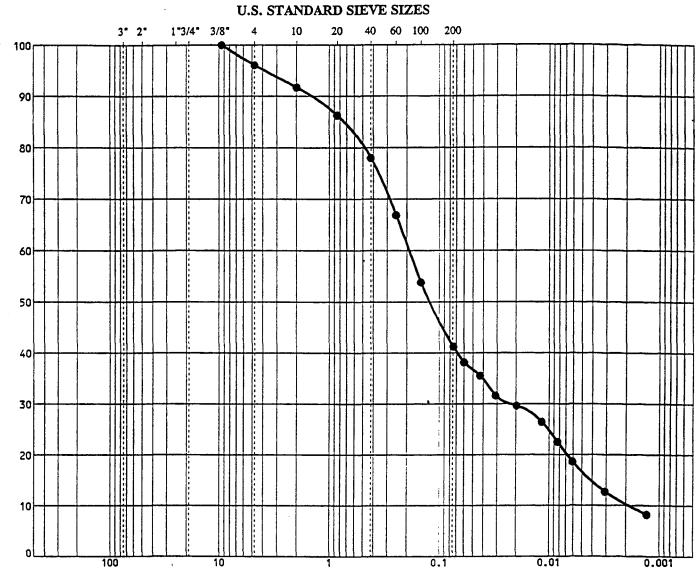
Monitoring well number:MW-6Date:3/5/98Time:13:45Weather:partly sunnyTemperature:upper 30s to upper 40sWater level:5.92 ftTotal depth of well:14.8 ftOne casing volume:1.62 gallons1.62 gallons

	Gallons		Condu	uctivity	Temp		
Time	Purged	pН	Value	scale	°C	NTU	Comments
13:45							HNu: BG
14:00							
14:02	1	7	650	10x	11	86	begin purging
14:06	4	7.55	700	10x	12	12	
14:08	7	7.5	700	10x	11	19	
14:09	8.5						stop purging
14:10		7.36	680	10x	11	5	Sample - initial
14:25		7.29	650	10x	11	33	Sample - final
M	S/MSD 1	set					
D	id not hav	e 2 sets f	or MS/MS	<u>SD</u>			
L							
						·	
L		L				<u>l</u>	
Type of p	oump:					d black poly	tubing
<u> </u>		sampled	with dedi	cated disp	posable ba	ailer	

**APPENDIX C** 

**GEOTECHNICAL ANALYSIS RESULTS** 





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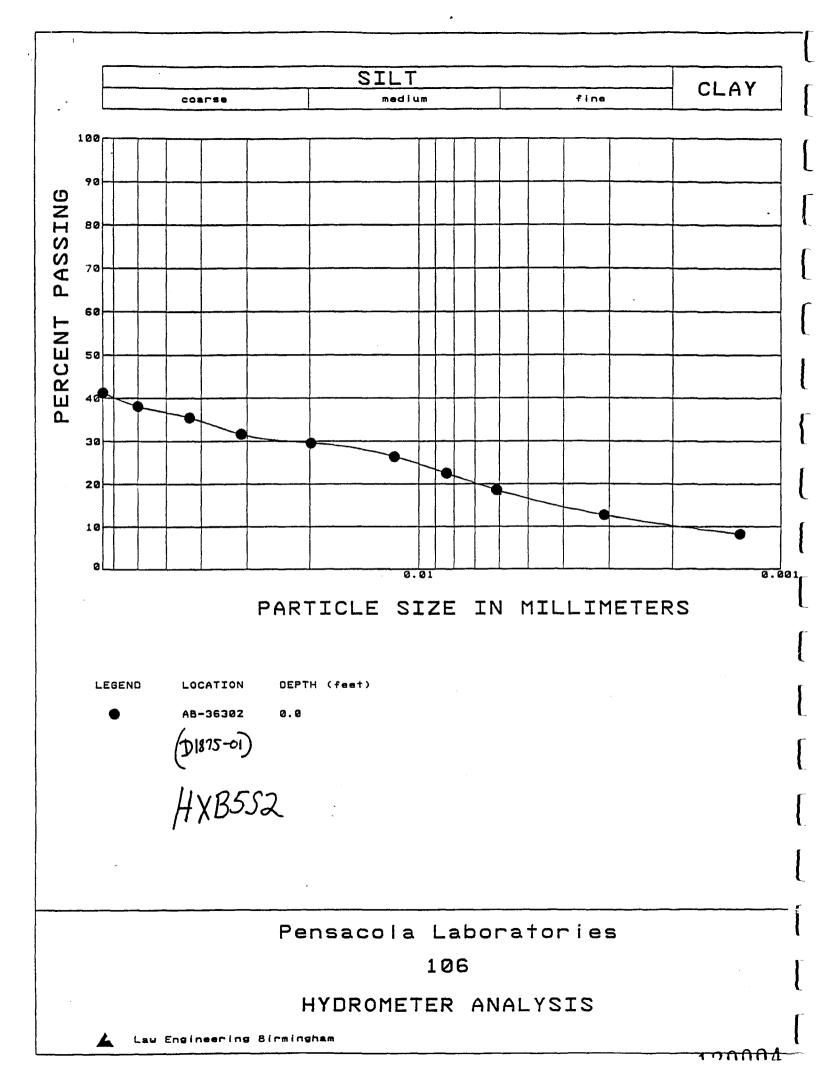
Т

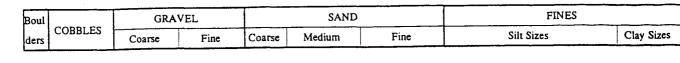
**GRAIN SIZE IN MILLIMETERS** 

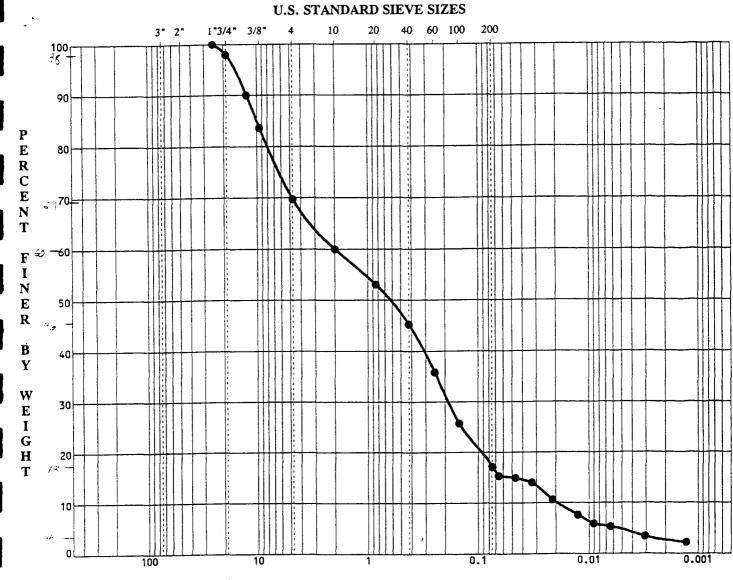
	DEPTH	NAT WC	LL	PL	PI	DESCRIPTION
$\bullet$	0.0					
		4				
					•	

	HXB552
SAMPLE NUMBER	HXB552 AB-36302 (D1875-01)
PROJECT NUMBER	106
PROJECT	Pensacola Laboratories

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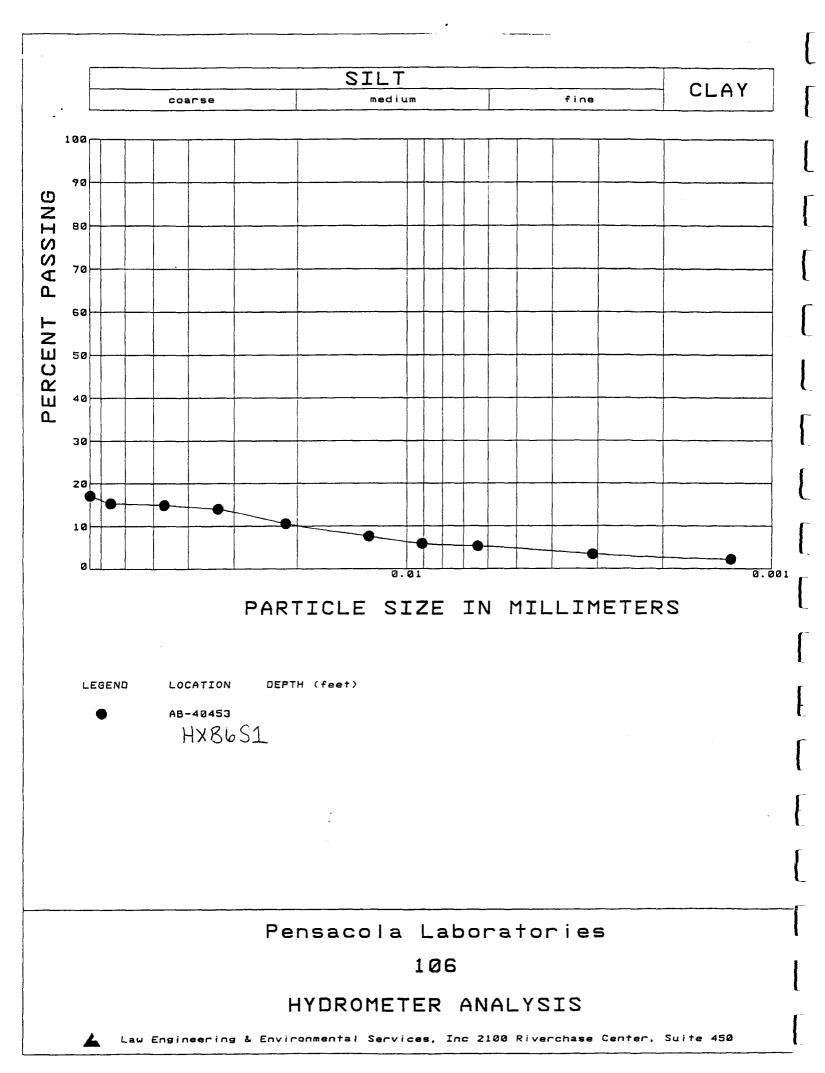


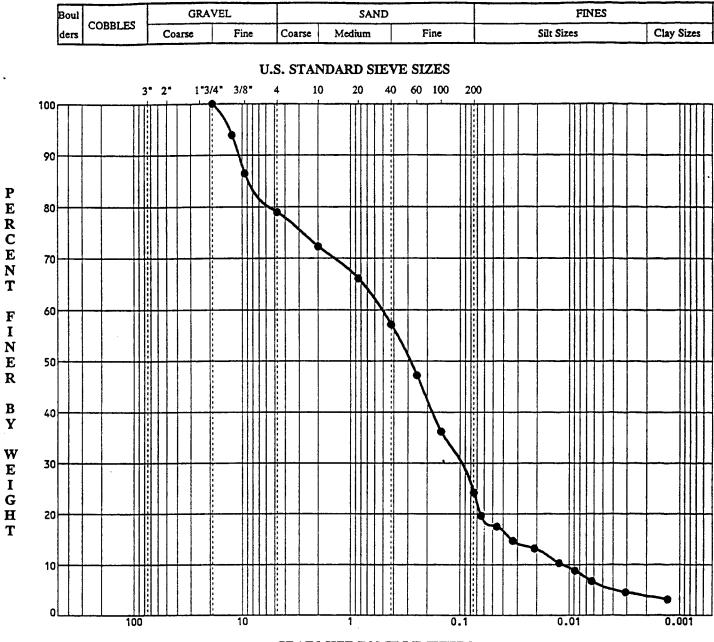


GRAIN SIZE IN MILLIMETERS .

Γ	DEPTH	NAT WC	LL	PL	PI	DESCRIPTION
•						

SIZE DISTI	RIBUTION
AB-40453	HXB6S1
106 Pensacola Laboratories	
	AB-40453 106





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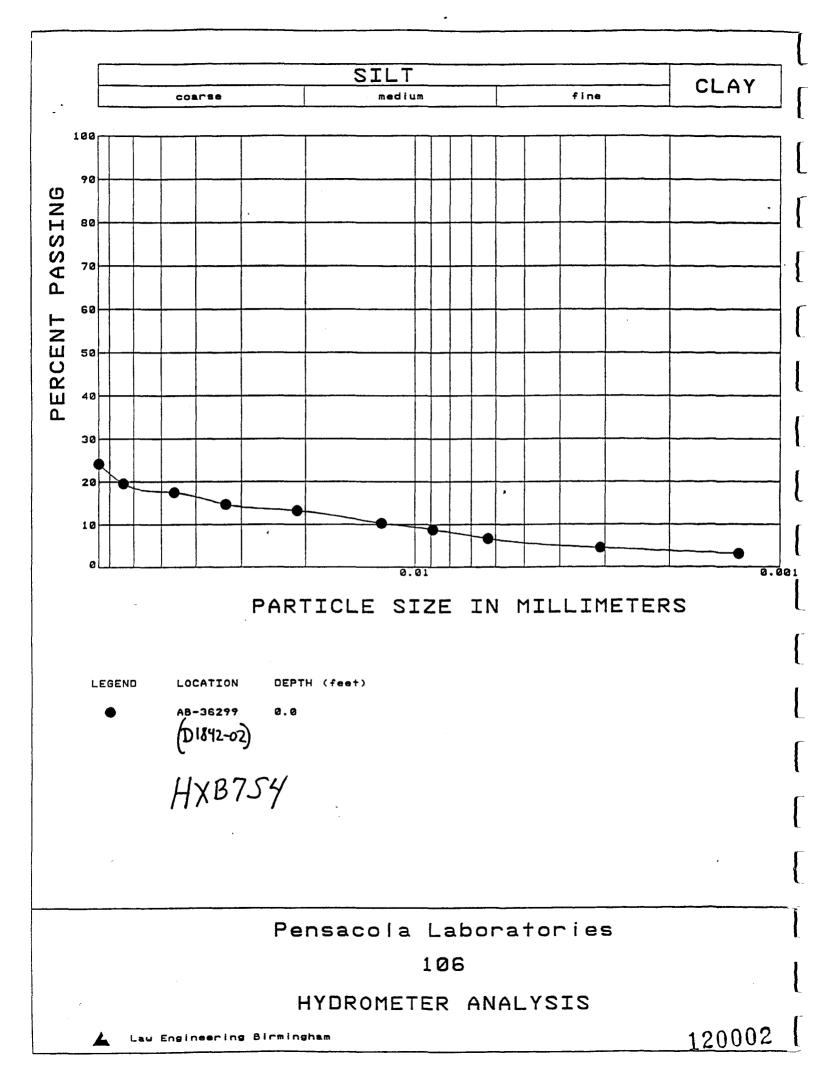
Т

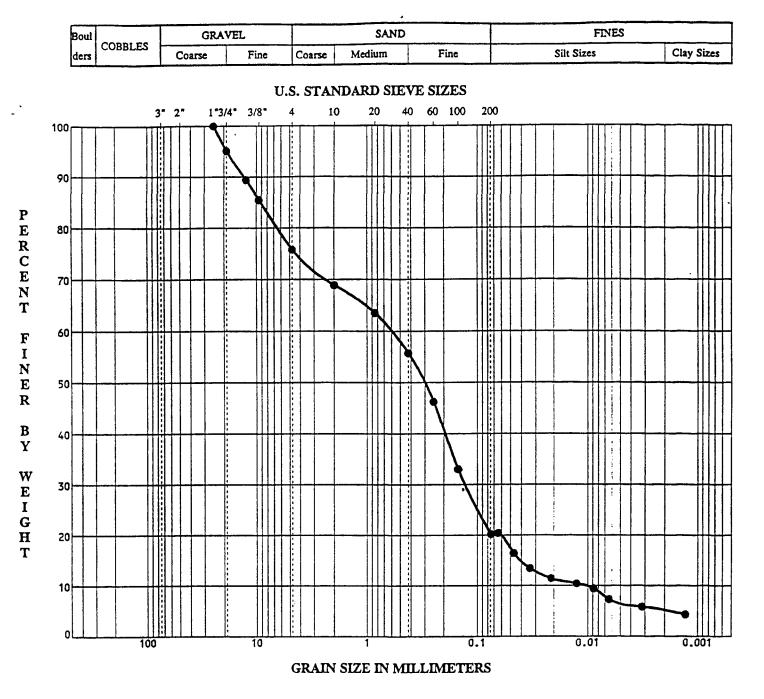
**GRAIN SIZE IN MILLIMETERS** 

	DEPTH	NAT WC	LL	PL	PI	DESCRIPTION
•	0.0					
					•	

	HXB754
SAMPLE NUMBER	AB-36299 (D1848-07)
PROJECT NUMBER	106
PROJECT	Pensacola Laboratories

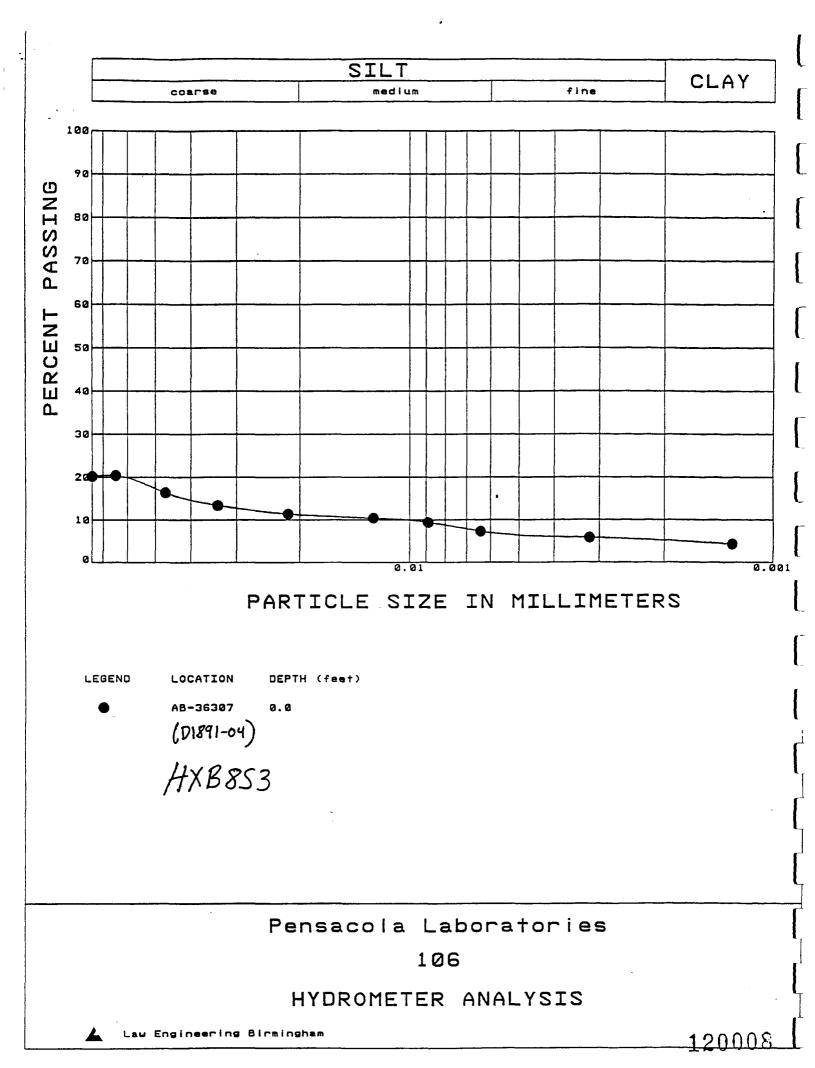
ī

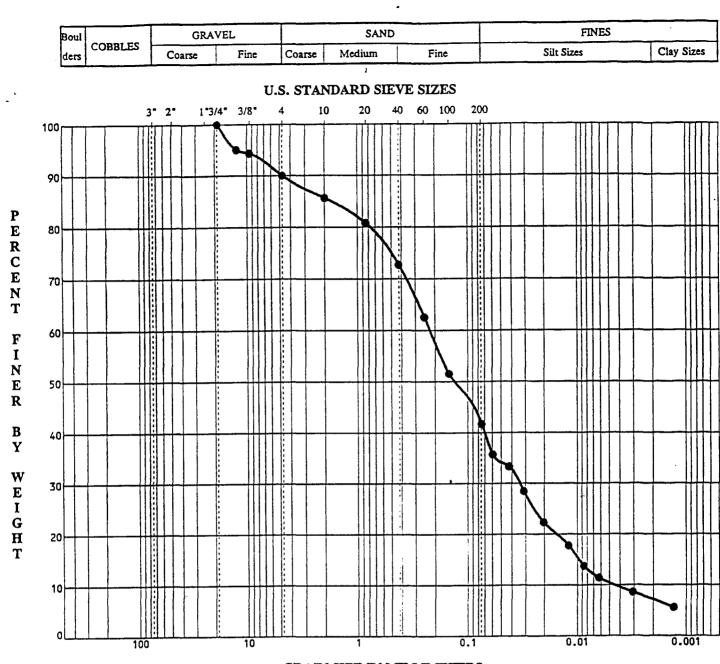




	DEPTH	NAT WC	LL	PL	PI	DESCRIPTION
$\bullet$	0.0					
					•	

	HYR853
	HXB8S3 AB-36307 (D1891-04)
SAMPLE NUMBER	AB-36307 ( $U1891-04$ )
PROJECT NUMBER	106
PROJECT	Pensacola Laboratories



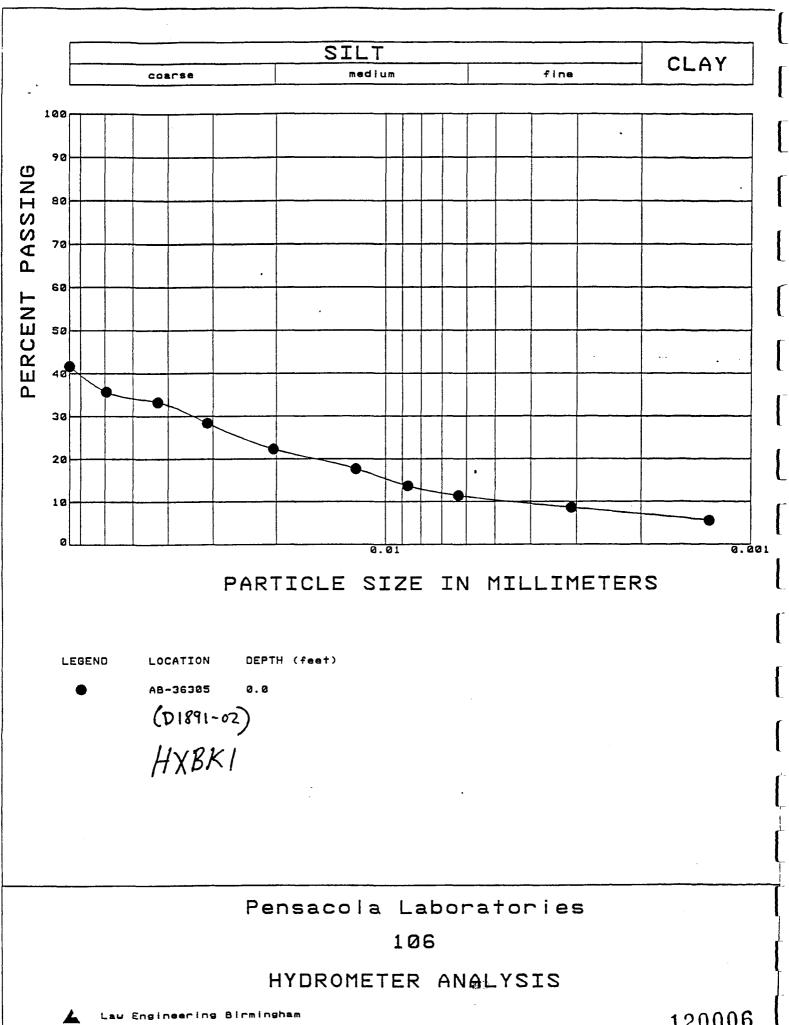


GRAIN SIZE IN MILLIMETERS

Γ	DEPTH	NAT WC	LL	PL	PI	DESCRIPTION
	• 0.0					
	[	1	[	(		

GR/	IN SIZE DIST	RIBUTION	
SAMPLE NUMBER	HXBK1 AB-36305	(D1891-02)	
PROJECT NUMBER PROJECT	106 Pensacola L	aboratories	
LAW ENGINEERI	NG & ENVIRO	NMENTAL SERVICES, INC.	

+>n005



**APPENDIX D** 

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ANALYTICAL DATA

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Field sample ID	HX-SS1	HX-SS51	HX-SS2	CIN 200-VII	11CIN 700-VII	CCC.V11	100-011	200 1/11		
Lab Sample ID	D2085-01	D2085-06	D2085-02	D2085-02MS	D2085-02MSD	D2085-03	D2085-04	D2085-05	E0065-01	E0065-01MS
Sample Location	EAST YARD	EAST YARD	EAST YARD	EAST YARD	EAST YARD	SOUTH YARD	NEW PLANT	OLD PLANT	MW6	MW6
Sample Description	ENV. SAMPLE	HX-SS1 DUP.	ENV. SAMPLE	MS	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	MS MS
Date Sampled	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	17/18/91	1/16/98	1/10/20
Aromatics		A STATE OF A	a da anti-ara an	all the print of the second	a statigat all the Analysis			A CAPITAL CONTRACT	A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR A CO	
Benzene	IN 11	IN H	<b>I</b> U 11	66	67	58 UJ	71 UJ	5		00
Toluene	45 J	33 J	10 11	68	68	230 J	260 J	35 J	m H	40
Ethylbenzene	1 ]	11 M	II II	0 H	11 N	41 J	14 J	2 ]	2 ]	
Xylene(total)	۲ O1	5 J	II UI	0 11		160 J	150 J	12 J	f 21	61
Styrene	IN II	IN 11	IN II	N 11	11 U	58 ()]	11 UJ		11 UJ	
Halogenated Aliphatics										
Chloromethane		2 J	IN II	11 U	0 II	58 UJ	11 N1	II UI	II UI	ח וו וו
Bromomethane	2 JN	IN II	IN II	0 11	N 11	58 UJ	U 17	IN II	II M	11 C
Vinvl Chloride		IN II	IN II	11 U	11 N	58 UJ	IU 17	U UI		11 0
Chloroethane	10 II	IN II	IN II			58 UJ	IN 12	II UI	Я	U 11
Methylene Chloride		(U) 11	IN II	N 11	n II	58 UJ	IN 12		I1 U1	n II
I, J-Dichloroethene		IN II	IN II	63	63	58 UJ	10 IL	II UI	ГЛ 11 П	74
1, 1-Dichloroethane		IN II		11 U	0 II 0	58 UJ	IU 17	II M	11 UJ	11 0
1,2-Dichloroethene (total)		IN II	IN II	11 N	11 U	58 UJ	11 UJ	II UI	II M	D =
Chloroform		11 07	in II	n H	0 11	58 UJ	rn 14	II UI	11 UJ	
1,2-Dichloroethane	[ 6]	[ 11 ]	8 J	12	11 ]	29 J	44 ]	12 J	EU II	n =
I, I, I-Trichloroethane		rn II	IN II	0 11	11 U	58 UJ	IU 17	IN II		N 11
Carbon Tetrachloride	11 NJ	IN II	IU II	n II	11 U	58 UJ	71 UJ	3	IN II	0 II
Bromodichloromethane	IN 11	m H n		11 U	11 N	58 UJ	10 IL	13 11	n =	
1,2-Dichloropropane		m 11	IN II	0 II	N 11	58 UJ	LU 17	5 =	3	
cis-1,3-Dichloropropene	n II	IN H	U1 U1	11 U	N 11	58 UJ	71 UJ	n =	IN II	
Trichloroethene	2 J	2 J		56	56	6 ]	EU 17	-	m =	20
Dibromochloromethane	60 H	IN II	IN II	0.11	11 U	58 UJ	11 M	I II	67 H	
1,1,2-Trichloroethane	EN 11	rn 11		0 11 O	11 U	58 UJ	IN 11	11 NJ	6 1	
trans-1,3-Dichloropropene		I1 UJ	II UI	0 II	11 U	58 UJ	11 UJ	5 	m II	
Вготоботи		m 11	IN IN	11 U	11 U	58 UJ	11 NI	10 11		
Tetrachloroethene	4 ]	3 J	2 J	2 J	2 J	29 J	11 UJ	4]	5	
I, I, 2, 2-Tetrachloroethane			IN H	n 11	U 11	58 UJ	1 I UJ	11 M		
Ketones		and the second secon	and the first of the second	And Andreas and						
Acetone	24 J	42 J		N 11	N 11 N	[ 1]	f 11	4 ]	15 J	22
2-Butanone	3 J	5 J	EU II	ח וו וו	II U	58 UJ	1 UJ	5 II	B =	
4-Methyl-2-pentanone	11 M	II UI	IN II	11 U		58 UJ	71 UJ	5		
2-Hexanone	FN 11	EU II	[]] []	11 N	11 N	58 UJ	IN 12	30 II	3 II	
Other/Miscellaneous VOCs	and the second sec		<ul> <li>A. M. S. S.</li></ul>							
Carbon disulfide	11 UI	IU 11		11 N	11 0	58 UJ	71 UJ	BI		
Chlorobenzene	10 11	10 11	10 H	65	66	110 J	11 M	6) = -		53
Total Target VOCs	110 J	[ 601	I 01	332	333	616 J	479 J	f 02	34 J	344 J
Number of VOC TICs	0	0	0	0	0	12	0	2	30	
Total VOC TIC Concentration						1400 J		21 J	4529 J	
Percent Solids	89%	%06	88%	88%	88%	86%	88%	%16	%16	%16
Dilution Factor	-	-		-	-	-	-	-	1.0	1.0
l evel	1 Aur	Iou	- mo	- I ow	worl	, nu	Low	Low	Low	MOT

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Field blank concentration reported in ug/L.
 An odor was detected in the cooler containing bottles shipped from the laboratory (Mitkem). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities.
 U = Not detected; J = Estimated value; R = Rejected value.

SD         Discolo         Discolo <thdiscolo< th=""> <thdiscolo< th=""> <thdiscol< th=""><th>Lab Sample ID Sample Location</th><th>POOLE OIL IOD</th><th>HXBIUSI</th><th>HXBI3SI</th><th>HXB16S1</th><th>HXB16SIMS</th><th>HXB16S1MSD</th><th>HX-SS6</th><th>HX-SS7</th><th>HX-SS8</th><th>HX-SS9</th></thdiscol<></thdiscolo<></thdiscolo<>	Lab Sample ID Sample Location	POOLE OIL IOD	HXBIUSI	HXBI3SI	HXB16S1	HXB16SIMS	HXB16S1MSD	HX-SS6	HX-SS7	HX-SS8	HX-SS9
Chronition         NNO         NEV ANTE         ITTERNI         OPENATE         CONTRACT         OTTERNI         OPENATE         CONTRACT         Contract         Description         Description <thdescription< th="">         Description         <thdescrip in<="" th=""><th>Sample Location</th><th>EUU05-UIMSU</th><th>D1860-01</th><th>D2003-02</th><th>D2003-01</th><th>D2003-01MS</th><th>D2003-01MSD</th><th>E1640-03</th><th>E1640-04</th><th>E1640-05</th><th>E1640-11</th></thdescrip></thdescription<>	Sample Location	EUU05-UIMSU	D1860-01	D2003-02	D2003-01	D2003-01MS	D2003-01MSD	E1640-03	E1640-04	E1640-05	E1640-11
Standing         ENX SAMPLE         ENX SAMPLE <thenx sample<="" th="">         ENX SAMPLE         ENX SAMPL</thenx>		MW6	NEW PLANT	HTHERMI	OFFICE/WARE	OFFICE/WARE	OFFICE/WARE	EAST YARD	EAST YARD	EAST YARD	EAST YARD
Semilate         11/10%         11/10%         11/10%         11/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10%         10/10	Sample Description	MSD		ENV. SAMPLE	ENV. SAMPLE	MS	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE
	Date Sampled	86/91/1	11/12/97	12/9/97	12/9/97	12/9/97	12/9/97	10/1/98	10/1/98	10/1/98	10/2/98
			A CARLES AND A CARLE								
73 $10000$ $1001$ $1001$ $1001$ $1001$ $1001$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $1101$ $11011$ $11011$ $1101$	Benzene	66	13000 UJ	I10 UI		61	63	U 01	n 11		0 H 0
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$m_{11}$ 1000         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100	Xylene(total)	22	590000 DJ	II0 UI	[ 6 <sup>.</sup> 0	0 II	0.7 J	U 01	11 0	11 11	11 U
wf         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1	Styrene	11 U	13000 UJ	110 DI	IN 11		11 U	10 U			0.11
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$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Chloromethane	II U	13000 UJ	II0 UI		n 11	n II		n 11	0 II	0 11
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Bromonsethane		13000 UJ	10 01		0 11		10 N		n II	11 U
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Vinvl Chloride		13000 UI	IN 011			0 11	10 D	0 11		0 II
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Chloroethane	11 0	13000 UJ	110 UJ	IN II	л н н	DII	10 01	11 11		11 U
86.         1300 UJ         110 U         110 U <t< td=""><td>Methylene Chloride</td><td>0 H .</td><td>13000 UJ</td><td>I10 UI</td><td>IN II</td><td>2 JB</td><td>4 JB</td><td>3 J</td><td>4 ]</td><td>-</td><td>5 ]</td></t<>	Methylene Chloride	0 H .	13000 UJ	I10 UI	IN II	2 JB	4 JB	3 J	4 ]	-	5 ]
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	1.1-Dichloroethene	86	13000 UJ	110 UJ		60	60	10 D	11 U		
(a)         (1)         (10)         (10)         (10)         (11)         (10)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)         (11)	1,1-Dichloroethane	11 U	13000 UJ	110 UJ	10 11	11 U	D II	10 N		0 11	0 11
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	1.2-Dichloroethene (total)	11 U	[3000 UJ	110 M		N 11		10 N			11 U
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Chloroform	11 U	13000 UJ	IN 011				U 01	11 0		11 U
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	1,2-Dichloroethane	11 U	13000 UJ	110 M		0 11		0 01			11 U
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	cis-1,3-Dichloropropene	11 D	13000 UJ	110 UJ		n II		10 N	0 11	11 0	0 11
e         11U         13000U         110U         110U <t< td=""><td>Trichloroethene</td><td>58</td><td>2900 J</td><td>II0 011</td><td></td><td>58</td><td>59</td><td>10 U</td><td>n II</td><td>0 11</td><td>0 1I O</td></t<>	Trichloroethene	58	2900 J	II0 011		58	59	10 U	n II	0 11	0 1I O
iiu         iiuo         iiuo         iiu         iiu<	Dibromochloromethane	11 U	13000 UJ	110 UJ			11 N	10 11	n II	n 11	11 U
ene         11 U         1300 U         110 U	1,1,2-Trichloroethane	N 11 N	13000 UJ	II0 UI	IN II	U II U	11 N	10 ()	11 N	1111	11 U
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	trans-1,3-Dichloropropene	n II	13000 UJ	I10 UI	IN II	ח וו וו ת	II U	10 11	11 U	1	11 U
11U $1300J$ $110U$ $100UJ$ $110U$ $110U$ $110U$ $110U$ $110U$ $110U$ $110U$ $111U$	Bromoform	11 N	13000 UJ	I10 M	IN II	N 11	D 11	10 01	D 11	U 11	11 ()
IIU         1300 UJ         110 UJ         11 UJ         <	Tetrachloroethene	11 U	13000 J	110 M	0.6 J		ΠΩ	2 J		11 0	5 J
21         6100         34         304         17         19         23         110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110         1110	1, 1, 2, 2-Tetrachloroethane	11 N	13000 UJ	110 UJ	11 UI	11 N	11 U	10 N	0 II		11 U
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IIU         1300 UJ         110 UJ         11 UJ         <	Acetone	21	F 0019	34 J	20 J	17	61	2 J	n 11	U 11	20
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	2-Butanone	U II	13000 UJ	110 UI	11 CI	n 11	11 U	10 N	11 N	U 11	4 J
IIIU         11U         110U         110U         11U         11U<	4-Methyl-2-pentanone	11 U	13000 UJ	110 M	IU 11	11 U	D II	10 DJ	11 N	1 I N	11 UJ
II U         13000 U1         110 U1         11 U	2-Hexanone	11 U	13000 UJ	110 UJ		U 11	U 11	10 U	11 U	11 U	U 11
II U         13000 UJ         110 UJ         11 UJ         11 U	Othen/Miscellaneous VOCs		and the second se	and the second secon						Average find a first of the fir	A CONTRACTOR AND A
61         24000 J         110 UJ         11 UJ         58         59         10 U         11 U <th< td=""><td>Carbon disulfide</td><td>11 N</td><td>13000 UJ</td><td>II 0 01</td><td>m II</td><td></td><td>0 <b>11</b> 0</td><td>0 01</td><td>D 11</td><td>0 =</td><td>0 11</td></th<>	Carbon disulfide	11 N	13000 UJ	II 0 01	m II		0 <b>11</b> 0	0 01	D 11	0 =	0 11
389 J         1344000 J         34 J         23 5 J         318 J         329 7 J         7 J         4 J         11         1           8         6         27         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         10         10         10         10         10         10         10         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0	Chlorobenzene	61	24000 J	110 NJ	10 H	58	59	0 01	11 U	U 11	0 H U
6         27         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10 </td <td>Fotal Target VOCs</td> <td>1 68E</td> <td>1344000 J</td> <td>34 J</td> <td>23.5 J</td> <td>318 J</td> <td>329.7 J</td> <td>7 J</td> <td>4 ]</td> <td></td> <td>36 J</td>	Fotal Target VOCs	1 68E	1344000 J	34 J	23.5 J	318 J	329.7 J	7 J	4 ]		36 J
91%         189000 J         12098 J         8 J         22%         92%         97%         91%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94% <t< td=""><td>Number of VOC TICs</td><td></td><td>9</td><td>27</td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td><b>^</b></td></t<>	Number of VOC TICs		9	27		0	0	0	0	0	<b>^</b>
91%         91%         92%         92%         92%         91%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94%         94% <td>Total VOC TIC Concentration</td> <td></td> <td>f 000681</td> <td>12098 J</td> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>62 J</td>	Total VOC TIC Concentration		f 000681	12098 J	8						62 J
1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0 <td>Percent Solids</td> <td>%16</td> <td>94%</td> <td>%16</td> <td>92%</td> <td>92%</td> <td>92%</td> <td>97%</td> <td>%16</td> <td>94%</td> <td>%06</td>	Percent Solids	%16	94%	%16	92%	92%	92%	97%	%16	94%	%06
Low Medium Low Low Low Low Low Low Low	Dilution Factor	1.0	0.1	1.0	1.0	1.0	0.1	1.0	1.0	1.0	1.0
	Level	Low	Medium	l.ow	Low	Low	Low	Low	Low	Low	Low

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Field blank concentration reported in ug/L.
 An odor was detected in the cooler containing bottles shipped from the laboratory (Mirkem). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities.
 U = Not detected, J = Estimated value; R = Rejected value.

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APPENDIX D-1A HEXAGON LABORATORIES RIFFS SURFACE SOIL ANALYTICAL DATA - VOLATILE ORGANICS (@/kg) Page 3 of 3

Lab Sample ID     E1640-12       Sample Location     EAST YARD       Sample Location     EAST YARD       Sample Description     ENV SAMPLE       Date Sample diversition     ENV SAMPLE       Date Sample Description     10/2/98       Aromatics     Date Sample diversition       Bracene     10/2/98       Aromatics     11 U       Sylenetotal     11 U       Sylenetotal     11 U       Sylenetotal     11 U       Vinylontation     11 U       Bronomethane     11 U       Bronomethane     11 U       Uninyl Chloride     11 U       Uninglorenthane     11 U       Ulioronethane     11 U	EI640-13 EAST YARD ENV. SAMPLE ENV. SAMPLE 102298 11 U 11 U 11 U 11 U 11 U 11 U 11 U 11	E1640-13MS EAST YARD MIS MIS 10/2/98 11/0 11/0 11/0 11/0 11/0 11/0 11/0 11/	E1640-13MSD EAST YARD MSD 102/98 102/98 55 55 55 11 U 11 U 11 U	E1640-08 EAST YARD ENV. SAMPLE 10/2/98	E1640-07 EAST YARD ENV. SAMPLE 10/1/98	D2085-08 HTHERMI ENV. SAMPLE	D2085-07 FIELD BLANK	E1640-01 FIELD BLANK 10/1/98	E1640-01 BOTTLE BLANK
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			11 U	n II	29 U	R	fU 01	10 OI	10 01
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	01		110	11 U	29 U	R	IU 01	10 01	LU 01
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1,2-Dichloropropane 11 U	11.U	חוח	0 11	ΠU	29 U	R	I0 UI	10 01	EU 01
cis-1,3-Dichloropropene 11 U	011	110	11 U	11 U	29 U	R	10 UJ	10 DI	I0 01
Trichloroethene 11 U	011	51	52	U II	29 U	×	f() 01	IU 01	ID 01
Dibromochloromethane 11 U	110	U 11	11 U	11 U	29 U	æ	10 OI	10 NJ	10 OI
1,1,2-Trichloroethane 11, U	11 U	11 U	N II	11 U	29 U	æ	10 01	10 UJ	EU 01
trans-1,3-Dichtoropropene 11 U	11	0 11	n II	11 U	29 U	×	IU 01	ED 01	I0 01
	U II	N 11	11 U	n n	29 U	×	I0 01	10 NJ	TN 01
	37	12	13	16	29 UJ	5 J	10 01	IU 01	[] 0 []
1,1,2,2-Tetrachloroethane 11, U	11 N	U II U	11 U	11 U	29 UI	×	I0 01	10 01	F(1) 01
Kelones	and the second sec								
Acetone 19	n II	II U	11 N	140	210	97 J	3 J	3 JB	ſ I
2-Butanone 5 J	110	11 U	11 U	21	39	R	10 DJ	10 M	5 J
4-Methyl-2-pentanone 11 UJ	m II	n II	11 U	11 UJ	29 UJ	×	10 M	10 M	10 OJ
2-Hexanone 11 U	D II	11 0	U 11	11 U	29 UJ	R	10 01	10 N1	2 J
cous VOCs	A REPORT OF A			antenne andre her her her her her her her her her h	You and the state of the sta			Same and the second second	
Carbon disulfide 11 U	U 11	11 U	11 U	2 J	11	Я	10 M	I0 01	10 N
Chlorobenzene 11 U	N 11	53	54	N 11	29 UJ	R	10 NI	10 NJ	10 U
Total Target VOCs 31 J	40 J	278	282 J	[ <u>1</u> 97 J	364 J	227 J	5 ]	133 J	I 88 J
ن ت				29	30	~		~	0
ntration	12 J			I 612	4908 J	47 J	12 J	37 J	
	94%	94%	94%	87%	87%	20%	%0	%0	%0
Dilution Factor 1.0	1.0	1.0	1.0	1.0	1.0	-		1.0	1.0
Level	Low	Low	Low	Low	Low	Low	Low	Low	Low

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Field blank concentration reported in ug/L.
 An odor was detected in the cooler containing bottles shipped from the laboratory (Mitkem). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities.
 U = Not detected; J = Estimated value; R = Rejected value.

APPENDIX D-IB	IIEXAGON LABORATORIES RI/FFS	SURFACE SOIL ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg)	Page 1 of 6
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Field sample ID	IIX-SSI	11X-SS51	HX-SS2	HX-SS2 MS	11X-SS2 MSD	11X-SS3	11X-SS4	11X-SS5	HXB6S1	HXB6SIMS
Lab Sample ID	D2085-01	D2085-06	1)2085-02	D2085-02MS	D2085-02MSD	D2085-03	D2085-04	D2085-05	E0065-01	E0065-01MS
Sample Location		EAST YARD	EAST YARD	EAST YARD	EAST YARD	SOUTH YARD	NEW PLANT	OLD PLANT	MW6	MW6
Sample Description	EN	HX-SSI DUP.	ENV. SAMPLE	MS	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	FNV. SAMPLE	MS
Date Sampled	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	1/16/98	11/16/97
Phenole/Acid Extractables								ALC: NAMES OF		
Phenol	R	R	R	1300	1200	390 U	R	R	370 U	1400
2-Chlorophenol	×	R	R	1100	1000	390 U	380 U	370 U	. N 0/2	1400
2-Methylphenol (o-cresol)	æ	R	×	390 U	0 06E	390 U	380 U	370 U	370 U	370 U
4- Methylphenol	2	Я	R	390 U	0 06E	U 06£	380 U	R	370 U	370 U
2,4-Dimethylphenol	×	R	2	390 U	J 06E	10 06E	380 UJ	370 UJ	370 U	370 U
2,4-Dichlorophenol	2	R	×	390 U	390 U	390 U	380 U	370 U	370 U	370 U
4-Chloro-3-methylphenol	æ	R	æ	1100	1100	390 U	380 U	370 U	370 U	1600
2,4,6-Trichlorophenol	R	R	ж	390 U	390 U	390 U	380 U	370 U	370 U	370 U
2,4,5-Trichlorophenol	R	R	2	D 070 U	0 026 U	010 U	0 096 N	940 U	940 U	940 U
2,4-Dinitrophenol	R	R	×	070 U	0 026	070 U	D 096	940 U	940 U	940 U
2-Nitrophenol	R	R	R	390 U	390 U	390 U	380 U	370 U	370 U	370 U
4-Nitrophenol	æ	R	Я	2800	2400	0 026 U	0 096	940 U	940 U	1600
4,6-Dinitro-2-methylphenol	R	R	я	U 070	U 079	970 U	0 096	940 U	940 U	940 U
Pentachlorophenol		R	æ	U 070	0 026 U	070 U	0 096	940 U	940 U	510 J
Polycyclic Aromatic Hydrocarbons (PAHs)	0								的名称的复数形式	
Naphthalcne	370 U	36 J	U 06E	0 06E	390 U	640	f 0 <i>L</i>	340 J	370 U	46 J
2-Methylnaphthalene	42 J	59 J	37 J	390 U	390 U	0091	80 J	370 U	I 68	250 J
2-Chloronaphthalene	370 U	370 U	390 U	390 U	U 096	390 U	380 U	370 U	370 U	370 U
Accnaphthylene	370 U	72 J	24 J	390 U	20 J	390 U	380 U	370 U	23 J	28 J
Acenaphthene	68 J	220 J	390 U	1100	1200	300 JN	380 U	R	35 J	1300
Fluorenc	130 J	320 J	24 J	390 U	U 095	660	230 J	370 U	41 J	86 J
Phenanthrene	1300	2100	∎f 08	39 J	52 J	1300	490 JN	NI 00E	440	650
Anthracene	150 J	260 J	22 JN	390 U	1 06E	140 JN	380 U	370 U	120 J	f 061
Fluoranthene	1200	1600	10 06E	390 U	U 065	390 U	380 U	370 U	860	800
Pyrene	1800	2800	180 J	1300	1400	390 UJ	R	370 UJ	820	2000
Benzo(a)anthracene	630	850	390 U	390 U	1000	390 UJ	R	370 UI	490	440
Chrysene	1400 JN	1600 JN	2000 JN	1300	1300	7400 DJN	4400 DJN	4000 DJN	490	480
Benzo(b)fluoranthene	1200 J	1800 J	530 JN	120 J	130 J	1200 J	R	R	700	640
Benzo(k)fluoranthene	560 J	750 J	260 JN	38 J	64 J	460 J	R	×	340 J	290 J
Benzo(a)pyrene	480 J	890 J	NI 08	43 J	49 ]	630 J	R	R	440	430
Indeno(1,2,3-cd)pyrene	270 J	390 J	170 J	38 J	44 J	230 J	R	R	260 J	210 J
Dibenz(a,h)anthracene	94 J	130 JN	R	390 U	390 U	R	R	R	88 J	70 J
Benzo(g,h,i)perylene	250 J	360 J	210 J	390 U	390 U	R	R	R	130 J	210 J
Aniline Compounds						<sup>1</sup> S. M. S. M S. M. S. M S. M. S. M. S	A Sector Sector	and the second secon		
4-Chloroaniline	370 UJ	370 UJ	U 068	390 U	U 095	10 06E	380 UJ	10 0/E	TU 075	370 U
2-Nitroaniline	940 U	940 U	070 U	0 070 U	0 026 U	070 U	0 096	940 U	940 U	940 U
3-Nitroaniline	940 U	940 U	0 026	0 026 U	N 026	01 026	N 096	940 U	040 M	940 U
4-Nitroaniline	940 U	940 U	970 U	970 U	0 0 0 O	970 U	960 U	940 U	940 U	940 U

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APPENDIX D-1B HEXAGON LABORATORIES RIFFS SURFACE SOIL ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg)	Page 2 of 6
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Field sample ID	ISS-XH	HX-SS51	HX-SS2	HX-SS2 MS	HX-SS2 MSD	HX-SS3	HX-SS4	HX-SS5	HXB6S1	HXB6SIMS
Lab Sample ID		D2085-06	D2085-02	D2085-02MS	D2085-02MSD	D2085-03	D2085-04	D2085-05	E0065-01	E0065-01MS
Sample Location		EAST YARD	EAST YARD	EAST YARD	EAST YARD	SOUTH YARD	NEW PLANT	OLD PLANT	MW6	MW6
Sample Description	EN	HX-SS1 DUP.	ENV. SAMPLE	MS	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	MS
Date Sampled	1 12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	1/16/98	11/16/97
<b>Bentenes/Aromatics</b>										
1,3-Dichlorobenzene	370 U	370 U	390 U	390 U	390 U	390 U	380 U	320 J	370 U	370 U
1,4-Dichiorobenzene	370 U	370 U	J 06E	1100	1100	390 U	380 U	370 U	370 U	870
1,2-Dichlorobenzene	370 U	370 U	J 06E	390 U	390 U	740	500	150 J	370 U	370 U
Nitrobenzene	370 U	370 U	0 06E	390 U	390 U	390 U	380 U	370 U	370 U	370 U
1,2,4-Trichlorobenzene	370 U	370 U	390 U	1200	1200	390 U	380 U	370 U	370 U	1100
2,6-Dinitrotoluene	370 U	370 U	390 U	390 U	390 U	390 U	380 U	370 U	370 U	370 U
2,4-Dinitrotoluene	370 U	370 U	390 [J	1200	1200	390 U	380 U	370 U	370 U	1300
Hexachlorobenzene	370 U	370 U	390 U	390 U	390 U	390 U	380 U	370 U	370 U	370 U
Puttalace										
Dimethylphthalate	370 U	370 U	390 U	390 U	390 U	N( 081	150 J	500	370 U	370 U
Diethylphthalate	370 U	370 U	390 U	390 U	390 U	390 U	380 U	370 U	370 U	370 U
Di-n-butyl phthalate	370 U	370 U	390 U	390 U	390 U	390 U	2900 JN	2300	370 U	370 U
Butylbenzyl phthalate	47 J	320 J	33 J	390 U	390 U	390 UJ	R	370 UJ	370 U	370 U
bis(2-Ethylhexyl)phthalate	NI 071	200 JN	140 JN	200 J	52 J	630 J	3800 DJN	R	f 68	90 J
Di-n-octy1 phthalate	R	20 JN	R	390 U	390 U	~	540 J	R	370 U	370 U
Other/Miscellaneous SYOCs	A STATE OF A STATE OF A STATE	STREET,		And the state of the state	a to a final state of the second state of the			Apple of the second second		
bis(2-choroethyl)Ether	370 U	370 U	390 U	390 U	390 U	390 U	. 380 U	370 U	370 U	370 U
2,2'-oxybis(1-chloropropane)	370 U	370 U	390 U	390 U	10 060	390 U	380 U	01 01 E	370 U	370 U
N-Nitroso-di-n-propylamine	370 U	370 U	U 060	1200	1200	390 U	380 U	370 U	370 U	1000
Hexachloroethane	370 U	370 U	390 U	390 U	J 06E	0 06E	380 U	370 U	370 U	370 U
Carbazole	Nf 0E1	240 J	390 U	390 U	390 U	390 U	380 U	370 U	370 U	370 U
Isophorone	370 U	370 U	390 U	390 U	0 06E	10 068	380 U	370 U	28 J	96 J
Hexachlorobutadiene	370 U	370 U	390 U	390 U	390 U	390 U	380 U	370 U	370 U	370 U
bis(2-chloroethoxy)methane	370 U	370 U	390 U	390 U	390 U	390 U	380 U	370 U	370 U	370 U
Hexachlorocyclopentadiene	370 U	370 U	390 U	390 U	390 U	390 U	380 U	370 U	370 U	370 U
Dibenzofuran	65 J	180 J	390 U	390 U	390 U	390 U	380 U	370 U	21 J	47 J
4-Chlorophenyl-phenyl ether	370 U	370 U	390 U	390 U	390 U	390 U	380 U	370 U	370 U	370 U
N-nitrosodiphenylamine	370 U	370 U	390 U	390 U	390 U	390 U	380 U	370 U	370 U	370 U
4-Bromophenyl-phenyl ether	370 U	370 U	390 U	1 06E	390 U	390 U	380 U	370 U	370 U	370 U
3,3'-Dichlorobenzidine	370 U	370 U	390 U	0 06E	390 U	390 UJ	R	370 UJ	370 UJ	370 U
Total Tarret SVOCs	9 986 1	15 107 1	1 700 I	15179 [	1 1 1 2 1	16110 1			C SAA T	101221
Number of SVOC TICs	0		36			10	4 001 <sup>1</sup> C		2007	
Total SVOC TIC Concentration	1 000 001	4 820 1	40 880 1			1 1 5 40 1	1 008 66	1 097 8	1 36 9 0	
Derrant Colide	000/	C 070'L	r 000'01	0000		r 0+c'11	r 000,12	C 00400	r r/0'9	1000
	89%	89%	86%	86%	86%	86%	87%	89%	89%	89%
	0.1.	0.1	0	1.0	1.0	0.1	1.0	1.0	1.0	0.1
Level	1.0W	Low	Low	Low	Low	Low	Low	I.ow	Low	Low

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Notes:

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 An odor was detected in the cooler containing bottles shipped from the laboratory (Mitken). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities.
 U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample.

APPENDIX D-1B HEXAGON LABORATORIES RI/FFS SURFACE SOIL ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 3 of 6

Field sample ID	HXB6S1MSD	HXB10S1	HXB13S1	HXB16S1	HXB16S1MS	HXB16S1MSD	HX-SS6	HX-SS7	HX-SS8	HX-SS9
Lab Sample ID	E0065-01MSD	D1860-01	D2003-02	D2003-01	D2003-01MS	D2003-01MSD	E1640-03	E1640-04	E1640-05	E1640-11RE
Sample Location		NEW PLANT	HTHERMI	OFFICE/WARE	OFFICE/WARE	OFFICE/WARE	EAST YARD	EAST YARD	EAST YARD	EAST YARD
Sample Description		ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	MS	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE
Date Sampled	11/16/97	11/12/97	12/9/97	12/9/97	12/9/97	12/9/97	10/1/98	10/1/98	10/1/98	10/2/98
Rhenols/Acid Extractables			ingen bereiten sternet in der sichten s Sichten sichten	소 가 가 있는 가지 변수가						
Phenol	1600	NE 081	4900 U	480 U	1600	1700	1700 U	1100 U	1100 U	370 U
2-Chlorophenol	1600	390 U	4900 U	480 U	1700	1900	1700 U	U 0011	1100 U	370 U
2-Methylphenol (o-cresol)	370 U	1100	4900 U	480 U	480 U	480 U	1700 U	U 0011	1100 U	370 U
4- Methylphenol	370 U	1800	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 U
2,4-Dimethylphenol	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 U
2,4-Dichlorophenol	370 U	390 U	4900 U	480 U	480 U	480 U	U 0071	1100 U	1100 U	370 U
4-Chloro-3-methylphenol	1800	1 06E	4900 U	480 U	0061	2100	1700 U	1100 U	1100 U	370 U
2,4,6-Trichlorophenol	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 UJ
2,4,5-Trichlorophenol	· 940 U	U 086	12000 U	1200 U	1200 U	1200 U	U 0071	1100 U	1100 U	370 UJ
2,4-Dinitrophenol	940 U	UU 086	12000 U	1200 U	1200 U	1200 U	1700 U	1 00 L	1 00 I	370 UJ
2-Nitrophenol	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 U
4-Nitrophenol	1400	086 U	12000 U	1200 UJ	3000	2800	U 0071	1100 U	1100 U	370 UI
4,6-Dinitro-2-methylphenol	940 U	0 086	12000 UJ	1200 UJ	1200 U	1200 U	1700 U	1100 U	1100 U	370 U
Pentachlorophenol	600 J	080 U	12000 UJ	1200 UJ	950 J	1100 1	I 700 UJ	I100 UJ	I100 UI	370 UJ
Polycyclic Aromatic Hydrocarbons (PAHs)					and the second sec	and the second of the second se				THE REPORT OF MELLING
Naphthalene	370 U	460.	4900 U	480 U	480 U	480 U	1700 U	U 0011	1100 U	370 U
2-Methylnaphthalene	240 J	2000	520 J	480 U	480 U	480 U	1 700 U	U 0011	1100 U	41 J
2-Chloronaphthalene	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 UJ
Acenaphthyfene	370 U	390 U	4900 U	480 U	480 U	480 U	U 0071	U 0011	1100 U	370 UJ
Acenaphthene	1300	390 U	R	480 U	1300	1400	1700 U	1100 U	1100 U	370 UJ
Fluorene	26 J	120 J	3000 JN	480 U	480 U	58 J	1700 U	U 0011	1100 U	370 UI
Phenanthrene	f 061	360 J	15000 J	8 J	6 I J	560	1700 U	1100 U	1100 U	370 U
Anthracene	53 J	390 U	4900 UJ	480 UJ	480 U	120 J	1700 U	1100 U	1100 U	370 U
Fluoranthene	290 J	1 091	4900 UJ	1 0/1	1 1 U J	540	U 0071	N 0011	1100 U	370 U
Pyrene	1600	93 J	4900 U	120 J	1400	2000	1700 U	1100 U	1100 U	370 U
Benzo(a)anthracene	170 J	f 0 <i>L</i>	4900 U	1 27	71 J	280 J	1700 U	1100 U	1100 U	370 U
Chrysene	180 J	130 J	300000 D	130 J	80 J	300 J	1700 U	1100 U	560 J	370 U
Benzo(b)fluoranthene	270 J	1001	1400 J	110 J	110 J	310 J	1700 U	1100 U	1100 U	39 J
Benzo(k)fluoranthene	[ 01]	52 J	4900 UJ	480 U	480 U	140 J	U 0071	U 0011	0.0011	370 U
Benzo(a)pyrene	170 J	63 J	3200 J	50 J	49 J	180 J	1700 U	1100 U	1100 U	370 U
Indeno(1,2,3-cd)pyrene	92 J	390 U	4900 UJ	480 U	480 U	480 U	U 0071	1100 U	1100 U	370 U
Dibenz(a,h)anthracene	370 U	0 06E	4900 UJ	480 U	480 U	480 U	1700 U	U 0011	1100 U	370 U
Benzo(g,h,i)perylene	I 79	390 U	4900 UJ	480 U	480 U	480 U	1700 U	U 0011	1100 U	52 J
Aniline Compounds						가는 가지 아파 아파 아파				
4-Chloroaniline	370 U	390 U	4900 UJ	480 UJ	480 U	480 U	1700 U	1100 U	1100 U	370 U
2-Nitroaniline	940 U	U 086	12000 U	1200 U	1200 U	1200 U	1700 U	1100 U	1100 U	370 UJ
3-Nitroaniline	940 U	980 U	12000 UJ	1200 UJ	1200 U	1200 U	1700 UJ	EU 0011	1100 UJ	370 UJ
4-Nitroaniline	940 U	U 080 U	12000 U	1200 U	1200 U	1200 U	1700 U	N 0011	1100 U	370 UJ

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Field sample ID	I HXB6SIMSD	HXB10S1	HXB13S1	HXB16S1	HXB16S1MS	HXB16S1MSD	HX-SS6	HX-SS7	HX-SS8	HX-SS9
Lab Sample ID	Ľ	D1860-01	D2003-02	D2003-01	D2003-01MS	D2003-01MSD	E1640-03	E1640-04	E1640-05	E1640-11RE
Sample Location		NEW PLANT	HTHERMI	OFFICE/WARE	OFFICE/WARE	OFFICE/WARE	EAST YARD	EAST YARD	EAST YARD	EAST YARD
Sample Description		ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	MS	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE
Date Sampled	11/16/97	11/12/97	12/9/97	12/9/97	12/9/97	12/9/97	10/1/98	86/1/01	10/1/98	10/2/98
Benzenes/Aromatics							and the second secon			
1,3-Dichlorobenzene	370 U	75 J	4900 U	480 U	480 U	480 U	1700 U	1100 U	U 0011	370 U
1,4-Dichlorobenzene	1100	390 U	4900 U	480 U	1200	1100	1700 U	U 0011	1100 U	370 U
1,2-Dichlorobenzene	370 U	83 J	4900 U	480 U	480 U	480 U	1700 U	0011	1100 U	370 U
Nitrobenzene	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	N 0011	1100 U	370 U
1,2,4-Trichlorobenzene	1200	390 U	4900 U	480 U	1400	00£1	1700 U	U 0011	1100 U	370 U
2.6-Dinitrotoluene	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 UJ
2,4-Dinitrotoluene	1300	390 U	4900 U	480 U	1400	1300	1700 U	N 0011	1100 U	370 UJ
Hexachlorobenzene	370 U	J 06E	4900 UJ	480 UJ	480 U	480 U	1700 U	01100	1100 U	370 U
Phihalates										
Dimethylphthalate	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	1100 U	U 0011	370 UJ
Diethylphthalate	370 U	5000 D	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 UJ
Di-n-butyl phthalate	21 J	390 U	4900 UJ	150 J	85 J	130 J	1700 U	1100 U	1100 U	370 U
Butylbenzyl phthalate	370 U	390 U	4900 U	480 UJ	480 U	480 U	1700 UJ	f() 0011	1100 UJ	370 UJ
bis(2-Ethylhexyl)phthalate	f 92	810	4900 U	6100 DJ	140 J	140 J	1700 U	1100 U	130 J	370 U
Di-n-octył phthalate	370 U	390 U	10004	480 UJ	480 U	480 U	LU 0071	rn 0011	1100 UI	370 UJ
<b>Other/Miscellaneous SVOCs</b>		<ul> <li>Substantial in Solution (Section 1997)</li> </ul>								
bis(2-choroethy()Ether	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 U
2.2'-oxybis(1-chloropropane)	370 U	1 06E	4900 U	480 U	480 U	480 U	1700 U	D 0011	1100 U	370 U
N-Nitroso-di-n-propylamine	1100	390 U	4900 U	480 U	1200	1100	1700 U	U 0011	1100 U	370 U
Hexachloroethane	370 U	390 U	4900 U	480 U	480 U	480 []	1700 U	U 0011	1100 U	370 U
Carbazole	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 U
Isophorone	370 U	390 U	4900 UJ	480 UJ	480 U	86 J	1700 U	1100 U	1100 U	370 U
Hexachlorobutadiene	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	0011	1100 U	370 U
bis(2-chloroethoxy)methane	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	U 0011	1100 U	370 U
Hexachlorocyclopentadiene	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 UJ
Dibenzofuran	370 U	100 J	4900 U	480 U	480 U	480 U	1700 U	U 0011	U 0011	370 UJ
4-Chlorophenyl-phenyl ether	370 U	390 U	4900 U	480 U	480 U	480 U	1700 U	1100 U	1100 U	370 UJ
N-nitrosodiphenylamine	370 U	390 U	4900 UJ	480 UJ	480 U	480 U	1700 U	U 0011	1100 U	370 U
4-Bromophenyl-phenyl ether	370 U	390 U	4900 UJ	480 UJ	480 U	480 U	1700 U	N 0011	1100 U	370 U
3,3'-Dichlorobenzídíne	370 U	390 UJ	4900 UJ	480 UJ	480 U	480 U	1700 UJ	f() 0011	1100 UJ	370 UJ
Total Target SVOCs	16,585 J	12.756 J	323.120 J	6.986.9	17.756 J	20.644 ]	0	0	690 J	132 J
Number of SVOC TICs		28	39	28	0	c	5	61	19	7
Total SVOC TIC Concentration		214,400 J	2,572,600 J	18,800 J	0	0	20,560 J	J0,360 J	33,230 J	2,803 J
Percent Solids	89%	85%	%16	92%	92%	92%	95%	%16	93%	89%
Dilution Factor	1.0	1.0	10.0	1.0	1.0	1.0	5	3	3	-
Level	Low	1.ow	Low	Low	Low	Low	1.ow	I.ow	Low	Low
Notes:										

APPENDIX D-1B

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Notes:

1. Field blank concentration reported in ug/L. 2. An odor was detected in the cooler containing bottles shipped from the laboratory (Mitkem). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities. 3. U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample.

Field sample ID	Dess-XH	HX-SS10	SM01SS-XH	DSM018S-XH	HXB18	HXB19	IMO-XH	HX-FBSS1 <sup>(1)</sup>	HXFB1001 <sup>(1)</sup>	HXBB1001 <sup>(1)(2)</sup>
Lab Sample ID	E1640-12	E1640-13	E1640-13MS	E1640-13MSD	E1640-08RE	E1640-07RE	D2085-08	D2085-07	E1640-01	E1640-01
Sample Location	EAST YARD	EAST YARD	EAST YARD	EAST YARD	EAST YARD	1	HTHERMI			
Sample Description	HX-SS9 DUP	ENV. SAMPLE	MS	MSD	ENV. SAMPLE	μщ.	ENV. SAMPLE	FIELD BLANK	FIELD BLANK	<b>BOTTLE BLANK</b>
Date Sampled	10/2/98	10/2/98	10/2/98	10/2/98	10/2/98	1 1	12/18/97	12/18/97	10/1/98	10/1/98
Phenole/Acid Extractables				States				Markey and a state of the state of		
Phenol	730 U	350 U	1400	1300	2	730 U	950000 U	10 U	10 N	NA
2-Chlorophenol	U 067	350 U	1400	1300	æ	U 067	950000 U	10 U	10 U	NA
2-Methylphenol (o-cresol)	730 U	350 U	350 U	350 U	æ	730 U	950000 U	10 N	10 U	NA
4- Methylphenol	730 U	350 U	350 U	350 U	8	730 U	950000 U	10 N	10 U	NA
2,4-Dimethylphenol	U 067	350 U	350 U	350 U	æ	U 067	950000 U	ID 01	10 N	NA
2,4-Dichlorophenol	130 U	350 U	350 U	350 U	æ	730 U	950000 U	10 N	10 N	NA
4-Chloro-3-methylphenol	U 067	350 U	2000	1800	R	730 U	950000 U	10 U	10 U	NA
2,4,6-Trichlorophenol	130 U	350 U	350 U	350 U	2	730 U	950000 U	10 11	10 N	NA
2,4,5-Trichlorophenol	U 057 '	350 U	350 U	350 U	~	730 U	2400000 U	25 U	U 01	NA
2,4-Dinitrophenol	730 U	350 U	350 U	350 U	R	730 U	2400000 U	25 U	I0 01	NA
2-Nitrophenol	130 U	350 U	350 U	350 U	~	730 U	D 000056	10 U	10 N	NA
4-Nitrophenol	730 U	350 U	2100	1800	æ	730 U	2400000 U	25 U	10 U	NA
4.6-Dinitro-2-methylphenol	U 067	350 U	350 U	350 U	~	· 730 U	2400000 U	25 U	10 N	NA
Pentachlorophenol	130 UJ	350 UJ	860	550	æ	730 UJ	240000 U	25 U	10 U	NA
Polycyclic Aromatic Hydrocarbons (PAHs)										
Naphthalene	220 J	350 U	350 U	350 U	64 J	490 J	950000 U	10 N	10 N	NA
2-Methylnaphthalene	240 J	350 U	350 U	350 U	I 061	590 J	950000 U	10 0	10 U	NA
2-Chloronaphthalene	730 U	350 U	350 U	350 U	350 U	730 U	950000 U	10 N	10 U	NA
Acenaphthylene	730 U	350 U	350 U	350 U	350 U	730 U	950000 U	10 U	10 U	NA
Acenaphthene	730 U	350 U	1200	1100	350 U	730 U	NL 00001	10 U	10 U	NA
Fluorene	730 U	350 U	350 U	350 U	350 U	85 J	380000 JN	10 U	10 U	NA
Phenanthrene	730 U	350 U	330 U	350 U	120 J	530 J	660000 J	10 N	10 U	NA
Anthracene	730 U	350 U	350 U	350 U	350 U	97 J	950000 U	10 U	10 U	NA
Fluoranthene	730 U	350 U	350 U	350 U	75 J	400 J	950000 U	10 U	10 U	NA
Pyrene	110 J	350 U	1200	1100	240 J	1100 J	950000 U	10 N	10 N	NA
Benzo(a)anthracenc	80 J	350 U	350 U	350 U	350 U	280 J	950000 U	10 U	10 U	NA
Chrysene	180 J	130 J	140 J	130 J	110 J	510 J	7200000	10 U	10 U	NA
Benzo(b)fluoranthene	130 J	43 ]	350 U	350 U	84 J	520 J	950000 UJ	10 U	10 U	NA
Benzo(k)fluoranthene	730 U	350 U	350 U	350 U	350 U	150 J	950000 UJ	10 N	10 U	NA
Benzo(a)pyrene	74 J	350 U	350 U	350 U	350 U	300 J	R	10 U	10 N	NA
Indeno(1,2,3-cd)pyrene	730 U	350 U	350 U	350 U	50 J	250 J	950000 UJ	10 D	10 U	NA
Dibenz(a,h)anthracene	730 U	350 U	350 U	350 U	350 U	730 U	950000 UJ	10 N	10 N	NA
Benzo(g,h,i)perylene	f 66	350 U	350 U	350 U	78 J	400 ]	950000 UJ	10 N	10 U	NA
Antline Compounds				Mathematical Sciences and Sc		We want to any according to the second se				
4-Chloroaniline	U 067	350 U	350 U	350 U	350 U	730 U	950000 U	10 DJ	10 U	NA
2-Nitroaniline	730 U	350 U	350 U	350 U	350 U	730 U	2400000 U	25 U	10 N	NA
3-Nitroaniline	730 UJ	350 UJ	350 U	350 U	350 UJ	T30 UJ	2400000 U	25 U	rn 01	NA
4-Nitroaniline	730 U	350 U	350 U	350 U	350 U	730 U	2400000 U	25 U	10 N	ΝA

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APPENDIX D-1B HEXAGON LABORATORIES RI/FFS SURFACE SOIL ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 5 of 6

HEXAGON LABORATORIES RIFFS SURFACE SOIL ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) APPENDIX D-1B Page 6 of 6

Field sample ID	Dess-XH	01SS-X11	SM01SS-X11	DSM01SS-XH	HXB18	1[XB19	IMO-XH	HX-FBSSI <sup>(1)</sup>	HXFB1001 <sup>(1)</sup>	HXBB1001 <sup>(1)(2)</sup>
Lab Sample ID	E1640-12	E1640-13	E1640-13MS	E1640-13MSD	E1640-08RE	E1640-07RE	D2085-08	D2085-07	E1640-01	E1640-01
Sample Location		EAST YARD	EAST YARD	EAST YARD	EAST YARD	EAST YARD	HTHERMI			
Sample Description	HX-SS9 DUP	ENV. SAMPLE	MS	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	FIELD BLANK	FIELD BLANK	BOTTLE BLANK
Date Sampled	10/2/98	10/2/98	10/2/98	10/2/98	10/2/98	86/1/01	12/18/97	12/18/97	10/1/98	10/1/98
Benceneckinnadics				The second second			C. C	THE STREET		
1, 3-Dichlorobenzene	730 U	350 U	350 U	350 U	350 UJ	730 U	000026 U	10 U	10 U	NA
1,4-Dichlorobenzene	730 U	350 U	980	006	350 UJ	730 U	950000 U	10 N	10 U	NA
[1,2-Dichlorobenzene	730 U	350 U	350 U	350 U	350 UJ	730 U	000026	10 N	10 U	NA
Nitrobenzene	730 U	350 U	350 U	350 U	350 U	730 U	950000 U	10 U	10 N	NA
1,2,4-Trichlorobenzene	730 U	350 U	1200	1100	350 U	730 U	000026 U	10 N	10 U	NA
2,6-Dinitrotoluene	730 U	350 U	350 U	350 U	350 U	730 U	000026 U	10 N	10 U	NA
2,4-Dinitrotoluene	730 U	350 U	1200	1100	350 U	730 U	000026 U	10 U	10 U	NA
Hexachlorobenzene	730 U	350 U	350 U	350 U	350 U	730 U	000026 U	10 N	10 N	NA
Phihalotes	<sup>10</sup> Construction of the second se			in the second	A CONTRACT AND A CONT				Constants Constants	and the second of the second second
Dimethylphthalate	730 U	350 U	350 U	350 U	350 U	730 U	000026 U	10 N	10 U	NA
Diethylphthalate	730 U	350 U	350 U	350 U	20 J	93 J	950000 U	10 N	10 U	NA
Di-n-butyl phthalate	730 U	350 U	350 U	350 U	350 U	490 J	000026 U	10 N	10 N	NA
Butylbenzyi phthalate	730 UJ	350 UJ	350 U	350 U	f 001	510 J	950000 U	10 U	10 U	NA
bis(2-Ethylhexyl)phthalate	730 U	f 081	200 J	200 J	f 86	2600 J	950000 U	10 U	[]	NA
Di-n-octyf phthalate	730 UJ	42 J	350 U	350 U	1U 025	IN 061	550000 UJ	10 U	10 U	NA
<b>Other/Affscellaneous</b> SVOCs							A PARTY AND A P	and the first of the second		and the state of the second
bis(2-choroethyl)Ether	730 U	350 U	350 U	25 J	350 UJ	730 U	000026 U	10 U	10 U	AN
2,2'-oxybis(1-chloropropane)	730 U	350 U	350 U	350 U	10 0SE	130 U	U 000026	10 U	10 N	NA
N-Nitroso-di-n-propyfamine	730 U	350 U	1300	350 U	350 UJ	730 U	950000 U	10 U	10 U	NA
I lexachloroethane	730 U	350 U	N.058	350 U	350 UI	130 U	000026 U	10 N	10 N	NA
Carbazole	730 U	350 U	350 U	350 U	U 02E	730 U	020000 U	10 U	10 U	NA
Isophorone	730 U	0 0SE	350 U	350 U	U 025	730 U	000026 U	10 U	10 N	NA
Hexachlorobutadiene	730 U	350 U	350 U	350 U	350 U	730 U	950000 U	10 U	10 U	AN
bis(2-chloroethoxy)methane	730 U	350 U	350 U	350 U	350 U	730 U	950000 U	10 U	10 U	NA
Hexachlorocyclopentadiene	730 U	350 U	350 U	350 U	350 U	730 U	950000 U	10 U	10 U	NA
Dibenzofuran	730 U	350 U	350 U	350 U	350 U	730 U	950000 U	10 U	10 U	AN
4-Chlorophenyl-phenyl ether	730 U	350 U	350 U	350 U	350 U	730 U	950000 U	10 U	10 U	٨٨
N-nitrosodiphenylamine	730 U	350 U	350 U	350 U	350 U	730 U	950000 U	10 U	10 U	AN
4-Bromophenyl-phenyl ether	730 U	350 U	350 U	350 U	350 U	730 U	000026 U	10 N	10 U	NA
3,3'-Dichlorobenzidine	130 UJ	350 UJ	350 U	350 U	350 UJ	730 UJ	950000 U	10 U	10 U	NA
				NAME AND ADDRESS OF TAXABLE PARTY.	n 697 - Alfan Statut and Alfan I.				organization and the second second second second second	TAR' Apartment (Savar - Caratter - C
1 UIAI 1 AI BEL 3 Y UCS	ر ددا,ا	1 (46	f 081,c1	CU4,21	f 6771	ן נענע	8,360,000 J	6 0	-	
Number of SVOC TICs	15	19			20	19	27	0	2	
Total SVOC TIC Concentration	8,260 J	17,850 J			26,420 J	11,980 J	126,000,000 J		6 J	
Percent Solids	<b>30%</b>	93%	93%	93%	63%	%06	88%	%0	%0	
Dilution Factor	2		-	-	1.0	2.0	100	1.0	1.0	
lLevel	Low	Low	Low	Low	Low	Low	Low	Low	Low	

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Notes:

Field blank concentration reported in ug/L.
 An odor was detected in the cooler containing bottles shipped from the laboratory (Mitkem). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities.
 U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample.

IIEXAGON LABORATORIES RI/FFS SURFACE SOIL ANALYTICAL DATA - PESTICIDES/PCBs (ug/kg) APPENDIX D-IC Page 1 of 3

Field sample ID	HX-SSI	HX-SS51	HX-SS2	HX-SS2 MS	HX-SS2 MSD	HX-SS3	11X-SS4	HX-SS5	IIXB6SI	HXB6SIMS
1.ab Sample ID	D2085-01	D2085-06	D2085-02	D2085-02MS	D2085-02MSD	D2085-03	D2085-04	D2085-05	E0065-01	E0065-01MS
Sample Location	EAST YARD	EAST YARD	EAST YARD	EAST YARD	EAST YARD	SOUTH YARD	NEW PLANT	OLD PLANT	9MW	MW6
Sample Description	ENV. SAMPLE	HX-SS1 DUP.	ENV. SAMPLE	MS	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	MS
Date Sampled	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	86/91/1	11/16/97
Pesdeldes					옷은 가는 물건을 해도 못했다.					
alpha-BHC	U 6.1	U 6.1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	U 6.1	U 6.1	U 6.1
beta-BHC	U 6.1	U 6.1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	U 6.1	0.61	U 6.1
delta-BHC	æ	U 6.1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	R	11	U 6.1
gamma-BHC (Lindane)	U 0.1	U 6.1	2.0 U	14	15	2.0 U	2.0 U	U 0.1	1 0 G I	13 P
[  leptachlor	6.4 J	2.9 J	20 U	12	13 P	2.0 U	R	R	U 6.1	11
Aldrin	8.5 J	4.8 J	67 DJN	43 EP	42 EP	NICI 081	22 JN	U 0.1	3.5 J	14
Heptachlor Epoxide	2.7 JN	N 61	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	N 61	11 61	U 6.1
Endosulfan I	0.61	U 0.1	2.0 U	2.0 U	2.0 U	2.0 U	R	R	N 61	U 0.1
Dieldrin	Ŗ	×	3.8 U	25	26	×	3.8 U	R	3.7 U	24 P
4,4'-DDE	~	æ	21	16	3.8 U	3.8 U	3.8 U	3.7 U	3.7 U	3.7 U
Endrin	5.6 JN	3.7 U	R	28 P	30 P	R	3.8 U	×	3.7 U	31
Endosulfan II	3.7 U	3.7 U	Nf 1.2	3.8 U	3.8 U	3.8 U	3.8 U	æ	3.7 U	3.7 U
4,4'-DDD	~	5.1	3.8 U	3.8 U	3.8 U	×	R	R	3.7 U	3.7 U
Endosulfan Sulfate	3.7 U	3.7 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.7 U	3.7 U	3.7 U
4.4-DDT	R	×	~	48 P	55 P	R	R	R	R	38 P
Methoxychlor	FI1 61	FN 61	20 01	U 02	4'4 Jb	fn 02	20 UJ	FN 61	10 61	U 61
Endrin ketone	3.7 U	3.7 U	3.8 U	3.8 U	0.8.C	3.8 U	3.8 U	R	3.7 U	3.7 U
Endrin aldehyde	3.7 U	3.7 U	4.0 JN	0.8.C	3.8 U	Y	R	3.7 U	R	3.7 U
alpha-Chlordane	æ	14 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	D 61	(1 e :	U 6.1
gamma-Chlordane	29	NF EI	5.2 JN	5.7 P	9 P.9	×	2.0 U	U 6.1	->	3.0
Toxaphene	U 001	U 061	200 U ·	200 U	200 U	200 U	200 U	U 001	U 001	U 061
PCBs										
Arocior-1016	37 U	37 U	38 U	• 38 U	38 U	38 U	38 U	37 U	37 U	37 U
Aroclor-1221	75 U	75 U	78 U	78 U	78 U	18 U	U 11	75 U	75 U	75 U
Arocior-1232	37 U	37 U	38 U	0 8E	0.86	0 8E	38 U	0 LE	37 U	37 U
Aroclor-1242	37 U	37 U	38 U	38 U	38 U	38 U	38 U	37 U	37 U	37 U
Aroclor-1248	37 U	0 <i>1</i> E	640	290	019	1500	320 J	N 18	37 U	37 U
Aroclor-1254	37 U	37 U	38 U	38 U	38 U	38 Ū	38 U	37 U	NI 06	170
Aroclor-1260	37 U	37 U	38 U	38 U	38 U	38 U	38 U	37 U	37 U	37 U
									and a shirt of the second states of the	
Percent Solids	89%	89%	86%	86%	86%	86%	87%	89%	89%	89%
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Notes:	•									

Field blank concentration reported in ug/L.
 An odor was detected in the cooler containing bottles shipped from the laboratory (Mitkem). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities.
 U = Not detected: J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample; E = Exceeds instrument calibration range; P = Dual column precision outside limits; NA = Not analyzed.

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APPENDIX D-IC HEXAGON LABORATORIES RI/FFS SURFACE SOIL ANALYTICAL DATA - PESTICIDES/PCBs (ug/kg) Page 2 of 3

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Field sample (D	11XB6S1MSD	IIXB10S1	IIXBI3SI	HXB16S1	IIXB16S1MS	OSM18918XH	9SS-X11	HX-SS7	11X-SS8	11X-SS9
Lab Sample ID		D1860-01	D2003-02	D2003-01		D2003-01MSD	E1640-03	E1640-04	E1640-05	E1640-11
Sample Location	ł	NEW PLANT	IITHERMI	OFFICE/WARE	ш	OFFICE/WARE	EAST YARD	EAST YARD	EAST YARD	EAST YARD
Sample Description	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	-	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE
Date Sampled	11/16/97	11/12/97	12/9/97	12/9/97	12/9/97	12/9/97	10/1/98	10/1/98	86/1/01	10/2/98
Pesticides										· 영영 · · · · · · · · · · · · · · · · ·
alpha-BHC	U 6.1	8.0 U	0.50 U	0.49 U	0.49 U	0.49 U	NA	NA	NA	NA
beta-BHC	U 6.1	N( E)	0.50 U	0.49 U	0.49 U	0.49 U	NA	NA	VN	NA
delta-BHC	U 6.1	8.0 U	R	0.49 U	0.49 U	0.49 U	NA	NA	NA	AN
gamma-BHC (Lindane)	4 II	8.0 U	0.50 U	0.49 U	12 E	11 E	NA	NA	NA	NA
Heptachlor	9.5	8.0 U	0.50 U	0.49 U	9.8 E	8.8 E	NA	NA	NA	NA
Aldrin	12	8.0 U	0.50 U	R	11 EP	10 E	VN	NA	NA	NA
Heptachlor Epoxide	U 6.1	8.0 U	0.50 U	0.49 U	0.49 U	0.49 U	NA	٧N	NA	NA
Endosulfan I	1 0 N	8.0 U	0.50 U	0.49 U	0.49 U	0.49 U	NA	NA	NA	NA
Dieldrin	20 P	16 U	0.96.0	8	28 EP	28 E	NA	NA	NA	AN
4,4'-DDE	3.7 U	NI 091	R	0.95 U	0.95 U	0.95 U	NA	NA	NA	AN
Endrin	27	Nf 96	36 DJ	4.9 JN	37 E	34 E	NA	NA	NA	AN
Endosulfan II	3.7 U	16 U	×	0.95 U	3.4 P	2.4 P	NA	NA	NA	NA
4,4'-DDD	3.7 U	16 U	NI II	0.95 U	0.95 U	1.6 P	NA	NA	NA	NA
Endosulfan Sulfate	3.7 U	24 JN	0.96.0	0.95 U	0.95 U	0.95 U	NA	NA	NA	AN
4,4'-DDT	32 P	58 JN	0.96.0	R	43 EP	40 EP	NA	NA	NA	AN
Methoxychlor	N 61	80 U	I 68	4.9 U	4.9 U	4.9 U	VN	NA	NA	AN
Endrin ketone	3.7 U	16 U	0.96.0	0.95 U	0.95 U	0.95 U	٧N	NA	NA	NA
Endrin aldehyde	3.7 U	24 JN	0.96.0	0.95 U	0.95 U	3.1 P	NA	NA	NA	AN
alpha-Chlordane	U 6.1	11	0.50 U	0.49 U	0.49 U	0.49 U	AN	NA	NA	AN
gamma-Chlordane	2.7 P	Nf 12	0.50 U	2.1 J	2.1 P	2.1 P	NA	NA	NA	٨٨
Toxaphene	0 061	800 U	50 U	49 U	40 U	40 U	NA	NA	NA	NA
PCBs	<ul> <li>March 1991 And Andrew States</li> <li>March 1991 And Andrew States</li> </ul>	and the second of the second secon						ti sector de la la la la	ang ang kanang ang ang ang ang ang ang ang ang an	
Aroclor-1016	37 U	160 U	0.6.0	U 2.0	9.5 U	9.5 U	35 U	36 U	35 U	37 U
Aroclor-1221	75 U	320 U	20 U	N 61	N 61	19 U	70 U	74 U	72 U	75 U
Aroclor-1232	37 U	160 U	0.6 U	9.5 U	9.5 U	9.5 U	35 U	36 U		37 U
Aroclor-1242	37 U	160 U	0.6.0	9.5 U	0.5.0	9.5 U	35 U	36 U	35 U	37 U
Aroclor-1248	37 U	740	0.6.0	9.5 U	0.5.0	9.5 U	35 U	36 U	35 U	37 U
Aroclor-1254	150	160 U	0.6 U	9.5 U	9.5 U	9.5 U	35 U	36 U	35 U	37 U
Aroclor-1260	37 U	160 U	0.6 U	9.5 U	9.5 U	9.5 U	35 U	Я	R	37 U
		a managana na m		an a the state of the state				<b>210</b>	\0C0	7000
Percent Solids	89%	85%	91%	92%	97%	%76	%66	91%	9/ CK	07/0
Dilution Factor	1.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

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Notes:

Field blank concentration reported in ug/L.
 An odor was detected in the cooler containing bottles shipped from the laboratory (Mitkem). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities.
 U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample; E = Exceeds instrument calibration range; P = Dual column precision outside limits; NA = Not analyzed.

APPENDIX D-IC	SURFACE SOIL ANALYTICAL DATA - PESTICIDES/PCBs (ug/kg)
HEXAGON LABORATORIES RIFFS	Page 3 of 3

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Field sample ID		HX-SS10	SM01SS-XH	GSM01SS-XH	IIXBI8	HXB19	IMO-XH	HX-FBSS-1 <sup>(1)</sup>	HXFB1001 <sup>(1)</sup>	HXBB1001 <sup>(1)(2)</sup>
Lab Sample ID		E1640-13	E1640-13MS	E1640-13MSD	E1640-08	E1640-07	D2085-08	10-68020	E1640-01	E1640-01
Sample Location		EAST YARD	EAST YARD	EAST YARD	EAST YARD	EAST YARD	HTHERMI			
Sample Description	HX-SS9 DUP	ENV. SAMPLE	MS	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	FIELD BLANK	FIELD BLANK	BOTTLE BLANK
Date Sampled	10/2/98	10/2/98	10/2/98	10/2/98	10/2/98	10/1/98	12/18/97	12/18/97	10/1/98	10/1/98
Pesticides			Research of but when	and the state of the second	the static is to the second	And the state of the state of the	A CONTRACTOR OF A CONTRACTOR	and the state of t	[1] A. S. Market, Market and M. Market, Market and Market And Market And Market And Mar Market And Market And Market And Market And Market And	
alpha-BHC	NA	NA	NA	1	NA	NA	R	0.050 U	NA	NA
beta-BHC	AN	NA	NA	NA	NA	NA	R	0.050 U	NA	NA
delta-BHC	NA	NA	NA	NA	NA	NA	R	0.050 U	AN	NA
gamma-BHC (Lindane)	NA	NA	AN	NA	AN	NA	R	0.050 U	NA	NA
l leptachlor	NA	NA	NA	NA	NA	NA	R	0.050 U	NA	NA
Aldrin	NA	NA	NA	NA	NA	NA	R	0.050 U	NA	NA
Heptachlor Epoxide	NA	NA	NA	NA	NA	NA	R	0.050 U	NA	NA
Endosulfan I	NA	AN	NA	NA	NA	NA	R	0.050 U	NA	NA
Dieldrin	NA	NA	AN	NA	NA	NA	æ	0.10 U	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	×	0.10 U	AN	NA
Endrin	NA	NA	NA	NA	NA	NA	R	0.10 U	NA	NA
Endosulfan II	NA	AN	AN	NA	AN	NA	×	0.10 U	NA	NA
4,4'-DDD	NA	VN	NA	NA	NA	NA	R	0.10 U	NA	NA
Endosulfan Sulfate	NA	NA	AN	NA	NA	NA	R	0.10 U	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	R	U 01.0	NA	NA
Methoxychlor	NA	NA	NA	NA	NA	NA	R	0.50 UJ	NA	NA
Endrin ketone	NA	NA	NA	NA	AN	NA	R	0.10 U	NA	NA
Endrin aldehyde	NA	NA	NA	NA	٩N	NA	R	0.10 U	٧V	NA
alpha-Chlordane	NA	NA	NA	NA	NA	NA	R	0.050 U	NA	NA
gamma-Chlordane	AN	NA	NA	NA	NA	NA	R	0.050 U	NA	NA
Toxaphene	NA	NA	NA	NA	AN	NA	R	5.0 U	VN	NA
PCBS										
Aroclor-1016	37 U	35 U	230 P	230 P	35 U	37 U	R	1.0 ()	1.0.1	NA
Aroclor-1221	74 U	72 U	72 U	72 U	72 U	74 U	R	2.0.0	$3 \approx 6$	NA
Aroclor-1232	37 U	35 U	35 U	35 U	35 U	37 U	R	U 0.1	11-571	NA
Aroclor-1242	37 U	35 U	35 U	35 U	35 U	1200 J	R	1.0 U	U 0.1	NA
Aroclor-1248	37 U	35 U	35 U	35 U	NI 005	37 U	R	1.0 U	U 0.1	٩N
Aroclor-1254	37 U	140 J	220 P	220 P	35 U	37 U	R	1.0 U	U 0.1	NA
Aroclor-1260	37 U	140	320	320	NI 002	R	R	U 0.1	U 0.1	NA
	a da la sera a sera a sera da la sera da sera d								an isan ƙwalton ƙata ƙ	, dan bertakan seri dari kebuat
Percent Solids	%06	63%	93%	93%	93%	<del>00%</del>	88%	0%0		
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Notes:										

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1. Field blank concentration reported in ug/L.

An odor was detected in the cooler containing bottles shipped from the laboratory (Mitkem). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities.
 U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample; E = Exceeds instrument calibration range; P = Dual column precision outside limits, NA = Not analyzed.

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APPENDIX D-ID HEXAGON LABORATORIES RIFFS SURFACE SOIL ANALYTICAL DATA - INORGANICS (mg/kg) Page 1 of 2

Field sample ID	HX-SS1	HX-SS51	HX-SS2	HX-SS3	HX-SS4	4X-SS5	HXB6S1	HXB10S1	HXB13S1	HXB16S1	HX-SS6
Lab Sample ID	D2085-01	D2085-06	D2085-02	D2085-03	D2085-04	D2085-05	E0065-01	D1860-01	D2003-S1	D2003-01	E1640-03
Sample Location	EAST YARD	EAST YARD	EAST YARD	SOUTH YARD	NEW PLANT	OLD PLANT	9MM	. NEW PLANT	HTHERMI	OFFICE/WARE	EAST YARD
Sample Description	ENV. SAMPLE	HX-SSI DUP.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE
Date Sampled	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	86/91/1	11/12/97	12/9/97	12/9/97	10/1/98
Aluminum	4190	4870	8010	10400	2500	3420	15200	14600	21700 J	17600 J	10300
Antimony	0.60 UJ	0.63 UJ	0.48 UJ	0.83 J	0.62 UJ	0.54 UJ	LU 10.0	0.55 U	0.53 UI	0.51 UJ	0.79 U
Arsenic	4.9	4.1	3.9	9.5	63.8	4.2	3.2	1.3	5.6 J	4.8.1	2.5
Barium	47.0 J	L 9.12	151 J	194 J	812 J	145 J	203	142	367 J	212 J	94.4
Beryllium	U 02.0	0.21 U	0.35	0.42	0.21 U	0.18 U	0.47	0.63	0.62	0.66	0.24
Cadmium	0.22	0.26	1.6	2.1	11.7	6.1	2.5	0.29	0.26	0.5	0.62 J
Calcium	42800 J	48900 J	5700 J	29100 J	18500 J	65500 J	33200 J	2950	6620 J	27800 J	5750
Chromium	14.8 J	24.2 J	55.1 J	133 J	257 J	57.9 J	229 J	123	52.9 J	54.7 J	24.4 J
Cobalt	2.8	3.1	0.11	12.2	28.2	4 9	16.6	15.5	24.7 J	23.6 J	11.2
Copper	14.4 J	18.3 J	1 6.72	95.1 J	1050 J	80.1 J	57.7 J	61.6	53.7 J	75.5 J	49.6 J
Iron	6490	7220	20700	29300	246000	31200	23800	22100	33400 J	25500 J	22800
Lead	32.8 J	53.3 J	144 J	206 J	1040 J	185 J	53.3 J	8.8	54.5	90.3	52.0 J
Magnesium	4760 J	3890 J	3530 J	6860 J	1540 J	13200 J	8770	7380	11800 J	17400 3	5230
Manganese	123 J	131 J	222 J	327 J	I 0681	400 J	319 J	320	421 J	451 J	279
Mercury	f 60'0	0.07 J	0.58 J	7.3 J	6.7 J	3.7 J	[ ].]	0.16	2.3 J	0.33 J	0.10 U
Nickel	11.2	13.1	60.1	97.0	265	28.5	40.9	63.5	37.6 J	85.0 J	14.2 J
Potassium	950	818	2380 J	4420 J	409	234 U	8860	1470 J	13600	10700	4110 J
Selenium	3.5 J	18.5	0.87 UJ	3.0 J	U 96.0	2.4 J	R	U 10.0	0.89 UJ	0.85 UJ	0.85
Silver	0.40 UJ	0.42 UJ	0.32 UJ	0.41 UJ	0.41 UJ	0.36 UJ	0.40 U	0.36 UJ	0.35 UJ	0.34 UJ	R
Sodium	184	061	154	282	350	228	9.99	320	112	229	111
Thallium	0.41	0.58	0.55	0.79	2.8	0.73	4.0	0.38	1.3	1.6	2.2
Vanadium	21.2	18.8	28.3	34.9	0.61	16.4	50.4	42.0	69.0	58.8	64.9.]
Zinc	64.8	83.4	545	482	1270	327	l 66 J	87.7 J	1,62 J	225 J	269 J
Cyanide	R	R	R	R	R	R	0.83 U	0.87 U	1.0 U	1.1 U	0.05 U
	a Sa 1972 - A un estructur de					and the contract the set		and a subject we will be a sub-	A DESCRIPTION OF THE OWNER OF THE	a ta a constante de la calendaria de la constante de la constante de la constante de la constante de la constan	
Percent Solids	89%	82%	86%	86%	87%	89%	89%	85%	61%	92%	93%0
Level	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium

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Notes:

Field blank concentration reported in ug/L.
 Field blank concentration reported in ug/L.
 An odor was detected in the cooler containing bottles shipped from the laboratory (Mitkem). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities.
 U = Not detected; J = Estimated value; R = Rejected value.

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HEXAGON LABORATORIES RIFFS SURFACE SOIL ANALYTICAI, DATA - INORGANICS (mg/kg) Page 2 of 2 APPENDIX D-1D

Field sample ID	HX-SS7	HX-SS8	HX-SS9	HX-SS9D	01SS-XH	HXB18	HXB19	IMO-XH	HX-FBSS1 <sup>(1)</sup>	HXFB1001 <sup>(1)</sup>	HXBB1001 <sup>(1)(2)</sup>
Lab Sample ID	E1640-04	E1640-05	E1640-11	E1640-12	E1640-13	E1640-08	E1640-07	D2085-08	D2085-07	E1640-01	E1640-01
Sample Location	EAST YARD	EAST YARD	EAST YARD	EAST YARD	EAST YARD	EAST YARD	EAST YARD	HTHERMI			
Sample Description	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	HX-SS9 DUP	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	FIELD BLANK	FIELD BLANK	BOTTLE BLANK
Date Sampled	10/1/98	86/1/01	10/2/98	10/2/98	10/2/98	10/2/98	10/1/98	12/18/97	12/18/97	86/1/01	10/1/98
Aluminum	7360	7830	10400	10700	12200	7230	10600	1560	22.4	21.0 U	NA
Antimony	U 0.1	f 8.11	3.4 J	4.0.1	2.5 J	0.83 U	24.3 J	9.5 J	3.0 U	5.0 U	NA
Arsenic	3.2	6.5.1	5.7 J	5.5 J	3.9	5.1 J	27.5 J	7.0	2.0 U	2.0 U	NA
Barium	84.5	646	588	427	114	123	1840	115 J	43.2 J	1.0 U	NA
Beryllium	0.19	0.20	0.35	0.34	0.14	0.27	0.22	0.18 U	1.0 U	0.20 U	NA
Cadmium	f 06'0	L 1.7 J	7.2 J	8.1 J	0.79 J	1.1 J	31.5 J	6.5	0.60 U	0.50 U	VN
Calcium	11700	19000	19500	18300	7920	76700	32100	23400 J	50.6	32.1	NA
Chromium	18.9 J	37.2 J	54.5 J	57.9 J	9.8.9	33.3 J	123 J	318 J	0.50 U	0.82	NA
Cobalt	9.7	11.7	10.9	0.01	13.7	13.3	14.0	43.2	1.4	0.50 U	VN
Copper	73.4 J	266 J	380 J	329 J	75.1 J	65.4 J	3720 J	293 J	5.8	2.0 U	NA
Iron	17300	24600	31800	31200	23500	15400	42000	69300	784	13.9	NA
Lead	111 1	856 J	928 J	f 116	286 J	f 6 66	1400 J	f 0611	2.7	3.0 U	NA
Magnesium	3660	8330	5810	5460	4370	10500	5610	15200 J	U 0.0	6.3	NA
Manganese	867	713	219	220	750	223	452	528 J	6.8	0.50 U	NA
Mercury	0.10 U	0.56	0.21	0.14	0.10 U	0.17	1.1	0.43 J	U 90.0	0.27 U	NA
Nickel	[ 101 ]	115 J	217 J	150 J	19.5 J	0.10 U	f 0†1	011	3.0 U	0.60 U	NA
Potassium	2450 J	1350 J	4800 J	5150 J	464 ]	3580 J	2610 J	234 U	1300 U	3.5	NA
Selenium	1.0 U	0.96 U	1.3	6.1	U 96.0	0.83 U	8.6	(U 1.1	5.0 UJ	5.0 U	NA
Silver	~	~	~	R	R	Я	R	1.5.1	2.0 U	2.0 U	NA
Sodium	567	4260	0006	8950	1410	545	20900	1690	300 U	449	NA
Thallium	0.84 U	0.77 U	2.7	2.6	0.77 U	0.66 U	0.73 U	0.83	2.0 U	4.0 U	NA
Vanadium	39.1 J	74.0 J	31.0.1	31.3 J	85.9 J	28.7 J	64.5 J	18.3	U 0.1	1.0 U	NA
Zinc	296 J	3020 J	6 0689 J	6590 J	381 J	265 J	f 0018	1090	.6.5	1.0 U	NA
Cyanide	0.05 U	[ 8.1	J EI.0	I 65.0	0.05 U	0.05 U	3.2 J	R	200 U	1.9	AN
Percent Solids	92%	92%	89%	06%	95%	95%	<u> </u>	88%	%0	0%	
Level	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Low	Low	
Notes											

Notes: 1. Field blank concentration reported in ug/L. 2. An odor was detected in the cooler containing bottles shipped from the laboratory (Mitkem). The bottle blank data represent deionized field blank water (provided by laboratory) poured directly into a soil collection jar in the field prior to sampling activities. 3. U = Not detected: J = Estimated value; R ≈ Rejected value.

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Field sample ID	HX-SSI	HX-SS51	ZSS-XH	L SS-XH	755"XH	1 222.74	137071		1 13610/0	11V CCO		
Lab Sample ID	D2085-01	D2085-06	D2085-02	D2085-03	D2085-04	20-28000	ENGK DI	ICOLOVIU	ICCIDVU	11 07713	IMU-AH	HA-FB351
Sample Location	Sample Location EAST YARD		EAST YARD	SOUTH VARD	Ī	]	10-0007	NEW DI ANT	70-0020	E1040-11	00-C007(1	10-02070
Sample Description ENV SAMPLE HX-SSI DHIP ENV SAMPLE ENV SAM	ENV SAMPLE	HX-SSI DIIP	ENV SAMPLE		ENV CAMPIF		LIN CAND	INEW FLANT	U HEKMI	EAST TAKU	HIREKMI	
				1	ENV. SAMITLE	ENV. SAMPLE FIELD BLANK	ENV. SAMPLE	FIELD BLANK				
Date Sampled	16/81/71	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97	1/16/98	11/12/97	12/9/97	10/2/98	12/18/97	12/18/97
TOC <sup>(1)</sup>	22400	14700	6630	21800	50800	25900	2360	0901	NA NA	13400	0000177	
						0000	0000	0070		00+01	000/ 40	(IN
ТРНС	AN	٩N	330	1500	NA	AN	NA	NA	28000	¥X	280000	₹Z

Notes:

Concentration of TOC in field blank (HX-FBSS1) reported in mg/L.
 ND = Not detected; NA = Not analyzed.

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APPENDIX D-IE IIEXAGON LABORATORIES RI/FFS SURFACE SOIL ANALYTICAL DATA TOTAL ORGANIC CARBON TOTAL PETROLEUM HYDROCARBONS (mg/kg)

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Field sample ID	D HXBIS3	HXB1S7	HXB3S2	HXB4S2	HXB54	HXB5S2	HXB7S2	HXB7S4	HXB8S4	HXB9S3	HXB9S5
Lab Sample ID		D1911-07	D1848-05	D1905-01	D1905-02	D1875-01	D1848-01	D1848-02	D1891-05	D1848-03	D1848-04
Sample Location		IMM	MW3	MW4	MW4	MW5	EAST YARD	EAST YARD	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Description	Ë	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	HAB452 DUF.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMILLE	ENV. MANITLE	ENV. SAMIFLE	LIN SAINT
Date Sampled	d 11/19/97	16/61/11	1 /6/1/11	11/18/9/	16/81/11	11/14/9/	16/11/11	16/11/11	16/11/11	11/11/9/	16/11/11
Aromatics											
Benzene	2 J	11 U	II UI	140000 U	140000 U	5600 U	110 UJ	7 -	10 11	30 J	1400 UJ
Foluene	130	11 U	88 ]	3200000 D	4200000 D	340000 D	360 J	78 J	IN II	75 J	1400 UJ
Ethylbenzene	3 J	11 Ū	111	490000	580000	47000	390 J	2 J	41 J	650 J	2200 J
Xylene(total)	22	11 U	99 J	3300000	390000	220000	2400 J	12 J	240 J	880 J	3000 J
Styrene	12 N	11 U	II II	140000 U	140000 U	5600 U	110 UJ			120 UJ	1400 U.
Halogenated Aliphatics											
Chloromethane	12 U	11 U	11 UU	140000 U	140000 U	5600 U	110 UJ	II UI	11 M	120 UJ	1400 UJ
Bromomethane	12 UJ	IN II	IN II	140000 U	140000 U	5600 U	110 011		(N 11	120 UJ	1400 M
Vinyl Chloride	12 U	N 11	(U 11	140000 U	140000 U	5600 U	I10 UI			120 UJ	1400 UJ
Chloroethane	12 U	. II U	11 M	140000 U	140000 U	5600 U	IN 011		IN II	120 UJ	1400 UJ
Methylene Chloride	0.8 J	6 9		140000 U	140000 U	5600 U	110 UJ	-		120 UJ	570 J
I, I-Dichloroethene	12 U	11 D		140000 U	140000 U	5600 U	110 UJ	II UI	10 11	120 UJ	1400 UJ
I, I-Dichloroethane	12 U	N 11	IN 11	140000 U	140000 U	5600 U	[U 0[]			120 UJ	1400 UJ
1,2-Dichloroethene (total)	12 U	11 N	ſ =	140000 U	140000 U	5600 U	110 UJ		m 11	120 UJ	1400 UJ
Chloroform	12 U	n 11	<b>1</b> 0 11	140000 U	140000 U	5600 U	I10 UJ		m 11	120 UJ	1400 UJ
,2-Dichloroethane	34 ·	24	30 J	f 00089	80000 J	5600 U	65 J	34 J		36 J	1400 UJ
I, I, I - Trichloroethane	12 U	U 11	IN II	15000 J	140000 U	5600 U	IN 011	[]		120 UJ	1400 UJ
Carbon Tetrachloride	12 U	N H	m 11	140000 U	140000 U	5600 U	IN 011	IN II	II UJ	120 UJ	1400 UJ
Bromodichloromethane	12 U	11 D	m 11	140000 U	140000 U	5600 U	110 UJ	11 UI	I1 UU	120 UJ	1400 [1]
1,2-Dichloropropane	12 U	11 U	II UJ	140000 J	140000 U	5600 U	110 UJ	11 UI	II UI	120 UJ	1400 UJ
cis-1,3-Dichloropropene	12 U	11 U	11 UJ	140000 U	140000 U	5600 U	110 UJ	11 UI	11 M	120 UJ	1400 UJ
<b>Frichloroethene</b>	4 J	0.0 J	[ 6]	150000	000061	410 J	l 2 J	6 ]	LU 11	120 UJ	1400 UJ
Dibromochloromethane	12 U	11 N	11 M	140000 U	140000 U	5600 U	110 UJ	11 [1]	II M	120 UJ	1400
1,1,2-Trichloroethane	12 U	11 U	11 M	140000 U	140000 U	5600 U	110 UJ	10 11		120 UJ	1400 UJ
trans-1,3-Dichloropropene	12 U	U 11	6 =	140000 U	140000 U	5600 U	LU 011	IU 11	II (1)	120 UJ	1400 UJ
Bromoform	12 U	11 U	11 (1)	140000 U	140000 U	5600 U	110 UJ	IN 11	IU II	120 UJ	1400 UJ
<b>fetrachloroethene</b>	6 J	11 U	51 J	1100000	1500000	5600 U	110 UJ	5 J	11 UJ	120 UJ	1400 UJ
1, 1, 2, 2-Tetrachlorocthane	12 U	ח וו וו ת	11 UJ	140000 U	140000 U	5600 U	U 011	11 07	1 10	120 UJ	1400 UJ
<b>L</b> etones									a survey of the second states of the		
Acetone	12 J	30	38 J	140000 U	140000 U	4700 J	200 J	30 J	5 H C	250 J	1400 UJ
2-Butanone	4 J	3 J	30 J	140000 U	140000 U	5600 U	110 UJ	5 ]		120 UJ	1400 UJ
4-Methyl-2-pentanone	12 U	11 U	11 UJ	140000 U	140000 U	5600 U	110 UJ	11 NJ	IN IN	120 UJ	1400 UJ
2-Hexanone	12 U	11 U		140000 U	140000 U	5600 U	110 UJ		II UI	120 UJ	1400 UJ
<b>Other</b> Aliscellaneous VOCs											
Carbon disulfide	12 U	U 11	II UI	140000 U	140000 U	5600 U	110 UI	11 UJ	11 UJ	120 UJ	1400 UJ
Chlorobenzene	12 U	3 J	11 UJ	140000 U	140000 U	5600 U	12 J	2 J	25 J	34 J	400 3
TOTAL TARGET VOCs	218 J	67 J	378 J	8463000 J	10450000 J	612110 J	3439 ]	180 J	306 J	1955 J	6170 J
Number of VOA TICs	, ,	ŕ	ſ		~	<b>₽</b>	30	0	30	30	30
Total VOA TIC Concentration	24 J	44 J	43 J	83000 J	270000 J	29000 J	13270 J		1568 J	1 500 J	266300 J
Percent Solids	83%	89%	%06	88%	88%	89%	88%	87%	93%	86%	89%
Dilution Factor	0.1	0.1	1.0	1.0	1.0	0	10	0.1	1.0	0.1	1.0
Level	Low	Low	Low	Medium	Medium	Medium	Low	Low	Low	Low	Medium
								Contraction of the local division of the loc			

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APPENDIX D-2A IIEXAGON LABORATORIES RI/FFS SUBSURFACE BORING ANALYTICAL DATA - VOLATILE ORGANICS (ug/kg) Page 1 of 2

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APPENDIX D-2A HEXAGON LABORATORIES RIFFS SUBSURFACE BORING ANALYTICAL DATA - VOLATILE ORGANICS (ug/kg) Page 2 of 2

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Field sample ID	HXBIIS	HXB12S7	HXB15S1	HXB17	HXB20	HXB21	HXBKI	HXBK2	HXBK3	HXFBA1 <sup>(1)</sup>	FBB-1 <sup>(1)</sup>
I ab Samle ID		D1860-02	D1911-05	E1640-06	E1640-09	E1640-10	D1891-02	D1891-03	D1891-01	E0065-02	D1891-06
Sample Location	0	OLD PLANT	NORTH YARD	EAST YARD	EAST YARD	EAST YARD	TUFO'S				
Sample Description	1	ENV. SAMPLE	BACKGROUND	ΒA	BĄ	FIELD BLANK	FIELD BLANK				
Date Sampled	_	11/12/97	11/19/97	10/1/98	10/2/98	10/2/98	11/17/97	11/17/97	11/17/97	1/16/98	16//.1/11
Aromattes											
Benzene	28000 IN	111 0069	0.6 J	330	2 J	22	12 UJ	IU 11	rn 11	10 UJ	10 N
Toluene	21000000 DI	150000 DJ	28	F 01	4 J	54	[6	10 II	fn II	I0 01	10 U
Fibvlhenzene	L 00007	7700 J	0.0 J	380	2 J	26	12 UJ			10 UJ	10 U
Xvlene(total)	3400000 DJ	48000 J	6 J	130	6 9	200	12 UJ	rn 11		[U 0]	10 N
Styrene	IU 00069	fU 0069	10 11	56 U	12 U	12 U	12 UJ		(N 11	10 DJ	10 U
Halopenated Aliphatics							아이는 아이는 아이는 것이다.				
Chloromethane	111 00069	f(1 0069	10 U	56 U	12 U	12 U	12 UJ		IN II	10 UJ	10 U
Bromomethane	LU 00069	IU 0069	10 N	56 U	12 U	12 U	12 UJ		n II	10 UJ	10 U
Vinvl Chloride	LU 00069	fn 0069	10 U	56 U	12 U	12 U	12 UJ			10 UJ	10 U
Chloroethane	IU 00069	f() 0069	10 N	56 U	12 U	12 U	12 UJ		II M	10 UJ	10 N
Methylene Chloride	26000 J	fU 0069	[ 9.0	l 2 J	2 J	2 J	12 UJ	IN II	11 UJ	10 UJ	10 U
1 1-Dichloroethene	111 00069	III 0069	10 ()	56 U	12 U	12 U	12 UJ	m 11	IN II	10 UJ	10 U
1 1-Dichloroethane	27000	111 0069	10 U	56 U	12 U	12 U	12 UJ			10 UJ	10 U
1 2-Dichloroethene (total)	111 00069	III 0069	10 U	56 U	12 U	12 U	12 UJ			I0 UJ	10 N
Chloroform	111 00069	111 0069	10 11	56 U	12 U	12 U	12 UJ			IU 01	10 U
1 2-Dichloroethane	5100000 DIN		36	56 U	12 U	12 U	12 UJ		II II	I0 01	10 U
1.1.1.5-Trichloroethane	570000 1		10 []	56 U	12 U	12 U	12 UJ	10 11		ID 01	10 U
Carbon Tetrachloride	111 00069	111 0069	10 []	26 11	12 U	12 U	12 UJ		IN II	10 DI	10 U
Bronodichloromethane	111 00069	111 0069	10 []	56 U	12 U	12 U	12 UJ			10 UJ	10 U
1 2-Dichloronconan-	111 00069	111 0069	10 01	56 U	12 U	12 U	12 UJ			IU 01	10 U
cis-1 3-Dichlorontonene	ED 00069	III 0069	10 11	56 U	12 U	12 U	12 UJ			IU 01	10 U
Trichloroethene	880000 1	840 1	I 6 0	56 U	12 U	12 U	6 ]	m 11	(U 11	IU 01	10 U
Dibromochloromethane	111 00069	III 0069	10 U	56 U	12 U	12 U	12 UJ	II UI		IU 01	10 U
1 1 2-Trichloroethane	[1] 00069	III 0069	10 01	56 U	12 U	12 U	12 UJ	10 II		10 DI	10 U
trans-1 3-Dichloropropene	EU 00069	f() 0069	10 U	56 U	12 U	12 U	12 UJ			10 DI	10 N
Bromoform	fU 00069	LU 0069	10 U	56 U	12 U	12 U	12 UJ	IN II		IU 01	10 U
Tetrachloroethene	310000 J	5100 J	-	56 U	18	12 J	2 J	11 M	11 01	10 01	10 U
I.I.2.2-Tetrachloroethane	IU 00069	IU 0069	10 U	56 U	12 U	12 U	12 UJ			10 M	10 U
Kelones											
Acetone	(U 00069	fU 0069	4 ]	240	36	140	89 J	2 J	4 J	10 NJ	10 N
2-Butanone	(U 0006)	IU 0069	10 U	19	5 ]	24	21 J	11 M	IN 11	10 NI	10 M
4-Methyl-2-pentanone	IU 00069	IU 0063	10 U	56 UJ	12 UJ	12 NJ	12 UJ	II M	IU =	10 01 11	10 O
2-Hexanone	IU 00069	(U 0069	10 N	56 U	12 U	12 U	12 UJ	IN II	11 07	10 M	10 01
<b>Other/Miscellaneous</b> VOCs											
Carbon disulfide	LU 00069	LU 0069	10 N	56 U	2 J	5 ]	12 UJ	IN II		IU 01	10 U
Chlorobenzene	200000 J	2900 J	N 01	84	12 U	12 U	12 UJ		IU II	FD 01	10 N
	1 00011666	1 0121C	1 96	1 LYCI	1 44	1 284	1 01 1	2 1	4 J	0	<u> </u>
NUMBER AND A TOTA	7 00011070	C 04/7417		02	102	- 0°	90	C	0	0	0
	010000	1 00211	7 1	1 00011	1 1 7 1	1 7 100	1 6917	,			
110/al VUA 11C CONCENTRATION	r 000414		/630	r 0/c11	104	7060	850%	88%	89%	100%	%0
Pilution Easter	0.04	0 I	01	01	10	10	01	01	1.0	1.0	1.0
Level	Medium	Medium	no l	Iow	- nor	Low	Low	Low	Low	I.ow	Low
Notes:											

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Notes: 1. Field blank concentration reported in ug/L. 2. U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample.

APPENDIX D-28 HEXAGON LABORATORIES RI/FFS SUBSURFACE BORING ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 1 of 4

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Field sample ID	HXB1S3	HXB1S7	HXB3S2	HXB4S2	HXB54	HXB5S2	HXB7S2	HXB7S4	HXB8S4	HXB9S3	HXB9S5
Lab Sample ID		D1911-07	D1848-05	D1905-01	D1905-02	D1875-01	D1848-01	D1848-02	D1891-05	D1848-03	D1848-04
Sample Location	I MMI	IMMI	MW3	MW4	MW4	MW5	EAST YARD	EAST YARD	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Description	<b>I ENV. SAMPLE</b>	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	HXB4S2 DUP.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE
Date Sampled	11/19/97	11/19/97	11/11/97	11/18/97	11/18/97	11/14/97	11/11/97	11/11/97	11/17/97	11/11/97	11/11/07
Phenols/Acid Extractables								Andreas (1970) Andreasting Andreas (1970) Andreasting Andre		<ul> <li>A. S. M. M. M. W. W.</li></ul>	and the second secon
Phenol	550 UJ	530 UJ	R	1500 UJ	1500 UJ	370 U	T40 UJ	380 U	1500 UJ	150 UJ	720 UJ
2-Chlorophenol	550 UJ	530 UJ	ж	1500 UJ	1500 UJ	370 U	740 UJ	380 U	1500 UJ	750 UJ	720 UJ
2-Methylphenol (o-cresol)	550 UJ	530 UJ	R	1500 UJ	1500 UJ	820	740 UJ	380 U	1500 UJ	750 UJ	720 UJ
4- Methylphenol	550 UJ	530 UJ	ж	1400 J	I 0011	480	740 UJ	380 U	1500 UJ	750 UJ	720 UJ
2,4-Dimethylphenol	550 UJ	530 UJ	æ	1500 UJ	1500 UJ	370 U	140 M	0 08E	1500 UJ	750 UJ	720 UJ
2,4-Dichlorophenol	550 UJ	530 UJ	R	1500 UJ	1500 UJ	370 U	740 UJ	380 U	1500 UJ	750 UJ	720 UJ
4-Chloro-3-methylphenol	550 UJ	530 UJ	Я	1500 UJ	1500 UJ	370 U	740 UJ	380 U	1500 UJ	IN 051	720 UJ
2,4,6-Trichlorophenol	550 UJ	530 UJ	×	1500 UJ	1500 UJ	370 U	740 UJ	U 080	1500 UJ	750 UJ	720 UJ
2,4,5-Trichlorophenol	1400 UJ	1300 UJ	R	3700 UJ	3700 UJ	940 U	IN 0081	U 096	3700 UJ	IU 0061	1800 UJ
2,4-Dinitrophenol	1400' UJ	1300 UJ	R	3700 UJ	3700 UJ	940 UJ	1800 UJ	0 096 0	3700 UJ	[U 006]	1800 UJ
2-Nitrophenol	550 UJ	530 UJ	æ	1500 UJ	1500 UJ	370 U	740 M	380 U	1500 UJ	750 UJ	720 UJ
4-Nitrophenol	1400 UJ	1300 UJ	R	3700 UJ	3700 UJ	940 U	LU 0081	N 096	3700 UJ	1900 UJ	1800 UJ
4.6-Dinitro-2-methylphenol	1400 UJ	1300 UJ	R	3700 UJ	3700 UJ	940 U	LU 0081	N 096	3700 UJ	IU 0061	1800 UJ
Pentachlorophenol	1400 UJ	1300 UJ	R	3700 UJ	3700 UJ	940 U	1800 UJ	096 U	3700 UJ	[U 006]	1800 UJ
<b>Polycyclic Aromatic Hydrocarbons (PAHs)</b>	Hs)										
Naphthalene	56 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	f 009	380 U	f 009	1800	4000
2-Methylnaphthalene	56 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	840	380 U	2400 J	12000 D	15000 D
2-Chloronaphthalene	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
Accuaphthylene	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
Acenaphthene	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	300 J	1100	970
Fluorene	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	51 J	380 U	280 J	1600	1400
Phenanthrene	360 J	530 UJ	380 U	1500 UJ	1500 UJ	1 07	310 J	380 U	480 J	3300	3300
Anthracene	68 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
Fluoranthene	480 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	230 J	380 U	1500 UJ	200 J	160 J
Pyrene	460 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	510 J	380 U	1500 UJ	510 J	500 J
Benzo(a)anthracene	230 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	140 JN	380 U	1500 UJ	750 U	64 J
Chrysene	290 J	530 UJ	380 U	1500 UJ	1500 UJ	60 J	250 J	380 U	1500 UJ	150 J	720 U
Benzo(b)fluoranthene	340 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	260 JN	380 U	1500 UJ	750 U	720 U
Benzo(k)fluoranthene	120 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	NI 08	380 U	1500 UJ	750 U	720 U
Benzo(a)pyrene	l 061	530 UJ	380 U	1500 UJ	1500 UJ	370 U	210 J	380 U	1500 UJ	750 U	720 U
Indeno(1,2,3-cd)pyrene	75 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	83 J	380 U	1500 UJ	750 U	720 U
Dibenz(a,h)anthracene	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 UJ	380 U	1500 UJ	750 U	720 U
Benzo(g,h,i)perylene	81 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 UJ	380 U	1500 UJ	750 U	720 U
Aniline Compounds							and the second			APART AND	and the second secon
4-Chloroaniline	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
2-Nitroaniline	1400 UJ	1300 UJ	950 U	3700 UJ	3700 UI	940 U	1800 U	960 U	3700 UJ	1900 U	1800 U
3-Nitroaniline	1400 UJ	1300 UJ	0 020 U	10 001E	3700 UJ	940 U	U 0081	U 096	1U 0075	. U 0001	1800 U
4-Nitroaniline	1400 UJ	1300 UJ	950 U	3700 UJ	3700 UJ	940 U	1800 U	960 U	3700 UJ	1900 U	1800 U

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Giald convolution	IVBICI	HYRIS7	HXB3S2	HXB4S2	HXB54	HXB5S2	HXB7S2	HXB7S4	HXB8S4	HXB9S3	HXB9S5
TIERU SAIIIPIE ILO TIERU SAIIIPIE ILO		101010	D1848_05	D1905-01	D1905-02	D1875-01	D1848-01	D1848-02	D1891-05	D1848-03	D1848-04
Cample I. Sample I.		MWI	EWM	MW4	MW4	MWS	EAST YARD	EAST YARD	SOUTH YARD		SOUTH YARD
Samule Description	ENV	ENV SAMPLE	ENV. SAMPLE	ENV. SAMPLE	HXB4S2 DUP.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE
Date Sampled		11/19/97	11/11/97	11/18/97	11/18/97	11/14/97	11/11/97	11/11/97	11/17/97	11/11/97	11/11/97
Renyenec/Armatics		a bara ta sana a sana ana ana ana ana ana ana an									
1 3-Dichlorohenzene	550 UI	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
1 4. Dichlorohenzene	50 025 111 055	111 085	380 11	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
1.2-Dichlorobenzene	550 UJ	530 UJ	380 U	9400 J	2500 J	I 80 J	740 U	380 U	1500 UJ	750 U	720 U
Nitrohenzene	550 [1]	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
1 2 4-Trichloroheuzene	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
2 6-Dinitrotoluene	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
7 4-Dinitrotoluene	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
Hevachlorohenzene	111 055	530 111	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
Philodoles								A STREET AS A S			
Dimethylnhthalate	550 UI	530 UI	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
Diethylohthalate	111 055	530 UJ	380 U	1500 UJ	1500 UJ	53 J	740 U	380 U	1500 UJ	750 U	720 U
Di-n-butvi ruhthalate	1201	530 UJ	380 U	1500 UJ	LS00 UJ	230 J	I 16	380 U	1500 UJ	750 U	720 U
Butvibenzvi nhthalate	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
his(2-Ethylhexyl)nhthalate	260 J	64 J	73 J	1500 UJ	1500 UJ	1300	750	380 U	1500 UJ	790	720 U
Di-n-octyl phthalate	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 UJ	380 U	1500 UJ	750 U	720 U
Other/Miscellaneous SVOCs	[1] A. S. M. M. Market, M.	And the second se									
bis(2-choroethy1)Ether	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
2.2'-oxvbis(1-chloropropane)	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
N-Nitroso-di-n-propylamine	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ		720 U
Hexachloroethane	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ		720 U
Isophorone	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
Carbazole	60 J	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
Hexachlorobutadiene	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
bis(2-chloroethoxy)methane	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ		720 U
Hexachlorocyclopentadiene	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ		720 U
Dibenzofuran	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	l 061	680 J	620 ]
4-Chlorophenyl-phenyl ether	550 UJ	530 UJ	380 U	11 0051	1500 UJ	370 U	740 U	380 U	1500 UJ		720 U
N-nitrosodiphenylamine	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	_	720 U
4-Bromophenyl-phenyl ether	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 U	740 U	380 U	1500 UJ	750 U	720 U
3.3'-Dichlorobenzidine	550 UJ	530 UJ	380 U	1500 UJ	1500 UJ	370 UJ	740 U	380 U	1500 UJ	750 U	720 U
						a dana at					
Total Target SVOCs	3,246 J	64 J	73 J	10,800 J	3,600 J	3,193 J	4,411 J	ſ 0	4,230 J	L UC1,22	r +10°07
Number of SVOA TICs	25	4	81	28	29	34	4	0	. 37	37	37
Total SVOA TIC Concentration	42,650 J	f 020'2	3,319 J	1,018,800 J	2,096,600 J	62,390 J	8,300 J		51,690 J	125,400 J	134,200 J
Percent Solids	81%	84%	88%	%06	%06	89%	<b>%06</b>	87%	%06	89%	93%
Dilution Factor	1.0	0.1	0.1	0.1	1.0	1.0	2.0	1.0	1,0	2.0	2.0
Level	Low	Low	I.ow	Low	Low	Low	Low	Low	Low	Low I	Low

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APPENDIX D-2B IIEXAGON LABORATORIES RI/FFS SUBSURFACE BORING ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 2 of 4

Notes:

1. Field blank concentration reported in ug/L. 2. U = Not detected: J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample; NA = Not analyzed.

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Field sample ID	HXB11S2	IIXB12S2	HXBI5SI	IIXB17	HXB20	HXB21	IIXBKI	HXBK2	HXBK3	IIXFBA1 <sup>(1)</sup>	FBB-1 (1)
Lab Sample ID	D1860-03	D1860-02	D1911-05	E1640-06	E1640-09	E1640-10	D1891-02	D1891-03	D1891-01	E0065-02	D1891-06
Sample Location		OLD PLANT	NORTH YARD	EAST YARD	EAST YARD	EAST YARD	TUFO'S	HOLLERS AVE.	PEARTREE AVE.		
Sample Description	EN	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	BACKGROUND	BACKGROUND BACKGROUND	BACKGROUND	FIELD BLANK	FIELD BLANK
Date Sampled	11/12/97	11/12/97	11/19/97	10/1/98	10/2/98	10/2/98	11/17/97	11/17/97	11/17/97	1/16/98	11/17/97
Phenols/Acid Extractables		e "14" - casteriation (Arty 288) Service and Asteriation (Arty 288)									
Phenol	5100 DJN	360 JN	490 UJ	1100 U	760 U	1 091	R	1500 UJ	1400 UJ	10 D	10 U
2-Chlorophenot	1800 U	370 U	490 UJ	U 0011	760 U	780 U	æ	1500 UJ	1400 UJ	10 N	10 U
2-Methylphenol (o-cresol)	4600 DJN	NL 22	490 UJ	1 00 I	760 U	140 J	Я	1500 UJ	1400 UJ	rn 01	10 U
4- Methylphenol	1000 DJ	350 J	490 UJ	1100 U	760 U	800	æ	1500 UJ	1400 UJ	10 N	10 U
2,4-Dimethylphenol	1800 U	370 U	490 UJ	1100 U	760 U	780 U	æ	1500 UJ	1400 UJ	10 N	10 N
2,4-Dichtorophenot	1800 U	370 U	490 UJ	1100 U	760 U	780 U	×	1500 UJ	1400 UJ	10 N	10 01
4-Chloro-3-methylphenof	1800 U	370 U	490 UJ	1100 U	760 U	780 U	R	1500 UJ	1400 UJ	10 U	10 U
2,4,6-Trichlorophenol	1800 U	370 U	490 UJ	1100 U	760 U	780 U	R	1500 UJ	1400 UJ	10 U	10 U
2,4,5-Trichlorophenol	4600 U	920 U	1200 UJ	1100 U	760 U	780 U	~	3700 UJ	3600 UJ	25 U	25 U
2,4-Dinitrophenol	4600 UJ	10 026	1200 UJ	U 0011	760 U	780 U	æ	3700 UJ	3600 UJ	25 U	25 U
2-Nitrophenol	1800 U	370 U	490 UJ	1100 U	760 U	780 U	R	1500 UJ	1400 UJ	10 U	10 0
4-Nitrophenol	4600 U	920 U	1200 UJ	1 00 U	760 U	780 U	æ	3700 UJ	3600 UJ	25 U	25 U
4,6-Dinitro-2-methylphenol	4600 U	920 UJ	1200 UJ	1100 U	760 U	780 U	æ	3700 UJ	3600 UJ	25 U	25 U
Pentachlorophenol	4600 U	920 UJ	1200 UJ	1100 UI	760 UJ	780 UJ	æ	3700 UJ	3600 UJ	25 U	25 U
<b>Polycyclic Aromatic Hydrocarbons (PAHs)</b>	(57,										
Naphthalene	14000 DJN	370 U	490 UJ	1 09L	270 J	1200	1600 UJ	1500 UJ	1400 UJ	10 N	10 U
2-Methylnaphthalene	1800 U	370 U	490 UJ	1100	300 J	1600	10001	1500 UJ	1400 UJ	10 U	10 U
2-Chloronaphthalene	1800 U	370 U	490 UJ	1100 U	760 U	780 U	10091	1500 UJ	1400 UJ	10 U	10 U
Acenaphthylene	1800 U	370 U	490 UI	N 0011	760 U	120 J	1600 UJ	1500 UJ	1400 UJ	10 U	10 U
Acenaphthene	1800 U	370 U	490 UJ	1100 U	760 U	780 U	6 0 J	1500 UJ	1400 UJ	10 N	10 U
Fluorenc	1800 U	370 U	490 UJ	1100 U	83 J	140 J	1 100 1	1500 UJ	1400 UJ	10 N	10 U
Phenanthrene	1800 U	360 JN	490 UJ	430 J	550 J	0001	12000 J	1500 UJ	1400 UJ	10 U	10 U
Anthracene	1800 U	370 UJ	490 UJ	1100 U	120 J	270 J	1200 J	1500 UJ	1400 UJ	10 U	10 U
Fluoranthene	1800 U	400 J	490 UJ	430 J	730 J	970	9600 J	1500 UJ	160 J	10 U	10 U
Pyrene	1800 U	130 J	490 UJ	I 0001	1300	2100	14000 DJ	1500 UJ	I 061	10 U	10 U
Benzo(a)authracene	1800 U	NL 88	490 UJ	220 J	440 J	690 J	4900 J	1500 UJ	1400 UJ	10 U	10 U
Chrysene	1800 U	I 061	490 UJ	460 J	760	1200	6600 J	1500 UJ	1400 UJ	10 U	10 fl
Benzo(b)fluoranthene	1800 U	I 70 J	490 UJ	410 J	600 J	1100	1 006E	1500 UJ	160 J	10 01	10 11
Benzo(k)fluoranthene	1800 U	62 J	490 UJ	120 J	260 J	I 098	f 0081	1500 UJ	1400 UJ	10 U	10 U
Benzo(a)pyrene	1800 U	NL 021	490 UJ	210 J	340 J	120 J	1500 J	1500 UJ	1400 UJ	10 U	10 U
Indeno(1,2,3-cd)pyrene	1800 U	370 U	490 UJ	f 061	I 00E	590 J	[ 0001	1500 UJ	1400 UJ	10 N	10 N
Dibenz(a,h)anthracene	1800 U	370 U	490 UJ	1100 U	760 U	780 U	480 J	1500 UJ	1400 UJ	10 N	10 N
Benzo(g,h,i)perylene	1800 U	370 U	490 UJ	280 J	410 J	840	1200 J	1500 UJ	1400 UJ	10 U	10 U
Aniline compounds				영상 문화 영상				전화가의 전자가			
4-Chloroaniline	1800 U	660	490 UJ	1 00 I I	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	ID 01	10 N
2-Nitroaniline	4600 U	920 U	1200 UJ	U 0011	760 U	U 087	4000 UJ	3700 UJ	3600 UJ	25 U	25 U
3-Nitroaniline	4600 U	920 U	1200 UJ	IN 0011	760 UJ	180 UJ	4000 UJ	3700 UJ	3600 UJ	25 UJ	25 U
4-Nitroaniline	4600 U	920 U	1200 UJ	1100 U	760 U	780 U	4000 UJ	3700 UJ	3600 UJ	25 U	25 U

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Field sample ID	HXB11S2	HXB12S2	HXB15S1	11811	HXB20	IIXB21	HXBKI	HXBK2	HXBK3	HXFBA1 <sup>(1)</sup>	FBB-1 <sup>(1)</sup>
Lab Sample ID	D1860-03	D1860-02	D1911-05	E1640-06	E1640-09	E1640-10	D1891-02	D1891-03	D1891-01	E0065-02	D1891-06
Sample Location	OLD PLANT	OLD PLANT	NORTH YARD	EAST YARD	EAST YARD	EAST YARD	TUFO'S	HOLLERS AVE.	PEARTREE AVE.		
Sample Description	ENV. SAMPLE	ENV. SAMPLE	Ξ	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	BACKGROUND	BACKGROUND BACKGROUND	BAC	FIELD BLANK	FIELD BLANK
Date Sampled	11/12/97	11/12/97	11/19/97	86/1/01	10/2/98	10/2/98	11/17/97	11/11/07	11/17/97	1/16/98	11/17/97
Benzenes/Aromatics											
1,3-Dichlorobenzene	1800 U	370 U	490 UJ	1 00 I I	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	10 N	10 N
1,4-Dichlorobenzene	1800 U	370 U	490 UJ	1 00 H	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	10 OI	10 U
1,2-Dichlorobenzene	1800 U	130 J	490 UJ	1100 U	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	10 N	10 N
Nitrobenzene	1800 U	370 U	490 UJ	1100 U	760 U	780 U	IN 0091	1500 UJ	1400 UJ	10 N	10 U
1.2.4-Trichlorobenzene	1800 U	370 U	490 UJ	1100 U	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	10 U	10 U
2,6-Dinitrotoluene	1800 U	370 U	490 UJ	1100 U	10 09L	780 U	1600 UJ	1500 UJ	1400 UJ	10 U	10 U
2,4-Dinitrotoluene	1800 U	370 U	490 UJ	D 0011	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	10 N	10 N
llexachlorobenzene	1800 U	370 UJ	490 UJ	1100 U	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	N 01	10 01
Phthalates											
Dimethylphthalate	6500	370 U	490 UJ	1100 U	760 U	150 J	1600 UJ	1500 UJ	1400 UJ	10 N	N 01
Diethylphthalate	38000 D	56 J	490 UJ	1100 U	160 U	140 J	1600 UJ	1500 UJ	1400 UJ	10 N	10 01
Di-n-butyl phthalate	3900	210 J	490 UJ	f 011	160 U	6 080 J	1600 UJ	1500 UJ	1400 UJ	N 01	N 01
Butylbenzyl phthalate	350 J	370 U	490 UJ	490 J	760 UJ	780 UJ	ff1 0091	1500 UJ	1400 UJ	U 01	10 N
bis(2-Ethylhexyl)phthalate	2500	520	55 J	15000 D	410 J	1000	1600 UJ	1500 UJ	1400 UJ	3 J	2 J
Di-n-octyl phthalate	1800 U	370 U	490 UJ	1100 UJ	760 UJ	780 UJ	1600 UJ	1500 UJ	1400 UJ	N 01	10 U
Other/Miscellaneous SVOCs											
bis(2-choroethyl)Ether	1800 U	370 U	490 UJ	1100 U	10 09L	780 U	1600 UJ	1500 UJ	1400 UJ	10 D	10 U
2,2'-oxybis(1-chloropropane)	1800 U	370 U	490 UJ	U 0011	160 U	N 082	1600 UJ	1500 UJ	1400 UJ	10 N	10 N
N-Nitroso-di-n-propylamine	1800 U	370 U	490 UJ	1100 U	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	10 U	10 U
Hexachloroethane	1800 U	370 U	490 UJ	1100 U	760 U	780 U	I0 0091	1500 UJ	1400 UJ	10 U	10 U
Isophorone	1800 U	370 U	f(1 064	1100 U	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	10 U	10 N
Carbazole	1800 U	370 UJ	490 UJ	1100 U	760 U	780 U	330 J	1500 UJ	· 1400 UJ	10 U	10 N
l lexachlorobutadiene	1800 U	370 U	490 UJ	1100 U	760 U	780 U	IO 0091	1500 UJ	1400 UJ	10 U	10 U
bis(2-chloroethoxy)methane	1800 U	370 U	490 UJ	1100 U	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	10 U	10 U
Hexachlorocyclopentadiene	1800 U	370 U	490 UJ	1100 U	760 U	780 U	IU 0091	1500 UJ	1400 UJ	10 N	N 01
Dibenzofuran	370 JN	39 J	490 UJ	1100 U	760 U	780 U	250 J	1500 UJ	1400 UJ	10 N	10 N
4-Chlorophenyl-phenyl ether	1800 U	370 U	490 UJ	1100 U	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	10 N	10 0
N-nitrosodiphenylamine	1800 U	370 UJ	490 UJ	1100 U	760 U	780 U	1600 UJ	1500 UJ	1400 UJ	10 U	10 U
4-Bromophenyl-phenyl ether	1800 U	10 07£	490 UJ	1100 U	760 U	780 U	IO 0091	1500 UJ	1400 UJ	10 N	10 01
3.3 - Dichlorobenzidine	1800 UJ	370 UJ	490 UJ	1100 UJ	100 UJ	780 UJ	1600 UJ	1500 UJ	1400 UJ	10 U	10 U
	1 000 75	- 000 6			1 (10)	1 05031	1 000 07		5101	1	
LUIAI LAIGET SVUCS	f 076'0/	L 00%;C	- CC	2121U J	f (7) 20	L U/VC1	f 079'00				
Number of SVOA TICs	29	30	8	61	19	19	30	-	2	0	
Total SVOA TIC Concentration	845,800 J	105,600 J	2,820 J	30,900 J	16,300 J	42,520 J	56,880 J	400 J	730 J		1 06
Percent Solids	%16	91%	%16	92%	87%	85%	84%	89%	93%	0%0	%0
Dilution Factor	5.0	1.0	1.0	3.0	2.0	2.0	1.0	1.0	0.1	1.0	1.0
Level	Low	l.ow	Low	Low	Low	Low	Low	Low	Low	Low	Low

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APPENDIX D-2B HEXAGON LABORATORIES RI/FFS SUBSURFACE BORING ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 4 of 4

Notes: 1. Field blank concentration reported in ug/L. 2. U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample; NA = Not analyzed.

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APPENDIX D-2C HEXAGON LABORATORIES RI/FFS SUBSURFACE BORING ANALYTICAL DATA - PESTICIDES/PCBs (ug/kg) Page 1 of 2
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Field sample ID	HXB1S3	HXBIS7	HXB3S2	HXB4S2	HXB54	HXB5S2	HXB7S2	HXB7S4	HXB8S4	£S98XH	HXB9S5
Lab Sample ID	90-1161O	D1911-07	D1848-05	D1905-01	D1905-02	D1875-01	D1848-01	D1848-02	D1891-05	D1848-03	D1848-04
Sample Location	IWM	IMM	MW3	MW4	MW4	MWS	EAST YARD	EAST YARD	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Description	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	HXB4S2 DUP.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE
Date Sampled	11/19/97	11/19/97	11/11/97	11/18/97	11/18/97	11/14/97	11/11/97	11/11/97	11/17/97	11/11/97	11/11/97
Pesticides											
alpha-BHC	0.56 U	0.54 U	0.61	0.50 U	0.39 U	3.0 J	2.4 JN	2.0 U	2.6 U	1.9 U	1.8 U
beta-BHC	0.56 U	0.54 U	U.6.1	0.50 U	0.39 U	Nf 01	U 6.1	2.0 U	2.6 U	U 6.1	1.8 U
delta-BHC	3.9 JN	0.54 U	4.6	310 DIN	NF 011	1 8 U	U 6.1	2.0 U	2.6 U	6.4 JN	3.5 IN
gamma-BHC (Lindane)	0.67 JN	0.54 U	n 61	38 JN	20 JN	1.8 U	0.61	2.0 U	2.6 U	U 6.1	1.8 U
Heptachlor	0.56 U	0.54 U	U 6.1	0.50 U	0.39 U	1.8 U	U 6.1	2.0 U	2.6 U	U 6.1	1.8 U
Aldrin	0.56 U	0.54 U	U 6.1	NICI 016	NF 011	1.8 U	NI 8.9	2.0 U	220 DJN	U 6.1	1.8 U
Heptachlor Epoxide	0.56 U	0.54 U	0.61	0.50 U	0.39 U	U 8.1	U 6.1	2.0 U	2.6 U	1.9 U	1.8 U
Endosulfan I	0.56 U	0.54 U	U 6.1	NICI 062	73 JN	Nf 6'1	0 6 I	2.0 U	2.6 U	U 6.1	1.8 U
Dieldrin	1.1 U	1.0 U	3.8 U	0.97 U	0.75 U	3.5 U	3.7 U	3.8 U	5.0 U	3.7 U	3.5 U
4,4'-DDE	5.1	1.0 U	3.8 U	260 DJN	0.75 U	5.9	3.7 U	3.8 U	5.0 U	3.7 U	6.0 JN
Endrin	2.2 JN	1.0 U	3.8 U	NF 21	=	3.5 U	11	3.8 U	5.0 U	3.7 U	3.5 U
Endosulfan II	1.1 U	1 0 N	3.8 U	U 10.0	0.75 U	3.5 U	3.7 U	3.8 U	5.0 U	3.7 U	3.5 U
4,4'-DDD	4.2 JN	1.0 U	3.8.0	U 70.0	NC 21	3.5 U	6.1	3.8 U	5.0 U	3.7 U	3.5 U
Endosulfan Sulfate	0 1.1	U 0.1	NI 1.9	26 JN	24 JN	3.5 U	3.7 U	3.8 U	5.0 U	3.7 U	3.5 U
4,4'-DDT	1.4 JN	1.0 U	3.8 U	300 DJN	54 JN	3.5 U	3.7 JN	3.8 U	5.0 U	3.7 U	4.5 JN
Methoxychior	5.6 U	5.4 U	N 61	5.0 U	NE 0E1	18 U	1 6 I	20 U	26 U	U 61	18 U
Endrin ketone	n 1'1	1.0 U	3.8 U	U 70.0	0.75 U ·	3.5 U	3.7 U	3.8 U	5.0 U	3.7 U	3.5 U
Endrin aldehyde	1.1 U	1 0 D	3.8 U	U 70.0	0.75 U	3.5 U	5.5 JN	3.8 U	5.0 U	3.7 U	3.5 U
alpha-Chlordane	0.56 U	0.54 U	2.0	NF 66	NE 96	NC 8.1	9.9	2.0 U	2.6 U	3.5	7.1
gamma-Chlordane	2.5 JN	0.54 U	U 6.1	N[ 19	NF 21	5.4 J	NL 2.5	2.0 U	2.6 U	2.2 JN	1.8 JN
Toxaphene	56 U	54 U	U 061	50 U	39 U	180 U	D 061	200 U	260 U	190 U	180 U
PCBs											
Aroclor-1016	11 U	10 0	38 U	0.7.0	7.5 U	35 U	37 U	38 U	50 U	37 U	35 U
Aroclor-1221	22 U	21 U	76 U	20 U	15 U	U 17	74 U	ט <i>דו</i> ט	100 U	75 U	72 U
Aroclor-1232	N 11	10 01	38 U	0.7.0	7.5 U	35 U	37 U	38 U	50 U	37 U	35 U
Aroclor-1242	36 JN	10 01	38 U	18000 DJN	7.5 U	35 U	74	38 U	50 U	37 U	100
Aroclor-1248	0 11	10 N	38 U	0.7.U	FCI 0066	35 U	37 U	38 U	4800 DJ	44	35 U
Aroclor-1254	<u> 11 U</u>	U 01	38 U	0.7.U	7.5 U	35 U	37 U	38 U	50 U	37 U	35 U
Aroclor-1260	0 11	10 N	38 U	0.7.0	U 2.7	35 U	37 U	38 U	50 U	37 U	35 U
											10701
Percent Solids	81%	84%	88%	<b>%06</b>	90%	94%	%06	87%	90%	89%	93%
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	0.1	1.0	1.0	1.0	1.0

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Notes: Notes: 1. Field blank concentration reported in ug/L. 2. U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample; NA = Not analyzed.

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Field sample ID	HXB11S2	HXB12S2	HXBI5SI	HXB17	IIXB20	IIXB21	HXBKI	HXBK2	HXBK3	IIXFBA1 <sup>(1)</sup>	FBB-1 (1)
Lab Sample ID	D1860-03	D1860-02	D1911-05	E1640-06	E1640-09	E1640-10	D1891-02	D1891-03	D1891-01	E0065-02	D1891-06
Sample Location	OLD PLANT	OLD PLANT	NORTH YARD	EAST YARD	EAST YARD	EAST YARD	TUFO'S	HOLLERS AVE.	PEARTREE AVE.		
Sample Description	ENV. SAMPLE	BACKGROUND	BACKGROUND	BACKGROUND	FIELD BLANK	FIELD BLANK					
Date Sampled	11/12/97	11/12/97	11/19/97	86/1/01	10/2/98	10/2/98	11/17/97	11/17/97	11/17/97	86/91/1	11/17/97
esticides											
alpha-BHC	9.3 U	7.5 U	0.50 U	NA	NA	NA	R	2.6 UJ	2.5 U	0.050 U	0.050 UJ
octa-BHC	9.3 U	7.5 U	0.50 U	NA	AN	NA	R	2.6 UJ	2.5 U	0.050 U	0.050 UJ
delta-BHC	9.3 U	7.5 U	0.50 U	NA	NA	NA	R	2.6 UJ	2.5 U	0.050 U	0.050 UJ
gamma-BHC (Lindane)	130 JN	7.5 U	0.50 U	NA	AN	NA	R	2.6 UJ	2.5 U	0.050 U	0.050 UJ
leptachlor	9.3 U	40 J	0.50 U	NA	NA	NA	R	2.6 UJ	2.5 U	0.050 U	0.050 UJ
Aldrin	0.3 U	7.5 U	0.73	NA	NA	NA	R	2.6 UJ	370 DJN	0.050 U	0.050 UJ
leptachlor Epoxide	9.3 U	28	0.50 U	NA	NA	NA	2.60 JN	2.6 UJ	2.5 U	0.050 U	0.050 UJ
Endosulfan I	370 DJN	NFCI 68	0.53 J	NA	NA	NA	R	2.6 UJ	2.5 U	0.050 U	0.050 UJ
Dieldrin	18 U	14 U	0.96 U	NA	NA	NA	R	5.0 UJ	4.8 U	0.10 U	U 01.0
4,4'-DDE	310 DJN	14 U	0.96.0	NA	NA	NA	R	5.0 UJ	100 D	0.10 U	0.10 UJ
Endrin	72 UJ	14 U	0.96.0	NA	NA	NA	9.2 JN	5.0 UJ	4.8 U	0.10 U	0.10 UJ
Endosulfan II	18 U	14 U	0.96.0	NA	NA	NA	R	5.0 UJ	4.8 U	0.10 U	0.10 UJ
4,4'-DDD	18 U	14 U	0.96 U	NA	NA	NA	R	5.0 UJ	4.8 U	0.10 U	0.10 UJ
Endosulfan Sulfate	18 U	33	2.6 JN	NA	NA	NA	R	5.0 UJ	4.8 U	0.10 U	0.10 UJ
4,4'-DDT	18 U	Nf 08	0.96 U	NA	NA	NA	×	5.0 UJ	I 120 DJN	0.10 U	0.10 UI
Methoxychior	93 U	75 U	5.0 U	NA	NA	NA	41 JN	26 UJ	25 U	0.50 U	0.50 UJ
Endrin ketone	140	14 U	0.96 U	NA	NA	NA	S.6 JN	5.0 UJ	4.8 U	0.10 U	0.10 UJ
Endrin aldehyde	18 U	S90 DJN	0.96 U	NA	NA	<b>N</b> A	×	5.0 UJ	4.8 U	0.10 U	0.10 UJ
alpha-Chlordane	9.3 U	NL 87	0.50 U	NA	NA	NA	~	2.6 UJ	2.5 U	0.050 U	0.050 UJ
gamma-Chlordane	37 UJ	7.5 U	0.50 U	NA	NA	NA	0.1	2.6 UJ	2.5 U	0.050 U	0.050 UJ
loxaphene	930 U	750 U	50 U	NA	NA	NA	×	260 UJ	250 U	0.0.2	5.0 UJ
PCBs									Sen 18: X		
Aroclor-1016	180 U	140 U	9.6 U	36 U	38 U	39 U	×	50 UJ	48 U	1.0 U	LU 0.1
Aroclor-1221	370 U	290 U	20 U	73 U	17 U	U 67	R	I00 U1	97 U	2.0 U	2.0 UJ
Aroclor-1232	180 U	140 U	9.6 U	36 U	38 U	39 U	×	50 UJ	48 U	U 0.1	LO UJ
Aroclor-1242	180 U	140 U	9.6 U	36 U	38 U	39 U	×	50 UJ	48 U	U 0.1	ID 0.1
Aroclor-1248	180 U	140 U	13	f 0001	38 U	39 U	×	50 UJ	5600 J	U 0.1	1.0 UJ
Aroclor-1254	180 U	140 U	0.6 U	36 U	38 U	39 U	ж	50 UJ	48 U	1 0 N	10 UJ
Aroclor-1260	180 U	140 U	9.6 U	R	38 U	R	R	50 UJ	NI 0011	1.0 U	1.0 UJ
Percent Solids	91%	91%	61%	97%	87%	85%	84% -	89%	93%	%001	%0
	2				-			01	-		01

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 I. Field blank concentration reported in ug/L.

 2. U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample; NA = Not analyzed.

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APPENDIX D-2C HEXAGON LABORATORIES RI/FFS SUBSURFACE BORING ANALYTICAL DATA - PESTICIDES/PCBs (ug/kg) Page 2 of 2

APPENDIX D-2D IIEXAGON LABORATORIES RIFFS SUBSURFACE BORING ANALYTICAL DATA - INORGANICS (mg/kg)	Page 1 of 2
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Field sample ID	HXBIS3	HXBIS7	HXB3S2	HXB4S2	HXB54	HXB5S2	HXB7S2	HXB7S4	HXB8S4	EXB9S3	4XB9S5
Lab Sample ID	D1911-06	D1911-07	D1848-05	D1905-01	D1905-2	D1875-01	D1848-01	D1848-02	D1891-05	D1848-03	D1848-04
Sample Location	IMM	IMM	MW3	MW4	MW4	MWS	EAST YARD	EAST YARD	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Description	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	HXB4S2 DUP.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE
Date Sampled	11/19/97	11/19/97	11/11/97	11/18/97	11/18/97	11/14/97	26/11/11	11/11/97	11/17/97	11/11/97	11/11/97
Aluminum	14200	16900	00601	3890 J	4190 J	20600	13000	13600	15500	15200	11600
Antimony	0.63 U	0.55 U	0.61 U	0.45 U	0.45 U	0.86	0.57 U	0.58 U	0.49 U	0.61 U	0.51 U
Arsenic	4.7	3.4	3.0	1.8	2.0	4.4 J	3.6	2.7	3.3 J	2.5	1.9
Barium	323	152	172	74.5 J	86.4 J	242	182	133	161	195	8.66
Beryllium	0.54	0.74	0.48	0.15 U	0.15 U	0.56	0.56	0.47	0.44	0.62	0.52
Cadmium	5.7	0.11.0	1.2	U 60.0	U 60.0	0.12 U	1.5	0.31	U 01.0	0.58	0.26
Calcium	00461	1600	6660	337 J	342 J	1260	11600	1450	1250	2130	1070
Chromium	62.7	78.3	33.3	28.8 J	29.1 J	174	56.6	56.4	44.4	63.1	63.7
Cobalt	13.6	14.4	6.11	4.3.1	4.7.1	18.8	13.2	12.5	16.4	16.0	16.3
Copper	185 J	52.1 J	45.1	31.1 J	34.9.1	46.8	36.5	35.6	16.7 J	38.0	42.3
Iron	28200	26700	110	1360 J	f 0011	31500	27500	23600	24900	20500	19900
Lead	182 J	8.2 J	265	1.6.1	8.2 J	4.0	121	41.6	0.69	32.6	2.8
Magnesium	7450	8230	4570	1720 J	2010 J	9200	9360	6750	6180	6500	5980
Manganese	384	266	225 J	62.3 J	66.3 J	497	252 J	1 80 J	217	315 J	255 J
Mercury	0.28	0.04	0.07	0.16	0.18	90.0	0.29	0.03 U	0.03 U	0.16	0.03 U
Nickel	62.0	64.6	32.6	27.9 J	24.9 J	85.1	71.8	44.6	30.8	35.1	48.6
Potassium	5790 J	8320 J	4850	f 0612	2350 J	12000 J	7280	7720	10300 J	8820	4570
Selenium	n 1.1 U	0.191 U		0.75 U	0.75 U	0.99 U	0.95 U	0.97 U	0.81 U	1.0 U	0.85 U
Silver	0.42 UJ	0.36 UJ	0.41 UJ	U 05.0	0.30 UJ	0.40 UJ	U 86.0	0.39 UJ	0.32 UJ	0.40 UJ	0.34 UI
Sodiun	540	415	264	6'96	61.4	69.3	148	127	157	182	253
Thallium	0.85	1.1	0.41 U	U 05.0	0.30 U	9.1	0.38 U	0.39 U	1.2	0.42	0.34 U
Vanadium	45.0	48.1	33.8	13.6 J	15.2.1	72.5	36.5	40.4	45.1	41.9	37.1
Zinc	1290	124	f 622	21.3	23.8	81.9	219 J	116 J	69.1 J	153 J	96.4 J
Cyanide	0 I.I 0	1.0 U	0.84 U	0.70 U	0.77 U	1 0 N	0.65 U	0.64 U	U 67.0	0.82 U	0.85 U
		1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	and the second		A STATE AND AND AND A				and the second		and a start of the second start of the
Percent Solids	81%	84%	88%	%06	90%	89%	<b>%06</b>	87%	%06	89%	93%
Level	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium

Notes: 1. Field blank concentration reported in ug/L. 2. U = Not detected: J = Estimated value; R = Rejected value; NA = Not analyzed.

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APPENDIX D-2D HEXAGON LABORATORIES RI/FFS SUBSURFACE BORING ANALYTICAL DATA - INORGANICS (mg/kg) Page 2 of 2

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Field cample 1D	HXBUS	HXB12S2	HXBI5SI	HXB17	HXB20	HXB21	HXBK1	НХВК2	HXBK3	HXFBA1 <sup>(1)</sup>	FBB-1 <sup>(1)</sup>
Lab Sample ID	D1860-03	D1860-02	D1911-05	E1640-06	E1640-09	E1640-10	D1891.02	D1891-03	D1891-01	E0065-02	D1891-06
Sample Location	OLD PLANT	OLD PLANT	NORTH YARD	EAST YARD	EAST YARD	EAST YARD	TUFO'S	HOLLERS AVE.	PEARTREE AVE.		
Sample Description	ENV. SAMPLE	ENV SAMPLE	ENV SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	BACKGROUND	BACKGROUND BACKGROUND	BACKGROUND	FIELD BLANK	FIELD BLANK
Date Sampled	11/12/97	11/12/97	26/61/11	86/1/01	10/2/98	10/2/98	11/17/97	11/17/97	11/17/97	1/16/98	11/17/97
Aluminum	4410	21300	16100	9410	11000	10700	16600	20400	13200	15.0 U	36.8
Antimonv	0.47 U	0.55 U	0.54 U	3.6 J	L 0.9	29.7 J	0.66 U	0.57 U	0.62 U	3.0 U	3.0 U
Arsenic	1.1	61	4.8	5.8 J	5.0 J	18.4 J	9.0 J	3.2	2.4	2.0 U	2.0 U
Barium	64.8	295	341	366	522	1790	559	162	89.2	43.5	8.6
Bervliun	0.16.U	0.49	0.48	0.29	0.38	0.33	69.0	0.84	0.45	1.0 U	1.0 U
Cadmium	0.09 U	0.24	5.6	4.2 J	6.4 J	28.2 J	1.3	D 11.0	0.12 U	0.60 U	0.60 U
Calcium	663	836	15800	8200	5790	17600	3120	1500	853	3860	35.9
Chromium	21.7	162	44.9	42.8 J	47.8 J	73.9 J	61.8	64.5	42.4	0.50 U	0.50 U
Cobalt	4.7	19.7	13.3	9.4	9.6	22.6	14.8	18.7	12.8	1.0 U	1.0 U
Conner	10.6	467	l 151	[ 39 J	125 J	509 J	f 961	33.5 J	l 1.91	3.0 U	11.1
Iron	2030	, 32600	27900	22500	29000	54100	57900	26700	19300	18.6	82.7
Lead	2.5	23.4	I 80 J	515 J	3850 J	3360 J	455	8.1	10.1	3.8 J	2.0 U
Maenesium	2060	8580	7730	4910	5840	5540	5820	8570	5380	289	0.0 U
Manganese	77.1	226	394	246	369	509	280	503	472	2.6 J	2.3
Mercury	611	0.63	0.03 U	0.23	0.19	0.78	0.07	0.04 U	0.04 U	U) 01.0	0.38 U
Nickel	13.8	44.7	38.0	25.7 J	l 8.3 J	[ 181	72.3	44.1	30.4	3.0 U	3.0 U
Potassium	2280 J	13200 J	f 0118	4860 J	5290 J	4430 J	4900 J	6750 J	3610 J	1300 U	1300 U
Selenium	0.78 U	0.92 U	U 06.0	3.2	2.0	1.7	0 F1	0.95 U	1.0 U	5.4	5.0 U
Silver	UU 16.0	0.37 UJ	0.36 UJ	R	æ	R	0.44 UJ	0.38 UJ	0.41 UJ	2.0 U	2.0 UJ
Sodium	152	361	327	1830	1660	15600	75.3	63.8	116	2860	300 U
Thallium	0.1E.0	0.37 U	0.99	2.4	2.3	0.93	1.5	1.3	0.92	2.0 U	2.0 U
Vanadium	13.8	68.3	50.3	40.9 J	33.1 J	48.4 J	46.7	51.7	32.9	U 0.1	1.0 U
Zinc	37.6 J	124 J	1070	1350 J	I 390 J	12000 J	f 0011	61.2 J	52.8 J	I 0.07	23.7 J
Cyanide	0 I'I	U 86.0	0.84 U	0.05 U	0.08	0.27	0 1.1	0.87 U	0.90 U	1000 U	1000 D
A REAL PROPERTY AND A REAL	traine a training the states of the	A Data Ser Andrew Market and Arts.	A CONTRACTOR AND AND A DECIMAL TO BE		A DESCRIPTION OF A DESC	and a state of the strength of the		n staar digaan di maana di maana di maa	and a state of the		
Percent Solids	%16	%16	%16	94%	89%	88%	84%	89%	93%	0%	0%0
Level	Medium	Medium	Low	Medium	Medium	Medium	Medium	Medium	Medium	Low	Low
				the second s							

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Notes: 1. Field blank concentration reported in ug/L. 2. U = Not detected; J = Estimated value; R = Rejected value; NA = Not analyzed.

APPENDIX D-2E IIEXAGON LABORATORIES RI/FFS SUBSURFACE BORING ANALYTICAL DATA - TOTAL ORGANIC CARBON AND TOTAL PETROLEUM IIYDROCARBONS (mg/kg)

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Field sample ID HXB1S3	HXBIS3	HXBIS7	HXB4S2	HXB54	HXB5S2	HXB11S2	HXB12S2	HXB20	HXBKI	HXBK2	HXBK3
Lab Sample ID	90-1161Q	D1911-07	D1905-01	D1905-02	D1875-01	D1860-03	D1860-02	E1640-09	D1891-02	D1891-03	D1891-01
Sample Location	IMMI	IMM	MW4	MW4	MW5	OLD PLANT	OLD PLANT	EAST YARD	TUFO'S	HOLLERS AVE.	PEARTREE AVE.
Sample Description ENV SAMPLE	ENV. SAMPLE	ENV. SAMPLE ENV. SAMP	ENV. SAMPLE	HXB4S2 DUP.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	BACKGROUND	BACKGROUND	BACKGROUND
Date Sampled	11/19/97	11/19/97	11/18/97	11/18/97	11/14/97	11/12/97	11/12/97	10/2/98	11/17/97	16/11/11	11/17/97
TOC	11000	519	12000	11200	2200	25900	NA	5500	6210	3690 -	4130
TPHC	NA	NA	NA	NA	NA	NA	1200	NA	NA	NA	58
Notes:											

NA = Not analyzed.

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Field sample 1D	I-TYN	NYT-2	I-NLAS	I-XNTYS	SYTS-1	SYTE-1	SYTW-I	SYTC-1	SYTCX-1	SYTEX-1	SYTEX-IMS
Lab Sample ID	D1875-02	D1875-03	D1991-01	D1991-07	D1991-02	D1991-03	D1991-04	D1991-05	D1991-06	01991-09 6V HET	D1991-09MS
Sample Location	1	NY UST	SY UST	SY UST	SY UST	SY UST	ISU YSUSI	SY UST ENV CAMPLE	CVTC 1 DUD	ENV SAMPLE	- SW
Sample Description	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	SYIN-LDUP.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAINITLE 17/4/97	12/4/97	12/4/97	12/5/97
Laic Sampler	11/14/97	1/1/1/1	1614/71								
Partana	151		1 092	770.1	111 00011	5700 [1]	140000 UJ	NA	NA	2900 UJ	16000
Delizene Tobiene	002	1 80	1900001	10 000000	240000 1	66000 J	320000 J	NA	NA	3400 J	19000
	200	1 02	6400 1	1 0052	111 00055	6 00 J	140000 UJ	NA	NA	3800 J	3700 B
Vulene(total)	1200	1 11	1 00001	1 00058	24000 1	( 00009	140000 UJ	NA	NA	6400 J	6400 B
Attrictionary	11 001	111 96	11 0011	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	NA	2900 UJ	2900 U
Halopenated Alinhatics											
Chloromethane	120 11	56 111	3300 UI	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	NA	2900 UJ	2900 U
Romomethane	120 11	20 02	3300 111	110015	33000 UJ	5700 UJ	140000 UJ	NA	NA	2900 UJ	2900 U
Vinvl Chloride	120 11	29 111 96	3300 111	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	NA	2900 UJ	2900 U
Chloroethane	11 0 11	111 96	111 0088	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	٨٨	2900 UJ	2900 U
Methylene Chloride	120 11	14 ]	3300 UI	l 80 J	33000 UJ	5700 UJ	140000 UJ	NA	VN	LU 0002	2900 U
1 1-Dichloroethene	120 11	111.90	110011	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	NA	2900 UJ	13000
1.1.Dichloroethane	11 0/1	111 YC	3300 UI	111 0018	33000 UJ	5700 UJ	140000 UJ	NA	NA	2900 UJ	2900 U
1.2-Dichloroethene (total)	11 001	20 02	110 0055	3100 UI	33000 UJ	5700 UJ	140000 UJ	NA	AN	2900 UJ	2900 U
Chloroform	120 11	111 96	3300 111	3100 11	33000 UJ	5700 UJ	140000 UJ	NA	NA	LU 0002	2900 U
1.2-Dichloroethane	130	26 UJ	5000 J	5000 J	33000 UJ	5700 UJ	140000 UJ	NA	NA	330 J	2900 U
1.1.1-Trichloroethane	120 U	26 UJ	370 J	370 J	33000 UJ	5700 UJ	140000 UJ	NA	NA	2900 UJ	2900 U
Carbon Tetrachloride	120 U	26 UJ	3300 UJ	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	NA	2900 UJ	2900 U
Bromodichloromethane	120 U	26 UJ	3300 UJ	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	٧N	2900 UJ	2900 U
1,2-Dichloropropane	120 U	26 UJ	3300 UJ	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	VN	2900 UJ	0.0007
cis-1,3-Dichloropropene	120 U	26 UJ	3300 UJ	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	AN	2900 UJ	0.0067
Trichloroethene	30 J	26 UJ	3200 J	3600 J	33000 UJ	5700 UJ	140000 UJ	NA	AN	2900 UJ	00001
Dibromochloromethane	120 U	26 UJ	3300 UJ	3100 UJ	33000 UJ	5700 UJ	140000 UJ	AN	AN 2	IN 0067	0 0067
I, I, 2-Trichloroethane	120 U	26 UJ	3300 UJ	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	NA	2900 UJ	0.0062
trans-1,3-Dichloropropene	120 U	26 UJ	3300 UJ	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	AN	IU 0062	0.0002
Bromoform	120 U	26 UJ	3300 UJ	3100 UJ	33000 UJ	5700 UJ	140000 UJ	<b>N</b> N	VZ .	1 0067	0 0067
Tetrachloroethene	29 J	26 UJ	5900 J	6 00 J	1600 J	1700 J	140000 UJ	AN	AN	1400	
1, 1, 2, 2-Tetrachloroethane	120 U	26 UJ	3300 UJ	3100 UJ	33000 UJ	5700 UJ	fU 00041	NA	¥N		0 00/7
kelones		•			111 00000		III UUUUTI	NA NA	NA	13000	14000 B
Acctonic	- co	r 0.62	f 0076	1 064		1 002		NA	NA	460 J	540 J
A Mathul 2 contanone	1 001					111 0023	1100001	NA	NA	2900 UJ	2900 U
2-Hexanone	120 11	26 01	3300 UJ	3100 UI	33000 UJ	5700 UJ	140000 UJ	VN	VN	2900 UJ	2900 U
<b>Other Afiscellaneous</b> VOCs											
Carbon disulfide	1 120 U	26 UJ	3300 UJ	3100 UJ	33000 UJ	5700 UJ	140000 UJ	NA	NA	2900 UJ	2900 U
Chlorobenzene	120 U	1 7 J	1 00001	12000 J	33000 UJ	75000 J	140000 UJ	Ν	NA	6700 J	21000 B
Total Tareet VOCs	2389 J	338 J	261330 J	300640 J	271600 J	210020 J	320000 J			35490 J	110240 J
Number of VOC TICs	50	08	4	~	0	29	0			-	
Total VOC TIC Concentration	79500 J	7380 J	12500 J	18600 J		405000 ]				3500 J	
Percent Solids	85%	77%	75%	80%	76%	87%	88%			87%	87%
Dilution Factor	0.1	1.0	1.0	1.0	1.0	1.0	0.1			1.0	0.1
i evel											

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Field blank concentration reported in ug/L.
 U = Not detected; J = Estimated value; D = Diluted sample; B = Detected in blank; NA = Not analyzed.

PNIST         District         District <thdistrict< th="">         District         <th< th=""><th>Field sample ID</th><th></th><th>EYT34-1</th><th>EYT35-1</th><th>EYT36-1</th><th>EYT37-1</th><th>1-TqN</th><th>NPT-2</th><th>NPT-3</th><th>NPT-4</th><th>SYTFB-1<sup>(1)</sup></th><th>EYTFB-1 <sup>(1)</sup></th></th<></thdistrict<>	Field sample ID		EYT34-1	EYT35-1	EYT36-1	EYT37-1	1-TqN	NPT-2	NPT-3	NPT-4	SYTFB-1 <sup>(1)</sup>	EYTFB-1 <sup>(1)</sup>
Smaller         FULG         EVUST         EVUST <t< th=""><th>Lab Sample ID</th><th>ā</th><th>D1349-01</th><th>DI349-02</th><th>D1349-03</th><th>D1349-04</th><th>D1911-01</th><th>D1911-03</th><th>DI911-02</th><th>D1911-04</th><th>D1991-08</th><th>DI349-05</th></t<>	Lab Sample ID	ā	D1349-01	DI349-02	D1349-03	D1349-04	D1911-01	D1911-03	DI911-02	D1911-04	D1991-08	DI349-05
	Sample Location		EY UST	EY UST	EY UST	EY UST	NP UST	NP UST	NP UST	NP UST		
	Sample Description		ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	FIELD BLANK	FIELD BLANK
Matrix			8/29/97	8/29/97	8/29/97	8/29/97	11/19/97	16/61/11	11/19/97	16/61/11	12/5/91	16/67/8
$e_{\rm c}$ 1000         120         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110         110 <th< th=""><th>Aromatics</th><th>ALCONTRACTOR OF A CONTRACTOR</th><th></th><th></th><th></th><th><ul> <li>M. K. Matter, L. M. Kanadar, N. K. K.</li></ul></th><th></th><th>1. (1. (1. (1. (1. (1. (1. (1. (1. (1. (</th><th>A CONTRACTOR OF A CONTRACTOR OF</th><th></th><th></th><th></th></th<>	Aromatics	ALCONTRACTOR OF A CONTRACTOR				<ul> <li>M. K. Matter, L. M. Kanadar, N. K. K.</li></ul>		1. (1. (1. (1. (1. (1. (1. (1. (1. (1. (	A CONTRACTOR OF			
e $model         model         model$	Benzene	16000	12 U	11 U	11 N	12 U	1700 J	4800 J	7800 J	55000	I0 01	10 N
	Toluene	18000	12 U	11 U	11 U	70	37000	1700000 D	1200000 D	170000 D	10 UI	10 U
	Ethylbenzene	3600 B	12 U	0.11	0 11	12 U	560 J	55000	15000	33000	I0 01	10 U
	Xylene(total)	6200 B	12 U	0 11		12 U	24000	30000	1500000 D	200000	10 DJ	10 U
	Styrene	2900 U	12 U		0 11	12 U	3400 U	12000 U	12000 U	11000 U	I0 01	N 01
Interface         5990 (         12 (1)         11 (1)         11 (1)         12 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (1)         11 (	Halogenated Aliphatics				and the second second second						10000000000000000000000000000000000000	
method         3900 (         12 (         11 (         11 (         12 (         3401 (         1200 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (         1100 (	Chloromethane	2900 U	12 UJ			12 UJ	3400 U	12000 U	12000 U	11000 U	10 DI	10 U
	Bromomethane	2900 U	12 U		11	12 U	3400 U	12000 U	12000 U	11000 U	I0 01	10 N
Interaction         2900 U         12 U         11 U	Vinvl Chloride	2900 U	12 U	11 0		12 U	3400 U	12000 U	12000 U	11000 U	I0 01	10 U
Exclusion         2001         12 1         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0         11 0	Chloroethane	2900 U	, 12 U		n n	12 U	3400 U	12000 U	12000 U	11000 U	10 01	10 U
	Methylene Chloride	2900 U	12 U	<u>n II</u>	H C	12 U	820 J	12000 U	1500 J	11000 U	I0 01	3 JB
	1.1-Dichloroethene	13000	12 U	0 11	0 11	12 U	3400 U	12000 U	12000 U	11000 U	I0 01	10 U
	1 1-Dichloroethane	2900 U	12 11	11 11	11 11	12 11	3400 11	12000 U	12000 U	11000 U	10 01	10 N
	1.2-Dichloroethene (total)	2900 U	12 U	11 11		12 0	280 J	830 J	1200 J	3700 J	10 01	U 01
	Chloroform	2900 U	12 U		11 11	12 U	3400 U	12000 U	12000 U	1 1000 U	10 01	2 J
relation         2900 U         12 U         11 U         12 U         2000 U         1200 U         1000 U         100 U <th>1 2-Dichloroethane</th> <th>11 0060</th> <th>11 11</th> <th></th> <th></th> <th>11 (1</th> <th>6300</th> <th>38000</th> <th>43000</th> <th>29000</th> <th>101</th> <th>10 []</th>	1 2-Dichloroethane	11 0060	11 11			11 (1	6300	38000	43000	29000	101	10 []
	1 1 1-Trichloroethane	11 0060	12 11			1 7	11 0075	11 00061	11 00001	1100011	10 11	10 11
Hittention         2000         12.0         11.0         11.0         12.0         3400         12000         11000         10010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010         1010	Carbon Tetrachlorida	11 0000	11 11			11 11	11 0012		11 00021	1100011		11 01
Moreorgane         290 U         12 U         11 U         11 U         12 U         340 U         1200 U         1200 U         100 U         100 U         100 U           Dielkorpresene         300 U         12 U         11 U         11 U         12 U         340 U         1200 U         1200 U         100 U	Bromodichloromethane	20002	12 11			11 (1	11 0045	11 00001	120001	11 00011	111 01	10 11
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	1 3-Dichlorontonane	2000 17	11 11			12 11	3400 11		1200011	1100011	111 01	tu ti
	cis-1 3-Dichloronropene	11 0062	0 77			12 11	3400 11	120001	12000 []	1100011	[1] 01	10 U
	Trichloroethene	15000	11 C1	11 11	11 11	17 11	460.1	46000	12000	1200 1	III 01	N 01
icklorechane         2900 U         12 U         11 U         12 U         11 U         12 U         11 U         12 U         10 U	Dibromochloromethane	2900 U	12 U	0 11	0 11	12 U	3400 U	12000 U	12000 U	11000 U	I0 UI	10 U
	I, I, 2-Trichloroethane	2900 U	12 U		N 11	12 U	3400 U	12000 U	12000 U	11000 U	10 M	10 U
	trans-1,3-Dichloropropene	2900 U	12 U	11 N	0 H	12 U	3400 U	12000 U	12000 U	11000 U	10 DJ	10 U
	Bromoform	2900 U	12 U	11 U	11 U	12 U	3400 U	12000 U	12000 U	11000 U	10 01	10 11
	Tetrachloroethene	1500 JB	12 U		111	12 U	440 J	10000	12000	[ 069	LU 01	10 01
at	1,1,2,2-Tetrachloroethane	2900 U	12 U	11 U	011	12 U	3400 U	12000 U	12000 U	11000 U	10 UJ	10 U
e13000 B21 U127 U112 U112 U112 U112 U1100 U3101100 U31031none $4601$ 12 U11 U11 U11 U12 U3400 U1200 U13000 U11000 U100 U10 U10 U $1^{12}$ -Pentanoe2900 U12 U11 U11 U11 U12 U3400 U12000 U13000 U1000 U1000 U1000 U10 U $1^{12}$ -Pentanoe2900 U12 U11 U11 U12 U3400 U12000 U13000 U1000 U100 U10 U $1^{12}$ Fentanoe2900 U12 U11 U11 U12 U3400 U12000 U1300 U1000 U100 U10 U $1^{12}$ Fentanoe2900 U12 U11 U11 U12 U3400 U12000 U1300 U1000 U300 U1000 U $1^{12}$ Fentanoe2900 U12 U11 U11 U12 U3400 U12000 U1300 U1000 U300 U1000 U $1^{12}$ Fentanoe2900 U12 U11 U11 U12 U3400 U12000 U12000 U1000 U300 U1000 U $1^{12}$ Fentanoe2900 U12 U11 U11 U12 U340 U12000 U12000 U1000 U1000 U10 U $1^{12}$ Fentanoe2900 U10 T10 U10 U10 T10 U10 U10 U10 U10 U $1^{12}$ Fentanoe2100 D2100 D2100 D2100 U2100 D2000 U<	Kelones	anteria (USA) in agli atta Rokari Stranovna in maneto (USA)	and the second	An an an earlier distantistic de la companya de la Companya de la companya de la company		rashari ya angi binakari Natariya. 1999 - Angi Kangari Katariya.						
none         460 i         12 U         11 U         11 U         12 U         3400 U         12000 U         11000 U         100 U <t< th=""><th>Acetone</th><th>13000 B</th><th>21 UJ</th><th>27 UJ</th><th>12 UJ</th><th>16 UJ</th><th>f 0001</th><th>12000 U</th><th>3200 J</th><th>11000 U</th><th>3 J</th><th>6 JB</th></t<>	Acetone	13000 B	21 UJ	27 UJ	12 UJ	16 UJ	f 0001	12000 U	3200 J	11000 U	3 J	6 JB
y1-2-pentanone $2900$ U $12$ U $11$ U $11$ U $11$ U $12$ U $3400$ U $12000$ U $11000$ U $1001$ U $1001$ U $none$ $2900$ U $12$ U $11$ U $11$ U $11$ U $12$ U $3400$ U $12000$ U $11000$ U $1000$ U $1001$ U $Micelinaeux VOCs$ $2900$ U $12$ U $11$ U $11$ U $11$ U $12$ U $3400$ U $12000$ U $12000$ U $10000$ U $1000$ U $dialfide2900 U12 U11 U11 U11 U12 U3400 U12000 U12000 U1000 U1001Udialfide2900 U12 U11 U11 U11 U12 U3400 U12000 U12000 U1001U1001Udialfide2900 U1200 U110 U110 U110 U1200 U1000 U1001U1001Udialfide2900 U1200 U110 U1200 U12000 U1000 U1001U1001Udialfide2900 U1200 U1200 U1200 U12000 U1000 U1001U1001Udialfide2900 U01 U1200 U12000 U12000 U1000U1001U1001Udialfide2900 U01 U1200 U12000 U12000 U1000U1001Udialfide2900 U01 U1200 U12000 U12000 U1000U1001Udialfide2900 U2000 U$	2-Butanone	460 J	12 U	11 U	11 N	12 U	3400 UJ	12000 U	12000 U	11000 U	10 UJ	10 U
none $2900 \text{ U}$ $12 \text{ U}$ $11 \text{ U}$ $12 \text{ U}$ $1100 \text{ U}$ $1000 \text{ U}$ $100  $	4-Methyl-2-pentanone	2900 U	12 U	11 U	וו נו	12 U	3400 U	12000 U	12000 U	11000 U	I0 01	10 U
Misciliarears VOCs         2900 U         12 U         11 U         11 U         12 U         3400 U         12000 U         11000 U         10 UJ           barzene         21000 B         12 U         11 U         11 U         12 U         3400 U         12000 U         11000 U         10 UJ           barzene         21000 B         12 U         11 U         11 U         11 U         11 U         31         10 UJ           barzene         21000 B         12 U         01         01         76 J         73030 J         2256630 J         207590 J         31         1         1           atget VOCs         107760 J         0 J         0 J         0 J         76 J         73030 J         2756630 J         207590 J         31         3         1           atget VOCs         107760 J         0 J         0 J         76 J         73030 J         2756630 J         207590 J         3 J         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1	2-Hexanone	2900 U	12 U	0 11	חוו	12 U	3400 UJ	12000 U	12000 U	11000 U	IU 01	10 U
disulfide2900 U12 U11 U11 U12 U12 U10 UJ10 UJ10 UJbenzene $2100$ B12 U11 U11 U11 U2 J470 J12000 U12000 U800 J10 UJ10 UJbenzene $21000$ B12 U11 U11 U11 U11 U2 J470 J12000 U12000 U800 J10 UJ10 UJarget VOCs10760 J0 J0 J0 J0 J0 J0 J76 J7303 J2256630 J279570 J207590 J3 J1arget VOCs0 U10 J0 J0 J0 J0 J84%74% B84% B74% B8 J8 J8 J1co CTIC concentration87%85%92% D91% B84% T74% B84% B84% B8 J10% D10111folds87%87% B84% B74% B85% B84% B10% B10% D10%10%10%folds1010101010101010101010%10%10%folds87%87% B84% B74% B85% B84% B10% D101010%10%10%folds10101010101010101010%10%10%10%10%10%10%folds87%87% B84% B74% B84% B10% D1010%	Other/Miscellaneous VOCs		San Manual Contractor	and the second secon	and the second	a service a Service a service a se	a statistica da seconda da second Seconda da seconda da s	and the second secon	and the second secon	A CONTRACTOR OF A CONTRACTOR A	[17] B. D. Colling, R. M. K. Markell, R. M. Son, S. M. San, S San, S. M. San, S. M. S	and the second
benzene $2100$ B $12$ U $11$ U $11$ U $11$ U $11$ U $11$ U $21$ D $2100$ D $5000$ D $5000$ D $5000$ D $10$ U	Carbon disulfide	2900 U	12 U	11 U	N 11	12 U	3400 U	12000 U	12000 U	11000 U	10 OI	10 U
arget VOCs       107760 J       0 J       0 J       0 J       0 J       0 J       76 J       73030 J       2256630 J       2795700 J       2027590 J       3 J       3 J         or of VOC TICs       0       1       0       0       0       6       5       5       25       1       1         or OT IC Concentration       24 J       0       0       0       6       5       5       25       1       1         OC TIC Concentration       87%       85%       91%       84%       74%       85%       84%       10       8       1       10         Solids       10       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0         Acidita       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0	Chlorobenzene	21000 B	12 U	11 U	U 11 U	2 J	470 J	12000	12000 U	5000 J	ID 01	10 N
x of VOC TICs         0         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         <	Total Tarvet VOCs	107760 1	10	10	10	76.1	1 01016	1 053320	2795700 I	1 0027590 1	1 2	I II
OCTIC Concentration       241       241       9190       1467001       2915001       81         ACTIC Concentration       87%       91%       84%       74%       85%       84%       1001       2915001       81         Solids       87%       91%       84%       74%       85%       84%       1001       2915001       81         Solids       10       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0         Factor       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.	Number of VOC TICs			, -				Y	v	36		c
Solids         87%         83%         91%         84%         74%         84%         84%         100%         100%           n Factor         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0 <td< th=""><th>Total VOC TIC Concentration</th><td></td><td></td><td>1 10</td><td></td><td></td><td>,</td><td>194100 1</td><td>46700 1</td><td>291500 J</td><td>[ 8</td><td><b>,</b></td></td<>	Total VOC TIC Concentration			1 10			,	194100 1	46700 1	291500 J	[ 8	<b>,</b>
n Factor 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Deroent Solide	70/0	050/	/010	0107	0402	70VL	020/	0.40/	600/	100%	10/06/2
Medium Low Low Low Medium Medium Medium Medium Medium Low	Dilution Factor	01/0	0.00	0776	01/0	04.70	110	010	0 1 0	10	01	01
and a manager I manager I manager I manager I more I manager I	- evel	Medium		100	Iow		Medium	Medium	Medium	Medium	and I	low
				407				in the second se				

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1. Field blank concentration reported in ug/L. 2. U = Not detected, J = Estimated value; D = Diluted sample; B = Detected in blank; NA = Not analyzed. ĺ

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Field complete ID	NVT-I	C-TVN	SYTN-I	- I-XNTVS	SYTS-1	SYTE-1	SYTW-1	SYTC-1	SYTCX-1	SYTEX-1	SYTEX-IMS
	ſ	D1875.03	10-1001U	D1001-07	CO-1661CI	D1991-03	D1991-04	D1991-05	90-1661C	00-1661CI	D1991-09MS
Sample Location		NY LIST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST
Sample Description	Z L	ENV SAMPLE	ENV SAMPLE	SYTN-1 DUP	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	SYTC-I DUP.	ENV. SAMPLE	MS
Date Sampled	_	11/14/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97
Phonole/ feld Petractables											
benefits a straight and a straight and a straight and a straight and a straight a st	11 0000	II UCP	NA	NA	NA	NA	AN	R	R	530 U	2000
ruum 0-Chloronhenol	2000 0	420 11	NA	NA	NA	NA	٩N	2900 U	520 U	530 U	2500
2-Cillotopiction D-Mathylinhenol (o-creeol)	2000 11	1 021	NA	AN	NA	NA	AN	2900 U	520 U	R	J 06
2-Internation (0-ciccou)	2000	11 007	VN.	NA	NA	NA	NA	2300 J	820	Nf 08	57 J
1 4- Micury Ipricator 1 4-Dimethylohenol	11 0002	420 11	NA	NA	NA	NA	AN	2900 U	520 U	530 U	530 U
2,7-Dichloronhand	2000 11	11 0.7	NA	NA	VN	NA	٧N	2900 U	520 U	530 U	530 U
4. Chloro-3-methylohenol	2000 1	420 11	AN N	NA	NA	NA	AN	2900 U	520 U	530 U	2600
1 4 6. Trichlorochenol	2000	111 007	NA	AN	NA	NA	AN	2900 U	520 U	530 U	530 U
2,4,0-1110100100010101 12.4.5.Trichterochenol	20002	111 0001	NA	NA	NA	NA	AN	7200 U	1300 U	1300 U	1300 U
2, T. Dinitronhand	2000	E1 0001	NA	NA	AN	NA	NA	7200 U	1300 U	1300 U	1300 U
2,7-Dilliuplicitoi		11 007	VN.	NA	NA	NA	AN	2900 U	520 U	530 U	530 U
	0 0007	0.075	VN	AN	NA	NA	AN	7200 UJ	1300 UJ	1300 UJ	4800 E
			VN	NA	NA	NA	NA	7200 U	1300 U	1300 UJ	1300 U
4,0-Dinuro-2-ineinyiphenoi	0 0002		VN		VN	NA	NA	11 0077	1300 UJ	210 JN	1600
		0 0001		A DAVID AND A CONTRACTOR	A NUMBER OF STREET, ST						Algebra a Arad a chuir a chuanaine. Mar an Arada a chuir an Arada an Arada a
Non-bitchen ar onmuse ar yar oran words (a	1 2000	VUV	NA	NA	NA	NA	NA	4500	1100	200 J	160 J
	0000	0001	VIN	VIN	VIN	NA	NA	16000	3800	460 J	480 J
2-Meinyinapinnaiene	14000	111 007			VN	NA	NA	11 0066	520 U	530 U	530 U
		11 007	VN	VN	AN	AN	AN	2900 U	520 U	530 U	530 U
Acenaphinylene	- vac	420 UJ	VN	VN	AN	AN	AN	2900 U	520 U	530 U	1400
rectapilitiene		1 0/1	AN	NA	NA	NA	NA	2400 J	710	55 J	f 02
Dhananthrend	0000	0011	AN	NA	NA	VN	NA	8600	2300	290 J	400 J
Anthracene	280 1	1 091	NA	NA	NA	NA	AN	2900 UJ	520 UJ	54 J	64 J
Fluoranthene	2000 11	440	NA	AN	NA	NA	NA	740 J	520 U	530 UJ	530 U
Pvrene	2000 U	180 J	AN	AN	AN	NA	NA	2500 JN	520 U	×	1600
Benzo(a)anthracene	2000 U	140 JN	NA	VN	NA	NA	VN	2900 U	520 U	530 U	530 U
Chrysene	2000 U	200 J	NA	NA	NA	NA	٧N	40000 DJ	13000 DJ	840	1100
Benzo(b)fluoranthene	2000 U	240 J	NA	NA	NA	NA	NA	380 J	160 J	82 JN	F 001
Benzo(k)fluoranthene	2000 U	Nf 011	NA	NA	NA	٧V	NA	2900 U	520 U	530 U	530 U
Benzo(a)pyrene	2000 U	180 J	NA	NA	NA	NA	NA	æ	520 U	58 J	74 ]
Indeno(1,2,3-cd)pyrene	2000 U	420 U	NA	NA	NA	NA	NA	2900 U	520 U	530 U	530 U
Dibenz(a,h)anthracene	2000 U	420 U	NA	NA	NA	AN	٩N	2900 U	520 U	530 U	530 U
Benzo(g,h,i)perylene	2000 U	420 U	NA	NA	NA	NA	AN	2900 U	520 U	530 U	530 U
Aniline Compounds						<ol> <li>A. M. A. M. M.</li></ol>		a the second of the second second			
4-Chloroaniline	2000 U	420 U	NA	NA	NA	NA	NA	2900 UJ	520 UJ	530 UJ	530 U
2-Nitroaniline	5000 U	1000 UJ	NA	AN	AN	NA	NA	7200 U	1300 U	1300 U	1300 U
3-Nitroaniline	5000 U	I000 UJ	NA	AN	NA	NA	NA	7200 UJ	1300 UJ	1300 UJ	1300 U
4-Nitroaniline	5000 U	N( 0001	AN	AN	NA	VN	NA	7200 U	1300 U	1300 U	1300 U
4-Nitroaniine			NA	AN	<b>VN</b>	VN		2 2 2 2	4		_

APPENDIX D-3B HEXAGON LABORATORIES RI/FFS SUBSURFACE UST ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 1 of 4

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APPENDIX D-3B HEXAGON LABORATORIES RI/FFS SUBSURFACE UST ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 2 of 4

Field sample ID	I-TYN	NYT-2	I-NTYS	I-XNLAS	I-STTS-1	SYTE-1	I-WTY2	SYTC-1	SYTCX-1	SYTEX-1	SYTEX-IMS
Lab Sample ID		D1875-03	10-1661C	L0-1661D	D1991-02	D1991-03	D1991-04	D1991-05	D1991-06	D1991-09	SW60-1661C
Sample Location		NY UST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST
Sample Description	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	SYTN-I DUP.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	SYTC-1 DUP.	ENV. SAMPLE	MS
Date Sampled	11/14/97	11/14/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97
Bentenes/Aromatics						and a second			<ol> <li>Statistical With Control of Statistical Activity of A</li></ol>		
1,3-Dichlorobenzene	2000 U	420 U	AN	NA	NA	NA	AN	2900 U	520 U	530 U	530 U
1,4-Dichlorobenzene	2000 U	420 U	AN	NA	NA	NA	NA	2900 U	520 U	530 U	1400
1,2-Dichlorobenzene	2000 U	420 U	NA	NA	NA	NA	NA	140000 D	Q 00061	1 10 J	530 U
Nitrobenzene	2000 U	420 U	AN	NA	NA	NA	NA	D 0062	520 U	530 U	530 U
1,2,4-Trichlorobenzene	2000 U	420 U	AN	NA	NA	NA	VN	2900 U	520 U	530 U	1600
2,6-Dinitrotoluene	2000 U	420 UJ	AN	NA	NA	NA	NA	2900 U	520 U	530 U	530 U
2,4-Dinitrotoluene	2000 U	420 (1)	NA	NA	NA	NA	AN	2900 U	520 U	530 U	1900
Hexachlorobenzene	2000 U	420 U	NA	NA	NA	NA	AN	D 0062	520 U	530 UI	530 U
Phthalates			A The second								
Dimethylphthalate	2000 U	420 UJ	VN	NA	NA	NA	NA	2900 U	520 U	530 U	530 U
Diethylphthalate	2000 U	420 UJ	NA	NA	NA	NA	NA	2900 U	R	86 J	f 011
Di-n-butyl phthalate	2000 U	94 J	AN	NA	NA	NA	NA	2900 U	520 U	f 089	450 J
Butytbenzyl phthalate	2000 U	420 U	NA	NA	NA	NA	NA	D 0062	NF 19	Nf 091	140 J
bis(2-Ethylhexyl)phthalate	2000 U	150 J	NA	NA	NA	NA	NA	850 J	270 J	1200 J	1800
Di-n-octyl phthalate	2000 U	420 U	AN	NA	NA	VN	AN	2900 UJ	520 111	530 UJ	f 091
Other/Miscellaneous SVOCs											and the second secon
bis(2-choroethyl)Ether	2000 U	420 U	AN	NA	NA	NA	NA	2900 U	520 U	530 U	530 U
2.2'-oxybis(1-chloropropane)	2000 U	420 U	AN	NA	NA	NA	NA	2900 U	520 U	530 U	530 U
N-Nitroso-di-n-propylamine	2000 U	420 U	NA	NA	NA	NA	NA	2900 U	520 U	530 U	1300
Hexachloroethane	2000 U	420 U	٩N	AN	NA	NA	NA	2900 U	520 U	530 U	530 U
Isophorone	2000 U	420 U	NA	ŇÀ	NA	NA	NA	2900 U	520 U	530 U	530 U
Carbazole	2000 U	420 U	NA	NA	NA	NA	NA	2900 U	520 U	530 UJ	530 U
Hexachlorobutadiene	2000 U	420 U	NA	NA	NA	NA	NA	2900 U	520 U	530 U	530 U
bis(2-chloroethoxy)methane	2000 U	420 U	VN	NA	NA	NA	NA	2900 U	520 U	530 U	530 U
Hexachlorocyclopentadiene	2000 U	420 UJ	AN	NA	NA	AN	AN	2900 U	520 U	530 U	530 U
Dibenzofuran	2000 U	NL 011	AN	NA	NA	NA	NA	2900 U	520 U	530 U	530 U
4-Chlorophenyl-phenyl ether	2000 U	420 UJ	NA	NA	NA	NA	NA	2900 U	520 U	530 U	530 U
N-nitrosodiphenylamine	2000 U	420 U	٩N	NA	NA	AN	AN	2900 U	520 U	530 UJ	530 U
4-Bromophenyl-phenyl ether	2000 U	420 U	NA	NA	NA	٩N	NA	2900 U	520 U	530 UJ	530 U
3,3'-Dichlorobenzidine	2000 UJ	420 U	NA	NA	NA	NA	NA	2,900 U	520 U	530 U	530 U
Tatal Taruet SVOCe	1 092 10		a state of the state of the state of the		A radio a mise Notenne Accession 2	S et a recent de la défaire de	والمحادية والأقافة فكالأخراف والمحاد	1 026 316		1 292 V	7 055 1
	- 00/1-7							· 0/7'017	6 177411	- cor't	
	66	2						9	3	87	
Total SVOC TIC Concentration	190,400 J	91,230 J						320,800 J	216,770 J	87,210 J	
Percent Solids	84%	80%						77%	85%	84%	84%
Dilution Factor	5.0	1.0						5.0	1.0	1.0	1.0
llevel	Low	Low						Low	Low	Low	Low
Notes:											

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1. Field blank concentration reported in ug/L. 2. U = Not detected; J = Estimated value; R = Rejected value; D = Diluted sample; E = Exceeds instrument calibration range; N = Presumptive evidence of presence; B = Detected in blank; NA = Not analyzed.

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Field sample ID	SVTFX-IMSD	EVT34-1	EVT35-1	EYT36-1	EYT37-1	NPT-1	NPT-2	NPT-3	NPT-4	SYTFB-1 <sup>(1)</sup>	EYTFB-1 <sup>117</sup>
I ah Samole ID	-	D1349-01	D1349-02	D1349-03	D1349-04	10-1161G	D1911-03	D1911-02	D1911-04	D1991-08	D1349-05
Sample Location		EY UST	EY UST	EY UST	EY UST	NP UST	NP UST	NP UST			
Sample Description		ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	EN	FIELD BLANK	FIELD BLANK
Date Sampled		8/29/97	8/29/97	8/29/97	8/29/97	11/19/97	11/19/97	11/19/97	76/61/11	12/4/97	8/29/97
Phenols/Acid Extractables											and the second secon
<u>Phenol</u>	2000	400 11	360 U	360 U	390 U	L 001	2600 UJ	310 J	520 UJ	10 N	NA
2-Chlorohenol	2500	400 U	360 1)	360 U	390 U	640 UJ	2600 UJ	2600 U	520 UJ	10 N	NA
Methylohenol (o-cresol)	110 J	400 U	360 U	360 U	390 U	510 J	2800 J	2600 U	520 UJ	10 N	NA
4- Methylohenot	621	400 11	360 U	360 U	390 U	3600 J	2600 UJ	630 J	6400 DJ	10 U	NA
2 4-Dimethylahenol	530 []	400 []	360 11	360 U	390 U	640 UJ	2600 UJ	2600 U	520 UJ	10 01	VN
2.4-Dichlorophenol	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 U	520 UJ	10 N	AN
4-Chloro-3-methylphenol	2500	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 U	520 UJ	10 U	AN
2.4.6-Trichlorophenol	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 U	520 UJ	10 N	NA
4.5-Trichlorophenot	1300 U	11 066	006	U 006	070 U	1600 UJ	6400 UJ	6600 U	1300 UJ	25 U	VN
2 4-Dinitronhenol	1300 []	111 066	fi) 006	U 006	10 070 UJ	1600 UJ	6400 UJ	0099	1300 UI	25 U	VN
2-Nitrophenol	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 U	520 UJ	10 N	NA
4-Nitrophenol	4700 E	U 066	0 006	U 006	070 U	1600 UJ	6400 UJ	0099 9	1300 UJ	25 U	NA
4.6-Dinitro-2-inethylohenol	1300 U	U 066	U 006	U 006	0 020 U	1600 UJ	6400 UJ	6600 U	1300 UJ	25 U	NA
Pentachlorophenol	1500	U 066	U 006	U 006	070 U	1600 UJ	6400 UJ	0099 N	1300 UJ	25 U	NA
Palycyclic Aromatic Hydrocarbons (PAHs)		And the second se									
Naphthalene	160 J	400 U	360 U	360 U	390 U	180 J	f 009	3800 J	7000 DJ	10 U	AN
2-Methylnaphthalene	440 J	400 U	360 U	360 U	390 U	280 J	2400 J	I 7000 J	26000 DJ	10 U	AN
2-Chloronaphthalene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
Acenaphthylene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	AN
Acenaphthene	1300	400 U	360 U	360 U	390 U	640 UJ	300 J	1100 J	520 UJ	10 U	AN
Fluorene	67 J	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	1100 J	520 UJ	10 U	NA
Phenanthrene	380 J	400 U	360 U	360 U	390 U	73 J	1 061	2400 J	520 UJ	10 N	AN
Anthracene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	390 J	640 DJ	10 N	AN
Fluoranthene	530 U	400 U	360 U	360 U	390 U	640 UJ	310 J	2600 UJ	520 UJ	10 0	YN S
Pyrene	1500	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	830 J	2400 JN	10 0	V Z
Benzo(a)anthracene	780	400 U	140 J	360 U	390 U	640 UJ	2600 UJ	2600 UJ	NL 089	0	AN .
Chrysene	006	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	l 0061	Nf 082	N 01	vz ;
Benzo(b)fluoranthene	96 J	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	0 0	V Z
Benzo(k)fluoranthene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	0 01	AN
Benzo(a)pyrene	59 J	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	220 JN	10 N	<b>V</b> N
indeno(1,2,3-cd)pyrene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 N	NA
Dibenz(a,h)anthracene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
Benzo(g,h,i)perytene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	AN
Aniline Compounds											
4-Chloroaniline	530 U	400 U	360 U	360 U	390 U	640 UJ	2700 J	2600 UJ	520 UJ		NA
2-Nitroaniline	1300 U	U 066	U 006	U 006	970 U	(U 0091	6400 UJ	6600 UJ		25 U	٩v
3-Nitroaniline	1300 U	U 066	000 N	U 006	01 070 U	1600 UJ	6400 UJ	6600 UJ			NA
4-Nitroaniline	1300 U	U 066	006	006	970 11	111 0091	6400 UJ	6600 UJ	1300 UJ		VV -

APPENDIX\_D-3B HEXAGON LABORATORIES RI/FFS SUBSURFACE UST ANALVTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 3 of 4

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Field sample ID	SYTEX-1MSD	EYT34-1	EYT35-1	EYT36-1	EVT37-1	I-T9N	NPT-2	NPT-3	NPT-4	SYTFB-1 <sup>(1)</sup>	EYTFB-1 <sup>(1)</sup>
Lab Sample ID	D1991-09MSD	D1349-01	D1349-02	D1349-03	D1349-04	10-1161O	D1911-03	D1911-02	D1911-04	D1991-08	D1349-05
Sample Location	SY UST	EY UST	EY UST	EY UST	EY UST	NP UST	NP UST	NP UST	NP UST		
Sample Description		ENV. SAMPLE	FIELD BLANK	FIELD BLANK							
Date Sampled	12/4/97	8/29/97	8/29/97	8/29/97	8/29/97	11/19/97	11/19/97	11/19/97	11/19/97	12/4/97	8/29/97
Benzenes/Arometics										(1) A start Western Strategy and A start an A start and A start	
1,3-Dichlorobenzene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 N	NA
1,4-Dichlorobenzene	1300	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	280 J	520 UJ	10 U	NA
1,2-Dichlorobenzene	530 U	400 U	360 U	360 U	390 U	[ 69 ]	27000 DJ	2200 J	NI 089	10 N	NA
Nitrobenzene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
1,2,4-Trichlorobenzene	1600	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 N	NA
2,6-Dinitrotoluene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
2,4-Dinitrotoluene	1700	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
Hexachlorobenzene	530 U	400 U	360 U	360 U	J) 06E	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
Phthalates											
Dimethylphthalate	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	U 01	NA
Diethylphthalate	f 06	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 N	NA
Di-n-butyl phthalate	670	400 U	360 U	360 U	390 U	510 J	480 J	260 J	520 UJ	10 U	NA
Butylbenzyl phthalate	200 J	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 01	NA
bis(2-Ethylhexyl)phthalate	1400	400 U	53 J	360 U	390 U	815	6 069 1	2600 UJ	520 UJ	I JB	NA
Di-n-octyl phthalate	230 J	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
<b>Other/Miscellaneous SVOCs</b>	a da sera a constructiva da sera a constructiva da sera da ser Esta da sera da										
bis(2-choroethyl)Ether	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 N	NA
2.2'-oxybis(I-chloropropane)	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
N-Nitroso-di-n-propylamine	1300	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
Hexachloroethane	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
lsophorone	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	10 0092	520 UJ	10 N	NA
Carbazole	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	1300 J	520 UJ	N 01	NA
Hexachlorobutadiene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
bis(2-chloroethoxy)methane	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
Hexachlorocyclopentadiene	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
Dibenzofuran	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	750 J	520 UJ	10 U	NA
4-Chlorophenyl-phenyl ether	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
N-nitrosodiphenylamine	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 N	NA
4-Bromophenyl-phenyl ether	530 U	400 U	360 U	360 U	390 U	640 UJ	2600 UJ	2600 UJ	520 UJ	10 U	NA
3.3'-Dichlorobenzidine	530 U	400 U	360 U	360 U	390 U	640 UJ	2,600 UJ	2,600 UJ	520 UJ	10 U	NA
Total Taurat CUACa		L C	1 01	10		1 503 7	1 020 02	1 USC VC	I UVO FF	Mine (migo 18, Supper Volte - Main 44 in	
							r ninter	f 017'tr	6 000,44		
Number of SVOC IICS		-	23		12	31	29	29	38	0	
Total SVOC TIC Concentration		140 J	9,289 J	1,980 J	1,851 J	28,670 J	689,300 3	205,200 J	383,900 J		
Percent Solids	84%	84%	93%	92%	86%	69%	87%	84%	85%	0%0	
Dilution Factor	1.0	1,0	1.0	1.0	1.0	1.0	5.0	5.0	1.0	1.0	
Level	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	
Notes:											

Notes: 1. Field blank concentration reported in ug/L. 2. U = Not detected; J = Estimated value; R = Rejected value; D = Diluted sample; E = Exceeds instrument calibration range; N = Presumptive evidence of presence; B = Detected in blank; NA = Not analyzed.

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Ciald counts 10	NVT -	C-TVN		CVTNX-1	SVTS-1	SYTE-1	SYTW-1	SYTC-1	SYTCX-1	SYTEX-1	SYTEX-IMS
I ah Sample ID	D1875-02	D1875-03	10-16610	D1991-07	D1991-02	£0-1661C	D1991-04	D1991-05	D1991-06	0-1661Q	D1991-09MS
Sample Location	TSILVN	NV LIST	SV UST	SY UST							
Sample Description	EN	ENV. SAMPLE	ENV. SAMPLE	SYTN-I DUP.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	SYTC-1 DUP.	ENV. SAMPLE	MS
Date Sampled		11/14/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97
Pesticides											
alpha-BHC	2.6 JN	1.8 U	NA	NA	NA	NA	AN	12 U	26 U	54 U	54 U
heta-BHC	1.7.11	1.8.0	NA	NA	AN	AN	NA	12 U	26 U	54 U	54 U
delta-BHC	1.7 U	1.8 U	NA	NA	NA	NA	NA	12 U	26 U	54 U	54 U
eamma-BHC (Lindane)	2.9	1.8.1	VN	VN	NA	VN	٧N	12 U	26 U	54 U	54 U
Hentachlor	2.5	1.8 U	VN	NA	۷N	VN	VN	12 U	26 U	54 U	54 U
Aldrin	1.7 U	1.8 U	NA	NA	NA	NA	NA	NI 081	200 JN	330 JN	220 P
Hentachlor Enoxide	171	18 U	NA	NA	٧N	AN	NA	12 U	26 U	54 U	54 U
Endosulfan 1	2.7	1.8 U	NA	NA	NA	VN	NA	R	R	54 U	54 U
Dieldrin	5.7	3.5 U	AN	NA	NA	NA	NA	23 U	51 U	100 U	100 U
4.4'-DDE	3.4 []	3.5 U	AN	NA	NA	NA	NA	f 61	64	100 U	100 N
Endrin	4.8	3.5 U	NA	NA	NA	NA	٧N	R	51 U	100 U	100 U
Endosulfan II	3411	151	VN	NA	NA	NA	NA	23 U	51 U	100 U	100 U
4.4'-DDD	5.5 JN	3.5 U	NA	NA	AN	NA	VN	23 U	51 U	100 N	1001
Endosulfan Sulfate	3.4 U	3.5 U	NA	NA	NA	NA	NA	23 U	51 U	100 U	1001
4.4'-DDT	5.5 JN	3.5 U	NA	NA	AN	NA	NA	Я	ж	100 U	0 00 T
Methoxychlor	26	18 U	NA NA	NA	NA	NA	NA	120 U	260 U	540 U	540 U
Endrin ketone	3.4 U	3.5 U	AN	NA	NA	NA	٧N	23 U	51 U	100 U	100 U
Endrin aldehyde	3.4 U	3.5 U	NA	NA	NA	NA	NA	23 U	51 U	100 U	100 U
alpha-Chlordane	U 1.7 U	Nf 61	NA	NA	NA	VN	NA	12 U	26 U	54 U	54 U
gamma-Chlordane	1.7 U	NI 9.7	٧N	NA	NA	NA	NA	ж	26 U	54 U	54 U
Toxaphene	170 U	180 U	NA	NA	NA	NA	NA	1200 U	2600 U	5400 U	5400 U
PCBs											
Aroclor-1016	34 U	35 U	NA	NA	NA	NA	NA	230 U	510 U	1000 U	1000
Aroctor-1221	68 U	0 12	NA	AN	٩N	VN	NA	460 U	1 000 U	2100 U	2100 U
Aroclor-1232	34 U	35 U	NA	AN	NA	AN	NA	230 U	510 U	1000 U	1000
Aroclor-1242	34 U	f 001	NA	NA	NA	NA	NA	230 U	510 U	1000 U	1000 U
Aroclor-1248	34 U	35 U	NA	AN	AN	NA	NA	4500	3600	6100	3800
Aroclor-1254	34 U	35 U	NA	AN	NA	NA	NA	230 U	510 U	10001	D 000
Aroclor-1260	34 U	35 U	٧N	NA	NA	NA	NA	230 U	510 U	1000 U	1000 U
									0.207	040/	240/
Percent Solids	98%	94%	100%	100%	100%	100%	100%	0///	0/.00	04/0	0.001
Dilution Factor	-	0.1	1.0	1.0	1.0	1.0	1.0	20.0	50.0	100.0	100.0

Noles:

Field blank concentration reported in ug/L.
 U = Not detected; J = Estimated value; R = Rejected value; D = Diluted sample; N = Presumptive evidence of presence; P = Dual column precision outside limits; NA = Not analyzed.

APPENDIX D-3C HENAGON LABORATORIES RI/FFS SUBSURFACE UST ANALYTICAL DATA - PESTICIDES/PCBs (ug/kg) Page 1 of 2

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APPENDIX D-3C HEXAGON LABORATORIES RI/FFS SUBSURFACE UST ANALYTICAL DATA - PESTICIDES/PCBs (ug/kg) Page 2 of 2

Field sample ID	SYTEX-IMSD	EYT34-1	EYT35-1	EYT36-1	EYT37-1	I-TQN	NPT-2	NPT-3	NPT-4	SYTFB-1 <sup>(1)</sup>	EYTFB-1 <sup>(1)</sup>
Lab Sample ID	D1991-09MSD	D1349-01	D1349-02	DI349-03	D1349-04	D1911-01	D1911-03	D1911-02	D1911-04	D1991-08	D1349-05
Sample Location	SY UST	EY UST	EY UST	EY UST	EY UST	NP UST	NP UST	NP UST	NP UST		
Sample Description	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	FIELD BLANK	FIELD BLANK
Date Sampled	12/4/97	8/29/97	<i>21/29/97</i>	8/29/97	8/29/97	26/61/11	11/19/97	11/19/97	11/19/97	12/4/97	8/29/97
Pediates :	생각 전체 알고 고급했다고										
aipha-BHC	54 U	2.0 U	1.8 U	1.8 U	2.0 U	3.3 U	2.6 U	2.7 U	2.7 U	0.050 U	NA
beta-BHC	54 U	2.0 U	0.8.1	1.8.0	2.0 U	3.3 U	2.6 U	2.7 U	2.7 U	0.050 U	NA
delta-BHC	54 U	2.0 U	U 8.1	1.8 U	2.0 U	3.3 U	300 DJN	2.7 U	2.7 U	0.050 U	NA
gamma-BHC (Lindane)	54 U	2.0 U	U 8.1	U 8.1	2.0 U	3.3 U	2.6 U	2.7 U	2.7 U	0.050 U	NA
Heptachlor	54 U	2.0 U	U 8.1	1.8 U	2.0 U	3.3 U	2.6 U	2.7 U	2.7 U	0.050 U	NA
Aldrin	380 P	2.0 U	0.8.1	1.8.0	2.0 U	3.3 U	350 DIN	350 JN	2.7 U	0.050 U	NA
Heptachlor Epoxide	54 U	2.0 U	U 8.1	1.8 U	2.0 U	3.3 U	2.6 U	2.7 U	2.7 U	0.050 U	AN
Endosulfan J	54 U	2.0 U	U 8.1	1.8 U	2.0 U	3.3 U	2.6 U	2.7 U	2.7 U	0.050 U	NA
Dieldrin	100 U	3.9 U	3.5 U	3.6 U	3.8 U	6.4 U	5.1 U	5.3 U	5.2 U	0.10 U	NA
4,4'-DDE	120	3.9 U	3.5 U	3.6 U	3.8 U	6.4 U	130 DJN	Nf 011	5.2 U	0.10 U	NA
Endrin	1 00 I	3.9 U	3.5 U	3.6 U	3.8 U	· 6.4 U	NI 67	NF 081	5.2 U	0.10 U	AN
Endosulfan II	100 U	3.9 U	3.5 U	3.6 U	3.8 U	6.4 U	5.1 U	5.3 U	5.2 U	0.10 U	NA
4,4'-DDD	1 00 I	3.9 U	3.5 U	3.6 U	3.8 U	6.4 U	NI 08	5.3 U	5.2 U	0.10 U	NA
Endosulfan Sulfate	100 U	3.9 U	3.5 U	3.6 U	3.8 U	6.4 U	24	5.3 U	5.2 U	0.10 U	NA
4;4'-DDT	140 P	3.9 U	3.5 U	3.6 U	3.8 U	6.4 U	55 JN	NI 56	5.2 U	0.10 U	NA
Methoxychlor	540 U	20 U	U 81	18 U	20 U	33 U	26 U	27 U	200 J	0.50 U	NA
Endrin ketone	100 U	3.9 U	3.5 U	3.6 U	3.8 U	6.4 U	5.1 U	5.3 U	5.2 U	0.10 U	NA
Endrin aldehyde	100 U	3.9 U	3.5 U	3.6 U	3.8 U	6.4 U	5.1 U	5.3 U	5.2 U	0.10 U	٧N
alpha-Chlordane	54 U	2.0 U	0.8.1	1.8.1	2.0 U	3.3 U	33	Nf 11	2.7 U	0.050 U	NA
gamma-Chlordane	54 U	2.0 U	0.8.1	1.8 U	2.0 U	3.3 U	120 DJN	21	2.7 U	0.050 U	NA
Toxaphene	5400 U	200 U	180 U	180 U	200 U	330 U	260 U	270 U	270 U	5.0 U	NA
PCBS	<ul> <li>March 19, and the state of the</li></ul>	and the second se						Second Print Part April 2010 (2010) (2010) Control of Control (2010) (2010)			
Aroctor-1016	1000 U	39 U	0 SE	36 U	38 U	64 U	51 U	53 U	52 UJ	U 0.1	٧N
Aroctor-1221	2100 U	80 U	72 U	73 U	78 U	130 U	100 U	110 U	110 UJ	2.0 U	AN
Aroclor-1232	1000 U	39 U	35 U	36 U	38 U	64 U	51 U	53 U	52 UJ	1.0 U	NA
Aroclor-1242	1000 U	39 U	35 U	36 U	38 U	64 U	51 U	53 U	52 UJ	1.0 U	NA
Aroclor-1248	6800	39 U	0 SE	36 U	38 U	64 U	7800 DJN	7200 JN	52 UJ	U 0.1	NA
Aroctor-1254	1 000 U	39 U	35 U	36 U	38 U	64 U	51 U	53 U	52 UJ	1.0 U	NA
Aroclor-1260	1000 N	39 U	U 25	36 U	38 U	64 U	0 IS	53 U	52 UJ	1.0 U	NA
	er inder fürst einer "Anttere	want word for the tract theory	and a grant of a doubt of a		n de la companya de l	<ul> <li>A state of the sta</li></ul>	a substant a sub-us de la	naaka kan ang asa sa tang sa sa sa sa	the second s	o and the state states of the second states	And Street and Street and Street and Street
Percent Solids	84%	84%	93%	92%	86%	69%	87%	84%	85%	%0	100%
Dilution Factor	100.0	1.0	1.0	1.0	0.	1.0	1.0	1.0	1.0	1.0	1.0
Mataai											

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Notes: 1. Field blank concentration reported in ug/L. 2. U = Not detected; J = Estimated value; R = Rejected value; D = Diluted sample; N = Presumptive evidence of presence; P = Dual column precision outside limits; NA = Not analyzed.

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APPENDIX D-3D HEXAGON LABORATORIES RI/FFS SUBSURFACE UST ANALYTICAL DATA - INORGANICS (mg/kg) Page 1 of 2

Field sample ID	I-TYN	NYT-2	I-NLAS	I-XNTVS	SYTS-1	SYTE-1	1-WTY2	SYTC-1	SYTCX-I	SYTEX-1
Lab Sample ID	D1875-02	D1875-03	D1991-01	D1991-07	D1991-02	D1991-03	D1991-04	D1991-05	D1991-06	D1991-09
Sample Location	NY UST	NY UST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST	SY UST
Sample Description	E	ENV. SAMPLE	ENV. SAMPLE	SYTN-I DUP.	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	SYTC-1 DUP.	ENV. SAMPLE
Date Sampled	11/14/97	11/14/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97	12/4/97
Aluminum	10500	18800	NA	NA	<b>NA</b>	NA	NA	6440 J	8340 J	7050 J
Antimony	0.48 U	0.64 U	NA	NA	NA	NA	NA	0.67 UJ	0.65 UJ	0.59 UI
Arsenic	2.8	5.2 J	ΨN	NA	NA	NA	NA	2.3	4.2	4.0 J
Barium	62.5	460	AN	AN	NA	NA	NA	82.3 J	128 J	103 J
Beryllium	0.54	0.79	NA	NA	NA	NA	NA	0.31 J	0.33 J	0.42 J
Cadmium	0.29	2.6	AN	AN	NA	NA	NA	09.0	0.87	16:0
Calcium	2260	4070	NA	NA	NA	NA	NA	20900 J	36100 J	17700 J
Chromium	62.6	88.9	AN	NA	NA	NA	NA	35.3	52.0	39.2
Cobalt	14.7	22.8	VN	NA	NA	NA	NA	7.7 J	9.4 J	7.4 J
Copper	28.5	127	AN	NA	NA	NA	NA	55.5 J	70.3 J	65.2 J
lron	24400	32800	NA	NA	NA	NA	NA	14200	19700	16700
Lead	28.0	410	AN	NA	NA	NA	NA	44.8	93.9	74.3
Magnesium	10100	10900	NA	NA	NA	NA	NA	5760 J	7340 J	3840 J
Manganese	262	486	ΥN	NA	NA	NA	NA	158 J	248 J	I 197 J
Mercury	0.04 U	4.2	NA	NA	NA	NA	NA	4.1 J	2.4 J	2.6 J
Nickel	135	94.1	NA	NA	NA	NA	NA	I 101	104 J	55.6 J
Potassium	1700	8120 J	NA	NA	NA	NA	NA	3300 J	4140 J	2950 J
Selenium	0.81		NA	NA	NA	AN	NA	IN 171	1.1 UJ	U 80.0
Silver	0.32 UJ	0.43 UJ	NA	ΥN	NA	NA	NA	0.44 UJ	0.43 UI	0.39 UI
Sodiun	123	452	NA	NA	NA	NA	NA	295	284	220
Thalfium	0.73	0.89	NA	NA	NA	νv	NA	0.44 U	0.60	0.41
Vanadium	37.3	67.6	NA	AN	AN	NA	VN	21.2 J	29.1 J	22.5 J
Zinc	21.4	912	NA	AN	NA	VA	NA	f 691	370 J	234 J
Cyanide	U I.I U	0.96.0	VN	٩N	۸A	NA	NA	1.0	1.4	1.4
Characterization and the first state of the	THE R. LEWIS CO. LANSING MICH.	<ul> <li>Comparison of the comparison of the</li></ul>	office of the policy of the			<ul> <li>Zerovski stratilský sklavnich</li> </ul>	patient/market, as the state of	Contractive Statistics and the second	<ul> <li>Marchine, "Providentation" and dependences</li> </ul>	print approximate information when the
Percent Solids	84%	80%						77%	85%	84%
Level	Medium	Medium						Medium	Medium	Medium
Notor:										

Notes: 1. Field blank concentrations reported in ug/L. 2. U = Not detected; J = Estimated value; NA = Not analyzed.

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APPENDIX D-3D HEXAGON LABORATORIES RI/FFS SUBSURFACE UST ANALYTICAL DATA - INORGANICS (mg/kg) Page 2 of 2

Field sample ID	EYT34-I	EVT35-1	EYT36-1	EYT37-1	I-TqN	NPT-2	NPT-3	NPT-4	SVTFB-1 <sup>(1)</sup>	EYTFB-1 <sup>(1)</sup>
Lab Sample ID	D1349-01	D1349-02	D1349-03	D1349-04	10-1161Q	D1911-03	D1911-02	D1911-04	D1991-08	D1349-05
Sample Location	EY UST	EY UST	EY UST	EY UST	NP UST	NP UST	NP UST	NP UST		
Sample Description ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	FIELD BLANK	FIELD BLANK
Date Sampled	8/29/97	8/29/97	8/29/97	8/29/97	11/19/97	11/19/97	11/19/97	11/19/97	12/4/97	8/29/97
Aluminum	f 102	f 164	620 J	829 J	16800	14800	16700	18000	42.3	NA
Antimony	0.58 U	0.58 U	0.59 U	0.52 U	0.66 U	0.53 U	0.64 U	0.52 U	3.0 U	ΝA
Arsenic	1.7	0.70	0.39 U	0.56	4.5	3.4	4.4	3.1	2.0 U	AN
Barium	5.1 J	5.5 J	1.9.5	5.0 J	208	152	192	147	8.0	NA
Beryllium	0.19 U	0.19 U	0.20 U	0.17 U	0.49	0.50	0.55	0.66	1.0 U	NA
Cadmium	0.12 U	0.12 U	0.12 U	0.10 U	0.13 U	0.11.U	0.13 U	0.10 U	0.60 U	NA
Calcium	135 J	2840 J	786 J	. [ 601	3980	3090	4540	684	37.3	NA
Chromium	3.8 J	2.8.1	2.0 J	2.9 J	56.6	49.0	63.0	48.3	0.50 U	NA
Cobalt	1.1	1.1	10.7 J	1.2	17.1	13.0	13.7	10.7	1.1	NA
Copper	2.5	3.1	4.3	2.3	36.1 J	95.3 J	44.6 J	31.8 J	12.5	NA
Iron	4770 J	2450 J	3190 J	3350 J	27300	25000	26100	23000	44.4	NA
Lead	1.5	3.3	2.8	1.4	44.4 J	8.5 J	49.4 J	16.1 J	2.0 U	NA
Magnesium	253 J	513 J	266 J	296 J	9050	6180	9270	7240	9.0 U	NA
Manganese	39.9 J	50.3 J	48.4 J	56.9 J	306	207	276	238	3.1	AN
Mercury	0.27	0.56	0.04 U	0.07	0.78	0.87	0.69	0.03 U	0.07 U	NA
Nickel	2.6	2.6	2.6	2.6	42.6	42.3	38.5	28.1	3.0 U	NA
Potassium	252 U	454	280	226 U	6170 J	7290 J	8130 J	1760 J	1300 U	NA
Selenium	U 70.0	0.96 U	0.98 U	0.87 U	1.1 U	0.89 U	1.1 U	0.87 U	5.0 UJ	NA
Silver	0.43 UJ	0.33 UJ	0.37 UJ	0.41 UJ	0.44 UJ	0.36 UJ	0.43 UJ	0.35 UI	2.0 UJ	NA
Sodium	130	192	125	112	894	1360	842	209	300 U	AN
Thallium	U 95.0	0.38 U	U 9E.0	0.35 U	0.1	1.0	0.93	0.96	2.0 U	NA
Vanadium	4.7 J	3.1 J	2.6 J	3.5 J	50.7	42.5	54.4	56.1	1.0 U	NA
Zinc	1 6.5	43.8 J	72.4 J	8.2 J	118	74.3	102	63.5	18.5	AN
Cyanide	0.24 U	0.21 U	0.22 U	0.23 U	1.2 U	U 1.1 U	1.0 U	1.0 U	2.0 U	٩N
والمتعادية والمناقبة والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع	and the second second second	sets and table spectrum.	and a straight the state of the	en de la frechezia de la composición de	and the second data and	the first of a section of the sector	WAY SHOP AND A LODGE A	A CONTRACT OF A DAMAGE AND A CONTRACT OF A DAMAGE AND A DAMAGE		
Percent Solids	84%	93%	92%	86%	69%	87%	84%	85%	%0	
Level	Low	Low	Low	Low	Low	Low	Low	Low	Low	

Notes: 1. Field blank concentrations reported in ug/L. 2. U = Not detected; J = Estimated value; NA = Not analyzed.

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### APPENDIX D-3E IIEXAGON LABORATORIES RI/FFS SUBSURFACE UST ANALYTICAL DATA - TOTAL ORGANIC CARBON (mg/kg)

Field sample ID		SYTEX-1	EYT36-1	I-T9N
Lab Sample ID		D1991-09	D1349-03	10-1161C
Sample Location	NY UST	SY UST	EY UST	NP UST
Sample Description	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE
Date Sampled	11/14/97	12/4/97	8/29/97	11/19/97
TOC	8760	23100	620	2180

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APPENDIX D-4A HEXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - VOLATILE ORGANICS (ug/L) Page 1 of 2

Field sample ID	IXH	HXMWI	WMXH I	CWA	MMXH	LW1	SWIMXH	W53	VXH	HXMW4
Lab Sample ID	E0001-01	E0299-01	E0001-02	E0299-02	E0001-03	E0299-03	E0001-06	E0299-04	E0001-04	E0001-04MS
Sample Location	EAST YARD (S)	EA	EA	EA	So	SOUTH YARD	SOUTH YARD	SOUTH YARD	NEW PLANT	NEW PLANT
Sample Description	-	+	F			ENV. SAMPLE	HXMW3 DUP.	HXMW3 DUP.	ENV. SAMPLE	MS
Date Sampled	1/2/98	3/5/98	86/7/1	3/5/98	1/2/98	3/5/98	1/2/98	3/5/98	1/2/98	1/2/98
Vioning and a second		An		and the second secon	and the second					and set of the set of
Benzene	94	260 J	280	230 DI	3600	1100 DJ	3900	2000 DJ	4000 J	320000
Toluene	2 J	100 UJ	8 J	11	8800	120 DJ	0096	f 061	280000	570000
Ethylbenzene	3 ]	11 ]	90	f 001	150 J	140 J	150 J	140 J	5200 J	5300 J
Xylene(total)	3 J	I00 UJ	360	130 J	1000	320 DJ	1000	600 DJ	26000 J	28000 J
Styrene	25 U	100 UJ	50 U	IN 01	1000 U	I0 01	1000 U	10 UJ	50000 U	50000 U
Halogenated Aliphatics			ALL AND A SEC.						and the second se	
Chloromethane	25 UJ	IU 001	50 UJ	IN 01	I000 UI	10 DI	fN 0001	IU 01	50000 UJ	50000 U
Bromomethane	25 U	100 UJ	50 U	IN 01	U 0001	I0 01	1000 U	10 NJ	50000 U	50000 U
Vinyl Chloride	25 U	IU 001	50 U	IN 01	780 J	160 DJ	580 J	250 DJ	50000 U	50000 U
Chloroethane	, 63	250 J	180	130 DJ	1000 U	16	U 0001	14 J	U 00002	50000 U
Methylene Chloride	25 UJ	100 UJ	50 UJ	3.1	120 J	6 ]	120 J	6 J	15000 J	14000 J
1, 1-Dichloroethene	25 U	100 UJ	50 U	I0 01	1000 U	31 J	1000 U	25 J	50000 U	290000
1, I-Dichloroethane	25 U	100 UJ	51	24 J	330 J	150 DJ	370 J	290 DJ	36000 J	37000 J
1,2-Dichloroethene (total)	25 UI	100 UI	50 UJ	ID 01	4300 J	1200 DJ	2500 J	2000 DJ	8800 J	9300 J
Chloroform	25 U	100 UJ	50 U	I0 01	1000 U	IU 01	1000 U	IU 01	20000 U	50000 U
1,2-Dichloroethane	25 U	fU 001	50 U	IU 01	1800	590 DJ	2000	IQ 0011	440000	460000
1,1,1-Trichloroethane	25 U	100 UJ	50 U	2 J	1000 U	2 ]	1000 U	2 J	20000 U	50000 U
Carbon Tetrachloride	25 UJ	100 DI	50 UJ	IU 01	1000 UJ	I0 U1	IN 0001	IU 01	50000 UJ	50000 U
Bromodichloromethane	25 U	IN 001	50 U	IU 01	1000 U	ID 01	U 0001	IU 01	0000S	50000 U
1,2-Dichloropropane	25 U	100 DI	50 U	IU 01	1 000 U	10 DJ	1000 U	4 J	50000 U	50000 U
cis-1,3-Dichloropropene	25 U	100 UJ	50 U	fn 01	U 0001	10 DI	U 0001	IU 01	50000 U	50000 U
Trichloroethene	25 U	100 UJ	50 U	1 ]	280 J	260 DJ	160 J	400 DJ	19000 J	330000
Dibromochloromethane	25 U	100 UJ	50 U.	[U 0]	1000 U	IU 01	1000 U	10 UJ	50000 U	50000 U
11,1,2-Trichloroethane	25 U	IU 001	50 U	10 01	1000 U	ID 01	1000 U	10 UJ	50000 U	50000 U
trans-1,3-Dichloropropene	25 U	100 UJ	50 U	IU 01	1000 U	10 UJ	1000 U	I0 UJ	50000 U	50000 U
Bromoform	25 U	100 UJ	50 U	IN 01	1000 U	ID 01	1000 U	10 UJ	50000 U	5000 U
Tetrachloroethene	25 U	100 UJ	50 U	LU 01	280 J	730 DJ	150 J	1100 DJ	1 0000 J	I 000 J
1,1,2,2-Tetrachloroethane	25 U	100 UJ	50 U	10 01	1000 U	ID 01	1000 U	10 UJ	50000 U	50000 U
CORE AND AND AND A REAL PROPERTY.	A STATE AND A STATE		In the Nation of Sec.	contraction in Sec.	States and a second second	and the second second second	ANT OF A STATE OF A ST	ALLER BANK ALLER	statements of a substate	and the second second
Acetone	30	100 UJ	15 J	4 J	14000	270 DJ	14000	390 DI	24000 J	25000 J
2-Butanone	25 U	100 UJ	50 U	I0 01	1000 U	10 DI	1000 U	10 UJ	50000 U	50000 U
4-Methyl-2-pentanone	25 U	100 UJ	50 U	ID 01	1000 U	17.1	1000 U	17 J	50000 U	50000 U
2-Hexanone	25 U	100 UJ	50 U	3 J	1000 U	37 J	1000 U	39 J	50000 U	50000 U
Other Aliseilaneous VOC	State and so that will be the	Contraction (1995)		States and the second	10.00	KOZ ADRA - V	INDERING AND	and the second second	and the second	standarts and second a
Carbon disulfide	25 UJ	I0 001	50 UJ	10 UI	1000 UJ	I0 M	1000 UJ	10 UJ	50000 UJ	50000 U
Chlorobenzene	270	830 J	450	460 DJ	1200	360 DJ	1200	690 DJ	3900 J	30000
Totat Tarvet VOCs	1 397	1 1321	1388 1	1088 I		55001	35730 1	1 6560	1 006128	1 009001
Number of VOC TICs		c		16	-	90	c	6	-	
Total VOC TIC Concentration	486 1		1 907	1 1 1 2 2	1 002	1 5 15		1 635	48000 1	
Dilution Factor	2 5 6	0.01		01	0.001		100.0		0 0005	\$000
		0.01		n'i I	100.0	n:	100.0	0, I	n.nnnc	0.000c
ILEVEI	LOW	LOW	MOT	1 mor	LOW	TOW	TOW	ΓOW	LOW .	MOT
Notes:	!									

1. U = Not detected; J = Estimated value; D = Diluted sample; N = Presumptive evidence of presence.

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APPENDIX D-4A HEXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - VOLATILE ORGANICS (ug/L) Page 2 of 2

Field sample ID	UXH	HXMW4	HXMW5	IW5		9MMXH	1W6		FBMW-1	TRIP BLANK
Lab Sample ID	E0001-04MS	E0299-06	E0001-05	E0299-07	E0221-01	E0299-05	E0299-05MS	E0299-05MSD	E0001-07	E0001-08
Sample Location	1	NEW PLANT	OLD PLANT	OLD PLANT	BOST. POST RD.	BOST. POST RD.	BOST POST RD.	BOST. POST RD.		
Sample Description		ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	MS	MSD	FIELD BLANK	TRIP BLANK
Date Sampled		3/5/98	1/2/98	3/5/98	2/18/98	3/5/98	3/5/98	3/5/98	1/2/98	1/2/98
							Las de la cara de la c	A CONTRACTOR OF A CONTRACT OF	Total Control of the Arriver of the Arriverof of the Arrivero of the Arrivero of the Arriverooft	A P. S.
	340000	3100 J	5000 U	130 J	10 N	2 J	61	65	10 U	10 U
Toluene	590000	290000 DJ	38000	42000 DJ	10 N	10 UJ	56	54	10 U	10 U
Ethylbenzene	5200 J	3700 J	<b>880 J</b>	980 J	10 U	10 UJ	10 N	10 N	10 U	10 U
Xvlene(total)	27000 J	f 00061	3900 J	4200 J	10 U	10 UI	10 N	0 01	10 U	10 U
Styrene	20000	11 00001	5000 U	1000 UJ	10 U	10 UJ	10 11	N 01	10 N	10 U
Holosenated Allahotics										and the state of the
		III UUUI	\$000 TIT	10001	11 01	10 UJ	10 U	10 01	I0 01	10 DJ
Bromomethane	11 00005	100001	5000 []	[1] 0001	10 U	10 UJ	10 N	10 U	10 N	10 U
Vinvl Chloride	\$0000	12001	5000 U	[[] 0001	10 U	10 M	10 N	10 N	10 N	10 U
Chloroethane	20000	111 00001	5000 U	10001	10 U	10 M	10 N	10 N	10 U	10 N
Methylene Chloride	1 00091	1 00/1	5000 UI	10001	10 U	10 DJ	10 N	10 N	IU 01	10 UJ
1 1-Dichloroethene	10000	100001	5000 11	10001	10 U	10 UJ	62	58	10 N	10 U
1 1. Dichloroethane	1 00081	34000 1	5000 11	111 0001	1 60	3 J	2 J	2 J	10 N	10 U
1 2-Dichloroethene (total)	9800 1	1 0079	5000 UI	10001	2 J	8 ]	11	L 7 J	IU 01	10 UJ
Chloroform	11 00005	1100001	5000-11	10001	5 1	2 J	2 J	2 J	10 U	10 N
1 2-Dichloroethane	48000	130000 DI	5000 U	140 1	3 J	8 ]	8 ]	8 J	10 U	10 U
1 1 1-Trichloroethane	50000 11	100001	5000 U	10001	10 U	10 UJ	10 D	10 U	10 D	10 N
Carbon Tetrachloride	50000 U	10000 UJ	5000 UJ	1000 UJ	10 N	I0 01	10 N	10 N	IU 01	10 UJ
Bromodichloromethane	50000 11	10000	5000 U	1000 UJ	10 N	I0 UI	10 N	10 U	10 N	10 U
1.2-Dichloropropane	50000 U	I0000 UJ	5000 U	1000 UJ	10 N	10 01	10 N	10 U	10 U	10 U
cis-1.3-Dichloropropene	5000 U	10000 UJ	5000 U	1000 UJ	10 U	10 UJ	10 N	10 N	10 U	10 U
Trichloroethene	350000	I 7000 J	5000 U	I000 UJ	6 J	26 J	61	76	10 U	10 U
Dibromochloromethane	50000 U	ID 00001	5000 U	• 1000 UJ	U 01	10 UJ	10 U	10 U	10 U	10 N
1,1,2-Trichloroethane	50000 U	ID 00001	5000 U	1000 UJ	10 O	10 UJ	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	50000 U	10000 UJ	5000 U	1000 UJ	10 N	10 UJ	10 D	10 U	10 U	10 N
Bromoform	50000 U	I00001	5000 U	1000 UJ	10 N	10 UJ	10 U	10 U	10 U	10 U
Tetrachloroethene	f 00011	9500 J	5000 U	1000 UJ	10 N	1 J	11	-	10 U	10 N
1,1,2,2-Tetrachloroethane	50000 U	10000 UJ	5000 U	1000 UJ	10 U	10 M	10 U	10 U	10 U	10 N
Keones	ALL	and the state of the second	and the second second	TOTAL NUMBER					Land Level M.	
Acetone	33000 J	I 00001	11000	4200 J	10 N	10 UJ	10 U	10 U	10 U	10 U
2-Butanone	50000 U	10000 UJ	2000 U	rn 0001	U 01	10 UJ	10 U	10 U	10 U	10 0
4-Methyl-2-pentanone	50000 U	IU 00001	5000 U	IU 0001	10 N	10 OI	10 U	10 U	10 N	10 N
2-Hexanone	50000 U	10000	5000 U	10001	10 N	10 M	10 U	10 U	10 U	10 U
Ojher/Miscellaneous//OCs	ACCURATE CONTRACTOR DATE		ANNAL AND AND A REAL	Dates of the second sec		Here and the second sec			Providences (N. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 ( 1000 (
Carbon disulfide	50000 U	I0000 UJ	5000 UJ	IU 0001	10 N	I0 01	10 N	10 U	10 UJ	I0 01
Chlorobenzene	320000	3100 J	5000 U	210 J	2 NJ	4 J	54	53	10 L	10 U
	A LOCAL C		I VOCCZ	I UZOLZ	I OI	A L Z	I CC	1 UCE	10	I 0
I otat 1 arget VOCs	f nnn95c7	L UUCPC1	f N9/50				1 760	r 07r		
Number of VOC TICs		•	0	0	۲ י	۰. ۲			•	- 0
Fotal VOC TIC Concentration					F 10	[45]			-	
Dilution Factor	5000.0	1000.0	500.0	100.0	0.1	1.0	- 1.0	n:-	U.I	
Level	worl	Low	Low	Low	Low	Low	Low	ILOW	LOW	1~~~1
Notes:										

Notes: I. U = Not detected; J = Estimated value; D = Diluted sample; N = Presumptive evidence of presence.

APPENDIX D-4B	HEXAGON LABORATORIES RIFFS	GROUNDWATER ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/L	Page I of 4
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Field sample ID	MWXH	1.01	2MMXH	<u>4W2</u>	VXH	HXMW3	NXH	HXMW53	HXMW4	1W4
Lab Sample ID	E0001-01	E0299-01	E0001-02	E0299-02	E0001-03	E0299-03	E0001-06	E0299-04	E0001-04	E0001-04MS
Sample Location	-		EAST YARD (D)		SOUTH YARD	SOUTH YARD	SOUTH YARD	SOUTH YARD	NEW PLANT	NEW PLANT
Sample Description	ENV	ENV. SAMPLE	ENV. SAMPLE	ENV	ENV. SAMPLE	ENV. SAMPLE	HXMW3 DUP.	HXMW3 DUP.	ENV. SAMPLE	WS
Date Sampled	1/2/98	3/5/98	1/2/98	3/5/98	1/2/98	3/5/98	1/2/98	3/5/98	1/2/98	1/2/98
Phenole/Acid Extractables	A STATE OF A	and the second secon	March 1997				A CONTRACTOR OF A	King to substant to the second		1
Phenol	R	5 J	10 U	41	600 D	430 D	640 D	430 D	3800	3400
2-Chlorophenol	10 N	3 J	10 N	U 01	R	10 N	10 U	10 U	500 U	85 J
2-Methylphenol (o-cresol)	10 N	10 U	10 N	10 N	R	220 DJ	R	230 DJ	500 U	500 U
4- Methylphenol	10 N	10 U	10 U	10 U	290 DJN	210 DJ	490 DJN	240 DJ	0000 D	5000 E
2,4-Dimethylphenol	10 N	U 01	10 N	U 01	10 N	18	U 01	91	500 U	500 U
2,4-Dichlorophenol	10 N	10 U	10 N	10 N	10 U	10 U	10 N	10 U	500 U	500 U
4-Chloro-3-methylpinenol	10 N	U 01	10 N	U 01	10 N	10 U	10 U	10 U	500 U	500 U
2,4,6-Trichlorophenol	10 N	U 01	U 01	10 D	10 N	10 0	N 01	10 N	500 U	500 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	1200 U	1200 U
2,4-Dinitrophenol	· 25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	1200 U	1200 U
2-Nitrophenol	10 N	10 U	10 U	10 U	10 N	10 U	10 N	10 U	500 U	500 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	1200 U	1200 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U.	25 U	25 U	1200 U	1200 U
Pentachlorophenol	25 U	25 UJ	25 U	25 UJ	25 U	25 UJ	25 U	25 UJ	1200 U	1200 U
Polycyclic Aromatic Hydrocarbons (PAHs)	40 - 1 Jan 19 - 19		the second second	and the second second	and the second secon					
Naphthalene	10 N	10 U	10 U	3 J	44	61	52	18	500 U	500 U
2-Methylnaphthalene	10 N	10 N	10 U	10 N	17	10	18	11	500 U	500 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	500 U	500 U
Acenaphthylene	10 U	D 01	10 N	10 N	10 N	10 U	10 U	10 U	500 U	500 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 N	500 U	500 U
Fluorene	10 U	10 U	10 N	10 N	[]	10 N	10 U	10 U	500 U	500 U
Phenanthrene	10 U	10 N	10 U	10 N	1 1	2 J	[]	1 ]	500 U	500 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	500 U	500 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	500 U	500 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	500 U	500 U
Benzo(a)anthracene	10 U	10 U	10 U	U 01	10 U	10 U	10 U	10 U	500 U	500 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 N	10 D	500 U	500 U
Benzo(b)fluoranthene	10 U	10 U	10 U	U 01	IU 01	10 U	10 UJ	10 1	500 U	500 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 UJ	10 U	10 UJ	10 U	500 U	500 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	IU 01	10 U	10 UJ	10 U	500 U	500 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 N	10 NJ	10 N	10 UJ	10 U	500 U	500 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 01	10 UJ	10 N	10 NJ	10 U	500 U	500 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 N	10 DI	10 U	10 UJ	10 U	500 U	500 U
Aniline Compounds		A CONTRACTOR OF A CONTRACT	A CAR AND A	S. S		and the second	「生まれ」は、「ま」			
4-Chloroanitine	10 N	U 01	10 N	U 01	R	10 N	10 N	10 U	500 U	500 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	1200 U	1200 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	1200 U	1200 U
4-Nitroaniline	25 U	R	25 U	R	25 U	R	25 U	R	1200 U	1200 U

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APPENDIX D-4B HEXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/L) Page 2 of 4

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Field cannie ID		HXMWI	HXMW2	1W2	MMXH	AW3	HXMW53	fW53	IIXMW4	W4
Lab Sample ID	E0001-01	E0299-01	E0001-02	E0299-02	E0001-03	E0299-03	E0001-06	E0299-04	E0001-04	E0001-04MS
Sample Location	EA	EAST YARD (S)	EAST YARD (D)	EAST YARD (D)	SOUTH YARD	SOUTH YARD	SOUTH YARD	SOUTH YARD	NEW PLANT	NEW PLANT
Samule Description		ENV SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	HXMW3 DUP.	HXMW3 DUP.	ENV. SAMPLE	WS
Date Sampled		3/5/98	1/2/98	3/5/98	1/2/98	3/5/98	1/2/98	3/5/98	1/2/98	1/2/98
Remember										
	10 11	10 11	10 U	10 N	10 U	10 D	10 U	U 01	500 U	500 U
1 4-Dichlorohenzene	10 01	10 U	10 D	10 N	10 N	10 U	10 U	10 N	500 U	54 J
1 2-Dichlorobenzene	2 ]	11	10 OI	6 ]	72	49	74	53	320 J	290 J
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 N	10 U	10 U	500 U	500 U
1.2.4-Trichlorobenzene	10 U	10 U	10 D	10 01	10 U	10 11	10 U	10 U	500 U	500 U
2.6-Dinitrotoluene	10 N	10 U	10 U	U 01	10 01	10 N	10 U	10 N	500 U	500 U
2 4-Dinitrotohiene	10 11	10 01	10 N	10 U	10 N	10 N	U 01	10 U	500 U	1 62
Hexachlorobenzene	10 N	10 N	10 D	10 U	10 N	10 N	10 N	10 N	500 U	500 U
Philadates										
Dimethylahthalate	10 11 , 11	10 11	11 01	10 11	10 U	10 N	10 N	10 N	500 U	500 U
Distivinities		11 01	10 11			10 N	10 01	10 N	84 ]	68 J
Di-n-butvi ohthalate		101	10 11	10 11	10 U	10 N	10 N	D 01	500 U	500 U
Rutylhenzyl nhthalate	10 11	10 11	10 11	10 11	10 U	10 U	10 N	10 N	500 U	500 U
his??-Ethythexyl)nhthalate	11 01	10 11	10 U	10 D	14 U	[]	73 U	[ -	500 U	92 BJ
Di-n-octvl nhthalate	11 01	10 11	10 11	10 11	10 OJ	10 N	I0 01	10 N	500 U	500 U
Other Miscellaneous SVOCs										
lbis(2-choroethvl)Ether	10 U	10 U	10 N	10 U	10 U	10 11	U 01	U 01	500 U	500 U
2 2'-oxvbis(1-chloronronane)	10 N	10 U	10 U	10 D	10 U	10 U	D 01	10 N	500 U	500 U
N-Nitroso-di-n-propylamine	10 11	10 N	10 N	10 N	10 N	10 01	10 U	10 N	500 U	500 U
Hexachloroethane	10 11	10 0	10 U	10 U	10 U	10 N	10 N	10 N	500 U	500 U
Carbazole	10 N	10 U	10 N	[]	10 N	10 N	10 N	10 U	500 U	500 U
Isonhorone	0 01	10 U	10 01	U 01	10 U	10 N	N 01	10 N	500 U	500 U
Hexachlorobutadiene	N 01	10 U	10 N	10 D	10 U	10 N	N 01	10 N	500 U	500 U
bis(2-chloroethoxy)methane	U 01	10 U	10 N	10 U	10 N	10 N	U 01	10 N	500 U	500 U
Hexachlorocyclopentadiene	I0 01	10 U	10 N	10 N	10 N	10 N	10 U	10 U	500 U	500 U
Dibenzofuran	10 N	10 N	10 N	10 N	10 U	10 N	10 U	10 U	500 U	500 U
4-Chlorophenyl-phenyl ether	10 N	10 01	10 N	IU 01	10 N	ID 01	10 N	10 01	500 U	500 U
N-nitrosodiphenylamine	10 N	10 N	10 N	10 N	10 U	10 N	10 N	10 U	500 U	500 U
4-Bromophenyl-phenyl ether	10 N	10 N	10 N	10 N	10 N	10 N	10 N	10 U	500 U	500 U
3,3'-Dichlorobenzidine	U 01	10 N	10 D	10 N	U 01	10 N	10 N	10 U	500 U	500 U
	adwine and the because of the Rest of the	officers as a second second second		per s'arrait. Inwith the states "			the set of	A CONTRACT OF THE OWNER OF THE OWNER.		1 070 0
Total Target SVOCs	2 J	[ 6]	0 ]	52 J	1,026 J	959 J	1,275 J	r 000'l	14,104 J	1 000'A
Number of SVOC TICs	23	. 8	-	3	15	8	15	~	8	
Total SVOC TIC Concentration	383 J	322 J	2 J	478 J	664 J	313 J	911 J	424 J	38,590 J	
Dilution Factor	1.0	1.0	1:0	1.0	1.0	1.0	1.0	1.0	10.0	10.0
Level	Low	Low	Low	Low	Low	I.ow	Low	Low	row	LOW
Notes:										

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Notes: 1. U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample; E = Exceeds instrument calibration range; B = Detected in blank.

APPENDIX D-48 11EXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/L) Page 3 of 4

.

Field sample ID	IXH	HXMW4	HXMWS	<u>4W5</u>		UXH	HXMW6		FBMW-1
Lab Sample ID	E0001-04M	E0299-06		E0299-07	E0221-01	E0299-05	E0299-05	E0299-05	E0001-07
Sample Location	NEW PLANT	NEW PLANT		OLD PLANT	-	BOST. POST RD.	BOST. POST RD.	BOST. POST RD.	
Sample Description	MSD	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	EN	ENV. SAMPLE	MS	MSD	FIELD BLANK
Date Sampled	1/2/98	3/5/98		3/5/98	2/18/98	3/5/98	3/5/98	3/5/98	1/2/98
Phenols/Acid Extractables									
Phenol	3700	3700 D	1600 D	1000 D	10 N	10 U	56	56	10 N
2-Chloraphenol	83 J	200 U	10 1	10 N	10 U	10 N	54	54	10 N
2-Methylphenol (o-cresol)	500 U	1200	550 D	660 DJ	10 U	10 U	10 U	10 N	10 N
4- Methylphenol	5700 E	Q 0066	2000 D	1000 D	10 U	10 U	10 U	10 U	U 01
2,4-Dimethylphenol	500 U	200 U	40	33	10 N	3.1	3.1	3 J	10 N
2.4-Dichlorophenol	500 U	200 U	10 N	10 N	10 U	10 N	10 0	10 U	10 N
4-Chloro-3-methylphenol	500 U	200 U	10 01	10 N	10 01	10 N	68	67	10 N
2,4,6-Trichlorophenol	500 U	200 UJ	10 D	10 N	10 N	10 N	10 N	10 11	10 O
2,4,5-Trichlorophenol	1200 U	500 UJ	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2,4-Dinitrophenol	1200 U	500 UJ	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Nitrophenol	500 U	200 U	U 01	10 N	10 0	10 N	10 N	10 U	10 N
4-Nitrophenol	1200 U	500 UJ	25 U	25 U	25 U	25 U	82 E	83 E	25 U
4,6-Dinitro-2-methylphenol	1200 U	500 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Pentachlorophenol	1200 U	500 UJ	25 U	25 UJ	25 U	25 UJ	72	75	25 U
Polycyclic Aromatic Hydrocarbons (PAHs)				The second s					
Naphthalene	500 U	430	N	5 -	10 0	10 11	10 U	10 N	10 N
2-Methylmaphthalene	54 J	200 U	D 01	10 N	10 ()	10 U	10 U	10 U	10 17
2-Chloronaphthalene	500 U	200 UJ	10 N	10 N	10 N	10 U	10 01	10 U	10 U
Acenaphthylenc	500 U	200 UJ	10 N	10 N	10 N	10 U	10 N	10 N	10 N
Acenaplithene	500 U	200 UJ	10 1	10 U	10 U	10 U	45	44	10 U
Fluorene	500 U	200 UJ	10 01	10 U	10 U	10 U	10 U	10 U	10 U
Phenanthrene	500 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U	10 N
Anthracene	500 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	500 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	500 U	200 U	10 N	10 N	10 U	10 U	37	35	10 U
Benzo(a)anthracene	500 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	500 U	200 U	10 N	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	500 U	200 U	LU 01	10 U	10 U	10 N	10 U	10 U	10 N
Benzo(k)fluoranthene	500 U	200 U	I0 01	10 U	10 U	10 U	10 U	10 U	10 N
Benzo(a)pyrene	500 U	200 U	IU 01	10 U	10 U	10 U	10 N	10 U	10 N
Indeno(1,2,3-cd)pyrene	500 U	200 U	10 M	10 U	10 U	10 N	10 N	10 U	10 U
Dibenz(a,h)anthracene	500 U	200 U	10 UJ	10 N	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	500 U	200 U	IN 01	10 U	10 U	10 U	10 N	10 U	10 U
Aniline Compounds	<ul> <li>Manager M. M. A. Martin and S. M. Sanakarana, J. S. Sanakarana, S. Sanakarana, S. Sanakarana, S. S</li> <li>Manager M. Sanakarana, S. Sanakar Sanakarana, S. Sanakarana, S. S Sanakarana, S. Sanakarana, S Sanakarana, S. Sanakarana, S. S Sanakarana, S. Sanakarana, S</li></ul>			an a		<ul> <li>A second se</li></ul>			
4-Chloroaniline	500 U	200 U	10 N	10 U	10 U	10 U	10 N	10 U	10 U
2-Nitroaniline	1200 U	500 UJ	25 U	25 U	25 U	25 U	25 U	25 U	25 U
3-Nitroaniline	1200 U	500 UJ	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitroaniline	1200 U	R	25 U	R	25 U	x	25 U	25 U	25 U

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APPENDIX D-4B HEXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/L) Page 4 of 4

	Eield cample ID		HXMW4	NXH	HXMW5		IXH	HXMW6		FBMW-1
	I ab Sample ID	E0001-04M	E0299-06		E0299-07	E0221-01	E0299-05	E0299-05	E0299-05	E0001-07
Same frame frame (b)         MSD         EWX SAMPLE         EWX	Sample Location	_	NEW PLANT	OLD PLANT	OLD PLANT	BOST. POST RD.	BOST. POST RD.	BOST. POST RD.	BOST. POST RD.	
Ton. Sampled         Ton. Sampled<	Sample Description		ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	MS	MSD	FIELD BLANK
extremeta: $300$ $300$ $000$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$ $001$	Date Sampled		3/5/98	1/2/98	3/5/98	2/18/98	3/5/98	3/5/98	3/5/98	1/2/98
distribution         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001         9001										
Interestate         1         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0	1 3-Dichlorobenzene	500 U	200 U	10 N	U 01	10 N	10 N		10 U	10 N
distribution         301         300         10         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100 <t< th=""><th>1 4-Dichlorohenzene</th><th>72.1</th><th>200 11</th><th>10 N</th><th>10 U</th><th>10 N</th><th>10 N</th><th>28</th><th>30</th><th>10 N</th></t<>	1 4-Dichlorohenzene	72.1	200 11	10 N	10 U	10 N	10 N	28	30	10 N
attent         500 b         <	1 2-Dichlorobenzene	310 J	290	16	14	6 J	=	10	10	10 U
	Nitrohenzene	500 U	200 []	10 N	10 N	10 01	10 11	U 01	10 U	10 N
minotheme $g00$ $g001$ $g001$ $g001$ $g001$ $g01$	1 7 4. Trichlorohonzene	200 11	200 11	10 11	10 N	10 U	10 01	39	38	10 U
introduction $9.0$ $2001$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$	2 6-Dinitrotoluene	500 U	200 UJ	D 01	10 N	10 0	10 U	N 01	1 ]	10 U
Holentener indentener90 1700 100 100 100 100 100 100 1Holentener (Holl190200 100 100 100 100 100 100 100 1Holentener (Holl190 1200 1200 100 100 100 100 100 100 1Holentener (Holl190 1200 1200 100 100 100 100 100 100 1Holentener (Holl500 1200 1200 100 100 100 100 100 100 1Holentener (Holl500 1200 1200 100 100 100 100 100 100 1Holentener (Holl500 1200 1200 100 100 100 100 100 100 1Holentener (Holl500 1200 100 100	7 4-Dimitrotoluene	1 62	200 111	10 D	10 N	10 11	10 U	56	52	10 N
interf         interf<	Hexachlorobenzene	500 []	200 U	10 N	10 D	10 N	10 U	10 N	10 U	10 U
Mydentiate $150$ $270$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ <th>Phihalates</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>an anna Angele ann a' graite a' ann a' ann a' ann a' ann a' a'</th>	Phihalates									an anna Angele ann a' graite a' ann a' ann a' ann a' ann a'
	Dimethylahthalate	1 150 1	1 02.0	10 11	10 11	10 U	10 U	10 U	10 01	10 U
uff bilinate500 i200 i000 i<	Districtly puntator	1 62	1 021	NI 6	10 11	10 D	10 N	10 U	10 N	10 N
model         model <t< th=""><th>Di a butul attalata</th><th>11 005</th><th>11 000</th><th>11 01</th><th>1 01</th><th>10 01</th><th>10 N</th><th>10 N</th><th>10 N</th><th>10 N</th></t<>	Di a butul attalata	11 005	11 000	11 01	1 01	10 01	10 N	10 N	10 N	10 N
Mitholite         500 U         200 U         48 U         2 J         10 U	Durthoury pumate	11 005	11 000		10 11	10 []	I 0 I	10 U	10 01	10 U
Cold         S00 U         S00 U <th< td=""><th>burytoenzyt pinualate</th><td>11 005</td><td>11 000</td><td>48 11</td><td></td><td>10 10</td><td>10 OI</td><td>10 U</td><td>10 N</td><td>58</td></th<>	burytoenzyt pinualate	11 005	11 000	48 11		10 10	10 OI	10 U	10 N	58
Material $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$ $000$	Di a cottel abthe data	2002	11 000	111 01	11 01	10 11	10 N	10 N	10 N	10 N
fnoctivity $500 \text{ U}$ $200 \text{ U}$ $100 \text{ U}$	Other/Miscellaneous SVOCs									
ybis(1-thiopropane) $500 U$ $200 U$ $100 U$ <th< th=""><th>his(2-chornethy1)Ether</th><th>500 U</th><th>200 U</th><th>10 N</th><th>10 N</th><th>10 U</th><th>10 U</th><th>10 N</th><th>10 N</th><th>10 U</th></th<>	his(2-chornethy1)Ether	500 U	200 U	10 N	10 N	10 U	10 U	10 N	10 N	10 U
cos di-r propylanite500 U200 U100 U10 U10 U10 U45444lotorelhare500 U200 U10 U10 U10 U10 U10 U10 U10 Ulotorelhare500 U200 U10 U10 U10 U10 U10 U10 U10 Ulotorelhare500 U200 U10 U10 U10 U10 U10 U10 U10 Ulotorelhare500 U200 U10 U10 U10 U10 U10 U10 U10 Ulotorelhare500 U200 U10 U10 U10 U10 U10 U10 U10 Ulotorelhare500 U200 U10 U10 U10 U10 U10 U10 U10 Ulotorelhare500 U200 U10 U10 U10 U10 U10 U10 U10 Ulotorelhare500 U200 U10 U10 U10 U10 U10 U10 U10 Ulotorelhare500 U200 U10 U10 U10 U10 U10 U10 U10 Uotherwidene500 U200 U10 U10 U10 U10 U10 U10 U10 Uotherwidene500 U200 U10 U10 U10 U10 U10 U10 U10 Uotherwidene500 U200 U10 U10 U10 U10 U10 U10 U10 Uotherwidene500 U200 U10 U10 U10 U10 U10	2.2'-oxvbis(1-chloropropane)	500 U	200 U	10 N	10 0	10 U	10 U	10 U	10 U	10 U
infore information500 U200 U100 U10 U </td <th>N-Nitroso-di-n-propylamine</th> <td>500 U</td> <td>200 U</td> <td>10 N</td> <td>10 0</td> <td>10 D</td> <td>10 U</td> <td>45</td> <td>44</td> <td>10 1</td>	N-Nitroso-di-n-propylamine	500 U	200 U	10 N	10 0	10 D	10 U	45	44	10 1
zole500 U $500 U$ $200 U$ $100 U$ $1$	Hexachloroethane	500 U	200 U	10 N	10 N	10 U	10 U	10 U	10 U	10 U
none500 U200 U00U00U00U00U00U00U00U00Uhlorobutatiene500 U200 U200 U00 U00 U00 U00 U00 U00 U00 Uhlorobutatiene500 U200 U00 U00 U00 U00 U00 U00 U00 U00 Uhlorobutatiene500 U200 U00 U00 U00 U00 U00 U00 U00 U00 Uzofuran500 U200 U00 U00 U00 U00 U00 U00 U00 U00 Usofuran500 U200 U00 U00 U00 U00 U00 U00 U00 U00 Usofurantifiere500 U200 U00 U00 U00 U00 U00 U00 U00 U00 Usofurantifiere500 U200 U00 U00 U00 U00 U00 U00 U00 U00 Usofurantifiere500 U200 U10 U10 U10 U10 U10 U10 U10 Usofurantifiere500 U200 U10 U10 U10 U10 U10 U10 U10 Usofurantifiere500 U200 U10 U10 U10 U10 U10 U10 U10 Usofurantifiere50 U200 U10 U10 U10 U10 U10 U10 U10 Usofurantifiere50 U20 U10 U10 U10 U10 U10 U10 U10 U	Carbazole	500 U	200 U	10 N	10 N	10 N	10 0	10 N	10 U	U 01
Incodutatiene $500$ U $200$ U $10$ U <th>lsophorone</th> <th>500 U</th> <th>200 U</th> <th>10 U</th> <th>10 N</th> <th>10 N</th> <th>10 N</th> <th>10 N</th> <th>10 N</th> <th>N 01</th>	lsophorone	500 U	200 U	10 U	10 N	10 N	10 N	10 N	10 N	N 01
Alloretharethane $500$ U $200$ U $100$ U $10$ U $100$	Hexachlorobutadiene	500 U	200 U	10 N	10 N	10 N	10 U	10 U	10 U	10 0
Introcyclopentadiene $500$ U $200$ UJ $10$ U $1$	bis(2-chloroethoxy)methane	500 U	200 U	10 N	10 U	10 N	10 N	10 U	10 N	10 N
zoftrant $500$ U $200$ UJ $10$ U <th< th=""><th>Hexachlorocyclopentadiene</th><th>500 U</th><th>200 UJ</th><th>10 N</th><th>10 U</th><th>10 U</th><th>10 U</th><th>10 N</th><th>10 U</th><th>0.01</th></th<>	Hexachlorocyclopentadiene	500 U	200 UJ	10 N	10 U	10 U	10 U	10 N	10 U	0.01
rophenyl-phenyl etther500 U200 UJ10 U10 U10 U10 U10 U10 Uosodiphenylamine $500$ U $200$ U $200$ U $10$ Uosodiphenylamine $500$ U $200$ U $200$ U $10$ U $10$ U $10$ U $10$ U $10$ U $10$ Umophenyl-phenyl etther $500$ U $200$ U $10$ U $10$ U $10$ U $10$ U $10$ U $10$ Umophenyl-phenyl etther $500$ U $200$ U $10$ U $10$ U $10$ U $10$ U $10$ U $10$ Umophenyl-phenyl etther $500$ U $200$ U $10$ U $10$ U $10$ U $10$ U $10$ U $10$ Uanget SVOCS $10,227$ J $15920$ $4,210$ J $2,710$ J $6$ J $14$ J $595$ J $592$ S $592$ Target SVOCS $10,270$ H $10$ J $100$ JSVOC TICs $10,02$ U $100$ J $1,02$ J $1,023$ J $1,020$ J $1,064$ J $1,862$ J $152$ J $103$ J $595$ J $592$ SSVOC TICs $100$ J $0.00$ J $200$ J $10$ J $1,00$ J $100$ J $100$ J $100$ JSVOC TICs $100$ Low $100$ Low $100$ Low $100$ Low $100$ Low $100$ Low $100$ LowSVOC TICs $100$ Low	Dibenzofuran	500 U	200 UJ	10 01	10 N	10 U	10 U	10 U	10 0	10 0
osodiplenylamine $500 \text{ U}$ $200 \text{ U}$ $10 \text{ U}$ <t< td=""><th>4-Chtorophenyt-phenyt ether</th><td>500 U</td><td>200 UJ</td><td>10 N</td><td>IU 01</td><td>10 N</td><td>10 DI</td><td>10 U</td><td>10 N</td><td>0 01</td></t<>	4-Chtorophenyt-phenyt ether	500 U	200 UJ	10 N	IU 01	10 N	10 DI	10 U	10 N	0 01
mophenyl-phenyl etter         500 U         200 U         10 U <th10< td=""><th>N-nitrosodiphenylamine</th><td>500 U</td><td>200 U</td><td>10 N</td><td>10 U</td><td>10 U</td><td>10 U</td><td>10 N</td><td>10 D</td><td></td></th10<>	N-nitrosodiphenylamine	500 U	200 U	10 N	10 U	10 U	10 U	10 N	10 D	
ichlorobenzidine         500 U         200 U         10 U <th>4-Bromophenyl-phenyl ether</th> <td>500 U</td> <td>200 U</td> <td>10 N</td> <td>10 N</td> <td>10 U</td> <td>10 N</td> <td>U 01</td> <td>0 01</td> <td></td>	4-Bromophenyl-phenyl ether	500 U	200 U	10 N	10 N	10 U	10 N	U 01	0 01	
Target SVOCs         10,227         1         15,920         4,210         2,710         6         1         14         595         592         792         792         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793         793	3,3'-Dichlorobenzidine	500 U	200 U	10 N	10 U	10 0	10 U	10 N	10 N	
Target SVOCs         10,227         15,920         4,210         2,710         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1 <th< td=""><th></th><td></td><td></td><td></td><td></td><td></td><td></td><td>&lt;0× 1</td><td>\$07</td><td>Ś</td></th<>								<0× 1	\$07	Ś
er of SVOC TICs         10         17         17         17         26         18         18           SVOC TIC concentration         64,300 J         1,064 J         1,862 J         132 J         103 J         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         <	Fotal Target SVOCs	10,227 J	15,920	4,210 J	r 01/,2	- 0	-	<b>r</b> <i>r.c.</i>	7/2	
SVOC TIC Concentration         64,300 J         1,064 J         1,862 J         132 J         103 J         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1 <th< td=""><th>Number of SVOC TICs</th><td></td><td>0</td><td>17</td><td>17</td><td>26</td><td>81</td><td></td><td></td><td></td></th<>	Number of SVOC TICs		0	17	17	26	81			
on Factor         10.0         20.0         1.0         1.0         1.0         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1	Total SVOC TIC Concentration		64,300 J	1,064 J	1,862 J	152 J	103 J			
Low Low Low Low Low Low Low Low Low	Dilution Factor	10.0	20.0	1.0	1.0				_	D.
	Level	Low	Low	Low	Low	I.ow	Low	Low	Low	LOW

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Notes: I. U = Not detected; J = Estimated value; R = Rejected value; N = Presumptive evidence of presence; D = Diluted sample; E = Exceeds instrument calibration range; B = Detected in blank.

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APPENDIX D-4C IIEXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - PESTICIDES/PCBs (ug/L) Page 1 of 2

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Field sample ID	MMXH	IWI	IIXMW.	1W2	EWMX11	4W3	NXH	HXMW53	IXH	HXMW4
Lab Sample ID	E0001-01	E0299-01	E0001-02	E0299-02	E0001-03	E0299-03	E0001-06	E0299-04	E0001-04	E0001-04MS
Sample Location	EAST YARD (S)	EAST YARD (S)	EAST YARD (D)	EAST YARD (D)	SOUTH YARD	SOUTH YARD	SOUTH YARD	SOUTH YARD	NEW PLANT	NEW PLANT
Sample Description	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	HXMW3 DUP.	HXMW3 DUP.	ENV. SAMPLE	MS
Date Sampled	1/2/98	3/5/98	86/7/1	3/5/98	1/2/98	3/5/98	1/2/98	3/5/98	1/2/98	1/2/98
Pesticides								and a strain of the second		
alpha-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
beta-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.46 JN	0.43 P ·
delta-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	R	0.71 P
gamma-BHC (Lindane)	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.35 P
1 leptachlor	0.050 U	0.050 U	0.050 U	0.050 U	0.12 JN	0.050 U	R	0.050 U	I.9 DJ	1.8 E
Aldrin	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	ĸ	4:1-0-1
Heptachlor Epoxide	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Endosulfan I	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	R	0.23 P
Dieldrin	0.10 U	0.10 U	R	×	0.26 JN	0.17 J	R	0.24	0.10 U	1.7 EP
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.25 JN	0.37 P
Endrin	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.I0 U	0.48 JN	1.3 P
Endosulfan II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	R	0.11 P
Endosulfan Sulfate	0.10 U	R	R	R	0.10 U	0.10 U	0.10 U	R	R	0.10 U
4,4'-DDT	0.10 U	0.21 J	0.29	0.33	0.10 U	0.10 U	0.10 U	0.10 U	R	1.4 P
Methoxychlor	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U
Endrin ketone	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin aldehyde	0.10 U	0.10 U	U 01.0	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
atpha-Chlordane	0.050 U	0.050 U	0.050 U	0.050 JN	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
gamma-Chlordane	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.20 J	0.32 P
Toxaphene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
PCBs				1911년 19 1911년 1911년 1911		an a				
Aroclor-1016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1221	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Aroclor-1232	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1242	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1248	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	13.1	15 P
Aroclor-1254	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Aroctor-1260	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	a di dala di 1913, 1917, 1917, 1917, 1917	de el 4- el 100 octabilitative.			and the second value of the	and a second	Decision of Baseline of Bu	SARAN AND A STREET		and the second
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.1	1.0
Notes:		-								

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1. U = Not detected; J = Estimated value; R = Rejected value; D = Diluted sample; E = Exceeds instrument calibration range; N = Presumptive evidence of presence; P = Dual column precision outside limits.

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APPENDIX D-4C HEXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - PESTICIDES/PCBs (ug/L) Page 2 of 2

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Field sample IDI	HXMW4	W4	NXH	HXMW5		IXH	HXMW6		FBMW-1
Lab Sample ID	E0001-04MSD	E0299-06	E0001-05	E0299-07	E0221-01	E0299-05	E0299-05	E0299-05	E0001-07
Sample Location	1	NEW PLANT	P	OLD PLANT	BOST. POST RD.	BOST. POST RD.	BOST. POST RD.	BOST. POST RD.	
Sample Description		ENV. SAMPLE	щ	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	WS	MSD	FIELD BLANK
Date Sampled	1/2/98	3/5/98		3/5/98	2/18/98	3/5/98	3/5/98	3/5/98	1/2/98
Pesticides		A set of the set of th			states and the states and the states of the		A STATE OF STATES AND A STATES	a the state of the	an a
alpha-BHC	10	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
beta-BHC	0.37 P	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
delta-BHC	0.85 EP	R	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
gamma-BHC (Lindane)	0.29 P	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.49	0.55	0.050 U
Heptachlor	1.9 E	l 2 J	0.050 U	0.050 U	0.050 U	0.050 U	0.42	0.45	0.050 U
Aldrin	1.1 EP	Я	0.050 U	0.050 U	0.050 U	0.050 U	0.38	0.39	0.050 U
Heptachlor Epoxide	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Endosulfan I	0.20 P	ж	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Dieldrin	1.0 P	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0	1.1	0.10 U
4,4'-DDE	· 0.35 P	R	0.10 U	0.10 U	0.10 U	0.10 U	0.I0 U	0.10 U	0.10 U
Endrin	1.3 P	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	1.1	1.2	0.10 U
Endosulfan II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDD	0.12 P	R	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan Sulfate	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	1.2 P	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.0 P	1.1 P	0.10 U
Methoxychlor	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Endrin ketone	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin aldehyde	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
alpha-Chlordane	0.050 U	R	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
gamma-Chlordane	0.28 P	×	0.050 U	0:020 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Toxaphene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
PCRs	WARNESS TO MARKED								
Aroclor-1016	1.0 U	U 0.1	1.0 U	U 0.1	U 0.1	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1221	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Aroclor-1232	1.0 U	1.0 U	1.0 U	U 0.1	U 0.1	U 0.1	1.0 U	1.0 U	1.0 U
Aroclor-1242	1.0 U	1.0 U	U 0.1	U 0.1	0.01	1.0 U	1.0 U	1.0 U	U 0.1
Aroclor-1248	18 P	21	1.0 U	U 0.1	U 0.1	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1254	1.0 U	U 0.1	U 0.1	U 0.1	U 0.1	1.0 U	1.0 U	1.0 U	1.0 U
Aroclor-1260	1.0 U	1.0 U	1.0 U	U 0.1	U 0.1	1 I U U	1.0 U	1.0 U	1.0 U
	- Bether and the State of the State of the		and a state of the second state of the	South and the second solution of the second s	o and a construction of the second states	A PROVIDENT AND A COMPANY AND A STRATE OF	ANNOUNCED AND ADDRESS A ADDRESS ADDRESS ADDRES		
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

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Notes: U = Not detected; J = Estimated value; R = Rejected value; D = Diluted sample; E = Exceeds instrument calibration range;<math>N = Presumptive evidence of presence; P = Dual column precision outside limits.

APPENDIX D-4D	<b>HEXAGON LABORATORIES RI/FFS</b>	GROUNDWATER ANALYTICAL DATA - INORGANICS (ug/L)	Page 1 of 3
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Field sample ID	1	IMMXH	IWN			HXMW2	IW2			1XH	НХМѠЗ	
Lab Sample ID	E0001-01	E0291-01	E0299-01	E0522-01	E0001-02	E0291-02	E0299-02	E0522-02	E0001-03	E0291-03	E0299-03	E0522-03
Sample Location	Sample Location EAST YARD (S)	EAST YARD (S)	EAST YARD (S)	EAST YARD (S)	EAST YARD (D)	EAST YARD (D) EAST YARD (D)	EAST YARD (D) EAST YARD (D)	EAST YARD (D)	SOUTH YARD	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Description	ENV. SAMPLE	FILTERED	ENV. SAMPLE	FILTERED	ENV. SAMPLE	FILTERED	ENV. SAMPLE	FILTERED	ENV. SAMPLE	FILTERED	ENV. SAMPLE	FILTERED
Date Sampled	1/2/98	1/2/98	3/5/98	3/5/98	1/2/98	86/7/1	3/5/98	3/5/98	1/2/98	1/2/98	3/5/98	3/5/98
Aluminum	81600	10.0 U	26700 J	10.0 U	669	17.6	409 J	10.0 U	2960	123 J	13400 J	10.0 U
Antimony	3.0 U	8.7	4.5	2.2	3.0 U	6.8	2.8	2.0 U	3.0 U	5.9	3.9	2.3
Arsenic	18.3	10.8	8.5	5.0 J	6.4	11.2	2.9	3.8 J	6.3	1.11	11.4	l 0.01
Barium	860	148 J	291 J	34.7 J	395	323 J	343 J	282 J	1.00	43.0 J	1881	20.4 J
Beryllium	3.8	0.50 U	1.8	0.50 U	U 0.1	0.50 U	0.50 U	0.50 U	U 0.1	0.50 U	0.50 U	0.50 U
Cadmiun	5.9	U 0.1	5.0 J	1.0 U	0,60 U	<b>I</b> 0.1	IN 0.1	1.0 U	0.60 U	U 0.1	1.5.1	1.0 U
Calcium	87900	78600	22600	21400	38500	45900	34900	38300	72000	74200	67600	49700
Chromium	320	1.4	I 901	2.6	3.9	2.5	3.2	2.3	13.8	4.1	49.1 J	4.5
Cobalt	80.2	5.7	25.7 J	1.6	6.1		1.1	0.78	6.5	3.4	16.1 J	2.6
Copper	383	14.2 J	128 J	1 0 N	5.4	14.1 J	3.5	1.0 U	16.6	10.7 J	55.8 J	1.0 U
Iron	115000	I 310 J	R	757 J	12800	10300 J	R	12600 J	12900	5370 J	R	2250 J
Lead	269	2.0 U	94.9	2.0 U	2.8	2.0 U	5.1	2.0 U	7.5	2.0 U	27.2	2.0 U
Magnesium	41200	9360 J	14400	4370	21600	24000 J	17000	18800	9230	9020 J	10800	6120
Manyanese	1460	366 J	R	103	934	f 0901	R	1400	616	566 J	R	453
Mercury	R	NA	0.58 J	0.26 UJ	R	NA	0.27 UJ	0.26 UJ	R	NA	0.27 UJ	0.26 UJ
Nickel	336	37.3 J	I 601	15.5 J	12.4	I 2.01	8.8	7.5	1.12	25.4 J	52.3 J	27.3 J
Potassium	57900 J	28900	4000 UJ	42200	f 0061£	35200	31800 J	33100	1 00868	38400	39900 J	31900
Selenium	5.1 J	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.1 U	5.0 UJ	5.0 U	5.0 U	5.0 U
Silver	2.0 U	11.7 J	6.4 J	11.2 J	2.0 U	8.4 J	3.2 J	9.2 J	2.0 U	5.4 J	4.3 J	6.5 J
Sodium	103000 J	121000	292000	301000	f 0006£1	171000	135000	155000	1 000£8£	450000	285000	342000
Thallium	19.0	3.0 U	4.2	3.0 U	2.0 U	3.0 U	3.0 U	3.0 U	2.7	3.0 U	3.0 U	3.0 U
Vanadium	203	4.7	62.1	4.0	17.7	5.7	3.0 U	3.2	1.71	5.8	32.9	5.3
Zinc	3300	866 J	1270	158 J	18.4	44.0 J	10.3 J	30.0 J	45.1	26.2	134	6.2 J
Cyanide	2.0 U	NA	1.5	NA	2.0 U	NA	8.1	٧N	2.0 U	AN	1.4	NA
Search and the search of the state of the search of the	Contract of the local data was a	a son and an and an an	Party of Barries (BAR) & Store	<ul> <li>A statistical and statistical and</li></ul>	The second se	A ME AND DESCRIPTION OF A DESCRIPTION OF	A HER C. S. MILLER & M. P. C. MILLER	The second s	HERE WE AND A CONTRACT OF A DATA	A self the second second second second second	A REPORT OF THE REPORT	<ul> <li>Complete part of 1911 (2018)</li> </ul>
Percent Solids	%0	%0	0%0	0%0	%0	0%0	0%0	%0	%0	0%0	%0	0%0
Level	Low	Low	Low	Low	Low	l.ow	Low	Low	wo.1	Low	row	Low
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Notes: 1. U = Not detected; J = Estimated value; R = Rejected value; NA = Not analyzed. APPENDIX D-4D IIEXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - INORGANICS (ug/L) Page 2 of 3

Field cample ID		NMXH	1W53			HXMW4	1W4		HXMWS	WS
Lab Sample ID	E0001-06	E0291-06	E0299-04	E0522-04	E0001-04	E0291-04	E0299-06	E0522-06	E0001-05	E0291-05
Sample Location	So	SOUTH YARD	SOUTH YARD	SOUTH YARD	NEW PLANT	NEW PLANT	NEW PLANT	NEW PLANT	OLD PLANT	OLD PLANT
Sample Description		FILTERED	HXMW3 DUP.	FILTERED	ENV. SAMPLE	FILTERED	ENV. SAMPLE	FILTERED	ENV. SAMPLE	FILTERED
Date Sampled	1/2/98	1/2/98	3/5/98	3/5/98	1/2/98	1/2/98	3/5/98	3/5/98	1/2/98	1/2/98
Aluminum	4580	10.0 U	10500 J	10.0 U	23100	497 J	57300 J	510	2060	10.0 U
Antimony	3.0 U	2.3	7.1	3.0	5.6	12.9	3.9	7.9	3.0 U	3.2
Arsenic	5.0	6.8	11.2	8.4 J	11.2	12.6	1.81	7.2 J	2.8	7.9
Barium	92.4	38.2 J	152 J	18.4 J	353	29.8 J	175 J	22.0 J	63.2	24.7 J
Bervllium	1.0 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	3.0	0.50 U	1.0 U	0.50 U
Cadmium	0.60 U	1.0 U	1.4 J	1.0 U	2.1	U 0.1	7.1 J	U 0.1	0.60 U	1.0 U
Calcium	65700	67700	60700	42400	102000	104000	130000	133000	44800	45300
Chromium	17.2	3.4	40.0 J	4.0	424	221 J	560 J	200	160	57.7 J
Cobalt	7.8	2.9	13.3 J	2.3	28.6	[ 0] ]]	51.1 J	8.9	6.5	3.7
Copper	25.4	6.5	47.3 J	1.0 U	923	25.9 J	2080 J	10.4	42.0	9.3
Iron	12900 ·	3230 J	R	l 0681	38900	5920 J	Я	8970 J	00661	5440 J
Lead	11.7	2.0 U	23.5	2.0 U	131	2.0 U	276	2.0 U	3.7	2.0 U
Magnesium	8820	7780 J	0096	5300	13500	6470 J	30800	9590	4630	4070 J
Manganese	517	443 J	R	392	801	273 J	R	464	859	765 J
Mercury	R	NA	0.27 UJ	0.26 UJ	~	NA	4.3 J	0.29 J	*	AN
Nickel	29.8	23.4 J	45.2 J	23.8 J	949	606 J	1240 J	618 J	26.5	24.0 J
Potassium	37400 J	34700	J 39100 J	26700	43800 J	34600	4000 UJ	34500	40200 J	41500
Selenium	12.4 J	5.0 U	5.0 U	5.7 U	5.0 UJ	5.0 U	5.0 U	5.0 U	12.3 J	5.0 U
Silver	2.0 U	2.0 UJ	4.3 J	4.3 J	2.0 U	4.7 J	f 6'S	3.4 J	2.0 U	2.0 UJ
Sodium	335000 J	388000	281000	291000	295000 J	279000	283000	318000	I 70000 J	196000
Thallium	2.0 U	3.0 U	3.0 U	3.0 U	7.2	3.0 U	10.2	3.0 U	2.0 U	3.0 U
Vanadium	20.7	5.9	28.0	4.7	113	48.2 J	177	38.2	14.2	3.3
Zinc	57.3	26.5	114	4.0 U	572	223 J	974	87.3 J	36.8	58.0 J
Cyanide	2.0 U	NA	06.0	NA	1150	VN	2000	NA	2.0 U	NA
a a shi ta	AND REAL STREET, ST.	A REPORT OF A R	supervision of the state of the	contraction of the application of	suggest a subscription of the subscription of	weeks weeks with the stores.	A STATE AND A S	the standard and the standard standards	<ul> <li>The State of the S</li></ul>	ARCONTRACTOR - PARTY
Percent Solids	%0	%0	0%0	0%	%0	0%	%0	0%0	%0	%0
Level	Low	Low	Low	Low	Low	Low	Low	Low	Low	l.ow

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Notes: I. U = Not detected; J = Estimated value; R = Rejected value.

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#### APPENDIX D-4D HEXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - INORGANICS (ug/L) Page 3 of 3

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Field sample ID	HXMWS	AW5	<u> </u>	NXH	HXMW6		FBMW-1	M-1
Lab Sample ID	E0299-07	E0522-07	E0221-01	E0291-08	E0299-05	E0522-05	E0001-07	E0291-07
Sample Location	OLD PLANT	OLD PLANT	BOST. POST RD.	BOST. POST RD.	BOST. POST RD.	BOST. POST RD.		
Sample Description	ENV. SAMPLE	FILTERED	ENV. SAMPLE	FILTERED	ENV. SAMPLE	FILTERED	FIELD BLANK	FILTERED
Date Sampled		3/5/98	2/18/98	2/18/98	3/5/98	3/5/98	1/2/98	1/2/98
Aluminum	12300 J	26.1	5660	3910 J	805 J	10.0 U	30.3	10.0 U
Antimony	4.7	2.0 U	3.6	2.6	2.4	2.0 U	3.0 U	2.0 U
Arsenic	5.9	3.5 J	3.8	3.9	2.0 U	2.8 J	2.0 U	2.8
Barium	180 J	14.1 J	165 J	I 22 J	76.3 J	12.7 J	12.2	1.0 U
Berythiun	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U
Cadmium	f 9.1	1.0 U	1.3	1.2	1.0 UJ	1.0 U	0.60 U	1.0 U
Calcium	32900	27600	49900	47600	. 51100	00009	23.6	96.9
Chromium	220 J	76.2	40.6 J	36.3 J	9.5 J	2.7	0.50 U	0.60 U
Cobalt	15.8 J	2.6	13.3 J	12.3 J	6.0 J	4.4	1.0 U	0.60 U
Copper	[ 689 ]	1.0 U	32.1 J	35.8 J	11.0 J	4.3	3.0 U	6.7
lron	R	8000 J	7840	5940 J	R	42.9 J	30.3	16.4
Lead	10.2	2.0 U	1.1	13.2	3.9	2.0 U	2.0 U	2.0 U
Magnesium	7370	3330	9400	8720 J	8640	9540	9.0 U	8.0 U
Manganese	R	644	545	504 J	R	511	2.8	3.7
Mercury	0.27 UJ	0.26 UJ	0.27 J	0.40	0.88 J	0.26 UJ	R	NA
Nickel	43.6 J	1 6.01	24.6 J	24.4 J	13.8 J	11.5 J	3.0 U	1.0 U
Potassiun	46000 J	38200	16100	15900	13800 J	15500	1300 U	4000 U
Selenium	5.0 U	5.0 U	5.0 UJ	0.0.2	5.0 U	5.0 U	5.0 UJ	5.0 U
Silver	3.0 J	2.0 UJ	5.8 J	2.0 UJ	2.3 J	3.9 J	2.0 U	2.0 UJ
Sodium	153000	178000	68800	62800	75400	87600	300 U	479
Thallium	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	2.0 U	3.0 U
Vanadium	41.1	3.6	14.3	11.5	3.3	3.0 U	1.0 U	3.0 U
Zinc	98.9	67.9 J	104 J	96.7 J	36.5 J	42.5 J	6.0 U	8.2
Cyanide	2.1	NA	4.5	AN	0.50 U	NA	2.0 U	AN
The second second second second second second	ARAL REPORTS AND ALL ALL REPORTS	CONTRACTOR AND ADDRESS	Conference on the second second second	Service in the service of the	- C.R. LEDGE VIETNAME AND NO ADDRESS.	A mail at a Martin protocol at which the	The second second and the second s	A STATE OF A
Percent Solids	%0	%0	%0	0%	0%	%0	0%0	%0
Level	Low	Low	Low	Low	Low	Low	Low	Low
Notes:								

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Notes: I. U = Not detected; J = Estimated value; R = Rejected value.

## APPENDIX D-4E HEXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - TOC, TPHC, TDS, AND TSS (mg/L) Page 1 of 2

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Field sample ID		IWWXH	HXMW2	AW2	HXMW3	1W3	NXH	HXMW53
Lab Sample ID	E0001-01	E0299-01	E0001-02	E0299-02	E0001-03	E0299-03	E0001-06	E0299-04
Sample Location	EAST YARD (S)	EAST YARD (S)	EAST YARD (D)	Sample Location EAST YARD (S) EAST YARD (S) EAST YARD (D) EAST YARD (D) SOUTH YARD SOUTH YARD SOUTH YARD SOUTH YARD	SOUTH YARD	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Description ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE   ENV. SAMPLE   ENV. SAMPLE   ENV. SAMPLE   HXMW3 DUP   HXMW3 DUP.	ENV. SAMPLE	ENV. SAMPLE	HXMW3 DUP.	HXMW3 DUP.
Date Sampled	1/2/98	3/5/98	1/2/98	3/5/98	1/2/98	3/5/98	1/2/98	3/5/98
TOC	16.6	AN	46.6	٧N	2720	٩N	78.4	٩N
TDS	640	950 J	700	680 J	1500	f 0001	1300	L 0001
TSS	200	1200 J	26	60 J	160	210 J	140	240 J
Notes:								

ND = Not detected; J = Estimated value; NA = Not analyzed.
 Only total dissolved solids data and total suspended solids data from 3/5/98 sampling event are validated.

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## APPENDIX D-4E HEXAGON LABORATORIES RI/FFS GROUNDWATER ANALYTICAL DATA - TOC, TPHC, TDS, AND TSS (mg/L) Page 2 of 2

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Field sample IU	:	HXMW4	NXH	HXMW5	IXH	HXMW6	FBMW-1
Lab Sample ID	E0001-04	E0299-06	E0001-05	E0299-07	E0221-01	E0299-05	E0001-07
Sample Location	Sample Location NEW PLANT	NEW PLANT	OLD PLANT		OLD PLANT BOST. POST RD.	BOST. POST RD.	
Sample Description ENV. SAMPLE ENV. SAMPLE ENV. SAMPLE ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	FIELD BLANK
Date Sampled	1/2/98	3/5/98	1/2/98	3/5/98	2/18/98	3/5/98	1/2/98
TOC	0101	AN	135	AN N	AN	NA	QN
TDS	1300	1 500 J	750	730 J	440 ]	540 J	110
TSS	120	613	78	330 J	110.1	613	QN

ND = Not detected; J = Estimated value; NA = Not analyzed.
 Only total dissolved solids data and total suspended solids data from 3/5/98 sampling event are validated.

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APPENDIX D-5A HEXAGON LABORATORIES SITE RI/FFS IRM UST EXCAVATED SOIL ANALYTICAL DATA - VOLATILE ORGANICS (ug/kg) Page 1 of 2

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Field sample ID	LDI-2-3	FOT#1	FOT#2	#1-2-3	FOI	F02	SYSI	SYS2	SYS3
Sample Location	SOUTH YARD	NEW PLANT	NEW PLANT	SOUTH YARD	NEW PLANT	NEW PLANT	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Interval (feet bgs)	0-3	9-0	9-0	0-6	0-6	0 - 6	0-6	0-6	0 - 6
Date Sampled	10/8/97	11/14/97	11/14/97	12/5/97	12/22/97	12/22/97	12/22/97	12/22/97	12/22/97
Aromatics									
Benzene	6300	63000	91000	5 U	250 U	0001	250 U	250 U	NA
Toluene	1700000	50000	1800000	150	10000	260000	30000	10000	AN
Ethylbenzene	62000	10000	62000	260	1300	23000	2800	3900	NA
Xylene(total)	270000	74000	420000	1500	42000	180000	14000	20000	AN
Styrene	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Halogenated Aliphatics	ALC: NAME OF A DESCRIPTION OF A DESCRIPR							a Merica College annual States	
Chloromethane	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Bromomethane	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Vinyl Chloride	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Chloroethane	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Methylene Chloride	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
I, I-Dichloroethene	500 U	U 0001	1000 U	5 U	250 U	200 U	250 U	250 U	NA
1, I-Dichloroethane	500 U	1 000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
1,2-Dichloroethene (total)	500 U	1600	7500	5 U	250 U	500 U	250 U	250 U	NA
Chloroform	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
1,2-Dichloroethane	12000	12000	57300	82	909	0011	250 U	950	NA
1,1,1-Trichloroethane	500 U	1 000 U	1000 U	5 U	250 U	510	250 U	250 U	NA
Carbon Tetrachloride	500 U	1 000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Bromodichloromethane	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
1,2-Dichloropropane	200 U	N 0001	U 0001	5 U	250 U	500 U	250 U	250 U	NA
Trichloroethene	15000	1000 U	3700	6	540	23000	250 U	440	NA
Dibromochloromethane	500 U	N 0001	U 0001	5 U	250 U	500 U	250 U	250 U	NA
I, I, 2-Trichtoroethane	500 U	1 000 U	1000 U	5 U	250 U	U 002	250 U	, 250 U	NA
Bromoform	500 U	U 0001	U 0001	5 U	250 U	500 U	250 U	250 U	NA
Tetrachloroethene	7200	1000 U	3500	120	3200	84000	450	2600	NA
1,1,2,2-Tetrachloroethane	500 U	1 000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Bromochloromethane	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	AN
1,2-Dibromo-3-Chloropropane	500 U	U 0001	1000 U	5 U	250 U	500 U	250 U	250 U	NA
1,2-Dibromoethane	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Dibromomethane	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Dichlorodifluoromethane	500 U	1000 U	1 000 U	5 U	250 U	500 U	250 U	250 U	NA
1,3-Dichloropropane	500 U	1000 U	1 000 U	5 U	250 U	500 U	250 U	250 U	NA
2,2-Dichloropropane	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
1,1-Dichloropropene	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
I.I.I.2-Tetrachloroethane	500 U	1000 U	1000 N	5 U	250 U	500 U	250 U	250 U	NA
Trichlorofluoromethane	500 11	10001	1000	5 U	250 U	500 U	250 U	250 U	NA
1,2,3-Trichloropropane	500 U	10001	1000 U	5 U	250 U	500 U	250 U	250 U	٧N

APPENDIX D-5A HEXAGON LABORATORIES SITE RI/FFS IRM UST EXCAVATED SOIL ANALYTICAL DATA - VOLATILE ORGANICS (ug/kg) Page 2 of 2

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Field sample ID	LD1-2-3	FOTHI	FOT#2	#1-2-3	FOI	F02	ISYS	SYS2	SYS3
Sample Location	SOUTH YARD	NEW PLANT	NEW PLANT	SOUTH YARD	NEW PLANT	NEW PLANT	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Interval (feet bgs)	0-3	0-6	0-6	0-6	0-6	0-6	9-0	0-6	0-6
Date Sampled	10/8/01	11/14/97	11/14/97	12/5/97	12/22/97	12/22/97	12/22/97	12/22/97	12/22/97
Keones			an an an ann an Aonaichtean an Aonaichtean an Aonaichtean an Aonaichtean an Aonaichtean Ann Aonaichtean Ann Aon				and the second		in a start of the
Acetone	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
2-Butanone	500 U	1 000 L	10001	5 U	250 U	500 U	250 U	250 U	NA
2-Hexanone	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Other/Miscellaneous VOCs									
Carbon disulfide	500 U	1000 N	10001	5 U	250 U	500 U	250 U	250 U	٧N
Chlorobenzene	72000	1000 U	1000 U	240	250 U	5800	2500	1100	٧N
1,2-Dichlorobenzene	500 U	1 0001	1000 U	39	6800	20000	560	250 U	NA
I,3-Dichlorobenzene	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
1,4-Dichlorobenzene	2400	1000 U	1 000 L	5 U	250 U	500 U	250 U	250 U	NA
Bromobenzene	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
n-Butylbenzene	500 U	3300	4600	5 U	250 U	500 U	250 U	250 U	NA
sec-Butylbenzene	500 U	1000 U	1 000 L	5 U	250 U	500 U	250 U	250 U	NA
tert-Butylbenzene	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
2-Chlorotoluene	500 U	1000 U	1000 U	5 U	250 U	500 U	250 U	250 U	NA
4-Chlorotoluene	500 U	1 000 I	1000 U	5 U	250 U	500 U	250 U	250 U	NA
Hexachlorobutadiene	500 U	1000 U	1000 U	5 U	250 U	200 N	250 U	250 U	NA
Isopropylbenzene	82000	2300	7000	220	0061	17000	7600	700	NA
p-Isopropylioluene	500 U	3100	4800	5 U	190	1100	250 U	250 U	NA
Naphthalene	270	8300	13000	34	1700	1700	290	310	AN
n-Propylbenzene	200 U	4000	6300	6	270	670	250 U	250 U	AN
1,2,3-Trichlorobenzene	500 U	1000 U	D 0001	5 U	250 U	500 U	250 U	250 U	NA
1,2,4-Trichlorobenzene	200 U	U 0001	0001	5 U	250 U	500 U	250 U	250 U	AN
1,3,5-Trimethylbenzene	1500	20000	32000	9	1400	2400	250 U	350	NA
1,2,4-Trimethylbenzene	500 U	29000	37000	1	2200	1700	250 U	290	NA
Vinyl Acetate	005 U	U 0001	1000 U	5 U	250 U	500 U	250 U	250 U	NA
	And the second second second second	LINE REPORT OF LINE STRATT	a menungen di anto a paraméterik	<ul> <li>A stand of webbility and set</li> </ul>	1 And All And And		and a specific to a strategy of the second	2013년 4년 1914년 1917년	and the second
TOTAL TCL VOCs	2144500	660600	2451000	2361	57640	578410	49750	134990	
TOTAL OTHER VOCS	86470	00004	104700	312	15060	44570	8450	1650	
TOTAL TARGET VOCs	2230970	730600	2555700	2673	72700	622980	58200	136640	

Notes:

Analytical data are not validated.
 U = Not detected; NA = Not analyzed.

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APPENDIX D-5B HEXAGON LABORATORIES RI/FFS IRM UST EXCAVATED SOIL ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 1 of 2

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Eield cannle []]	101.2.4	FOT#1	FOT#2	#1-2-3	FOI	F02	ISYSI	SYS2	SYS3
Sample Location	Ş	NEW PLANT	NFW PLANT	SOUTH YARD	NEW PLANT	NEW PLANT	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Interval (feet his)	-	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
Date Sampled		11/14/97	11/14/97	12/5/97	12/22/97	12/22/97	12/22/97	12/22/97	12/22/97
Phenol 24 ctd Extractubles	and the second second second			in the second			A SAME A COMPANY	And the first of the second of the	An and the second of the second s
Phenol	670 U		20000 U	01 029	NA	NA	NA	NA	AN
2-Chlorophenol	0 029	20000 U	20000 U	670 U	NA	NA	NA	NA	AN
2-Methylphenol (o-cresol)	670 U	20000 U	20000 U	670 U	NA	NA	AN	NA	AN
4- Methylphenol	2900	22000	23000	670 U	NA	NA	AN	NA	AN
2,4-Dimethylphenol	670 U	20000 U	20000 U	670 U	NA	NA	AN	NA	AN
2,4-Dichtorophenol	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	AN
4-Chloro-3-methylphenol	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	AN
2,4,6-Trichlorophenol	670 U	20000 U	20000 U	670 U	NA	NA	νv	NA	AN
2,4,5-Trichlorophenol	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
2,4-Dinitrophenol	1300 U	40000 U	40000 U	1330 U	NA	NA	NA	AN	AN
2-Nitrophenol	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	AN
4-Nitrophenol	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
4.6-Dinitro-2-methylphenol	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
Pentachlorophenol	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons (PAHs)									1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Naphthalene	330 U	U 0066	U 0066	510	NA	NA	NA	NA	NA
2-Methylnaphthalene	010 U	33000	22000	1500	NA	NA	NA	NA	NA
2-Chloronaphthalene	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
Acenaphthylene	400 U	12000 U	12000 U	400 U	NA	NA	NA	NA	NA
Acenaphthene	330 U	10000 U	1 0000 U	330 U	NA	NA	NA	NA	NA
Fluorene	330 U	10000 U	1 0000 I	380	NA	NA	NA	NA	NA
Phenanthrene	330 U	10000 U	10000 U	1500	NA	NA	NA	NA	NA
Anthracene	330 U	10000 U	N 00001	360	NA	NA	NA	AN	۸N
Fluoranthene	330 U	10000 U	10000 U	330 U	NA	NA	NA	NA	AN
Pyrene	330 U	1 0000 U	10000 U	330 U	NA	NA	٨A	NA	AN
Benzo(a)anthracene	330 U	U 00001	10000 U	330 U	AN	AN	NA	NA	AN
Chrysene	40 U	1200 U	1200 U	720	NA	AN	NA	NA	٧N
Benzo(b)fluoranthene	40 U	1200 U	1200 U	150	NA	NA	NA	NA	AN
Benzo(k)fluoranthene	40 U	1200 U	1200 U	100 U	NA	AN	NA	NA	AN
Benzo(a)pyrene	40 U	1200 U	1200 U	50	NA	NA	AN	VN	AN
Indeno(1,2,3-cd)pyrene	40 U	1200 U	1200 U	80	NA	NA	NA	NA	AN
Dibenz(a,h)anthracene	40 U	1200 U	1200 U	70	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	40 U	1200 U	1200 U	100 U	NA	NA	NA	NA	AN
Antline Compounds	ALL CONTRACTORS					NAL LANCE AND AND	Late and the same	1.2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	
4-Chloroaniline	670 U		20000 U	670 U	NA	NA	NA	NA	NA
2-Nitroaniline	670 U	20000 U	20000 U	670 U	NA	NA	NA	AN	NA
3-Nitroaniline	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
4-Nitroaniline	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA

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Field sample ID	0 LDI-2-3	FOT#1	FOT#2	#1-2-3	FOI	F02	SYSI	SYS2	SYS3
Sample Location	SOUTH YARD	NEW PLANT	NEW PLANT	SOUTH YARD	NEW PLANT	NEW PLANT	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Interval (feet bgs)	0-3	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
Date Sampled	1 10/8/97	11/14/97	11/14/97	12/5/97	12/22/97	12/22/97	12/22/97	12/22/97	12/22/97
Renzementary and a second s	time to be a second to	And the second second			Martin Charles		and a straight start.		Solution and
1,3-Dichlorobenzene	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	730	20000 U	D 00002	0 0 A D	NA	NA	NA	NA	NA
Nitrobenzene	5600	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	100 U	3000 U	3000 U	100 U	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	670 U	20000 U	0000 U	670 U	NA	NA	NA	NA	NA
Hexachlorobenzene	070 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
Pathadades	TANKING CONTRACTOR		adding to the second						
Dimethylphthalate	010 D	20000 U	U 00002	01 029	NA	NA	NA	NA	NA
Diethylphthalate	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
Di-n-butyl pluthalate	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
Butylbenzyl phthalate	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	670 U	20000 U	20000 U	1400	NA	NA	NA	NA	NA
Di-n-octyl phthalate	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
Other/Miscellaneous SVOCs was the strike	. Medical designation of	And the second	a despite of the styles.		And American Contraction	and a straight for the second	A Designation of the party of the second	A STATE OF STREET	a signa ant a sur diam (framesian) a signa ant a sur diam (framesian) a sur diam (framesian)
bis(2-choroethyl)Ether	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
Hexachloroethane	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
Isophorone	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
Hexachlorobutadiene	670 U	20000 U	0000 D	670 U	NA	NA	NA	NA	NA
bis(2-chloroethoxy)methane	670 U	U 00002	D 0000Z	670 U	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	1000 U	30000 U	30000 U	1000 U	NA	NA	NA	NA	NA
Dibenzofuran	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
4-Chlorophenyl-phenyl ether	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
N-nitrosodiphenylamine	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
4-Bromophenyl-phenyl ether	670 U	20000 U	20000 U	670 U	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	0 0/9	U 00002	0000Z	670 U	NA	NA	NA	NA	NA
Benzyl Alcohol	0 0 O	20000 U	Ω 0000Z	0 0/9	٩N	AN	AN	AN	NA
bis(2-chloroisopropy1)ether	670 U	20000 U	20000 U	670 U	NA	NA	NA	AN	NA
			a share and share to the state		المراجع وردائه المناجع والمناجع		and the decay of the line of the second	S.S. 2010 10 10 10 10 10 10 10 10 10 10 10 10	
TOTAL TCL SVOCs	9230	55000	45000	6720					
TOTAL OTHER SVOCs	0	0	0	0					
Total Target SVOCs	9230	55000	45000	6720					
Notes:									

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Notes: 1. Analytical data are not validated. 2. U = Not detected, NA = Not analyzed.

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APPENDIX D-5C HEXAGON LABORATORIES RI/FFS IRM UST EXCAVATED SOIL ANALYTICAL DATA - PESTICIDES/PCBS (ug/kg)

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	50101	a∩T#1	EOT#2	5-6-1#	FOI	F02	SYSI	SYS2	SYS3
	C-7-101	VIEW DI ANT	NEW DI ANT	COLITEL VAPO	NEW PI ANT	NFW PI ANT	SOUTH YARD	SOUTH YARD	SOUTH YARD
Sample Location	SOUTH YAKD	NEW PLANI	NEW FLAN	NULL LIND		0-6	0-6	0-6	0-6
Sample Interval (feet bgs)	0-3	0-0.	0-0	0 - 0	0-0		10101	10/07	10/02/01
Date Sampled	10/8/97	11/14/97	11/14/97	12/5/97	12/22/91	16/77/71	16177171	16177171	1 1 1 1 1 1 1
Pesticides and the second second	Solution of States and a second	()))))))))))))))))))))))))))))))))))))	ALL THE REPORT OF A DECK	The second s		att ( a state	LEAST BOLLE	alanda 11 - Katan	
	[1 5	NA	AN	AN	AN	NA	NA	NA	NA
heta-RHC	11 \$	NA	YN.	NA	NA	NA	NA	NA	NA
delta-BHC	5 U	NA	NA	NA	NA	NA	NA	NA	NA
vamma-RHC (1 indane)	5 11	NA	NA	NA	NA	NA	NA	NA	NA
Bannachlor	11.5	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	5 10	NA	NN	NA	NA	NA	NA	NA	AN
Hentachlor Fnoxide	115	NA	NA	NA	NA	NA	NA	NA	٩N
Endoculfan I	5 11	NA	VN	NA	NA	NA	NA	NA	AN
Dieldrin	5 []	NA	AN	NA	NA	NA	NA	NA	AN
4 4'-DDF	5 11	NA	AN	NA	NA	NA	NA	NA	NA
Endrin	, 511	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	5 U	NA	NA	NA	NA	NA	NA	NA	NA
4 4'-DDD	5 11	NA	AN	NA	NA	NA	NA	NA	AN
Endosulfan Sulfate	5 U	AN	NA	NA	NA	NA	NA	NA	AN
4 4'-DDT	5 U	AN	NA	NA	NA	NA	NA	NA	NA
4 4-Methoxychlor	5 U	NA	AN	NA	NA	NA	NA	NA	NA
Endrin ketone	5 U	NA	AN	NA	NA	NA	NA	AA	NA
Endrin aldehvde	5 U	AN	AN	NA	NA	NA	NA	AN	NA
Chlordane	5 U	NA	NA	NA	NA	NA.	NA	٩N	NA
Toxaphene	500 U	NA	NA	NA	NA	NA	NA	NA	NA
PCBs - Land All A and a set	S.K. Marken and	ALLES	Section of the sectio	and the second second		and the second secon			
Aroclor-1016	1000 U	2000 U	2000 U	1000 U	NA	NA	NA	AN	
Aroclor-1221	1000 U	2000 U	2000 U	1000 U	NA	NA	NA	AN	1000 U
Aroclor-1232	9600	2000 U	2000 U	1000 U	NA	NA	AN	AN	1000 L
Aroclor-1242	1000 U	2000 U	2000 U	1000 U	NA	NA	NA	AN	1000 N
Aroclor-1248	87000	2000 U	2000 U	U 0001	NA	NA	٩N	AN	5600
Aroclor-1254	00061	2000 U	2000 U	U 0001	NA	٩N	AN	NA	1000 U
Aroclor-1260	1000 U	2000 U	2000 U	1000 N	NA	NA	NA	NA	1000 U

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Notes:

Analytical data are not validated.
 U = Not detected; NA = Not analyzed.

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APPENDIX D-5D HEXAGON LABORATORIES RI/FFS IRM UST EXCAVATED SOIL ANALYTICAL DATA - INORGANICS (mg/kg)

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Field sample ID	LD1-2-3	FOT#1	FOT#2	#1-2-3	F01	F02	SYSI	SYS2	SYS3
Sample Location	SOUTH YARD	NEW PLANT	NEW PLANT	SOUTH YARD	NEW PLANT	NEW PLANT	SOUTH YARD	SOUTH YARD	SOUTH YARD
inple interval (feet bgs)	0-3	0-6	0-6	0-6	0-6	0-6	9-0	9-0	0-6
Date Sampled	10/8/01	11/14/97	11/14/97	12/5/97	12/22/97	12/22/97	12/22/97	12/22/97	12/22/97
Arsenic	0.6.U	6.6 U	6.6 U	6.6 U	NA	NA	NA	NA	NA
Barium	88.88	119	101	601	NA	AN	AN	VN	NA
Cadmium	U 23.1	1.65 U	U 23.1	1.65 U	NA	NA	<b>NA</b>	VN	NA
Chromium	29.4	35.3	44.4	36.8	NA	NA	AN	VN	NA
Copper	144	NA	VN	50.1	٨٨	AN	AN	٧N	NA
Iron	12700	NA	NA	21280	AN	NA	AN	VN	NA
Lead	103	7.3	35.5	54.5	NA	NA	NA	<b>NA</b>	NA
Manganese	127	NA	VN	172	NA	NA	<b>NA</b>	NA	NA
Mercury	0.020 U	0.02 U	0.02 U	0.02 U	AN	NA	AN	VN	NA
Nickel	32.8	AN	NA	51.4	AN	AN	٧N	٧N	NA
Selenium	1.65 U	1.65 U	1.65 U	3.74	AN	NA	NA	AN	VN
Silver	U 29.1 ,	1.65 U	0 23.1	1.65 U	NA	NA	NA	NA	NA
Zinc	21.9	NA	VN	177	VN	NA	NA	NA	NA
Notes:									

Notes: 1. Analytical data are not validated. .

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#### APPENDIX D-6A HEXAGON LABORATORIES RI/FFS IRM FLOOR SLAB ANALYTICAL DATA - VOLATILE ORGANICS (ug/kg) Page 1 of 2

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Field sample ID	140	0P2	0P3	NP4	NPS	NP6
Sample Location	OLD PLANT	OLD PLANT	OLD PLANT	NEW PLANT	NEW PLANT	NEW PLANT
Sample Interval (inches bgs)	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1	0-0.1	0 - 0.1
Date Sampled	12/11/97	12/11/97	12/11/97	12/11/97	12/11/97	12/11/97
Arpmatics in the Party of the		the second of the second	Abort States and States and States		And And Annal and Ann	Research Color
Benzene	250 U	50 U	10 U	5 U	5 U	10 U
Toluene	65000	0001	910	130	380	1000
Ethylbenzene	3500	50 U	48	26	12	23
Xylene(total)	15000	150 U	360	140	63	180
Styrene	250 U	50 U	10 U	5 U	5 U	10 U
Halogenated Aliphatics		Service States in the service of the		<ul> <li>South and the second sec</li></ul>		
Chloromethane	250 U	50 U	10 N	5 U	5 U	10 U
Bromomethane	250 U	50 U	10 01	5 U	5 U	10 U
Vinyl Chloride	250 U	50 U	10 U	5 U	5 U	10 U
Chloroethane	250 U	50 U	10 N	5 U	5 U	10 U
Methylene Chloride	250 U	50 U	10 U	5 U	5 U	10 U
I, I-Dichloroethene	250 U	50 U	10 U	5 U	5 U	10 U
1,1-Dichloroethane	250 U	50 U	10 N	5 U	5 U	10 U
1,2-Dichloroethene (total)	250 U	50 U	U 01	5 U	5 U	10 U
Chloroform	250 U	50 U	10 N	5 U	5 U	10 U
1,2-Dichloroethane	1600	4600	91	5 U	5 U	130
1,1,1-Trichloroethane	250 U	U 02	10 U	5 U	5 U	10 U
Carbon Tetrachloride	250 U	50 U	10 U	5 U	5 U	10 U
Bromodichloromethane	250 U	50 U	10 U	5 U	5 U	10 U
1,2-Dichloropropane	250 U	50 U	10 U	5 U	5 U	10 U
Trichloroethene	250 U	50 U	10 U	5 U	5 U	10 U
Dibromochloromethane	250 U	50 U	10 N	5 U	5 U	10 U
1,1,2-Trichloroethane	250 U	50 U	10 U	5 U	5 U	10 U
Bromoform	250 U	50 U	N 01	5 U	5 U	10 U
Tetrachloroethene	250 U	50 U	10 U	5 U	5 U	10 U
1,1,2,2-Tetrachloroethane	250 U	50 U	10 U	5 U	5 U	10 U
Bromochloromethane	250 U	50 U	10 U	5 U	5 U	10 U
1,2-Dibromo-3-Chloropropane	250 U	50 U	10 U	5 U	5 U	10 U
1,2-Dibromoethane	250 U	50 U	10 U	5 U	5 U	10 U
Dibromomethane	250 U	50 U	10 N	5 U	5 U	10 U
Dichlorodifluoromethane	250 U	50 U	10 N	5 U	5 U	10 U
1,3-Dichloropropane	250 U	50 U	10 N	5 U	5 U	10 U
2.2-Dichloropropane	250 U	50 U	N 01	5 U	5 U	10 U
1,1-Dichloropropene	250 U	50 U	N 01	5 U	5 U	10 U
1,1,1,2-Tetrachloroethane	250 U	50 U	U 01	5 U	5 U	10 N
Trichlorofluoromethane	250 U	50 U	10 U	5 U	5 U	10 U
1,2,3-Trichloropropane	250 U	50 U	10 N	5 U	5 U	10 U

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### APPENDIX D-6A HEXAGON LABORATORIES RI/FFS IRM FLOOR SLAB ANALVTICAL DATA - VOLATILE ORGANICS (ug/kg) Page 2 of 2

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Field sample ID	140	0P2	0P3	NP4	NP5	9dN
Sample Location	OLD PLANT	OLD PLANT	OLD PLANT	NEW PLANT	NEW PLANT	NEW PLANT
Sample Interval (inches bgs)	0 - 0.1	0-0.1	0 - 0.1	0 - 0.1	1.0 - 0	1'0 - 0
Date Sampled	12/11/97	12/11/97	12/11/97	12/11/97	12/11/97	12/11/97
Ketasa a bi a a a la la la la la la la	attack	addition of the second	and the second second second second	ALL SALE SALE.	A MARCH AND	South a sha
	250 U	50 U	10 U	5 U	5 U	10 U
2-Butanone	250 U	20 U	U 01	5 U	5 U	10 N
2-Hexanone	250 U	50 U	10 N	5 U	5 U	10 N
Other/Miscellaneous VOCs	Maria Constanting		and a subscription of the later	A STATE OF A	A Street and a street of the second	Material States of Automatic
Carbon disulfide	250 U	50 U	10 N	5 U	5 U	10 N
Chlorobenzene	250 U	50 U	10 U	5 U	5 U	10 DI
1,2-Dichlorobenzene	250 U	50 U	10 N	5 U	33	13
1,3-Dichlorobenzene	250 U	50 U	10 N	5 U	5 U	U 01
1,4-Dichlorobenzene	250 U	50 U	10 U	5 U	5 U	10 U
Bromobenzene	250 U	50 U	10 N	5 U	. s u	10 N
n-Bútylbenzene	250 U	50 U	10 N	5 U	5 U	10 N
sec-Butylbenzene	250 U	50 U	10 U	5 U	5 U	10 U
tert-Butylbenzene	250 U	50 U	10 U	5 U	5 U	10 U
2-Chloratoluene	250 U	50 U	10 U	5 U	5 U	10 N
4-Chlorotoluene	250 U	50 U	10 U	5 U	5 U	10 U
Hexachlorobutadiene	250 U	50 U	10 U	5 U	5 U	10 U
Isopropylbenzene	830	50 U	10 U	5 U	5 U	17
p-Isopropyitoluene	250 U	50 U	10 N	5 U	5 U	10 U
Naphthalene	250 U	50 U	10 U	5 U	5 U	10 N
n-Propylbenzene	250 U	50 U	10 U	5 U	5 U	10 N
1,2,3-Trichlorobenzene	250 U	50 U	10 U	5 U	. 5 U	10 N
1,2,4-Trichlorobenzene	250 U	50 U	10 U	5 U	5 U	10 U
1,3,5-Trimethylbenzene	250 U	50 U	10 U	5 U	5 U	10 U
1,2,4-Trimethylbenzene	330	50 U	10 U	<u>5 U</u>	5 U	10 N
Vinyl Acetate	250 U	50 U	10 U	5 U	5 U	10 U
	가지 않는 것 같은 것 같은 것 같이 하는 것이 같다.	NAMES OF A DESCRIPTION OF	a tangan dari kenangan dari ka	والمراجعة فالمراجع والمراجع المراجع	and the second second second	State States
TOTAL TCL VOCs	85100	5600	1334	296	455	1333
TOTAL OTHER VOCS	1160	0	0	0	33	30
TOTAL TARGET VOCs	86260	2600	1334	296	488	1363

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Analytical data are not validated.
 U = Not detected.

#### APPENDIX D-6B HEXAGON LABORATORIES RI/FFS IRM FLOOR SLAB ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 1 of 2

Field sample 10	140	OP2	OP3	NP4	NP5	NP6
Sample Location	OLD PLANT	OLD PLANT	OLD PLANT	NEW PLANT	NEW PLANT	NEW PLANT
Sample Interval (inches bgs)	0-0.1	0 - 0.1	0-0.1	0 - 0.1	0 - 0.1	0 - 0.1
Date Sampled	12/11/97	12/11/97	12/11/97	12/11/97	12/11/97	12/11/97
Phenols/Acid Extractables					<ul> <li>B. M. Sangaran and Hermitian</li> </ul>	
Phenol	670 U	670 U				
2-Chlorophenol	670 U	670 U				
2-Methylphenol (o-cresol)	670 U	670 U				
4- Methylphenol	670 U	670 U	670 U	700 U	670 U	670 U
2.4-Dimethylphenol	670 U	670 U				
2,4-Dichlorophenol	670 U	670 U				
4-Chloro-3-methylphenol	670 U	670 U				
2,4,6-Trichlorophenol	670 U	670 U				
2,4,5-Trichlorophenol	670 U	670 U	0 029 N	670 U	670 U	670 U
2,4-Dinitrophenol	1300 U	1300 U	1300 U	U 00£1	1300 U	1300 U
2-Nitrophenol	670 U	670 U	0 029 U	670 U	670 U	670 U
4-Nitrophenol	670 U	670 U	0 029	670 U	670 U	670 U
4,6-Dinitro-2-methylphenol	670 U	850	670 U	670 U	670 U	670 U
Pentachiorophenol	670 U	0 029 U	0 029 U	670 U	670 U	670 U
Polycyclic Aromatic Hydrocarbons (PAHs)	s)					
Naphthalene	330 U	330 U				
2-Methylnaphthalene	670 U	670 U				
2-Chloronaphthalene	670 U	670 U				
Accnaphthylene	400 U	400 U				
Acenaphthene	330 U	330 U				
Fluorene	330 U	330 U				
Phenanthrene	330 U	330 U				
Anthracene	330 U	330 U				
Fluoranthene	330 U	, 330 U				
Pyrene	330 U	330 U				
Benzo(a)anthracene	330 U	330 U				
Chrysene	110	950	140	260	420	110
Benzo(b)fluoranthene	150 U	150 U				
Benzo(k)fluoranthene	100 U	100 U				
Benzo(a)pyrene	40 U	40 U				
Indeno(1,2,3-cd)pyrene	40 U	40 U				
Dibenz(a,h)anthracene	40 U	40 U				
Benzo(g,h,i)perylene	00 N	100 U	100 U	100 U	100 U	100 U
Antline Compounds						
4-Chloroaniline	670 U	670 U				
2-Nitroaniline	670 U	670 U				
3-Nitroaniline	670 U	670 U				
4-Nitroaniline	670 U	670 U				

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#### APPENDIX D-6B HEXAGON LABORATORIES RI/FFS IRM FLOOR SLAB ANALYTICAL DATA - SEMIVOLATILE ORGANICS (ug/kg) Page 2 of 2

Field sample ID	140	0P2	0P3	NP4	NP5	NP6
Sample Location	OLD PLANT	OLD PLANT	OLD PLANT	NEW PLANT	NEW PLANT	NEW PLANT
Sample Interval (inches bgs)	0 - 0,1	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1	0 - 0.1
Date Sampled	12/11/97	12/11/97	12/11/97	12/11/97	12/11/97	12/11/97
Bentenechromatics						
1,3-Dichlorobenzene	670 U	670 U	670 U	670 U	670 U	670 U
1.4-Dichlorobenzene	670 U	670 U	670 U	670 U	670 U	670 U
1,2-Dichlorobenzene	670 U	670 U	670 U	670 U	670 U	670 U
Nitrobenzene	670 U	4100	670 U	100 U	670 U	670 U
1,2,4-Trichlorobenzene	100 N	100 U	N 001	100 U	100 U	100 U
2,6-Dinitrotoluene	670 U	670 U	670 U	670 U	670 U	670 U
2,4-Dinitrotoluene	670 U	670 U	670 U	670 U	670 U	670 U
Hexachlorobenzene	670 U	070 U	0 0L9	670 U	670 U	670 U
Phthalates	[10] S. M. M. Martin, M. M. Martin, M. S. M. Martin, and M. M. Martin, and M. M. Martin, and M. M. Martin, and M. Ma Martin, and M. Martin, and M Martin, and M. Martin, and Martin, and M. Martin, and Martin, and M. Martin, and M					
Dimethylphthalate	670 U	670 U	670 U	670 U	670 U	670 U
Diethylphthalate	670 U	670 U	670 U	670 U	670 U	670 U
Di-n-butyl phthalate	670 U	670 U	670 U	670 U	670 U	670 U
Butylbenzyl phthalate	670 U	670 U	670 U	01 029	670 U	670 U
bis(2-Ethylhexyl)phthalate	1100	1500	1600	47000	670 U	670 U
Di-n-octyl phthalate	670 U	670 U	670 U	1400	670 U	670 U
<b>Other/Miscellaneous</b> SVOCs						
bis(2-choroethyl)Ether	670 U	670 U	670 U	670 U	670 U	670 U
N-Nitroso-di-n-propylamine	670 U	670 U	670 U	670 U	670 U	670 U
Hexachloroethane	670 U	670 U	670 U	670 U	670 U	670 U
Isophotone	0 020 U	670 U	670 U	670 U	670 U	670 U
Hexachlorobutadiene	670 U	670 U	670 U	670 U	670 U	670 U
bis(2-chloroethoxy)methane	670 U	670 U	670 U	670 U	670 U	670 U
Hexachlorocyclopentadiene	1000 U	1000 N	1000 U	1000 U	1000 U	1000 U
Dibenzofuran	670 U	670 U	670 U	670 U	670 U	670 U
4-Chlorophenyl-phenyl ether	670 U	670 U	670 U	670 U	670 U	670 U
N-nitrosodiphenylamine	670 U	670 U	670 U	670 U	670 U	670 U
4-Bromophenyl-phenyl ether	670 U	670 U	670 U	670 U	670 U	670 U
3,3'-Dichlorobenzidine	670 U	670 U	670 U	670 U	670 U	670 U
Benzyl Alcohol	2800	670 U				
bis(2-chloroisopropyl)ether	670 U	670 U	670 U	670 U	670 U	670 U
TOTAL TCL SVOCs	1210	7400	1740	48660	420	011
TOTAL OTHER SVOCs	2800	0	0	0	0	0
Total Target SVOCs	4010	7400	1740	48660	420	011

Notes:

Analytical data are not validated.
 U = Not detected.

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APPENDIX D-7 HEXAGON LABORATORIES RI/FFS ANALYTICAL DATA - TCLP (ug/L)

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		010011	LUNI COL		IJUDIUCI	COURAII	HYRI3SI	SVA
I ah Sample ID	D2085-08	D1911-06	D1911-07	D1875-01	D1860-01	D1860-02	D2003-02	
Sample Location	HTHERMI	MWI	MWI	MWS	NEW PLANT	OLD PLANT	HTHERMI	SOUTH YARD
Sample Description	μ.	ENV SAMPLE	ENV SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	ENV. SAMPLE	0-6
Date Sampled		11/19/97	11/19/97	11/14/97	11/12/97	11/12/97	12/9/97	11/17/97
Volatile Organics	122					ADM (MARK) BALLON	States States	Workhelper G. Wighter
Vinyl Chloride	5 U)	s UJ	s ui	50 UJ	50 UJ	50 UJ	5 UI	NA
1, I-Dichloroethene	s ur	5 UJ	5 UJ	S0 UJ	50 UJ	50 UJ	5 UJ	NA
Chloroform	s ur	5 UJ	5 UJ	50 UJ	50 UJ	50 UI	5 UJ	NA
1,2-Dichloroethane	s ur	5 UJ	s UI	R	R	R	5 UJ	NA
2-Butanone	5 UI	5 (1)	IN S	50 UJ	50 UJ	50 UJ	5 UJ	NA
Carbon Tetrachloride	5 UI	5 UJ	5 UJ	50 UJ	50 UJ	50 UJ	5 UJ	NA
Trichloroethene	5 UJ	5 UI	5 UI	×	R	R	5 UJ	NA
Benzene	s ur	5 UI	5 UJ	50 UJ	50 UJ	so UJ	5 UJ	NA
Tetrachloroethene	5 UJ	5 UI	5 UJ	50 UJ	R	R	5 UJ	NA
Chlorobenzene .	5 UJ	5 UI	5 UJ	50 UJ	1300 U	1300 U	5 UI	NA
Semivolatile Organics								
Cresol (Total)	33 U	5 J	33 U	370	300	300	33 U	NA
1 4-Dichlorobenzene	33 U	33 U	33 U	33 U	33 U	33 U	33 U	NA
Hexachloroethane	33 U	33 U	33 U	33 U	33 U	33 U	33 U	٧N
Nitrobenzene	33 U	33 U	33 U	33 U	33 U	33 U	33 U	NA
Hexachlorobutadiene	33 U	33 U	33 U	33 U	33 U	33 U	33 U	NA
2,4,6-Trichlorophenol	33 U	33 U	33 U	33 U	33 U	33 U	33 U	NA
2.4.5-Trichlorophenol	83 U	83 U	83 U	83 U	83 U	83 U	83 U	NA
2,4-Dinitrotoluene	33 U	33 U	33 U	33 U	33 U	33 U	33 U	NA
Hexachlorobenzene	33 U	33 U	33 U	33 U	33 U	33 U	33 U	NA
Pentachlorophenol	83 U	83 U	83 U	83 U	83 U	83 U	83 U	NA
Pyridine	33 U	33 U	33 U	33 U	33 U	33 U	33 U	NA
Pesticides & Herbicides	A DUCTOR AND A DUCTOR A				AND A CONTRACT OF A CONTRACT O	and the second secon	Southern Street	Katha and
Chlordane	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	NA
Endrin	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	NA
Heptachlor	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	NA
Heptachlor Epoxide	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	٨٨
gamma-BHC (Lindane)	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	NA
Methoxychlor	U 1.1 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.7 U	NA
Toxaphene	17 U	17 U	N 21	17 U	17 U	17 U	17 U	NA
[2,4,-D	10 E.E	3.3 U	U E.E	3.3 U		3.3 U	3.3 U	AA
2,4,5-TP (Silvex)	0.33 UJ	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	NA
lnorganics 🛼 👘 👘		and the second secon				a state of the second secon	A A A A A A A A A A A A A A A A A A A	
Arsenic	13.1	13.6	9'11	10.7	10.8	11.2	3.9	24 U
Barium	591 J	1870	861	394	564 J	f 0/11	973 J	900
Cadmium	32.2 J	58.8	U 09.0	0.60 U	0.60 U	0.60 U	7.6 J	3.7
Chromium	1 9.11	10.4 J	15.7 J	60.4	63.8 J	113 J	12.4 J	8.1
Lead	5.9	I 080 J	36.8 J	26.9	24.1 J	38.2 J	175 J	51
Mercury	28.0	0.28 U	0.28 U	U 1.1	1.1 U	1.1 U	0.28 UJ	0.15
Selenium	5.0 UJ	R	R	R	22.5	16.4	5.0 U	42 U
Silver	2.0 U	2.0 UJ	5.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	2.0 U	4.3 U
Notes:								

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U = Not detected; J = Estimated value; R = Rejected value; NA = Not analyzed.
 Analytical data for TCLP sample collected by Trade-Winds during the IRM (SYA) was not validated.

APPENDIX E

**RISK QUANTIFICATION CALCULATIONS** 

SITE SURFACE SOIL INGESTION PATHWAY CURRENT AND FUTURE USE SCENARIOS - HIGH END RISKS TO TRESPASSERS TABLE E-1 HEXAGON LABORATORIES RI/FFS Page 1 of 2

CARCINOGENS - HIGH END SURFACE SOIL INGESTION EXPOSURE

10<sup>6</sup> mg Ikg

Averaging Time

Body Wt.

Factor

Intake Soil

Conc.

×

Exposure Duration

1 X Frequency X

Bioavail. X

×

Chronic Daily Intake (mg/kg-day) = Exposure Point X

Exposure

Chronic Daily Int	Chronic Daily Intake (mg/kg-day) =	mg/kg	i 100 mg/day X	1.00 X	L X	52 days/yr X	6 yrs X	X Ikg		
			78.6 kg 365 days/yr X 70 yrs/lifetime		78.6 kg	365 days/yr X	70 yrs/lifetime	10 <sup>6</sup> mg		
		Exposure Point Conc.	Intake	Bio- availability	Body Weight	Exposure	Averaging Time	CDI	SF	RISK
Com	Compound	(mg/kg)	_	Factor	(kg)	(days)	(days/lifetime)	(mg/kg-day)	(kg-day/mg)	SF*CDI
INORGANICS		8.87E+02	100	1.00	78.6	3.12E+02	2.56E+04	1.38E-05	(1)	
SEMIVOLATILE ORGANICS BENZO(A)PYRENE	LE ORGANICS SNE	1.11E+00	100	1.00	78.6	3.12E+02	2.56E+04	1.73E-08	7.30E+00	1.3E-07
									TOTAL RISK 1.3E-07	1.3E-07

Notes:

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1) No Slope Factor is available for this compound.
(2) CDI = Chronic Daily Intake; SF = Slope Factor.
(3) Risk associated with semivolatile organic compound TICs is not quatifiable due to lack of slope factor data.

### IIEXAGON LABORATORIES RIFFS SITE SURFACE SOIL INGESTION PATHWAY CURRENT AND FUTURE USE SCENARIOS - HIGH END RISKS TO TRESPASSERS **TABLE E-1** Page 2 of 2

## NONCARCINOGENS - HIGH END SURFACE SOIL INCESTION EXPOSURE

lkg	10 <sup>6</sup> mg	:	IKg	$10^{6} \text{ mg}$
X 1 X Frequency X	Body Wt. Averaging Time		$\lambda$ I $\lambda$ 52 days/yr $\lambda$	78.6 kg 365 days/yr
Bioavail.	Factor		1.00	
×		;	~	
Soil	Intake	1000	100 mg/day	
×		2	~	
<b>Exposure</b> Point	Conc.		mg/kg	
Chronic Daily Intake (mg/kg-day) =			Chronic Daily Intake (mg/kg-day) =	
	X Bioavail. X 1 X Frequency	oint X Soil X Bioavail. X <u>1 X Frequency X</u> Intake Factor Body Wt. Averaging Time	X Bioavail. X 1 X Frequency 7 Factor Body Wt. Averaging Time	X Bioavail. X <u>1</u> X Frequency Factor Body Wt. Averaging Time ay X 1.00 X <u>1 X 52 days/yr</u>

		Exposure Point	Intake	Bio- availability	Body Weight	Exposure	CDI	Rf.)	
	Compound	(mg/kg)	(mg/day)	Factor	(kg)	Averaging Time	m)	(mg/kg-day)	CDI/RID
	INORGANICS LEAD	8.87E+()2	001	1.00	78.6	1.42E-01	1.61E-04	(1)	
	SEMIVOLATILE ORGANICS BENZO(A)PYRENE	1.11E+00	100	1.00	78.6	1.42E-01	2.02E-07	(2)	
<u> </u>							-	147 ARD INDFX	E E
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Lead toxicity value is currently not available.
 No Reference Dose is available for this contaminant.
 Hazard Index is not quatifiable due to lack of numeric reference doses for the contaminants of concern. Note that semi-volatile TICs were also detected but are not quantifiable due to lack of reference dose data.
 CDI = Chronic Daily Intake; RfD = Reference Dose.

SITE SURFACE SOIL DERMAL CONTACT PATHWAY CURRENT AND FUTURE USE SCENARIOS - HIGH END RISKS TO TRESPASSERS Page 1 of 2 HEXAGON LABORATORIES RI/FFS **TABLE E-2** 

# CARCINOGENS - HIGH END SURFACE SOIL DERMAL CONTACT EXPOSURE

					R	SF4		
					SF	(kg-day/mg)	=	(1)
1kg	10 <sup>6</sup> mg	lkg	10 <sup>6</sup> mg		CDI	(mg/kg-day)		1.84E-U/
Surface X	Area	4,443 cm2 X		Surface	Area	$(cm^2)$	0011011	4.443E+U3 1.84E-U/
Event Exposure Exposure X Adherence X 1 X Frequency X Frequency X Duration X Surface X 1kg		X 0.03 X 1 X I event/day X 52 days/yr X 6 yrs X 4,443 cm2 X 1kg	70 years	Averaging	Time	(days/lifetime)		2.56E+04
Exposure Frequency X	Averaging Time	52 days/yr N	365 days/yr X	Exposure	Frequency	(days)		3.12E+02
Event Frequency X		I event/day X	365 da	Event	Frequency	(events/day)		
۲ ۲	Body W1.	I X	78.6 kg	Body	Weight	(kg)		78.6
X Adherence X	Factor	X 0.03 X	mg/cm <sup>2</sup> -event 78.6 kg		Adherence	Factor		0.03
Absorption >	Fraction	X Absorption N		Absorption	Fraction	(unitless)	_	1.00E-02
Exposure Point X	Conc.	mg/kg	•	Exposure Point	Conc.	(mg/kg)		8.87E+02
Chronic Dailty Intake (mykg-day) = Exposure Point X Absorption		Chronic Daily Intake (mg/kg-day) =				Compound	INORGANICS	ILEAD
Chr		Chr						<u> </u>

	Conc.	Fraction	Adherence	Weight	Frequency	Frequency	Time	Area	CDI	SF	RISK	
Compound	(mg/kg)	(unitless)	Factor	(kg)	(events/day)	(days)	(days/lifetime)	$(cm^2)$	(mg/kg-day)	(mg/kg-day) (kg-day/mg)	SF*CDI	
INORGANICS	8.87E+02	1.00E-02	0.03	78.6		3.12E+02	2.56E+04	4.443E+03	1.84E-07	(1)		
 SEMIVOLATILE ORGANICS												
BENZO(A)PYRENE	1.11E+00	1.30E-01	0.03	78.6	-	3.12E+02	2.56E+04	4.443E+03	3.00E-09	7.30£+00	2.212-08	-
										TOTAL RISK	2.2E-08	

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Notes:

No Slope Factor is available for this compound.
 CDI = Chronic Daily Intake; SF = Slope Factor.
 Risk associated with semivolatile organic compound TICs is not quatifiable due to lack of slope factor data.

SITE SURFACE SOIL DERMAL CONTACT PATHWAY CURRENT AND FUTURE USE SCENARIOS - HIGH END RISKS TO TRESPASSERS HEXAGON LABORATORIES RIFFS TABLE E-2 Page 2 of 2

# NONCARCINOGENS - HIGH END SURFACE SOIL DERMAL CONTACT EXPOSURE

		Exposure Point	Absorption		Body	Event	Exposure	Averaging	Surface			
		Conc.	Fraction	Adherence	Weight	Frequency	Frequency	Time	Area	CDI	RfD	
	Compound	(mg/kg)	(unitless)	Factor	(kg)	(events/day)	(days)	(days/year)	(cm <sup>2</sup> )	(mg/kg-day)	(mg/kg-day)	CDI/RtD
	INORGANICS LEAD	8.87E+02	1.001:-02	0.03	78.6		5.2015+01	3.6515102	4.443 <u>E</u> +03	2.141:-06	(1)	
3	SEMIVOLATILE ORGANICS BENZO(A)PYRENE	  CS  .11E+00	1.30E-01	0.03	78.6		5.20E+01	3.65E+02	4.443E+03	3.50E-08	(2)	
										H	HAZARD INDEX	(3)
Notec:												

Notes:

(1) Lead toxicity value is currently not available.

No Reference Dose is available for this contaminant.
 Hazard Index is not quatifiable due to lack of numeric reference doses for the contaminants of concern.

Note that semi-volatile TICs were also detected but are not quantifiable due to lack of reference dose data. (4) CDI = Chronic Daily Intake; RID = Reference Dose.

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TABLE E-3 IIEXAGON LABORATORIES RI/FFS SITE SURFACE SOIL INGESTION PATHWAY FUTURE USE SCENARIO - HIGH END RISKS TO SITE WORKERS Page 1 of 2

### **CARCINOGENS - HIGH END SURFACE SOIL INGESTION EXPOSURE**

Exposure Duration

Exposure 1 X Frequency X

Chronic Daily Intake (mg/kg-day) = Exposure Point X	Exposure Point X	Soil	K Bioavail.	×	x I	Frequency X	X Bioavail. X 1 X Frequency X Duration X	x	lkg		
	Cone.	Intake	Factor Body Wt.	ыщ	dy Wt.	Averaging Time	g Time		10 <sup>6</sup> mg		
Chronic Daily Intake (mg/kg-day) =	mg/kg	50 mg/day	X 1.00	×	1 X	X 50 mg/day X 1.00 X 1 X 250 days/yr X 25 yrs		×	1kg		
	1	I		6	8.6 kg	98.6 kg 365 days/yr X 70 yrs/lifetime	70 yrs/lifetime	-	0° mg		
	Exposure Point		Bio-	┢	Body		Averaging				
	Conc.	Intake	availability		Weight	Exposure	Time		CDI	SF	RISK
Compound	(mg/kg)	(mg/day)	Factor		(kg)	(days)	(days/lifetime)	gm)	(mg/kg-day)	(kg-day/mg)	SF*CDI
INORGANICS		ŝ			7.00	60° 336 7	PUT395 C		105-04	Ð	
LEAD	8.87E+02	00			<u> </u>	CU+11C2.0	+01-10C.2	-			
SEMIVOLATILE ORGANICS									i		
<b>BENZO(A)PYRENE</b>	1.11E+00	50	1.00		98.6	6.25E+03	2.56E+04		1.38E-07	7.30E+00	1.0E-06

Notes:

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1.0E-06

TOTAL RISK

No Slope Factor is available for this compound.
 CDI = Chronic Daily Intake; SF = Slope Factor.
 Risk associated with semivolatile organic compound TICs is not quatifiable due to lack of slope factor data.

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### IIEXAGON LABORATORIES RI/FFS SITE SURFACE SOIL INGESTION PATHWAY FUTURE USE SCENARIO - HIGH END RISKS TO SITE WORKERS Page 2 of 2 **TABLE E-3**

### NONCARCINOGENS - HIGH END SURFACE SOIL INGESTION EXPOSURE

	1		1	
	1kg	10 <sup>6</sup> mg	l kg	10° mg
Exposure	X I X Frequency X	Factor Body Wt. Averaging Time	X 1 X 250 days/yr X	98.6 kg 365 days/yr
	Bioavail.	Factor	1.00	
	n X Soil X	Intake	X 50 mg/day X 1.00	
	×		×	
	<b>Exposure Point</b>	Cone.	mg/kg	
	Chronic Daily Intake (mg/kg-day) = Exposure Point X		Chronic Daily Intake (mg/kg-day) =	

		Exposure Point Cone	Intake	Bio- availability	Body Weight	Bio- Body Exposure availability Weicht Frequency	CDI	RD	
	Compound	(mg/kg)		Factor	(kg)	Averaging Time	۳ ۳	(mg/kg-day)	CDI/RID
	INORGANICS LEAD	8.87E+02	50	1.00	98.6	6.85E-01	3.08E-04	(1)	
	SEMIVOLATILE ORGANICS BENZO(A)PYRENE	1.11E+00	50	1.00	98.6	6.85E-01	3.87E-07	(2)	
								HAZARD INDEX	(3)
Notes:									

(1) Lead toxicity value is currently not available.

(2) No Reference Dose is available for this contaminant.

(3) Hazard Index is not quatifiable due to lack of numeric reference doses for the contaminants of concern. Note that semi-volatile TICs were also detected but are not quantifiable due to lack of reference dose data.
(4) CDI = Chronic Daily Intake; RfD = Reference Dose.

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HEXAGON LABORATORIES RI/FFS SI'TE SURFACE SOIL DERMAL CONTACT PATHWAY FUTURE USE SCENARIO - HIGH END RISKS TO SI'TE WORKERS **TABLE E-4** Page 1 of 2

## CARCINOGENS - HIGH END SURFACE SOIL DERMAL CONTACT EXPOSURE

Chronic Daily Intake (mg/kg-day) = Exposure Point X Absorption X Adherence  $\frac{X}{P^{4}}$  Absorption Factor Body Wt.

Chrc	Chronic Daily Intake (mg/kg-day) =		Absorption X	0.03 X	1 X	I event/day X	250 days/yr X	mg/kg X Absorption X 0.03 X 1 X 1 event/day X 250 days/yr X 25 yrs X 4,443 cm2 X 1kg	4,443 cm2 X_	lkg		
			Fraction mg/cm <sup>2</sup>	ng/cm <sup>2</sup> -event 98.6 kg	98.6 kg	365 days/yr	ys/yr X	70 years		10 <sup>6</sup> mg		
		Exposure Point Conc.	Absorption Fraction	Adherence	Body Weight	Event Frequency	Exposure Frequency	Averaging Time	Surface Area	CDI	SF	RISK
	Compound	(mg/kg)	(unitless)	Factor	(kg)	(events/day)	(days)	(days/lifetime)	$(cm^2)$	(mg/kg-day)	(kg-day/mg)	SF*CDI
	INORGANICS I FAD	, 8 & 7R +0.2	CU <sup>-</sup> AUU 1	£0 0	9 X b	-	6 25E+03	2.56E-F04	4.443E+03	2.93E-06	Ξ	<u> </u>
	SEMIVOLATILE ORGANICS	1				•						
	BENZO(A)PYRENE	1.11E+00	1.30E-01	0.03	98.6	-	6.25E+03	2.56E+04	4.443E+03	4.78E-08	7.30E+00	3.5E-07
											TOTAL RISK 3.5E-07	3.5E-07

10<sup>6</sup> mg 1kg

×

Surface Area

×

Exposure Duration

Event Exposure I X Frequency X Frequency X

Averaging Time

Notes:

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No Slope Factor is available for this compound.
 CDI = Chronic Daily Intake; SF = Slope Factor.
 Risk associated with semivolatile organic compound TICs is not quatifiable due to lack of slope factor data.

FUTURE USE SCENARIO - HIGH END RISKS TO SITE WORKERS SITE SURFACE SOIL DERMAL CONTACT PATHWAY **IIEXAGON LABORATORIES RI/FFS TABLE E-4** Page 2 of 2

# NONCARCINOGENS - HIGH END SURFACE SOIL DERMAL CONTACT EXPOSURE

X Surface X 1kg	10 <sup>6</sup> mg	X 4,443 cm2 X 1kg	10 <sup>6</sup> mg	
×		2 X		
Surface	Area	4,443 cn		01
×		×		
Exposure X Frequency	Averaging Time	250 days/yr	tys/yr	L
Event Frequency X		mg/kg X Absorption X 0.03 X 1 X 1 event/day X 250 days/yr	365 days/yr	L
1 X	Factor Body Wt.	- - -	98.6 kg	
ence X	or	3 x -	-event	
X Adher	Fact	X 0.0	mg/cm <sup>2</sup>	
Absorption	Fraction	Absorption	Fraction mg/cm <sup>2</sup> -event 98.6 kg	Absorbian
int X		X		
Exposure Poi	Conc.	mg/kg		Print Daily
Event Exposure Exposure Point X Absorption X Adherence X 1 X Frequency X Frequency X Frequency X $\overline{P}$		Chronic Daily Intake (mg/kg-day) =		
				L

		Exposure Point	Absorption		Body	Event	Exposure	Averaging	Surface			
		Conc.	Fraction	Adherence	Weight	Frequency	Frequency	Time	Area	CDH	RfD	
Group	Compound	(mg/kg)	(unitless)	Factor	(kg)	(events/day)	(days)	(days/year)	(cm <sup>2</sup> )	(mg/kg-day)	(mg/kg-day)	CDI/RID
Trespassers	Trespassers INORGANICS [LEAD]	8.87E+02	1.00E-02	0.03	98.6		2.50E+02	3.65E+02	4.443E+03	8.21E-06	(1)	
	SEMIVOLATILE ORGANICS											
	<b>BENZO(A)PYRENE</b>	1.11E+00	1.30E-01	0.03	98.6	-	2.50E+02	3.65E+02	4.443E+03	1.34E-07	(2)	-
										H	HAZARD INDEX	(3)
N1-4												

Notes:

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Lead toxicity value is currently not available.
 No Reference Dose is available for this contaminant.
 Hazard Index is not quatifiable due to lack of numeric reference doses for the contaminants of concern.

Note that semi-volatile TICs were also detected but are not quantifiable due to lack of reference dose data. (4) CDI = Chronic Daily Intake; RtD = Reference Dose.

TABLE E-5 HEXAGON LABORATORIES RI/FFS SITE SURFACE SOIL INGESTION PATHWAY FUTURE USE SCENARIO - HIGH END RISKS TO CONSTRUCTION WORKERS Page 1 of 2

### CARCINOGENS - HIGH END SURFACE SOIL INGESTION EXPOSURE

Exposure Duration

Exposure

Notes:

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No Slope Factor is available for this compound.
 CDI = Chronic Daily Intake; SF = Slope Factor.
 Risk associated with semivolatile organic compound TICs is not quatifiable due to lack of slope factor data.

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### FUTURE USE SCENARIO - HIGH END RISKS TO CONSTRUCTION WORKERS SITE SURFACE SOIL INGESTION PATHWAY HEXAGON LABORATORIES RI/FFS TABLE E-5 Page 2 of 2

### NONCARCINOGENS - HIGH END SURFACE SOIL INGESTION EXPOSURE

<ul> <li>Exposure Point X Soil X Bioavail. X 1 X Frequency X</li> <li>Conc. Intake Factor Body Wt. Averaging Time</li> <li>mg/kg X 480 mg/day X 1.00 X 1 X 250 diavs/yr X</li> <li>98.6 kg 365 days/yr</li> </ul>					1
<ul> <li>Exposure Point X Soil</li> <li>Cone. Intake</li> <li>mg/kg X 480 mg/d</li> </ul>		Ikg	10 <sup>6</sup> mg	lkg	10 <sup>6</sup> mg
<ul> <li>Exposure Point X Soil</li> <li>Cone. Intake</li> <li>mg/kg X 480 mg/d</li> </ul>	Exposure	X I X Frequency X	Body Wt. Averaging Time	X 1 X 250 davs/yr X	98.6 kg 365 days/yr
<ul> <li>Exposure Point X Soil</li> <li>Cone. Intake</li> <li>mg/kg X 480 mg/d</li> </ul>		Bioavail.	Factor		
<ul> <li>Exposure Point X Soil</li> <li>Cone. Intake</li> <li>mg/kg X 480 mg/d</li> </ul>		×		×	
<ul> <li>Exposure Point</li> <li>Cone.</li> <li>mg/kg</li> </ul>		Soil	Intake	480 mg/day	
Juily Intake (mg/kg-day) = Exposure Poin Cone. Jaily Intake (mg/kg-day) = mg/kg		чX		×	
auily latake (mg/kg-day) = Jaily Intake (mg/kg-day) =		Exposure Poir	Conc.	mg/kg	
Chronic I Chronic I		Chronic Daily Intake (mg/kg-day) =		Chronic Daily Intake (mg/kg-day) =	

		Exposure Point Conc.		Bio- availability E		Exposure Frequency	CDI	RfD	CDI/D
	Compound	(@%Kg)	(mg/uay)	ractor	(KB)	(kg) Averaging 1 une	(mg/kg-day)	(mg/kg-uay)	
	INORGANICS LEAD	8.87E+02	480	1.00	98.6	6.85E-01	2.96E-03	(1)	
	SEMIVOLATILE ORGANICS BENZO(A)PYRENE	1.11E+00	480	1.00	98.6	6.85E-01	3.71E-06	(2)	
							1	 HAZARD INDEX	(3)
N. A.									

Notes:

(1) Lead toxicity value is currently not available.

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(2) No Reference Dose is available for this contaminant.
(3) Hazard Index is not quatifiable due to lack of numeric reference doses for the contaminants of concern. Note that semi-volatile TfCs were also detected but arc not quantifiable due to lack of reference dose data.
(4) CDI = Chronic Daily Intake; RID = Reference Dose.

SITE SURFACE SOIL DERMAL CONTACT PATHWAY FUTURE USE SCENARIO - HIGH END RISKS TO CONSTRUCTION WORKERS Page 1 of 2 **HEXAGON LABORATORIES RI/FFS TABLE E-6** 

## **CARCINOGENS - HIGH END SURFACE SOIL DERMAL CONTACT EXPOSURE**

						Event	Exposure	Exposure			
	Chronic Daily Intake (mg/kg-day) = Exposure Point X		Absorption X	Adherence X	1 X	Frequency X	Frequency X	Absorption X Adherence X 1 X Frequency X Frequency X Duration X Surface X 1kg	Surface X	lkg	
			Fraction	Factor	Body Wt.		Averaging Time		Area	10 <sup>6</sup> mg	
	Chronic Daily Intake (mg/kg-day) =	mg/kg X	Absorption X	0.045 X	1 X	l event/day X	250 days/yr X	Absorption X 0.045 X 1 X I event/day X 250 days/yr X 1 yrs X 4,443 cm2 X 1kg	4,443 cm2 X	lkg	
			Fraction	Fraction mg/cm <sup>2</sup> -event 98.6 kg	98.6 kg	365 days/yr	/s/yr X	X 70 years		10 <sup>6</sup> mg	
L		Exposure Point	Absorption		Body	Event	Exposure	Averaging	Surface	Ĩ	CIF.
		Conc.	Fraction	Adherence	Weight	Frequency	Frequency	lime	Area		
	Compound	(mg/kg)	(unitless)	Factor	(kg)	(events/day)	(days)	(days/lifetime)	(cm <sup>*</sup> )	(mg/kg-day)	mg/kg-day) (kg-day/mg)

		Exposure Point	Absorption		Body		Exposure	Averaging	Surface	CDI	SF	RISK
	-	Conc.	FTACION	Volicicius	weight	r requervy	richnesicy i				1	
	Compound	(mg/kg)	(unitless)	Factor	(kg)	(events/day)	(days)	(days/lifetime)	$(\text{cm}^2)$	(mg/kg-day)	(mg/kg-day) (kg-day/mg)	SF*CDI
	6			300	a de la companya de			2 56E +014	EUTHEVV V	1 765-07	Ξ	
	LEAD	8.8/E+U2	1.002-02	0.40	70.0	1	7.302.44	FULTUC'7			1.1	
	SEMIVOLATILE ORGANICS	ICS										, , ,
	<b>BENZO(A)PYRENE</b>	1.11E+00	1.30E-01	0.045	98.6	-	2.50E+02	2.56E+04	4.443E+03	2.87E-09	7.30E+00	2.11:-08
											TOTAL RISK 2.1E-08	2.1E-08
Notes:												

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Notes: (1) No Slope Factor is available for this compound. (2) CDI = Chronic Daily Intake; SF = Slope Factor. (3) Risk associated with semivolatile organic compound TICs is not quatifiable due to lack of slope factor data.

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SITE SURFACE SOIL DERMAL CONTACT PATHWAY FUTURE USE SCENARIO - HIGH END RISKS TO CONSTRUCTION WORKERS **HEXAGON LABORATORIES RI/FFS TABLE E-6** Page 2 of 2

# NONCARCINOGENS - HIGH END SURFACE SOIL DERMAL CONTACT EXPOSURE

Exposure

Event

						~		1
						CDI/RID		
					RfD	(mg/kg-day)	()	(3)
lkg	10 <sup>6</sup> mg	lkg	10 <sup>6</sup> mg		CDI	(mg/kg-day)	1.23E-05	2.01E-07
X Surface X 1kg	Area	X 4,443 cm2 X 1kg		Surface	Area	$(cm^{2})$	4.443E+03	4.443E+03
×		x		Averaging	Time	(days/year)	3.65E+02	3.65E+02
Frequency	Averaging Time	250 days/yr	lys/yr	Exposure	Frequency	(days)	2.50E+02	2.50E+02
Frequency X		0.045 X 1 X 1 event/day X 250 days/yr	365 days/yr	Event	Frequency	(events/day)	1	-
-	Body Wt.	- X	98.6 kg	Body	Weight	(kg)	98.6	98.6
Adherence X	Factor		Fraction mg/cm <sup>2</sup> -event 98.6 kg		Adherence	Factor	0.045	0.045
Absorption N	Fraction	X Absorption X	Fraction	Absorption	Fraction	(unitless)	1.00E-02	1.30E-01
Exposure Point X	Conc.	mg/kg		Exposure Point	Conc.	(mg/kg)	8.87E+02	CS L.11E+00
Chronic Daily Intake (mg/kg-day) = Exposure Point X Absorption X Adherence X 1 X Frequency X Frequency		Chronic Daily Intake (mg/kg-day) =				Compound	INORGANICS LEAD	SEMIVOLATILE ORGANICS BENZO(A)PYRENE
Сh		сh						

Notes:

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HAZARD INDEX

Lead toxicity value is currently not available.
 No Reference Dose is available for this contaminant.
 Hazard Index is not quatifiable due to lack of numeric reference doses for the contaminants of concern. Note that semi-volatile TICs were also detected but are not quantifiable due to lack of reference dose data.
 CDI = Chronic Daily Intake; RID = Reference Dose.

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HEXAGON LABORATORIES RIFFS SITE SURFACE SOIL INGESTION PATHWAY CURRENT AND FUTURE USE SCENARIOS - CENTRAL TENDENCY RISKS TO TRESPASSERS Page 1 of 2 **TABLE E-7** 

### CARCINOGENS - AVERAGE SURFACE SOIL INGESTION EXPOSURE

Exposure Duration

1 X Frequency X Exposure

Chronic Daily Intake (mo/k@-day) = Exnosure Point X Soil	Exposure Point X	Soil	X Bioavail.	X 1 X	Frequency X	X Bioavail. X 1 X Frequency X Duration X	K Ikg		
	Conc.	Intake	Factor	Body Wt.	Averaging Time	; Time	10 <sup>6</sup> mg		
Chronic Daily Intake (mg/kg-day) =	me/ke	50 mg/day	X 1.00	X I X	13 days/yr X	X 50 mg/day X 1.00 X 1 X 13 days/yr X 2 yrs X	K Ikg		
	5	, )		55.7 kg	55.7 kg 365 days/yr X 70 yrs/lifetime	70 yrs/lifetime	10 <sup>6</sup> mg		
	Exposure Point		Bio-	Body		Averaging			
	Conc.	Intake	availability	availability Weight	Exposure	Time	CDI	SF	
Compound	(mg/kg)	(mg/day)	Factor	(kg)	(days)	(days/lifetime)	(mg/kg-day)	(kg-day/mg)	
INORGANICS									
LEAD	3.47E+02	50	1.00	55.7	2.60E+01	2.56E+04	3.17E-07	(1)	
 SEMIVOLATILE ORGANICS									
 <b>BENZO(A)PYRENE</b>	5.52E-01	50	1.00	55.7	2.60E+01	2.56E+04	5.04E-10	7.30E+00	

RISK SF\*CDI

Notes:

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3.7E-09

TOTAL RISK

3.7E-09

No Slope Factor is available for this compound.
 CDI = Chronic Daily Intake; SF = Slope Factor.
 Risk associated with semivolatile organic compound TICs is not quatifiable due to lack of slope factor data.

### CURRENT AND FUTURE USE SCENARIOS - CENTRAL TENDENCY RISKS TO TRESPASSERS SITE SURFACE SOIL INGESTION PATHWAY HEXAGON LABORATORIES RI/FFS **TABLE E-7** Page 2 of 2

### NONCARCINOGENS - AVERAGE SURFACE SOIL INGESTION EXPOSURE

	ļ		1	
	lkg	10° mg	lkg	10 <sup>6</sup> mg
Exposure	X Bioavail. X 1 X Frequency X	Factor Body Wt. Averaging Time	X 1 X 13 days/yr X	55.7 kg 365 days/yr
	Bioavail.	Factor	1.00	
	at X Soil N	Intake	50 mg/day X	
	×		×	
	Exposure Point	Conc.	mg/kg X 50 mg/day X 1.00	
	Chronic Daily Intake (mg/kg-day) = Exposure Point X		Chronic Daily Intake (mg/kg-day) =	

 Compound	Exposure Point Conc. (mg/kg)	Intake (mg/day)	Bio- availability Factor	Body Weight (kg)	Body Exposure Weight Frequency (kg) Averaging Time	CDI (mg/kg-day)	RID (mg/kg-day)	CDI/RD
INORGANICS LEAD	3.47E+02	50	1.00	55.7	3.56E-02	1.11E-05	(1)	
 SEMIVOLATILE ORGANICS BENZO(A)PYRENE	5.521:-01	50	1.00	55.7	3.565-02	1.76E-08	(2)	
						H	HAZARD INDEX	(3)

Notes:

Note that semi-volatile TICs were also detected but are not quantifiable due to lack of reference dose data. Lead toxicity value is currently not available.
 No Reference Dose is available for this contaminant.
 Hazard Index is not quatifiable due to lack of numeric reference doses for the contaminants of concern.

(4) CDI = Chronic Daily Intake; RfD = Reference Dose.

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		CUM	KENI AND FUI		2	Page 1 of 2		CUKKENT AND FUTUKE USE SCENARIOS - CENTRAL TENDENCY RISKS TO TRESPASSERS Page 1 of 2	SERS			
RCIN	CARCINOGENS - AVERAGE SURFACE SOIL DERMAL CONTACT EXPOSURI	CE SOIL DERMAI	L CONTACT EX	POSURE		ŀ						
ซ์	Chronic Daily Intake (mg/kg-day) = Exposure Point X Conc.	Exposure Point X Conc.	Absorption X Adherence X Fraction Factor 1	Adherence X Factor	1 3ody Wt	Event X Frequency X	Exposure Frequency X Averaging Time	Exposure Duration X	Surface <u>X</u> Area	1kg 10 <sup>6</sup> mg		
อี	Chronic Daily Intake (mg/kg-day) =	mg/kg X	Absorption X Fraction	( 0.03 X mg/cm <sup>2</sup> -event	1 55.7 kg	I event/day X 26 365 days/yr	X l event/day X 26 days/yr X 365 days/yr X	2 yrs 70 years	X 4,443 cm2 X	Ikg 10 <sup>6</sup> mg		
		Exposure Point Conc.	Absorption Fraction	Adherence	Body Weight	Event Frequency	Exposure Frequency	Averaging Time	Surface Area	CDI	SF	RISK
	Compound	(mg/kg)	(unitless)	Factor	(kg)	(events/day)	(days)	(days/lifetime)	(cm <sup>2</sup> )	(mg/kg-day)	(kg-day/mg)	SF*CDI
	INORGANICS LEAD	3.47E+02	1.00E-02	0.03	55.7	-	5.20E+01	2.56E+04	4.443E+03	1.69E-08	(1)	
	SEMIVOLATILE ORGANICS BENZO(A)PYRENE	CS 5.52E-01	1.30E-01	0.03	55.7	1	5.20E+01	2.56E+04	4.443E+03	3.49E-10	7.30E+00	2.6E-09
											TOTAL DICK	7 6F.NG
Notes: (1) No Slc (2) CDI = (3) Risk a	Notes: Notes: (1) No Slope Factor is available for this compound. (2) CDI = Chronic Daily Intake; SF = Slope Factor. (3) Risk associated with semivolatile organic compound TICs is not quatifiable due to lack	npound. ie Factor. ie compound TICs i	s not quatifiable d	Le to lack of slc	of slope factor data.	- E						20-70.4

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TABLE E-8	HEXAGON LABORATORIES RI/FFS	SITE SURFACE SOIL DERMAL CONTACT PATHWAY	CURRENT AND FUTURE USE SCENARIOS - CENTRAL TENDENCY RISKS TO TRESPASSERS	Page 2 of 2	
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# NONCARCINOGENS - AVERAGE SURFACE SOIL DERMAL CONTACT EXPOSURE

Event     Event     Exposure       Chronic Daily Intake (mg/kg-day) = Exposure Point X     Absorption     X     Adherence     X     Frequency     X     X     Surface     X     Ikg       Conc.     Fraction     Factor     Body Wit.     Averaging Time     Area     10 <sup>6</sup> mg	mg/kg X Absorption X 0.03 X 1 X 1 event/day X 26 days/yr X 4,443 cm2 X 1kg Fraction mg/cm <sup>2</sup> -event 53.7 kg 365 days/yr 10 <sup>6</sup> mg	11 Absorption Body Event Exposure Averaging Surface CDI1 RtD Fraction Adherence Weight Frequency Frequency Time Area CDI1 RtD	(mg/kg)         (uniters)         ractor         (kg)         (events/day)         (days)         (cm)         (mg/kg-day)         (mg/kg-day)         (uniters)         (mg/kg-day)         (uniters)         (mg/kg-day)         (uniters)         (mg/kg-day)         (uniters)         (mg/kg-day)         (uniters)         (mg/kg-day)         (uniters)         (1)         (1)           3.47E+02         1.00E-02         0.03         55.7         1         2.60E+01         3.65E+02         4.443E+03         5.91E-07         (1)	ICS 5 57E-01 0.03 557 1 7 55E-03 1 37E-08 731
Exposure Point X Ah Cone. F				ļ
Chronic Daily Intake (mg/kg-day) =	Chronic Daily Intake (mg/kg-day) =		Compound INORGANICS LEAD	SEMIVOLATILE ORGANICS

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HAZARD INDEX

Notes:

Lead toxicity value is currently not available.
 No Reference Dose is available for this contaminant.
 Hazard Index is not quatifiable due to lack of numeric reference doses for the contaminants of concern. Note that semi-volatile TYCs were also detected but are not quantifiable due to lack of reference dose data.
 CDI Chronic Daily Intake, R1D Reference Dose.

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TABLE E-9 HEXAGON LABORATORIES RIFFS SITE SURFACE SOIL INGESTION PATHWAY FUTURE USE SCENARIO - CENTRAL TENDENCY RISKS TO SITE WORKERS Page 1 of 2

### **CARCINOGENS - AVERAGE SURFACE SOIL INGESTION EXPOSURE**

		RISK SF*CDI		4.3E-08
		SF (kg-day/mg)	(])	7.30E+00
1kg 10 <sup>6</sup> mg	lkg 10 <sup>6</sup> mg	CDI (mg/kg-day)	3.69E-06	5.87E-09
×	×			
Exposure Duration Time		Averaging Time (days/lifetime)	2.56E+04	2.56E+04
X Bioavail. X 1 X Exposure Exposure Factor Body Wt. Averaging Time	X 50 mg/day X 1.00 X $\frac{1}{71.8 \text{ kg}}$ X $\frac{39 \text{ days/yr}}{365 \text{ days/yr}}$ X 70 yrs/lifetime	Exposure (days)	3.90E+02	3.90E+02
K 1 X Body Wt.	71.8 kg	Body Weight (kg)	71.8	71.8
Bioavail. X Factor	1.00 X	Bio- availability Factor	1.00	1.00
×	×			
Soil Intake	50 mg/day	Intake (mg/day)	50	50
X E	×	E E		
Exposure Poi Conc.	mg/kg	Exposure Point Conc. (mg/kg)	3.47E+02	5.52E-01
Chronic Daily Intake (mg/kg-day) = Exposure Point X Conc.	Chronic Daily Intake (mg/kg-day) =	Compound	INORGANICS LEAD	SEMIVOLATILE ORGANICS BENZO(A)PYRENE

4.3E-08

TOTAL RISK

Notes:

No Slope Factor is available for this compound.
 CDI = Chronic Daily Intake; SF = Slope Factor.
 Risk associated with semivolatile organic compound TICs is not quatifiable due to lack of slope factor data.

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### SITE SURFACE SOIL INGESTION PATHWAY FUTURE USE SCENARIO - CENTRAL TENDENCY RISKS TO SITE WORKERS HEXAGON LABORATORIES RI/FFS **TABLE E-9** Page 2 of 2

### NONCARCINOGENS - AVERAGE SURFACE SOIL INGESTION EXPOSURE

	lkg	10 <sup>6</sup> mg	1kg	10° mg
Exposure	X Bioavail. X 1 X Frequency X	Body Wt. Averaging Time	X I X 39 days/yr X 1	71.8 kg 365 days/yr
	Bioavail.	Factor	X 50 mg/day X 1.00	
			×	
	Soil	Intake	50 mg/day	
	×		×	
	Exposure Poin	Conc.	mg/kg	
	Chronic Daily Intake (mg/kg-day) = Exposure Point X		Chronic Daily Intake (mg/kg-day) =	

		Exposure Point		Bio-	Body	Exposure			
		Cone.	Intake	availability	Weight	Frequency	CDI	RID	
	Compound	(mg/kg)	(mg/day)		(kg)	Averaging Time	(mg/kg-day)	(mg/kg-day)	CDI/RID
	INORGANICS I F AD	3 47F+07	20	001	71 X	10"32.0 4	2 581:-CIS	Ð	
	SEMIVOLATILE ORGANICS BENZO(A)PYRENE	5.52E-01	50	1.00	71.8	1.07E-01	4.11E-08	(2)	
								HAZARD INDEX	(3)
Matau									

Notes:

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Lead toxicity value is currently not available.
 No Reference Dose is available for this contaminant.
 Hazard Index is not quatifiable due to lack of numeric relerence doses for the contaminants of concern. Note that semi-volatile T/Cs were also detected but are not quantifiable due to lack of reference dose data.
 CDI = Chronic Daily Infake; RfD = Reference Dose.

	,	? FUTURE USI	SITE SURFACE SOIL DERMAL, CONTACT PATHWAY B SCENARIO - CENTRAL TENDENCY RISKS TO SITE Page 1 of 2	- CENTRA - CENTRA Pa	DERMAL CONT RAL TENDENCY Page 1 of 2	FUTURE USE SCENARIO - CENTRAL TENDENCY RISKS TO SITE WORKERS Page 1 of 2	IE WORKERS				
CARCINOGENS - AVERAGE SURFACE SOIL DERMAL CONTACT EXPOSURE	IL DERMAL	CONTACT EX	POSURE								
Chronic Daily Intake (mg/kg-day) = Exposure Point X Conc.	osure Point X Conc.	Absorption X Adherence X Fraction Factor E	Adherence X_ Factor E	1 Body Wi	Event X Frequency X	Exposure Frequency X Averaging Time	Exposure Duration X	Surface <u>X</u> Area	1kg 10 <sup>6</sup> mg		
Chronic Daily Intake (mg/kg-day) = mų	mg/kg X	~	1.0 X ng/cm <sup>2</sup> -event	1 XX	X 1 event/day X 39 365 days/yr		10 yrs X 70 years	4,4	1kg 10 <sup>6</sup> mg		
Expose Commonind	Exposure Point Conc.	Absorption Fraction	Adherence	Body Weight	Event Frequency	Exposure Frequency	Averaging Time	Surface Area	CDI1 (moles day)	SF Are doution	RISK CE+CDI
	(1119 × 6/	(unuess) 1.00E-02	1.0	71.8	(cvents/uay)	(uays) 3.90E+02	(uay»/incunic) 2.56E+04	(viii ) 4.443E+03	(IIIE/NE-Uay) 3.28E-06	(v <u>5 uayim</u> 5)	5
SEMIVOLATILE ORGANICS BENZO(A)PYRENE 5.	5.52E-01	1.30E-01	1.0	71.8	-	3.90E+02	2.56E+04	4.443E+03	6.78E-08	7.30E+00	4.9E-07
										TOTAL RISK	4.9E-07

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FUTURE USE SCENARIO - CENTRAL TENDENCY RISKS TO SITE WORKERS SITE SURFACE SOIL DERMAL CONTACT PATHWAY HEXAGON LABORATORIES RIFFS **TABLE E-10** Page 2 of 2

# NONCARCINOGENS - AVERAGE SURFACE SOIL DERMAL CONTACT EXPOSURE

lkg	10 <sup>6</sup> mg	1kg	۱0 <sup>6</sup> mg	
X Surface X Ikg	Area	X 4,443 cm2 X 1kg		Surface
x		x		Averaging
Exposure Frequency	Averaging Time	39 days/yr	ays⁄yr	Exposure
Event Frequency X		1 event/day X	365 days/yr	Body Event
X I X	Body Wt.	x 1 X	l 71.8 kg	Body
X Adherence	Factor Body Wt.	X 1.0	Fraction mg/cm <sup>2</sup> -event 71.8 kg	sorption
Absorption	Fraction	Absorption	Fraction	Absorption
Exposure Point X	Cone.	mg/kg X		Exposure Point
Event Exposure Chronic Daily Intake ( $mg/kg$ -day) = Exposure Point X Absorption X Adherence X 1 X Frequency X Frequency Chronic Daily Intake ( $mg/kg$ -day) = Exposure Point X Absorption X Adherence X 1 X Frequency X Freque		Chronic Daily Intake (mg/kg-day) = mg/kg X Absorption X 1.0 X 1 X 1 event/day X 39 days/yr		
				Ŀ_

_		Exposure Point	Absorption		Body	Event	Exposure	Averaging	Surface			
		Conc.	Fraction	Adherence	Weight	Frequency	Frequency	Time	Area	CDI	RID	
	Compound	(mg/kg)	(unitless)	Factor	(kg)	(events/day)	(days)	(days/year)	$(cm^2)$	(mg/kg-day)	(mg/kg-day)	CDI/RfD
	INORGANICS LEAD	3.47E+02	1.00E-02	1.0	71.8	-	3.90E+01	3.65E+02	4.443E+03	2.29E-05	(1)	
	SEMIVOLATILE ORGANICS BENZO(A)PYRENE	CS 5.52E-01	1.30E-01	1.0	71.8	-	3.90E+01	3.65E+02	4.443E+03	4.74E-07	(2)	
										H	HAZARD INDEX	(3)
Notes:												

Lead toxicity value is currently not available.
 No Reference Dose is available for this contaminant.
 Hazard Index is not quatifiable due to lack of numeric reference doses for the contaminants of concern. Note that semi-volatile TICs were also detected but are not quantifiable due to lack of reference dose data.
 CDI = Chronic Daily Intake; RID = Reference Dose.

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SITE SURFACE SOIL INGESTION PATHWAY FUTURE USE SCENARIO - CENTRAL TENDENCY RISKS TO CONSTRUCTION WORKERS **HEXAGON LABORATORIES RI/FFS TABLE E-11** Page 1 of 2

### CARCINOGENS - AVERAGE SURFACE SOIL INGESTION EXPOSURE

Notes:

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1.3E-07

TOTAL RISK

No Slope Factor is available for this compound.
 CUM Chronic Daily Intake; SF Slope Factor.
 Risk associated with semivolatile organic compound TICs is not quatifiable due to lack of slope factor data.

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### FUTURE USE SCENARIO - CENTRAL TENDENCY RISKS TO CONSTRUCTION WORKERS SITE SURFACE SOIL INGESTION PATHWAY HEXAGON LABORATORIES RI/FFS **TABLE E-11** Page 2 of 2

### NONCARCINOGENS - AVERAGE SURFACE SOIL INGESTION EXPOSURE

	1			
	lkg	10 <sup>6</sup> mg	lkg	10° mg
Exposure	X 1 X Frequency X	Factor Body Wt. Averaging Time	- X	71.8 kg 365 days/yr
	Bioavail.	Factor	1.00	
	Soil X	Intake	480 mg/day X	
	Exposure Point N	Conc.	mg/kg X	
	Chronic Daily Intake (mg/kg-day) = Exposure Point X Soil X Bioavail. X 1 X Frequency X		Chronic Daily Intake (mg/kg-day) ≂	

	Compound	Exposure Point Conc. (mg/kg)	Intake (mg/day)	Bio- availability W Factor	Body Weight (kg)	Body Exposure Weight Frequency (kg) Averaging Time	CDI (my/kg-day)	RfD (mg/kg-day)	CDI/RD
	, INORGANICS LEAD	3.47E+02		1.00	71.8	3.42E-01	7.94E-04	(1)	
	SEMIVOLATILE ORGANICS BENZO(A)PYRENE	5.52E-01	480	1.00	71.8	3.42E-01	1.26E-06	(2)	
								HAZARD INDEX	(3)
Modoo:									

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ZOLOS.

Lead toxicity value is currently not available.
 No Reference Dose is available for this contaminant.
 Ilazard Index is not quatifiable due to lack of numeric relerence doses for the contaminants of concern. Note that semi-volatile TICs were also detected but are not quantifiable due to lack dose data.

(4) CDI = Chronic Daily Intake; RfD = Reference Dose.

SITE SURFACE SOIL DERMAL CONTACT PATHWAY FUTURE USE SCENARIO - CENTRAL TENDENCY RISKS TO SITE WORKERS **HEXAGON LABORATORIES RI/FFS TABLE E-12** Page 1 of 2

### CARCINOGENS - AVERAGE SURFACE SOIL DERMAL CONTACT EXPOSURE

Exposure Duration X Surface <u>X lkg</u> Area 10 <sup>6</sup> mg	X Absorption X 0.045 X $\frac{1}{1.8 \text{ kg}}$ X $\frac{1}{1.8 \text{ kg}}$ X $\frac{1}{1.8 \text{ kg}}$ X $\frac{1}{1.8 \text{ kg}}$ X $\frac{1}{1.06 \text{ mg}}$ X $\frac{1}{10^6 \text{ mg}}$ X $\frac{1}{10^6 \text{ mg}}$	Averaging Surface Area CDI SF RISK	(days/lifetime) (cm <sup>2</sup> ) (mg/kg-day) (kg-day/mg) SF*CDI	2.56E+04 4.443E+03 4.73E-08 (1)	2.56E+04 4.443E+03 9.78E-10 7.30E+00 7.1E-09	TOTAL RISK 7.1E-09
Exposure K Frequency X Averaging Time	day X 250 days/yr X 365 days/yr X	Exposure Frequency		1.25E+02	1.25E+02	
Event Frequency 2	1 event/day 2 365 c	Event Frequency	(events/day)	_	-	
K <u>1</u> X Body Wt.	x <u>1</u> X 71.8 kg	Body Weight	(kg)	71.8	71.8	
Adherence > Factor	x 0.045 X 1 mg/cm <sup>2</sup> -event 71.8 kg	Adherence	Factor	0.045	0.045	
Absorption X Fraction	Absorption X Fraction	Absorption Fraction	(unitless)	1.00E-02	1.30E-01	
Exposure Point X Conc.	mg/kg	Exposure Point Conc.	(me/kg)	3.47E+02		
Chronic Daily Intake (mg/kg-day) = Exposure Point X     Absorption     X     Adherence     X     I     X     Frequency     X     Frequency     X       Conc.     Fraction     Factor     Body Wt.     Averaging Time	Chronic Daily Intake (mg/kg-day) =		Compound	INORGANICS	SEMIVOLATILE ORGANICS BENZO(A)PYRENE	

Notes:

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No Slope Factor is available for this compound.
 CDI = Chronic Daily Intake; SF = Slope Factor.
 Risk associated with semivolatile organic compound TICs is not quatifiable due to lack of slope factor data.

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FUTURE USE SCENARIO - CENTRAL TENDENCY RISKS TO SITE WORKERS SITE SURFACE SOIL DERMAL CONTACT PATHWAY **HEXAGON LABORATORIES RIFES** Page 2 of 2

# NONCARCINOGENS - AVERAGE SURFACE SOIL DERMAL CONTACT EXPOSURE

Chronic Daily Intake (ing/kg-day) = Exposure Point X Absorption X Adherence X

lkg

 $\times$ 

Surface A ....

×

Exposure Duration

Frequency X ŧ

X Frequency X

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Event

Exposure

		Conc.	Fraction	Factor ]	Body Wt.		Averaging Time		Area	10 <sup>6</sup> mg		
Chroni	Chronic Daily Intake (mg/kg-day) =	mg/kg	X Absorption X		I X	I event/day X	250 days/yr N	0.045 X 1 X 1 event/day X 250 days/yr X 0.5 yrs X 4,443 cm2 X 1kg	4,443 cm2 X	lkg		
			Fraction n	mg/cm <sup>2</sup> -event 71.8 kg	71.8 kg	365 days/yr	ys/yr			10 <sup>6</sup> mg		
		Exposure Point	Absorption		Body	Event	Exposure	Averaging	Surface			
		Conc.	Fraction	Adherence	Weight	Frequency	Frequency	Time	Агеа	CDI	RfD	
	Compound	(mg/kg)	(unitless)	Factor	(kg)	(events/day)	(days)	(days/year)	$(cm^2)$	(mg/kg-day)	(mg/kg-day)	CDI/RID
	INORGANICS											
<u></u> :	LEAD	3.47E+02	1.00E-02	0.045	71.8	1	1.25E+02	3.65E+02	4.443E+03	3.31E-06	(1)	
<u></u>	SEMIVOLATILE ORGANICS	S										
	BENZO(A)PYRENE	5.52E-01	1.30E-01	0.045	71.8	-	1.25E+02	3.65E+02	4 443E+03	6.84E-08	(2)	
=												

Notes:

(1) Lead toxicity value is currently not available.

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HAZARD INDEX

(2) No Reference Dose is available for this contaminant.
(3) Hazard Index is not quatifiable due to lack of numeric reference doses for the contaminants of concern. Note that semi-volatile TICs were also detected but are not quantifiable due to lack of reference dose data.

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(4) CDI = Chronic Daily Intake; RtD = Reference Dose.

### **TABLE E-12**

### APPENDIX F

### TOXICOLOGICAL PROFILES

Lead Benzo(a)pyrene LEAD

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**IRIS Substance File** 

0277 Lead and compounds (inorganic); CASRN 7439-92-1 (03/01/97)

Health assessment information on a chemical substance is included in IRIS only after a comprehensive review of chronic toxicity data by U.S. EPA health scientists from several Program Offices and the Office of Research and Development. The summaries presented in Sections I and II represent a consensus reached in the review process. Background information and explanations of the methods used to derive the values given in IRIS are provided in the Background Documents.

STATUS OF DATA FOR Lead and compounds (inorganic)

File On-Line 03/01/88

Category (section)	Status 	Last Revised
Oral RfD Assessment (I.A.)	message	02/01/91
Inhalation RfC Assessment (I.B.)	no data	
Carcinogenicity Assessment (II.)	on-line	11/01/93

I. CHRONIC HEALTH HAZARD ASSESSMENTS FOR NONCARCINOGENIC EFFECTS

I.A. REFERENCE DOSE FOR CHRONIC ORAL EXPOSURE (RfD)

Substance Name -- Lead and compounds (inorganic) CASRN -- 7439-92-1

A great deal of information on the health effects of lead has been obtained through decades of medical observation and scientific research. This information has been assessed in the development of air and water quality criteria by the Agency's Office of Health and Environmental Assessment (OHEA) in support of regulatory decision-making by the Office of Air Quality Planning and Standards (OAQPS) and by the Office of Drinking Water (ODW). By comparison to most other environmental toxicants, the degree of uncertainty about the health effects of lead is quite low. It appears that some of these effects, particularly changes in the levels of certain blood enzymes and in aspects of children's neurobehavioral development, may occur at blood lead levels so low as to be essentially without a threshold. The Agency's RfD Work Group discussed inorganic lead (and lead compounds) at two meetings (07/08/85 and 07/22/85) and considered it inappropriate to develop an RfD for inorganic lead. For additional information, interested parties are referred to the 1986 Air Quality Criteria for Lead (EPA-600/8-83/028a-dF) and its 1990 Supplement (EPA/600/8-89/049F).

EPA Contacts:

Please contact the Risk Information Hotline for all questions concerning this assessment or IRIS, in general, at (513)569-7254 (phone), (513)569-7159 (FAX) or RIH.IRIS@EPAMAIL.EPA.GOV (internet address).

I.B. REFERENCE CONCENTRATION FOR CHRONIC INHALATION EXPOSURE (Rfc)

Substance Name -- Lead and compounds (inorganic) CASRN -- 7439-92-1

Not available at this time.

\_II. CARCINOGENICITY ASSESSMENT FOR LIFETIME EXPOSURE

Substance Name -- Lead and compounds (inorganic) CASRN -- 7439-92-1 Last Revised -- 11/01/93

Section II provides information on three aspects of the carcinogenic assessment for the substance in question; the weight-of-evidence judgment of the likelihood that the substance is a human carcinogen, and quantitative estimates of risk from oral exposure and from inhalation exposure. The quantitative risk estimates are presented in three ways. The slope factor is the result of application of a low-dose extrapolation procedure and is presented as the risk per (mg/kg)/day. The unit risk is the quantitative estimate in terms of either risk per ug/L drinking water or risk per ug/cu.m air breathed. The third form in which risk is presented is a drinking water or air concentration providing cancer risks of 1 in 10,000, 1 in 100,000 or 1 in 1,000,000. The rationale and methods used to develop the carcinogenicity information in IRIS are described in The Risk Assessment Guidelines of 1986 (EPA/600/8-87/045) and in the IRIS Background Document. IRIS summaries developed since the publication of EPA's more recent Proposed Guidelines for Carcinogen Risk Assessment also utilize those Guidelines where indicated (Federal Register 61(79):17960-18011, April 23, 1996). Users are referred to Section I of this IRIS file for information on long-term toxic effects other than carcinogenicity.

II.A. EVIDENCE FOR CLASSIFICATION AS TO HUMAN CARCINOGENICITY

II.A.1. WEIGHT-OF-EVIDENCE CLASSIFICATION

Classification -- B2; probable human carcinogen

Basis -- Sufficient animal evidence. Ten rat bioassays and one mouse assay have shown statistically significant increases in renal tumors with dietary and subcutaneous exposure to several soluble lead salts. Animal assays provide reproducible results in several laboratories, in multiple rat strains with some evidence of multiple tumor sites. Short term studies show that lead affects gene expression. Human evidence is inadequate.

### II.A.2. HUMAN CARCINOGENICITY DATA

Inadequate. There are four epidemiologic studies of occupational cohorts exposed to lead and lead compounds. Two studies (Dingwall-Fordyce and Lane, 1963; Nelson et al., 1982) did not find any association between exposure and cancer mortality. Selevan et al. (1985), in their retrospective cohort mortality study of primary lead smelter workers, found a slight decrease in the total cancer mortality (SMR=95). Apparent excesses were observed for respiratory cancer (SMR=111, obs=41, p > 0.05) and kidney cancer (SMR=204, obs=6, p > 0.05). Cooper and Gaffey (1975) and Cooper (1985 update) performed a cohort mortality study of battery plant workers and lead smelter workers. They found statistically significant excesses for total cancer mortality (SMR=113, obs=344), stomach cancer (SMR=168, obs=34), and lung cancer (SMR=124, obs=109) in the battery plant workers. Although similar excesses were observed in the smelter workers, they were not statistically significant. Cooper and Gaffey (1975) felt it was possible that individual subjects were monitored primarily on the basis of obvious signs of lead exposure, while others who showed no symptoms of lead poisoning were not monitored.

All of the available studies lacked quantitative exposure information, as well as information on the possible contribution from smoking. All studies also included exposures to other metals such as arsenic, cadmium, and zinc for which no adjustment was done. The cancer excesses observed in the lung and stomach were relatively small (<200). There was no consistency of site among the various studies, and no study showed any dose-response relationship. Thus, the available human evidence is considered to be inadequate to refute or demonstrate any potential carcinogenicity for humans from lead exposure.

### II.A.3. ANIMAL CARCINOGENICITY DATA

Sufficient. The carcinogenic potential of lead salts (primarily phosphates and acetates) administered via the oral route or by injection has been demonstrated in rats and mice by more than 10 investigators. The most characteristic cancer response is bilateral renal carcinoma. Rats given lead acetate or subacetate orally have developed gliomas, and lead subacetate also produced lung adenomas in mice after i.p. adminstration. Most of these investigations found a carcinogenic response only at the highest dose. The lead compounds tested in animals are almost all soluble salts. Metallic lead, lead oxide and lead tetralkyls have not been tested adequately. Studies of inhalation exposure have not been located in the literature.

Azar et al. (1973) administerd 10, 50, 100, and 500 ppm lead as lead acetate in dietary concentrations to 50 rats/sex/group for 2 years. Control rats (100/sex) received the basal laboratory diet. In a second 2-year feeding study, 20 rats/group were given diets containing 0, 1000, and 2000 ppm lead as lead acetate. No renal tumors were reported in the control groups or in treated animals of either sex receiving 10 to 100 ppm. Male rats fed 500, 1000, and 2000 ppm lead acetate had an increased renal tumor incidence of 5/50, 10/20, and 16/20, while 7/20 females in the 2000-ppm group developed renal tumors.

The Azar et al. (1973) study is limited by the lack of experimental detail. The possibility of environmental contamination from lead in the air or drinking water was not mentioned. The strains of rats used were not specified in the study, but the Health Effects Assessment for Lead (U.S. EPA, 1984) indicates the rats were Wistar strain. The weight gain at 1000 and 2000 ppm was reported to be depressed, but details were not given.

Kasprzak et al. (1985), in investigating the interaction of dietary calcium on lead carcinogenicity, fed 1% lead subacetate (8500 ppm Pb) to male Sprague-Dawley rats in the diet for 79 weeks. Of the rats surviving (29/30) in this treatment group beyond 58 weeks, 44.8% had renal tumors. Four rats had adenocarcinomas; the remainaing nine had adenomas. Bilateral tumors were noted. No renal tumors were noted among the controls.

As part of a study to determine interactions between sodium nitrite, ethyl urea and lead, male Sprague-Dawley rats were given lead acetate in their drinking water for 76 weeks (Koller et al., 1986). The concentration of lead was 2600 ppm. No kidney tumors were detected among the 10 control rats. Thirteen of 16 (81%) lead-treated rats had renal tubular carcinoma; three tumors were detected at 72 weeks and the remainder detected at the termination of the study.

Van Esch and Kroes (1969) fed basic lead acetate at 0, 0.1%, and 1.0% in the diet to 25 Swiss mice/sex/group for 2 years. No renal tumors developed in the control group, but 6/25 male mice of 0.1% basic lead acetate group had renal tumors (adenomas and carcinomas combined). In the 1.0% group, one female had a renal tumor. The authors thought that the low incidence in the 1.0% group was due to early mortality.

Hamsters given lead subacetate at 0.5% and 1% in the diet had no significant renal tumor response (Van Esch and Kroes, 1969).

### II.A.4. SUPPORTING DATA FOR CARCINOGENICITY

Lead acetate induces cell transformation in Syrian hamster embryo cells (DiPaolo et al., 1978) and also enhances the incidence of simian adenovirus induction. Lead oxide showed similar enhanced adenovirus induction (Casto et al., 1979).

Under certain conditions lead compounds are capable of inducing chromosomal aberrations in vivo and in tissue cultures. Grandjean et al. (1983) showed a relationship between SCE and lead exposure in exposed workers. Lead has been shown, in a number of DNA structure and function assays, to affect the molecular processes associated with the regulation of gene expression (U.S. EPA, 1986).

### II.B. QUANTITATIVE ESTIMATE OF CARCINOGENIC RISK FROM ORAL EXPOSURE

Not available.

Quantifying lead's cancer risk involves many uncertainties, some of which may be unique to lead. Age, health, nutritional state, body burden, and exposure duration influence the absorption, release, and excretion of lead. In addition, current knowledge of lead pharmacokinetics indicates that an estimate derived by standard procedures would not truly describe the potential risk. Thus, the Carcinogen Assessment Group recommends that a numerical estimate not be used.

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\_\_\_\_II.C. QUANTITATIVE ESTIMATE OF CARCINOGENIC RISK FROM INHALATION EXPOSURE

Not available.

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II.D. EPA DOCUMENTATION, REVIEW, AND CONTACTS (CARCINOGENICITY ASSESSMENT)

II.D.1. EPA DOCUMENTATION

Source Document -- U.S. EPA, 1984, 1986, 1989

U.S. EPA, 1989 has received OHEA and SAB review.

The 1986 Air Quality Criteria Document for Lead has received Agency and External Review.

\_\_\_\_II.D.2. REVIEW (CARCINOGENICITY ASSESSMENT)

Agency Work Group Review -- 05/04/88

Verification Date -- 05/04/88

II.D.3. U.S. EPA CONTACTS (CARCINOGENICITY ASSESSMENT)

Please contact the Risk Information Hotline for all questions concerning this assessment or IRIS, in general, at (513)569-7254 (phone), (513)569-7159 (FAX) or RIH.IRIS@EPAMAIL.EPA.GOV (internet address).

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VI. BIBLIOGRAPHY

Substance Name -- Lead and compounds (inorganic) CASRN -- 7439-92-1 Last Revised -- 11/01/93

VI.A. ORAL RFD REFERENCES

None

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VI.B. INHALATION RfD REFERENCES

None

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VI.C. CARCINOGENICITY ASSESSMENT REFERENCES

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Selevan, S.G., P.J. Landrigan, F.B. Stern and J.H. Jones. 1985. Mortality of lead smelter workers. Am. J. Epidemiol. 122: 673-683.

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U.S. EPA. 1986. Air Quality Criteria Document for Lead. Volumes III, IV. Prepared by the Office of Health and Environmental Assessment, Environmental Criteria and Assessment Office, Research Triangle Park, NC, for the Office of Air Quality Planning and Standards. EPA-600/8-83/028dF.

U.S. EPA. 1989. Evaluation of the potential carcinogenicity of lead and lead compounds: In support of reportable quantity adjustments pursuant to CERCLA Section 102. Prepared by the Office of Health and Environmental Assessment, Washington, DC. EPA/600/8-89/045A. (External Review Draft).

Van Esch, G.J. and R. Kroes. 1969. The induction of renal tumors by feeding of basic lead acetate to mice and hamsters. Br. J. Cancer. 23: 265-271.

\_VII. REVISION HISTORY

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Substance Name -- Lead and compounds (inorganic) CASRN -- 7439-92-1
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Date	Section	Description
02/01/89 06/01/89 12/01/89 12/01/89 07/01/90 07/01/90 02/01/91 02/01/91 05/01/91 01/01/92 06/01/92 07/01/93 07/01/93	II. IV.B.1. II.D.3. IV.A.1. II.A.3. VI. I.A. IV.F.1. I.A. II.A. IV. IV.B.2. II.D.3. VI.C. II.D.1.	Carcinogen summary on-line Effect level corrected in discussion Primary contact changed Reference corrected - changed number for part in CFR Last paragraph - Correct Van Esch 1969 citation Bibliography on-line Changed contact J. Cohen's office and telephone number EPA contact changed Message revised to include new EPA document EPA contacts changed Text edited Regulatory actions updated MCL monitoring reqs. and BAT corrected Secondary contact's phone number changed References alphabetized correctly U.S. EPA 1987 replaced with 1989; rev. state. revised
11/01/93	VI.C.	U.S. EPA 1987 deleted; U.S. EPA 1989 added

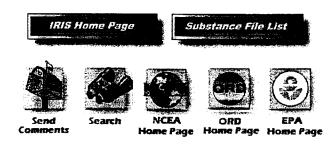
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SYNONYMS

Substance Name -- Lead and compounds (inorganic) CASRN -- 7439-92-1 Last Revised -- 03/01/88

7439-92-1 Lead Lead and compounds plumbum

### **End of IRIS Substance File**



Last updated: February 6, 1998

### **BENZO(A)PYRENE**





### **IRIS Substance File**

0136 Benzo[a]pyrene (BaP); CASRN 50-32-8 (03/01/97)

Health assessment information on a chemical substance is included in IRIS only after a comprehensive review of chronic toxicity data by U.S. EPA health scientists from several Program Offices and the Office of Research and Development. The summaries presented in Sections I and II represent a consensus reached in the review process. Background information and explanations of the methods used to derive the values given in IRIS are provided in the Background Documents.

STATUS OF DATA FOR BAP

File On-Line 03/31/87

Category (section)	Status	Last Revised
Oral RfD Assessment (I.A.)	no data	
Inhalation RfC Assessment (I.B.)	no data	
Carcinogenicity Assessment (II.)	on-line	11/01/94

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\_I. CHRONIC HEALTH HAZARD ASSESSMENTS FOR NONCARCINOGENIC EFFECTS

\_\_\_I.A. REFERENCE DOSE FOR CHRONIC ORAL EXPOSURE (RfD) Substance Name -- Benzo[a]pyrene (BaP) CASRN -- 50-32-8

Not available at this time.

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\_\_\_I.B. REFERENCE CONCENTRATION FOR CHRONIC INHALATION EXPOSURE (RfC) Substance Name -- Benzo[a]pyrene (BaP) CASRN -- 50-32-8 Not available at this time.

II. CARCINOGENICITY ASSESSMENT FOR LIFETIME EXPOSURE

Substance Name -- Benzo[a]pyrene (BaP) CASRN -- 50-32-8 Last Revised -- 11/01/94

Section II provides information on three aspects of the carcinogenic assessment for the substance in question; the weight-of-evidence judgment of the likelihood that the substance is a human carcinogen, and quantitative estimates of risk from oral exposure and from inhalation exposure. The quantitative risk estimates are presented in three ways. The slope factor is the result of application of a low-dose extrapolation procedure and is presented as the risk per (mg/kg)/day. The unit risk is the quantitative estimate in terms of either risk per ug/L drinking water or risk per ug/cu.m air breathed. The third form in which risk is presented is a drinking water or air concentration providing cancer risks of 1 in 10,000, 1 in 100,000 or 1 in 1,000,000. The rationale and methods used to develop the carcinogenicity information in IRIS are described in The Risk Assessment Guidelines of 1986 (EPA/600/8-87/045) and in the IRIS Background Document. IRIS summaries developed since the publication of EPA's more recent Proposed Guidelines for Carcinogen Risk Assessment also utilize those Guidelines where indicated (Federal Register 61(79):17960-18011, April 23, 1996). Users are referred to Section I of this IRIS file for information on long-term toxic effects other than carcinogenicity.

NOTE: At the June 1992 CRAVE Work Group meeting, a revised risk estimate for benzo[a]pyrene was verified (see Additional Comments for Oral Exposure). This section provides information on three aspects of the carcinogenic risk assessment for the agent in question; the U.S. EPA classification, and quantitative estimates of risk from oral exposure and from inhalation exposure. The classification reflects a weight-of-evidence judgment of the likelihood that the agent is a human carcinogen. The quantitative risk estimates are presented in three ways. The slope factor is the result of application of a low-dose extrapolation procedure and is presented as the risk per (mg/kg)/day. The unit risk is the quantitative estimate in terms of either risk per ug/L drinking water or risk per ug/cu.m air breathed. The third form in which risk is presented is a drinking water or air concentration providing cancer risks of 1 in 10,000 or 1 in 1,000,000. The Carcinogenicity Background Document provides details on the rationale and methods used to derive the carcinogenicity values found in IRIS. Users are referred to the Oral Reference Dose (RfD) and Reference Concentration (RfC) sections for information on long-term toxic effects other than carcinogenicity.

### II.A. EVIDENCE FOR CLASSIFICATION AS TO HUMAN CARCINOGENICITY

### II.A.1. WEIGHT-OF-EVIDENCE CLASSIFICATION

Classification -- B2; probable human carcinogen

Basis -- Human data specifically linking benzo[a]pyrene (BAP) to a carcinogenic effect are lacking. There are, however, multiple animal studies in many species demonstrating BAP to be carcinogenic following administration by numerous routes. BAP has produced positive results in numerous genotoxicity assays.

### II.A.2. HUMAN CARCINOGENICITY DATA

Inadequate. Lung cancer has been shown to be induced in humans by various mixtures of polycyclic aromatic hydrocarbons known to contain BAP including cigarette smoke, roofing tar and coke oven emissions. It is not possible, however, to conclude from this information that BAP is the responsible agent.

### II.A.3. ANIMAL CARCINOGENICITY DATA

Sufficient. The animal data consist of dietary, gavage, inhalation, intratracheal instillation, dermal and subcutaneous studies in numerous strains of at least four species of rodents and several primates. Repeated BAP administration has been associated with increased incidences of total tumors and of tumors at the site of exposure. Distant site tumors have also been observed after BAP administration by various routes. BAP is frequently used as a positive control in carcinogenicity bioassays.

BAP administered in the diet or by gavage to mice, rats and hamsters has produced increased incidences of stomach tumors. Neal and Rigdon (1967) fed BAP (purity not reported) at concentrations of 0, 1, 10, 20, 30, 40, 45, 50, 100 and 250 ppm in the diets of male and female CFW-Swiss mice. The age of the mice ranged from 17-180 days old and the treatment time from 1-197 days; the size of the treated groups ranged from 9 to 73. There were 289 mice (number of mice/sex not stated) in the control group. No forestomach tumors were reported in the 0-, 1- and 10-ppm dose groups. The incidence of forestomach tumors in the 20-, 30-, 40-, 45-, 50-, 100- and 250-ppm dose groups were 1/23, 0/37, 1/40, 4/40, 23/34, 19/23 and 66/73, respectively. The authors felt that the increasing tumor incidences were related to both the concentration and the number of doses administered. Historical control forestomach tumor data are not available for CFW-Swiss strain mice. In historical control data from a related mouse strain, SWR/J Swill, the forestomach tumor incidence rate was 2/268 and 1/402 for males and females, respectively (Rabstein et al., 1973).

Brune et al., (1981) fed 0.15 mg/kg BAP (reported to be "highly pure") in the diet of 32 Sprague-Dawley rats/sex/group either every 9th day or 5 times/week. These treatments resulted in annual average doses of 6 or 39 mg/kg, respectively. An untreated group of 32 rats/sex served as the control. Rats were treated until moribund or dead; survival was similar in all groups. Histologic examinations were performed on each rat. The combined incidence of tumors of the forestomach, esophagus and larynx was 3/64, 3/64 and 10/64 in the control group, the group fed BAP every 9th day and the group fed BAP 5 times/week, respectively. A trend analysis showed a statistically significant tendancy for the proportion of animals with tumors of the forestomach, esophagus or larynx to increase steadily with dose (Knauf and Rice, 1992).

As part of the same study, Brune et al. (1981) administered BAP ("highly pure") orally to Sprague-Dawley rats by caffeine gavage. The rats were treated until moribund or dead; all rats were subjected to terminal histopathologic examination. Gavaged rats were divided into 3 dose groups of 32 rats/sex/group; the groups received 0.15 mg/kg per gavage either every 9th day (Group A), every 3rd day (Group B) or 5 times per week (Group C); these treatments resulted in annual average doses of 6, 18 or 39 mg/kg, respectively. Untreated and gavage (5 times/week) controls (32 rats/sex/group) were included. The median survival times for the untreated control group; the gavage control group; and groups A, B and C were 129, 102, 112, 113 and 87 weeks, respectively. The survival time of Group C was short compared with controls and may have precluded tumor formation (Knauf and Rice, 1992). The combined tumor incidence in the forestomach, esophagus and larynx was 3/64, 6/64, 13/64, 26/64 and 14/64 for the untreated control group, gavage control group, group A, group B and group C, respectively. There was a statistically significant association between the dose and the proportions of rats with tumors of the forestomach, esophagus or larynx. This association is not characterized by a linear trend. The linearity was affected by the apparently reduced tumor incidence that is seen in the high-dose group (Knauf and Rice, 1992).

Intratracheal instillation and inhalation studies in guinea pigs, hamsters and rats have resulted in elevated incidences of respiratory tract and upper digestive tract tumors (U.S. EPA, 1991a). Male Syrian golden hamsters (24/group) were exposed by inhalation to 0, 2.2, 9.5 or 46.5 mg BAP/cu.m in a sodium chloride aerosol (Thyssen et al., 1981). (Greater than 99% of the particles had diameters between 0.2 and 0.5 um.) For the first 10 weeks of the study, the hamsters were exposed to BAP daily for 4.5 hours/day; thereafter, daily for 3 hours/day. Animals dying within the first year of the study were replaced; the effective number of hamsters in the control, low-, mid- and high-dose groups was 27, 27, 26 and 25, respectively. (The total time of treatment, although over 60 weeks, was not stated.) During the first 10 weeks, animals in the 3 dose groups reportedly lost weight. After week 10, however, the body weights in all groups were similar until week 60 when the body weights of hamsters in the high-dose group decreased and the mortality increased significantly. The incidence of respiratory tract tumors (including tumors of the nasal cavity, larynx and trachea) in the control, low-, mid- and high-dose groups was 0/27, 0/27, 9/26 and 13/25, respectively; the incidences of upper digestive tract tumors (including tumors of the pharynx, esophagus and forestomach) were 0/27, 0/27, 7/26 and 14/25, respectively. Trend analysis for incidences of both respiratory tract tumors and upper gastrointestinal tract tumors showed a statistically significant tendancy for the proportion of animals with either tumor type to increase steadily with increased dose (Knauf and Rice, 1992).

Intraperitoneal BAP injections have caused increases in the number of injection site tumors in mice and rats (reviewed in U.S. EPA, 1991a). Subcutaneous BAP injections have caused increases in the number of injection site tumors in mice, rats, guinea pigs, hamsters and some primates (IARC, 1983; U.S. EPA, 1991a). BAP is commonly used as a positive control in many dermal application bioassays and has been shown to cause skin tumors in mice, rats, rabbits and guinea pigs. BAP is both an initiator and a complete carcinogen in mouse skin (IARC, 1983). Increased incidences of distant site tumors have also been reported in animals as a consequence of dermal BAP exposure (reviewed in U.S. EPA, 1991a).

BAP has also been reported to be carcinogenic in animals when administered by the following routes: i.v.; transplacentally; implantation in the stomach wall, lung, renal parenchyma and brain; injection into the renal pelvis; and vaginal painting (U.S. EPA, 1991a).

### II.A.4. SUPPORTING DATA FOR CARCINOGENICITY

Benzo[a]pyrene has been shown to cause genotoxic effects in a broad range of prokaryotic and mammalian cell assay systems (U.S. EPA, 1991a). In prokaryotes, BAP tested positive in DNA damage assays and in both reverse and forward mutation assays. In mammalian cell culture assays, BAP tested positive in DNA damage assays, forward mutation assays, chromosomal effects assays and cell transformation assays.

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II.B. QUANTITATIVE ESTIMATE OF CARCINOGENIC RISK FROM ORAL EXPOSURE

NOTE: The range of oral slope factors calculated was: 4.5E+0 to 11.7E+0 per (mg/kg)/day.

II.B.1. SUMMARY OF RISK ESTIMATES

Oral Slope Factor -- 7.3E+0 per (mg/kg)/day

Drinking Water Unit Risk -- 2.1E-4 per (ug/L)

Extrapolation Method -- Risk estimate based on a geometric mean of four slope

factors obtained by differing modeling procedures. Derived from the combination of multiple data sets from two different reports using more than one sex and species.

Drinking Water Concentrations at Specified Risk Levels:

Risk	L€	evel	L	Conce	entration
			10,000) 100,000)		ug/L ug/L
			1,000,000)		ug/L

II.B.2. DOSE-RESPONSE DATA (CARCINOGENICITY, ORAL EXPOSURE)

Tumor Type -- forestomach, squamous cell papillomas and carcinomas Test Animals -- CFW mice, sex unknown Route -- oral, diet Reference -- Neal and Rigdon, 1967

a) Conditional upper bound two-stage model with terms for promotion (modification of Moolgavkar-Venson-Knudson, generalized forms of two-stage model)

Administered

	(man)	<b></b>	Treidere	-		
Dose	(ppm)	Tumor	Incidence	=		
			· • • • • • • • • • • • • • • • • • • •	-		
0	1	0,	/289			
1		0,	/25			
10	)	0,	/24			
20	l i i i i i i i i i i i i i i i i i i i	1,	/23			
30	1	0,	/37			
40	)	1,	40			
45	5	4,	/40			
50	)	24,	/34			
100	)	19,	/23			
250	)	66,	/73			
Test Route	Animals oral	<sup>-</sup> SWR, , diet	ous cell ( /J Swill n in et al.	mice	of the	e forestomach
Admin	nistered					

Dose (ppm) Tumor Incidence 0 2/268\* male 0 1/402\* female

\*See additional comments concerning the use of control data from other studies that utilized similar mouse strains.

b) Same data as above. Upper bound estimate by extrapolation from 10% response point to background of empirically fitted dose-response curve. (Procedure using two-stage model described in (a)).

c) Same data as above except the additional 2 control groups (Rabstein et al., 1973) were excluded. Generalized Weibull-type dose-response model.

d) Tumor Type -- forestomach, larynx and esophagus, papillomas and carcinomas (combined). Linearized Multistage Model, Extra Risk.

Test Animals -- Sprague-Dawley rats, males and females Route -- oral, diet Reference -- Brune et al., 1981

Dose Tumor (mg/kg diet/year) Incidence

0	3/64
6	3/64
39	10/64

\_\_\_\_II.B.3. ADDITIONAL COMMENTS (CARCINOGENICITY, ORAL EXPOSURE)

At the June 1992 CRAVE Work Group meeting, it was noted that an error had been made in the 1991 document "Dose-Response Analysis of Ingested Benzo[a]pyrene" which is quoted in the Drinking Water Criteria Document for PAH. In the calculation of the doses in the Brune et al. (1981) study it was erroneously concluded that doses were given in units of mg/year, whereas it was in fact mg/kg/year. When the doses are corrected the slope factor is correctly calculated as 11.7 per (mg/kg)/day, as opposed to 4.7 per (mg/kg)/day as reported in the Drinking Water Criteria Document. The correct range of slope factors is 4.5 to 11.7 per (mg/kg)/day, with a geometric mean of 7.3 per (mg/kg)/day. A drinking water unit risk based on the revised slope factor is 2.1E-4 per (ug/L). Therefore, these values have been changed on IRIS and an Erratum to the Drinking Water Criteria Document is being prepared.

Risk estimates were calculated from two different studies in two species of outbred rodents (Neal and Rigdon, 1967; Brune et al., 1981). These studies have several commonalities including mode of administration, tumor sites, tumor types and the presumed mechanisms of action. The data sets were not combined prior to modeling (the preferred approach) because they employed significantly dissimilar protocols.

The geometric mean from several slope factors, each considered to be of equal merit, was used to calculate a single unit risk. These four slope factor estimates span less than a factor of three and each is based on an acceptable, but less-than-optimal, data set. Each estimate is based on a lowdose extrapolation procedure which entails the use of multiple assumptions and default procedures.

Clement Associates (1990) fit the Neal and Rigdon (1967) data to a twostage dose response model. In this model the transition rates and the growth rate of preneoplastic cells were both considered to be exposure-dependent. (The functional form for the dose-dependence of preneoplastic cell growth rate was simple saturation.) A term to permit the modeling of BAP as its own promoter was also included. Historical control stomach tumor data from a related, but not identical, mouse strain, SWR/J Swill (Rabstein et al., 1973) and the CFW Texas colony (Neal and Rigdon, 1967) were used in the modeling. In calculating the lifetime unit risk for humans several standard assumptions were made: mouse food consumption was 13% of its body weight/day; human body weight was assumed to be 70 kg and the assumed body weight of the mouse 0.034 kg. The standard assumption of surface area equivalence between mice and humans was the cube root of 70/0.034. A conditional upper bound estimate was calculated to be 5.9 per (mg/kg)/day (U.S. EPA, 1991a).

A U.S. EPA report (1991b) argued that the upper-bound estimate calculated in Clement Associates (1990) involved the use of unrealistic conditions placed on certain parameters of the equation. Other objections to this slope factor were also raised. The authors of this report used the Neal and Rigdon (1967) data to generate an upper-bound estimate extrapolated linearly from the 10% response point to the background of an empirically fitted dose-response curve (Clement Associates, 1990). Other results, from similar concepts and approaches used for other compounds, suggest that the potency slopes calculated in this manner are comparable to those obtained from a linearized multistage procedure for the majority of the other compounds. The upper bound estimate calculated in U.S. EPA (1991b) is 9.0 per (mg/kg)/day.

The authors of U.S. EPA (1991b) selected a model to reflect the partial lifetime exposure pattern over different parts of the animals' lifetimes. The authors thought that this approach more closely reflected the Neal and Rigdon (1967) regimen. A Weibull-type dose-response model was selected to accommodate the partial lifetime exposure; the upper-bound slope factor calculated from this method was 4.5 per (mg/kg)/day.

Using the dietary portion of the Brune et al. (1981) rat data, a linearized multistage procedure was used to calculate an upper bound slope factor for humans. In the interspecies conversion the assumed human body weight was 70 kg and the rat 0.4 kg. The slope factor calculated by this method was 11.7 per (mg/kg)/day.

II.B.4. DISCUSSION OF CONFIDENCE (CARCINOGENICITY, ORAL EXPOSURE)

The data are considered to be less than optimal, but acceptable. There are precedents for using multiple data sets from different studies using more than one sex, strain and species; the use of the geometric mean of four slope factors is preferred because it makes use of more of the available data. The use of the geometric means was based on arguments presented in a personal communication (Stiteler, 1991).

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\_\_\_\_II.C. QUANTITATIVE ESTIMATE OF CARCINOGENIC RISK FROM INHALATION EXPOSURE Not available.

\_\_\_II.D. EPA DOCUMENTATION, REVIEW, AND CONTACTS (CARCINOGENICITY ASSESSMENT)

II.D.1. EPA DOCUMENTATION

Source Document -- U.S. EPA, 1991a,b

The 1991 Drinking Water Criteria Document for the polycyclic aromatic hydrocarbons has received agency review.

II.D.2. REVIEW (CARCINOGENICITY ASSESSMENT)

Agency Work Group Review -- 01/07/87, 12/04/91, 06/03/92, 08/05/93, 02/02/94, 06/09/94

Verification Date -- 12/04/91

II.D.3. U.S. EPA CONTACTS (CARCINOGENICITY ASSESSMENT)

Please contact the Risk Information Hotline for all questions concerning this assessment or IRIS, in general, at (513)569-7254 (phone), (513)569-7159 (FAX) or RIH.IRIS@EPAMAIL.EPA.GOV (internet address).

VI. BIBLIOGRAPHY

Substance Name -- Benzo[a]pyrene (BaP) CASRN -- 50-32-8 Last Revised -- 12/01/93 VI.A. ORAL RfD REFERENCES

None

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VI.B. INHALATION RfD REFERENCES

None

VI.C. CARCINOGENICITY ASSESSMENT REFERENCES

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VII. REVISION HISTORY

Substance Name -- Benzo[a]pyrene (BaP) CASRN -- 50-32-8

\_\_\_\_\_ \_\_\_\_\_ Section Description Date \_ \_ \_ \_ \_ \_ \_ \_ \_ -----\_\_\_\_\_ VI. Bibliography on-line II. Carcinogen assessment noted as pending change 08/01/89 01/01/92 IV. 01/01/9211.Carcinogen assessment noted as pointing including01/01/92IV.Regulatory actions updated04/01/92II.Summary revised; oral quantitative section added04/01/92VI.C.Carcinogen assessment references revised05/01/92II.D.2.Work group review and verification date corrected07/01/92II.Text revised in NOTE 07/01/92 II.B. Range of slope factors corrected 07/01/92 II.B.1. Slope factor and risks corrected 07/01/92 II.B.2. Data table heading corrected 07/01/92 II.B.3. Slope factor corrected; last paragraph 07/01/92 II.D.3. Secondary contact changed 09/01/93 II. Carcinogenicity assessment noted as pending change 09/01/93 II.D.2. Work group review date added 12/01/93 VI.C. Reference revised - U.S. EPA, 1991b 02/01/94 II.D.3. Primary contact's phone number changed Pending change note removed; no change 03/01/94 II. 03/01/94 II.D.2. Work group review date added 07/01/94 II.D.2. Work group review date added 11/01/94 II.B.1. Slope factor clarified; changed 0 to "0"

### SYNONYMS

Substance Name -- Benzo[a]pyrene (BaP) CASRN -- 50-32-8 Last Revised -- 03/31/87

50-32-8 BaP Benzo[a]pyrene BENZO(d, e, f) CHRYSENE 3,4-BENZOPIRENE 3,4-BENZOPYRENE 6,7-BENZOPYRENE BENZO (a) PYRENE 3,4-BENZPYREN 3,4-BENZPYRENE 3,4-BENZ(a)PYRENE BENZ (a) PYRENE 3,4-BENZYPYRENE BP 3,4-BP B(a)P RCRA WASTE NUMBER U022

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