DATA REVIEW FOR MCKESSON - BEAR STREET SITE

SDG# Z948

VOLATILE AND SEMIVOLATILE ANALYSES

Analyses performed by:

Severn Trent Laboratories Edison, New Jersey

Review performed by:



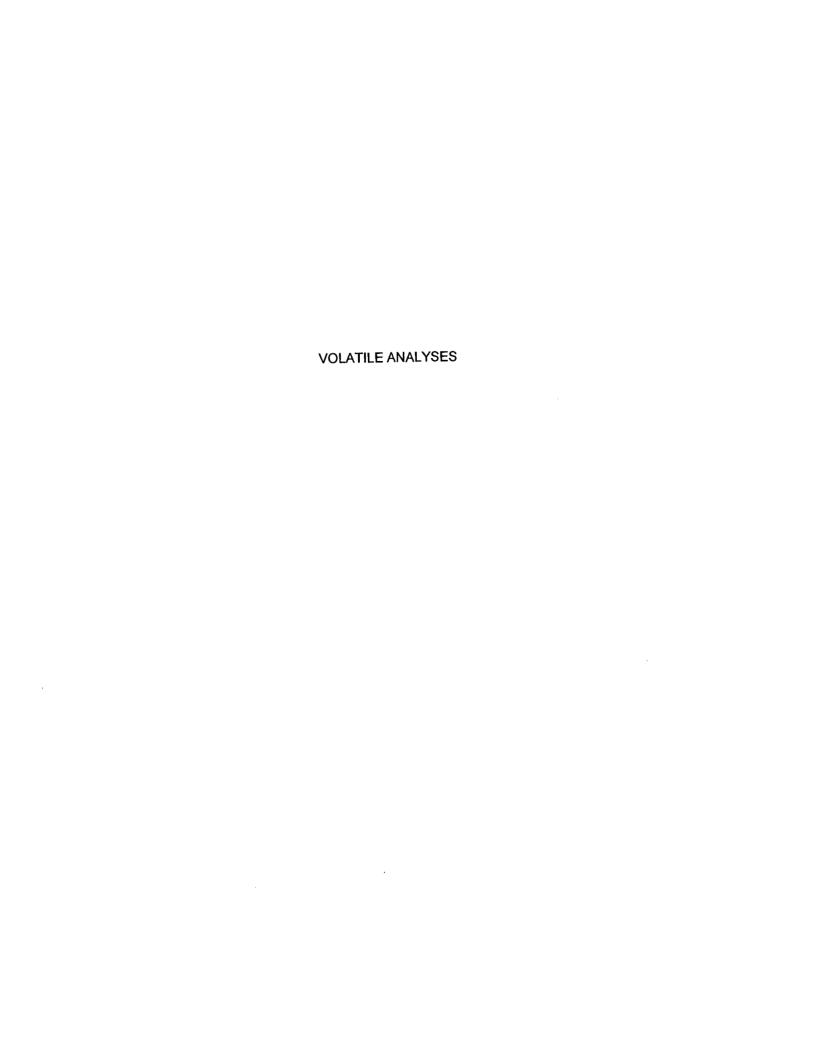
Blasland, Bouck & Lee, Inc. Syracuse, New York

Summary

The following is an assessment of the data package for SDG# Z948 for sampling at the McKesson - Bear Street Site. Included with this assessment are the data review check sheets used in the review of the package and corrected sample results. Analyses were performed on the following samples:

Senimelle	1(1/15)		Sprinfelien		sien sie Diele	
				 Links or in the Control of the Control	. Wes	
MW-31	640578	water	6/07/05	x	x	х
TW-01	640579	water	6/07/05	×	×	×
MW-33	640580	water	6/07/05	x	×	×
MW-32	640581	water	6/07/05	_x	x	
_MW-1	640582	water	6/07/05	х	x	x
MW-35	640583	water	6/07/05	x	x	<u> </u>
MW-9S	640584	water	_6/07/05	x	x	<u>x</u>
MW-36	640585	water	6/07/05	x	x	х
Trip_Blank	640586	water	6/07/05	x		
		_				
						_
						<u></u>
				_		
			-			-
	 -					

¹ VOC analyses include methylene chloride, acetone, trichloroethene, benzene, toluene, ethylbenzene and xylene 2 Miscellaneous analyses include methanol 3 SVOC analyses include aniline and N,N'-dimethylaniline



Introduction

Analyses were performed according to USEPA method 8260 as referenced in the NYSDEC ASP.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with National Functional Guidelines:

- U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
- J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
- B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
- JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
- E The compound was quantitated above the calibration range.
- D Concentration is based on a diluted sample analysis.
- UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
- R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC test, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Data Assessment

1. Holding Time

The specified holding time for volatile analyses under the Quality Assurance Project Plan (QAPP) is 7 days from sample receipt, the technical holding time is 14 days.

All samples were analyzed within the technical holding time.

2. Blank Contamination

Quality assurance blanks (i.e., method, trip, or rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure contamination of samples during shipment. Rinse blanks measure contamination of samples during field operations.

No target compounds were detected in the method or trip blanks.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable.

Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies various percent relative standard deviation (%RSD) limits for select compounds and allows two outliers. A technical review of the data applies a RSD limit of 30% to all compounds with no exceptions.

All compounds associated with the initial calibration exhibited a %RSDs within control limit with the exception of acetone. Data for acetone were qualified as estimated based on the deviation.

4.2 Continuing Calibration

All compounds associated with the continuing calibration standards exhibited a percent difference (%D) less than the control limit with the exception of acetone. Data for acetone were qualified as estimated in sample TW-01, MW-33, MW-32, MW-1, MW-35, MW-36 and Trip Blank.

5. Surrogates / System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every experimental run.

All internal standard areas and retention times were within established limits.

7. Compound Identification

Target compounds are identified on the GC/MS by using the compound's relative retention time and ion spectra.

All identified compounds met the specified criteria.

8. Matrix Spike/Matrix Spike Duplicate/Matrix Spike Blank

Matrix and matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method relative to the sample matrix. Matrix spike blank (MSB) data is used to assess the precision and accuracy of the analytical method independent of matrix interferences.

All MS/MSD recoveries and relative percent differences between recoveries were within control limits. All MSB recoveries were also within control limits.

9. Field Duplicates

No field duplicates were included with the samples in this data set.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines listed in the analytical method.



Volatile Organics Data Validation Checklist

	YES	NO	NA
Data Completeness and Deliverables			
Have any missing deliverables been received and added to the data package?		X	
Is there a narrative or cover letter present?	X		
Are the sample numbers included in the narrative?	X		
Are the sample chain-of-custodies present?	_X_		
Do the chain-of-custodies indicate any problems with sample receipt or sample condition?		X	
Holding Times			
Have any holding times been exceeded?		X	
Surrogate Recovery			
Are surrogate recovery forms present?	<u>X</u>		
Are all the samples listed on the appropriate surrogate recovery form?	<u>X</u>		
Was one or more surrogate recoveries outside of specified limits for any sample or blank?		X	
If yes, were the samples reanalyzed?			<u>X</u>
<u>Matrix Spikes</u>			
Is there a matrix spike recovery form present?	<u>X</u>		
Were matrix spikes analyzed at the required frequency?	<u>X</u>		
How many spike recoveries were outside of QC limits?			
<u>0</u> out of <u>10</u>			
How many RPDs for matrix spike and matrix spike duplicate were outside of QC limits?			
<u>0</u> out of <u>5</u>			
<u>Bianks</u>			
Is the method blank summary form present?	X		
Has a method blank been analyzed for each set of samples or for each 20 samples, whichever is more frequent?	X		
Has a blank been analyzed at least once every twelve hours for each system used?	X		
Do any method/reagent/instrument blanks have positive results?		X	
Are there trip/field/rinse/equipment blanks associated with every sample?	X		
Do any trip/field/rinse blanks have positive results?		<u>X</u>	
Tuning and Mass Calibration			
Are the GC/MS tuning forms present for BFB?	X		

	YES	NO	NA
Are the bar graph spectrum and mass/charge listing provided for each BFB?	X		
Has a BFB been analyzed for each twelve hours of analysis per instrument?	X		
Have the ion abundance criteria been met for each instrument used?	<u>X</u>		
Target Analytes			
Is an organics analysis data sheet present for each of the following:			
Samples	<u>X</u>		
Matrix spikes	X		· · · · · · · · · · · · · · · · · · ·
Blanks	_X_		
Are the reconstructed ion chromatograms present for each of the following:			
Samples	_X_		
Matrix spikes	_X_		
Blanks	X		
Is the chromatographic performance acceptable?	X		
Are the mass spectra of the identified compounds present?	X		
Is the RRT of each reported compound within 0.06 RRT units of the continuing calibration standard?	X	· ·	
Are all ions present in the standard mass spectrum at a relative intensity of 10% or greater also present in the sample spectrum?	X		
Do the samples and standard relative ion intensities agree within 20%?	X		
Tentatively Identified Compounds			
Are all the TIC summary forms present?		X	
Are the mass spectra for the tentatively identified compounds and there associated "best match" spectra present?			X
Are any target compounds listed as TICs?			X
Are all ion present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum?			x
Do the TIC and "best match" spectrum agree within 20%?			X
Quantitation and Detection Limits			
Are there any transcription/calculation errors in the Form 1 results?		_ <u>X</u> _	
Are the reporting limits adjusted to reflect sample dilutions, and for soils, sample moisture?			X
Standard Data			
Are the quantitation reports and reconstructed ion chromatograms present for the initial and continuing calibration standards?	X		
Initial Calibration			
Are the initial calibration forms present for each instrument used?	_X_		

	YES	NO	NA
Are the response factor RSDs within specified limits?		X	
Are the average RRF equal to or greater than minimum requirements?	<u>X</u>		
Are there any transcription/calculation errors in reporting the RRF or RSD?		X	
Continuing Calibration			
Are the continuing calibration forms present for each day and each instrument?	<u>X</u>		
Has a continuing calibration standard been analyzed for each twelve hours of analysis per instrument?	X		
All %D within acceptable limits?	X		
Are all RF equal to or greater than minimum requirements?	X		
Are there any transcription/calculation errors in reporting of RF or %D?		X	
Internal Standards			
Are internal standard areas of every sample and blank within the upper and lower limits for each continuing calibration?	X		
Are the retention times of the internal standards within 30 seconds of the associated calibration standard?	X		
Field Duplicates			
Were field duplicates submitted with the samples?		X	

Volatile Qualifier Summary Holding Time, Surrogates, Internal Standards

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MW-31							
TW-01							
MW-33							
MW-32							
MW-1							
MW-35							
MW-9S							
MW-36							
Trip Blank							

Surrogates: TOL Toluene-d8

BFB Bromofluorobenzene DCE 1,4-Dichloroethane-d4 Internal Standards:

1,4-Dichlorobenzene-d4

FBZ Fluorobenzene CBZ Chlorobenzene-d5 Qualifiers:

† Recovery high Recovery low

DCB

^{*} Unless otherwise specified, all parameters are within acceptable limits.

Volatile Calibration Outliers

Instrument: VOAMS3
Matrix: water
Level: low

Methylene chloride 42.2 30.1 Acetone 42.2 30.1 Trichloroethene Benzene 1 Toluene Ethylbenzene 1 m,p-xylene 0-xylene 1 Affected Samples: All TW-01 MW-33 MW-32 MW-35 MW-36 MW-36 MW-36	199799152		day.		(C. 712)						
Methylene chloride 42.2 30.1		1056		320	<u> </u>						
Acetone 42.2 30.1			- 96-50e	IL AND	F6101		Para Tara		i vip		2400
Trichloroethene Benzene Toluene Ethylbenzene m,p-xylene o-xylene Affected Samples: All TW-01 MW-33 MW-32 MW-1 MW-35	Methylene chloride										
Benzene	Acetone		42.2		30.1			<u> </u>			
Toluene Ethylbenzene m,p-xylene o-xylene Affected Samples: All TW-01 MW-33 MW-32 MW-1 MW-35	Trichloroethene							ļ			
Ethylbenzene m,p-xylene o-xylene Affected Samples: All TW-01 MW-33 MW-32 MW-1 MW-35	Benzene							ļ			
m,p-xylene Image: square	Toluene										
O-xylene Affected Samples: All TW-01 MW-33 MW-32 MW-1 MW-35	Ethylbenzene										
Affected Samples: All TW-01 MW-33 MW-32 MW-1 MW-35	m,p-xylene										
MW-33 MW-32 MW-1 MW-35	o-xylene		_	_							
MW-32 MW-1 MW-35	Affected Samples:		All_	TW-01							
MW-1 MW-35				MV	V-33						
MW-35				MV	V-32						
MW-35				M'	N-1		_			_	
MW-36				ΜV	V-35				_		
				M <u>V</u>	V-36	-					
Trip Blank				Trip	Blank						



Introduction

Analyses were performed according to USEPA SW-846 Method 8270 as referenced in NYSDEC ASP.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with National Functional Guidelines:

- U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
- J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
- B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
- JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
- E The compound was quantitated above the calibration range.
- D Concentration is based on a diluted sample analysis.
- UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
- R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC test, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Data Assessment

1. Holding Time

The specified holding times for semi-volatile analyses under the Quality Assurance Project Plan (QAPP) are 5 days from sample receipt to extraction and 40 days to analysis. The technical holding times are 7 days from sample collection to extraction and 40 days to analysis.

All samples were extracted and analyzed within the specified holding times.

2. Blank Contamination

Quality assurance blanks (i.e., method, field, or rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure contamination of samples during field operations.

No target compounds were detected in the method blanks.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies various percent relative standard deviation (%RSD) limits for select compounds and allows two outliers. A technical review of the data applies a RSD limit of 30% to all compounds with no exceptions.

All compounds associated with the initial calibration exhibited a %RSDs within control limit.

4.2 Continuing Calibration

All compounds associated with the continuing calibration standards exhibited a percent difference (%D) less than the control limit.

5. Surrogates / System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every experimental run.

All internal standard areas and retention times were within established limits.

7. Compound Identification

Target compounds are identified on the GC/MS by using the analyte's relative retention time and ion spectra.

All identified compounds met the specified criteria.

8. Matrix Spike/Matrix Spike Duplicate/Matrix Spike Blank

Matrix and matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method relative to the sample matrix. Matrix spike blank (MSB) data is used to assess the precision and accuracy of the analytical method independent of matrix interferences.

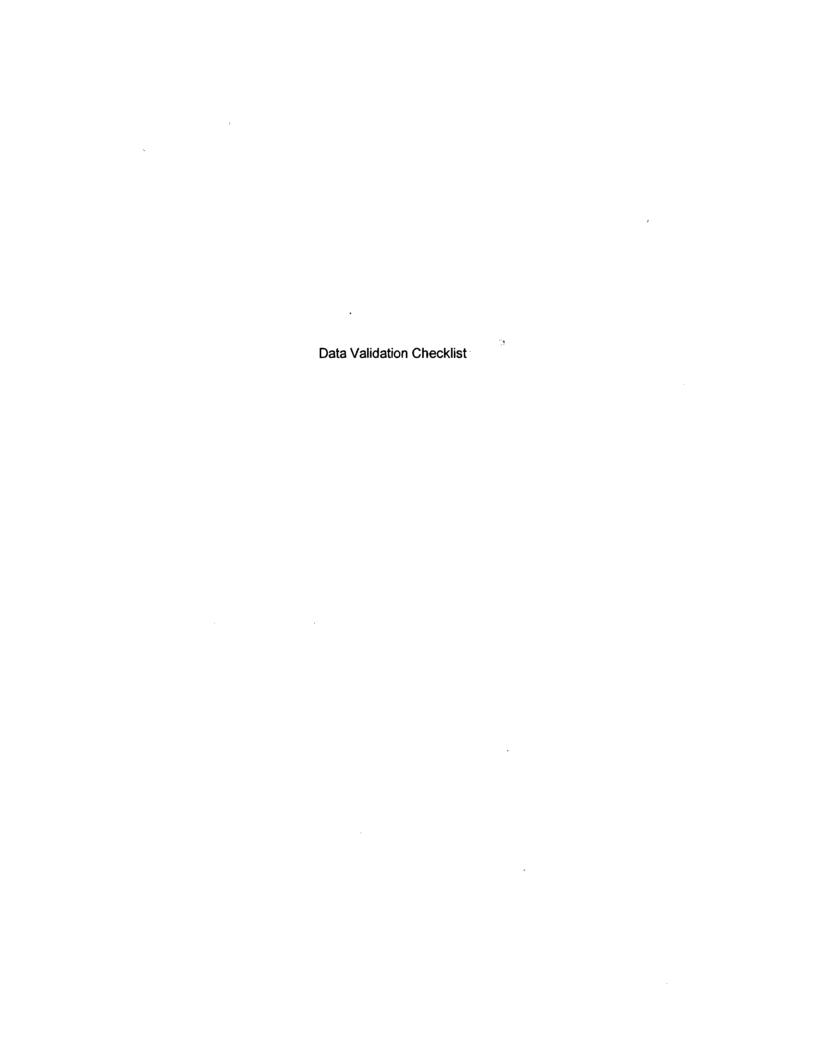
The MS/MSD recoveries and the relative percent difference between recoveries were within control limits. The MSB recoveries were also within control limits.

9. Field Duplicates

No field duplicates were included with the samples in this data set.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines listed in the analytical method.



Semivolatile Organics Data Validation Checklist

	YES	NO	NA
Data Completeness and Deliverables			
Have any missing deliverables been received and added to the data package?		X	
Is there a narrative or cover letter present?	X		
Are the sample numbers included in the narrative?	X		
Are the sample chain-of-custodies present?	X		
Do the chain-of-custodies indicate any problems with sample receipt or sample condition?		X	
Holding Times			
Have any holding times been exceeded?		X	
Surrogate Recovery			
Are the surrogate recovery forms present?	X		
Are all the samples listed on the appropriate surrogate recovery form?	X		
Were two or more surrogate recoveries outside of specified limits for any sample or blank?		X	_
If yes, were the samples reanalyzed?			<u>X</u>
<u>Matrix Spikes</u>			
Is there a matrix spike recovery form present?	X		
Were matrix spikes analyzed at the required frequency	X		
How many spike recoveries were outside of QC limits?			
<u>0</u> out of <u>4</u>			
How many RPDs for matrix spike and matrix spike duplicate were outside of QC limits?			
<u>0</u> out of <u>2</u>			
<u>Blanks</u>			
Is the method blank summary form present?	X		
Has a method blank been analyzed for each set of samples or for each 20 samples, whichever is more frequent?	.,		
	<u>X</u>		
Has a blank been analyzed for each GC/MS system used?	<u>X</u>		
Do any method/reagent/instrument blanks have positive results?		X	
Are there field/rinse/equipment blanks associated with every sample?		X	

	YES	NO _	NA
Do any field/rinse blanks have positive results?			X
Tuning and Mass Calibration			
Are the GC/MS tuning forms present for DFTPP?	X		·
Are the bar graph spectrum and mass/charge listing provided for each DFTPP?	X		
Has a DFTPP been analyzed for each twelve hours of analysis per instrument?	X		
Have the ion abundance criteria been met for each instrument used?	x		
<u>Target Analytes</u>			
Is an organics analysis data sheet present for each of the following:			
Samples	X		
Matrix spikes	X		
Blanks	X		
Has GCP cleanup been performed on all soil/sediment sample extracts?			x
Are the reconstructed ion chromatograms present for each of the following:			
Samples	X		
Matrix spikes	X		
Blanks	X		
Is the chromatographic performance acceptable?	X		
Are the mass spectra of the identified compounds present?	X		
Are all ions present in the standard mass spectrum at a relative intensity of 10% or greater also present in the sample spectrum?	х		
Do the samples and standard relative ion intensities agree within 20%?	X		
Tentatively Identified Compounds	_		
Are all the TIC summary forms present?		X	
Are the mass spectra for the tentatively identified compounds and their associated "best match" spectra present?			
			X
Are any target compounds listed as TICs?			X
Are all ions present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum?			~

	YES	NO	NΑ
Do the TIC and "best match" spectrum agree within 20%?			X
Quantitation and Detection Limits	·		
Are there any transcription/calculation errors in the Form 1 results?		X	
Are the reporting limits adjusted to reflect sample dilutions, and for soils, sample moisture?			X
Standard Data			
Are the quantitation reports and reconstructed ion chromatograms present for the initial and continuing calibration standards?	X		
Initial Calibration			
Are the initial calibration forms present for each instrument used?	X		
Are the response factor RSDs within acceptable limits?	X		
Are the average RRF equal to or greater than minimum requirements?	X	•	
Are there any transcription/calculation errors in reporting the RRF or RSD?		x	
Continuing Calibration			
Are the continuing calibration forms present for each day and each instrument?	x		
Has a continuing calibration standard been analyzed for each twelve hours of analysis per instrument?	X		
All %D within acceptable limits?	X		
Are all RF equal to or greater than minimum requirements?	X		
Are there any transcription/calculation errors in reporting of RF or %D?		X	
Internal Standards			
Are internal standard areas of the samples and blanks within the upper and lower limits for each continuing calibration?	x		
Are the retention times of the internal standards within 30 seconds of the associated calibration standard?	X		
Field Duplicates			
Were field duplicates submitted with the samples?		X	

Semi-Volatile Qualifier Summary Holding Time, Surrogates, Internal Standards

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	alores de la Cartena	11252				Mâ	-1785			P. P.
MW-31				_						
TW-01										
MW-33				1						
MW-32										<u> </u>
MW-1					 					
MW-35							_			
MW-9 <u>S</u>										
MW-36										
									_	
				-						
				-		_				
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_		-			-					
			-							
							_			

Surrogates:

Nitrobenzene-d5 NBZ FBP

TPH

2-Fluorobiphenyl Terphenyl-d14

Internal Standards:

1,4-Dichlorobenzene-d4 DCB NPT Naphthalene-d8

ANT Acenaphthene-d10 PHN Phenanthrene-d10

Chrysene-d12 **CRY**

PRY Perylene-d12

Qualifiers:

Diluted

1

Recovery low Recovery high

11 Recovery below 10%

^{*} Unless otherwise specified, all parameters are within acceptable limits.

Semivolatile Calibration Outliers

Instrument: BNAMS3

Level: low

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iniline		 	ļ								
,n'-dimethylaniline					_						
Affected Samples:								_			
		 <u> </u>		_						-	

SUPPLEMENTAL PARAMETERS

Introduction

Analyses were performed according to USEPA method 8015 for Methanol as referenced in the NYSDEC ASP.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with National Functional Guidelines:

- U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
- J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
- B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
- JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
- E The compound was quantitated above the calibration range.
- D Concentration is based on a diluted sample analysis.
- UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
- R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC test, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Data Assessment

1. Holding Time

The specified holding time for volatile analyses under the Quality Assurance Project Plan (QAPP) is 7 days from sample receipt. The technical holding time is 14 days from sample collection to analysis.

All samples were analyzed within the specified holding time.

2. Blank Contamination

Quality assurance blanks (i.e., method, trip, field, or rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure contamination of samples during shipment.

No target compounds were detected in the method blank.

Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies a percent relative standard deviation (%RSD) limit of 20% or, alternately, a correlation coefficient of 0.99 or greater.

The initial calibration was acceptable.

3.2 Continuing Calibration

All continuing calibration standards were within 15%D of the initial calibration.

4. Compound Identification

Target compounds are identified by using the analyte's retention time.

No target compounds were identified in the samples.

5. Matrix Spike/Matrix Spike Duplicate/Matrix Spike Blank

Matrix and matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method relative to the sample matrix.

All MS/MSD recoveries and the relative percent difference between recoveries were within control limits.

6. Field Duplicates

No field duplicates were included with the samples in this data set.

7. System Performance and Overall Assessment

Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines listed in the analytical method.



Organic Data Validation Checklist

	YES	NO_	NA
Data Completeness and Deliverables			
Have any missing deliverables been received and added to the data package?		X	
Is there a narrative or cover letter present?	X		
Are the sample numbers included in the narrative?	X		
Are the sample chain-of-custodies present?	<u>X</u>		
Do the chain-of-custodies indicate any problems with sample receipt or sample condition?		X	
Holding Times			
Have any holding times been exceeded?		X	
Matrix Spikes			
Is there a matrix spike recovery form present?	X		
Were matrix spikes analyzed at the required frequency?	X		
How many spike recoveries were outside of QC limits?			
0 out of _2_			
How many RPDs for matrix spike and matrix spike duplicate were outside of QC limits?			
<u>0</u> out of <u>1</u>			
<u>Blanks</u>			
Is the method blank summary form present?	X		
Has a method blank been analyzed for each set of samples or for each 20 samples, whichever is more frequent?	v		
the a black been each and at least one a grant track being for each	<u>X</u>		
Has a blank been analyzed at least once every twelve hours for each system used?	X		
Do any method/reagent/instrument blanks have positive results?		X	
Are there trip/field/rinse/equipment blanks associated with every sample?		X	
Do any trip/field/rinse blanks have positive results?			X
Target Analytes			
Is an organics analysis data sheet present for each of the following:			
Samples	x		
Matrix spikes	X		
Blanks	Χ		

	YES	NO	NA
Are the chromatograms present for each of the following:			
Samples	X		
Matrix spikes	X		
Blanks	X		
Is the chromatographic performance acceptable?	X		
Quantitation and Detection Limits			
Are there any transcription/calculation errors in the Form 1 results?		X	
Are the reporting limits adjusted to reflect sample dilutions, and for soils, sample moisture?			X
Standard Data			
Are the quantitation reports and chromatograms present for the initial and continuing calibration standards?	X		
Initial Calibration			
Are the initial calibration forms present for each instrument used?	X		
Are the response factor RSDs or correlation coefficients within acceptable limits?	X		
Are there any transcription/calculation errors in reporting the RRF or RSD?		X	
Continuing Calibration			
Are the continuing calibration forms present for each day and each instrument?	Χ		
Has a continuing calibration standard been analyzed for each twelve hours of analysis per instrument?	X		
All %D within acceptable limits?	X		
Are there any transcription/calculation errors in reporting of RF or %D?		X	
<u>Field Duplicates</u>			
Were field duplicates submitted with the samples?		X	



Site: McKesson-Bear St.

Lab Sample No: 640578

Lab Job No: Z948

Date Sampled: 06/07/05

Date Received: 06/08/05

Date Analyzed: 06/17/05 GC Column: Rtx-VMS

Instrument ID: VOAMS3.i Lab File ID: ca04486.d

Matrix: WATER Level: LOW

Purge Volume: 5.0 ml Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result Units: ug/l	Quantitation Limit <u>Units: uq/l</u>
Methylene Chloride Acetone	ND ND J	3.0 5.0
Trichloroethene	ND J	1.0
Benzene	11	1.0
Toluene	N D	5.0
Ethylbenzene	ND	4.0
Xylene (Total)	1.3J	5.0

Site: McKesson-Bear St.

Lab Sample No: 640579 Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05

Date Analyzed: 06/17/05 GC Column: Rtx-VMS Instrument ID: VOAMS3.i

Lab File ID: ca04470.d

Matrix: WATER Level: LOW

Purge Volume: 5.0 ml Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: ug/l</u>
Methylene Chloride Acetone Trichloroethene	ND ND (C ND ND	3.0 5.0 1.0
Benzene	1.8	1.0
Toluene	ND	5.0
Ethylbenzene	ND	4.0
Xylene (Total)	ND	5.0

Site: McKesson-Bear St.

Lab Sample No: 640580

Lab Job No: Z948

Date Sampled: 06/07/05

Date Received: 06/08/05 Date Analyzed: 06/17/05 GC Column: Rtx-VMS

Instrument ID: VOAMS3.i
Lab File ID: ca04471.d

Matrix: WATER Level: LOW

Purge Volume: 5.0 ml Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: uq/l</u>
Methylene Chloride	ND	3.0
Acetone	ND J	5.0
Trichloroethene	ND	1.0
Benzene	11	1.0
Toluene	1.0J	5.0
Ethylbenzene	ND	4.0
Xylene (Total)	ND	5.0

Site: McKesson-Bear St.

Lab Sample No: 640581

Lab Job No: Z948

Date Sampled: 06/07/05

Date Received: 06/08/05 Date Analyzed: 06/17/05

GC Column: Rtx-VMS

Instrument ID: VOAMS3.i
Lab File ID: ca04472.d

Matrix: WATER Level: LOW

Purge Volume: 5.0 ml

Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: ug/l</u>
Methylene Chloride Acetone Trichloroethene Benzene Toluene Ethylbenzene Xylene (Total)	ND J ND 1.0 ND ND ND ND	3.0 5.0 1.0 1.0 5.0 4.0

Site: McKesson-Bear St.

Lab Sample No: 640582

Lab Job No: Z948

Date Sampled: 06/07/05

Date Received: 06/08/05 Date Analyzed: 06/17/05 GC Column: Rtx-VMS

Instrument ID: VOAMS3.i Lab File ID: ca04473.d

Matrix: WATER Level: LOW

Purge Volume: 5.0 ml Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: ug/l</u>
Methylene Chloride Acetone Trichloroethene Benzene Toluene Ethylbenzene Xylene (Total)	ND ND ND ND ND ND ND	3.0 5.0 1.0 1.0 5.0 4.0 5.0

Site: McKesson-Bear St.

Lab Sample No: 640583

Lab Job No: Z948

Date Sampled: 06/07/05
Date Received: 06/08/05

Date Received: 06/08/05 Date Analyzed: 06/17/05 GC Column: Rtx-VMS

Instrument ID: VOAMS3.i
Lab File ID: ca04474.d

Matrix: WATER Level: LOW

Purge Volume: 5.0 ml Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: ug/l</u>
Methylene Chloride	ND T	3.0
Acetone	ND ND	5.0
Trichloroethene	ND	1.0
Benzene	ND	1.0
Toluene	ND	5.0
Ethylbenzene	ND	4.0
Xylene (Total)	ND	5.0

Site: McKesson-Bear St.

Lab Sample No: 640584

Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05

Date Analyzed: 06/17/05

GC Column: Rtx-VMS Instrument ID: VOAMS3.i Lab File ID: ca04487.d Matrix: WATER Level: LOW

Purge Volume: 5.0 ml Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS METHOD 8260B

<u>Parameter</u>	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: ug/l</u>
Methylene Chloride	ND	3.0
Acetone	44 5	5.0
Trichloroethene	ND	1.0
Benzene	1.9	1.0
Toluene	3.2J	5.0
Ethylbenzene	24	4.0
Xylene (Total)	64	5.0

Site: McKesson-Bear St.

Lab Sample No: 640585

Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05

Date Analyzed: 06/17/05 GC Column: Rtx-VMS

Instrument ID: VOAMS3.i
Lab File ID: ca04475.d

Matrix: WATER Level: LOW

Purge Volume: 5.0 ml Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS METHOD 8260B

<u>Parameter</u>	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: ug/l</u>
Methylene Chloride Acetone Trichloroethene	24 T	3.0 5.0 1.0
Benzene	2.1	1.0
Toluene	ND	5.0
Ethylbenzene	ND	4.0
Xylene (Total)	1.0J	5.0

Client ID: Trip-Blank Site: McKesson-Bear St.

Lab Sample No: 640586 Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05 Date Analyzed: 06/17/05 GC Column: Rtx-VMS

Level: LOW

Matrix: WATER

Instrument ID: VOAMS3.i Lab File ID: ca04476.d

Purge Volume: 5.0 ml Dilution Factor: 1.0

VOLATILE ORGANICS - GC/MS METHOD 8260B

<u>Parameter</u>	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: ug/l</u>
Methylene Chloride Acetone Trichloroethene	ND ND J ND	3.0 5.0 1.0
Benzene Toluene Ethylbenzene	ND ND ND	1.0 5.0 4.0
Xylene (Total)	ND	5.0

Site: McKesson-Bear St.

Lab Sample No: 640578 Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05

Date Extracted: 06/13/05 Date Analyzed: 06/17/05

GC Column: DB-5

Instrument ID: BNAMS3.i
Lab File ID: t20454.d

Matrix: WATER Level: LOW

Sample Volume: 1000 ml

Extract Final Volume: 2.0 ml

Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result Units: uq/l	Quantitation Limit <u>Units: uq/l</u>		
Aniline N,N-Dimethylaniline	3.2 2.7	1.0		

Site: McKesson-Bear St.

Lab Sample No: 640579

Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05

Date Extracted: 06/13/05

Date Analyzed: 06/17/05

GC Column: DB-5

Instrument ID: BNAMS3.i
Lab File ID: t20455.d

Matrix: WATER Level: LOW

Sample Volume: 950 ml

Extract Final Volume: 2.0 ml

Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: ug/l</u>
Aniline	ND	1.0
N,N-Dimethylaniline	ND	1.0

Site: McKesson-Bear St.

Lab Sample No: 640580

Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05

Date Extracted: 06/13/05

Date Analyzed: 06/18/05 GC Column: DB-5 Instrument ID: BNAMS3.i Lab File ID: t20470.d

Matrix: WATER Level: LOW

Sample Volume: 950 ml

Extract Final Volume: 2.0 ml

Dilution Factor: 10.0

Parameter	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: ug/l</u>
Aniline	1800	10
N,N-Dimethylaniline	ND	10

Site: McKesson-Bear St.

Date Sampled: 06/07/05
Date Received: 06/08/05
Date Extracted: 06/13/05
Date Analyzed: 06/17/05

GC Column: DB-5

Instrument ID: BNAMS3.i Lab File ID: t20457.d Lab Sample No: 640582

Lab Job No: Z948

Matrix: WATER Level: LOW

Sample Volume: 970 ml

Extract Final Volume: 2.0 ml

Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result <u>Units: uq/l</u>	Limit <u>Units: ug/l</u>
Aniline	0.2J	1.0
N,N-Dimethylaniline	ND	1.0

Site: McKesson-Bear St.

Date Sampled: 06/07/05 Date Received: 06/08/05 Date Extracted: 06/13/05 Date Analyzed: 06/17/05

GC Column: DB-5 Instrument ID: BNAMS3.i Lab File ID: t20458.d

Lab Sample No: 640583

Lab Job No: Z948

Matrix: WATER Level: LOW

Sample Volume: 990 ml

Extract Final Volume: 2.0 ml

Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result <u>Units: uq/l</u>	Quantitation Limit <u>Units: ug/l</u>
Aniline N,N-Dimethylaniline	ND ND	1.0

Site: McKesson-Bear St.

Lab Sample No: 640584

Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05 Date Extracted: 06/13/05

Date Analyzed: 06/17/05 GC Column: DB-5 Instrument ID: BNAMS3.i Lab File ID: t20459.d

Matrix: WATER Level: LOW

Sample Volume: 950 ml

Extract Final Volume: 2.0 ml

Dilution Factor: 1.0

<u>Parameter</u>	Analytical Result <u>Units: ug/l</u>	Quantitation Limit <u>Units: ug/l</u>		
Aniline	2.6	1.0		
N,N-Dimethylaniline	1.9	1.0		

Site: McKesson-Bear St.

Lab Sample No: 640585

Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05

Date Extracted: 06/13/05

Date Analyzed: 06/18/05 GC Column: DB-5

Instrument ID: BNAMS3.i Lab File ID: t20471.d Matrix: WATER
Level: LOW

Sample Volume: 930 ml

Extract Final Volume: 2.0 ml

Dilution Factor: 5.0

<u>Parameter</u>	Analytical Result <u>Units: uq/l</u>	Quantitation Limit <u>Units: uq/l</u>
Aniline	1200	5.4
N,N-Dimethylaniline	ND	5.4

Site: McKesson-Bear St.

Lab Sample No: 640578 Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05 Date Analyzed: 06/09/05

Lab File ID: gc5f6700.d

GC Column: DB624 Instrument ID: BNAGC5.i

Parameter

Methanol

Injection Volume:

1.0 ul

Final Volume: 0.0 mL

Dilution Factor:

Matrix: WATER

Level: LOW

1.0

NONHALOGENATED ORGANICS - GC/FID ALCOHOLS

Analytical Result Units: uq/l

Quantitation

Limit

Units: uq/l

ND

1000

Site: McKesson-Bear St.

Date Sampled: 06/07/05 Date Received: 06/08/05

Date Analyzed: 06/09/05

Parameter

Methanol

GC Column: DB624
Instrument ID: BNAGC5.i Lab File ID: gc5f6701.d Lab Sample No: 640579

Lab Job No: Z948

Matrix: WATER

Level: LOW

Injection Volume: 1.0 ul

Final Volume: 0.0 mL

1.0 Dilution Factor:

NONHALOGENATED ORGANICS - GC/FID ALCOHOLS

Analytical Result

Units: uq/l

Quantitation

Limit

Units: uq/l

ND

Site: McKesson-Bear St.

Lab Sample No: 640580 Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05 Date Analyzed: 06/09/05

GC Column: DB624 Instrument ID: BNAGC5.i Lab File ID: gc5f6702.d

Matrix: WATER Level: LOW

Injection Volume: 1.0 ul

Final Volume: 0.0 mL

Dilution Factor: 1.0

NONHALOGENATED ORGANICS - GC/FID ALCOHOLS

Analytical Result Units: uq/l

Quantitation

Limit Units: uq/l

Methanol

Parameter

ND

Site: McKesson-Bear St.

Date Sampled: 06/07/05 Date Received: 06/08/05 Date Analyzed: 06/09/05

GC Column: DB624 Instrument ID: BNAGC5.i Lab File ID: gc5f6703.d Lab Sample No: 640581

Lab Job No: Z948

Matrix: WATER

Level: LOW

Injection Volume: 1.0 ul

Final Volume: 0.0 mL

Dilution Factor: 1.0

NONHALOGENATED ORGANICS - GC/FID ALCOHOLS

> Analytical Result Units: uq/l

Quantitation Limit Units: uq/l

ND

1000

Parameter

Methanol

Site: McKesson-Bear St.

Date Sampled: 06/07/05 Date Received: 06/08/05 Date Analyzed: 06/09/05

GC Column: DB624 Instrument ID: BNAGC5.i Lab File ID: gc5f6704.d Lab Sample No: 640582

Lab Job No: Z948

Matrix: WATER Level: LOW

Injection Volume: 1.0 ul

Final Volume: 0.0 mL

1.0 Dilution Factor:

NONHALOGENATED ORGANICS - GC/FID ALCOHOLS

Analytical Result Units: ug/l

Quantitation Limit Units: uq/l

ND

1000

Methanol

Parameter

Site: McKesson-Bear St.

Lab Sample No: 640583 Lab Job No: Z948

Date Sampled: 06/07/05 Date Received: 06/08/05

Date Analyzed: 06/09/05

GC Column: DB624

Parameter

Methanol

Instrument ID: BNAGC5.i Lab File ID: qc5f6705.d Matrix: WATER Level: LOW

Injection Volume: 1.0 ul

Final Volume: 0.0 mL

Dilution Factor: 1.0

NONHALOGENATED ORGANICS - GC/FID ALCOHOLS

Analytical Result

Units: uq/l

Quantitation

Limit

Units: uq/l

ND

Site: McKesson-Bear St.

Date Sampled: 06/07/05 Date Received: 06/08/05 Date Analyzed: 06/09/05 GC Column: DB624

<u>Parameter</u>

Methanol

Instrument ID: BNAGC5.i Lab File ID: gc5f6706.d Lab Sample No: 640584

Lab Job No: Z948

Matrix: WATER

Level: LOW

Injection Volume:

1.0 ul

Final Volume: 0.0 mL

Dilution Factor: 1.0

NONHALOGENATED ORGANICS - GC/FID ALCOHOLS

> Analytical Result Units: ug/1

Quantitation Limit

Units: ug/l

ND

Site: McKesson-Bear St.

Date Sampled: 06/07/05 Date Received: 06/08/05 Date Analyzed: 06/09/05 GC Column: DB624

Parameter

Methanol

Instrument ID: BNAGC5.i Lab File ID: gc5f6707.d Lab Sample No: 640585

Lab Job No: Z948

Matrix: WATER Level: LOW

Injection Volume:

1.0 ul

Final Volume: 0.0 mL

Dilution Factor:

1.0

NONHALOGENATED ORGANICS - GC/FID ALCOHOLS

Analytical Result <u>Units: ug/l</u>

Quantitation Limit Units: uq/l

ND

Client ID: Trip-Blank Site: McKesson-Bear St.

Date Sampled: 06/07/05 Date Received: 06/08/05 Date Analyzed: 06/09/05

GC Column: DB624

Instrument ID: BNAGC5.i Lab File ID: gc5f6709.d Lab Sample No: 640586

Lab Job No: Z948

Matrix: WATER Level: LOW

Injection Volume: 1.0 ul

Final Volume: 0.0 mL

Dilution Factor: 1.0

NONHALOGENATED ORGANICS - GC/FID ALCOHOLS

> Analytical Result Units: uq/1

Quantitation Limit Units: uq/l

ND

Methanol

Parameter



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