CON 12-15
Doc #16653

September 9, 2004

Mr. Lambert Nnadi
Iowa Department of Natural Resources, Contaminated Sites Section
Wallace State Office Building
502 East 9th St.
Des Moines, Iowa 50319

Re: 2004 Annual Ground Water Monitoring
Former Koch/Sinclair Terminal, Terminal Street, Dubuque, Iowa

Dear Mr. Nnadi:

Enclosed please find the report entitled "Former Dubuque Terminal – 2004 Annual Groundwater Monitoring, Dubuque, Iowa" (dated August 9, 2004). The report is submitted in accordance with your August 28, 2003 letter.

The report provides the results of the annual monitor well sampling performed at the former Dubuque terminal in July 2004. The groundwater samples were laboratory analyzed for BTEX, MTBE, naphthalene, THE (diesel), and TPH (gasoline), as requested. Split samples were also collected by Mr. Don Chase, Iowa Department of Natural Resources (IDNR) Field Office #1.

None of the results exceeded an Iowa Tier 1 level, except benzene at well MW-3A. The detected benzene concentration was 10.7 ug/L, which has declined compared to prior years. The table in the attached report shows that the sampling results for the past three years meet the IDNR steady or declining criteria.

Based upon the above, Sinclair Oil Corporation requests that no further action be required for the site.

If you have any question regarding the enclosed, please do not hesitate to contact me at 913-233-7325.

Sincerely,
Sinclair Oil Corporation

Paul D. Conrad

Paul D. Conrad
Environmental Engineer

Attachments

Cc: Mr. Joe Sanfilippo, IDNR Field Office #1
Mr. Barry Lindahl, Esq., City of Dubuque
Joe Maffuccio, Sinclair
Mr. Mark Petersen, Sinclair
Mr. Lynn Hart, Esq., Sinclair

Sinclair Oil Corporation
3401 FAIRBANKS AVENUE • P.O. BOX 6247 • KANSAS CITY, KANSAS 66106
(913) 321-3700

16653

DATE STAMP

3773 AM 9:26 08/15/04

Howard R. Green Company

August 9, 2004

Mr. Paul Conrad, P.E.
Environmental Engineer
Sinclair Oil Corporation
3401 Fairbanks Avenue
PO Box 6247
Kansas City, KS 66106

RE: Former Dubuque Terminal – 2004 Groundwater Monitoring
Dubuque, Iowa

Dear Mr. Conrad:

On July 13, 2004 a Howard R. Green Company Field Technician collected groundwater samples from four groundwater monitoring wells, MW-1A, 2A, 3A, and 4A at Sinclair's former Dubuque Terminal in Dubuque, Iowa. Prior to sampling, the Field Technician measured the depth to groundwater in each well. A sampling pump was used for micro-purging and sample collection. The discharge was monitored for temperature, dissolved oxygen (DO), pH, and specific conductivity. A sample was collected after three consecutive readings of temperature, DO, pH, and conductivity were within 10%. Samples were split with Don Chase of IDNR Field Office #1. Purge water was placed in a drum supplied by Howard R. Green Company and disposed of by the Field Technician in coordination with the City of Dubuque POTW. Pace Analytical Services, Inc. analyzed groundwater samples for benzene, toluene, ethylbenzene, xylenes (BTEX) and naphthalene by Iowa Method OA-1 and for total extractable hydrocarbons (TEH) and methyl *tert*-butyl ether (MTBE) by Iowa Method OA-2. The analytical reports are attached as are the field sampling and wastewater disposal forms.

Benzene was detected at a concentration of 10.7 ug/L in MW-3A. This was the only analyte detected above an Iowa Tier 1 level. TEH as diesel was detected in MW-2A and ethylbenzene in MW-3A but both were below Tier 1 levels.

In the attached table, we summarized the sampling results for the last three years for the four wells at your site. The two wells that have had analyte concentrations exceeding Iowa Tier 1 levels, MW-2A and MW-3A, now meet IDNR's steady or declining criteria. We recommend that you request that IDNR not require any further action on your site.

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8710 Earhart Lane SW • Cedar Rapids, IA 52404 • PO Box 9009 • Cedar Rapids, IA 52409-9009
319.841.4000 fax 319.841.4012 toll free 800.728.7805 www.hrgreen.com

16653

It's been a pleasure working with you again. Please contact me at 319.841.4424 if you have any questions.

Very truly yours,

HOWARD R. GREEN COMPANY

Cynthia L. Quast, P.E.
Senior Technical Advisor

Enclosures

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Historical Groundwater Monitoring Summary
Sinclair Oil/Koch Materials Company Terminal
Dubuque, Iowa

Analyte (ug/L)	MW-1/1A			MW-2/2A			MW-3/3A			MW-4/4A			Tier 1 Level
	7/02	6/03	7/04	7/02	6/03	7/04	7/02	6/03	7/04	7/02	6/03	7/04	
Benzene	<2	<2	<2	<2	<2	<2	**108**	**62.9**	**10.7**	<2	<2	<2	5
Toluene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	1000
Ethylbenzene	<2	<2	<2	<2	<2	<2	2.83	3.67	3.70	<2	<2	<2	700
Xylenes	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<5	<5	10,000
TEH-diesel	<400	<400	<400	**3,600**	740	860	<400	<400	<400	<400	<400	<400	1,200

3775 AM 9:26 09/15/04

Site Name Sinclair Oil - Dubuque, Iowa
Project Manager Cindy Quast
Weather Clear, southwest wind 10-15mph, 90°

Date July 13, 2004
LUST # 7LTJ63
Sampled By Randy Gavin

MW-1A
Well depth- 16.90 Static Water Level- 9.13 Sample Time- 9:50

Time	Volume Removed	pH	Specific Conductance S/m	Temp (C)	Turbidity	DO
9:30	- - -	7.10	0.601	19.4	110.0	9.36
9:33	0.125	6.85	0.562	18.8	91.3	9.82
9:37	0.75	6.95	0.559	17.7	145.0	9.30
9:40	1.00	7.08	0.559	17.7	133.0	9.03
9:47	1.50	7.18	0.560	18.2	126.0	9.13

Notes: There was no measurable free product in the well.

MW-2A
Well depth- 17.40 Static Water Level- 6.81 Sample Time- 14:45

Time	Volume Removed	pH	Specific Conductance S/m	Temp (C)	Turbidity	DO
14:14	0.125	6.94	0.563	23.0	200.0	1.53
14:19	0.50	6.61	0.498	21.1	265.0	0.78
14:25	1.25	6.78	0.493	19.6	273.0	0.56
14:29	1.50	6.79	0.505	19.9	227.0	0.44
14:34	2.00	6.74	0.529	19.7	171.0	0.33
14:38	2.25	6.84	0.555	19.7	185.0	0.00
14:44	3.00	6.88	0.552	20.1	186.0	0.00

NOTES: There was no measurable free product in the well. There was a sheen of product in well. A thick black product was on oil/water interface probe when water level was measured. 3 absorbent socks were placed in the well on 7/15/04

Site Name Sinclair Oil - Dubuque, Iowa
Project Manager Cindy Quast
Weather Clear, southwest wind 10-15mph, 90°

Date July 13, 2004
LUST # 7LTJ63
Sampled By Randy Gavin

MW-3A
Well depth- 16.85 Static Water Level- 9.96 Sample Time- 13:30

Time	Volume Removed	pH	Specific Conductance S/m	Temp (C)	Turbidity	DO
12:54	0.125	6.76	1.50	20.6	201.0	6.68
13:00	0.500	6.78	1.50	20.0	133.0	4.06
13:07	1.250	6.83	1.52	19.9	96.9	3.12
13:12	1.625	6.97	1.53	19.8	84.4	3.01
13:17	2.000	6.98	1.53	19.5	78.8	2.58
13:22	2.500	6.99	1.53	19.6	75.8	2.67
13:29	2.750	6.92	1.52	19.6	70.2	2.68

Notes: There was no measurable free product in the well.

MW-4A
Well depth- 19.10 Static Water Level- 8.47 Sample Time- 11:15

Time	Volume Removed	pH	Specific Conductance S/m	Temp (C)	Turbidity	DO
10:33	0.125	6.92	0.622	21.8	539.0	7.32
10:38	0.500	6.58	0.578	20.7	267.0	4.40
10:45	1.000	6.75	0.576	20.5	222.0	3.87
10:50	1.250	6.83	0.581	20.6	187.0	3.30
10:54	1.625	6.87	0.582	20.2	289.0	3.09
11:00	2.000	6.88	0.586	22.3	245.0	5.19
11:05	2.250	6.92	0.589	23.6	240.0	6.88
11:10	2.500	6.91	0.591	24.0	223.0	7.20

Notes: There was no measurable free product in the well.

White: Hauler
Canary: WWTP Office
Pink: City Hall Finance

No _____

City of Dubuque
Wastewater Treatment Plant
Dumping Permit for Private Haulers

Name of Waste Hauler: RANDY GAVIN C.A. Technical Services

Name of Customer: Sinclair Oil

Address of Customer: Terminal Street Dubuque, IA 52001

Circle One: Domestic Material (Commercial Material)

Estimated Volume: 20 gallons Date: 8/2/04 Time: 15:00

I certify that the information listed here is true, accurate and complete. I am aware of the conditions and requirements of the Waste Hauler Permit. I understand that failure to comply with the Permit may result in immediate suspension of the Permit and/or possible penalties as may be allowed by law. I further certify that this load of wastewater does not contain any substance prohibited by 40 CFR 403.5(b) and does conform to the provisions of the Municipal Code of the City of Dubuque.

Driver/Operator Signature: [signature]

TO BE COMPLETED BY POTW REPRESENTATIVE

Date: 8-2-04 Time: 15:00

Signature: Jonathan Brown

Sample ID#: Sample Results
(If Collected): Received and Results Okay JB

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www.pacelabs.com

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

July 22, 2004

CINDY QUAST
HOWARD R. GREEN COMPANY
22 SOUTH LINN ST
IOWA CITY, IA 52240

RE: Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

Dear QUAST:

Enclosed are the analytical results for sample(s) received by the laboratory on July 14, 2004. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Angie Brown
angela.brown@pacelabs.com
Project Manager

Kansas/NELAP Certification Number E-10116

Enclosures

REPORT OF LABORATORY ANALYSIS

ACCREDITED IN ACCORDANCE WITH nelac

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Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

SAMPLE SUMMARY

Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

Project Sample Number	Sample Number	Client Sample ID	Matrix	Date Collected	Date Received
6084646-001	607292463	MW-1A	Water	07/13/04 09:50	07/14/04 09:20
6084646-002	607292471	MW-2A	Water	07/13/04 14:45	07/14/04 09:20
6084646-003	607292489	MW-3A	Water	07/13/04 13:30	07/14/04 09:20
6084646-004	607292497	MW-4A	Water	07/13/04 11:15	07/14/04 09:20
6084646-005	607292505	TRIP BLANK	Water	07/13/04	07/14/04 09:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

Project Sample Number	Sample No	Client Sample ID	Analysis Code		Analysis Description	Analytes Reported
6084646-001	607292463	MW-1A	OA1	WL60	TPH Gas/BTEX	9
			OA2	WL60	Total Extractable Hydrocarbons	9
6084646-002	607292471	MW-2A	OA1	WL60	TPH Gas/BTEX	9
			OA2	WL60	Total Extractable Hydrocarbons	9
6084646-003	607292489	MW-3A	OA1	WL60	TPH Gas/BTEX	9
			OA2	WL60	Total Extractable Hydrocarbons	10
6084646-004	607292497	MW-4A	OA1	WL60	TPH Gas/BTEX	9
			OA2	WL60	Total Extractable Hydrocarbons	9
6084646-005	607292505	TRIP BLANK	OA1	WL60	TPH Gas/BTEX	9

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Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

Lab Sample No: 607292463 Project Sample Number: 6084646-001 Date Collected: 07/13/04 09:50
Client Sample ID: MW-1A Matrix: Water Date Received: 07/14/04 09:20

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Semivolatiles									
Total Extractable Hydrocarbons	Prep/Method: OA2 / OA2								
Mineral Spirits	ND	mg/l	0.40	1.0	07/21/04 11:02	RMN1			
Jet Fuel	ND	mg/l	0.40	1.0	07/21/04 11:02	RMN1			
Kerosene	ND	mg/l	0.40	1.0	07/21/04 11:02	RMN1			
Diesel Fuel	ND	mg/l	0.40	1.0	07/21/04 11:02	RMN1	68334-30-5		
Fuel Oil	ND	mg/l	0.40	1.0	07/21/04 11:02	RMN1	68334-30-5		
Motor Oil	ND	mg/l	0.40	1.0	07/21/04 11:02	RMN1			
p-Terphenyl (S)	95	%		1.0	07/21/04 11:02	RMN1	92-94-4		
n-Tetracosane (S)	99	%		1.0	07/21/04 11:02	RMN1	646-31-1		
Date Extracted	07/19/04				07/19/04				
GC Volatiles									
TPH Gas/BTEX	Method: EPA 8021/OA1								
Gasoline Range Hydrocarbons	ND	ug/l	500.	1.0	07/20/04 14:18	ARF			
Benzene	ND	ug/l	2.00	1.0	07/20/04 14:18	ARF	71-43-2		
Toluene	ND	ug/l	2.00	1.0	07/20/04 14:18	ARF	108-88-3		
Ethylbenzene	ND	ug/l	2.00	1.0	07/20/04 14:18	ARF	100-41-4		
Xylene (Total)	ND	ug/l	5.00	1.0	07/20/04 14:18	ARF	1330-20-7		
Methyl-tert-butyl ether	ND	ug/l	10.0	1.0	07/20/04 14:18	ARF	1634-04-4		
Naphthalene	ND	ug/l	10.0	1.0	07/20/04 14:18	ARF	91-20-3		
a,a,a-Trifluorotoluene (S)	100	%		1.0	07/20/04 14:18	ARF	98-08-8		
4-Bromofluorobenzene (S)	95	%		1.0	07/20/04 14:18	ARF	460-00-4		

REPORT OF LABORATORY ANALYSIS

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Fax: 913.599.1759

Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

Lab Sample No: 607292471 Project Sample Number: 6084646-002 Date Collected: 07/13/04 14:45
Client Sample ID: MW-2A Matrix: Water Date Received: 07/14/04 09:20

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Semivolatiles									
Total Extractable Hydrocarbons	Prep/Method: OA2 / OA2								
Mineral Spirits	ND	mg/l	0.40	1.0	07/21/04 15:07	RMN1			
Jet Fuel	ND	mg/l	0.40	1.0	07/21/04 15:07	RMN1			
Kerosene	ND	mg/l	0.40	1.0	07/21/04 15:07	RMN1			
Diesel Fuel	0.86	mg/l	0.40	1.0	07/21/04 15:07	RMN1	68334-30-5		
Fuel Oil	ND	mg/l	0.40	1.0	07/21/04 15:07	RMN1	68334-30-5		
Motor Oil	ND	mg/l	0.40	1.0	07/21/04 15:07	RMN1			
p-Terphenyl (S)	90	%		1.0	07/21/04 15:07	RMN1	92-94-4		
n-Tetracosane (S)	81	%		1.0	07/21/04 15:07	RMN1	646-31-1		
Date Extracted	07/19/04				07/19/04				
GC Volatiles									
TPH Gas/BTEX	Method: EPA 8021/OA1								
Gasoline Range Hydrocarbons	ND	ug/l	500.	1.0	07/20/04 14:48	ARF			
Benzene	ND	ug/l	2.00	1.0	07/20/04 14:48	ARF	71-43-2		
Toluene	ND	ug/l	2.00	1.0	07/20/04 14:48	ARF	108-88-3		
Ethylbenzene	ND	ug/l	2.00	1.0	07/20/04 14:48	ARF	100-41-4		
Xylene (Total)	ND	ug/l	5.00	1.0	07/20/04 14:48	ARF	1330-20-7		
Methyl-tert-butyl ether	ND	ug/l	10.0	1.0	07/20/04 14:48	ARF	1634-04-4		
Naphthalene	ND	ug/l	10.0	1.0	07/20/04 14:48	ARF	91-20-3		
a,a,a-Trifluorotoluene (S)	99	%		1.0	07/20/04 14:48	ARF	98-08-8		
4-Bromofluorobenzene (S)	92	%		1.0	07/20/04 14:48	ARF	460-00-4		

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Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

Lab Sample No: 607292489 Project Sample Number: 6084646-003 Date Collected: 07/13/04 13:30
Client Sample ID: MW-3A Matrix: Water Date Received: 07/14/04 09:20

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Semivolatiles									
Total Extractable Hydrocarbons	Prep/Method: OA2 / OA2								
Mineral Spirits	ND	mg/l	0.40	1.0	07/21/04 16:00	RMN1			
Jet Fuel	ND	mg/l	0.40	1.0	07/21/04 16:00	RMN1			
Kerosene	ND	mg/l	0.40	1.0	07/21/04 16:00	RMN1			
Diesel Fuel	ND	mg/l	0.40	1.0	07/21/04 16:00	RMN1	68334-30-5		
Fuel Oil	ND	mg/l	0.40	1.0	07/21/04 16:00	RMN1	68334-30-5		
Motor Oil	ND	mg/l	0.40	1.0	07/21/04 16:00	RMN1			
Total Petroleum Hydrocarbons	0.52	mg/l	0.40	1.0	07/21/04 16:00	RMN1		1	
p-Terphenyl (S)	94	%		1.0	07/21/04 16:00	RMN1	92-94-4		
n-Tetracosane (S)	100	%		1.0	07/21/04 16:00	RMN1	646-31-1		
Date Extracted	07/19/04				07/19/04				
GC Volatiles									
TPH Gas/BTEX	Method: EPA 8021/OA1								
Gasoline Range Hydrocarbons	1750	ug/l	500.	1.0	07/20/04 15:18	ARF			
Benzene	10.7	ug/l	2.00	1.0	07/20/04 15:18	ARF	71-43-2		
Toluene	ND	ug/l	2.00	1.0	07/20/04 15:18	ARF	108-88-3		
Ethylbenzene	3.70	ug/l	2.00	1.0	07/20/04 15:18	ARF	100-41-4		
Xylene (Total)	ND	ug/l	5.00	1.0	07/20/04 15:18	ARF	1330-20-7		
Methyl-tert-butyl ether	ND	ug/l	10.0	1.0	07/20/04 15:18	ARF	1634-04-4		
Naphthalene	ND	ug/l	10.0	1.0	07/20/04 15:18	ARF	91-20-3		
a,a,a-Trifluorotoluene (S)	112	%		1.0	07/20/04 15:18	ARF	98-08-8		
4-Bromofluorobenzene (S)	94	%		1.0	07/20/04 15:18	ARF	460-00-4		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

Lab Sample No: 607292497 Project Sample Number: 6084646-004 Date Collected: 07/13/04 11:15
Client Sample ID: MW-4A Matrix: Water Date Received: 07/14/04 09:20

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Semivolatiles									
Total Extractable Hydrocarbons	Prep/Method: OA2 / OA2								
Mineral Spirits	ND	mg/l	0.40	1.0	07/21/04 12:29	RMN1			
Jet Fuel	ND	mg/l	0.40	1.0	07/21/04 12:29	RMN1			
Kerosene	ND	mg/l	0.40	1.0	07/21/04 12:29	RMN1			
Diesel Fuel	ND	mg/l	0.40	1.0	07/21/04 12:29	RMN1	68334-30-5		
Fuel Oil	ND	mg/l	0.40	1.0	07/21/04 12:29	RMN1	68334-30-5		
Motor Oil	ND	mg/l	0.40	1.0	07/21/04 12:29	RMN1			
p-Terphenyl (S)	96	%		1.0	07/21/04 12:29	RMN1	92-94-4		
n-Tetracosane (S)	100	%		1.0	07/21/04 12:29	RMN1	646-31-1		
Date Extracted	07/19/04				07/19/04				
GC Volatiles									
TPH Gas/BTEX	Method: EPA 8021/OA1								
Gasoline Range Hydrocarbons	ND	ug/l	500.	1.0	07/20/04 15:48	ARF			
Benzene	ND	ug/l	2.00	1.0	07/20/04 15:48	ARF	71-43-2		
Toluene	ND	ug/l	2.00	1.0	07/20/04 15:48	ARF	108-88-3		
Ethylbenzene	ND	ug/l	2.00	1.0	07/20/04 15:48	ARF	100-41-4		
Xylene (Total)	ND	ug/l	5.00	1.0	07/20/04 15:48	ARF	1330-20-7		
Methyl-tert-butyl ether	ND	ug/l	10.0	1.0	07/20/04 15:48	ARF	1634-04-4		
Naphthalene	ND	ug/l	10.0	1.0	07/20/04 15:48	ARF	91-20-3		
a,a,a-Trifluorotoluene (S)	99	%		1.0	07/20/04 15:48	ARF	98-08-8		
4-Bromofluorobenzene (S)	94	%		1.0	07/20/04 15:48	ARF	460-00-4		

REPORT OF LABORATORY ANALYSIS

ACCREDITED IN ACCORDANCE WITH nelac

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Fax: 913.599.1759

Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

Lab Sample No: 607292505 Project Sample Number: 6084646-005 Date Collected: 07/13/04 00:00
Client Sample ID: TRIP BLANK Matrix: Water Date Received: 07/14/04 09:20

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
TPH Gas/BTEX	Method: EPA 8021/OA1								
Gasoline Range Hydrocarbons	ND	ug/l	500.	1.0	07/20/04 18:48	ARF			
Benzene	ND	ug/l	2.00	1.0	07/20/04 18:48	ARF	71-43-2		
Toluene	ND	ug/l	2.00	1.0	07/20/04 18:48	ARF	108-88-3		
Ethylbenzene	ND	ug/l	2.00	1.0	07/20/04 18:48	ARF	100-41-4		
Xylene (Total)	ND	ug/l	5.00	1.0	07/20/04 18:48	ARF	1330-20-7		
Methyl-tert-butyl ether	ND	ug/l	10.0	1.0	07/20/04 18:48	ARF	1634-04-4		
Naphthalene	ND	ug/l	10.0	1.0	07/20/04 18:48	ARF	91-20-3		
a,a,a-Trifluorotoluene (S)	101	%		1.0	07/20/04 18:48	ARF	98-08-8		
4-Bromofluorobenzene (S)	94	%		1.0	07/20/04 18:48	ARF	460-00-4		

Comments : PACE LOT 061504A

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Lenexa, KS 66219
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Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

PARAMETER FOOTNOTES

Dilution factor shown represents the factor applied to the reported result and reporting limit due to changes in sample preparation, dilution of the extract, or moisture content

ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
(S)	Surrogate
[1]	Quantitation of the Total Petroleum Hydrocarbon fraction was achieved using No. 2 diesel fuel as a reference standard from C10 to C28. The TPH fingerprint was indicative of gasoline range hydrocarbons.

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QUALITY CONTROL DATA

Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

QC Batch: 173644 Analysis Method: OA2
QC Batch Method: OA2 Analysis Description: Total Extractable Hydrocarbons
Associated Lab Samples: 607292463 607292471 607292489 607292497

METHOD BLANK: 607301272
Associated Lab Samples: 607292463 607292471 607292489 607292497

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Mineral Spirits	mg/l	ND	0.40	
Jet Fuel	mg/l	ND	0.40	
Kerosene	mg/l	ND	0.40	
Diesel Fuel	mg/l	ND	0.40	
Fuel Oil	mg/l	ND	0.40	
Motor Oil	mg/l	ND	0.40	
p-Terphenyl (S)	%	100		
n-Tetracosane (S)	%	103		

LABORATORY CONTROL SAMPLE: 607301280

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Footnotes
Diesel Fuel	mg/l	12.50	9.909	79	60-125	
p-Terphenyl (S)				93	61-145	
n-Tetracosane (S)				105	54-143	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 607301298 607301306

Parameter	Units	607298320 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Footnotes
Diesel Fuel	mg/l	4.873	14.29	17.41	17.06	88	85	39-150	2	17	
p-Terphenyl (S)						93	96	61-145			
n-Tetracosane (S)						109	111	54-143			

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QUALITY CONTROL DATA

Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

QC Batch: 173689 Analysis Method: EPA 8021/OA1
QC Batch Method: EPA 5030 Analysis Description: TPH Gas/BTEX
Associated Lab Samples: 607292463 607292471 607292489 607292497 607292505

METHOD BLANK: 607302866
Associated Lab Samples: 607292463 607292471 607292489 607292497 607292505

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Gasoline Range Hydrocarbons	ug/l	ND	500.	
Benzene	ug/l	ND	2.00	
Toluene	ug/l	ND	2.00	
Ethylbenzene	ug/l	ND	2.00	
Xylene (Total)	ug/l	ND	5.00	
Methyl-tert-butyl ether	ug/l	ND	10.0	
Naphthalene	ug/l	ND	10.0	
a,a,a-Trifluorotoluene (S)	%	98		
4-Bromofluorobenzene (S)	%	94		

LABORATORY CONTROL SAMPLE: 607302874

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Footnotes
Gasoline Range Hydrocarbons	ug/l	2000.00	2044	102	80-122	
Benzene	ug/l	20.00	19.36	97	84-121	
Toluene	ug/l	20.00	19.36	97	87-116	
Ethylbenzene	ug/l	20.00	19.72	99	89-112	
Xylene (Total)	ug/l	60.00	60.95	102	89-114	
Methyl-tert-butyl ether	ug/l	20.00	20.23	101	79-120	
Naphthalene	ug/l	20.00	20.92	105	64-118	
a,a,a-Trifluorotoluene (S)				99	85-113	
4-Bromofluorobenzene (S)				94	78-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 607306933 607306941

Parameter	Units	607292463 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Footnotes
Gasoline Range Hydrocarbons	ug/l	0	2000.00	1913	2052	96	103	72-119	7	16	

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QUALITY CONTROL DATA

Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 607306933 607306941

Parameter	Units	607292463 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Footnotes
Benzene	ug/l	0	20.00	19.52	18.48	98	92	74-133	5	17	
Toluene	ug/l	0	20.00	19.36	18.45	97	92	74-125	5	16	
Ethylbenzene	ug/l	0	20.00	19.52	18.60	98	93	78-120	5	16	
Xylene (Total)	ug/l	0.6356	60.00	58.96	56.84	97	94	75-121	4	15	
Methyl-tert-butyl ether	ug/l	1.416	20.00	21.52	20.43	100	95	68-132	5	13	
Naphthalene	ug/l	0	20.00	15.14	21.12	76	106	63-122	33	23	1
a,a,a-Trifluorotoluene (S)						98	96	85-113			
4-Bromofluorobenzene (S)						92	95	78-119			

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Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	The calculated RPD was outside QC acceptance limits. Acceptable recovery of the LCS indicates the analytical system was in control.

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QUALITY CONTROL DATA

CROSS REFERENCE TABLE

Lab Project Number: 6084646
Client Project ID: SINCLAIR OIL DUBUQUE 726950J01

Lab Sample No Identifier	Client Sample Identifier	QC Batch Method	QC Batch Identifier	Analytical Method	Analytical Batch Identifier
607292463	MW-1A	OA2	173644	OA2	173741
607292471	MW-2A	OA2	173644	OA2	173741
607292489	MW-3A	OA2	173644	OA2	173741
607292497	MW-4A	OA2	173644	OA2	173741
607292463	MW-1A	EPA 8021/OA1	173689		
607292471	MW-2A	EPA 8021/OA1	173689		
607292489	MW-3A	EPA 8021/OA1	173689		
607292497	MW-4A	EPA 8021/OA1	173689		
607292505	TRIP BLANK	EPA 8021/OA1	173689		

CHAIN-OF-CUSTODY Analytical Request Document

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The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

809386
To Be Completed by Pace Analytical and Client

Required Client Information: Section A

Company: Sinclair Oil / Howard R. Green
Address: P.O. Box 9009
Cedar Rapids, IA 52409
Phone: 319-841-4000 Fax: 319-841-4012

Required Client Information: Section B

Report To: H.R. Green Sinclair
Cindy Quast / Paul Conrad
Copy To:
Invoice To: Sinclair Oil
P.O. —
Project Name: Sinclair Oil - Dubuque
Project Number: 726950-J01

Client Information (Check quote/contract):
Requested Due Date: *TAT:

* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calendar days.

Section C

Quote Reference: —
Project Manager: Cindy Quast (HRG) Paul Conrad (Sinclair)
Project #: 726950-J01 6084646
Profile #: —

Section D Required Client Information:

SAMPLE ID
One character per box.
(A–Z, 0–9 / .–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

Requested Analysis: OA-1 + MTBE; OA-2 + Naphthalene

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED mm / dd / yy	TIME COLLECTED hh:mm a/p	# Containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	OA-1 + MTBE	OA-2 + Naphthalene	Remarks / Lab ID
1	MW-1A	WT	07/13/04	09:50	4	1			3					X	3	0719403
2	MW-2A	WT		14:45	4	1			3					X		0719471
3	MW-3A	WT		13:30	4	1			3					X		0719489
4	MW-4A	WT		11:15	4	1			3					X		0719497
5	TRIP BLANK	WT		—	2									X	2	0719505
6																
7																
8																
9																
10																
11																
12																

SITE LOCATION
☐ NC ☐ SC ☐ GA
☐ Other

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ Other

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Randy Jr / OA. TECH	7/13/04	16:40	Colin Kopp	7/14/04	9:20

SAMPLE CONDITION

Temp in °C	5.3
Received on Ice	(Y/N)
Sealed Cooler	(Y/N)
Samples Intact	(Y/N)

SAMPLE NOTES

Additional Comments:

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Randy Gavin
SIGNATURE of SAMPLER: Randy Jr
DATE Signed: (MM / DD / YY) 7/13/04

SEE REVERSE SIDE FOR INSTRUCTIONS