



## The University of Iowa

DANIEL COOK  
IDNR CONTAMINATED SITES  
LAND QUALITY BUREAU  
502 E 9TH STREET  
DES MOINES, IA 50319-0034

Accession Number	295264
Date Sample Finalized	2015-10-05 15:21
Date Received	2015-09-18 10:15
Sample Source	Non-Drinking Water
Project	WMSF
Date Collected	2015-09-18 08:30
Collection Site	keck energy
Collection Address	DES MOINES,
Sample Description	ground water
Client Reference	mw-2
Collector	cook dan
Phone	515/725-8371

Note: Upon arrival, sample met container and preservation requirements for the analysis requested. Please review carefully your sample results for additional analyte comments or method exceptions.

### Results of Analyses

#### Volatile Petroleum Hydrocarbons, Iowa OA-1

Units	ug/L	Analyzed In	Coralville
Date Analyzed	2015-09-21 13:54	Date Verified	2015-09-22 15:49
Analyst	LJL	Verifier	TGC

Analyte	Result	Quant Limit
Benzene	78	2
Toluene	<2	2
Ethylbenzene	7	2
Total Xylenes	<5	5

Note: A variety non-target compound hydrocarbons were observed in the analysis of this sample at concentrations up to 610 ug/L.

#### Total Extractable Hydrocarbons, Iowa OA-2

Units	ug/L	Analyzed In	Coralville
Date Analyzed	2015-09-24 08:47	Date Verified	2015-10-05 15:21
Analyst	PM	Verifier	SJM

Analyte	Result	Quant Limit
Gasoline	<1000	1000
Mineral spirits	<1000	1000
Kerosene	<1000	1000
Diesel fuel	27000	1000
Motor oil	<1000	1000
Total Extractable Hydrocarbons	27000	1000

Note: The chromatographic profile of the sample extract is similar to this laboratory's diesel fuel standard. Quantitation is based on this laboratory's diesel fuel standard.



# State Hygienic Laboratory

*The University of Iowa*

Accession Number | 295264

**Prep by Separatory Funnel, Iowa OA-2**

Units | ug/L  
Date Analyzed | 2015-09-21 07:35  
Analyst | GHJ

Analyzed In | Coralville  
Date Verified | 2015-09-21 13:41  
Verifier | KB

**Description of Units used within this report**

ug/L = Micrograms per Liter

The result(s) of this report relate only to the items analyzed. This report shall not be reproduced except in full without the written approval of the laboratory.

Iowa Environmental Laboratory IDs are: Ankeny #397, Iowa City/Coralville #027, Lakeside #393.

If you have any questions, please call Client Services at 800/421-IOWA (4692) or 319/335-4500. Thank you.



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DANIEL COOK  
 IDNR CONTAMINATED SITES  
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 502 E 9TH STREET  
 DES MOINES, IA 50319-0034

Accession Number	295265
Date Sample Finalized	2015-10-05 15:21
Date Received	2015-09-18 10:15
Sample Source	Non-Drinking Water
Project	WMSF
Date Collected	2015-09-18 08:40
Collection Site	keck energy
Collection Address	DES MOINES,
Sample Description	ground water
Client Reference	mw-3
Collector	cook dan
Phone	515/725-8371

*Note:* Upon arrival, sample met container and preservation requirements for the analysis requested. Please review carefully your sample results for additional analyte comments or method exceptions.

## Results of Analyses

### **Volatile Petroleum Hydrocarbons, Iowa OA-1**

Units	ug/L	Analyzed In	Coralville
Date Analyzed	2015-09-21 14:49	Date Verified	2015-09-22 15:56
Analyst	LJL	Verifier	TGC

Analyte	Result	Quant Limit
Toluene	24	2

*Note:* A variety non-target compound hydrocarbons were observed in the analysis of this sample at concentrations up to 420 ug/L.

### **Volatile Petroleum Hydrocarbons, Iowa OA-1**

Units	ug/L	Analyzed In	Coralville
Date Analyzed	2015-09-21 18:32	Date Verified	2015-09-22 15:56
Analyst	LJL	Verifier	TGC

Analyte	Result	Quant Limit
Benzene	700	20.
Ethylbenzene	550	20.
Total Xylenes	800	50.

### **Total Extractable Hydrocarbons, Iowa OA-2**

Units	ug/L	Analyzed In	Coralville
Date Analyzed	2015-09-24 05:51	Date Verified	2015-10-05 15:21
Analyst	PM	Verifier	SJM

Analyte	Result	Quant Limit
Gasoline	2800	100
Mineral spirits	<100	100
Kerosene	<100	100



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*The University of Iowa*

Accession Number | 295265

Analyte	Result	Quant Limit
Diesel fuel	590	100
Motor oil	<100	100
Total Extractable Hydrocarbons	3400	100

*Note:* The chromatographic profile of this sample extract indicates a mixture, 590 ug/L did not match this laboratory's fuel or oil standards, quantitation was based on this laboratory's diesel fuel standard. The remaining 2800 ug/L did not match this laboratory's fuel or oil standards and quantitation was based on this laboratory's gasoline standard.

**Prep by Separatory Funnel, Iowa OA-2**

Units | ug/L  
Date Analyzed | 2015-09-21 07:35  
Analyst | GHJ

Analyzed In | Coralville  
Date Verified | 2015-09-21 13:41  
Verifier | KB

**Description of Units used within this report**

ug/L = Micrograms per Liter

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 502 E 9TH STREET  
 DES MOINES, IA 50319-0034

Accession Number	295266
Date Sample Finalized	2015-10-05 15:21
Date Received	2015-09-18 10:15
Sample Source	Non-Drinking Water
Project	WMSF
Date Collected	2015-09-18 09:10
Collection Site	keck energy
Collection Address	DES MOINES,
Sample Description	ground water
Client Reference	mw-5
Collector	cook dan
Phone	515/725-8371

Note: Upon arrival, sample met container and preservation requirements for the analysis requested. Please review carefully your sample results for additional analyte comments or method exceptions.

## Results of Analyses

### Volatile Petroleum Hydrocarbons, Iowa OA-1

Units	ug/L	Analyzed In	Coralville
Date Analyzed	2015-09-21 15:16	Date Verified	2015-09-22 15:58
Analyst	LJL	Verifier	TGC

Analyte	Result	Quant Limit
Benzene	76	2
Toluene	19	2

Note: A variety non-target compound hydrocarbons were observed in the analysis of this sample at concentrations up to 810 ug/L.

### Volatile Petroleum Hydrocarbons, Iowa OA-1

Units	ug/L	Analyzed In	Coralville
Date Analyzed	2015-09-21 18:58	Date Verified	2015-09-22 15:58
Analyst	LJL	Verifier	TGC

Analyte	Result	Quant Limit
Ethylbenzene	470	20.
Total Xylenes	950	50.

### Total Extractable Hydrocarbons, Iowa OA-2

Units	ug/L	Analyzed In	Coralville
Date Analyzed	2015-09-24 06:50	Date Verified	2015-10-05 15:21
Analyst	PM	Verifier	SJM

Analyte	Result	Quant Limit
Gasoline	4200	100
Mineral spirits	<100	100
Kerosene	<100	100



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*The University of Iowa*

Accession Number | 295266

Analyte	Result	Quant Limit
Diesel fuel	280	100
Motor oil	<100	100
Total Extractable Hydrocarbons	4500	100

*Note:* The chromatographic profile of this sample indicates a mixture, 280 ug/L did not match this laboratory's fuel or oil standards, quantitation was based on this laboratory's diesel fuel standard. The remaining 4200 ug/L did not match this laboratory's fuel or oil standards and quantitation was based on this laboratory's gasoline standard.

***Prep by Separatory Funnel, Iowa OA-2***

Units | ug/L  
Date Analyzed | 2015-09-21 07:35  
Analyst | GHJ

Analyzed In | Coralville  
Date Verified | 2015-09-21 13:41  
Verifier | KB

**Description of Units used within this report**

ug/L = Micrograms per Liter

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DANIEL COOK  
 IDNR CONTAMINATED SITES  
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 502 E 9TH STREET  
 DES MOINES, IA 50319-0034

Accession Number	295267
Date Sample Finalized	2015-10-05 15:21
Date Received	2015-09-18 10:15
Sample Source	Non-Drinking Water
Project	WMSF
Date Collected	2015-09-18 08:50
Collection Site	keck energy
Collection Address	DES MOINES,
Sample Description	ground water
Client Reference	mw-8
Collector	cook dan
Phone	515/725-8371

*Note:* Upon arrival, sample met container and preservation requirements for the analysis requested. Please review carefully your sample results for additional analyte comments or method exceptions.

## Results of Analyses

### ***Volatile Petroleum Hydrocarbons, Iowa OA-1***

Units	ug/L	Analyzed In	Coralville
Date Analyzed	2015-09-22 09:25	Date Verified	2015-09-22 16:02
Analyst	LJL	Verifier	TGC

Analyte	Result	Quant Limit
Benzene	490	10.
Toluene	<10.	10.
Ethylbenzene	<10.	10.
Total Xylenes	25	25

*Note:* A variety non-target compound hydrocarbons were observed in the analysis of this sample at concentrations up to 570 ug/L.

### ***Total Extractable Hydrocarbons, Iowa OA-2***

Units	ug/L	Analyzed In	Coralville
Date Analyzed	2015-09-24 07:48	Date Verified	2015-10-05 15:21
Analyst	PM	Verifier	SJM

Analyte	Result	Quant Limit
Gasoline	1400	100
Mineral spirits	<100	100
Kerosene	<100	100
Diesel fuel	1200	100
Motor oil	<100	100
Total Extractable Hydrocarbons	2600	100

*Note:* The chromatographic profile of this sample indicates a mixture, 1200 ug/L did not match this laboratory's fuel or oil standards, quantitation was based on this laboratory's diesel fuel standard. The remaining 1400 ug/L did not match this



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Accession Number | 295267

laboratory's fuel or oil standards and quantitation was based on this laboratory's gasoline standard.

**Prep by Separatory Funnel, Iowa OA-2**

Units | ug/L  
Date Analyzed | 2015-09-21 07:35  
Analyst | GHJ

Analyzed In | Coralville  
Date Verified | 2015-09-21 13:41  
Verifier | KB

**Description of Units used within this report**

ug/L = Micrograms per Liter

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Iowa Environmental Laboratory IDs are: Ankeny #397, Iowa City/Coralville #027, Lakeside #393.

If you have any questions, please call Client Services at 800/421-IOWA (4692) or 319/335-4500. Thank you.

Data Path : J:\7305\data\15-264\  
 Data File : 9264v17.D  
 Acq On : 21 Sep 2015 13:54  
 Operator : llimkema  
 Sample : 295264||  
 Misc : 5ML + SUL V3323C  
 ALS Vial : 17 Sample Multiplier: 1

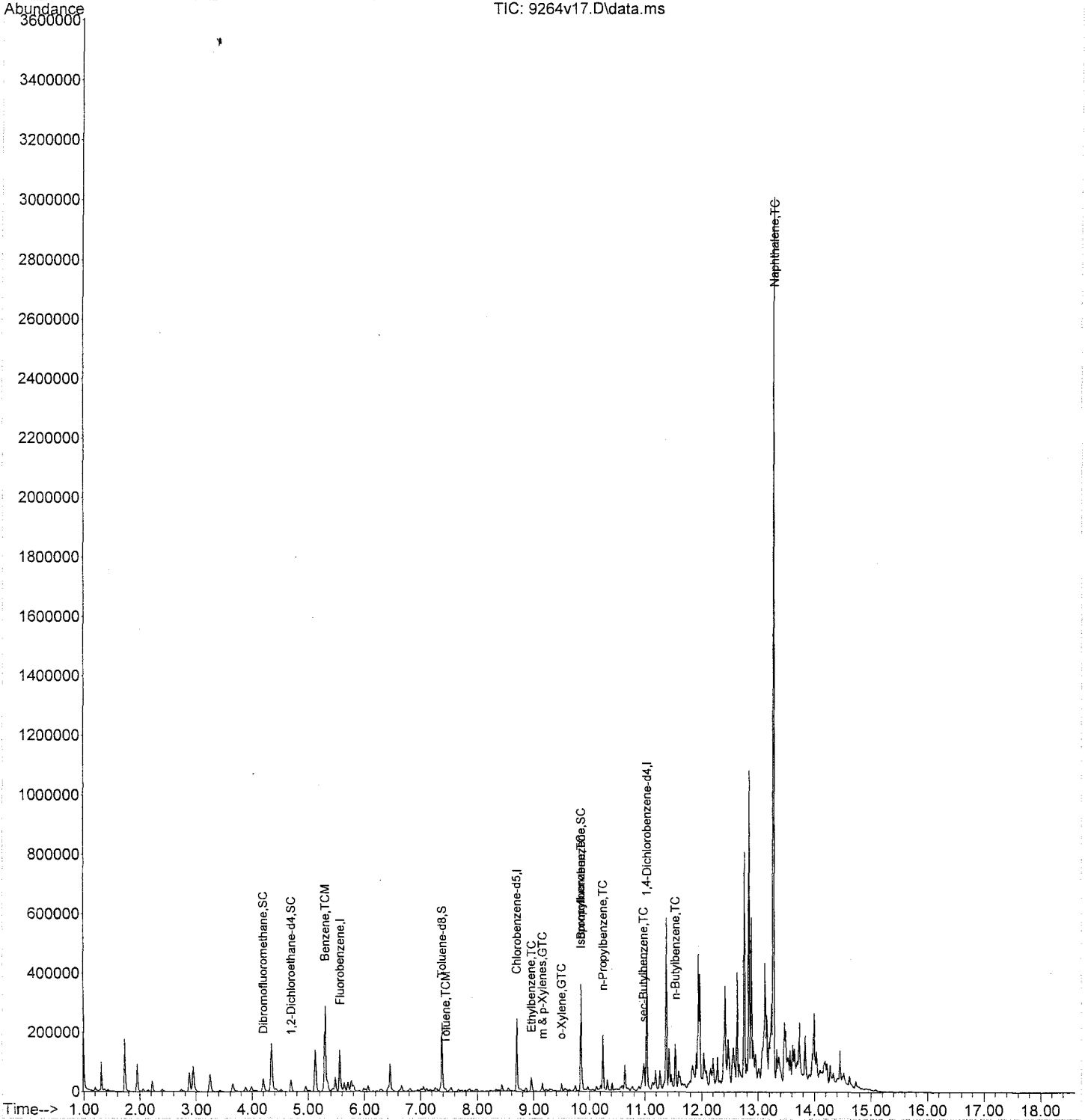
Quant Time: Sep 21 14:17:24 2015  
 Quant Method : J:\7305\METHODS\WTR8260.M  
 Quant Title : Waste Water  
 QLast Update : Mon Sep 21 13:35:48 2015  
 Response via : Initial Calibration

Compound	R.T.	Scan	Response	Conc	Units	Dev(Min)
-----+-----						
Internal Standards						
1) Fluorobenzene	5.563	1427	106748	50.000000	ug/L	0.00
39) Chlorobenzene-d5	8.698	2404	64031	50.000000	ug/L	# 0.00
67) 1,4-Dichlorobenzene-d4	11.031	3131	159302	50.000000	ug/L	# 0.00
System Monitoring Compounds						
21) Dibromofluoromethane	4.200	1002	27179	47.826963	ug/L	0.00
Spiked Amount	50.000000	Range	80 - 116	Recovery	=	95.65%
22) 1,2-Dichloroethane-d4	4.697	1157	25805	49.287293	ug/L	0.00
Spiked Amount	50.000000	Range	81 - 115	Recovery	=	98.57%
40) Toluene-d8	7.380	1993	126630	52.727373	ug/L	0.00
Spiked Amount	50.000000	Range	85 - 115	Recovery	=	105.45%
53) Bromofluorobenzene	9.844	2761	73089	46.344706	ug/L	0.00
Spiked Amount	50.000000	Range	83 - 115	Recovery	=	92.69%
Target Compounds						
					Qvalue	
29) Benzene	5.300	1345	224524	78.057354	ug/L	98
43) Toluene	7.444	2013	4508	1.491160	ug/L	99
49) Ethylbenzene	8.955	2484	7342	6.930852	ug/L	98
50) m & p-Xylenes	9.151	2545	6175	4.200840	ug/L	96
51) o-Xylene	9.494	2652	6000	4.243556	ug/L	92
58) Isopropylbenzene	9.841	2760	43450	10.855634	ug/L #	96
62) n-Propylbenzene	10.248	2887	118479	25.305275	ug/L #	98
66) sec-Butylbenzene	10.974	3113	25197	4.587022	ug/L #	68
70) n-Butylbenzene	11.538	3289	36493	8.958852	ug/L #	80
74) Naphthalene	13.278	3831	1775306	611.418316	ug/L	100
-----						

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : J:\7305\data\15-264\  
 Data File : 9264v17.D  
 Acq On : 21 Sep 2015 13:54  
 Operator : llimkema  
 Sample : 295264||  
 Misc : 5ML + 5UL V3323C  
 ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 21 14:17:24 2015  
 Quant Method : J:\7305\METHODS\WTR8260.M  
 Quant Title : Waste Water  
 QLast Update : Mon Sep 21 13:35:48 2015  
 Response via : Initial Calibration



Data Path : J:\7305\data\15-264\  
 Data File : 9264v19.D  
 Acq On : 21 Sep 2015 14:49  
 Operator : llimkema  
 Sample : 295265||  
 Misc : 5ML + 5UL V3323C  
 ALS Vial : 19 Sample Multiplier: 1

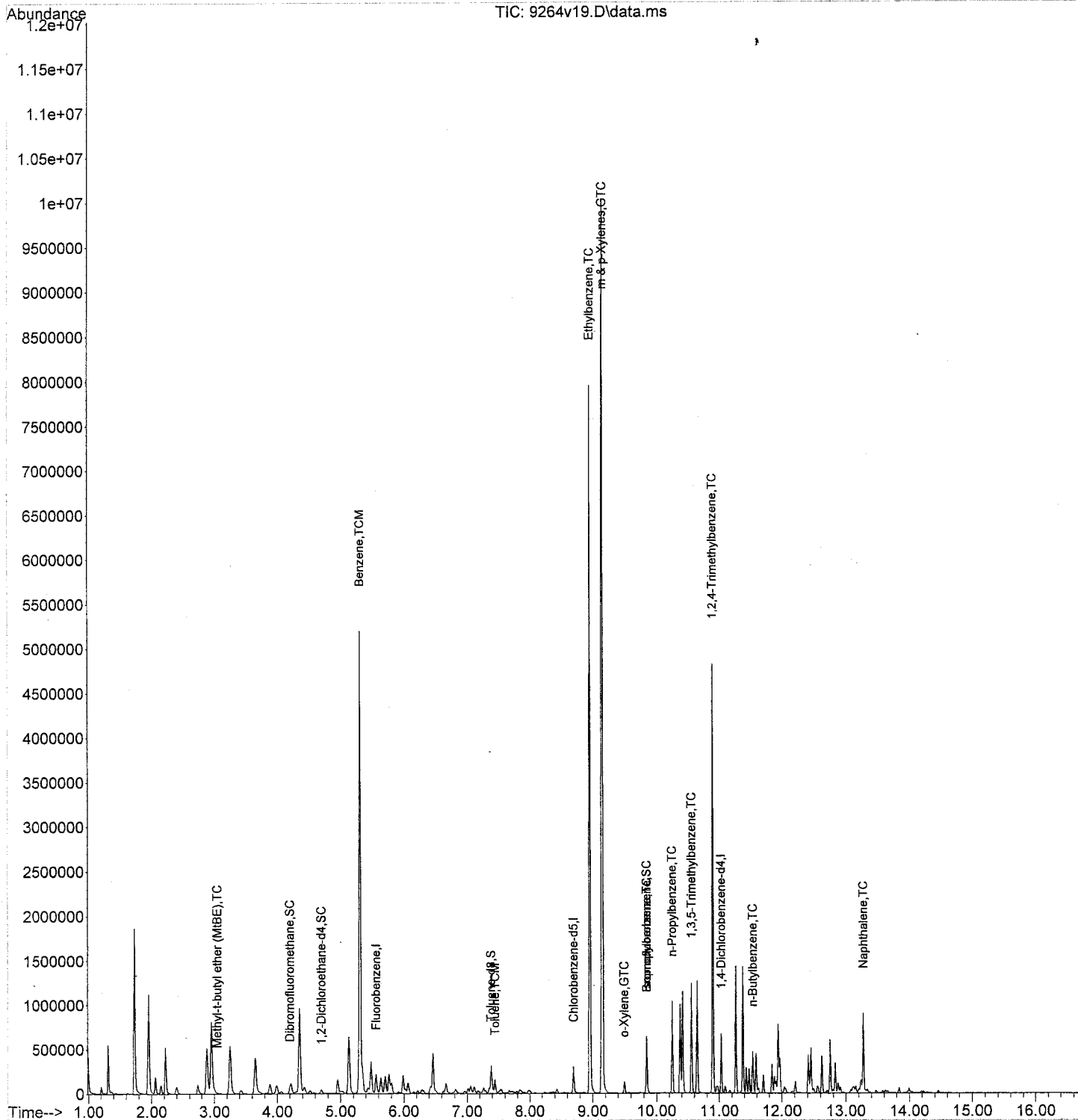
Quant Time: Sep 21 15:08:07 2015  
 Quant Method : J:\7305\METHODS\WTR8260.M  
 Quant Title : Waste Water  
 QLast Update : Mon Sep 21 13:35:48 2015  
 Response via : Initial Calibration

Compound	R.T.	Scan	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	5.563	1427	126651	50.000000	ug/L	0.00
39) Chlorobenzene-d5	8.698	2404	77833	50.000000	ug/L	# 0.00
67) 1,4-Dichlorobenzene-d4	11.034	3132	206478	50.000000	ug/L	# 0.00
System Monitoring Compounds						
21) Dibromofluoromethane	4.199	1002	31766	47.114326	ug/L	0.00
Spiked Amount	50.000000	Range	80 - 116	Recovery	=	94.23%
22) 1,2-Dichloroethane-d4	4.697	1157	29528	47.535302	ug/L	0.00
Spiked Amount	50.000000	Range	81 - 115	Recovery	=	95.07%
40) Toluene-d8	7.380	1993	151988	52.063738	ug/L	0.00
Spiked Amount	50.000000	Range	85 - 115	Recovery	=	104.13%
53) Bromofluorobenzene	9.844	2761	100721	52.540555	ug/L	0.00
Spiked Amount	50.000000	Range	83 - 115	Recovery	=	105.08%
Target Compounds						
					Qvalue	
14) Methyl-t-butyl ether (...)	3.047	643	3568	1.759405	ug/L #	50
29) Benzene	5.310	1348	3989154	1168.915128	ug/L E	99
43) Toluene	7.444	2013	87111	23.704988	ug/L	98
49) Ethylbenzene	8.958	2485	1528782	1187.255822	ug/L #E	82
50) m & p-Xylenes	9.154	2546	3157267	1767.001819	ug/L #E	77
51) o-Xylene	9.497	2653	30229	17.588507	ug/L	90
58) Isopropylbenzene	9.844	2761	147306	30.276967	ug/L	99
62) n-Propylbenzene	10.248	2887	648328	113.917637	ug/L #	97
63) 1,3,5-Trimethylbenzene	10.556	2983	531400	118.115549	ug/L #	95
65) 1,2,4-Trimethylbenzene	10.900	3090	2058818	417.280933	ug/L	94
70) n-Butylbenzene	11.538	3289	92543	17.528059	ug/L #	68
74) Naphthalene	13.274	3830	554071	147.223822	ug/L	100
-----						

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : J:\7305\data\15-264\  
Data File : 9264v19.D  
Acq On : 21 Sep 2015 14:49  
Operator : llimkema  
Sample : 295265||  
Misc : 5ML + 5UL V3323C  
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Sep 21 15:08:07 2015  
Quant Method : J:\7305\METHODS\WTR8260.M  
Quant Title : Waste Water  
QLast Update : Mon Sep 21 13:35:48 2015  
Response via : Initial Calibration



Data Path : J:\7305\data\15-264\  
 Data File : 9264v20.D  
 Acq On : 21 Sep 2015 15:16  
 Operator : llimkema  
 Sample : 295266||  
 Misc : 5ML + 5UL V3323C  
 ALS Vial : 20 Sample Multiplier: 1

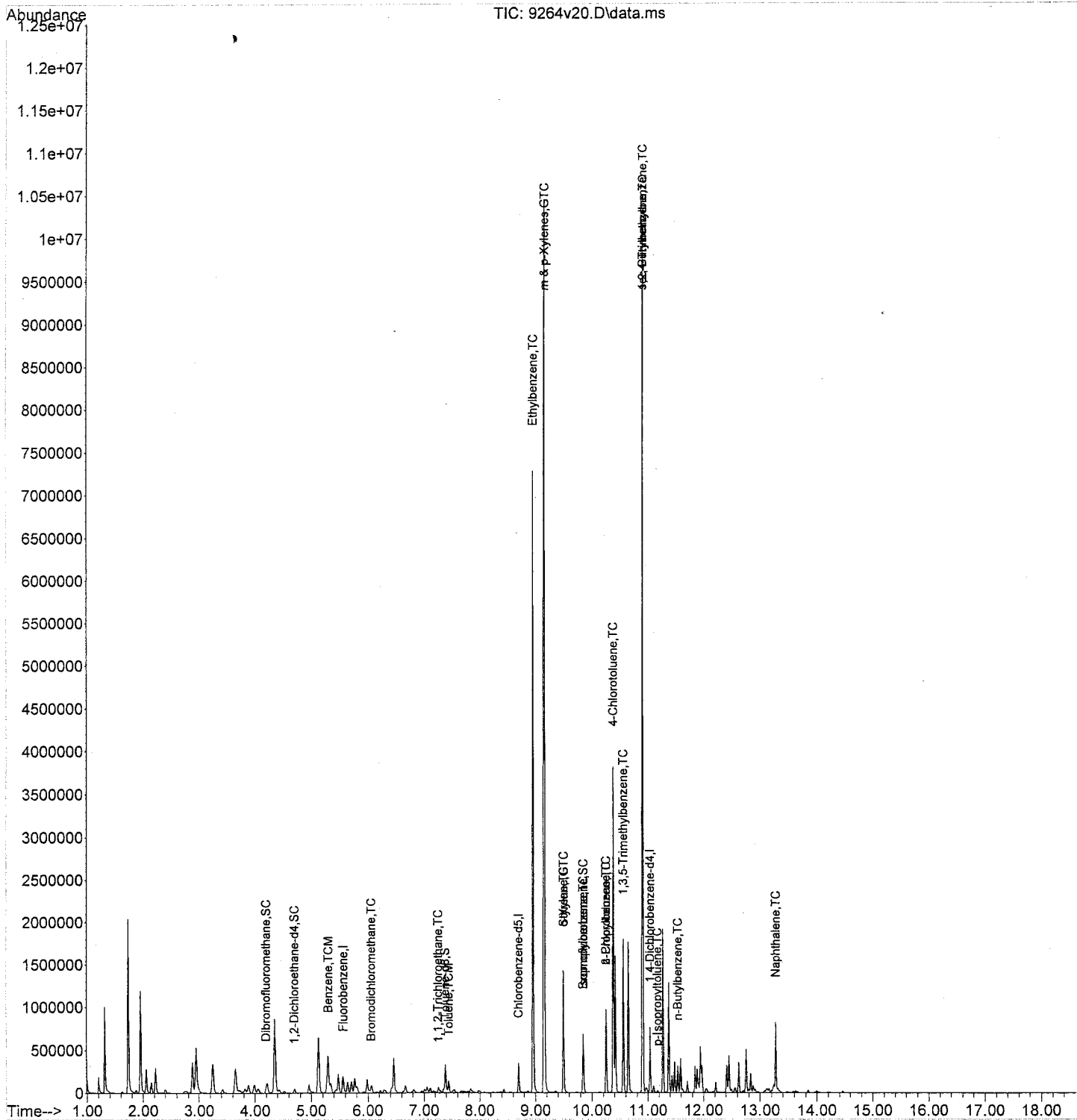
Quant Time: Sep 22 08:20:18 2015  
 Quant Method : J:\7305\METHODS\WTR8260.M  
 Quant Title : Waste Water  
 QLast Update : Mon Sep 21 13:35:48 2015  
 Response via : Initial Calibration

Compound	R.T.	Scan	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.563	1427	139845	50.000000	ug/L	0.00
39) Chlorobenzene-d5	8.698	2404	89033	50.000000	ug/L	# 0.00
67) 1,4-Dichlorobenzene-d4	11.034	3132	234370	50.000000	ug/L	# 0.00
System Monitoring Compounds						
21) Dibromofluoromethane	4.196	1001	35281	47.390689	ug/L	0.00
Spiked Amount	50.000000	Range 80 - 116	Recovery =	94.78%		
22) 1,2-Dichloroethane-d4	4.694	1156	31997	46.650163	ug/L	0.00
Spiked Amount	50.000000	Range 81 - 115	Recovery =	93.30%		
40) Toluene-d8	7.379	1993	168862	50.567413	ug/L	0.00
Spiked Amount	50.000000	Range 85 - 115	Recovery =	101.13%		
53) Bromofluorobenzene	9.844	2761	116941	53.327864	ug/L	0.00
Spiked Amount	50.000000	Range 83 - 115	Recovery =	106.66%		
Target Compounds						
29) Benzene	5.303	1346	285543	75.776645	ug/L	97
32) Bromodichloromethane	6.057	1581	3288	2.980570	ug/L	# 27
36) 1,1,2-Trichloroethane	7.254	1954	1000	1.284063	ug/L	# 1
43) Toluene	7.444	2013	80783	19.217614	ug/L	98
49) Ethylbenzene	8.958	2485	1407131	955.313777	ug/L	#E 83
50) m & p-Xylenes	9.157	2547	3364527	1646.123697	ug/L	#E 77
51) o-Xylene	9.497	2653	319644	162.586510	ug/L	89
52) Styrene	9.497	2653	14737	4.716790	ug/L	# 1
58) Isopropylbenzene	9.844	2761	145816	26.200518	ug/L	98
59) 2-Chlorotoluene	10.248	2887	607035	146.040501	ug/L	# 54
60) 4-Chlorotoluene	10.377	2927	221895	50.147451	ug/L	# 55
61) p-Isopropyltoluene	11.169	3174	10389	1.621086	ug/L	96
62) n-Propylbenzene	10.248	2887	607462	93.309974	ug/L	# 97
63) 1,3,5-Trimethylbenzene	10.556	2983	769086	149.442179	ug/L	# 95
65) 1,2,4-Trimethylbenzene	10.903	3091	4598311	814.744970	ug/L	# 90
66) sec-Butylbenzene	10.903	3091	4523669	592.259583	ug/L	# 76
70) n-Butylbenzene	11.538	3289	59836	9.984460	ug/L	# 67
74) Naphthalene	13.274	3830	509413	119.248920	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : J:\7305\data\15-264\  
 Data File : 9264v20.D  
 Acq On : 21 Sep 2015 15:16  
 Operator : llimkema  
 Sample : 295266||  
 Misc : 5ML + 5UL V3323C  
 ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 22 08:20:18 2015  
 Quant Method : J:\7305\METHODS\WTR8260.M  
 Quant Title : Waste Water  
 QLast Update : Mon Sep 21 13:35:48 2015  
 Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : J:\7305\data\15-265\  
 Data File : 9265V06.D  
 Acq On : 22 Sep 2015 9:25  
 Operator : llimkema  
 Sample : 295267|5||  
 Misc : 5ML + 5UL V3323C  
 ALS Vial : 6 Sample Multiplier: 5

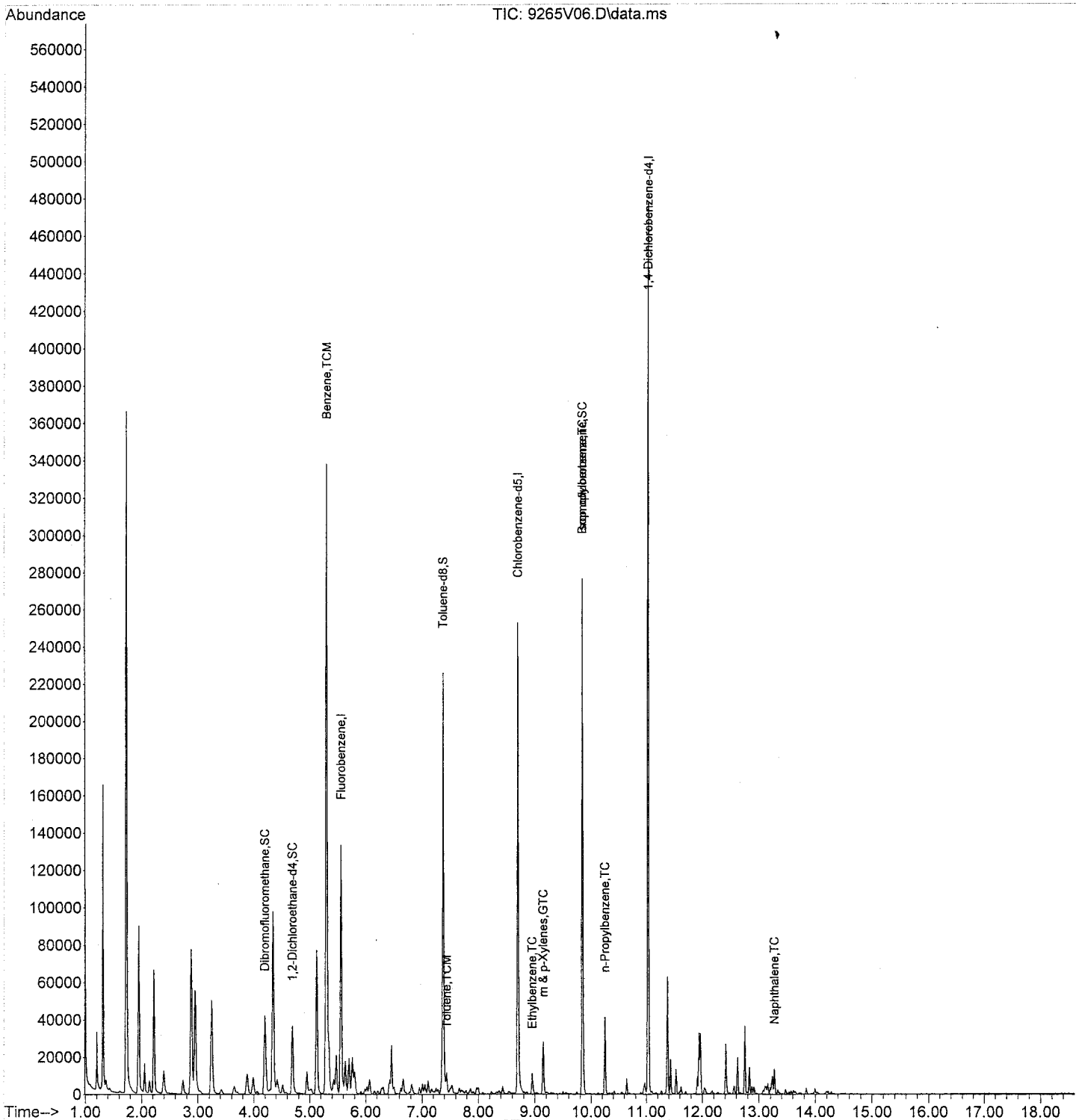
Quant Time: Sep 22 10:00:16 2015  
 Quant Method : J:\7305\methods\wtr8260.M  
 Quant Title : Waste Water  
 QLast Update : Tue Sep 22 08:34:12 2015  
 Response via : Initial Calibration

Compound	R.T.	Scan	Response	Conc	Units	Dev(Min)
<b>Internal Standards</b>						
1) Fluorobenzene	5.560	1426	103791	50.000000	ug/L	0.00
39) Chlorobenzene-d5	8.695	2403	67152	50.000000	ug/L	# 0.00
67) 1,4-Dichlorobenzene-d4	11.028	3130	153708	50.000000	ug/L	# 0.00
<b>System Monitoring Compounds</b>						
21) Dibromofluoromethane	4.196	1001	25866	46.813235	ug/L	0.00
Spiked Amount	50.000000	Range 80 - 116	Recovery =	93.63%		
22) 1,2-Dichloroethane-d4	4.690	1155	24946	49.004061	ug/L	0.00
Spiked Amount	50.000000	Range 81 - 115	Recovery =	98.01%		
40) Toluene-d8	7.376	1992	125985	50.020693	ug/L	0.00
Spiked Amount	50.000000	Range 85 - 115	Recovery =	100.04%		
53) Bromofluorobenzene	9.841	2760	73704	44.562598	ug/L	0.00
Spiked Amount	50.000000	Range 83 - 115	Recovery =	89.13%		
<b>Target Compounds</b>						
14) Methyl-t-butyl ether (...)	3.051	644	993	2.987508	ug/L #	66
29) Benzene	5.300	1345	273889	489.661207	ug/L	98
43) Toluene	7.440	2012	5715	9.012760	ug/L	97
49) Ethylbenzene	8.952	2483	2027	9.122782	ug/L	95
50) m & p-Xylenes	9.144	2543	7838	25.421769	ug/L	92
51) o-Xylene	9.497	2653	321m	1.082393	ug/L #	
58) Isopropylbenzene	9.841	2760	10969	13.065733	ug/L #	77
62) n-Propylbenzene	10.245	2886	27205	27.702550	ug/L #	97
66) sec-Butylbenzene	10.967	3111	2876	2.496159	ug/L #	39
70) n-Butylbenzene	11.532	3287	3470	4.414353	ug/L #	70
74) Naphthalene	13.271	3829	8872	15.833667	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : J:\7305\data\15-265\  
Data File : 9265V06.D  
Acq On : 22 Sep 2015 9:25  
Operator : llimkema  
Sample : 295267|5||  
Misc : 5ML + 5UL V3323C  
ALS Vial : 6 Sample Multiplier: 5

Quant Time: Sep 22 10:00:16 2015  
Quant Method : J:\7305\methods\wtr8260.M  
Quant Title : Waste Water  
QLast Update : Tue Sep 22 08:34:12 2015  
Response via : Initial Calibration



Data Path : J:\7305\data\15-264\  
 Data File : 9264S14.D  
 Acq On : 21 Sep 2015 12:36  
 Operator : llimkema  
 Sample : 8260-624-oal cont cal 50||  
 Misc : 5ML OF 100ml + 20ul v3325E+ 5UL V3323C  
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 21 13:35:14 2015  
 Quant Method : J:\7305\methods\wtr8260.M  
 Quant Title : Waste Water  
 QLast Update : Mon Sep 21 13:34:13 2015  
 Response via : Initial Calibration

Compound	R.T.	Scan	Response	Conc	Units	Dev(Min)	
<b>Internal Standards</b>							
1) Fluorobenzene	5.560	1426	102219	50.000000	ug/L	0.00	
39) Chlorobenzene-d5	8.698	2404	64619	50.000000	ug/L	# 0.00	
67) 1,4-Dichlorobenzene-d4	11.031	3131	178649	50.000000	ug/L	# 0.00	
<b>System Monitoring Compounds</b>							
21) Dibromofluoromethane	4.199	1002	27382	50.319071	ug/L	0.00	
Spiked Amount	50.000000	Range 80 -	116	Recovery =	100.64%		
22) 1,2-Dichloroethane-d4	4.694	1156	24934	49.733746	ug/L	0.00	
Spiked Amount	50.000000	Range 81 -	115	Recovery =	99.47%		
40) Toluene-d8	7.379	1993	122736	50.640915	ug/L	0.00	
Spiked Amount	50.000000	Range 85 -	115	Recovery =	101.28%		
53) Bromofluorobenzene	9.844	2761	79926	50.218790	ug/L	0.00	
Spiked Amount	50.000000	Range 83 -	115	Recovery =	100.44%		
<b>Target Compounds</b>							
							Qvalue
2) Dichlorodifluoromethane	1.103	37	35208	51.585621	ug/L		98
3) Chloromethane	1.186	63	34819	51.095989	ug/L		97
4) Vinyl chloride	1.270	89	47746	51.205345	ug/L		98
5) Bromomethane	1.459	148	22293	49.852089	ug/L		98
6) Chloroethane	1.539	173	29599	50.081987	ug/L		100
7) Trichlorofluoromethane	1.860	273	66714	51.278431	ug/L	#	98
8) 1,1-Dichloroethene	2.207	381	43370	49.095878	ug/L	#	79
9) Iodomethane	2.213	383	35625	60.587021	ug/L	#	87
10) Acrylonitrile	2.284	405	15611	51.916136	ug/L		98
11) Carbon disulfide	2.434	452	148506+	49.726438	ug/L		99
12) Acetone	1.953	302	8795	46.761275	ug/L		89
13) Methylene chloride	2.329	419	44753	50.151253	ug/L		92
14) Methyl-t-butyl ether (...)	3.041	641	83327	50.910060	ug/L	#	90
15) trans-1,2-Dichloroethy...	2.893	595	33177	49.702113	ug/L		95
16) Vinyl acetate	3.397	752	49983	51.457791	ug/L	#	96
17) cis-1,2-Dichloroethyle...	3.801	878	34974	50.861614	ug/L	#	86
18) 1,1-Dichloroethane	3.137	671	60056	50.847022	ug/L		100
19) Bromochloromethane	3.971	931	15510	52.170920	ug/L	#	66
20) Chloroform	4.058	958	56845	52.016214	ug/L		97
23) 1,2-Dichloroethane	4.780	1183	39115	50.867910	ug/L		96
24) 2,2-Dichloropropane	4.126	979	42055	50.416765	ug/L		97
25) 2-Butanone	3.708	849	12839m	51.242591	ug/L		
26) 1,1,1-Trichloroethane	4.864	1209	48733	50.962492	ug/L		99
27) 1,1-Dichloropropene	5.088	1279	47434	51.857609	ug/L	#	91
28) Carbon tetrachloride	5.229	1323	43134	50.810335	ug/L		98
29) Benzene	5.300	1345	140808	51.121843	ug/L		99
30) Trichloroethene	5.980	1557	33543	51.214610	ug/L		98
31) 1,2-Dichloropropane	5.932	1542	33319	52.741904	ug/L		99
32) Bromodichloromethane	6.025	1571	42023	52.115851	ug/L		83
33) Dibromomethane	5.871	1523	17126	51.064535	ug/L	#	74
34) cis-1,3-Dichloropropene	6.712	1785	50821	53.772643	ug/L		100
35) trans-1,3-Dichloropropene	7.158	1924	45268	53.755432	ug/L		100
36) 1,1,2-Trichloroethane	7.267	1958	30065	52.815683	ug/L		100
37) 1,3-Dichloropropane	7.498	2030	52595	51.997204	ug/L	#	88
38) Dibromochloromethane	7.691	2090	35490	53.172613	ug/L		99
41) Bromoform	9.147	2544	31520	48.430036	ug/L		98

Data Path : J:\7305\data\15-264\  
 Data File : 9264S14.D  
 Acq On : 21 Sep 2015 12:36  
 Operator : llimkema  
 Sample : 8260-624-0a1 cont cal 50||  
 Misc : 5ML OF 100ml + 20ul v3325E+ 5UL V3323C  
 ALS Vial : 14 Sample Multiplier: 1

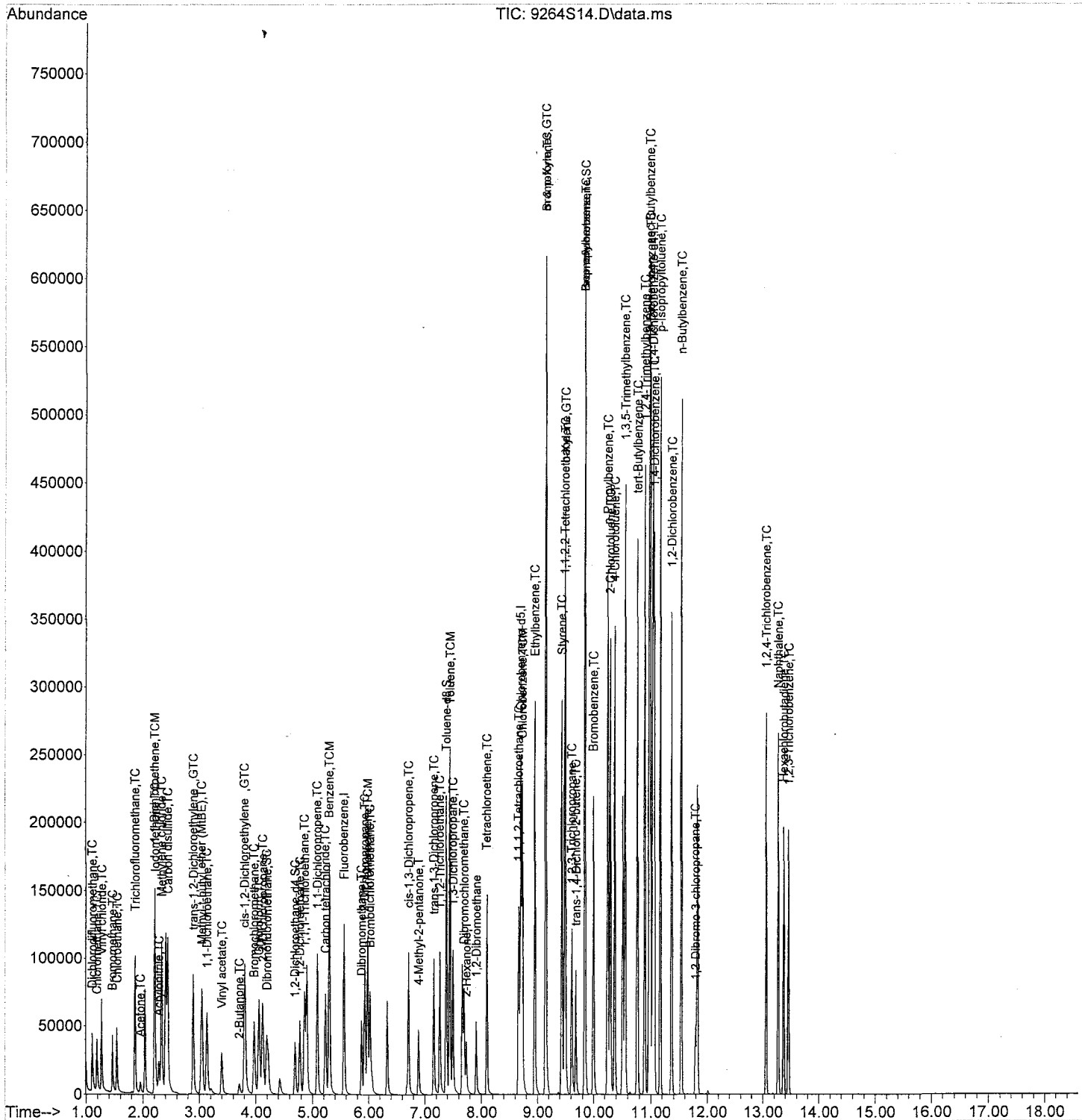
Quant Time: Sep 21 13:35:14 2015  
 Quant Method : J:\7305\methods\wtr8260.M  
 Quant Title : Waste Water  
 QLast Update : Mon Sep 21 13:34:13 2015  
 Response via : Initial Calibration

Compound	R.T.	Scan	Response	Conc	Units	Dev(Min)
42) 4-Methyl-2-pentanone	6.888	1840	11449	52.897097	ug/L	99
43) Toluene	7.444	2013	154375	50.599618	ug/L	99
44) Tetrachloroethene	8.098	2217	25866	51.039509	ug/L	98
45) 2-Hexanone	7.732	2103	20088	51.107664	ug/L	88
46) 1,2-Dibromoethane	7.909	2158	30984	52.358436	ug/L	99
47) Chlorobenzene	8.727	2413	101080	52.088857	ug/L	98
48) 1,1,1,2-Tetrachloroethane	8.663	2393	32865	52.889403	ug/L	97
49) Ethylbenzene	8.952	2483	56525	52.874084	ug/L	95
50) m & p-Xylenes	9.147	2544	154015	103.822682	ug/L	93
51) o-Xylene	9.494	2652	75452	52.878543	ug/L	89
52) Styrene	9.436	2634	121604	53.626084	ug/L	77
54) 1,1,2,2-Tetrachloroethane	9.488	2650	67728	50.848722	ug/L	99
55) 1,2,3-Trichloropropane	9.613	2689	17785	51.693430	ug/L	83
56) trans-1,4-Dichloro-2-b...	9.687	2712	19608	52.529381	ug/L #	82
57) Bromobenzene	9.995	2808	82891	51.236882	ug/L	97
58) Isopropylbenzene	9.841	2760	208818	51.696769	ug/L	98
59) 2-Chlorotoluene	10.293	2901	159073	52.728671	ug/L	98
60) 4-Chlorotoluene	10.370	2925	167959	52.299242	ug/L	99
61) p-Isopropyltoluene	11.166	3173	241935	52.014196	ug/L	95
62) n-Propylbenzene	10.248	2887	247136	52.304101	ug/L #	97
63) 1,3,5-Trimethylbenzene	10.553	2982	193372	51.770534	ug/L #	97
64) tert-Butylbenzene	10.768	3049	161982	51.464518	ug/L	92
65) 1,2,4-Trimethylbenzene	10.893	3088	212417	51.856523	ug/L	97
66) sec-Butylbenzene	10.973	3113	282238	50.912865	ug/L	98
68) 1,3-Dichlorobenzene	10.986	3117	128755	47.260625	ug/L	99
69) 1,4-Dichlorobenzene	11.054	3138	127980	47.949493	ug/L	99
70) n-Butylbenzene	11.538	3289	232502	50.896759	ug/L	96
71) 1,2-Dichlorobenzene	11.365	3235	113026	48.929056	ug/L	99
72) 1,2-Dibromo-3-chloropr...	11.792	3368	11241	49.344021	ug/L	98
73) Hexachlorobutadiene	13.370	3860	26450	49.536448	ug/L	96
74) Naphthalene	13.271	3829	164979	50.665756	ug/L	99
75) 1,2,4-Trichlorobenzene	13.056	3762	63603	48.923804	ug/L	97
76) 1,2,3-Trichlorobenzene	13.454	3886	46046	49.573631	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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 Quant Title : Waste Water  
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Sample Type/Matrices: (Must check one)

- ▼ Water
- Waste Water
  - Drinking Water
  - Surface Water
  - Ground Water
  - Other \_\_\_\_\_
- ▼ Solids
- Soil
  - Foliage
  - Sludge
  - Sediment

DNR Project Codes: (Must check one)

- 17WSTECH
- WQUST
- 04WQFS
- 05WQFK
- 07WQER
- WMSF
- WQSWR
- 16WSCOMP

REPORT TO:

Name of Person: Daniel Cook, Iowa DNR  
 IDNR & Office: Wallace State Office Building  
 Street Address: 502 East 9<sup>th</sup> Street  
 City, State, Zip: Des Moines, IA 50319  
 Phone Number: 515-284-4474 725-8371  
 Fax Number: 515-284-8895 725-8202  
 E-Mail: dan.cook@dnr.iowa.gov

BILL TO:  same as Report to:

Complete the following information only for public water supply

PWS Name: NA  
 PWS ID: \_\_\_\_\_ Water Facility ID #: \_\_\_\_\_ Sampling Point ID: \_\_\_\_\_  
 Sample Category:  CH  TC  RA  PB  RT  SP  RP  
\*choose one \*choose one  
 CH-Chemical, TC-Coliform, RA-Radionuclides, PB-Lead RT-Routine, SP-Special, RP-Repeat  
 Chlorine Residual: Free \_\_\_\_\_ mg/L Total \_\_\_\_\_ mg/L

Environmental Sample Collection Form

Requested Analyses

Analysis and Method Requested: Iowa OA-1 and Iowa OA-2

Complete the following information. Please use one form per site.

Collection Site: See attached Number of bottles submitted per collection site: 2 (8 total)  
Specific sample location/SHL bottle #(s)

Collection Location: Keck Energy, Des Moines, Iowa  
(Town, County, GPS, Township, Section, Road Intersection, etc)

Collection Date/Time: 2015 / 09 / 18 / Client Reference: see attached  
Year mm dd Military time Additional client information if needed

Collector's Name: Dan Cook Collector's Phone #: 515-725-8371  
Please print

Collector's Signature: [Signature]

Chain of Custody/Tracking Signatures

Relinquished by: [Signature] Date/Time 9/18/15 1002  
 Received by: \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time \_\_\_\_\_  
SHL Custodian

For SHL use only. Please do not write below here.

SAMPLE INTACT:  Yes  No pH: \_\_\_\_\_ TEMPERATURE: \_\_\_\_\_

Comments: \_\_\_\_\_

Place Label Here

Place Label Here

Place Label Here

State Hygienic Laboratory

Lakeside Laboratories  
 1838 Highway 86  
 Milford, IA 51351  
 Phone #: 712-337-3669 ext: 6  
 Fax #: 712-337-0227

2220 S. Ankeny Blvd  
 Ankeny, IA 50021  
 Phone #: 515-725-1600  
 Fax #: 515-725-1642

U of I Research Park  
 Iowa City, IA 52242-5002  
 Phone #: 319-335-4500  
 Fax #: 319-335-4555

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