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Project Title/Work Order:

HYDROGEN RECOMBINER CATALYST TEST SUPPORTING DATA

EDT No.: 610138

ECN No.:

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Westinghouse Hanford Company

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2. To: (Receiving Organization) Grout Technology	3. From: (Originating Organization) Chemical Engineering Laboratory	4. Related EDT No.: 610139, 161765
5. Proj./Prog./Dept./Div.: 8A400/D44L2	6. Cog. Engr.: Michael D. Britton	7. Purchase Order No.: N/A
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11. Receiver Remarks:		10. System/Bldg./Facility: 2703E
		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
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15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Impact Level	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-WM-TRP-212		0	HYDROGEN RECOMBINER CATALYST TEST SUPPORTING DATA	NA	1	1	1

16. KEY					
Impact Level (F)		Reason for Transmittal (G)		Disposition (H) & (I)	
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		2. Release	5. Post-Review	2. Approved w/comment	5. Reviewed w/comment
		3. Information	6. Dist. (Receipt Acknow. Required)	3. Disapproved w/comment	6. Receipt acknowledged

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Reason	Disp.								
1	1	Cog. Engr. M.D. Britton <i>M.D. Britton</i> 12/20/94 S4-25				Grout Technology W. J. Powell <i>W.J. Powell</i> 12/21/94 H5-27			
1	1	Cog. Mgr. M.J. Schliebe <i>M.J. Schliebe</i> 12/20/94 S4-25							

18. Signature of EDT Originator <i>M.D. Britton</i> 12/20/94	19. Authorized Representative for Receiving Organization <i>W.J. Powell</i> 12/21/94	20. Cognizant/Project Engineer's Manager <i>M.J. Schliebe</i> 12/20/94	21. DOE APPROVAL (if required) Ltr. No. ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments
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Release Date: January 19, 1995

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WHC Information Release Administration Specialist:

Kara M. Broz

January 19, 1995

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SUPPORTING DOCUMENT

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2. Title HYDROGEN RECOMBINER CATALYST TEST SUPPORTING DATA	3. Number WHC-SD-WM-TRP-212	4. Rev No. 0
5. Key Words Hydrogen oxidation catalyst, Hydrogen recombiner catalyst, Hydrogen mitigation, Nuclear waste offgas, Noble metal catalyst. <i>KMB 1/19/95</i>	6. Author Name: Michael D. Britton <i>Michael D. Britton</i> Signature Organization/Charge Code 8A400/D44L2	
7. Abstract This document contains supplemental data for the Hydrogen Recombiner Catalyst Test report (WHC-SD-WM-TRP-211). PUBLIC RELEASE		
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HYDROGEN RECOMBINER CATALYST TEST SUPPORTING DATA DOCUMENT

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HYDROGEN RECOMBINER CATALYST TEST SUPPORTING DATA DOCUMENT

FORWARD

This document contains supplemental data for the Hydrogen Recombiner Catalyst Test Report (Britton 1994)..

REFERENCES

Britton, M. D., 1994, *Mitigation of Hydrogen by Oxidation Using Nitrous Oxide and Noble Metal Catalysts*, WHC-SD-WM-TRP-211, Westinghouse Hanford Company, Richland, Washington.

APPENDIX A

MASS SPECTROMETRY ANALYSIS REPORTS

SAMPLES 93-001 THROUGH 93-157

MASTER

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

June 29, 1993

Michael D Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Sir

The gas sample analyses are complete. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen is run each day the instrument is used to correct for drift.

The results are attached to this letter.

If you have any questions please contact me.

Sincerely

Milton W Goheen
Atomic and Molecular Spectroscopy

Concurrence

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: June 28, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 68
 Measurement and test equipment WC38625

Sample Id.	93-001 GSC #1		
Analysis Date	June 25, 1993	Mole	Estimate
Log-in No.	93-08351	Percent	of Precision
Argon		0.035 ±	0.002
Carbon dioxide		0.004 ±	0.001
Carbon monoxide		<0.005 ±	
Helium		<0.001 ±	
Hydrogen		3.55 ±	0.06
Methane		<0.001 ±	
Nitrogen		95.72 ±	0.1
Oxygen		0.683 ±	0.02
Nitrous oxide		<0.001 ±	
Other nitrogen oxides		<0.001 ±	
Comments			

Sample Id.	93-002 GSC #3		
Analysis Date	June 25, 1993	Mole	Estimate
Log-in No.	93-08352	Percent	of Precision
Argon		0.013 ±	0.002
Carbon dioxide		0.003 ±	0.001
Carbon monoxide		<0.005 ±	
Helium		<0.001 ±	
Hydrogen		3.81 ±	0.04
Methane		<0.001 ±	
Nitrogen		95.98 ±	0.04
Oxygen		0.198 ±	0.003
Nitrous oxide		<0.001 ±	
Other nitrogen oxides		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: June 28, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 68
 Measurement and test equipment WC38625

Sample Id.	93-003 GSC #2		
Analysis Date	June 25, 1993		
Log-in No.	93-08353	Mole Percent	Estimate of Precision
Argon		0.072 ±	0.007
Carbon dioxide		0.006 ±	0.001
Carbon monoxide		<0.005 ±	
Helium		<0.001 ±	
Hydrogen		3.55 ±	0.04
Methane		<0.001 ±	
Nitrogen		94.87 ±	0.04
Oxygen		1.5 ±	0.02
Nitrous oxide		<0.001 ±	
Other nitrogen oxides		<0.001 ±	
Comments			

Sample Id.	93-004 GSC #4		
Analysis Date	June 25, 1993		
Log-in No.	93-08354	Mole Percent	Estimate of Precision
Argon		0.03 ±	0.003
Carbon dioxide		0.003 ±	0.001
Carbon monoxide		<0.005 ±	
Helium		<0.001 ±	
Hydrogen		3.72 ±	0.04
Methane		<0.001 ±	
Nitrogen		95.66 ±	0.04
Oxygen		0.582 ±	0.006
Nitrous oxide		<0.001 ±	
Other nitrogen oxides		<0.005 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: June 28, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 68
 Measurement and test equipment WC38625

Sample Id.	93-005 GSC #5		
Analysis Date	June 25, 1993	Mole	Estimate
Log-in No.	93-08355	Percent	of Precision
Argon		0.029 ±	0.003
Carbon dioxide		0.003 ±	0.001
Carbon monoxide		0.53 ±	0.02
Helium		<0.001 ±	
Hydrogen		0.005 ±	0.001
Methane		<0.001 ±	
Nitrogen		98.88 ±	0.02
Oxygen		0.536 ±	0.005
Nitrous oxide		<0.001 ±	
Other nitrogen oxides		<0.001 ±	
Comments			

Sample Id.	93-006 GSC #6		
Analysis Date	June 25, 1993	Mole	Estimate
Log-in No.	93-08356	Percent	of Precision
Argon		0.015 ±	0.002
Carbon dioxide		0.003 ±	0.001
Carbon monoxide		<0.005 ±	
Helium		<0.001 ±	
Hydrogen		0.0004 ±	0.0002
Methane		<0.001 ±	
Nitrogen		97.7 ±	0.03
Oxygen		2.28 ±	0.03
Nitrous oxide		<0.001 ±	
Other nitrogen oxides		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: June 28, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 68
 Measurement and test equipment WC38625

Sample Id.	93-007 GSC #9		
Analysis Date	June 25, 1993	Mole	Estimate
Log-in No.	93-08357	Percent	of Precision
Argon		0.013	± 0.001
Carbon dioxide		0.003	± 0.001
Carbon monoxide		<0.005	±
Helium		<0.001	±
Hydrogen		0.0004	± 0.0002
Methane		0.497	± 0.006
Nitrogen		99.29	± 0.01
Oxygen		0.198	± 0.004
Nitrous oxide		<0.001	±
Other nitrogen oxides		<0.001	±
Comments			

Sample Id.	93-008 GSC #8		
Analysis Date	June 25, 1993	Mole	Estimate
Log-in No.	93-08358	Percent	of Precision
Argon		0.022	± 0.004
Carbon dioxide		<0.005	±
Carbon monoxide		<0.005	±
Helium		<0.001	±
Hydrogen		0.0003	± 0.0002
Methane		0.003	± 0.002
Nitrogen		95.93	± 0.04
Oxygen		0.398	± 0.005
Nitrous oxide		3.64	± 0.04
Other nitrogen oxides		<0.001	±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: June 28, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 68
 Measurement and test equipment WC38625

Sample Id.	93-009 GSC #7		Estimate
Analysis Date	June 25, 1993		of
Log-in No.	93-08359	Mole Percent	Precision
Argon		0.021 ±	0.002
Carbon dioxide		<0.005 ±	
Carbon monoxide		<0.005 ±	
Helium		<0.001 ±	
Hydrogen		0.0003 ±	0.0002
Methane		0.004 ±	0.002
Nitrogen		8.93 ±	0.09
Oxygen		0.517 ±	0.006
Nitrous oxide		90.53 ±	0.09
Other nitrogen oxides		<0.005 ±	
Comments

Battelle

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509)

376-3358

July 2, 1993

Michael D Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Sir

The gas sample analyses are complete. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen is run each day the instrument is used to correct for drift.

The results are attached to this letter.

If you have any questions please contact me.

Sincerely

MW Goheen

Milton W. Goheen
Atomic and Molecular Spectroscopy

Concurrence

R E. [signature]

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 02, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 71
 Measurement and test equipment WC38625

Sample Id.	93-010 GSC-14		Estimate
Analysis Date	July 02, 1993	Mole	of
Log-in No.	93-08551	Percent	Precision
Argon		0.02 ±	0.002
Carbon dioxide		0.016 ±	0.002
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.326 ±	0.007
Methane		<0.001 ±	
Nitrogen		99.36 ±	0.01
Oxygen		0.283 ±	0.006
Nitrous oxide		<0.001 ±	
Other nitrogen oxides		<0.001 ±	
Comments			

Sample Id.	93-011 GSC-16		Estimate
Analysis Date	July 02, 1993	Mole	of
Log-in No.	93-08552	Percent	Precision
Argon		0.018 ±	0.002
Carbon dioxide		0.0031 ±	0.001
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.385 ±	0.007
Methane		0.032 ±	0.004
Nitrogen		99.35 ±	0.01
Oxygen		0.212 ±	0.004
Nitrous oxide		<0.001 ±	
Other nitrogen oxides		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 02, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 71
 Measurement and test equipment WC38625

Sample Id.	93-012 GSC-13		
Analysis Date	July 02, 1993	Mole	Estimate
Log-in No.	93-08553	Percent	of Precision
Argon		0.016	± 0.002
Carbon dioxide		0.013	± 0.002
Carbon monoxide		<0.001	±
Helium		<0.001	±
Hydrogen		0.029	± 0.003
Methane		0.029	± 0.003
Nitrogen		99.67	± 0.007
Oxygen		0.244	± 0.004
Nitrous oxide		<0.001	±
Other nitrogen oxides		<0.001	±
Comments			

Sample Id.	93-013 GSC-15		
Analysis Date	July 02, 1993	Mole	Estimate
Log-in No.	93-08554	Percent	of Precision
Argon		0.02	± 0.004
Carbon dioxide		0.004	± 0.002
Carbon monoxide		<0.001	±
Helium		<0.001	±
Hydrogen		0.558	± 0.008
Methane		<0.001	±
Nitrogen		98.83	± 0.01
Oxygen		0.591	± 0.008
Nitrous oxide		<0.001	±
Other nitrogen oxides		<0.001	±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 02, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 71
 Measurement and test equipment WC38625

Sample Id.	93-014 GSC-10		Estimate
Analysis Date	July 02, 1993	Mole	of
Log-in No.	93-08555	Percent	Precision
Argon		0.016	± 0.002
Carbon dioxide		0.012	± 0.002
Carbon monoxide		<0.001	±
Helium		<0.001	±
Hydrogen		0.057	± 0.005
Methane		<0.001	±
Nitrogen		99.712	± 0.007
Oxygen		0.191	± 0.004
Nitrous oxide		0.007	± 0.002
Other nitrogen oxides		<0.001	±
Comments			

Sample Id.	93-015 GSC-12		Estimate
Analysis Date	July 02, 1993	Mole	of
Log-in No.	93-08556	Percent	Precision
Argon		0.013	± 0.002
Carbon dioxide		<0.001	±
Carbon monoxide		<0.001	±
Helium		<0.001	±
Hydrogen		1.07	± 0.02
Methane		0.002	± 0.001
Nitrogen		66.4	± 0.4
Oxygen		0.212	± 0.004
Nitrous oxide		32.3	± 0.4
Other nitrogen oxides		<0.01	±
Comments

Battelle

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

July 12, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 7-8-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

Milton W Goheen
Atomic and Molecular Spectroscopy

R E Brinn
Concurrence

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 9, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 72
 Measurement and test equipment WC38625

Sample Id.	93-016		
Analysis Date	July 8, 1993	Mole	Estimate
Log-in No.	93-08764	Percent	of Precision
Argon		0.018	± 0.002
Carbon dioxide		<0.001	±
Carbon monoxide		<0.001	±
Helium		<0.001	±
Hydrogen		0.017	± 0.002
Methane		0.0008	± 0.0004
Nitrogen		60.4	± 0.4
Oxygen		0.343	± 0.006
Nitrous oxide		39.2	± 0.4
Other nitrogen oxides		0.02	± 0.01
Comments			

Sample Id.	93-017		
Analysis Date	July 8, 1993	Mole	Estimate
Log-in No.	93-08765	Percent	of Precision
Argon		0.013	± 0.001
Carbon dioxide		<0.001	±
Carbon monoxide		<0.001	±
Helium		<0.001	±
Hydrogen		0.938	± 0.009
Methane		0.0006	± 0.0004
Nitrogen		58.8	± 0.4
Oxygen		0.221	± 0.002
Nitrous oxide		40.1	± 0.4
Other nitrogen oxides		0.02	± 0.01
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 9, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 72
 Measurement and test equipment WC38625

Sample Id.	93-018		
Analysis Date	July 8, 1993	Mole	Estimate
Log-in No.	93-08766	Percent	of Precision
Argon		0.011 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.018 ±	0.002
Methane		0.0005 ±	0.0004
Nitrogen		60.1 ±	0.4
Oxygen		0.164 ±	0.002
Nitrous oxide		39.7 ±	0.4
Other nitrogen oxides		0.02 ±	0.01
Comments			

Sample Id.	93-019		
Analysis Date	July 8, 1993	Mole	Estimate
Log-in No.	93-08767	Percent	of Precision
Argon		0.014 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.016 ±	0.002
Methane		0.0012 ±	0.0004
Nitrogen		60.2 ±	0.4
Oxygen		0.25 ±	0.003
Nitrous oxide		39.5 ±	0.4
Other nitrogen oxides		0.003 ±	0.0006
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 9, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 72
 Measurement and test equipment WC38625

Sample Id.	93-020		
Analysis Date	July 8, 1993	Mole	Estimate
Log-in No.	93-08768	Percent	of Precision
Argon		0.017 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.932 ±	0.009
Methane		0.0013 ±	0.0004
Nitrogen		59.1 ±	0.4
Oxygen		0.304 ±	0.003
Nitrous oxide		39.7 ±	0.4
Other nitrogen oxides		0.0098 ±	0.0009
Comments			

Sample Id.	93-021		
Analysis Date	July 8, 1993	Mole	Estimate
Log-in No.	93-08769	Percent	of Precision
Argon		0.017 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.02 ±	0.002
Methane		0.0012 ±	0.0004
Nitrogen		60.4 ±	0.4
Oxygen		0.284 ±	0.003
Nitrous oxide		39.3 ±	0.4
Other nitrogen oxides		0.001 ±	0.0004
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 9, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 72
 Measurement and test equipment WC38625

Sample Id.	93-022		
Analysis Date	July 8, 1993	Mole	Estimate
Log-in No.	93-08770	Percent	of Precision
Argon		0.0099 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.96 ±	0.009
Methane		0.0018 ±	0.0004
Nitrogen		57.6 ±	0.4
Oxygen		0.134 ±	0.002
Nitrous oxide		41.3 ±	0.4
Other nitrogen oxides		0.01 ±	0.001
Comments			

Sample Id.	93-023		
Analysis Date	July 8, 1993	Mole	Estimate
Log-in No.	93-08771	Percent	of Precision
Argon		0.012 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.024 ±	0.004
Methane		0.0018 ±	0.0004
Nitrogen		58.8 ±	0.4
Oxygen		0.18 ±	0.002
Nitrous oxide		40.9 ±	0.4
Other nitrogen oxides		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 9, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 72
 Measurement and test equipment WC38625

Sample Id.	93-024		
Analysis Date	July 8, 1993	Mole	Estimate
Log-in No.	93-08772	Percent	of Precision
Argon		0.011 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.957 ±	0.009
Methane		0.0018 ±	0.0004
Nitrogen		57.5 ±	0.4
Oxygen		0.159 ±	0.002
Nitrous oxide		41.4 ±	0.4
Other nitrogen oxides		<0.001 ±	
Comments

Battelle

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

July 13, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 7-12-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

Milton W Goheen
Atomic and Molecular Spectroscopy

Concurrence

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 13, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 74
 Measurement and test equipment WC38625

Sample Id.	93-025		Estimate
Analysis Date	July 13, 1993	Mole	of
Log-in No.	93-08821	Percent	Precision
Argon		0.029 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.023 ±	0.002
Methane		<0.001 ±	
Nitrogen		99.4 ±	0.01
Oxygen		0.525 ±	0.008
Nitrous oxide		0.025 ±	0.002
Other nitrogen oxides		<0.005 ±	
Comments			

Sample Id.	93-026		Estimate
Analysis Date	July 13, 1993	Mole	of
Log-in No.	93-08822	Percent	Precision
Argon		0.018 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.912 ±	0.01
Methane		<0.001 ±	
Nitrogen		98.32 ±	0.01
Oxygen		0.744 ±	0.009
Nitrous oxide		0.006 ±	0.001
Other nitrogen oxides		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 13, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 74
 Measurement and test equipment WC38625

Sample Id.	93-027		
Analysis Date	July 13, 1993	Mole	Estimate
Log-in No.	93-08823	Percent	of Precision
Argon		0.017 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.0143 ±	0.0005
Methane		0.029 ±	0.01
Nitrogen		59.93 ±	0.4
Oxygen		0.334 ±	0.005
Nitrous oxide		39.6 ±	0.4
Other nitrogen oxides		<0.005 ±	
Comments			

Sample Id.	93-028		
Analysis Date	July 13, 1993	Mole	Estimate
Log-in No.	93-08824	Percent	of Precision
Argon		0.026 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.926 ±	0.01
Methane		0.091 ±	0.001
Nitrogen		58.17 ±	0.4
Oxygen		0.052 ±	0.006
Nitrous oxide		40.27 ±	0.4
Other nitrogen oxides		<0.005 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 13, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 74
 Measurement and test equipment WC38625

Sample Id.	93-029		Estimate
Analysis Date	July 13, 1993	Mole	of
Log-in No.	93-08825	Percent	Precision
Argon		0.031 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.0157 ±	0.006
Methane		<0.001 ±	
Nitrogen		90.98 ±	0.1
Oxygen		0.584 ±	0.006
Nitrous oxide		8.39 ±	0.09
Other nitrogen oxides		<0.005 ±	
Comments			

Sample Id.	93-030		Estimate
Analysis Date	July 13, 1993	Mole	of
Log-in No.	93-08826	Percent	Precision
Argon		0.015 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.913 ±	0.01
Methane		<0.001 ±	
Nitrogen		89.5 ±	0.1
Oxygen		0.208 ±	0.004
Nitrous oxide		9.37 ±	0.1
Other nitrogen oxides		<0.001 ±	
Comments

Battelle

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509)

376-3358 .

July 16, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 7-14-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

Milton W Goheen
Atomic and Molecular Spectroscopy

Concurrence

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 16, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 75
 Measurement and test equipment WC38625

Sample Id.	93-031		
Analysis Date	July 15, 1993	Mole	Estimate
Log-in No.	93-08925	Percent	of Precision
Argon		0.039 ±	0.004
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.028 ±	0.002
Methane		<0.001 ±	
Nitrogen		99.14 ±	0.07
Oxygen		0.702 ±	0.07
Nitrous oxide		0.094 ±	0.002
Other nitrogen oxides		0.0012 ±	0.0008
Comments			

Sample Id.	93-032		
Analysis Date	July 15, 1993	Mole	Estimate
Log-in No.	93-08926	Percent	of Precision
Argon		0.012 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.0237 ±	0.002
Methane		<0.001 ±	
Nitrogen		99.6 ±	0.005
Oxygen		0.119 ±	0.002
Nitrous oxide		0.242 ±	0.004
Other nitrogen oxides		0.001 ±	0.0008
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 16, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 75
 Measurement and test equipment WC38625

Sample Id.	93-033		
Analysis Date	July 15, 1993	Mole	Estimate
Log-in No.	93-08927	Percent	of
			Precision
Argon		0.014 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.924 ±	0.01
Methane		<0.001 ±	
Nitrogen		97.97 ±	0.02
Oxygen		0.166 ±	0.004
Nitrous oxide		0.93 ±	0.01
Other nitrogen oxides		<0.001 ±	
Comments			

Sample Id.	93-034		
Analysis Date	July 15, 1993	Mole	Estimate
Log-in No.	93-08928	Percent	of
			Precision
Argon		0.013 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.049 ±	0.002
Methane		0.0014 ±	0.0008
Nitrogen		59.5 ±	0.4
Oxygen		0.211 ±	0.004
Nitrous oxide		40.27 ±	0.4
Other nitrogen oxides		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 16, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 75
 Measurement and test equipment WC38625

Sample Id.	93-035		Estimate
Analysis Date	July 15, 1993	Mole	of
Log-in No.	93-08929	Percent	Precision
Argon		0.015 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.07 ±	0.003
Methane		0.001 ±	0.0008
Nitrogen		59.5 ±	0.4
Oxygen		0.253 ±	0.006
Nitrous oxide		40.1 ±	0.4
Other nitrogen oxides		<0.001 ±	
Comments			

Sample Id.	93-036		Estimate
Analysis Date	July 15, 1993	Mole	of
Log-in No.	93-08930	Percent	Precision
Argon		0.011 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.94 ±	0.01
Methane		0.0007 ±	0.0005
Nitrogen		58.1 ±	0.4
Oxygen		0.162 ±	0.004
Nitrous oxide		40.8 ±	0.4
Other nitrogen oxides		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 16, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 75
 Measurement and test equipment WC38625

Sample Id.	93-037		Estimate
Analysis Date	July 15, 1993	Mole	of
Log-in No.	93-08931	Percent	Precision
Argon		0.021 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.027 ±	0.001
Methane		0.0012 ±	0.0008
Nitrogen		59.3 ±	0.4
Oxygen		0.387 ±	0.008
Nitrous oxide		40.2 ±	0.4
Other nitrogen oxides		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 16, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 75
 Measurement and test equipment WC38625

Sample Id.	93-038		
Analysis Date	July 15, 1993	Mole	Estimate
Log-in No.	93-08932	Percent	of Precision
Argon		0.012 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.03 ±	0.001
Methane		<0.001 ±	
Nitrogen		58.64 ±	0.4
Oxygen		0.199 ±	0.004
Nitrous oxide		40.5 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		0.6	
Comments	NH3 estimated		

Sample Id.	93-039		
Analysis Date	July 15, 1993	Mole	Estimate
Log-in No.	93-08933	Percent	of Precision
Argon		0.025 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.92 ±	0.01
Methane		<0.001 ±	
Nitrogen		57.32 ±	0.4
Oxygen		0.474 ±	0.009
Nitrous oxide		40.5 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		0.8	
Comments	NH3 estimated

Battelle

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

July 21, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 7-20-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

Milton W Gohsen

Atomic and Molecular Spectroscopy

Concurrence

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 21, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 76
 Measurement and test equipment WC38625

Sample Id.	93-040		Estimate
Analysis Date	July 21, 1993	Mole	of
Log-in No.	93-09260	Percent	Precision
Argon		0.028 ±	0.002
Carbon dioxide		0.019 ±	0.005
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.313 ±	0.006
Methane		<0.001 ±	
Nitrogen		99.04 ±	0.01
Oxygen		0.545 ±	0.008
Nitrous oxide		0.055 ±	0.005
Other nitrogen oxides		<0.001 ±	
Ammonia			
Comments			

Sample Id.	93-041		Estimate
Analysis Date	July 21, 1993	Mole	of
Log-in No.	93-09261	Percent	Precision
Argon		0.025 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.96 ±	0.01
Methane		<0.001 ±	
Nitrogen		98.01 ±	0.01
Oxygen		0.831 ±	0.008
Nitrous oxide		0.181 ±	0.004
Other nitrogen oxides		0.0016 ±	0.0008
Ammonia			
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 21, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 76
 Measurement and test equipment WC38625

Sample Id.	93-042		
Analysis Date	July 21, 1993	Mole	Estimate
Log-in No.	93-09262	Percent	of Precision
Argon		0.0074 ±	0.0007
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.1 ±	0.002
Methane		0.101 ±	0.005
Nitrogen		62.8 ±	0.4
Oxygen		0.059 ±	0.003
Nitrous oxide		36.9 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia			
Comments			

Sample Id.	93-043		
Analysis Date	July 21, 1993	Mole	Estimate
Log-in No.	93-09263	Percent	of Precision
Argon		0.013 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.103 ±	0.002
Methane		0.1 ±	0.005
Nitrogen		62.8 ±	0.4
Oxygen		0.202 ±	0.004
Nitrous oxide		36.8 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia			
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 21, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 76
 Measurement and test equipment WC38625

Sample Id.	03-044		Estimate
Analysis Date	July 21, 1993	Mole	of
Log-in No.	93-09264	Percent	Precision
Argon		0.0095 ±	0.0005
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		1.04 ±	0.1
Methane		0.1 ±	0.005
Nitrogen		61.1 ±	0.4
Oxygen		0.099 ±	0.005
Nitrous oxide		37.6 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia			
Comments			

Sample Id.	93-045		Estimate
Analysis Date	July 21, 1993	Mole	of
Log-in No.	93-09265	Percent	Precision
Argon		0.022 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.094 ±	0.002
Methane		<0.001 ±	
Nitrogen		91.59 ±	0.08
Oxygen		0.315 ±	0.006
Nitrous oxide		7.98 ±	0.08
Other nitrogen oxides		<0.001 ±	
Ammonia			
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 21, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 76
 Measurement and test equipment WC38625

Sample Id.	93-046		
Analysis Date	July 21, 1993	Mole	Estimate
Log-in No.	93-09266	Percent	of Precision
Argon		0.017 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.096 ±	0.002
Methane		<0.001 ±	
Nitrogen		91.56 ±	0.08
Oxygen		0.196 ±	0.004
Nitrous oxide		8.13 ±	0.08
Other nitrogen oxides		<0.001 ±	
Ammonia			
Comments			

Sample Id.	93-047		
Analysis Date	July 21, 1993	Mole	Estimate
Log-in No.	93-09267	Percent	of Precision
Argon		0.021 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.985 ±	0.01
Methane		<0.001 ±	
Nitrogen		89.81 ±	0.01
Oxygen		0.302 ±	0.006
Nitrous oxide		8.88 ±	0.009
Other nitrogen oxides		<0.001 ±	
Ammonia			
Comments

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

July 23, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 7-22-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

Milton W. Goheen
Atomic and Molecular Spectroscopy

Concurrence
7-23-93

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 23, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 77
 Measurement and test equipment WC38625

Sample Id.	93-049		
Analysis Date	July 22, 1993	Mole	Estimate
Log-in No.	93-09350	Percent	of Precision
Argon		0.007 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		1.44 ±	0.02
Methane		<0.001 ±	
Nitrogen		66.6 ±	0.3
Oxygen		0.045 ±	0.004
Nitrous oxide		31.9 ±	0.3
Other nitrogen oxides		<0.01 ±	
Comments			

Sample Id.	93-050		
Analysis Date	July 22, 1993	Mole	Estimate
Log-in No.	93-09351	Percent	of Precision
Argon		0.015 ±	0.002
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		1.45 ±	0.02
Methane		<0.001 ±	
Nitrogen		64.5 ±	0.3
Oxygen		0.214 ±	0.004
Nitrous oxide		33.8 ±	0.3
Other nitrogen oxides		<0.01 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 23, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 77
 Measurement and test equipment WC38625

Sample Id.	93-051		
Analysis Date	July 22, 1993	Mole	Estimate
Log-in No.	93-09352	Percent	of Precision
Argon		0.007 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		1.55 ±	0.02
Methane		<0.001 ±	
Nitrogen		63.1 ±	0.3
Oxygen		0.04 ±	0.004
Nitrous oxide		35.3 ±	0.3
Other nitrogen oxides		<0.01 ±	
Comments			

Sample Id.	93-052		
Analysis Date	July 22, 1993	Mole	Estimate
Log-in No.	93-09353	Percent	of Precision
Argon		0.009 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.351 ±	0.007
Methane		<0.001 ±	
Nitrogen		99.47 ±	0.01
Oxygen		0.143 ±	0.003
Nitrous oxide		0.022 ±	0.004
Other nitrogen oxides		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 23, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 77
 Measurement and test equipment WC38625

Sample Id.	93-053		
Analysis Date	July 22, 1993	Mole	Estimate
Log-in No.	93-09354	Percent	of Precision
Argon		0.01 ±	0.001
Carbon dioxide		0.0012 ±	0.0005
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.335 ±	0.007
Methane		<0.001 ±	
Nitrogen		99.51 ±	0.01
Oxygen		0.108 ±	0.002
Nitrous oxide		0.031 ±	0.004
Other nitrogen oxides		<0.001 ±	
Comments			

Sample Id.	93-054		
Analysis Date	July 22, 1993	Mole	Estimate
Log-in No.	93-09355	Percent	of Precision
Argon		0.014 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.345 ±	0.007
Methane		<0.001 ±	
Nitrogen		99.4 ±	0.01
Oxygen		0.202 ±	0.003
Nitrous oxide		0.04 ±	0.004
Other nitrogen oxides		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 23, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 77
 Measurement and test equipment WC38625

Sample Id.	93-055		Estimate
Analysis Date	July 22, 1993	Mole	of
Log-in No.	93-09356	Percent	Precision
Argon	0.015	±	0.001
Carbon dioxide	<0.001	±	
Carbon monoxide	<0.001	±	
Helium	<0.001	±	
Hydrogen	1.05	±	0.01
Methane	<0.001	±	
Nitrogen	98.37	±	0.01
Oxygen	0.564	±	0.007
Nitrous oxide	0.003	±	0.001
Other nitrogen oxides	<0.001	±	
Comments			

Sample Id.	93-056		Estimate
Analysis Date	July 22, 1993	Mole	of
Log-in No.	93-09357	Percent	Precision
Argon	0.01	±	0.002
Carbon dioxide	<0.001	±	
Carbon monoxide	<0.001	±	
Helium	<0.001	±	
Hydrogen	0.152	±	0.003
Methane	0.089	±	0.009
Nitrogen	59.9	±	0.3
Oxygen	0.101	±	0.003
Nitrous oxide	39.7	±	0.3
Other nitrogen oxides	<0.001	±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 23, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 77
 Measurement and test equipment WC38625

Sample Id.	93-057		
Analysis Date	July 22, 1993	Mole	Estimate
Log-in No.	93-09358	Percent	of Precision
Argon		0.012 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.109 ±	0.003
Methane		0.092 ±	0.009
Nitrogen		59.4 ±	0.3
Oxygen		0.158 ±	0.003
Nitrous oxide		40.2 ±	0.3
Other nitrogen oxides		<0.001 ±	
Comments			

Sample Id.	93-058		
Analysis Date	July 22, 1993	Mole	Estimate
Log-in No.	93-09359	Percent	of Precision
Argon		0.009 ±	0.001
Carbon dioxide		<0.001 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.937 ±	0.009
Methane		0.093 ±	0.002
Nitrogen		57.8 ±	0.3
Oxygen		0.109 ±	0.002
Nitrous oxide		41 ±	0.3
Other nitrogen oxides		<0.001 ±	
Comments

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

July 27, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 7-26-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

Milton W Goheen
Atomic and Molecular Spectroscopy

Concurrence

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 79
 Measurement and test equipment WC38625

Sample Id.	93-059		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09466	Percent	of Precision
Argon		0.009 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.232 ±	0.004
Methane		0.004 ±	0.002
Nitrogen		61.5 ±	0.4
Oxygen		0.114 ±	0.004
Nitrous oxide		38.1 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-060		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09467	Percent	of Precision
Argon		0.019 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.312 ±	0.006
Methane		0.015 ±	0.005
Nitrogen		61.4 ±	0.4
Oxygen		0.354 ±	0.006
Nitrous oxide		37.9 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments	NH3 present		

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 79
 Measurement and test equipment WC38625

Sample Id.	93-061		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09468	Percent	of Precision
Argon		0.45 ±	0.009
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.02 ±	0.01
Methane		0.013 ±	0.005
Nitrogen		60.2 ±	0.4
Oxygen		0.41 ±	0.008
Nitrous oxide		37.9 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-062		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09469	Percent	of Precision
Argon		0.032 ±	0.003
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.096 ±	0.001
Methane		<0.001 ±	
Nitrogen		91.37 ±	0.08
Oxygen		0.475 ±	0.008
Nitrous oxide		8.02 ±	0.08
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 79
 Measurement and test equipment WC38625

Sample Id.	93-063		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09470	Percent	of Precision
Argon		0.029 ±	0.003
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.085 ±	0.004
Methane		<0.001 ±	
Nitrogen		90.84 ±	0.09
Oxygen		0.493 ±	0.009
Nitrous oxide		8.56 ±	0.09
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-064		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09471	Percent	of Precision
Argon		0.025 ±	0.003
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.896 ±	0.009
Methane		<0.001 ±	
Nitrogen		89.06 ±	0.09
Oxygen		0.42 ±	0.008
Nitrous oxide		9.6 ±	0.09
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 79
 Measurement and test equipment WC38625

Sample Id.	93-065		Estimate
Analysis Date	July 27, 1993	Mole	of
Log-in No.	93-09472	Percent	Precision
Argon		0.029 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.133 ±	0.003
Methane		<0.001 ±	
Nitrogen		62.4 ±	0.4
Oxygen		0.519 ±	0.009
Nitrous oxide		36.9 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-066		Estimate
Analysis Date	July 27, 1993	Mole	of
Log-in No.	93-09473	Percent	Precision
Argon		0.006 ±	0.001
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.129 ±	0.003
Methane		<0.001 ±	
Nitrogen		61.5 ±	0.4
Oxygen		0.017 ±	0.002
Nitrous oxide		38.4 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 79
 Measurement and test equipment WC38625

Sample Id.	93-067		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09474	Percent	of Precision
Argon		0.018 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.03 ±	0.01
Methane		<0.001 ±	
Nitrogen		60.7 ±	0.4
Oxygen		0.288 ±	0.006
Nitrous oxide		37.9 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-068		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09475	Percent	of Precision
Argon		0.008 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.399 ±	0.008
Methane		<0.001 ±	
Nitrogen		99.18 ±	0.01
Oxygen		<0.001 ±	
Nitrous oxide		0.408 ±	0.008
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 79
 Measurement and test equipment WC38625

Sample Id.	93-069		Estimate
Analysis Date	July 27, 1993	Mole	of
Log-in No.	93-09476	Percent	Precision
Argon		0.008 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.407 ±	0.008
Methane		<0.001 ±	
Nitrogen		99.17 ±	0.01
Oxygen		<0.001 ±	
Nitrous oxide		0.417 ±	0.008
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-070		Estimate
Analysis Date	July 27, 1993	Mole	of
Log-in No.	93-09477	Percent	Precision
Argon		0.008 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.01 ±	0.01
Methane		<0.001 ±	
Nitrogen		97.96 ±	0.01
Oxygen		<0.001 ±	
Nitrous oxide		1.02 ±	0.01
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments

Battelle

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

July 28, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 7-27-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

M. W. Goheen
Milton W Goheen

Atomic and Molecular Spectroscopy

Stan Bort 7-28-93
Concurrence

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 80
 Measurement and test equipment WC38625

Sample Id.	93-071		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09671	Percent	of Precision
Argon		0.019 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.096 ±	0.004
Methane		<0.001 ±	
Nitrogen		90.78 ±	0.09
Oxygen		0.215 ±	0.004
Nitrous oxide		8.88 ±	0.09
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-072		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09672	Percent	of Precision
Argon		0.011 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.093 ±	0.004
Methane		<0.001 ±	
Nitrogen		90.71 ±	0.09
Oxygen		0.084 ±	0.005
Nitrous oxide		9.1 ±	0.09
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 80
 Measurement and test equipment WC38625

Sample Id.	93-073		Estimate
Analysis Date	July 27, 1993	Mole	of
Log-in No.	93-09673	Percent	Precision
Argon		0.027 ±	0.003
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.899 ±	0.009
Methane		<0.001 ±	
Nitrogen		88.94 ±	0.09
Oxygen		0.435 ±	0.008
Nitrous oxide		9.7 ±	0.09
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-074		Estimate
Analysis Date	July 27, 1993	Mole	of
Log-in No.	93-09674	Percent	Precision
Argon		0.01 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.125 ±	0.005
Methane		0.0021 ±	0.0002
Nitrogen		61.1 ±	0.4
Oxygen		0.091 ±	0.009
Nitrous oxide		38.6 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 80
 Measurement and test equipment WC38625

Sample Id.	93-075		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09675	Percent	of Precision
Argon		0.01 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.126 ±	0.005
Methane		<0.001 ±	
Nitrogen		60.71 ±	0.4
Oxygen		0.079 ±	0.008
Nitrous oxide		39.1 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-076		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09676	Percent	of Precision
Argon		0.011 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.07 ±	0.01
Methane		<0.001 ±	
Nitrogen		59.3 ±	0.4
Oxygen		0.098 ±	0.009
Nitrous oxide		39.5 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 80
 Measurement and test equipment WC38625

Sample Id.	93-077		Estimate
Analysis Date	July 27, 1993	Mole	of
Log-in No.	93-09677	Percent	Precision
Argon	0.012	±	0.002
Carbon dioxide	<0.01	±	
Carbon monoxide	<0.01	±	
Helium	<0.001	±	
Hydrogen	0.143	±	0.005
Methane	<0.001	±	
Nitrogen	61.1	±	0.4
Oxygen	0.12	±	0.009
Nitrous oxide	38.6	±	0.4
Other nitrogen oxides	<0.001	±	
Ammonia	<0.001	±	
Comments			

Sample Id.	93-078		Estimate
Analysis Date	July 27, 1993	Mole	of
Log-in No.	93-09678	Percent	Precision
Argon	0.009	±	0.002
Carbon dioxide	<0.01	±	
Carbon monoxide	<0.01	±	
Helium	<0.001	±	
Hydrogen	0.139	±	0.003
Methane	0.004	±	0.002
Nitrogen	61.1	±	0.4
Oxygen	0.064	±	0.006
Nitrous oxide	38.7	±	0.4
Other nitrogen oxides	<0.001	±	
Ammonia	<0.001	±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 27, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 80
 Measurement and test equipment WC38625

Sample Id.	93-079		
Analysis Date	July 27, 1993	Mole	Estimate
Log-in No.	93-09679	Percent	of Precision
Argon		0.01 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.06 ±	0.01
Methane		<0.001 ±	
Nitrogen		59.2 ±	0.4
Oxygen		0.092 ±	0.009
Nitrous oxide		39.6 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

July 29, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 7-28-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

A handwritten signature in cursive script, appearing to read "M. W. Goheen".

Milton W Goheen

Atomic and Molecular Spectroscopy

A handwritten signature in cursive script, appearing to read "S. J. Bea".

Concurrence

7-29-93

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 28, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 80
 Measurement and test equipment WC38625

Sample Id.	93-080		
Analysis Date	July 28, 1993	Mole	Estimate
Log-in No.	93-09759	Percent	of Precision
Argon		0.013 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.137 ±	0.003
Methane		0.001 ±	0.0005
Nitrogen		60.7 ±	0.4
Oxygen		0.136 ±	0.003
Nitrous oxide		39 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-081		
Analysis Date	July 28, 1993	Mole	Estimate
Log-in No.	93-09760	Percent	of Precision
Argon		0.011 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.301 ±	0.008
Methane		<0.001 ±	
Nitrogen		99.257 ±	0.01
Oxygen		0.008 ±	0.002
Nitrous oxide		0.422 ±	0.008
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 29, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 80
 Measurement and test equipment WC38625

Sample Id.	93-082		
Analysis Date	July 28, 1993	Mole	Estimate
Log-in No.	93-09761	Percent	of Precision
Argon		0.009 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.419 ±	0.008
Methane		<0.001 ±	
Nitrogen		99.14 ±	0.01
Oxygen		0.007 ±	0.002
Nitrous oxide		0.429 ±	0.008
Other nitrogen oxides		0.001 ±	0.0005
Ethane		<0.001 ±	
Comments			

Sample Id.	93-083		
Analysis Date	July 28, 1993	Mole	Estimate
Log-in No.	93-09762	Percent	of Precision
Argon		0.008 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.02 ±	0.02
Methane		<0.001 ±	
Nitrogen		97.93 ±	0.02
Oxygen		0.005 ±	0.002
Nitrous oxide		1.03 ±	0.02
Other nitrogen oxides		0.005 ±	0.002
Ethane		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 28, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 80
 Measurement and test equipment WC38625

Sample Id.	93-084		
Analysis Date	July 28, 1993	Mole	Estimate
Log-in No.	93-09763	Percent	of Precision
Argon		0.009 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.324 ±	0.009
Methane		<0.001 ±	
Nitrogen		99.52 ±	0.01
Oxygen		0.147 ±	0.004
Nitrous oxide		0.003 ±	0.002
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Sample Id.	93-085		
Analysis Date	July 28, 1993	Mole	Estimate
Log-in No.	93-09764	Percent	of Precision
Argon		0.008 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.311 ±	0.009
Methane		<0.001 ±	
Nitrogen		99.55 ±	0.01
Oxygen		0.127 ±	0.003
Nitrous oxide		0.004 ±	0.002
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 29, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 80
 Measurement and test equipment WC38625

Sample Id.	93-086		
Analysis Date	July 28, 1993	Mole	Estimate
Log-in No.	93-09765	Percent	of Precision
Argon		0.009 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.03 ±	0.02
Methane		<0.001 ±	
Nitrogen		98.472 ±	0.02
Oxygen		0.486 ±	0.009
Nitrous oxide		<0.001 ±	
Other nitrogen oxides		0.004 ±	0.003
Ethane		<0.001 ±	
Comments			

Sample Id.	93-087		
Analysis Date	July 28, 1993	Mole	Estimate
Log-in No.	93-09766	Percent	of Precision
Argon		0.006 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		0.12 ±	0.02
Helium		<0.001 ±	
Hydrogen		0.97 ±	0.02
Methane		0.002 ±	0.001
Nitrogen		62.9 ±	0.4
Oxygen		0.005 ±	0.002
Nitrous oxide		36.1 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ethane		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 28, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 80
 Measurement and test equipment WC38625

Sample Id.	93-088		
Analysis Date	July 28, 1993	Mole	Estimate
Log-in No.	93-09767	Percent	of Precision
Argon		0.006 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		0.11 ±	0.02
Helium		<0.001 ±	
Hydrogen		1.04 ±	0.02
Methane		<0.001 ±	
Nitrogen		62.8 ±	0.4
Oxygen		0.026 ±	0.002
Nitrous oxide		36.1 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia		<0.001 ±	
Comments

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

August 3, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 7-29-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

Milton W. Goheen
Milton W. Goheen
Atomic and Molecular Spectroscopy

S. J. Doe 8-3-93
Concurrence

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 30, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 81
 Measurement and test equipment WC38625

Sample Id.	93-089		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09785	Percent	of Precision
Argon		0.008 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.197 ±	0.004
Methane		<0.001 ±	
Nitrogen		99.66 ±	0.01
Oxygen		0.113 ±	0.003
Nitrous oxide		0.016 ±	0.002
Other nitrogen oxides		<0.001 ±	
Ethane		<0.001 ±	
Comments			

Sample Id.	93-090		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09786	Percent	of Precision
Argon		0.013 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.203 ±	0.004
Methane		<0.001 ±	
Nitrogen		99.14 ±	0.01
Oxygen		0.234 ±	0.005
Nitrous oxide		0.409 ±	0.008
Other nitrogen oxides		<0.001 ±	
Ethane		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 30, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 81
 Measurement and test equipment WC38625

Sample Id.	93-091		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09787	Percent	of Precision
Argon		0.114 ±	0.003
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.871 ±	0.01
Methane		<0.001 ±	
Nitrogen		96.3 ±	0.03
Oxygen		2.7 ±	0.03
Nitrous oxide		0.012 ±	0.002
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.001 ±	
Comments			

Sample Id.	93-092		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09788	Percent	of Precision
Argon		0.009 ±	0.002
Carbon dioxide		0.09 ±	0.01
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.074 ±	0.003
Methane		<0.001 ±	
Nitrogen		80.8 ±	0.2
Oxygen		0.006 ±	0.002
Nitrous oxide		19.1 ±	0.2
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 30, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 81
 Measurement and test equipment WC38625

Sample Id.	93-093		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09789	Percent	of Precision
Argon		0.028	± 0.003
Carbon dioxide		0.144	± 0.003
Carbon monoxide		<0.001	±
Helium		<0.001	±
Hydrogen		0.145	± 0.002
Methane		0.003	± 0.001
Nitrogen		80	± 0.2
Oxygen		0.501	± 0.005
Nitrous oxide		19.2	± 0.2
Other nitrogen oxides		<0.001	±
Ammonia (estimated)		<0.001	±
Comments			

Sample Id.	93-094		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09790	Percent	of Precision
Argon		0.011	± 0.002
Carbon dioxide		<0.001	±
Carbon monoxide		0.18	± 0.05
Helium		<0.001	±
Hydrogen		1.41	± 0.02
Methane		<0.001	±
Nitrogen		77.2	± 0.3
Oxygen		0.107	± 0.003
Nitrous oxide		21	± 0.3
Other nitrogen oxides		<0.001	±
Ammonia (estimated)		<0.001	±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 30, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 81
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Sample Id.	93-095		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09791	Percent	of Precision
Argon		0.008 ±	0.003
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.151 ±	0.004
Methane		<0.001 ±	
Nitrogen		60 ±	0.4
Oxygen		0.062 ±	0.006
Nitrous oxide		39.7 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments	NH3 present		

Sample Id.	93-096		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09792	Percent	of Precision
Argon		0.023 ±	0.003
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.154 ±	0.003
Methane		0.016 ±	0.004
Nitrogen		59.4 ±	0.4
Oxygen		0.418 ±	0.008
Nitrous oxide		40 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments	NH3 present		

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 30, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 81
 Measurement and test equipment WC38625

Sample Id.	93-097		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09793	Percent	of Precision
Argon		0.008	± 0.002
Carbon dioxide		<0.01	±
Carbon monoxide		<0.01	±
Helium		<0.001	±
Hydrogen		0.937	± 0.009
Methane		<0.001	±
Nitrogen		57.3	± 0.4
Oxygen		0.075	± 0.005
Nitrous oxide		40.9	± 0.4
Other nitrogen oxides		<0.001	±
Ammonia (estimated)		0.81	± 0.08
Comments			

Sample Id.	93-098		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09794	Percent	of Precision
Argon		0.009	± 0.002
Carbon dioxide		<0.01	±
Carbon monoxide		<0.01	±
Helium		<0.001	±
Hydrogen		0.119	± 0.003
Methane		<0.001	±
Nitrogen		63.5	± 0.4
Oxygen		0.059	± 0.002
Nitrous oxide		36.3	± 0.4
Other nitrogen oxides		<0.001	±
Ammonia (estimated)		<0.01	±
Comments	NH3 present		

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 30, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 81
 Measurement and test equipment WC38625

Sample Id.	93-099		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09795	Percent	of Precision
Argon		0.013 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.105 ±	0.003
Methane		0.002 ±	0.001
Nitrogen		63.9 ±	0.4
Oxygen		0.157 ±	0.004
Nitrous oxide		35.8 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments	NH3 present		

Sample Id.	93-100		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09796	Percent	of Precision
Argon		0.009 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.04 ±	0.03
Methane		0.002 ±	0.001
Nitrogen		62.2 ±	0.4
Oxygen		0.071 ±	0.005
Nitrous oxide		36.7 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 30, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 81
 Measurement and test equipment WC38625

Sample Id.	93-101		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09797	Percent	of Precision
Argon		0.022 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.19 ±	0.004
Methane		0.002 ±	0.001
Nitrogen		60.3 ±	0.4
Oxygen		0.304 ±	0.006
Nitrous oxide		39.2 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.001 ±	
Comments			

Sample Id.	93-102		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09798	Percent	of Precision
Argon		0.01 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.107 ±	0.003
Methane		0.002 ±	0.001
Nitrogen		59.6 ±	0.4
Oxygen		0.098 ±	0.003
Nitrous oxide		40.1 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.001 ±	
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 30, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 81
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Sample Id.	93-103		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09799	Percent	of Precision
Argon		0.024	± 0.003
Carbon dioxide		<0.01	±
Carbon monoxide		<0.01	±
Helium		<0.001	±
Hydrogen		0.911	± 0.02
Methane		0.004	± 0.002
Nitrogen		58.7	± 0.4
Oxygen		0.438	± 0.008
Nitrous oxide		40	± 0.4
Other nitrogen oxides		<0.001	±
Ammonia (estimated)			±
Comments			

Sample Id.	93-104		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09800	Percent	of Precision
Argon		0.054	± 0.003
Carbon dioxide		<0.01	±
Carbon monoxide		<0.01	±
Helium		<0.001	±
Hydrogen		0.183	± 0.004
Methane		<0.001	±
Nitrogen		63.9	± 0.4
Oxygen		1.02	± 0.01
Nitrous oxide		34	± 0.4
Other nitrogen oxides		<0.001	±
Ammonia (estimated)		0.83	± 0.08
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: July 30, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 81
 Measurement and test equipment WC38625

Sample Id.	93-105		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09801	Percent	of Precision
Argon		0.011	± 0.002
Carbon dioxide		<0.01	±
Carbon monoxide		<0.01	±
Helium		<0.001	±
Hydrogen		0.201	± 0.004
Methane		<0.001	±
Nitrogen		62.8	± 0.4
Oxygen		0.129	± 0.003
Nitrous oxide		35.8	± 0.4
Other nitrogen oxides		<0.001	±
Ammonia (estimated)		1.07	± 0.1
Comments			

Sample Id.	93-106		
Analysis Date	July 29, 1993	Mole	Estimate
Log-in No.	93-09802	Percent	of Precision
Argon		0.01	± 0.002
Carbon dioxide		<0.01	±
Carbon monoxide		<0.01	±
Helium		<0.001	±
Hydrogen		1.06	± 0.01
Methane		<0.001	±
Nitrogen		61.8	± 0.4
Oxygen		0.123	± 0.003
Nitrous oxide		36.1	± 0.4
Other nitrogen oxides		<0.001	±
Ammonia (estimated)		0.91	± 0.09
Comments

Battelle

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509)

376-3358

August 6, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 7-30-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

This is a second sample report. The sample log-in numbers on the first report were incorrect.

Sincerely,

Milton W Goheen
Atomic and Molecular Spectroscopy

Concurrence

8-6-93

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 6, 1993
 Subject: Gas Species Analysis
 Corrected Copy

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 83
 Measurement and test equipment WC38625

Sample Id.	93-107		
Analysis Date	August 2, 1993	Mole	Estimate
Log-in No.	93-09853	Percent	of Precision
Argon		0.032 ±	0.003
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.114 ±	0.002
Methane		<0.001 ±	
Nitrogen		90.96 ±	0.08
Oxygen		0.486 ±	0.009
Nitrous oxide		8.41 ±	0.08
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Sample Id.	93-108		
Analysis Date	August 2, 1993	Mole	Estimate
Log-in No.	93-09854	Percent	of Precision
Argon		0.009 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.114 ±	0.003
Methane		<0.001 ±	
Nitrogen		91.37 ±	0.08
Oxygen		0.0004 ±	0.0002
Nitrous oxide		8.51 ±	0.08
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 6, 1993
 Subject: Gas Species Analysis
 Corrected Copy

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 83
 Measurement and test equipment WC38625

Sample Id.	93-109		Estimate
Analysis Date	August 2, 1993	Mole	of
Log-in No.	93-09855	Percent	Precision
Argon		0.052 ±	0.005
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.97 ±	0.02
Methane		<0.001 ±	
Nitrogen		89.2 ±	0.1
Oxygen		0.408 ±	0.008
Nitrous oxide		9.4 ±	0.1
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Sample Id.	93-110		Estimate
Analysis Date	August 2, 1993	Mole	of
Log-in No.	93-09856	Percent	Precision
Argon		0.015 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.093 ±	0.002
Methane		<0.001 ±	
Nitrogen		99.04 ±	0.01
Oxygen		0.088 ±	0.008
Nitrous oxide		0.763 ±	0.008
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 6, 1993
 Subject: Gas Species Analysis
 Corrected Copy

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 83
 Measurement and test equipment WC38625

Sample Id.	93-111		
Analysis Date	August 2, 1993	Mole	Estimate
Log-in No.	93-09857	Percent	of Precision
Argon		0.085 ±	0.003
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.17 ±	0.004
Methane		<0.01 ±	
Nitrogen		97.74 ±	0.02
Oxygen		1.74 ±	0.02
Nitrous oxide		0.269 ±	0.005
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Sample Id.	93-112		
Analysis Date	August 2, 1993	Mole	Estimate
Log-in No.	93-09858	Percent	of Precision
Argon		0.014 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.9 ±	0.02
Methane		<0.01 ±	
Nitrogen		97.51 ±	0.04
Oxygen		0.151 ±	0.003
Nitrous oxide		1.42 ±	0.03
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 6, 1993
 Subject: Gas Species Analysis
 Corrected Copy

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 83
 Measurement and test equipment WC38625

Sample Id.	93-113		Estimate
Analysis Date	August 2, 1993	Mole	of
Log-in No.	93-09859	Percent	Precision
Argon		0.005 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.124 ±	0.003
Methane		0.099 ±	0.003
Nitrogen		63 ±	0.4
Oxygen		0.0013 ±	0.0006
Nitrous oxide		36.8 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Sample Id.	93-114		Estimate
Analysis Date	August 2, 1993	Mole	of
Log-in No.	93-09860	Percent	Precision
Argon		0.012 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.121 ±	0.003
Methane		0.097 ±	0.003
Nitrogen		63.5 ±	0.4
Oxygen		0.151 ±	0.003
Nitrous oxide		36.1 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 6, 1993
 Subject: Gas Species Analysis
 Corrected Copy

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 83
 Measurement and test equipment WC38625

Sample Id.	93-115		Estimate
Analysis Date	August 2, 1993	Mole	of
Log-in No.	93-09861	Percent	Precision
Argon		0.005 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.04 ±	0.02
Methane		0.098 ±	0.003
Nitrogen		61.5 ±	0.4
Oxygen		0.002 ±	0.001
Nitrous oxide		37.3 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Sample Id.	93-116		Estimate
Analysis Date	August 2, 1993	Mole	of
Log-in No.	93-09862	Percent	Precision
Argon		0.006 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.121 ±	0.003
Methane		<0.001 ±	
Nitrogen		63.3 ±	0.4
Oxygen		0.0004 ±	0.0002
Nitrous oxide		36.6 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 6, 1993
 Subject: Gas Species Analysis
 Corrected Copy

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 83
 Measurement and test equipment WC38625

Sample Id.	93-117		
Analysis Date	August 2, 1993	Mole	Estimate
Log-in No.	93-09863	Percent	of Precision
Argon		0.006 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.116 ±	0.003
Methane		<0.001 ±	
Nitrogen		63.3 ±	0.4
Oxygen		0.0002 ±	0.0001
Nitrous oxide		36.6 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Sample Id.	93-118		
Analysis Date	August 2, 1993	Mole	Estimate
Log-in No.	93-09864	Percent	of Precision
Argon		0.006 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.03 ±	0.02
Methane		<0.001 ±	
Nitrogen		61.7 ±	0.4
Oxygen		<0.0005 ±	
Nitrous oxide		37.2 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 6, 1993
 Subject: Gas Species Analysis
 Corrected Copy

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 83
 Measurement and test equipment WC38625

Sample Id.	93-119		Estimate
Analysis Date	August 2, 1993	Mole	of
Log-in No.	93-09865	Percent	Precision
Argon		0.006 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.148 ±	0.003
Methane		<0.001 ±	
Nitrogen		61.6 ±	0.4
Oxygen		0.0009 ±	0.0005
Nitrous oxide		38.3 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Sample Id.	93-120		Estimate
Analysis Date	August 2, 1993	Mole	of
Log-in No.	93-09866	Percent	Precision
Argon		0.007 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.148 ±	0.003
Methane		<0.001 ±	
Nitrogen		61.7 ±	0.4
Oxygen		0.0016 ±	0.0005
Nitrous oxide		38.1 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected		

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 6, 1993
 Subject: Gas Species Analysis
 Corrected Copy

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 83
 Measurement and test equipment WC38625

Sample Id.	93-121		
Analysis Date	August 2, 1993	Mole	Estimate
Log-in No.	93-09867	Percent	of Precision
Argon		0.007 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.04 ±	0.02
Methane		<0.001 ±	
Nitrogen		60.2 ±	0.4
Oxygen		0.0018 ±	0.0006
Nitrous oxide		38.8 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		<0.01 ±	
Comments:	Log-in number corrected

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

August 5, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 8-3-93. The package number for this work is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. A valve on one of the samples [93-124] was open slightly and leaked. If you have any questions please contact me at 376-3358.

Sincerely,

Milton W Goheen
Atomic and Molecular Spectroscopy

Concurrence

8-5-93

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 85
 Measurement and test equipment WC38625

Sample Id.	93-122		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09961	Percent	of Precision
Argon		0.005 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.17 ±	0.004
Methane		<0.001 ±	
Nitrogen		62.4 ±	0.4
Oxygen		0.0009 ±	0.0005
Nitrous oxide		36.6 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		0.78 ±	0.1
Comments	NH3 interference		

Sample Id.	93-123		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09962	Percent	of Precision
Argon		0.005 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.168 ±	0.004
Methane		<0.001 ±	
Nitrogen		62.5 ±	0.4
Oxygen		0.004 ±	0.002
Nitrous oxide		36.4 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)		1 ±	0.1
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
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 Measurement and test equipment WC38625

Sample Id.	93-124		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09963	Percent	of Precision
Argon		0.577	± 0.009
Carbon dioxide		<0.01	±
Carbon monoxide		<0.01	±
Helium		<0.001	±
Hydrogen		0.017	± 0.002
Methane		0.004	± 0.001
Nitrogen		70	± 0.3
Oxygen		13.4	± 0.2
Nitrous oxide		15.9	± 0.2
Other nitrogen oxides		<0.001	±
Ammonia (estimated)			±
Comments	valve was slightly open		

Sample Id.	93-125		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09964	Percent	of Precision
Argon		0.008	± 0.002
Carbon dioxide		<0.01	±
Carbon monoxide		<0.01	±
Helium		<0.001	±
Hydrogen		0.822	± 0.02
Methane		<0.001	±
Nitrogen		98.77	± 0.02
Oxygen		0.388	± 0.008
Nitrous oxide		0.0128	± 0.002
Other nitrogen oxides		0.002	± 0.001
Ammonia (estimated)			±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
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Sample Id.	93-126		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09965	Percent	of Precision
Argon		0.008	± 0.002
Carbon dioxide		<0.01	±
Carbon monoxide		<0.01	±
Helium		<0.001	±
Hydrogen		0.812	± 0.02
Methane		<0.001	±
Nitrogen		98.77	± 0.02
Oxygen		0.397	± 0.008
Nitrous oxide		0.0062	± 0.002
Other nitrogen oxides		0.003	± 0.002
Ammonia (estimated)			±
Comments			

Sample Id.	93-127		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09966	Percent	of Precision
Argon		0.008	± 0.002
Carbon dioxide		<0.01	±
Carbon monoxide		<0.01	±
Helium		<0.001	±
Hydrogen		1.02	± 0.02
Methane		<0.001	±
Nitrogen		98.46	± 0.02
Oxygen		0.505	± 0.009
Nitrous oxide		0.008	± 0.002
Other nitrogen oxides		0.004	± 0.003
Ammonia (estimated)			±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 85
 Measurement and test equipment WC38625

Sample Id.	93-128		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09967	Percent	of Precision
Argon		0.005 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.111 ±	0.002
Methane		0.102 ±	0.002
Nitrogen		63.2 ±	0.4
Oxygen		0.0007 ±	0.0005
Nitrous oxide		36.6 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Sample Id.	93-129		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09968	Percent	of Precision
Argon		0.004 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.109 ±	0.02
Methane		0.101 ±	0.02
Nitrogen		63.1 ±	0.4
Oxygen		0.0012 ±	0.0006
Nitrous oxide		36.7 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 85
 Measurement and test equipment WC38625

Sample Id.	93-130		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09969	Percent	of Precision
Argon		0.005 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.05 ±	0.02
Methane		0.101 ±	0.003
Nitrogen		61.6 ±	0.4
Oxygen		0.0017 ±	0.0006
Nitrous oxide		37.3 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Sample Id.	93-131		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09970	Percent	of Precision
Argon		0.013 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.116 ±	0.002
Methane		<0.001 ±	
Nitrogen		58.7 ±	0.4
Oxygen		0.183 ±	0.004
Nitrous oxide		41 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 85
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Sample Id.	93-132		Estimate
Analysis Date	August 4, 1993	Mole	of
Log-in No.	93-09971	Percent	Precision
Argon		0.034 ±	0.003
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.107 ±	0.002
Methane		<0.001 ±	
Nitrogen		58.9 ±	0.4
Oxygen		0.676 ±	0.009
Nitrous oxide		40.3 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Sample Id.	93-133		Estimate
Analysis Date	August 4, 1993	Mole	of
Log-in No.	93-09972	Percent	Precision
Argon		0.011 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.94 ±	0.01
Methane		<0.001 ±	
Nitrogen		57.2 ±	0.4
Oxygen		0.159 ±	0.003
Nitrous oxide		41.7 ±	0.4
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 85
 Measurement and test equipment WC38625

Sample Id.	93-134		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09973	Percent	of Precision
Argon		0.014 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.099 ±	0.002
Methane		<0.001 ±	
Nitrogen		91.31 ±	0.08
Oxygen		0.14 ±	0.003
Nitrous oxide		8.43 ±	0.08
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Sample Id.	93-135		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09974	Percent	of Precision
Argon		0.014 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.102 ±	0.002
Methane		<0.001 ±	
Nitrogen		91.23 ±	0.09
Oxygen		0.14 ±	0.003
Nitrous oxide		8.52 ±	0.09
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
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Sample Id.	93-136		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09975	Percent	of Precision
Argon		0.01 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		1.03 ±	0.02
Methane		<0.001 ±	
Nitrogen		89.6 ±	0.1
Oxygen		0.064 ±	0.003
Nitrous oxide		9.3 ±	0.1
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Sample Id.	93-137		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09976	Percent	of Precision
Argon		0.014 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.435 ±	0.008
Methane		<0.001 ±	
Nitrogen		98.74 ±	0.01
Oxygen		0.156 ±	0.003
Nitrous oxide		0.657 ±	0.009
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 85
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Sample Id.	93-138		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09977	Percent	of Precision
Argon		0.016 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.439 ±	0.008
Methane		<0.001 ±	
Nitrogen		98.76 ±	0.01
Oxygen		0.21 ±	0.004
Nitrous oxide		0.574 ±	0.009
Other nitrogen oxides		0.001 ±	0.0005
Ammonia (estimated)			±
Comments			

Sample Id.	93-139		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09978	Percent	of Precision
Argon		0.023 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.01 ±	
Helium		<0.001 ±	
Hydrogen		0.982 ±	0.02
Methane		<0.001 ±	
Nitrogen		97.47 ±	0.02
Oxygen		0.355 ±	0.006
Nitrous oxide		1.17 ±	0.02
Other nitrogen oxides		0.0007 ±	0.0005
Ammonia (estimated)			±
Comments			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 85
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Sample Id.	93-142		Estimate
Analysis Date	August 4, 1993	Mole	of
Log-in No.	93-09981	Percent	Precision
Argon		0.015 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		1.62 ±	0.02
Methane		<0.001 ±	
Nitrogen		72.1 ±	0.3
Oxygen		0.217 ±	0.004
Nitrous oxide		26.1 ±	0.3
Other nitrogen oxides		<0.01 ±	
Ammonia (estimated)		±	
Comments			

SAMPLE REANALYZED.
SEE ANALYSIS REPORT
DATED 8/9/93.

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 4, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 85
 Measurement and test equipment WC38625

Sample Id.	93-140		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09979	Percent	of Precision
Argon		0.025 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.066 ±	0.002
Methane		<0.001 ±	
Nitrogen		74.6 ±	0.3
Oxygen		0.457 ±	0.008
Nitrous oxide		24.9 ±	0.3
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

Sample Id.	93-141		
Analysis Date	August 4, 1993	Mole	Estimate
Log-in No.	93-09980	Percent	of Precision
Argon		0.011 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		<0.001 ±	
Helium		<0.001 ±	
Hydrogen		0.071 ±	0.002
Methane		<0.001 ±	
Nitrogen		74.6 ±	0.3
Oxygen		0.138 ±	0.003
Nitrous oxide		25.2 ±	0.3
Other nitrogen oxides		<0.001 ±	
Ammonia (estimated)			±
Comments			

SAMPLE REANALYZED
SEE ANALYSIS REPORT
DATED 8/9/93

Battelle

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

August 9, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer reanalyses are complete on your samples 93-140 through 93-142. There was carbon monoxide in the last two samples but not in 93-140. The high resolution scans on the samples were in error. The secondary electron multiplier [SEM] failed about the time your samples were checked for CO. The samples were rechecked using low resolution scans with carbon monoxide present in the data reduction library. The high resolution method is much more sensitive than the low resolution method. A replacement SEM was ordered in May but lost by WHC delivery. A second SEM was ordered two weeks ago.

If you have any questions please contact me at 376-3358.

Sincerely,

Milton W Goheen
Atomic and Molecular Spectroscopy

Concurrence

8-9-93

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 6, 1993
 Subject: Gas Species Analysis
 Corrected Copy

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 85
 Measurement and test equipment WC38625

Sample Id.	93-141		
Analysis Date	August 6, 1993	Mole	Estimate
Log-in No.	93-09980	Percent	of Precision
Argon		0.011 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		0.295 ±	0.02
Helium		<0.001 ±	
Hydrogen		0.071 ±	0.01
Methane		0.003 ±	0.001
Nitrogen		74.3 ±	0.3
Oxygen		0.138 ±	0.003
Nitrous oxide		25.2 ±	0.3
Other nitrogen oxides		<0.001 ±	
Comments:			

Sample Id.	93-142		
Analysis Date	August 6, 1993	Mole	Estimate
Log-in No.	93-09981	Percent	of Precision
Argon		0.015 ±	0.002
Carbon dioxide		<0.01 ±	
Carbon monoxide		1.435 ±	0.05
Helium		<0.001 ±	
Hydrogen		1.63 ±	0.02
Methane		0.01 ±	0.001
Nitrogen		70.6 ±	0.3
Oxygen		0.216 ±	0.004
Nitrous oxide		26.1 ±	0.3
Other nitrogen oxides		<0.001 ±	
Comments:			

*SAMPLE REANALYZED -
 SEE SAMPLE ANALYSIS REPORT
 DATED 8/19/93
 THIS IS THE REANALYSIS
 NO. 3*

Battelle

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

September 2, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 8-6-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

Milton W Goheen
Atomic and Molecular Spectroscopy

Concurrence

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 10, 1993
 Subject: Gas Species Analysis

To: M.D.Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 87
 Measurement and test equipment WC38625

Sample Id.	93-143		
Analysis Date	August 9, 1993	Mole	Estimate
Log-in No.	93-10192	Percent	of Precision
Argon		0.039	± 0.004
Carbon dioxide			±
Carbon monoxide			±
Helium		<0.001	±
Hydrogen		0.158	± 0.003
Methane		<0.001	±
Nitrogen		62.5	± 0.4
Oxygen		0.673	± 0.009
Nitrous oxide		36.6	± 0.4
Other nitrogen oxides		0.034	± 0.004
Ammonia (estimated)		<0.001	±
Comments:			

Sample Id.	93-144		
Analysis Date	August 9, 1993	Mole	Estimate
Log-in No.	93-10193	Percent	of Precision
Argon		0.032	± 0.003
Carbon dioxide			±
Carbon monoxide			±
Helium		<0.001	±
Hydrogen		0.178	± 0.003
Methane		<0.001	±
Nitrogen		62.3	± 0.4
Oxygen		0.543	± 0.009
Nitrous oxide		36.9	± 0.4
Other nitrogen oxides		0.024	± 0.003
Ammonia (estimated)		<0.001	±
Comments:			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 10, 1993
 Subject: Gas Species Analysis

To: M.D.Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 87
 Measurement and test equipment WC38625

Sample Id.	93-145		
Analysis Date	August 9, 1993	Mole	Estimate
Log-in No.	93-10194	Percent	of Precision
Argon		0.014	± 0.001
Carbon dioxide			±
Carbon monoxide			±
Helium		<0.001	±
Hydrogen		1.04	± 0.01
Methane		<0.001	±
Nitrogen		61.2	± 0.4
Oxygen		0.235	± 0.005
Nitrous oxide		37.5	± 0.4
Other nitrogen oxides		0.053	± 0.005
Ammonia (estimated)		<0.001	±
Comments:			

Sample Id.	93-146		
Analysis Date	August 9, 1993	Mole	Estimate
Log-in No.	93-10195	Percent	of Precision
Argon		0.009	± 0.001
Carbon dioxide			±
Carbon monoxide			±
Helium		<0.001	±
Hydrogen		0.025	± 0.003
Methane		<0.001	±
Nitrogen		63.2	± 0.4
Oxygen		0.109	± 0.004
Nitrous oxide		36.6	± 0.4
Other nitrogen oxides		0.036	± 0.004
Ammonia (estimated)		<0.001	±
Comments:			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 10, 1993
 Subject: Gas Species Analysis

To: M.D.Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 87
 Measurement and test equipment WC38625

Sample Id.	93-147		
Analysis Date	August 9, 1993	Mole	Estimate
Log-in No.	93-10196	Percent	of Precision
Argon		0.01	± 0.001
Carbon dioxide			±
Carbon monoxide			±
Helium		<0.001	±
Hydrogen		1.14	± 0.01
Methane		<0.001	±
Nitrogen		61.2	± 0.4
Oxygen		0.146	± 0.004
Nitrous oxide		37.5	± 0.4
Other nitrogen oxides		0.034	± 0.004
Ammonia (estimated)		<0.001	±
Comments:			

Sample Id.	93-148		
Analysis Date	August 9, 1993	Mole	Estimate
Log-in No.	93-10197	Percent	of Precision
Argon		0.0047	± 0.0005
Carbon dioxide			±
Carbon monoxide			±
Helium		<0.001	±
Hydrogen		0.021	± 0.003
Methane		<0.001	±
Nitrogen		62.6	± 0.4
Oxygen		0.0014	± 0.0004
Nitrous oxide		37.3	± 0.4
Other nitrogen oxides		0.026	± 0.003
Ammonia (estimated)		<0.001	±
Comments:			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 10, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 87
 Measurement and test equipment WC38625

Sample Id.	93-149		
Analysis Date	August 9, 1993	Mole	Estimate
Log-in No.	93-10198	Percent	of Precision
Argon		0.044 ±	0.005
Carbon dioxide		±	
Carbon monoxide		±	
Helium		<0.001 ±	
Hydrogen		0.052 ±	0.005
Methane		<0.001 ±	
Nitrogen		61.8 ±	0.4
Oxygen		0.942 ±	0.01
Nitrous oxide		36.9 ±	0.4
Other nitrogen oxides		0.013 ±	0.002
Ammonia (estimated)		<0.001 ±	
Comments:			

Sample Id.	93-150		
Analysis Date	August 9, 1993	Mole	Estimate
Log-in No.	93-10199	Percent	of Precision
Argon		0.0047 ±	0.0005
Carbon dioxide		±	
Carbon monoxide		±	
Helium		<0.001 ±	
Hydrogen		1.01 ±	0.01
Methane		<0.001 ±	
Nitrogen		60 ±	0.4
Oxygen		0.0011 ±	0.0004
Nitrous oxide		39 ±	0.4
Other nitrogen oxides		0.063 ±	0.006
Ammonia (estimated)		<0.001 ±	
Comments:			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 10, 1993
 Subject: Gas Species Analysis

To: M.D.Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 87
 Measurement and test equipment WC38625

Sample Id.	93-151		Estimate
Analysis Date	August 9, 1993	Mole	of
Log-in No.	93-10200	Percent	Precision
Argon	0.0049	±	0.0005
Carbon dioxide		±	
Carbon monoxide		±	
Helium	<0.001	±	
Hydrogen	0.06	±	0.006
Methane	<0.001	±	
Nitrogen	61.2	±	0.4
Oxygen	0.0019	±	0.0004
Nitrous oxide	38.6	±	0.4
Other nitrogen oxides	0.013	±	0.002
Ammonia (estimated)	<0.001	±	
Comments:

Battelle
Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509) 376-3358

September 2, 1993

Michael D. Britton
Westinghouse Hanford Company
Box 1970, M/S S4-25
Richland, Washington

Dear Michael,

Mass spectrometer analyses are complete on your samples delivered 8-10-93. The WHC work order number is ED3724. The mass spectrometer used is a Finnigan MAT-271 that is calibrated on a monthly basis. Nitrogen sensitivity check is run each day the instrument is used.

The results are included with this letter. If you have any questions please contact me at 376-3358.

Sincerely,

Milton W Goheen
Atomic and Molecular Spectroscopy

Concurrence

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 11, 1993
 Subject: Gas Species Analysis

To: M.D.Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 87
 Measurement and test equipment WC38625

Sample Id.	93-152		
Analysis Date	August 11, 1993	Mole	Estimate
Log-in No.	93-10248	Percent	of Precision
Argon		0.028 ±	0.003
Carbon dioxide		±	
Carbon monoxide		±	
Helium		<0.001 ±	
Hydrogen		0.0073 ±	0.0005
Methane		<0.001 ±	
Nitrogen		61.9 ±	0.4
Oxygen		0.508 ±	0.005
Nitrous oxide		37.4 ±	0.4
Other nitrogen oxides		<0.01 ±	
Ammonia (estimated)		<0.001 ±	
Comments:			

Sample Id.	93-153		
Analysis Date	August 11, 1993	Mole	Estimate
Log-in No.	93-10249	Percent	of Precision
Argon		0.011 ±	0.001
Carbon dioxide		±	
Carbon monoxide		±	
Helium		<0.001 ±	
Hydrogen		1.03 ±	0.01
Methane		<0.001 ±	
Nitrogen		60.2 ±	0.4
Oxygen		0.16 ±	0.002
Nitrous oxide		38.5 ±	0.4
Other nitrogen oxides		<0.01 ±	
Ammonia (estimated)		<0.001 ±	
Comments:			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 11, 1993
 Subject: Gas Species Analysis

To: M.D.Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 87
 Measurement and test equipment WC38625

Sample Id.	93-154		
Analysis Date	August 11, 1993	Mole	Estimate
Log-in No.	93-10250	Percent	of Precision
Argon		0.013 ±	0.001
Carbon dioxide		±	
Carbon monoxide		±	
Helium		<0.001 ±	
Hydrogen		0.156 ±	0.002
Methane		<0.001 ±	
Nitrogen		61.9 ±	0.4
Oxygen		0.217 ±	0.002
Nitrous oxide		37.5 ±	0.4
Other nitrogen oxides		<0.01 ±	
Ammonia (estimated)		<0.001 ±	
Comments:			

Sample Id.	93-155		
Analysis Date	August 11, 1993	Mole	Estimate
Log-in No.	93-10251	Percent	of Precision
Argon		0.0062 ±	0.0006
Carbon dioxide		±	
Carbon monoxide		±	
Helium		<0.001 ±	
Hydrogen		1.03 ±	0.01
Methane		<0.001 ±	
Nitrogen		60.5 ±	0.4
Oxygen		0.052 ±	0.005
Nitrous oxide		38.3 ±	0.4
Other nitrogen oxides		<0.01 ±	
Ammonia (estimated)		<0.001 ±	
Comments:			

Pacific Northwest Laboratory

From: Inorganic Mass Spectrometry Lab.
 Phone: (509) 376-3358 / mail slot P7-22
 Date: August 11, 1993
 Subject: Gas Species Analysis

To: M.D. Britton

Analytical procedure: PNL-MA-299 ALO-284
 Laboratory record book 54411 Page 87
 Measurement and test equipment WC38625

Sample Id.	93-156		
Analysis Date	August 11, 1993	Mole	Estimate
Log-in No.	93-10252	Percent	of Precision
Argon		0.0097	± 0.001
Carbon dioxide			±
Carbon monoxide			±
Helium		<0.001	±
Hydrogen		1.02	± 0.01
Methane		<0.001	±
Nitrogen		60.4	± 0.4
Oxygen		0.128	± 0.002
Nitrous oxide		38.3	± 0.4
Other nitrogen oxides		<0.01	±
Ammonia (estimated)		<0.001	±
Comments:			

Sample Id.	93-157		
Analysis Date	August 11, 1993	Mole	Estimate
Log-in No.	93-10253	Percent	of Precision
Argon		0.0057	± 0.0006
Carbon dioxide			±
Carbon monoxide			±
Helium		<0.001	±
Hydrogen		1.05	± 0.01
Methane		<0.001	±
Nitrogen		60.4	± 0.4
Oxygen		0.037	± 0.004
Nitrous oxide		38.5	± 0.4
Other nitrogen oxides		<0.01	±
Ammonia (estimated)		<0.001	±
Comments:			

APPENDIX B

GAS SPECTROMETRY ANALYSIS REPORTS

SAMPLES 93-141 THROUGH 93-658

**Westinghouse
Hanford Company**

WHC-SD-WM-TRP-212, Rev. 0

**Internal
Memo**

From: Special Analytical Studies
Phone: 373-4051 S3-90
Date: April 6, 1994
Subject: GROUT PROGRAM GAS CHROMATOGRAPHIC SPREAD SHEETS

To: M. D. Britton S4-25

cc: L. L. Lockrem S3-90
W. J. Powell L4-75
LAP File/LB

The proceeding spread sheets are the compilation of the Gas Chromatographic work performed by Special Analytical Studies, WHC, for the grout program under the direction of Chemical Engineering Laboratory, WHC.

Introduction

A gas chromatograph was used to monitor the resulting gases of a designed chemical reaction. The major gas of interest was carbon monoxide and hydrogen. The gas samples were collected via Tedlar™ sample bag. The contents of the sample bag were analyzed by gas chromatography and the immediate results were displayed at the experiment location.

Description

MTI (Microsensor Technology Incorporated) Analytical™ Gas Chromatograph Quad 400, four channel column/detector module system. A single common injection port was fabricated to facilitate the four 1.0 micro liter sample injections.

Channel A. Poropak Q, 8 meter, TCD. Helium carrier gas, column temperature 89°C, column head pressure 27.8 psi. Inject time 100 msec, sample time 10 sec, run time 70 sec. Sample injection size 1.0uL

Channel B. Poroplot U, 6 meter, TCD. Helium carrier gas, column temperature 54°C, column head pressure 30.3 psi. Inject time 100 msec, sample time 10 sec, run time 70 sec. Sample injection size 1.0uL

Channel C. Molesieve 5A, 10 meter, TCD. Helium carrier gas, column temperature 89°C, column head pressure 44.8 psi. Inject time 100 msec, sample time 10 sec, run time 70 sec. Sample injection size 1.0uL

M. D. Britton
Page 2
April 6, 1994

12920-SAS94-083

Channel D. Molesieve 5A, 10 meter, TCD. Nitrogen carrier gas, column temperature 89°C, column head pressure 41.8 psi. Inject time 100 msec, sample time 10 sec, run time 70 sec. Sample injection size 1.0uL

The gas chromatograph is controlled by a 486/25 Compaq™ portable computer with docking station. The PC has a 370 megabyte hard drive, uncompressed, with 200 megabyte RAM. Instrument control was by the software package EZChrom 400 Version 3.5.8 supplied by MTI Analytical Instruments™. The methodology parameters are variable by operational application. All data was initially stored to hard drive then transferred and verified to an internal Bernoulli™ 150 for transfer out of the laboratory for compilation and review. Each individual gas chromatographic file is the analytical results of at least 3 sample injections.

Each time that samples were planned to be analyzed a series of calibration standards were run prior to the sample analysis. The concentration of the calibration standards were in the range of the expected gas levels for the tests that were planned that day. The results of these standards analysis were compared to the previous days calibration curve. If significant difference were in the two days standard concentrations (2% of the low end concentration) the calibration curve was recalculated for that day. If there was any extended period of time between two sample runs the instrument was recalibrated. At the daily end of a series of analysis a second set of calibrations standards were analyzed to monitor any detector drift.

The gases of interest were nitrous oxide (channel A and B), carbon monoxide (channel C) and hydrogen (channel C and D).

The chromatograms were processed by importing the EZChrom generated *.PRN file data into a Borland QuatroPro™ spreadsheet and rearranging the data into a presentable form. All chromatograms were individually reviewed for baseline anomalies that might interfere with the integration of the chromatographic peak. The chromatograms that might be influenced by inconsistencies of the baseline have been identified by highlighting the influenced run on the QuatroPro™ spreadsheet.

Results

The data being generated by the chromatographic analysis was initially printed and saved as a hardcopy. At sample run #140 the computer storage capabilities were utilized. Consequently the presented data starts at run #141, #140 being lost to experimental error.

The reported results have been edited for groups of data that show no interesting characteristics, i.e. no data. These data groups have been omitted from the reported data to allow presentation of results in a manner which is readable.

M. D. Britton
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April 6, 1994

12920-SAS94-083

There have been several data files lost either in their generation or sometime during their transfer. These files are identified as;

140	Experimental Error
163-211	Lost by incorrect save command
252-255	Lost
275	Lost
441	Lost

The files numbered 93-400 through 93-440 have a number of baseline discrepancies in channel C. This is a result of the volume of the matrix gas in the injected gas sample. The sample gas matrix consisted of a 40% mixture of nitrous oxide and the remainder of nitrogen and gas of interest. A quantity of N_2O at this concentration effects the baseline stability as it passes the detector. N_2O can be partitioned by a molesieve 5A column if the mass volumes are small enough not to overload the partitioning capacity. If the column is overloaded, as was the case in some of these identified files, the peak stretches out over a considerable time period and appears as a deviation of the expected baseline. The elution of the N_2O was over a long enough period that it was initially perceived as an instrumental error. After identification of the problem, an erratic baseline, it was determined that when running a sample containing large quantities of N_2O a sufficient time between injections should be allowed for the complete elution of this gas. Analyses after this were spaced further apart to compensate for N_2O elution.

Data file #658 was the last analysis.

Conclusion

The files that are highlighted are the ones identified as possibly having erroneous reported values due to baseline shift during a run. The resulting statistics should be viewed as possibly bias. Before accepting the reported statistics of a file in which one or more of the runs have a highlighted bar through a portion of the data, it is necessary to examine the reported peaks. If the baseline shifted during the analysis the integration software may have successfully established a baseline near the analyte peak and thus integrated and reported the correct peak area. Some of the more obvious files that have baseline abnormalities have had statistical corrections made in the data reporting.

M. D. Britton
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April 6, 1994

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Any data file that shows an area value of "-8888" has a analyte gas concentration that is greater than the dynamic range of the gas chromatograph. This is the result of the analyte gas exceeding the expected maximum concentration. The software allows for the shifting of the dynamic range by changing the detector response. But in shifting the detector response the calibration curve also changes negating any current calibration. Once the analyte gas concentration has been identified then appropriate calibration curves can be established.

A handwritten signature in cursive script, appearing to read "L. A. Pingel".

L. A. Pingel, Scientist
Special Analytical Studies

drt

Attachment

Sample I.D. Number										
Channel A*										
93 - 141										
Channel B*										
Carbon Dioxide										
Nitrous Oxide										
Channel C*										
Carbon Monoxide										
Channel D*										
Neuron										
Hydrogen										
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	
93-141.prt	21.89	343427	0.00	22.82	18727146	22.80	20.01	0	51.31	239491
	21.95	343436	0.00	22.82	18727146	22.80	20.01	0	51.31	239491
	21.96	343496	0.00	22.82	18727146	22.80	20.01	0	51.31	239491
Average	3.42E+05	0.01	1.62E+05	25.01	0.00	0.00	0.00	0.00	0.00	0.00
Standard Deviation	1.75E+03	0.00	1.09E+05	0.17	0.00	0.00	0.00	0.00	0.00	0.00
%RSD	5.11E-01	7.53	6.73E-01	0.67	0.00	0.00	0.00	0.00	0.00	0.00

Sample ID Number 93 - 142											
Channel A*			Channel B*			Channel C*			Channel D*		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-142 pm	21.85	118270	0.00	22.82	8525902	12.12	18.82	250380	51.31	120162	0
	21.85	122471	0.00	22.82	8291402	12.73	19.62	315183	51.2	141573	0
	21.85	117004	0.00	22.82	8777202	12.912	19.81	264481	51.2	143702	0
Average	1.20E+05	0.00	8.52E+07	13.12	0.00	2.56E+05	0.00	0.00	1.37E+06	0.04	0.00E+00
Standard Deviation	2.51E+03	0.00	2.54E+05	0.32	0.00	1.45E+04	0.00	0.00	1.45E+06	0.00	0.00E+00
%RSD	2.09E+03	0.00	2.98E+03	2.98	0.00	2.13E+04	0.00	0.00	1.05E+01	10.30	ERR

Channel A*										Channel B*										Channel C*										Channel D*									
Sample ID Number 93 - 143																																							
Carbon Dioxide										Nitrous Oxide										Carbon Dioxide										Carbon Monoxide									
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT										
93-143 pm	22.26	21701652	4.76	22.82	21701652	35.91	18.82	0	51.31	120162	0	51.31	120162	0	51.31	120162	0	51.31	120162	0	51.31	120162	0	51.31	120162	0	51.31	120162	0										
	22.31	20725102	4.56	22.31	20725102	31.915	18.82	0	31.915	18.82	0	31.915	18.82	0	31.915	18.82	0	31.915	18.82	0	31.915	18.82	0	31.915	18.82	0	31.915	18.82	0										
	21.75	112872	0.002	22.31	20725102	35.912	18.82	0	35.912	18.82	0	35.912	18.82	0	35.912	18.82	0	35.912	18.82	0	35.912	18.82	0	35.912	18.82	0	35.912	18.82	0										
Average	1.42E+08	3.72	2.70	2.05E+08	32.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
Standard Deviation	1.23E+08	2.70	8.63E+06	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
%RSD	8.66E-01	86.62	4.14E+03	4.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										

Channel E*										
Sample ID Number 93 - 144										
Channel B*										
Carbon Dioxide										
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	
93-144 pm	21.81	184598	0.00	22.82	12527715	18.20	18.82	0	51.31	120162
	21.81	184598	0.00	22.82	12527715	18.20	18.82	0	51.31	120162
	21.81	184598	0.00	22.82	12527715	18.20	18.82	0	51.31	120162
Average	1.58E+05	0.00	1.25E+08	19.19	0.00	0.00	0.00	0.00	0.00	0.00
Standard Deviation	5.51E+02	0.00	5.72E+05	0.05	0.00	0.00	0.00	0.00	0.00	0.00
%RSD	3.49E-01	0.00	4.59E+01	0.46	0.00	0.00	0.00	0.00	0.00	0.00

Sample ID Number: 93 - 145									
Channel A*									
Carbon Dioxide									
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
93-145 pm	0	0	0	22.82	24071874	37.86	18.82	0	51.31
	0	0	0	22.82	24071874	37.86	18.82	0	51.31
	0	0	0	22.82	24071874	37.86	18.82	0	51.31
Average	0.00E+00	0.00	2.45E+08	37.76	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Standard Deviation	0.00E+00	0.00	1.46E+05	0.22	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Channel B*									
Nitrous Oxide									
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT

[illegible]

Sample I.D. Number: 93 - 151

Sample Name	Channel "A"						Channel "B"						Channel "C"				Channel "D"							
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide				helium			hydrogen				
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-151.prm	21.21	348555	0.1	22.67	62231624	10.752	20.2	-8881	0	20.2	-8881	0	50.31	88173	0.002	0	0	0	0	0	0	24.85	4432289	0.034
	21.76	353935	0.102	22.67	72241832	11.385	20.17	-8881	0	20.17	-8881	0	50.31	0	0	0	0	0	0	0	0	24.87	4788140	0.036
	21.76	358048	0.102	22.67	74808522	11.750	20.16	-8881	0	20.16	-8881	0	0	0	0	0	0	0	0	0	0	24.85	4353077	0.033
Average		3.53E+05	0.10		7.17E+07	11.30		-8.9E+02	0.00		-8.9E+02	0.00		2.94E+04	0.00		0.00E+00	0.00		0.00		4.53E+06	0.03	
Standard Deviation		4.21E+03	0.00		3.22E+06	0.51		0.00E+00	0.00		0.00E+00	0.00		5.09E+04	0.00		0.00E+00	0.00		0.00		2.30E+05	0.00	
%RSD		1.15	1.14		4.50	4.50		0.00	ERR		0.00	ERR		173.21	173.21		ERR	ERR		ERR		5.08	4.45	

Sample I.D. Number: 93 - 152

Sample Name	Channel "A"						Channel "B"						Channel "C"						Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			Helium			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-152.prm	21.72	477687	0.137	22.27	24120500	32.045	20.11	0	0	20.11	0	0	0	0	0	0	0	0	0	0	0	24.71	898621	0.007
	21.73	478274	0.137	22.31	240180752	37.652	20.11	0	0	20.11	0	0	0	0	0	0	0	0	0	0	0	24.71	304132	0.002
	21.73	471885	0.135	22.31	238352411	37.721	20.11	0	0	20.11	0	0	0	0	0	0	0	0	0	0	0	24.73	477203	0.004
Average		4.75E+05	0.14		2.40E+08	37.67		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		5.90E+05	0.00
Standard Deviation		3.00E+03	0.00		1.02E+06	0.16		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		2.71E+05	0.00
%RSD		0.62	0.85		0.43	0.42		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR		45.85	44.61

Sample I.D. Number: 93 - 153

Sample ID: 93-153	Channel "A"						Channel "B"						Channel "C"						Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			helium			hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-153.prm	0	0	0	22.26	247239136	36.985	20.11	0	0	20.11	0	0	50.2	3255040	0.087	0	0	0	24.79	138942234	1.141			
	0	0	0	22.26	245809321	36.735	20.11	0	0	20.11	0	0	50.2	3266738	0.087	0	0	0	24.79	138288855	1.122			
	0	0	0	22.26	245104401	36.624	20.11	0	0	20.11	0	0	50.2	8900446	0.225	0	0	0	24.79	129103402	1.132			
Average		0.00E+00	0.00		2.46E+08	36.76		0.00E+00	0.00		0.00E+00	0.00		5.15E+06	0.14		0.00E+00	0.00		1.39E+08	1.13			
Standard Deviation:		0.00E+00	0.00		1.09E+06	0.17		0.00E+00	0.00		0.00E+00	0.00		3.25E+06	0.09		0.00E+00	0.00		7.78E+05	0.01			
%RSD		ERR	ERR		0.44	0.44		ERR	ERR		ERR	ERR		63.19	63.04		ERR	ERR		0.56	0.57			

Sample I.D. Number: 93 - 154

Sample ID	Channel "A"						Channel "B"						Channel "C"						Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			helium			hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-154.prm	21.77	433377	0.124	22.35	240982891	37.675	20.11	0	0	20.11	0	0	0	0	0	50.2	0	0	0	0	0	24.75	21108800	0.185
	21.77	431601	0.124	22.35	239397200	37.725	20.11	0	0	20.11	0	0	0	0	0	0	0	0	0	0	0	24.75	21914543	0.172
	21.77	430512	0.124	22.35	239374491	37.725	20.11	0	0	20.11	0	0	50.81	22138091	0.585	0	0	0	0	0	24.77	22126894	0.173	
Average		4.32E+05	0.12		2.40E+08	37.81		0.00E+00	0.00		0.00E+00	0.00		7.38E+06	0.20		0.00E+00	0.00		0.00E+00	0.00		2.17E+07	0.17
Standard Deviation		1.46E+03	0.00		5.22E+05	0.15		0.00E+00	0.00		0.00E+00	0.00		1.28E+07	0.34		0.00E+00	0.00		5.38E+05	0.00		5.38E+05	0.00
%RSD		0.34	0.00		0.38	0.38		ERR	ERR		ERR	ERR		173.21	173.21		ERR	ERR		ERR	ERR		2.48	2.56

Sample I.D. Number: 93 - 155

93-155.prm	Channel "A"						Channel "B"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			Helium			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
	0	0	0	22.21	248829021	36.805	20.11	0	0	20.11	0	0	50.31	3388854	0.055	0	0	0	24.77	141280032	1.155
	0	0	0	22.21	243518032	36.375	20.11	0	0	20.11	0	0	50.2	3323531	0.081	0	0	0	24.77	145578922	1.188
	0	0	0	22.29	242488405	35.215	20.11	0	0	20.11	0	0	50.1	3275858	0.067	0	0	0	24.77	135477294	1.115
Average	0.00E+00	0.00		2.44E+08	36.47		0.00E+00	0.00		0.00E+00	0.00		3.33E+06	0.09		0.00E+00	0.00		1.41E+08	1.15	
Standard Deviation	0.00E+00	0.00		1.93E+06	0.30		0.00E+00	0.00		0.00E+00	0.00		5.56E+04	0.00		0.00E+00	0.00		4.55E+06	0.04	

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MHC-SD-WM-TRP-212, Rev. 0

Sample I.D Number: 93 - 156

93-156.ppt	Channel "A"						Channel "B"						Channel "C"						Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			helium			hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
	21.85	105274	0.035	22.57	128203912	20.217	20.1E	C	0	20.1E	C	0	50.2	1045392	0.042	0	0	0	24.75	81852704	0.504			
	21.85	133534	0.035	22.57	127492504	20.095	20.1E	C	0	20.1E	C	0	50.2	8135721	0.052	0	0	0	24.77	83700544	0.88			
	21.85	138176	0.035	22.57	129081804	20.34	20.1E	C	0	20.1E	C	0	50.04	2488972	0.065	0	C	C	24.75	82180042	0.887			
Average		1.35E+05	0.04		1.28E+08	20.22		0.03E+00	0.00		0.03E+00	0.00		2.08E+06	0.05		0.00E+00	0.00		8.26E+07	0.67			
Standard Deviation		8.04E+02	0.00		7.85E+05	0.12		0.03E+00	0.00		0.03E+00	0.00		4.13E+05	0.01		0.00E+00	0.00		9.90E+05	0.01			
%RSD		0.60	1.49		0.61	0.61		ERR	ERR		ERR	ERR		19.84	20.23		ERR	ERR		1.20	1.27			

Sample I.D Number: 93 - 157

93-157.ppt	Channel "A"						Channel "B"						Channel "C"						Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			Helium			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
	0	C	C	22.37	248159040	39.106	20.1E	C	C	20.1E	C	C	0	50.36	4148992	0.11	0	C	C	24.79	140522964	1.147		
	0	C	C	22.25	248127582	39.761	20.1E	C	C	20.1E	C	C	0	0	C	C	0	C	C	24.81	140207832	1.142		
	0	C	C	22.31	244789241	32.52	20.1E	C	C	20.1E	C	C	0	0	C	C	0	C	C	24.81	140858112	1.187		
Average	0.00E+00	0.00		2.46E+06	38.82		0.00E+00	0.00		0.00E+00	0.00		1.38E+06	0.04		0.00E+00	0.00		1.42E+08	1.16				
Standard Deviation	0.00E+00	0.00		1.69E+05	0.27		0.00E+00	0.00		0.00E+00	0.00		2.39E+06	0.06		0.00E+00	0.00		3.63E+06	0.03				
%RSD	ERR	ERR		0.65	0.65		ERR	ERR		ERR	ERR		173.21	173.21		ERR	ERR		2.55	2.55				

Sample I.D Number: 93 - 158

	Channel "A"						Channel "B"						Channel "C"				Channel "D"				
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide		Helium		Hydrogen				
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-158.ppt	0	C	C	22.21	255440544	40.257	20.1E	C	0	20.1E	C	0	50.36	3233781	0.085	C	C	C	24.75	124810806	1.018
	0	C	C	22.25	255319721	40.238	20.1E	C	0	20.1E	C	0	50.36	3397520	0.09	C	C	C	24.75	118040322	0.976
	0	C	C	22.21	253788032	39.898	20.1E	C	0	20.1E	C	0	50.2	2957760	0.076	C	C	C	24.75	123740152	1.006
Average	0.00E+00		0.00	2.55E+06		40.16	0.00E+00		0.00	0.00E+00		0.00	3.20E+06		0.08	0.00E+00		0.00	1.23E+08		1.00
Standard Deviation	0.00E+00		0.00	9.22E+05		0.15	0.00E+00		0.00	0.00E+00		0.00	2.22E+06		0.01	0.00E+00		0.00	2.73E+06		0.02
%RSD	ERR		ERR	0.36		0.36	ERR		ERR	ERR		ERR	6.95		7.15	ERR		ERR	2.22		2.27

Sample I.D Number: 93 - 159

	Channel "A"						Channel "B"						Channel "C"						Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			Helium			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-159.ppt	0	C	C	22.21	241752898	38.1	20.1E	C	C	20.1E	C	C	50.36	3260073	0.082	0	C	C	24.89	125788532	1.028			
	0	C	C	22.25	232134352	36.584	20.1E	C	C	20.1E	C	C	50.36	3141587	0.083	C	C	C	24.89	113337400	0.920			
	21.85	39804	0.011	22.25	222121424	37.164	C	C	C	C	C	C	50.36	3000744	0.079	0	C	C	24.89	110953280	0.904			
Average		1.32E+04	0.00		2.32E+08	36.62		0.00E+00	0.00		0.00E+00	0.00		2.13E+06	0.08		0.00E+00	0.00		1.17E+08	0.95			
Standard Deviation		2.29E+04	0.01		9.22E+05	1.47		0.00E+00	0.00		0.00E+00	0.00		1.30E+05	0.00		0.00E+00	0.00		7.97E+06	0.07			
%RSD		173.21	173.21		4.01	4.01		ERR	ERR		ERR	ERR		4.14	4.25		ERR	ERR		6.83	6.90			

Sample I.D Number: 93 - 160

	Channel "A"						Channel "B"						Channel "C"						Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			Helium			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-160.ppt	21.85	48801	0.014	22.21	205705002	32.416	C	C	C	C	C	C	C	50.36	0	C	0	C	C	24.59	7031787	0.053		
	21.85	54042	0.016	22.21	202105424	31.883	C	C	C	C	C	C	C	50.36	0	C	0	C	C	24.57	8110181	0.048		
	21.85	70844	0.01	22.27	188305712	29.878	C	C	C	C	C	C	C	49.87	864052	0.012	0	C	C	24.57	81051453	0.041		
Average	5.78E+04	0.02		1.99E+08	31.32		0.00E+00	0.00		0.00E+00	0.00		2.31E+05	0.01		0.00E+00	0.00		6.40E+06	0.05				
Standard Deviation	1.14E+04	0.00		9.22E+05	1.45		0.00E+00	0.00		0.00E+00	0.00		4.01E+05	0.01		0.00E+00	0.00		5.50E+05	0.00				

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 161

Channel "A"						Channel "B"						Channel "C"						Channel "D"					
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			helium			hydrogen					
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-161.pn	22.17	234888811	87.391	22.17	234888811	37.015	0	0	0	0	0	0	49.87	0	0	0	0	0	24.59	7520501	0.057		
	0	0	0	22.2	227998881	36.074	0	0	0	0	0	0	49.87	0	0	0	0	0	24.57	8805302	0.05		
	0	0	0	22.2	219483791	34.51	0	0	0	0	0	0	49.87	0	0	0	0	0	24.5	8809057	0.05		
Average		7.83E+07	22.47		2.28E+06	35.89		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		6.91E+06	0.05		
Standard Deviation:		1.36E+08	38.91		7.76E+06	1.22		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		5.27E+05	0.00		
%RSD		173.21	173.21		3.41	3.41		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR		7.63	7.72		

Sample I.D. Number 93 - 162

Channel "A"						Channel "B"						Channel "C"						Channel "D"					
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			helium			hydrogen					
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-162.pn	21.89	41331	0.012	22.32	20034551	31.586	0	0	0	0	0	0	49.87	0	0	0	0	0	24.82	120898780	0.087		
	21.73	70301	0.01	22.3	174480491	27.491	0	0	0	0	0	0	49.87	0	0	0	0	0	24.89	118038591	0.045		
	21.73	85847	0.021	22.4	153445744	24.181	0	0	0	0	0	0	49.87	0	0	0	0	0	24.89	108076112	0.004		
Average		6.92E+04	0.02		1.76E+08	27.75		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		1.14E+08	0.03		
Standard Deviation:		2.73E+04	0.01		2.95E+07	3.70		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		7.56E+06	0.06		
%RSD		39.43	40.00		12.33	12.33		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR		6.61	6.62		

Sample I.D Number: 93 - 212

Channel "A"						Channel "B"						Channel "C"						Channel "D"					
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			helium			hydrogen			RT	AREA	AMT
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-212 pm	21.77	91895	0.027	C	C	C	19.85	529352	0.014	C	C	C	48.92	164911E	0.049	0	0	0	24.81	0	C		
	21.75	92465	0.027	C	C	C	19.85	51704E	0.013	C	C	C	48.92	1643634	0.049	0	0	0	24.81	0	C		
	21.75	91490	0.027	C	C	C	19.85	113392E	0.029	C	C	C	48.92	1639433	0.049	0	0	0	24.81	C	C		
Average		9.19E+04	0.03		0.00E+00	0.00		7.26E+05	0.02		0.00E+00	0.00		1.84E+06	0.05		0.00E+00	0.00		0.00E+00	0.00		
Standard Deviation		5.33E+02	0.00		0.00E+00	0.00		3.53E+05	0.01		0.00E+00	0.00		5.34E+03	0.00		0.00E+00	0.00		0.00E+00	0.00		
%RSD		0.68	2.19		ERR	ERR		48.58	48.02		ERR	ERR		0.29	0.00		ERR	ERR		ERR	ERR		

Sample I.D Number: 93 - 213

Channel "A"						Channel "B"						Channel "C"						Channel "D"					
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			helium			hydrogen			RT	AREA	AMT
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-213 pm	21.77	10832E	0.031	C	C	C	19.8	589900	0.015	C	C	C	48.92	256990E	0.088	0	0	0	24.81	0	C		
	21.76	10611E	0.031	C	C	C	19.81	131478E	0.034	C	C	C	48.92	255913C	0.091	0	0	0	24.81	0	C		
	21.76	10679E	0.031	C	C	C	19.81	131183E	0.034	C	0	C	48.92	255514E	0.091	0	0	0	24.81	0	C		
Average		1.07E+05	0.03		0.00E+00	0.00		1.07E+06	0.03		0.00E+00	0.00		2.56E+06	0.07		0.00E+00	0.00		0.00E+00	0.00		
Standard Deviation		2.47E+02	0.00		0.00E+00	0.00		4.29E+05	0.01		0.00E+00	0.00		8.23E+03	0.00		0.00E+00	0.00		0.00E+00	0.00		
%RSD		0.23	0.00		ERR	ERR		40.30	39.65		ERR	ERR		0.32	0.85		ERR	ERR		ERR	ERR		

Sample I.D Number: 93 - 214

Channel "A"						Channel "B"						Channel "C"						Channel "D"					
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			helium			hydrogen			RT	AREA	AMT
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-214 pm	21.75	10779E	0.031	C	C	C	19.8	130943E	0.034	C	0	C	48.92	3200103	0.085	0	0	0	24.81	0	C		
	21.76	10805E	0.031	C	C	C	19.8	57952E	0.015	C	C	C	48.92	3191367	0.084	0	0	0	24.81	0	C		
	21.77	10477E	0.03	C	C	C	19.9	57805E	0.015	C	C	C	48.92	3198581	0.084	0	0	0	24.81	0	C		
Average		1.07E+05	0.03		0.00E+00	0.00		8.21E+05	0.02		0.00E+00	0.00		3.20E+06	0.08		0.00E+00	0.00		0.00E+00	0.00		
Standard Deviation		1.82E+03	0.00		0.00E+00	0.00		4.20E+05	0.01		0.00E+00	0.00		4.87E+03	0.00		0.00E+00	0.00		0.00E+00	0.00		
%RSD		1.71	1.88		ERR	ERR		51.15	51.42		ERR	ERR		0.15	0.68		ERR	ERR		ERR	ERR		

Sample I.D Number: 93 - 215

Channel "A"						Channel "B"						Channel "C"						Channel "D"					
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			helium			hydrogen			RT	AREA	AMT
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-215 pm	21.77	9895E	0.027	C	C	C	19.81	52393E	0.014	C	C	C	48.92	354885E	0.094	0	0	0	24.81	0	C		
	21.77	9553E	0.027	C	C	C	19.81	51731E	0.013	C	C	C	48.92	3548411	0.094	0	0	0	24.81	0	C		
	21.77	9722E	0.027	C	C	C	19.81	115117E	0.02	C	C	C	48.92	3526333	0.093	0	0	0	24.81	0	C		
Average		9.66E+04	0.03		0.00E+00	0.00		7.31E+05	0.02		0.00E+00	0.00		3.54E+06	0.09		0.00E+00	0.00		0.00E+00	0.00		
Standard Deviation		9.08E+02	0.00		0.00E+00	0.00		3.64E+05	0.01		0.00E+00	0.00		1.34E+04	0.00		0.00E+00	0.00		0.00E+00	0.00		
%RSD		0.94	2.09		ERR	ERR		48.82	50.21		ERR	ERR		0.38	0.62		ERR	ERR		ERR	ERR		

Sample I.D Number: 93 - 216

Channel "A"						Channel "B"						Channel "C"						Channel "D"					
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			helium			hydrogen			RT	AREA	AMT
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-216 pm	21.77	8135E	0.022	C	C	C	19.82	48322E	0.012	C	C	C	48.92	391350E	0.101	0	0	0	24.81	0	C		
	21.77	8098E	0.023	C	C	C	19.82	48922E	0.012	C	C	C	48.92	3798827	0.1	0	0	0	24.81	0	C		
	21.77	7898E	0.023	C	C	C	19.82	45292E	0.012	C	C	C	48.92	379512E	0.1	0	0	0	24.81	0	C		
Average		8.04E+04	0.02		0.00E+00	0.00		4.58E+05	0.01		0.00E+00	0.00		3.80E+06	0.10		0.00E+00	0.00		0.00E+00	0.00		
Standard Deviation		1.30E+03	0.00		0.00E+00	0.00		5.20E+03	0.00		0.00E+00	0.00		9.83E+03	0.00		0.00E+00	0.00		0.00E+00	0.00		
%RSD		1.61	0.00		ERR	ERR		1.12	0.00		ERR	ERR		0.26	0.58		ERR	ERR		ERR	ERR		

B-11

WHC-SD-WM-TRP-212, Rev. 0

Sample ID Number	Channel A										Channel B										Channel C										Channel D									
	Carbon Dioxide					Nitrous Oxide					Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					Helium					Hydrogen									
	RT	Area	AMT	RT	Area	AMT	RT	Area	AMT	RT	Area	AMT	RT	Area	AMT	RT	Area	AMT	RT	Area	AMT	RT	Area	AMT	RT	Area	AMT	RT	Area	AMT	RT	Area	AMT							
93-217.pn	21.77	50024	0.017	0	0	0	19.92	41152	0.011	19.92	41152	0.008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Average		5.98E+04	0.02																																					
Standard Deviation		6.65E+02	0.00																																					
%RSD		1.12	0.00																																					
Sample ID Number	Channel A										Channel B										Channel C										Channel D									
93-218.pn	21.81	49231	0.014	0	0	0	19.94	34435	0.005	19.94	34435	0.005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Average		4.97E+04	0.01																																					
Standard Deviation		1.45E+02	0.00																																					
%RSD		0.29	0.00																																					
Sample ID Number	Channel A										Channel B										Channel C										Channel D									
93-219.pn	21.81	39827	0.011	0	0	0	19.94	30110	0.004	19.94	30110	0.004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Average		3.98E+04	0.01																																					
Standard Deviation		9.55E+02	0.00																																					
%RSD		2.51	0.00																																					
Sample ID Number	Channel A										Channel B										Channel C										Channel D									
93-220.pn	21.81	29854	0.006	0	0	0	19.94	25030	0.004	19.94	25030	0.004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Average		3.04E+04	0.01																																					
Standard Deviation		1.20E+03	0.00																																					
%RSD		3.93	0.00																																					
Sample ID Number	Channel A										Channel B										Channel C										Channel D									
93-221.pn	21.81	29854	0.006	0	0	0	19.94	25030	0.004	19.94	25030	0.004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Average		1.95E+04	0.01																																					
Standard Deviation		1.72E+04	0.01																																					
%RSD		86.61	86.63																																					

Sample ID Number	Channel 'A'										Channel 'B'										Channel 'C'										Channel 'D'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	Carbon Dioxide					Nitrous Oxide					Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					Hydrogen					Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					Hydrogen																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
93-222-pin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample I.D. Number: 93 - 227

Channel "A"			Channel "B"			Channel "C"			Channel "D"		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-227.prm	0	0	0	0	0	20.01	0	0	48.02	4354642	0.115
	0	0	0	0	0	20.01	0	0	48.02	4361521	0.110
	0	0	0	0	0	20.01	0	0	48.02	4373078	0.110
Average	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	4.37E+06	0.12	0.00E+00
Standard Deviation	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	1.38E+04	0.00	0.00E+00
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.32	0.50	ERR

Sample I.D. Number: 93 - 228

Channel "A"			Channel "B"			Channel "C"			Channel "D"		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-228.prm	0	0	0	0	0	20.01	0	0	48.02	4345900	0.115
	0	0	0	0	0	20.01	0	0	48.02	4350757	0.115
	0	0	0	0	0	20.01	0	0	48.02	4351465	0.115
Average	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	4.35E+06	0.12	0.00E+00
Standard Deviation	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	3.03E+03	0.00	0.00E+00
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.07	0.00	ERR

Sample I.D. Number: 93 - 229

Channel "A"			Channel "B"			Channel "C"			Channel "D"		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-229.prm	0	0	0	0	0	20.01	0	0	48.02	3301078	0.001
	0	0	0	0	0	20.01	0	0	48.02	3282042	0.001
	0	0	0	0	0	20.01	0	0	48.02	3290620	0.001
Average	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	2.29E+06	0.06	0.00E+00
Standard Deviation	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	9.55E+03	0.00	0.00E+00
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.42	0.95	ERR

Sample I.D. Number: 93 - 230

Channel "A"			Channel "B"			Channel "C"			Channel "D"		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-230.prm	0	0	0	0	0	20.01	0	0	48.02	915780	0.024
	0	0	0	0	0	20.01	0	0	48.02	924304	0.024
	0	0	0	0	0	20.01	0	0	48.02	926252	0.024
Average	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	9.22E+05	0.02	0.00E+00
Standard Deviation	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	5.81E+03	0.00	0.00E+00
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.63	0.00	ERR

Sample I.D. Number: 93 - 231

Channel "A"			Channel "B"			Channel "C"			Channel "D"		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-231.prm	0	0	0	0	0	20.01	0	0	48.02	401328	0.011
	0	0	0	0	0	20.01	0	0	48.02	392058	0.01
	0	0	0	0	0	20.01	0	0	48.02	389030	0.01
Average	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	3.94E+05	0.01	0.00E+00
Standard Deviation	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	5.41E+03	0.00	0.00E+00
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	1.63	5.59	ERR

Sample I.D Number 93 - 232

Channel "A"			Channel "B"			Channel "C"			Channel "D"		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-232 ppm	0	0	0	0	0	20.01	0	0	48.01	181308	0.005
	0	0	0	0	0	20.01	0	0	48.01	171444	0.005
	0	0	0	0	0	20.01	0	0	48.01	179454	0.005
Average	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	1.75E+05	0.01	0.00E+00
Standard Deviation	0.00E+00	0.00	0.00E+00	0.00	0.00	0.00E+00	0.00	0.00	5.43E+03	0.00	0.00E+00
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	3.10	0.00	ERR

Sample I.D Number 93 - 233

Channel "A"			Channel "B"			Channel "C"			Channel "D"		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-233 ppm	21.95	2576591	0.734	0	0	20.01	2655814	0.085	48.01	909116	0.024
	21.97	2492154	0.716	0	0	20.01	2654591	0.085	48.01	815454	0.022
	21.97	2635141	0.722	0	0	20.05	2803401	0.085	48.01	910081	0.024
Average	2.53E+06	0.73	0.00E+00	0.00	0.00	2.66E+06	0.07	0.04	8.79E+05	0.02	0.00E+00
Standard Deviation	4.22E+04	0.01	0.00E+00	0.00	0.00	5.75E+03	0.00	0.00	5.55E+04	0.00	0.00E+00
%RSD	1.67	1.65	ERR	ERR	ERR	0.22	0.00	0.00	6.31	4.95	ERR

Sample I.D Number 93 - 234

Channel "A"			Channel "B"			Channel "C"			Channel "D"		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-234 ppm	21.97	2509105	0.72	0	0	20.1	2592810	0.087	48.01	828524	0.014
	21.97	5404781	0.716	0	0	20.1	2611291	0.087	48.01	409456	0.010
	21.97	2408802	0.691	0	0	20.1	2629112	0.087	48.01	441235	0.012
Average	2.47E+06	0.71	0.00E+00	0.00	0.00	2.61E+06	0.07	0.04	4.90E+05	0.01	0.00E+00
Standard Deviation	5.53E+04	0.02	0.00E+00	0.00	0.00	1.84E+04	0.00	0.00	4.45E+04	0.00	0.00E+00
%RSD	2.24	2.22	ERR	ERR	ERR	0.70	0.00	0.00	9.09	7.69	ERR

Sample I.D Number 93 - 235

Channel "A"			Channel "B"			Channel "C"			Channel "D"		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-235 ppm	22.03	2829441	0.812	0	0	20.15	3050780	0.078	48.01	217056	0.004
	22.03	2881176	0.827	0	0	20.15	3091864	0.078	48.01	0	0
	22.03	2770762	0.795	0	0	20.15	3050940	0.078	48.01	274123	0.007
Average	2.83E+06	0.81	0.00E+00	0.00	0.00	3.05E+06	0.08	0.04	1.64E+05	0.00	0.00E+00
Standard Deviation	5.52E+04	0.02	0.00E+00	0.00	0.00	6.45E+03	0.00	0.00	1.45E+05	0.00	0.00E+00
%RSD	1.95	1.97	ERR	ERR	ERR	0.21	0.00	0.00	88.34	87.37	ERR

Sample I.D Number 93 - 236

Channel "A"			Channel "B"			Channel "C"			Channel "D"		
Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-236 ppm	22.05	2829551	0.812	0	0	20.15	3028810	0.078	48.01	0	0
	22.05	2818886	0.806	0	0	20.15	3028845	0.078	48.01	0	0
	22.05	2734981	0.785	0	0	20.15	3020439	0.078	48.01	0	0
Average	2.79E+06	0.80	0.00E+00	0.00	0.00	3.03E+06	0.08	0.04	0.00E+00	0.00	0.00E+00
Standard Deviation	5.18E+04	0.01	0.00E+00	0.00	0.00	4.28E+03	0.00	0.00	0.00E+00	0.00	0.00E+00
%RSD	1.85	1.85	ERR	ERR	ERR	0.14	0.00	0.00	ERR	ERR	ERR

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WHC-SD-MM-TRP-212, Rev. 0

Sample I.D. Number 93 - 237

93-237.prm	Channel "A"						Channel "B"						Channel "C"						Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			Helium			hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
	22.05	2427148	0.897	0	0	0	20.18	2639940	0.085	20.18	2639940	0.032	0	0	0	0	0	0	0	0	0			
	22.05	24259524	0.706	0	0	0	20.17	2639880	0.085	20.17	2639880	0.032	0	0	0	0	0	0	0	0	0			
	22.03	2423413	0.707	0	0	0	20.18	2634576	0.085	20.18	2634576	0.032	0	0	0	0	0	0	0	0	0			
Average		2.45E+06	0.70	0.00E+00	0.00		2.64E+06	0.07		2.64E+06	0.04	0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00			
Standard Deviation		1.99E+04	0.01	0.00E+00	0.00		2.99E+03	0.00		2.99E+03	0.00	0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00			
%RSD		0.81	0.78	ERR	ERR	ERR	0.11	0.00		0.11	0.00		ERR	ERR	ERR	ERR		ERR	ERR	ERR	ERR			

Sample I.D. Number 93 - 238

Sample Name	Channel "A"						Channel "B"						Channel "C"						Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Dioxide			Nitrous oxide			Carbon Monoxide			Helium			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-238.prm	22.05	2238722	0.842	0	0	0	20.17	2415113	0.082	20.17	2415112	0.035	0	0	0	0	0	0	24.77	43457850	0.340			
	22.05	2276431	0.852	0	0	0	20.17	278092	0.025	20.17	278092	0.014	0	0	0	0	0	0	24.77	0	0			
	22.05	2313111	0.864	0	0	0	20.17	2481030	0.084	20.17	2481030	0.035	0	0	0	0	0	0	24.73	44012330	0.353			
Average		2.28E+06	0.65	0.00E+00	0.00	0.00		1.95E+06	0.05		1.95E+06	0.03	0.00E+00	0.00	0.00E+00	0.00		0.00E+00	0.00		2.92E+07	0.23		
Standard Deviation		3.82E+04	0.01	0.00E+00	0.00	0.00		6.43E+05	0.02		6.43E+05	0.01	0.00E+00	0.00	0.00E+00	0.00		0.00E+00	0.00		2.53E+07	0.20		
%RSD		1.66	1.68		ERR	ERR		43.21	43.63		43.21	43.30		ERR	ERR		ERR	ERR		85.61	86.61			

Sample ID Number	93 - 239	Channel 'A'	Channel 'C'	Channel 'D'
		Carbon Dioxide	Carbon Monoxide	hydrogen
93-239.prm	RT	AMT	RT	AMT
	AREA	AREA	AREA	AREA
	RT	AMT	RT	AMT
	AREA	AREA	AREA	AREA
Average	0.00E+00	0.00	0.00E+00	0.00
Standard Deviation	0.00E+00	0.00	0.00E+00	0.00
%RSD	ERR	ERR	ERR	ERR

Sample ID Number	93 - 240	Channel 'A'	Channel 'C'	Channel 'D'
		Carbon Dioxide	Carbon Monoxide	hydrogen
93-240.prm	RT	AMT	RT	AMT
	AREA	AREA	AREA	AREA
	RT	AMT	RT	AMT
	AREA	AREA	AREA	AREA
Average	0.00E+00	0.00	0.00E+00	0.00
Standard Deviation	0.00E+00	0.00	0.00E+00	0.00
%RSD	ERR	ERR	ERR	ERR

Sample ID Number	93 - 241	Channel 'A'	Channel 'C'	Channel 'D'
		Carbon Dioxide	Carbon Monoxide	hydrogen
93-241.prm	RT	AMT	RT	AMT
	AREA	AREA	AREA	AREA
	RT	AMT	RT	AMT
	AREA	AREA	AREA	AREA
Average	3.15E+04	0.00	0.00E+00	0.00
Standard Deviation	2.89E+03	0.00	0.00E+00	0.00
%RSD	9.19	11.1	ERR	ERR

Sample ID Number	93 - 242	Channel 'A'	Channel 'C'	Channel 'D'
		Carbon Dioxide	Carbon Monoxide	hydrogen
93-242.prm	RT	AMT	RT	AMT
	AREA	AREA	AREA	AREA
	RT	AMT	RT	AMT
	AREA	AREA	AREA	AREA
Average	5.84E+04	0.02	0.00E+00	0.00
Standard Deviation	9.78E+02	0.00	0.00E+00	0.00
%RSD	1.67	0.00	ERR	ERR

Sample I.D. Number 93 - 243

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-243.prm	21.73	62970	0.016	0	0	0	0	0	0	0	0	0	24.81	0	0
	21.73	63857	0.016	0	0	0	0	0	0	0	0	0	24.81	0	0
	21.73	64546	0.016	0	0	0	0	0	0	0	0	0	24.81	0	0
Average		6.38E+04	0.02		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		8.40E+02	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		1.32	3.15		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 244

	Channel 'A'						Channel 'C'			Channel 'D'						
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen			
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-244.prm	21.77	54184	0.016	0	0	0	0	0	0	0	0	0	0	24.81	0	0
	21.77	55395	0.016	0	0	0	0	0	0	0	0	0	0	24.81	0	0
	21.77	55077	0.016	0	0	0	0	0	0	0	0	0	0	24.81	0	0
Average		5.49E+04	0.02		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00	
Standard Deviation		6.39E+02	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00	
%RSD		1.16	0.00		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR	

Sample I.D. Number 93 - 245

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-245.prm	21.77	33233	0.01	0	0	0	0	0	0	0	0	0	24.81	0	0
	21.77	33605	0.01	0	0	0	0	0	0	0	0	0	24.81	0	0
	21.77	34322	0.01	0	0	0	0	0	0	0	0	0	24.81	0	0
Average		3.38E+04	0.01		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		4.95E+02	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		1.46	0.00		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 246

	Channel: "A"						Channel: "C"			Channel: "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-246.prn	21.77	31851	0.009	0	0	0	0	0	0	0	0	0	24.81	0	0
	21.77	32355	0.009	0	0	0	0	0	0	0	0	0	24.81	0	0
	21.77	32255	0.009	0	0	0	0	0	0	0	0	0	24.81	0	0
Average		3.23E+04	0.01		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		5.01E+02	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		1.55	0.00		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number	Channel "D"														
	Channel "A"						Channel "C"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-247.ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR

Sample I.D. Number	93 - 248														
Channel A*	Channel C*														
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-248.ppm	c	c	0	c	c	c	c	c	c	c	c	c	24.61	c	c
	c	c	c	c	c	c	c	c	c	c	c	c	24.61	c	c
	c	0	0	c	c	c	c	c	c	c	0	0	24.61	0	0
Average		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number	93 - 249														
Channel A*	Channel D*														
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-249.ppm	0	0	0	0	0	0	0	0	0	0	0	0	24.81	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	24.81	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	24.81	0	0
Average		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR

Sample I.D. Number:	93 - 250													
Channel A*														
Carbon Dioxide														
RT	AREA	AMT	Nitrous Oxide	RT	AREA	AMT	Carbon Monoxide	RT	AREA	AMT	Channel D*	RT	AREA	AMT
93-250.ppm											helium			
Average	0.00E+00	0.00				0.00					hydrogen			
Standard Deviation	0.00E+00	0.00				0.00								
%RSD	ERR	ERR				ERR								

Sample I.D. Number 93 - 251

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-251.pm	0	0	0	0	0	0	0	0	0	0	0	0	24.81	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	24.81	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	24.81	0	0
Average		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 256

Channel 'A'				Channel 'C'				Channel 'D'			
Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-256.pn	21.07	174943	0.05	C	C	C	00.06	4011324	0.012	22.86	0
	21.07	173007	0.05	C	C	C	00.06	4014075	0.012	22.23	3673503
	21.07	172500	0.05	C	C	C	00.06	4508714	0.012	22.23	3805241
Average		1.74E+05	0.05		0.00E+00	0.00		4.61E+06	0.01		2.58E+06
Standard Deviation		1.18E+03	0.00		0.00E+00	0.00		8.42E+03	0.00		2.23E+06
%RSD		0.68	0.00		ERR	ERR		0.18	0.00		86.60

Sample I.D. Number 93 - 257

Channel 'A'				Channel 'C'				Channel 'D'			
Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-257.pn	21.07	355545	0.105	C	C	C	C	C	22.23	14040005	0.014
	21.07	350015	0.102	C	C	C	0	C	22.23	12134104	0.014
	21.03	358525	0.103	C	C	C	0	C	22.23	14250004	0.014
Average		3.60E+05	0.10		0.00E+00	0.00		0.00E+00	0.00		1.50E+07
Standard Deviation		4.70E+03	0.00		0.00E+00	0.00		0.00E+00	0.00		1.07E+05
%RSD		1.31	1.48		ERR	ERR		ERR	ERR		0.71

Sample I.D. Number 93 - 258

Channel 'A'				Channel 'C'				Channel 'D'			
Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-258.pn	21.07	302371	0.087	C	C	C	00.06	1020301	0.005	22.23	5098217
	21.07	207560	0.085	C	C	C	00.06	1015905	0.005	22.23	5185775
	21.07	209530	0.086	C	C	C	00.06	1015716	0.005	22.23	5108823
Average		3.00E+05	0.09		0.00E+00	0.00		1.92E+06	0.01		5.15E+06
Standard Deviation		2.41E+03	0.00		0.00E+00	0.00		6.06E+03	0.00		4.64E+04
%RSD		0.81	1.16		ERR	ERR		0.32	0.00		0.90

Sample I.D. Number 93 - 259

Channel 'A'				Channel 'C'				Channel 'D'			
Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-259.pn	21.07	258055	0.074	C	C	C	00.06	3234745	0.005	22.23	0
	21.07	258557	0.074	C	C	C	00.06	3240137	0.005	0	0
	21.07	259034	0.074	C	C	C	00.06	3239077	0.005	0	0
Average		2.59E+05	0.07		0.00E+00	0.00		3.24E+06	0.01		0.00E+00
Standard Deviation		4.75E+02	0.00		0.00E+00	0.00		7.29E+03	0.00		0.00E+00
%RSD		0.18	0.00		ERR	ERR		0.22	0.00		ERR

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 260

Channel 'A'				Channel 'C'				Channel 'D'			
Carbon Dioxide				Nitrous Oxide				helium			
RT	AREA	AMT	RT	RT	AREA	AMT	RT	AMT	RT	AREA	AMT
21.07	280274	0.06	C	0.06	4381760	0.01	22.22	0.01	22.22	3308046	0.003
21.07	275497	0.076	C	0.06	4114804	0.011	22.22	0.011	22.22	3413281	0.003
21.07	270716	0.076	C	0.06	4103069	0.011	22.22	0.011	22.22	3404121	0.003
Average	277E+05	0.08	0.00E+00	0.00E+00	4.10E+06	0.01	3.40E+06	0.01	3.40E+06	0.00E+00	0.00
Standard Deviation	2.48E+03	0.00	0.00E+00	0.00E+00	1.68E+04	0.00	2.34E+04	0.00	2.34E+04	0.00E+00	0.00
%RSD	0.89	C.73	ERR	ERR	0.41	5.41	0.69	ERR	ERR	ERR	ERR

Sample I.D. Number 93 - 261

Channel 'A'				Channel 'C'				Channel 'D'			
Carbon Dioxide				Nitrous Oxide				helium			
RT	AREA	AMT	RT	RT	AREA	AMT	RT	AMT	RT	AREA	AMT
21.07	360824	0.106	C	0.06	4237136	0.011	22.22	0.011	22.22	16756502	0.015
21.07	369043	0.106	C	0.06	4237167	0.011	22.22	0.011	22.22	16350072	0.015
21.07	364733	0.106	C	0.06	4216867	0.011	22.22	0.011	22.22	16023170	0.015
Average	3.66E+05	0.11	0.00E+00	0.00E+00	4.23E+06	0.01	1.66E+07	0.02	1.66E+07	0.00E+00	0.00
Standard Deviation	1.13E+03	0.00	0.00E+00	0.00E+00	6.34E+03	0.00	2.07E+05	0.00	2.07E+05	0.00E+00	0.00
%RSD	0.31	C.00	ERR	ERR	0.15	0.00	1.25	ERR	ERR	ERR	ERR

Sample I.D. Number 93 - 262

Channel 'A'				Channel 'C'				Channel 'D'			
Carbon Dioxide				Nitrous Oxide				helium			
RT	AREA	AMT	RT	RT	AREA	AMT	RT	AMT	RT	AREA	AMT
21.07	210205	0.063	C	0.06	4501037	0.012	22.22	0.012	22.22	0	0
21.07	210810	0.063	C	0.06	4507303	0.012	0	0.012	0	0	0
21.07	224182	0.064	C	0.06	4500083	0.012	0	0.012	0	0	0
Average	2.21E+05	0.06	0.00E+00	0.00E+00	4.58E+06	0.01	0.00E+00	0.00	0.00E+00	0.00E+00	0.00
Standard Deviation	2.58E+03	0.00	0.00E+00	0.00E+00	2.06E+04	0.00	0.00E+00	0.00	0.00E+00	0.00E+00	0.00
%RSD	1.16	0.91	ERR	ERR	0.45	0.00	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number 93 - 263

Channel 'A'				Channel 'C'				Channel 'D'			
Carbon Dioxide				Nitrous Oxide				helium			
RT	AREA	AMT	RT	RT	AREA	AMT	RT	AMT	RT	AREA	AMT
21.07	214532	0.061	C	0.06	4503070	0.012	22.22	0.012	22.22	307657	0
21.07	214077	0.061	C	0.06	4045434	0.012	22.22	0.012	22.22	300600	0
21.07	216706	0.061	C	0.06	4521587	0.012	22.22	0.012	22.22	304804	0
Average	2.16E+05	0.06	0.00E+00	0.00E+00	4.62E+06	0.01	3.07E+05	0.02	3.07E+05	0.00E+00	0.00
Standard Deviation	3.16E+03	0.00	0.00E+00	0.00E+00	2.58E+04	0.00	1.48E+03	0.00	1.48E+03	0.00E+00	0.00
%RSD	1.46	1.61	ERR	ERR	0.55	0.00	0.48	ERR	ERR	ERR	ERR

Sample I.D. Number 93 - 264

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-264.prn	21.07	2892786	0.784	C	C	C	C	C	C	22.25	280986880	0.259	C	C	C
	21.07	435046	0.125	C	C	C	00.00	4278010	0.011	22.25	22142415	0.02	C	C	C
	21.07	401068	0.115	C	C	C	00.00	4274602	0.011	22.25	21507182	0.02	C	C	C
Average		1.17E+06	0.33		0.00E+00	0.00		4.28E+06	0.01		1.08E+08	0.10		0.00E+00	0.00
Standard Deviation		1.30E+06	0.37		0.00E+00	0.00		2.47E+06	0.01		1.49E+08	0.14		0.00E+00	0.00
%RSD		111.10	111.11		ERR	ERR		57.74	57.74		138.24	138.45		ERR	ERR

Sample I.D. Number 93 - 265

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-265.prn	21.07	337906	0.097	C	C	C	00.06	4366712	0.011	22.27	15502806	0.014	0	C	C
	21.07	335914	0.095	C	C	C	00.06	4391352	0.011	22.27	15384116	0.014	0	C	C
	21.07	333223	0.094	C	C	C	00.06	4367207	0.011	22.27	15227066	0.014	0	C	C
Average		3.36E+05	0.10		0.00E+00	0.00		4.38E+06	0.01		1.54E+07	0.01		0.00E+00	0.00
Standard Deviation		2.39E+03	0.00		0.00E+00	0.00		1.32E+04	0.00		1.18E+05	0.00		0.00E+00	0.00
%RSD		0.71	0.60		ERR	ERR		0.30	0.00		0.77	0.00		ERR	ERR

Sample I.D. Number 93 - 266

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium	hydrogen				
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-266.prn	22.01	109055	0.057	C	C	C	00.00	4821200	0.012	22.27	C	C	C	C	C
	22.01	107223	0.057	C	C	C	00.00	4841182	0.012	22.27	C	C	C	C	C
	22.01	109332	0.057	C	C	C	00.00	4830027	0.012	C	C	C	C	C	C
Average		1.09E+05	0.06		0.00E+00	0.00		4.63E+06	0.01		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		1.13E+03	0.00		0.00E+00	0.00		1.03E+04	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		0.57	0.00		ERR	ERR		0.22	0.00		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 267

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-267.prn	22.01	2059441	0.591	C	C	C	C	C	C	22.05	108346	C	C	C	C
	22.01	2075281	0.595	C	C	C	00.00	47842054	0.123	C	C	C	C	C	C
	22.01	2010582	0.58	C	C	C	00.00	47425836	0.122	C	C	C	C	C	C
Average		2.05E+06	0.59		0.00E+00	0.00		4.76E+07	0.12		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		2.87E+04	0.01		0.00E+00	0.00		2.94E+05	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		1.40	1.39		ERR	ERR		0.62	0.58		ERR	ERR		ERR	ERR

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WIC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 268

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-268.pn	22.01	2014134	0.632	0	0	0	00.06	0	0	0	0	0	0	0	0
	22.01	2022527	0.632	0	0	0	00.06	45048304	0.117	22.03	73371	0	24.07	100534	0.001
	22.01	265931E	0.632	0	0	0	00.06	45533600	0.117	22.05	65071	0	24.07	0	0
Average		2.91E+06	0.84		0.00E+00	0.00		4.56E+07	0.12		5.24E+04	0.00		3.55E+04	0.00
Standard Deviation		1.23E+04	0.00		0.00E+00	0.00		2.63E+07	0.07		4.60E+04	0.00		6.16E+04	0.00
%RSD		0.42	0.42		ERR	ERR		57.74	57.74		87.71	ERR		173.21	173.21

Sample I.D. Number 93 - 269

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-269.pn	22.01	3052303	1.134	0	0	0	00.06	0	0	0	0	0	0	0	0
	22.01	3057200	1.136	0	0	0	00.06	43708352	0.112	22.03	60270	0	0	0	0
	22.01	3042700	1.131	0	0	0	00.06	43757300	0.112	22.03	64332	0	0	0	0
Average		3.95E+06	1.13		0.00E+00	0.00		4.38E+07	0.11		4.15E+04	0.00		0.00E+00	0.00
Standard Deviation		7.33E+03	0.00		0.00E+00	0.00		2.53E+07	0.06		3.60E+04	0.00		0.00E+00	0.00
%RSD		0.19	0.22		ERR	ERR		57.74	57.74		86.74	ERR		ERR	ERR

Sample I.D. Number 93 - 270

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-270.prn	22.01	1030926	0.552	0	0	0	00.06	47420040	0.122	22.05	85637	0	0	0	0
	22.01	1040524	0.557	0	0	0	00.06	47409550	0.122	22.05	0	0	0	0	0
	22.01	1022030	0.552	0	0	0	00.06	47263102	0.121	22.05	0	0	0	0	0
Average		1.93E+06	0.56		0.00E+00	0.00		4.74E+07	0.12		2.19E+04	0.00		0.00E+00	0.00
Standard Deviation		9.29E+03	0.00		0.00E+00	0.00		7.62E+04	0.00		3.79E+04	0.00		0.00E+00	0.00
%RSD		0.48	0.48		ERR	ERR		0.16	0.47		173.21	ERR		ERR	ERR

Sample I.D. Number 93 - 271

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-271.prn	22.01	8013700	2.3	0	0	0	00.06	35812770	0.092	22.01	88501	0	0	0	0
	22.01	7090900	2.26	0	0	0	00.06	35503652	0.091	22.01	87503	0	0	0	0
	22.01	7086750	2.297	0	0	0	00.06	35413004	0.091	22.01	75836	0	24.07	40700	0
Average		7.99E+06	2.29		0.00E+00	0.00		3.56E+07	0.09		8.40E+04	0.00		1.56E+04	0.00
Standard Deviation		1.71E+04	0.01		0.00E+00	0.00		2.00E+05	0.00		7.08E+03	0.00		2.70E+04	0.00
%RSD		0.21	0.22		ERR	ERR		0.56	0.63		8.42	ERR		173.21	ERR

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number		Channel 'A'										Channel 'C'										Channel 'D'									
Channel 'A'		Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					helium					hydrogen					Channel 'D'				
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT					
93-272.prm	22.01	1823172	0.523	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
	22.01	1700077	0.514	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
	22.01	1773204	0.506	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
Average		1.80E+06	0.52			0.00	0.00E+00																								
Standard Deviation		2.54E+04	0.01			0.00	0.00E+00																								
%RSD		1.42	1.38			ERR	ERR																								
Sample I.D. Number		93 - 273										Channel 'C'										Channel 'D'									
Channel 'A'		Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					helium					hydrogen					Channel 'D'				
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT					
93-273.prm	22.01	2762851	0.702	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
	22.01	2767206	0.603	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
	22.01	2772635	0.706	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
Average		2.78E+06	0.80			0.00	0.00E+00																								
Standard Deviation		1.78E+04	0.01			0.00	0.00E+00																								
%RSD		0.64	0.64			ERR	ERR																								
Sample I.D. Number		93 - 274										Channel 'C'										Channel 'D'									
Channel 'A'		Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					helium					hydrogen					Channel 'D'				
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT					
93-274.prm	22.01	3412401	0.976	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
	22.01	3416306	0.96	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
	22.01	3394825	0.974	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
Average		3.41E+06	0.96			0.00	0.00E+00																								
Standard Deviation		1.15E+04	0.00			0.00	0.00E+00																								
%RSD		0.34	0.33			ERR	ERR																								

{DOWN 4}
 {RIGHT}
 {Publish,Font}3
 {DOWN 2}
 {END}

{getnumber' what is the first run number' .a233}
 {GETNumber' What is the last run Number' .a234}
 {getnumber' What is the number of runs per page' .3220}
 {FOR .a236.a233.a234 .1.a215}
 {HOME}

{DOWN 9}
 {RIGHT 16}
 {down} {end} {L} {D}

Sample I.D. Number 93 - 276

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-276.pn	22.05	2750103	0.702	C	C	0	00.05	44774526	0.115	0	0	0	24.05	83450	0.001
	22.05	2752185	0.71	C	0	0	00.05	44751676	0.115	0	0	0	24.05	0	0
Average	22.05	1.84E+05	0.53	C	0.00E+00	0.00	00.05	2.08E+07	0.115	0	0.00E+00	0.00	24.05	2.78E+04	0.00
Standard Deviation		1.59E+06	0.46		0.00E+00	0.00		2.58E+07	0.07	0.00E+00	0.00		4.82E+04	0.00	
%RSD		86.60	86.60		ERR	ERR		86.60	86.60		ERR	ERR		173.21	173.21
%RSD		0.01	18963.34		ERR	ERR		3.35E-04	1.30E-05		ERR	ERR		3.59E-01	3.00E+07

Sample I.D. Number 93 - 277

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-277.pn	22.13	1560241	0.453	22.13	1560241	0.255	07	48466926	0.124	0	0	0	24.01	83200	0.001
	22.13	1578126	0.453	22.13	1578126	0.254	07	49130072	0.126	0	0	0	24.01	0	0
	22.13	1573405	0.452	22.13	1573405	0.254	07	47889076	0.123	0	0	0	24.01	0	0
Average		1.58E+06	0.45		1.58E+06	0.25		4.85E+07	0.124		0.00E+00	0.00		2.77E+04	0.00
Standard Deviation		3.45E+03	0.00		3.45E+03	0.00		6.21E+05	0.00		0.00E+00	0.00		4.80E+04	0.00
%RSD		0.22	0.13		0.22	0.23		1.28	1.23		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 278

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-278.pn	22.13	4420205	1.271	22.13	4420205	0.714	07	C	0	0	0	0	24.01	0	0
	22.13	4363146	1.261	22.13	4363146	0.705	07	C	0	0	0	0	24.01	0	0
	22.13	4433215	1.272	22.13	4433215	0.715	07	0	0	0	0	0	0	0	0
Average		4.42E+06	1.27		4.42E+06	0.71		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		2.18E+04	0.01		2.18E+04	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		0.49	0.48		0.49	0.53		ERR	ERR		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 279

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-279.pn	22.13	3714162	1.065	22.13	3714162	0.595	07	18231752	0.047	0	0	0	0	0	0
	22.13	3706706	1.064	22.13	3706706	0.595	07	18208856	0.047	0	0	0	0	0	0
	22.13	3715577	1.066	22.13	3715577	0.596	07	18393342	0.047	0	0	0	0	0	0
Average		3.71E+06	1.07		3.71E+06	0.60		1.83E+07	0.05		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		4.72E+03	0.00		4.72E+03	0.00		1.01E+05	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		0.13	0.11		0.13	0.00		0.55	0.00		ERR	ERR		ERR	ERR

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WHC-SD-WM-TRP-212, Rev. 0

Sample ID Number	Channel 'C'										Channel 'D'									
	Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					Hydrogen				
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA
93-280.prm	22.13	2100186	0.602	22.13	2100186	0.335	0"	35018144	0.1	0	0	0	0	0	0	0	0	0	0	0
	22.13	2001510	0.592	22.13	2001510	0.332	0"	36063750	0.1	0	0	0	0	0	0	0	0	0	0	0
	22.13	2007510	0.56	22.13	2007510	0.332	0"	3075768	0.1	0	0	0	0	0	0	24.81	04200	0.00	0	0
Average		2.07E+06	0.60		2.07E+06	0.33		3.91E+07	0.10		0.00E+00	0.00		0.00E+00	0.00		2.14E+04	0.00		0.00
Standard Deviation		2.36E+04	0.0		2.36E+04	0.00		1.02E+05	0.00		0.00E+00	0.00		0.00E+00	0.00		3.71E+04	0.00		0.00
%RSD		1.14	1.18			1.2		0.26	0.00		ERR	ERR		ERR	ERR		173.21	173.21		ERR

Sample ID Number	Channel 'C'										Channel 'D'									
	Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					Hydrogen				
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA
93-281.prm	22.17	2594542	0.745	22.17	2594542	0.415	0"	44430780	0.114	0	0	0	0	0	0	24.81	03250	0	0	0
	22.17	2575550	0.736	22.17	2575550	0.415	0"	44551350	0.114	0	0	0	0	0	0	24.81	0	0	0	0
	22.15	2550603	0.725	22.15	2550603	0.413	0"	44480220	0.114	0	0	0	0	0	0	24.81	54016	0	0	0
Average		2.58E+06	0.74		2.58E+06	0.42		4.45E+07	0.11		0.00E+00	0.00		0.00E+00	0.00		3.81E+04	0.00		0.00
Standard Deviation		1.74E+04	0.0		1.74E+04	0.00		5.93E+04	0.00		0.00E+00	0.00		0.00E+00	0.00		3.32E+04	0.00		0.00
%RSD		0.67	0.68			0.6		0.67	0.00		ERR	ERR		ERR	ERR		87.00	87.00		ERR

Sample ID Number	Channel 'C'										Channel 'D'									
	Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					Hydrogen				
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA
93-282.prm	22.16	354127	1.016	22.16	354127	0.57	0"	44750940	0.113	0	0	0	0	0	0	24.81	0	0	0	0
	22.15	355568	1.02	22.15	355568	0.573	0"	4303326	0.113	0	0	0	0	0	0	24.81	50351	0	0	0
	22.15	3503503	1.023	22.15	3503503	0.572	0"	44043570	0.113	0	0	0	0	0	0	24.81	55002	0	0	0
Average		3.55E+06	1.02		3.55E+06	0.57		4.40E+07	0.11		0.00E+00	0.00		0.00E+00	0.00		3.83E+04	0.00		0.00
Standard Deviation		1.13E+04	0.00		1.13E+04	0.00		1.28E+05	0.00		0.00E+00	0.00		0.00E+00	0.00		3.33E+04	0.00		0.00
%RSD		0.32	0.34			0.35		0.29	0.00		ERR	ERR		ERR	ERR		86.74	86.74		ERR

Sample ID Number	Channel 'C'										Channel 'D'									
	Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					Hydrogen				
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA
93-283.prm	0	0	0	22.16	2084076	0.336	0"	40232346	0.12	0	0	0	0	0	0	24.81	0	0	0	0
	0	0	0	22.16	2005000	0.337	0"	40284200	0.12	0	0	0	0	0	0	24.81	0	0	0	0
	0	0	0	22.16	2074535	0.335	0"	40262750	0.12	0	0	0	0	0	0	24.81	0	0	0	0
Average		0.00E+00	0.00		2.08E+06	0.34		4.70E+07	0.12		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00
Standard Deviation		0.00E+00	0.00		8.22E+03	0.00		2.81E+04	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00E+00	0.00		0.00
%RSD		ERR	ERR		0.39	0.30		0.06	0.00		ERR	ERR		ERR	ERR		ERR	ERR		ERR

Sample ID, Number									
93 - 284									
Channel A									
Carbon Dioxide									
93-284.ppm	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
0	0	0	0	22 15	185893	0.301	07	47461304	0.123
0.525	22 17	1818136	0.525	22 17	1818136	0.203	07	47427258	0.122
0.524	22 17	1825205	0.524	22 17	1825205	0.204	07	48163202	0.124
Average	1.21E+06	0.35	1.84E+06	0.30	4.77E+07	0.123	0.00E+00	0.00	0.94
Standard Deviation	1.05E+06	0.30	2.75E+04	0.00	4.26E+05	0.00	0.00E+00	0.00	ERR
%RSD	86.60	86.60			0.89	0.94	ERR	ERR	ERR

Sample ID, Number									
93 - 285									
Channel A									
Carbon Dioxide									
93-285.ppm	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
0	0	0	0	22 15	3807055	0.582	07	43260086	0.113
0.581	22 15	3805270	0.581	07	43274712	0.112	0	24 83	0
0.58	22 15	3557167	0.58	07	44141152	0.112	0	24 85	0
Average	0.00E+00	0.00	3.60E+06	0.58	4.40E+07	0.113	0.00E+00	0.00	3.01E+04
Standard Deviation	0.00E+00	0.00	5.27E+03	0.00	1.37E+05	0.00	0.00E+00	0.00	5.22E+04
%RSD	ERR	ERR	0.16	0.17	0.91	0.61	ERR	ERR	173.21

Sample ID, Number									
93 - 286									
Channel A									
Carbon Dioxide									
93-286.ppm	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
0	0	0	0	22 15	1727423	0.275	07	47201804	0.121
0.275	22 21	1732186	0.275	07	46375620	0.12	0	24 87	0
0.275	22 21	1732118	0.275	07	46375620	0.12	0	24 87	0
Average	0.00E+00	0.00	1.73E+06	0.28	3.14E+07	0.121	0.00E+00	0.00	5.62E+04
Standard Deviation	0.00E+00	0.00	2.73E+03	0.00	2.72E+07	0.07	0.00E+00	0.00	4.87E+04
%RSD	ERR	ERR	0.16	0.00	86.60	0.07	ERR	ERR	86.60

Sample ID, Number									
93 - 287									
Channel A									
Carbon Dioxide									
93-287.ppm	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
0	0	0	0	22 15	1724697	0.276	07	46323800	0.124
0.284	22 15	1732726	0.284	07	46344240	0.124	0	24 87	0
0.276	22 15	1725112	0.276	07	46225298	0.124	0	24 87	0
Average	0.00E+00	0.00	1.74E+06	0.28	4.84E+07	0.124	0.00E+00	0.00	2.17E+04
Standard Deviation	0.00E+00	0.00	89E+04	0.00	1.60E+05	0.00	0.00E+00	0.00	3.76E+04
%RSD	ERR	ERR	0.09	0.00	1.15	0.01	ERR	ERR	173.21

Sample I.D. Number 93 - 288

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-288.prn	0	0	0	22.23	1804822	0.291	07	0		0	0	0	0	0	0
	0	0	0	22.23	1792006	0.289	07	48317032	0.124	0	0	0	24.87	105202	0.001
	0	0	0	22.23	1805084	0.291	07	50161828	0.126	0	0	0	24.87	0	0
Average		0.00E+00	0.00		1.80E+06	0.29		3.28E+07	0.06	0.127		0.00E+00	0.00	3.51E+04	0.00
Standard Deviation		0.00E+00	0.00		8.06E+03	0.00		2.84E+07	0.07			0.00E+00	0.00	6.08E+04	0.00
%RSD		ERR	ERR		0.45	0.40		86.65	86.65			ERR	ERR	173.21	173.21

Sample I.D. Number 93 - 289

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-289.prn	0	0	0	22.23	1705502	0.271	07	47000700	0.123	0	0	0	24.87	85721	0.001
	0	0	0	22.23	1695270	0.273	07	46161252	0.124	0	0	0	24.87	0	0
	0	0	0	22.23	1698404	0.274	07	47057330	0.123	0	0	0	24.87	0	0
Average		0.00E+00	0.00		1.70E+06	0.27		4.80E+07	0.123		0.00E+00	0.00		2.86E+04	0.00
Standard Deviation		0.00E+00	0.00		5.29E+03	0.00		1.34E+05	0.00		0.00E+00	0.00		4.95E+04	0.00
%RSD		ERR	ERR		0.31	0.36		0.28	0.47		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 290

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-290.prn	0	0	0	22.21	3502572	0.581	07	43469104	0.112	0	0	0	24.87	0	0
	0	0	0	22.21	3554032	0.573	00.89	43450484	0.111	0	0	0	24.87	0	0
	0	0	0	22.21	3549817	0.576	07	43705200	0.112	0	0	0	24.87	0	0
Average		0.00E+00	0.00		3.57E+06	0.58		4.36E+07	0.112		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		0.00E+00	0.00		2.94E+04	0.00		1.70E+05	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		ERR	ERR		0.82	0.86		0.39	0.52		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 291

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-291.prn	0	0	0	22.25	1920812	0.31	07	48044710	0.12	0	0	0	24.87	0	0
	0	0	0	22.25	1924114	0.31	07	48009706	0.121	0	0	0	24.87	0	0
	0	0	0	22.25	1911673	0.306	07	47307140	0.121	0	0	0	24.87	0	0
Average		0.00E+00	0.00		1.92E+06	0.31		4.71E+07	0.12		0.00E+00	0.00		0.00E+00	0.00
Standard Deviation		0.00E+00	0.00		6.33E+03	0.00		1.95E+05	0.00		0.00E+00	0.00		0.00E+00	0.00
%RSD		ERR	ERR		0.33	0.37		0.41	0.48		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 292

Channel "A"				Channel "C"				Channel "D"			
Carbon Dioxide				Carbon Monoxide				Nitrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-292.ppm	0	0	0	1870531	0.302	07	23445032	0.05	0	0	0
	0	0	0	1851051	0.3	07	23452776	0.05	0	0	0
	0	0	0	1853784	0.296	07	23348222	0.05	0	0	0
Average	0.00E+00	0.00	0.00	1.85E+06	0.30		2.34E+07	0.05	0.00E+00	0.00	0.00
Standard Deviation	0.00E+00	0.00	0.00	8.42E+03	0.00		5.80E+04	0.00	0.00E+00	0.00	0.00
%RSD	ERR	ERR	ERR	0.45	0.5		0.25	0.00	ERR	ERR	ERR

Sample I.D. Number 93 - 293

Channel "A"				Channel "C"				Channel "D"			
Carbon Dioxide				Carbon Monoxide				Nitrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-293.ppm	0	0	0	2372205	0.353	07	0205814	0.02	0	0	0
	0	0	0	2370104	0.385	07	0908685	0.025	0	0	0
	0	0	0	2303746	0.382	07	0627303	0.02	0	0	0
Average	0.00E+00	0.00	0.00	2.38E+06	0.38		9.85E+06	0.03	0.00E+00	0.00	0.00
Standard Deviation	0.00E+00	0.00	0.00	1.15E+04	0.00		1.47E+05	0.00	0.00E+00	0.00	0.00
%RSD	ERR	ERR	ERR	0.48	0.45		0.45	2.28	ERR	ERR	ERR

Sample I.D. Number 93 - 294

Channel "A"				Channel "C"				Channel "D"			
Carbon Dioxide				Carbon Monoxide				Nitrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-294.ppm	0	0	0	1650665	0.302	07	4133522	0.011	0	0	0
	0	0	0	1828744	0.335	07	4271050	0.011	0	0	0
	0	0	0	1855244	0.292	07	4271214	0.011	0	0	0
Average	0.00E+00	0.00	0.00	1.85E+06	0.30		4.23E+06	0.01	0.00E+00	0.00	0.00
Standard Deviation	0.00E+00	0.00	0.00	2.05E+04	0.00		7.54E+04	0.00	0.00E+00	0.00	0.00
%RSD	ERR	ERR	ERR	1.13	1.18		1.88	0.00	ERR	ERR	ERR

Sample I.D. Number 93 - 295

Channel "A"				Channel "C"				Channel "D"			
Carbon Dioxide				Carbon Monoxide				Nitrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-295.ppm	0	0	0	1810011	0.292	07	882172	0.002	0	0	0
	0	0	0	1800172	0.28	07	914917	0.002	0	0	0
	0	0	0	1815427	0.293	07	817372	0.002	0	0	0
Average	0.00E+00	0.00	0.00	1.81E+06	0.29		8.74E+05	0.00	0.00E+00	0.00	0.00
Standard Deviation	0.00E+00	0.00	0.00	7.74E+03	0.00		5.05E+04	0.00	0.00E+00	0.00	0.00
%RSD	ERR	ERR	ERR	0.43	0.52		5.79	0.00	ERR	ERR	ERR

Sample I.D. Number: 93 - 296

Channel 'A'	Channel 'C'				Channel 'D'			
	Carbon Dioxide		Nitrous Oxide		Carbon Monoxide		Helium	
	RT	AREA	AMT	RT	AMT	RT	AMT	RT
93-296.ppm	C	C	C	22.25	0.541	6"	C	24.67
	C	C	C	22.25	0.543	6"	0.005	24.67
	C	C	C	22.25	0.541	6"	C	24.67
Average		0.00E+00	0.00	22.25	3.36E+06	9.50E-04	0.00	0.00E+00
Standard Deviation		0.00E+00	0.00		9.43E+03	1.64E+05	0.00	0.00E+00
%RSD		ERR	ERR		0.28	173.2	ERR	ERR

Sample I.D. Number: 93 - 297

Channel 'A'	Channel 'C'				Channel 'D'			
	Carbon Dioxide		Nitrous Oxide		Carbon Monoxide		Helium	
	RT	AREA	AMT	RT	AMT	RT	AMT	RT
93-297.ppm	C	C	C	22.27	0.295	6"	C	24.67
	C	C	C	22.27	0.295	6"	C	24.67
	C	C	C	22.27	0.292	6"	C	24.67
Average		0.00E+00	0.00	22.27	1.84E+06	0.00E+00	0.00	0.00E+00
Standard Deviation		0.00E+00	0.00		5.55E+03	0.00E+00	0.00	0.00E+00
%RSD		ERR	ERR		0.34	ERR	ERR	ERR

Sample I.D. Number: 93 - 298

Channel 'A'	Channel 'C'				Channel 'D'			
	Carbon Dioxide		Nitrous Oxide		Carbon Monoxide		Helium	
	RT	AREA	AMT	RT	AMT	RT	AMT	RT
93-298.ppm	C	C	C	22.29	0.312	6"	C	24.67
	C	C	C	22.29	0.312	6"	C	24.67
	C	C	C	22.29	0.311	6"	C	24.67
Average		0.00E+00	0.00	22.29	1.92E+06	0.00E+00	0.00	0.00E+00
Standard Deviation		0.00E+00	0.00		1.05E+03	0.00E+00	0.00	0.00E+00
%RSD		ERR	ERR		0.82	ERR	ERR	ERR

Sample I.D. Number: 93 - 299

Channel A		Channel C		Channel D	
RT	AMT	RT	AMT	RT	AMT
93-299.ppm	1570403	93-299.ppm	1570403	93-299.ppm	1570403
21.97	0.451	21.97	0.451	21.97	0.451
21.97	0.457	21.97	0.457	21.97	0.457
21.97	0.45	21.97	0.45	21.97	0.45
Average	1.58E+06	Average	1.58E+06	Average	1.58E+06
Standard Deviation	1.28E+04	Standard Deviation	1.28E+04	Standard Deviation	1.28E+04
%RSD	0.81	%RSD	0.84	%RSD	1.7321

Sample I.D. Number: 93 - 300

Channel A		Channel C		Channel D	
RT	AMT	RT	AMT	RT	AMT
93-300.ppm	1819824	93-300.ppm	1819824	93-300.ppm	1819824
21.97	0.222	21.97	0.222	21.97	0.222
21.97	0.51	21.97	0.51	21.97	0.51
21.97	0.524	21.97	0.524	21.97	0.524
Average	1.78E+06	Average	1.78E+06	Average	1.78E+06
Standard Deviation	3.22E+04	Standard Deviation	3.22E+04	Standard Deviation	3.22E+04
%RSD	1.81	%RSD	1.79	%RSD	0.000

Sample I.D. Number: 93 - 301

Channel A		Channel C		Channel D	
RT	AMT	RT	AMT	RT	AMT
93-301.ppm	3585007	93-301.ppm	3585007	93-301.ppm	3585007
21.97	1.056	21.97	1.056	21.97	1.056
21.97	1.02	21.97	1.02	21.97	1.02
21.97	1.056	21.97	1.056	21.97	1.056
Average	3.69E+06	Average	3.69E+06	Average	3.69E+06
Standard Deviation	4.09E+03	Standard Deviation	4.09E+03	Standard Deviation	4.09E+03
%RSD	0.11	%RSD	0.11	%RSD	0.000

Sample I.D. Number: 93 - 302

Channel A		Channel C		Channel D	
RT	AMT	RT	AMT	RT	AMT
93-302.ppm	3082276	93-302.ppm	3082276	93-302.ppm	3082276
21.97	1.143	21.97	1.143	21.97	1.143
21.97	1.136	21.97	1.136	21.97	1.136
21.97	1.13	21.97	1.13	21.97	1.13
Average	3.96E+06	Average	3.96E+06	Average	3.96E+06
Standard Deviation	2.23E+04	Standard Deviation	2.23E+04	Standard Deviation	2.23E+04
%RSD	0.56	%RSD	0.58	%RSD	0.000

Sample I.D. Number 93 - 303

	Channel 'A'						Channel 'C'						Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-303.prn	21.07	3338148	0.056	C	C	C	00.30	43511600	0.112	C	C	C	24.50	00028	0.00			
	21.07	3337163	0.056	C	C	C	00.30	43029216	0.112	C	C	C	24.50	C	C			
	21.07	3347502	0.051	C	C	C	00.30	43348086	0.111	C	C	C	24.50	C	C			
Average		3.34E+06	0.059		0.00E+00	0.000		4.35E+07	0.112		0.00E+00	0.000		2.23E+04	0.000			
Standard Deviation		5.74E+03	0.002		0.00E+00	0.000		1.41E+05	0.001		0.00E+00	0.000		3.86E+04	0.001			
%RSD		0.17	0.18		ERR	ERR		0.32	0.52		ERR	ERR		173.21	173.21			

Sample I.D. Number 93 - 304

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-304.prn	21.07	3150405	0.007	C	C	C	00.30	45002006	0.116	C	C	C	24.50	C	C
	21.07	3153105	0.005	C	C	C	00.30	40110016	0.116	C	C	C	24.01	104720	0.00
	21.07	3163850	0.006	C	C	C	00.30	40133152	0.116	C	C	C	24.01	50204	C
Average		3.16E+06	0.007		0.00E+00	0.000		4.60E+07	0.118		0.00E+00	0.000		5.16E+04	0.000
Standard Deviation		6.84E+03	0.002		0.00E+00	0.000		1.27E+05	0.000		0.00E+00	0.000		5.24E+04	0.00
%RSD		0.22	0.22		ERR	ERR		0.28	0.00		ERR	ERR		101.42	173.21

Sample I.D. Number 93 - 305

	Channel 'A'						Channel 'C'			Channel 'D'						
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen			
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-305.prn	21.07	2082030	0.054	C	C	C	00.30	47040320	0.121	C	0	0	0	24.01	0	0
	21.06	2076200	0.055	C	C	C	00.30	40067004	0.12	C	0	0	0	24.01	70531	0.00
	21.07	2000140	0.051	C	C	C	00.30	47001024	0.121	C	0	0	0	24.01	0	0
Average		2.98E+06	0.054		0.00E+00	0.000		4.70E+07	0.121		0.00E+00	0.000		2.55E+04	0.000	
Standard Deviation		8.63E+03	0.003		0.00E+00	0.000		3.40E+04	0.001		0.00E+00	0.000		4.42E+04	0.001	
%RSD		0.30	0.31		ERR	ERR		0.07	0.48		ERR	ERR		173.21	173.21	

Sample I.D. Number 93 - 306

	Channel 'A'			Channel 'C'			Channel 'D'								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-306.prn	21.07	2560270	0.743	C	C	C	00.30	47797250	0.123	22.60	30885	0	24.01	C	C
	21.07	2503200	0.744	C	C	C	00.30	47400700	0.122	22.60	C	C	24.01	C	C
	21.07	2500630	0.745	C	C	C	00.30	47002104	0.122	22.60	C	C	24.01	C	C
Average		2.59E+06	0.744		0.00E+00	0.000		4.77E+07	0.122		1.02E+04	0.000		0.00E+00	0.000
Standard Deviation		3.28E+03	0.001		0.00E+00	0.000		1.69E+05	0.001		1.77E+04	0.000		0.00E+00	0.000
%RSD		0.13	0.13		ERR	ERR		0.35	0.47		173.21	ERR		ERR	ERR

WHC-SD-WM-TRP-212, Rev. 0

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Sample I.D. Number 93 - 307

	Channel "A"			Channel "C"			Channel "D"			Channel "E"			Channel "F"		
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-307.prm	21.07	2363435	0.584	0	0	0	00.30	48031076	0.123	0	0	0	24.01	55085	0
	21.07	2370007	0.083	0	0	0	00.30	47581526	0.122	0	0	0	24.03	57015	0
	21.07	2368794	0.068	0	0	0	00.30	47850084	0.123	0	0	0	24.01	74580	0.001
Average		2.39E+06	0.685		0.00E+00	0.000		4.78E+07	0.123		0.00E+00	0.000		6.35E+04	0.000
Standard Deviation		1.02E+04	0.003		0.00E+00	0.000		2.27E+05	0.001		0.00E+00	0.000		9.60E+03	0.001
%RSD		0.43	0.39		ERR	ERR		0.48	0.47		ERR	ERR		15.11	173.21

Sample I.D. Number 93 - 308

	Channel "A"			Channel "C"			Channel "D"			Channel "E"			Channel "F"		
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-308.prm	21.07	2338274	0.671	0	0	0	00.30	47722456	0.122	0	0	0	24.01	0	0
	21.07	2340020	0.672	0	0	0	00.30	47510076	0.122	0	0	0	24.03	70001	0.001
	21.07	2357794	0.677	0	0	0	00.30	47584344	0.122	0	0	0	24.03	0	0
Average		2.35E+06	0.673		0.00E+00	0.000		4.76E+07	0.122		0.00E+00	0.000		2.33E+04	0.000
Standard Deviation		1.08E+04	0.003		0.00E+00	0.000		1.05E+05	0.000		0.00E+00	0.000		4.04E+04	0.001
%RSD		0.46	0.48		ERR	ERR		0.22	0.00		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 309

	Channel "A"			Channel "C"			Channel "D"			Channel "E"			Channel "F"		
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-309.prm	21.07	2222016	0.635	0	0	0	00.30	48021032	0.121	0	0	0	24.03	0	0
	21.07	2240046	0.045	0	0	0	00.30	47903976	0.123	0	0	0	24.03	0	0
	21.07	2222552	0.636	0	0	0	00.30	47955302	0.123	0	0	0	24.03	0	0
Average		2.23E+06	0.640		0.00E+00	0.000		4.80E+07	0.123		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation		1.52E+04	0.004		0.00E+00	0.000		5.87E+04	0.000		0.00E+00	0.000		0.00E+00	0.000
%RSD		0.68	0.63		ERR	ERR		0.12	0.00		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 310

	Channel "A"			Channel "C"			Channel "D"			Channel "E"			Channel "F"		
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-310.prm	21.07	2201806	0.631	0	0	0	00.30	47955402	0.122	0	0	0	24.03	0	0
	21.07	2180540	0.026	0	0	0	00.30	47964544	0.123	0	0	0	24.03	0	0
	21.07	2185944	0.027	0	0	0	00.30	47703016	0.122	0	0	0	24.03	80446	0.001
Average		2.19E+06	0.629		0.00E+00	0.000		4.78E+07	0.122		0.00E+00	0.000		2.88E+04	0.000
Standard Deviation		8.58E+03	0.003		0.00E+00	0.000		1.74E+05	0.001		0.00E+00	0.000		4.99E+04	0.001
%RSD		0.39	0.42		ERR	ERR		0.36	0.47		ERR	ERR		173.21	173.21

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MHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 31.1

Channel 'A'		Channel 'C'				Channel 'D'			
Carbon Dioxide		Carbon Monoxide				Nitrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
21.07	3040798	1.04E	05.35	45012772	0.11E	22.85	58042	0	24.03
21.07	3027790	1.04E	05.35	45202720	0.11E	22.89	0	0	24.03
21.07	3039541	1.04E	05.35	45217256	0.11E	22.89	0	0	24.03
Average	3.64E+06	1.043	4.52E+07	0.000	0.11E	1.96E+04	0.000	0.000	2.85E+04
Standard Deviation	7.20E+03	0.002	1.33E+05	0.000	0.001	3.40E+04	0.000	0.000	4.94E+04
%RSD	0.20	0.20	ERR	ERR	0.50	173.21	ERR	ERR	173.21

Sample I.D. Number 93 - 31.2

Channel 'A'		Channel 'C'				Channel 'D'			
Carbon Dioxide		Carbon Monoxide				Nitrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
21.07	2003508	0.58E	05.35	4780024	0.12E	0	0	0	24.03
21.07	2042086	0.58E	05.35	47740324	0.12E	0	0	0	24.03
21.07	2085223	0.58E	05.35	47802120	0.12E	0	0	0	24.03
Average	2.08E+06	0.592	4.78E+07	0.000	0.12E	0.00E+00	0.000	0.000	4.55E+04
Standard Deviation	2.11E+04	0.006	1.11E+05	0.000	0.001	0.00E+00	0.000	0.001	3.94E+04
%RSD	1.02	1.01	ERR	ERR	0.47	ERR	ERR	ERR	88.60

Sample I.D. Number 93 - 31.3

Channel 'A'		Channel 'C'				Channel 'D'			
Carbon Dioxide		Carbon Monoxide				Nitrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
22.01	1000488	0.57E	05.35	47804844	0.12E	0	0	0	24.03
22.01	1088003	0.57E	05.35	48200400	0.12E	0	0	0	24.03
22.01	2005573	0.57E	05.35	47843824	0.12E	0	0	0	24.03
Average	1.99E+06	0.572	4.79E+07	0.000	0.12E	0.00E+00	0.000	0.000	2.13E+04
Standard Deviation	1.01E+04	0.003	9.03E+04	0.000	0.000	0.00E+00	0.000	0.001	3.70E+04
%RSD	0.51	0.56	ERR	ERR	0.00	ERR	ERR	ERR	173.21

Sample I.D. Number 93 - 31.4

Channel 'A'		Channel 'C'				Channel 'D'			
Carbon Dioxide		Carbon Monoxide				Nitrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
22.01	1517010	0.43E	05.35	48700112	0.12E	22.05	324570	0	0
22.01	1505716	0.43E	05.35	47740324	0.12E	22.05	88505	0	0
22.01	1501285	0.43E	05.35	47410020	0.12E	22.05	0	0	0
Average	1.51E+06	0.435	4.80E+07	0.000	0.12E	1.31E+05	0.000	0.000	0.00E+00
Standard Deviation	8.19E+03	0.003	6.70E+05	0.000	0.002	1.71E+05	0.000	0.000	0.00E+00
%RSD	0.54	0.61	ERR	ERR	1.41	130.52	ERR	ERR	ERR

93-B

Sample ID: Number 93 - 315											
Channel A				Channel C				Channel D			
Carbon Dioxide				Carbon Monoxide				hydrogen			
RT	AREA	AMT	RT	RT	AREA	AMT	RT	RT	AREA	AMT	RT
93-315.ppm	4334616	1.244	22.01	0	0	0	0	0	0	0	0
22.01	4318252	1.235	22.01	0	0	0	0	0	0	0	0
22.01	4287000	1.23	22.01	0	0	0	0	0	0	0	0
Average				0.00E+00				0.00E+00			
Standard Deviation				0.00E+00				0.00E+00			
2.40E+04				0.00E+00				0.00E+00			
0.56				ERR				ERR			
0.57				ERR				ERR			
%RSD				ERR				ERR			

Sample ID: Number 93 - 316											
Channel A				Channel C				Channel D			
Carbon Dioxide				Carbon Monoxide				hydrogen			
RT	AREA	AMT	RT	RT	AREA	AMT	RT	RT	AREA	AMT	RT
93-316.ppm	7124592	2.045	22.01	0	0	0	0	0	0	0	0
22.01	7114851	2.042	22.01	0	0	0	0	0	0	0	0
22.01	7057644	2.025	22.01	0	0	0	0	0	0	0	0
Average				0.00E+00				0.00E+00			
Standard Deviation				0.00E+00				0.00E+00			
7.10E+05				0.00E+00				0.00E+00			
0.51				ERR				ERR			
0.53				ERR				ERR			
%RSD				ERR				ERR			

Sample ID: Number 93 - 317											
Channel A				Channel C				Channel D			
Carbon Dioxide				Carbon Monoxide				hydrogen			
RT	AREA	AMT	RT	RT	AREA	AMT	RT	RT	AREA	AMT	RT
93-317.ppm	11957250	3.421	22.01	0	0	0	0	0	0	0	0
22.01	11903721	3.415	22.01	0	0	0	0	0	0	0	0
22.01	11933757	3.425	22.01	0	0	0	0	0	0	0	0
Average				0.00E+00				0.00E+00			
Standard Deviation				0.00E+00				0.00E+00			
1.19E+07				0.00E+00				0.00E+00			
0.20				ERR				ERR			
0.19				ERR				ERR			
%RSD				ERR				ERR			

Sample ID: Number 93 - 318											
Channel A				Channel C				Channel D			
Carbon Dioxide				Carbon Monoxide				hydrogen			
RT	AREA	AMT	RT	RT	AREA	AMT	RT	RT	AREA	AMT	RT
93-318.ppm	14058232	4.034	22.02	0	0	0	0	0	0	0	0
22.02	13948238	4.001	22.02	0	0	0	0	0	0	0	0
22.02	13948021	4.003	22.02	0	0	0	0	0	0	0	0
Average				0.00E+00				0.00E+00			
Standard Deviation				0.00E+00				0.00E+00			
6.54E+04				0.00E+00				0.00E+00			
0.47				ERR				ERR			
0.46				ERR				ERR			
%RSD				ERR				ERR			

Sample I.D. Number		Channel 'A'										Channel 'D'									
Channel 'A'		Channel 'C'										Channel 'D'									
Carbon Dioxide		Nitrous Oxide					Carbon Monoxide					Nitrogen					Channel 'D'				
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-319.prm	22.06	13430766	3.867	C	C	06.36	35512106	0.001	C	0	0	24.06	47326	C	0	24.06	C	0	0	0	
	22.06	13373827	3.836	C	C	06.36	35364426	0.001	C	0	0	24.06	C	0	0	24.06	C	0	0	0	
	22.06	13408656	3.846	C	C	06.36	35311072	0.001	C	0	0	24.71	72002	C	0	24.71	72002	C	0	0	
Average	1.34E+07	3.848	0.00E+00	0.00C	0.00C	3.54E+07	0.00E+00	0.001	0.00E+00	0.000	0.000	3.98E-04	0.000	0.000	3.98E-04	0.000	0.000	0.000	0.000	0.000	
Standard Deviation	3.30E+04	0.01C	0.00E+00	0.00C	0.00C	1.04E+05	0.00E+00	0.00C	0.00E+00	0.000	0.000	3.66E-04	0.000	0.000	3.66E-04	0.001	0.001	0.001	0.001	0.001	
%RSD	0.25	0.25	ERR	ERR	ERR	0.29	ERR	ERR	ERR	0.00	ERR	92.02	ERR	ERR	92.02	173.21	ERR	173.21	ERR	173.21	
Sample I.D. Number		Channel 'A'										Channel 'D'									
Channel 'A'		Channel 'C'										Channel 'D'									
Carbon Dioxide		Nitrous Oxide					Carbon Monoxide					Nitrogen					Channel 'D'				
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-320.prm	22.06	11603095	3.356	C	C	06.36	40164526	0.10C	C	0	0	24.06	75416	C	0	24.06	75416	C	0	0	
	22.06	11606014	3.354	C	C	06.36	40176026	0.10C	C	0	0	24.71	59812	C	0	24.71	59812	C	0	0	
	22.06	11702401	3.356	C	C	06.36	40411626	0.104	C	0	0	24.71	0	C	0	24.71	0	C	0	0	
Average	1.17E+07	3.357	0.00E+00	0.00C	0.00C	4.03E+07	0.00E+00	0.103	0.00E+00	0.000	0.000	4.41E-04	0.000	0.000	4.41E-04	0.000	0.000	0.000	0.000	0.000	
Standard Deviation	8.33E+03	0.002	0.00E+00	0.00C	0.00C	1.30E+05	0.00E+00	0.001	0.00E+00	0.000	0.000	3.93E-04	0.000	0.000	3.93E-04	0.001	0.001	0.001	0.001	0.001	
%RSD	0.07	0.07	ERR	ERR	ERR	0.32	ERR	ERR	ERR	0.00	ERR	89.14	ERR	ERR	89.14	173.21	ERR	173.21	ERR	173.21	
Sample I.D. Number		Channel 'A'										Channel 'D'									
Channel 'A'		Channel 'C'										Channel 'D'									
Carbon Dioxide		Nitrous Oxide					Carbon Monoxide					Nitrogen					Channel 'D'				
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-321.prm	22.06	11609701	3.417	C	C	06.36	38233846	0.006	C	0	0	24.71	C	0	0	24.71	C	0	0	0	
	22.06	11644624	3.366	C	C	06.36	38126556	0.006	C	0	0	24.71	54152	C	0	24.71	54152	C	0	0	
	22.06	11625207	3.364	C	C	06.36	37977526	0.007	C	0	0	24.71	0	C	0	24.71	0	C	0	0	
Average	1.19E+07	3.403	0.00E+00	0.00C	0.00C	3.81E+07	0.00E+00	0.008	0.00E+00	0.000	0.000	0.00E+00	0.000	0.000	0.00E+00	0.000	0.000	0.000	0.000	0.000	
Standard Deviation	4.35E+04	0.012	0.00E+00	0.00C	0.00C	7.60E+04	0.00E+00	0.001	0.00E+00	0.000	0.000	3.13E-04	0.000	0.000	3.13E-04	0.000	0.000	0.000	0.000	0.000	
%RSD	0.37	0.36	ERR	ERR	ERR	0.20	ERR	ERR	ERR	0.00	ERR	173.21	ERR	ERR	173.21	ERR	ERR	ERR	ERR	ERR	
Sample I.D. Number		Channel 'A'										Channel 'D'									
Channel 'A'		Channel 'C'										Channel 'D'									
Carbon Dioxide		Nitrous Oxide					Carbon Monoxide					Nitrogen					Channel 'D'				
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-322.prm	22.06	8436913	2.421	C	C	06.36	44434556	0.114	C	0	0	24.71	0	0	0	24.71	0	0	0	0	
	22.06	8404651	2.412	C	C	06.36	44251626	0.113	C	0	0	24.73	0	0	0	24.73	0	0	0	0	
	22.06	8391725	2.406	C	C	06.36	44206026	0.114	C	0	0	24.73	0	0	0	24.73	0	0	0	0	
Average	8.41E+06	2.414	0.00E+00	0.00C	0.00C	4.43E+07	0.00E+00	0.114	0.00E+00	0.000	0.000	2.29E-04	0.000	0.000	2.29E-04	0.000	0.000	0.000	0.000	0.000	
Standard Deviation	2.26E+04	0.007	0.00E+00	0.00C	0.00C	9.50E+04	0.00E+00	0.001	0.00E+00	0.000	0.000	3.90E-04	0.000	0.000	3.90E-04	0.001	0.001	0.001	0.001	0.001	
%RSD	0.27	0.28	ERR	ERR	ERR	0.21	ERR	ERR	ERR	0.00	ERR	173.21	ERR	ERR	173.21	ERR	ERR	ERR	ERR	ERR	

Sample I.D. Number	Channel 'A'										Channel 'D'									
	Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					helium				
	RT	AREA	AMT	RT	AREA	RT	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
93-323.prm	22.06	7200451	2.056	C	C	C	C	22.06	45218452	0.116	C	C	0	24.73	0	0	24.73	0	0	0
	22.06	7173341	2.055	C	C	C	C	22.06	45344084	0.116	C	C	0	24.73	0	0	24.73	0	0	0
	22.06	7188235	2.052	C	C	C	C	22.06	45424072	0.116	C	C	0	24.73	0	0	24.73	0	0	0
Average		7.19E+06	2.054						4.53E+07	0.116			0.00E+00		0.00E+00	0.000		0.00E+00	0.000	
Standard Deviation		1.81E+04	0.005						1.12E+05	0.000			0.00E+00		0.00E+00	0.000		0.00E+00	0.000	
%RSD		0.25	0.24						ERR	ERR			ERR		ERR	ERR		ERR	ERR	
Sample I.D. Number	Channel 'A'										Channel 'D'									
	Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					helium				
	RT	AREA	AMT	RT	AREA	RT	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
93-324.prm	22.06	7477202	2.140	C	C	C	C	22.06	43231886	0.111	C	C	0	24.73	0	0	24.73	0	0	0
	22.06	7408973	2.125	C	C	C	C	22.06	43253572	0.111	C	C	0	24.73	0	0	24.73	0	0	0
	22.06	7359053	2.115	C	C	C	C	22.06	43380156	0.111	C	C	0	24.73	0	0	24.73	0	0	0
Average		7.42E+06	2.129						4.33E+07	0.111			0.00E+00		0.00E+00	0.000		2.97E+04	0.000	
Standard Deviation		5.45E+04	0.016						8.00E+04	0.000			0.00E+04		0.00E+04	0.000		5.14E+04	0.001	
%RSD		0.73	0.74						ERR	ERR			ERR		ERR	ERR		1.73E+01	173.21	
Sample I.D. Number	Channel 'A'										Channel 'D'									
	Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					helium				
	RT	AREA	AMT	RT	AREA	RT	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
93-325.prm	22.06	5609283	1.625	C	C	C	C	22.06	45026532	0.116	C	C	0	24.75	0	0	24.75	0	0	0
	22.06	5607706	1.632	C	C	C	C	22.06	45103526	0.116	C	C	0	24.75	0	0	24.75	0	0	0
	22.06	5650476	1.622	C	C	C	C	22.06	45275184	0.116	C	C	0	24.75	0	0	24.75	0	0	0
Average		5.68E+06	1.630						4.82E+07	0.116			0.00E+00		0.00E+00	0.000		5.93E+04	0.001	
Standard Deviation		2.51E+04	0.037						8.82E+04	0.000			0.00E+00		0.00E+00	0.000		5.39E+04	0.001	
%RSD		0.44	0.42						ERR	ERR			ERR		ERR	ERR		90.76	86.60	
Sample I.D. Number	Channel 'A'										Channel 'D'									
	Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					helium				
	RT	AREA	AMT	RT	AREA	RT	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
93-326.prm	22.06	5326443	1.526	C	C	C	C	22.06	45330544	0.116	C	C	0	24.75	0	0	24.75	0	0	0
	22.06	5323143	1.526	C	C	C	C	22.06	45433404	0.116	C	C	0	24.75	0	0	24.75	0	0	0
	22.06	5327102	1.522	C	C	C	C	22.06	45083022	0.116	C	C	0	24.75	0	0	24.75	0	0	0
Average		5.33E+06	1.529						4.53E+07	0.116			0.00E+00		0.00E+00	0.000		6.30E+04	0.001	
Standard Deviation		2.76E+03	0.021						2.46E+05	0.000			0.00E+00		0.00E+00	0.000		5.51E+04	0.001	
%RSD		0.05	0.04						ERR	ERR			ERR		ERR	ERR		87.38	86.60	

Sample I.D. Number	Channel 'A'				Channel 'C'				Channel 'D'			
	Carbon Dioxide				Nitrous Oxide				Carbon Monoxide			
	RT	AREA	AMT	RT	RT	AREA	AMT	RT	RT	AREA	AMT	RT
93-327.prn	22.05	4120523	1.165	C	C	C	C	65.35	45771585	0.117	0	24.73
	22.05	4005455	1.175	C	C	C	C	65.35	45745372	0.115	0	24.73
	22.05	4001720	1.174	C	C	C	C	65.35	45762352	0.112	0	24.73
Average	4.11E+06	1.178			0.00E+00	0.00E+00	0.000	4.68E+07	0.00E+00	0.00E+00	0.000	3.35E+04
Standard Deviation	2.00E+04	0.006			0.00E+00	0.00E+00	0.000	1.33E+04	0.00E+00	0.00E+00	0.000	5.80E+04
%RSD	0.48	0.52						0.03	ERR	ERR	ERR	173.21

Sample I.D. Number	Channel 'A'				Channel 'C'				Channel 'D'			
	Carbon Dioxide				Nitrous Oxide				Carbon Monoxide			
	RT	AREA	AMT	RT	RT	AREA	AMT	RT	RT	AREA	AMT	RT
93-328.prn	22.05	4407530	1.20	C	C	C	C	65.35	45633804	0.117	0	24.71
	22.05	4456501	1.275	C	C	C	C	65.35	45571112	0.117	0	24.73
	22.05	4455510	1.275	C	C	C	C	65.35	45467085	0.117	0	24.71
Average	4.47E+06	1.283			0.00E+00	0.00E+00	0.000	4.55E+07	0.00E+00	0.00E+00	0.000	7.27E+04
Standard Deviation	2.31E+04	0.007			0.00E+00	0.00E+00	0.000	4.66E+04	0.00E+00	0.00E+00	0.000	1.33E+04
%RSD	0.52	0.54						0.10	ERR	ERR	ERR	18.31

Sample I.D. Number	Channel 'A'				Channel 'C'				Channel 'D'			
	Carbon Dioxide				Nitrous Oxide				Carbon Monoxide			
	RT	AREA	AMT	RT	RT	AREA	AMT	RT	RT	AREA	AMT	RT
93-329.prn	22.05	3421712	0.885	C	C	C	C	65.35	47177784	0.121	0	24.71
	22.05	3423075	0.882	C	C	C	C	65.35	47182080	0.121	0	24.71
	22.05	330805	0.875	C	C	C	C	65.35	47117704	0.121	0	24.71
Average	3.42E+06	0.981			0.00E+00	0.00E+00	0.000	4.71E+07	0.00E+00	0.00E+00	0.000	2.00E+04
Standard Deviation	1.70E+04	0.005			0.00E+00	0.00E+00	0.000	3.35E+04	0.00E+00	0.00E+00	0.000	3.46E+04
%RSD	0.50	0.52						0.07	ERR	ERR	ERR	173.21

Sample I.D. Number	Channel 'A'				Channel 'C'				Channel 'D'			
	Carbon Dioxide				Nitrous Oxide				Carbon Monoxide			
	RT	AREA	AMT	RT	RT	AREA	AMT	RT	RT	AREA	AMT	RT
93-330.prn	22.05	4009313	1.172	C	C	C	C	65.35	45603844	0.117	0	24.05
	22.05	4045004	1.16	C	C	C	C	65.35	45592336	0.117	0	24.05
	22.05	4001543	1.165	C	C	C	C	65.35	45476102	0.117	0	24.05
Average	4.07E+06	1.168			0.00E+00	0.00E+00	0.000	4.56E+07	0.00E+00	0.00E+00	0.000	1.95E+04
Standard Deviation	2.78E+04	0.008			0.00E+00	0.00E+00	0.000	1.56E+05	0.00E+00	0.00E+00	0.000	3.98E+04
%RSD	0.68	0.65						0.35	ERR	ERR	ERR	173.21

Sample I.D. Number 93 - 331

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-331.prm	22.01	3007072	0.863	C	C	C	65.36	47170404	0.121	C	C	C	24.66	69343	0.001
	22.01	3012716	0.865	C	C	C	65.36	47222904	0.121	C	C	C	24.66	41344	0
	22.01	3004765	0.862	C	C	C	65.36	47473166	0.122	C	C	C	24.66	82603	0.001
Average		3.01E+06	0.863		0.00E+00	0.000		4.73E+07	0.121		0.00E+00	0.000		7.46E+04	0.001
Standard Deviation		4.09E+03	0.002		0.00E+00	0.000		1.62E+05	0.001		0.00E+00	0.000		2.99E+04	0.001
%RSD		0.14	0.18		ERR	ERR		0.34	0.48		ERR	ERR		40.11	86.60

Sample I.D. Number 93 - 332

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-332.prn	22.01	3460556	0.996	C	C	C	65.36	45882360	0.116	C	C	C	24.66	0	C
	22.01	3460730	0.993	C	C	C	65.36	45612044	0.117	C	C	C	24.66	0	C
	22.01	3473116	0.997	C	C	C	65.36	45535266	0.117	C	C	C	24.66	60275	0.001
Average		3.47E+06	0.996		0.00E+00	0.000		4.57E+07	0.117		0.00E+00	0.000		3.01E+04	0.000
Standard Deviation		1.00E+04	0.003		0.00E+00	0.000		1.82E+05	0.001		0.00E+00	0.000		5.21E+04	0.001
%RSD		0.29	0.31		ERR	ERR		0.40	0.49		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 333

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-333.prm	22.01	2804630	0.805	C	C	C	65.36	47275712	0.121	22.66	52607	0	24.69	67542	0.001
	22.01	2762776	0.796	C	C	C	65.36	47275824	0.121	0	0	0	24.71	71234	0.001
	22.01	2760211	0.795	C	C	C	65.36	47174520	0.121	0	0	0	24.71	0	0
Average		2.79E+06	0.800		0.00E+00	0.000		4.72E+07	0.121		1.75E+04	0.000		4.63E+04	0.001
Standard Deviation		1.79E+04	0.005		0.00E+00	0.000		5.85E+04	0.000		3.04E+04	0.000		4.01E+04	0.001
%RSD		0.64	0.63		ERR	ERR		0.12	0.00		173.21	ERR		86.69	86.60

Sample I.D. Number 93 - 334

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-334.prm	22.05	3283767	0.942	C	C	C	65.36	45758564	0.117	C	C	C	24.66	60777	0.001
	22.05	3316321	0.952	C	C	C	65.36	45703824	0.117	C	C	C	24.66	C	C
	22.05	3317657	0.952	C	C	C	65.36	45556886	0.117	C	C	C	24.66	70226	0.001
Average		3.31E+06	0.949		0.00E+00	0.000		4.57E+07	0.117		0.00E+00	0.000		5.37E+04	0.001
Standard Deviation		1.92E+04	0.006		0.00E+00	0.000		1.17E+05	0.000		0.00E+00	0.000		4.76E+04	0.001
%RSD		0.58	0.61		ERR	ERR		0.26	0.00		ERR	ERR		89.69	86.60

B-40

WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 335

Channel 'A'		Channel 'C'				Channel 'D'			
Carbon Dioxide		Nitrous Oxide				Carbon Monoxide			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
22.02	2780076	0.706	0	0	0	0.32	47005792	0.121	0
22.02	2740012	0.706	0	0	0	0.32	46837152	0.12	0
22.02	2771407	0.705	0	0	0	0.32	46786300	0.11	0
Average	2.77E+06	0.704		0.00E+00	0.000		4.69E+07	0.120	0.000
Standard Deviation	1.77E+04	0.005		0.00E+00	0.000		1.49E+05	0.001	0.000
%RSD	0.64	0.65		ERR	ERR		0.32	0.48	173.21

Sample I.D. Number 93 - 336

Channel 'A'		Channel 'C'				Channel 'D'			
Carbon Dioxide		Nitrous Oxide				Carbon Monoxide			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
22.02	5753216	1.65	0	0	0	0.32	41527476	0.100	0
22.02	5758892	1.65	0	0	0	0.32	41405702	0.100	0
22.02	5751306	1.65	0	0	0	0.32	41525764	0.107	0
Average	5.76E+06	1.654		0.00E+00	0.000		4.15E+07	0.106	0.000
Standard Deviation	2.12E+04	0.006		0.00E+00	0.000		1.01E+05	0.001	0.000
%RSD	0.37	0.37		ERR	ERR		0.24	0.54	ERR

Sample I.D. Number 93 - 337

Channel 'A'		Channel 'C'				Channel 'D'			
Carbon Dioxide		Nitrous Oxide				Carbon Monoxide			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
22.02	3194006	0.915	0	0	0	0.32	45922804	0.116	0
22.02	3201260	0.916	0	0	0	0.32	45675116	0.117	0
22.02	3176006	0.91	0	0	0	0.32	45722412	0.117	0
Average	3.19E+06	0.915		0.00E+00	0.000		4.58E+07	0.117	0.000
Standard Deviation	1.64E+04	0.005		0.00E+00	0.000		8.89E+04	0.001	0.000
%RSD	0.51	0.52		ERR	ERR		0.19	0.49	173.21

Sample I.D. Number 93 - 338

Channel 'A'		Channel 'C'				Channel 'D'			
Carbon Dioxide		Nitrous Oxide				Carbon Monoxide			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
22.02	2275353	0.653	0	0	0	0.32	47103340	0.121	0
22.02	2260938	0.656	0	0	0	0.32	47344852	0.121	0
22.02	2276271	0.653	0	0	0	0.32	47120204	0.121	0
Average	2.28E+06	0.655		0.00E+00	0.000		4.72E+07	0.121	0.000
Standard Deviation	1.22E+04	0.003		0.00E+00	0.000		1.14E+05	0.000	0.000
%RSD	0.53	0.53		ERR	ERR		0.24	0.53	173.21

Sample I.D. Number 93 - 339

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-339.prn	22.06	3166793	0.606	C	0	C	66.36	45031232	0.116	0	0	0	24.73	0	0
	22.06	3146820	0.603	C	0	C	66.36	45761356	0.117	0	0	0	24.73	0	0
	22.06	3140506	0.604	C	0	C	66.36	45743848	0.117	0	0	0	24.73	0	0
Average		3.15E+06	0.905		0.00E+00	0.000		4.58E+07	0.117		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation		1.08E+04	0.003		0.00E+00	0.000		9.74E+04	0.001		0.00E+00	0.000		0.00E+00	0.000
%RSD		0.34	0.36		ERR	ERR		0.21	0.49		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 340

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-340.prn	22.06	2163096	0.63	C	0	C	66.36	46072280	0.123	0	0	0	24.73	0	0
	22.06	2206611	0.634	C	0	C	66.36	47200020	0.121	0	0	0	24.75	72124	0.001
	22.06	2160675	0.626	C	0	C	66.36	47518200	0.122	23.01	30542	0	24.75	58028	C
Average		2.20E+06	0.631		0.00E+00	0.000		4.76E+07	0.122		1.02E+04	0.000		4.34E+04	0.000
Standard Deviation		1.02E+04	0.003		0.00E+00	0.000		4.02E+05	0.001		1.76E+04	0.000		3.82E+04	0.001
%RSD		0.46	0.42		ERR	ERR		0.84	0.82		173.21	ERR		89.11	173.21

Sample I.D. Number 93 - 341

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-341.prn	22.06	2227739	0.636	C	C	C	66.36	46256004	0.116	C	0	C	24.75	62710	0
	22.13	2220094	0.636	22.13	2220094	0.356	66.36	45831700	0.116	C	0	0	24.75	0	0
	22.13	2253630	0.647	22.13	2253630	0.303	66.36	46368702	0.116	C	0	0	24.75	0	0
Average		2.24E+06	0.642		1.49E+06	0.241		4.62E+07	0.116		0.00E+00	0.000		2.09E+04	0.000
Standard Deviation		1.54E+04	0.005		1.29E+06	0.206		2.83E+05	0.001		0.00E+00	0.000		3.62E+04	0.000
%RSD		0.69	0.72		86.61	86.61		0.61	0.49		ERR	ERR		173.21	ERR

Sample I.D. Number 93 - 342

	Channel 'A'			Channel 'C'			Channel 'D'								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-342.prn	22.13	1561321	0.446	22.13	1561321	0.256	66.36	47233404	0.121	0	0	0	24.75	0	0
	22.13	1555537	0.446	22.13	1555537	0.256	66.36	47112056	0.121	0	0	0	24.75	0	0
	22.13	1573932	0.452	22.13	1573932	0.254	66.36	47037820	0.121	0	0	0	24.75	0	0
Average		1.57E+06	0.450		1.57E+06	0.253		4.71E+07	0.121		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation		6.42E+03	0.002		6.42E+03	0.001		9.88E+04	0.000		0.00E+00	0.000		0.00E+00	0.000
%RSD		0.41	0.46		0.41	0.46		0.21	0.00		ERR	ERR		ERR	ERR

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Sample I.D. Number **93 - 343**

Sample ID Number	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-343.prn	22.13	1699001	0.486	22.13	1699001	0.274	66.36	47066836	0.121	C	C	C	24.76	50046	0
	22.13	1710000	0.492	22.13	1710000	0.277	66.36	47100016	0.121	C	C	C	24.76	51007	0
	22.13	1650036	0.476	22.13	1650036	0.266	66.36	47467084	0.122	C	C	C	24.76	C	C
Average		1.69E+06	0.486		1.69E+06	0.273		4.73E+07	0.121		0.00E+00	0.000		3.70E-04	0.000
Standard Deviation		3.04E+04	0.009		3.04E+04	0.006		2.21E+05	0.001		0.00E+00	0.000		3.22E+04	0.000
%RSD		1.80	1.80		1.80	1.66		0.47	0.48		ERR	ERR		87.12	ERR

Sample I.D. Number **93 - 344**

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-344.prm	22.13	1914381	0.546	22.13	1914381	0.306	66.06	46509356	0.116	C	C	C	24.76	35772	0
	22.13	1858206	0.533	22.13	1868206	0.3	66.06	46367152	0.116	C	C	C	24.76	C	0
	22.13	1855040	0.535	22.13	1855040	0.301	66.06	46557446	0.116	C	C	C	24.76	C	C
Average		1.88E+06	0.539		1.88E+06	0.303		4.65E+07	0.119		0.00E+00	0.000		1.23E-04	0.000
Standard Deviation		3.05E+04	0.009		3.05E+04	0.006		1.37E+05	0.001		0.00E+00	0.000		2.12E-04	0.000
%RSD		1.62	1.62		1.62	1.63		0.29	0.48		ERR	ERR		173.21	ERR

Sample I.D. Number **QASTD 299**

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
QASTD299	21.03	2343272	0.672	C	C	C	66.36	100944604	0.506	22.81	15722220	0.015	24.56	458787	0.004
	21.03	2303501	0.661	C	C	C	66.36	108509556	0.509	22.81	16017181	0.015	24.56	309000	0.002
	21.03	2316993	0.666	C	C	C	66.36	109113108	0.506	22.81	16238816	0.015	24.56	253321	0.002
Average		2.32E+06	6.66E-01		0.00E+00	0.00E+00		1.98E+08	5.07E-01		1.60E+07	1.50E-02		3.41E+05	2.67E-03
Standard Deviation		2.02E+04	5.57E-03		0.00E+00	0.00E+00		8.55E+05	2.08E-03		2.59E+05	0.00E+00		1.06E+05	1.15E-03
%RSD		0.87	0.84		ERR	ERR		0.43	0.41		1.62	0.00		31.17	43.30

Sample I.D. Number **QASTD 344**

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
QASTD344	22.15	2921161	0.636	22.15	2921161	0.471	66.36	185928846	0.477	23.01	13101384	0.012	24.81	225413	0.002
	22.15	2900995	0.630	22.15	2900995	0.469	66.36	185229984	0.475	23.01	13220371	0.012	24.81	195176	0.002
	22.15	2902953	0.633	22.15	2902953	0.465	66.36	185703016	0.476	23.01	13103603	0.012	24.81	225983	0.002
Average		2.91E+06	6.34E-01		2.91E+06	4.69E-01		1.86E+08	4.76E-01		1.32E+07	1.20E-02		2.16E+05	2.00E-03
Standard Deviation		1.11E+04	3.21E-03		1.11E+04	1.73E-03		3.65E+05	1.00E-03		2.84E+04	0.00E+00		1.76E+04	0.00E+00
%RSD		0.36	0.39		0.38	0.37		0.20	0.21		0.22	0.00		8.18	0.00

Sample ID, Number	Channel 'C'									
	Carbon Dioxide					Nitrous Oxide				
Channel 'A'	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
93-345.prm	21.07	2587164	0.737	2	0	0	08.04	4540810E	0.126	24.05
	21.07	2532748	0.724	2	0	0	08.04	4570270E	0.137	24.05
	21.07	2551953	0.733	2	0	0	08.04	4403325E	0.126	24.05
Average		2555+06	0.731		0.00E+00	0.000		4.54E+07	0.129	6.33E+04
Standard Deviation		2275-04	0.007		0.00E+00	0.000		4.31E+05	0.002	3.66E+04
%RSD		0.89	0.9		ERR	ERR		0.95	1.18	57.76

Sample ID, Number	Channel 'C'									
	Carbon Dioxide					Nitrous Oxide				
Channel 'A'	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
93-346.prm	21.07	3587794	1.023	2	0	0	08.04	0	0	24.05
	21.07	3585106	1.023	2	0	0	08.04	0	0	24.05
	21.07	3511375	1.008	2	0	0	08.04	0	0	24.05
Average		355E+06	1.018		0.00E+00	0.000		0.00E+00	0.000	0.000
Standard Deviation		301E+04	0.009		0.00E+00	0.000		0.00E+00	0.000	0.000
%RSD		0.85	0.85		ERR	ERR		ERR	ERR	ERR

Sample ID, Number	Channel 'C'									
	Carbon Dioxide					Nitrous Oxide				
Channel 'A'	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
93-347.prm	21.07	3280035	0.941	2	0	0	08.04	1676598E	0.046	24.05
	21.07	3234533	0.928	2	0	0	08.04	1682880E	0.048	24.05
	21.07	3237200	0.93	2	0	0	08.04	1655778E	0.047	24.05
Average		324E+06	0.930		0.00E+00	0.000		1.67E+07	0.048	0.00E+00
Standard Deviation		371E+04	0.01		0.00E+00	0.000		1.48E+05	0.00	0.00E+00
%RSD		1.15	1.14		ERR	ERR		0.88	1.2	ERR

Sample ID, Number	Channel 'C'									
	Carbon Dioxide					Nitrous Oxide				
Channel 'A'	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT
93-348.prm	21.07	2407054	0.716	2	0	0	08.04	3302204E	0.112	24.05
	21.07	2405077	0.712	2	0	0	08.04	3302161E	0.112	24.05
	21.07	2504996	0.716	2	0	0	08.04	3220688E	0.112	24.05
Average		250E+06	0.717		0.00E+00	0.000		3.33E+07	0.112	5.36E+04
Standard Deviation		759E+03	0.002		0.00E+00	0.000		578E+04	0.000	3.09E+04
%RSD		0.30	0.29		ERR	ERR		0.15	0.00	57.74

Sample I.D. Number 93 - 349

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-349.prn	21.07	2255107	0.047	c	c	c	05.04	45282824	0.126	0	c	0	24.03	01704	c
	21.07	2237281	0.042	c	c	c	05.04	45100506	0.129	0	c	c	24.05	00102	c
	21.07	2230576	0.043	c	c	c	05.04	45211712	0.126	0	c	0	24.03	02004	0.001
Average		2.24E+06	0.044		0.00E+00	0.000		4.52E+07	0.129		0.00E+00	0.000		6.13E+04	0.000
Standard Deviation		9.75E+03	0.003		0.00E+00	0.000		4.61E+04	0.000		0.00E+00	0.000		1.92E+03	0.001
%RSD		0.43	0.41		ERR	ERR		0.10	0.00		ERR	ERR		3.13	173.21

Sample I.D. Number 93 - 350

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-350.prn	21.07	1923706	0.572	c	c	c	05.04	47088000	0.134	c	c	0	24.05	05153	0.001
	21.07	2002176	0.575	c	c	c	05.04	47003526	0.134	0	c	c	24.05	0	c
	21.07	1922017	0.572	c	c	c	05.04	47008086	0.134	0	c	0	24.05	0	0
Average		2.00E+06	0.573		0.00E+00	0.000		4.71E+07	0.134		0.00E+00	0.000		9.52E+04	1.00E-03
Standard Deviation		5.11E+03	0.002		0.00E+00	0.000		4.06E+04	0.000		0.00E+00	0.000		5.49E+04	0.001
%RSD		0.26	0.30		ERR	ERR		0.09	0.00		ERR	ERR		57.74	57.74

Sample I.D. Number 93 - 351

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-351.prn	21.07	2099740	0.603	c	c	c	05.04	47872100	0.137	c	c	0	24.05	0	c
	21.07	2085203	0.598	c	c	c	05.04	47102420	0.134	c	c	0	24.05	0	c
	21.07	2070517	0.595	c	c	c	05.04	47112330	0.134	0	c	0	24.05	10005	0.001
Average		2.09E+06	0.599		0.00E+00	0.000		4.74E+07	0.135		0.00E+00	0.000		3.54E+04	0.000
Standard Deviation		1.17E+04	0.004		0.00E+00	0.000		4.42E+05	0.002		0.00E+00	0.000		6.12E+04	0.001
%RSD		0.56	0.60		ERR	ERR		0.93	1.28		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 352

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-352.prn	21.07	2132127	0.612	C	C	C	05.04	47250064	0.135	C	C	C	24.05	C	C
	21.07	2124882	0.61	C	C	C	05.04	47172100	0.135	C	C	C	24.05	00712	0.001
	21.07	2129032	0.611	C	C	C	05.04	47060700	0.134	22.05	1371521	0.001	24.05	C	C
Average		2.13E+06	0.611		0.00E+00	0.000		4.72E+07	0.135		4.57E+05	0.000		3.02E+04	0.000
Standard Deviation		3.64E+03	0.001		0.00E+00	0.000		9.54E+04	0.001		7.92E+05	0.001		5.24E+04	0.001
%RSD		0.17	0.16		ERR	ERR		0.20	0.43		173.21	173.21		173.21	173.21

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 353

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-353.pn	21.07	2162605	0.621	C	C	C	05.04	47420504	0.135	22.05	C	0	24.05	0	0
	21.07	2110788	0.607	C	0	C	05.04	46221824	0.134	0	C	0	24.05	59714	C
	21.07	2132710	0.612	C	0	C	05.04	47154402	0.134	C	C	0	24.05	0	0
Average		2.14E+06	0.613		0.00E+00	0.000		4.72E+07	0.134		0.00E+00	0.000		1.99E+04	0.000
Standard Deviation		2.33E+04	0.007		0.00E+00	0.000		2.50E+05	0.001		0.00E+00	0.000		3.45E+04	0.000
%RSD		1.09	1.16		ERR	ERR		0.53	0.43		ERR	ERR		173.21	ERR

Sample I.D. Number 93 - 354

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-354.pn	21.07	1021095	0.552	C	C	C	05.04	47023032	0.134	C	0	C	24.05	0	C
	21.07	1023074	0.552	C	C	C	05.04	47348840	0.135	0	C	C	24.05	80174	0.001
	21.07	1012343	0.549	0	0	C	05.04	47184092	0.135	0	C	0	24.05	80102	0.001
Average		1.92E+06	0.551		0.00E+00	0.000		4.72E+07	0.135		0.00E+00	0.000		5.85E+04	0.001
Standard Deviation		5.91E+03	0.002		0.00E+00	0.000		1.63E+05	0.001		0.00E+00	0.000		5.06E+04	0.001
%RSD		0.31	0.31		ERR	ERR		0.34	0.43		ERR	ERR		86.64	86.60

Sample I.D. Number 93 - 355

	Channel 'A'			Channel 'C'			Channel 'D'								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-355.pn	21.07	1800032	0.542	C	C	C	05.04	47572920	0.135	C	C	C	24.05	0	0
	21.07	1807132	0.544	C	C	C	05.04	47410246	0.135	C	C	0	24.05	0	0
	22.01	1882712	0.541	C	C	C	05.04	47140704	0.134	C	C	0	24.07	92000	0.001
Average		1.89E+06	0.543		0.00E+00	0.000		4.74E+07	0.135		0.00E+00	0.000		3.10E+04	0.000
Standard Deviation		8.56E+03	0.002		0.00E+00	0.000		2.13E+05	0.001		0.00E+00	0.000		5.36E+04	0.001
%RSD		0.45	0.38		ERR	ERR		0.45	0.74		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 356

	Channel: 'A'						Channel: 'C'						Channel: 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-356.pn	21.07	1037001	0.555	C	C	C	05.04	47092392	0.134	C	C	0	24.07	C	0			
	22.01	1052605	0.56	C	C	C	05.04	47105020	0.135	C	C	0	24.05	80128	0			
	22.01	1018021	0.551	C	C	C	05.04	46582024	0.134	C	C	0	24.07	73036	0.001			
Average		1.94E+06	0.556		0.00E+00	0.000		4.71E+07	0.134		0.00E+00	0.000		4.44E+04	0.000			
Standard Deviation		1.70E+04	0.005		0.00E+00	0.000		1.07E+05	0.001		0.00E+00	0.000		3.90E+04	0.001			
%RSD		0.88	0.81		ERR	ERR		0.23	0.43		ERR	ERR		87.82	173.21			

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number	93 - 357																								
Channel A*	Channel C*																								
	Carbon Dioxide					Nitrous Oxide					Carbon Monoxide					Helium					Hydrogen				
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT				
93-357.prm	22.01	1818816	0.522	0	0	0	25.04	47245106	0.135	0	0	0	24.87	0	0	0	0	0	24.87	0	0				
	22.01	1776906	0.51	0	0	0	25.04	47245004	0.132	0	0	0	24.87	0	0	0	0	0	24.87	0	0				
	22.01	1821407	0.523	0	0	0	25.04	47100644	0.134	0	0	0	24.87	0	0	0	0	0	24.87	0	0				
Average		1.81E+06	0.518		0.00E+00	0.000		4.72E+07	0.35		0.00E+00	0.000		0.00E+00	0.000		0.00E+00	0.000		0.00E+00	0.000				
Standard Deviation		2.54E+04	0.037		0.00E+00	0.000		7.82E+04	0.031		0.00E+00	0.000		0.00E+00	0.000		0.00E+00	0.000		0.00E+00	0.000				
%RSD		1.40	1.40		ERR	ERR		0.17	0.43		ERR	ERR		ERR	ERR		ERR	ERR		ERR	ERR				

Sample I.D. Number	93 - 358														
Channel A*	Channel C*														
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			Helium			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-358.prm	22.01	1617060	0.55	0	0	0	65.04	47267632	0.135	0	0	0	24.67	48745	0
	22.01	1010276	0.551	0	0	0	65.04	47582402	0.135	0	0	0	24.57	0	0
	22.01	1602749	0.543	0	0	0	65.04	47520625	0.135	0	0	0	24.65	51021	0
Average		1.91E+06	0.548		0.03E+00	0.000		4.75E-07	0.136		0.00E+00	0.000		3.39E-04	0.000
Standard Deviation		1.45E+04	0.004		0.03E+00	0.000		1.57E+05	0.007		0.00E+00	0.000		2.91E+04	0.000
%RSD		0.76	0.80		ERR	ERR		C.33	0.43		ERR	ERR		86.73	ERR

Sample I.D. Number	93 - 359														
Channel:A*	Channel:D*														
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-359.prm	22.01	1807872	0.516	0	0	0	62.04	4742784	0.132	0	0	0	24.07	04287	0.007
	22.01	1776576	0.51	0	0	0	62.04	47142750	0.134	0	0	0	24.07	0	0
	22.01	1702806	0.514	0	0	0	62.04	47126804	0.134	0	0	0	24.07	01036	0
Average		1.79E+06	0.514		0.00E+00	0.000		4.72E-07	0.134		0.00E+00	0.000		5.20E-04	0.000
Standard Deviation		1.46E+04	0.035		0.00E+00	0.000		1.68E-05	0.001		0.00E+00	0.000		4.79E-04	0.001
%RSD		0.82	0.88		ERR	ERR		C.35	0.43		ERR	ERR		92.13	173.21

Sample I.D. Number	93 - 360														
Channel A'	Channel C'														
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-360.prm	22.0"	1526046	0.436	0	0	0	0	0	0.135	0	0	0	24.07	120786	0.001
	22.0"	1510025	0.436	0	0	0	0	0	0.136	0	0	0	24.07	0	0
	22.0"	1515486	0.436	0	0	0	0	0	0.136	0	0	0	24.06	63650	0.001
Average	1.52E+06		0.436	0.00E+00	4.74E+07	0.000	0.135	0.00E+00	0.000	6.15E+04	0.001	0.000	6.04E+04	0.001	
Standard Deviation	5.90E+03		0.002	0.00E+00	5.67E+04	0.000	0.000	0.00E+00	0.000	6.04E+04	0.000	0.000	6.04E+04	0.001	
%RSD	0.35		0.35	ERR	0.12	ERR	0.00	ERR	ERR	98.29	ERR	ERR	98.29	86.60	

Sample I.D. Number	Channel 'A'									
	Carbon Dioxide					Nitrous Oxide				
	RT	AREA	AMT	AMT	AREA	RT	AREA	AMT	AMT	AREA
93-361.prm	22.01	4528044	1.326	0	0	0	0	0	0	0
	22.01	4503220	1.321	0	0	0	0	0	0	0
	22.01	4537417	1.302	0	0	0	0	0	0	0
Average		4.59E+06	1.317	0.000	0.00E+00					
Standard Deviation		4.68E+04	0.013	0.000	0.00E-00					
%RSD		1.02	1.02	ERR	ERR					

Sample I.D. Number	Channel 'C'									
	Carbon Monoxide					Carbon Monoxide				
	RT	AREA	AMT	AMT	AREA	RT	AREA	AMT	AMT	AREA
93-362.prm	22.01	1471880	0.422	0	0	0	0	0	0	0
	22.01	1484022	0.422	0	0	0	0	0	0	0
	22.01	1443875	0.414	0	0	0	0	0	0	0
Average		1.47E+06	0.421	0.000	0.00E+00					
Standard Deviation		2.10E+04	0.006	0.000	0.00E-00					
%RSD		1.43	1.45	ERR	ERR					

Sample I.D. Number	Channel 'C'									
	Carbon Monoxide					Carbon Monoxide				
	RT	AREA	AMT	AMT	AREA	RT	AREA	AMT	AMT	AREA
93-363.prm	22.01	1533065	0.44	0	0	0	0	0	0	0
	22.01	1409416	0.43	0	0	0	0	0	0	0
	22.01	1509014	0.432	0	0	0	0	0	0	0
Average		1.51E+06	0.434	0.000	0.00E+00					
Standard Deviation		1.78E+04	0.005	0.000	0.00E-00					
%RSD		1.18	1.22	ERR	ERR					

Sample I.D. Number	Channel 'D'									
	Carbon Monoxide					Carbon Monoxide				
	RT	AREA	AMT	AMT	AREA	RT	AREA	AMT	AMT	AREA
93-364.prm	22.01	1400340	0.426	0	0	0	0	0	0	0
	22.01	1475044	0.423	0	0	0	0	0	0	0
	22.01	1430726	0.412	0	0	0	0	0	0	0
Average		1.47E+06	0.421	0.000	0.00E+00					
Standard Deviation		2.76E+04	0.008	0.000	0.00E-00					
%RSD		1.86	1.94	ERR	ERR					

Sample I.D. Number 93 - 365

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-365.prn	22.01	3054614	0.877	C	C	C	00.04	44019126	0.126	0	C	0	24.05	70472	0.001
	22.01	3034672	0.871	C	C	C	00.04	45083352	0.126	0	C	0	0	C	C
	22.01	3040374	0.872	C	C	C	00.04	44000032	0.126	0	C	0	24.05	74683	0.001
Average		3.04E+06	0.873		0.00E+00	0.000		4.50E+07	0.128		0.00E+00	0.000		5.05E-04	0.001
Standard Deviation		1.01E+04	0.003		0.00E+00	0.000		8.54E+04	0.001		0.00E+00	0.000		4.37E-04	0.001
%RSD		0.33	0.37		ERR	ERR		0.19	0.45		ERR	ERR		86.62	86.60

Sample I.D. Number 93 - 366

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-366.prn	22.01	2145406	0.616	C	C	C	00.04	10016726	0.056	22.07	115076	0	24.05	0	0
	22.01	2110946	0.606	C	C	C	00.04	10001476	0.056	22.03	30855	0	C	C	0
	22.01	2107104	0.605	C	C	C	00.04	10048100	0.057	22.03	0	0	0	0	0
Average		2.12E+06	0.610		0.00E+00	0.000		1.98E+07	0.056		5.18E+04	0.000		0.00E+00	0.000
Standard Deviation		1.95E-04	0.006		0.00E+00	0.000		1.74E+05	0.001		5.88E+04	0.000		0.00E+00	0.000
%RSD		0.92	0.93		ERR	ERR		0.88	1.02		113.35	ERR		ERR	ERR

Sample I.D. Number 93 - 367

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-367.prn	22.01	3193382	0.916	C	C	C	00.04	30507526	0.105	C	C	C	24.05	60810	C
	22.01	3173870	0.911	C	C	C	00.04	30016480	0.104	C	C	C	24.05	C	C
	22.01	3170097	0.91	C	C	C	00.04	30503306	0.104	C	C	C	24.05	C	C
Average		3.18E+06	0.912		0.00E+00	0.000		3.66E+07	0.104		0.00E+00	0.000		2.03E+04	0.000
Standard Deviation		1.25E+04	0.003		0.00E+00	0.000		6.76E+04	0.001		0.00E+00	0.000		3.51E+04	0.000
%RSD		0.39	0.35		ERR	ERR		0.18	0.55		ERR	ERR		173.21	ERR

Sample I.D. Number 93 - 368

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-368.prn	22.01	1810405	0.52	C	C	C	00.04	45005256	0.126	0	C	0	24.07	60875	0
	22.01	1830103	0.526	C	C	C	00.04	44934544	0.126	0	C	C	24.07	0	0
	22.01	1800255	0.517	C	0	C	00.04	45012206	0.126	0	C	0	24.07	88330	0.001
Average		1.81E+06	0.521		0.00E+00	0.000		4.50E+07	0.128		0.00E+00	0.000		4.97E-04	0.000
Standard Deviation		1.52E-04	0.004		0.00E+00	0.000		4.30E-04	0.000		0.00E+00	0.000		4.52E-04	0.001
%RSD		0.84	0.78		ERR	ERR		0.10	0.00		ERR	ERR		90.89	173.21

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Sample I.D. Number 93 - 369

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium		hydrogen			
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-369.prn	22.01	2600873	0.604	C	0	C	65.04	45160232	0.129	0	C	0	24.67	0	0
	22.01	2785406	0.702	C	0	C	65.04	45250050	0.129	0	0	0	24.67	84793	0.001
	22.01	2794965	0.802	C	0	0	65.04	45404040	0.129	0	C	0	24.67	0	0
Average		2.79E+06	0.802		0.00E+00	0.000		4.53E+07	0.129		0.00E+00	0.000		2.83E+04	0.000
Standard Deviation		7.81E+03	0.003		0.00E+00	0.000		1.23E+05	0.000		0.00E+00	0.000		4.90E+04	0.001
%RSD		0.28	0.31		ERR	ERR		0.27	0.00		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 370

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-370.prm	22.01	1644244	0.529	C	C	C	65.04	47133200	0.134	0	C	0	24.67	0	0
	22.01	1794042	0.515	C	C	C	65.04	47036620	0.134	C	0	0	24.67	0	0
	22.01	1767476	0.513	C	0	C	65.04	47222016	0.135	0	C	0	24.65	82380	0.001
Average		1.81E+06	0.519		0.00E+00	0.000		4.71E+07	0.134		0.00E+00	0.000		2.75E+04	0.000
Standard Deviation		3.11E+04	0.009		0.00E+00	0.000		9.17E+04	0.001		0.00E+00	0.000		4.76E+04	0.001
%RSD		1.72	1.68		ERR	ERR		0.19	0.43		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 371

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-371.prn	22.01	2601017	0.833	C	C	C	65.04	45516104	0.13	C	C	0	24.65	0	0
	22.01	2600821	0.832	C	C	C	65.04	45406100	0.129	C	0	0	24.67	78456	0.001
	22.01	2607265	0.831	C	C	C	65.04	45339336	0.129	0	C	0	24.67	0	0
Average		2.90E+06	0.832		0.00E+00	0.000		4.54E+07	0.129		0.00E+00	0.000		2.62E+04	0.000
Standard Deviation		1.97E+03	0.001		0.00E+00	0.000		9.01E+04	0.001		0.00E+00	0.000		4.53E+04	0.001
%RSD		0.07	0.12		ERR	ERR		0.20	0.45		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 372

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-372.prn	22.01	1695975	0.461	C	C	C	65.04	47678950	0.135	0	C	0	24.67	0	0
	22.01	1696916	0.462	C	C	C	65.04	47369930	0.135	C	C	0	24.67	76036	0.001
	22.01	1691547	0.462	C	0	C	65.04	47424612	0.135	C	0	0	24.67	0	0
Average		1.69E+06	0.466		0.00E+00	0.000		4.75E+07	0.135		0.00E+00	0.000		2.60E+04	0.000
Standard Deviation		3.13E+03	0.001		0.00E+00	0.000		1.65E+05	0.001		0.00E+00	0.000		4.51E+04	0.001
%RSD		0.19	0.24		ERR	ERR		0.35	0.43		ERR	ERR		173.21	173.21

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Sample I.D. Number 93 - 373

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-373.prm	22.01	2706101	0.603	C	C	0	00.04	45854720	0.131	22.07	112700	0	24.07	0	0
	22.01	2622501	0.6	C	C	C	00.04	45834708	0.131	C	0	0	24.05	75000	0.001
	22.01	2774002	0.700	C	C	0	00.04	45728700	0.13	C	C	0	24.05	0	0
Average		2.80E+06	0.603		0.00E+00	0.000		4.58E+07	0.131		3.76E+04	0.000		2.50E+04	0.000
Standard Deviation		2.38E+04	0.007		0.00E+00	0.000		6.77E+04	0.001		6.51E+04	0.000		4.33E+04	0.001
%RSD		0.85	0.87		ERR	ERR		0.15	0.44		173.21	ERR		173.21	173.21

Sample I.D. Number 93 - 374

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-374.prn	22.01	1055022	0.476	C	C	C	00.04	47205204	0.135	C	C	0	24.07	60080	0.001
	22.01	1076002	0.482	C	C	C	00.04	47330012	0.135	0	C	0	24.07	C	0
	22.01	1000810	0.476	C	C	C	00.04	47210210	0.135	0	C	0	24.07	0	0
Average		1.67E+06	0.480		0.00E+00	0.000		4.73E+07	0.135		0.00E+00	0.000		2.33E+04	0.000
Standard Deviation		6.30E+03	0.002		0.00E+00	0.000		7.58E+04	0.000		0.00E+00	0.000		4.04E+04	0.001
%RSD		0.38	0.43		ERR	ERR		0.16	0.00		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 375

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-375.prn	22.01	4047587	1.162	C	C	C	00.04	43047500	0.125	C	C	0	24.07	60522	0.001
	22.01	4057454	1.164	C	C	C	00.04	43030520	0.125	C	C	0	24.07	0	0
	22.01	4101380	1.177	C	C	C	00.04	51532112	0.147	C	C	0	24.00	60105	0
Average		4.07E+06	1.168		0.00E+00	0.000		4.59E+07	0.131		0.00E+00	0.000		4.32E+04	0.000
Standard Deviation		2.86E+04	0.008		0.00E+00	0.000		4.90E+06	0.014		0.00E+00	0.000		3.77E+04	0.001
%RSD		0.70	0.70		ERR	ERR		10.69	10.58		ERR	ERR		87.28	173.21

Sample I.D. Number 93 - 376

	Channel "A"			Channel "C"			Channel "D"								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-376.prn	22.01	1450745	0.418	C	C	C	00.04	47385024	0.135	C	C	C	24.07	75416	0.001
	22.01	1418100	0.407	C	C	C	00.04	47317400	0.135	C	C	C	24.07	0	0
	22.01	1423056	0.409	C	C	C	00.04	47207084	0.135	C	C	C	24.07	0	0
Average		1.43E+06	0.411		0.00E+00	0.000		4.73E+07	0.135		0.00E+00	0.000		2.51E+04	0.000
Standard Deviation		2.09E+04	0.006		0.00E+00	0.000		4.57E+04	0.000		0.00E+00	0.000		4.35E+04	0.001
%RSD		1.46	1.42		ERR	ERR		0.10	0.00		ERR	ERR		173.21	173.21

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Sample I.D. Number 93 - 377

	Channel 'A'			Channel 'C'			Channel 'D'								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-377.prn	22.01	4892060	1.404	C	C	C	00.04	100123200	0.462	22.01	22789852	0.021	24.00	158715	0.001
	22.01	4872350	1.398	C	C	C	00.04	100209040	0.483	22.01	24000708	0.022	24.00	147312	0.001
	22.01	4882062	1.401	C	C	C	00.04	100222628	0.461	22.00	22434504	0.021	24.00	127060	0.001
Average		4.88E+06	1.401		0.00E+00	0.000		1.69E+08	0.482		2.31E+07	0.021		1.44E+05	0.001
Standard Deviation		1.03E+04	0.003		0.00E+00	0.000		3.17E+05	0.001		8.21E+05	0.001		1.60E+04	0.000
%RSD		0.21	0.21		ERR	ERR		0.19	0.21		3.56	2.71		11.11	0.00

Sample I.D. Number 93 - 378

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-378.prn	22.01	1797246	0.516	C	C	C	00.04	40530444	0.134	22.00	123031	0	24.00	0	0
	22.01	1753640	0.503	C	C	C	00.04	47349440	0.135	0	0	0	C	0	0
	22.01	1761100	0.505	C	C	C	00.04	47021380	0.134	0	C	0	24.00	00000	0.001
Average		1.77E+06	0.508		0.00E+00	0.000		4.71E+07	0.134		4.12E+04	0.000		2.23E+04	0.000
Standard Deviation		2.33E+04	0.007		0.00E+00	0.000		2.58E+06	0.001		7.14E+04	0.000		3.87E+04	0.001
%RSD		1.32	1.38		ERR	ERR		0.55	0.43		173.21	ERR		173.21	173.21

Sample I.D. Number 93 - 379

	Channel 'A'			Channel 'C'			Channel 'D'								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-379.prn	22.01	2135100	0.613	C	C	C	00.04	40585044	0.133	0	0	0	24.00	0	0
	22.01	2130403	0.611	C	C	C	00.04	40371050	0.132	22.07	40053	0	24.00	C	0
	22.01	2127056	0.61	C	C	C	00.04	40510144	0.133	22.07	0	0	24.00	0	0
Average		2.13E+06	0.611		0.00E+00	0.000		4.65E+07	0.133		1.66E+04	0.000		0.00E+00	0.000
Standard Deviation		4.04E+03	0.002		0.00E+00	0.000		1.10E+05	0.001		2.87E+04	0.000		0.00E+00	0.000
%RSD		0.19	0.25		ERR	ERR		0.24	0.44		173.21	ERR		ERR	ERR

Sample I.D. Number 93 - 380

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-380.prn	22.01	5402732	1.55	C	C	C	00.04	18033272	0.051	22.07	0	0	24.00	C	0
	22.01	5345743	1.534	C	C	C	00.04	18082002	0.052	22.07	0	0	24.00	C	0
	22.01	5345204	1.534	C	C	C	00.04	18062340	0.052	22.07	0	0	24.00	C	0
Average		5.36E+05	1.539		0.00E+00	0.000		1.81E+07	0.052		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation		3.30E+04	0.009		0.00E+00	0.000		2.50E+04	0.001		0.00E+00	0.000		0.00E+00	0.000
%RSD		0.62	0.60		ERR	ERR		0.14	1.12		ERR	ERR		ERR	ERR

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Sample I.D. Number 93 - 381

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-381.prn	22.01	1010067	2.899	C	C	C	00.04	21221356	0.061	22.07	C	0	24.00	C	C
	22.01	10095656	2.867	C	C	C	00.04	21270170	0.061	22.07	C	0	24.00	C	C
	22.01	10075557	2.801	C	C	C	00.30	21421104	0.061	22.07	C	0	24.00	C	C
Average		1.01E+07	2.896		0.00E+00	0.000		2.13E+07	0.061		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation		1.33E+04	0.004		0.00E+00	0.000		1.03E+05	0.000		0.00E+00	0.000		0.00E+00	0.000
%RSD		0.13	0.14		ERR	ERR		0.48	0.00		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 382

	Channel 'A'			Channel 'C'			Channel 'D'								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-382.prn	22.01	13982540	4.013	C	C	C	00.04	23470012	0.067	22.07	C	0	24.00	C	C
	22.01	14025117	4.025	C	C	C	00.04	23465010	0.067	22.07	C	0	24.00	C	C
	22.01	14029681	4.025	C	C	C	00.04	23390044	0.067	22.07	38447	0	24.00	C	C
Average		1.40E+07	4.021		0.00E+00	0.000		2.34E+07	0.067		1.28E+04	0.000		0.00E+00	0.000
Standard Deviation		2.61E+04	0.007		0.00E+00	0.000		3.98E+04	0.000		2.22E+04	0.000		0.00E+00	0.000
%RSD		0.19	0.18		ERR	ERR		0.17	0.00		173.21	ERR		ERR	ERR

Sample I.D. Number 93 - 383

Channel "A"						Channel "C"				Channel "D"					
Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen			
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-383.prn	22.01	15820467	4.54	C	C	C	00.04	20903280	0.077	22.07	56703	0	24.00	C	C
	22.01	15615152	4.536	C	C	C	00.04	18467184	0.067	22.07	C	0	24.00	C	C
	22.01	15721502	4.512	C	C	C	00.04	20220072	0.076	22.07	0	0	24.00	C	C
Average		1.58E+07	4.530		0.00E+00	0.000		2.40E+07	0.069	0.76	1.99E+04	0.000		0.00E+00	0.000
Standard Deviation		5.56E+04	0.016		0.00E+00	0.000		4.78E+06	0.014		3.45E+04	0.000		0.00E+00	0.000
%RSD		0.35	0.34		ERR	ERR		19.89	19.77		173.21	ERR		ERR	ERR

Sample I.D. Number 93 - 384

Channel "A"						Channel "C"				Channel "D"					
Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen			
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-384.prn	22.01	16331507	4.667	C	C	C	00.04	30374774	0.067	22.07	C	C	24.00	C	C
	22.01	16300900	4.676	C	C	C	00.04	30269180	0.067	22.07	C	C	24.00	C	C
	22.01	16261303	4.672	C	C	C	00.04	30472084	0.067	22.07	C	C	24.00	C	C
Average		1.63E+07	4.679		0.00E+00	0.000		3.04E+07	0.067		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation		2.53E+04	0.008		0.00E+00	0.000		9.18E+04	0.001		0.00E+00	0.000		0.00E+00	0.000
%RSD		0.16	0.16		ERR	ERR		0.30	0.67		ERR	ERR		ERR	ERR

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WHC-SD-MM-TRP-212, Rev. 0

Sample I.D. Number 93 - 385

	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-385.prm	22.01	15595612	4.467	C	0	C	85.04	34847580	0.096	22.07	35850	0	24.71	48714	0
	22.01	15588422	4.473	C	C	C	85.04	34868270	0.096	22.07	C	0	24.71	C	C
	22.01	15576294	4.471	C	0	0	85.04	34393480	0.096	22.07	C	0	24.71	0	0
Average		1.56E+07	4.470		0.00E+00	0.000		3.47E+07	0.099		1.20E+04	0.000		1.56E+04	0.000
Standard Deviation		1.06E+04	0.003		0.00E+00	0.000		2.70E+05	0.001		2.07E+04	0.000		2.70E+04	0.000
%RSD		0.07	0.07		ERR	ERR		0.78	0.59		173.21	ERR		173.21	ERR

Sample I.D. Number 93 - 386

Sample File Number	Channel "A"						Channel "C"			Channel "D"					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-386.prm	22.01	13455730	3.861	C	C	C	85.04	39511100	0.113	22.07	0	0	24.71	0	0
.	22.01	13402450	3.872	C	C	C	85.04	39555720	0.113	22.07	C	0	24.71	0	0
	22.01	13476053	3.867	C	C	C	85.04	39395104	0.112	22.07	C	0	24.71	0	0
Average		1.35E+07	3.867		0.00E+00	0.000		3.96E+07	0.113		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation		1.84E+04	0.006		0.00E+00	0.000		1.39E+05	0.001		0.00E+00	0.000		0.00E+00	0.000
%RSD		0.14	0.14		ERR	ERR		0.35	0.51		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 387

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-387.prm	22.01	10981100	3.151	C	C	C	85.04	43963712	0.125	0	C	0	24.71	68971	0.001
	22.01	10974010	3.146	C	C	C	85.04	43347650	0.124	0	C	0	24.71	0	0
	22.01	10952900	3.143	C	C	C	85.04	43880320	0.125	0	C	0	24.71	0	0
Average		1.10E+07	3.148		0.00E+00	0.000		4.36E+07	0.125		0.00E+00	0.000		2.30E+04	0.000
Standard Deviation		1.47E+04	0.004		0.00E+00	0.000		1.93E+05	0.001		0.00E+00	0.000		3.98E+04	0.001
%RSD		0.13	0.13		ERR	ERR		0.44	0.46		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 388

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-388.prm	22.01	8855034	2.541	C	C	C	85.04	45160290	0.128	C	C	0	24.71	0	0
	22.01	8806107	2.528	C	C	C	85.04	45035790	0.128	C	C	0	24.71	0	0
	22.01	8793616	2.524	C	C	C	85.04	44016800	0.128	C	C	0	24.71	0	0
Average		8.82E+06	2.531		0.00E+00	0.000		4.50E+07	0.128		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation		3.25E+04	0.009		0.00E+00	0.000		1.21E+05	0.001		0.00E+00	0.000		0.00E+00	0.000
%RSD		0.37	0.35		ERR	ERR		0.27	0.45		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 389

	Channel "A"			Channel "C"			Channel "D"		
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-389.prn	22.01	7307122	2.007	C	C	C	00.04	45215400	0.126
	22.01	7270323	2.066	C	C	C	00.04	45434700	0.13
	22.01	7283137	2.09	C	C	C	00.04	45111432	0.126
Average		7.29E+06	2.091		0.00E+00	0.000		4.53E+07	0.129
Standard Deviation		1.87E+04	0.006		0.00E+00	0.000		1.65E+05	0.001
%RSD		0.26	0.27		ERR	ERR		0.36	0.45

Sample I.D. Number 93 - 390

	Channel "A"			Channel "C"			Channel "D"		
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-390.prn	22.05	6012090	1.726	C	C	C	00.04	46021616	0.131
	22.01	5056367	1.709	C	C	C	00.04	46751216	0.133
	22.01	5070551	1.716	C	C	C	00.04	46404594	0.132
Average		5.98E+06	1.717		0.00E+00	0.000		4.64E+07	0.132
Standard Deviation		2.85E+04	0.009		0.00E+00	0.000		3.65E+05	0.001
%RSD		0.48	0.50		ERR	ERR		0.79	0.76

Sample I.D. Number 93 - 391

	Channel "A"			Channel "C"			Channel "D"		
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-391.prn	22.05	6067205	1.919	C	C	C	00.04	44030032	0.126
	22.05	6052353	1.909	C	C	C	00.04	44304044	0.126
	22.05	6082434	1.916	C	C	C	00.04	44000262	0.126
Average		6.67E+06	1.915		0.00E+00	0.000		4.41E+07	0.126
Standard Deviation		1.89E+04	0.006		0.00E+00	0.000		1.43E+05	0.000
%RSD		0.28	0.29		ERR	ERR		0.32	0.00

Sample I.D. Number 93 - 392

	Channel "A"			Channel "C"			Channel "D"		
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-392.prn	22.01	4546205	1.305	C	C	C	00.04	46095000	0.134
	22.01	4497600	1.261	C	C	C	00.04	46924512	0.134
	22.01	4501340	1.262	C	C	C	00.04	46676700	0.134
Average		4.52E+06	1.296		0.00E+00	0.000		4.69E+07	0.134
Standard Deviation		2.70E+04	0.008		0.00E+00	0.000		5.95E+04	0.000
%RSD		0.60	0.60		ERR	ERR		0.13	0.00

WHC-SD-MM-TRP-212, Rev. 0

Sample I.D. Number 93 - 393

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-393.prm	22.01	5346905	1.535	C	0	C	66.04	44781944	0.126	0	0	0	24.71	71000	0.001
	22.01	5313511	1.525	C	0	C	66.04	44776336	0.126	0	0	0	24.71	0	0
	22.01	5302042	1.522	C	0	C	66.04	44620940	0.126	22.43	242316	0	24.71	0	0
Average		5.32E+06	1.527		0.00E+00	0.000		4.48E+07	0.128		8.08E+04	0.000		2.37E+04	0.000
Standard Deviation		2.42E+04	0.007		0.00E+00	0.000		2.93E+04	0.000		1.40E+05	0.000		4.10E+04	0.001
%RSD		0.45	0.45		ERR	ERR		0.07	0.00		173.21	ERR		173.21	173.21

Sample I.D. Number 93 - 394

	Channel 'A'			Channel 'C'			Channel 'D'								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-394.prm	22.01	3710740	1.065	C	0	C	66.04	47216712	0.135	C	C	0	24.71	61500	0.001
	22.01	3723520	1.066	C	0	C	66.04	47132952	0.134	0	0	0	24.71	0	0
	22.01	3700978	1.052	C	0	C	66.04	46944400	0.134	0	0	0	24.71	0	0
Average		3.71E+06	1.065		0.00E+00	0.000		4.71E+07	0.134		0.00E+00	0.000		3.05E+04	0.000
Standard Deviation		1.13E+04	0.004		0.00E+00	0.000		1.39E+05	0.001		0.00E+00	0.000		5.29E+04	0.001
%RSD		0.30	0.33		ERR	ERR		0.30	0.43		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 395

	Channel 'A'						Channel 'C'			Channel 'D'					
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-395.prm	22.05	1534100	0.44	C	0	C	66.04	46661460	0.134	0	0	0	24.71	62150	0.001
	22.05	1531540	0.44	C	0	C	66.04	46536352	0.134	0	0	0	24.71	0	0
	22.05	1515327	0.435	C	0	C	66.04	47214800	0.135	0	0	0	24.71	0	0
Average		1.53E+06	0.436		0.00E+00	0.000		4.70E+07	0.134		0.00E+00	0.000		2.74E+04	0.000
Standard Deviation		1.02E+04	0.003		0.00E+00	0.000		1.53E+05	0.001		0.00E+00	0.000		4.74E+04	0.001
%RSD		0.67	0.66		ERR	ERR		0.33	0.43		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 396

	Channel 'A'			Channel 'C'			Channel 'D'								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-396.prm	22.05	1028604	0.553	C	0	C	66.04	46043960	0.131	0	C	0	24.75	54124	0
	22.05	1010280	0.546	C	C	C	66.04	46547624	0.132	0	C	0	24.73	0	0
	22.05	1006012	0.546	C	0	C	66.04	46026704	0.131	C	C	0	24.76	88370	0.001
Average		1.92E+06	0.550		0.00E+00	0.000		4.62E+07	0.132		0.00E+00	0.000		4.75E+04	0.000
Standard Deviation		1.13E+04	0.003		0.00E+00	0.000		2.77E+05	0.001		0.00E+00	0.000		4.46E+04	0.001
%RSD		0.59	0.53		ERR	ERR		0.60	0.88		ERR	ERR		93.81	173.21

Sample I.D Number 93 - 397

	Channel 'A'			Channel 'C'			Channel 'D'								
	Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-397.prm	22.05	5233639	1.602	C	C	C	22.05	103008810	0.467	22.05	22365710	0.021	24.73	162012	0.001
	22.05	5208978	1.492	C	C	C	22.05	104375770	0.466	22.05	21400544	0.02	24.71	150555	0.001
	22.05	5209032	1.492	C	C	C	22.05	103045130	0.466	22.05	20782032	0.019	24.71	148867	0.001
Average		5.22E+06	1.497		0.00E+00	0.000		1.64E+08	0.468		2.15E+07	0.020		1.54E+05	0.001
Standard Deviation		1.40E+04	0.004		0.00E+00	0.000		3.66E+05	0.001		7.98E+05	0.001		7.15E+03	0.000
%RSD		0.27	0.27		ERR	ERR		0.22	0.21		3.71	5.00		4.65	0.00

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{FOR G591,A603,F590,1,C595}
{HOME}

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345

397

398

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WMC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 398

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-398.pm	10.11	350350816	2.875	0	0	0	00.04	35244344	0.113	23.03	20421453	0.019	24.01	774500076	3.02
	10.11	357144102	2.845	0	0	0	00.04	0	0	23.01	355435	0	24.01	765040248	3.02
	10.06	350730944	2.846	0	0	0	00.04	0	0	0	0	0	24.01	775790272	3.05
	10.06	355072606	2.836	0	0	0	00.04	0	0	22.06	78214	0	24.09	784025558	3.00
Average		3.57E+08	2.852		0.00E+00	0.000		8.81E+06	0.028		5.23E+06	0.005		7.70E+08	3.033
Standard Deviation		2.02E+06	0.016		0.00E+00	0.000		1.76E+07	0.057		1.02E+07	0.010		5.73E+06	0.023
%RSD		0.56	0.56		ERR	ERR		-200.00	200.00		194.37	200.00		0.74	0.75

Sample I.D. Number 93 - 399

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-399.pm	10.13	345000280	2.76	0	0	0	00.04	0	0	23.05	160500003	0	24.05	776671072	2.99
	10.13	343039456	2.744	0	0	0	00.04	0	0	23.03	341023	0	24.03	765082646	2.95
	10.13	341404632	2.725	0	0	0	00.04	0	0	0	0	0	24.03	765270400	2.944
	10.11	342202804	2.721	0	0	0	00.04	0	0	0	0	0	23.57	32424002	-0.351
Average		3.43E+08	2.740		0.00E+00	0.000		0.00E+00	0.000		5.08E+06	0.000		7.70E+08	2.964
Standard Deviation		1.98E+06	0.016		0.00E+00	0.000		0.00E+00	0.000		9.92E+06	0.000		6.32E+06	0.028
%RSD		0.58	0.57		ERR	ERR		ERR	ERR		195.55	ERR		0.82	0.95

B-50

WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 92 - 400

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
92-400.ppm	10.00	30401148E	2.433	20.03	0	0	05.4	0	0	22.07	1274333E	0	24.05	-898E	0
	10.00	305414012	2.437	20.03	0	0	05.4	0	0	0	0	0	0	0	0
	10.00	304120704	2.426	20.03	0	0	05.4	0	0	0	0	0	24.05	501324480	1.757
	10.00	302824806	2.410	20.03	0	0	05.4	0	0	0	0	0	24.05	50140028E	1.757
Average		3.04E+08	2.428		0.00E+00	0.000		0.00E+00	0.000		3.18E+06	0.000		2.51E+08	1.757
Standard Deviation		1.13E+06	0.009		0.00E+00	0.000		0.00E+00	0.000		6.37E+06	0.000		2.89E+08	1.757
%RSD		0.37	0.38		ERR	ERR		ERR	ERR		200.00	ERR		115.47	115.47

Sample I.D. Number 92 - 401

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
92-401.ppm	10.00	303605920	2.422	20.03	0	0	05.4	0	0	22.07	6016304	0	24.05	50092080E	1.780
	10.00	302780704	2.410	20.03	0	0	05.4	0	0	22.07	07405	0	24.71	518005900	1.830
	10.00	301302850	2.404	20.03	0	0	05.4	0	0	0	0	0	24.05	515288704	1.80
	10.00	301580704	2.400	20.03	0	0	05.4	0	0	0	0	0	24.05	404532480	1.720
Average		3.02E+08	2.412		0.00E+00	0.000		0.00E+00	0.000		2.25E+06	0.000		5.09E+08	1.790
Standard Deviation		1.07E+06	0.008		0.00E+00	0.000		0.00E+00	0.000		4.44E+06	0.000		1.06E+07	0.048
%RSD		0.35	0.35		ERR	ERR		ERR	ERR		197.13	ERR		2.08	2.66

Sample I.D. Number 93 - 402

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-402.ppm	10.03	48134402E	3.84	10.04	3313704	0.00E	05.4	0	0	22.06	1241717E	0	24.05	39983512	-0.321
	10.03	482734432	3.851	10.04	3347337	0.00E	05.4	0	0	22.07	216431	0	24.05	374000000	-0.326
	10.03	484030144	3.855	10.04	3343770	0.00E	05.4	0	0	0	0	0	24.05	3830508E	-0.324
	10.03	482501504	3.85	10.04	3325351	0.00E	05.4	0	0	0	0	0	24.05	37474080	-0.320
Average		4.83E+08	3.851		3.33E+06	0.000		0.00E+00	0.000		3.16E+06	0.000		3.80E+07	-0.326
Standard Deviation		1.10E+06	0.009		1.58E+04	0.000		0.00E+00	0.000		6.17E+06	0.000		7.51E+05	0.004
%RSD		0.23	0.23		0.47	0.00		ERR	ERR		195.46	ERR		1.97	-1.14

Sample I.D. Number 93 - 403

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-403.ppm	10.00	34820060E	2.776	10.05	0	0	05.4	0	0	22.07	3298380	0	24.05	4020105E	-0.276
	10.07	344803544	2.752	10.05	0	0	05.4	0	0	0	0	0	24.05	40332524	-0.276
	10.07	345235130	2.754	10.05	0	0	05.4	0	0	0	0	0	24.05	40240012	-0.275
	10.07	34530124E	2.755	10.05	0	0	05.4	0	0	0	0	0	24.05	4085300E	-0.273
Average		3.46E+08	2.760		0.00E+00	0.000		0.00E+00	0.000		8.25E+05	0.000		4.94E+07	-0.275
Standard Deviation		1.54E+06	0.012		0.00E+00	0.000		0.00E+00	0.000		1.66E+06	0.000		2.89E+05	0.001
%RSD		0.44	0.44		ERR	ERR		ERR	ERR		200.00	ERR		0.58	-0.36

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Sample I.D. Number		93 - 404									
Channel A* (%)		Carbon Dioxide					Channel C* (%)				
Nitrous Oxide		RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Channel D* (%)
		helium					helium				
93-404.prm		10.06	325820904	2.6	0	0	0	22.06	3353806	0	24.86
		10.06	323192232	2.576	0	0	0	22.06	60780	0	24.86
		10.06	323107048	2.576	0	0	0	0	0	0	24.86
		10.06	322254408	2.571	0	0	0	0	0	0	24.86
Average			3.24E+08	2.582	0.00E+00	0.00E+00	0.00E+00	8.60E+05	0.00E+00	0.00E+00	4.42E+07
Standard Deviation			1.55E+06	0.013	0.00E+00	0.00E+00	0.00E+00	1.66E+06	0.00E+00	0.00E+00	1.09E+06
%RSD			0.48	0.48	ERR	ERR	ERR	193.33	ERR	ERR	2.48
											-1.65
Sample I.D. Number		93 - 405									
Channel A* (%)		Carbon Dioxide					Channel C* (%)				
Nitrous Oxide		RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Channel D* (%)
		helium					helium				
93-405.prm		10.11	300843362	2.401	15.06	0	0	22.06	5027462	0	24.71
		10.11	268800804	2.382	15.06	0	0	0	0	0	24.71
		10.11	290576806	2.393	15.06	0	0	0	0	0	24.71
		10.11	290340272	2.388	15.06	0	0	0	0	0	24.71
Average			3.00E+08	2.392	0.00E+00	0.00E+00	0.00E+00	1.48E+06	0.00E+00	0.00E+00	4.90E+07
Standard Deviation			8.84E+06	0.007	0.00E+00	0.00E+00	0.00E+00	2.96E+06	0.00E+00	0.00E+00	9.76E+05
%RSD			0.28	0.28	ERR	ERR	ERR	200.00	ERR	ERR	2.00
											-1.65
Sample I.D. Number		93 - 406									
Channel A* (%)		Carbon Dioxide					Channel C* (%)				
Nitrous Oxide		RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Channel D* (%)
		helium					helium				
93-406.prm		10.11	300762304	2.471	15.06	0	0	22.06	1500404	0	24.71
		10.11	307240280	2.457	15.06	0	0	0	0	0	24.71
		10.11	300750072	2.447	15.06	0	0	0	0	0	24.71
		10.11	307833586	2.456	15.06	0	0	0	0	0	24.71
Average			3.08E+08	2.456	0.00E+00	0.00E+00	0.00E+00	3.98E+05	0.00E+00	0.00E+00	4.76E+07
Standard Deviation			1.32E+06	0.011	0.00E+00	0.00E+00	0.00E+00	7.95E+05	0.00E+00	0.00E+00	2.03E+05
%RSD			0.43	0.43	ERR	ERR	ERR	200.00	ERR	ERR	0.43
											-0.35
Sample I.D. Number		93 - 407									
Channel A* (%)		Carbon Dioxide					Channel C* (%)				
Nitrous Oxide		RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Channel D* (%)
		helium					helium				
93-407.prm		10.11	298224686	2.386	15.06	0	0	23.01	2000016	0	24.71
		10.11	298794286	2.384	15.06	0	0	0	0	0	24.71
		10.11	297670520	2.372	15.06	0	0	0	0	0	24.71
		10.11	298220882	2.376	15.06	0	0	0	0	0	24.71
Average			2.98E+08	2.382	0.00E+00	0.00E+00	0.00E+00	5.15E+05	0.00E+00	0.00E+00	5.00E+07
Standard Deviation			6.90E+05	0.006	0.00E+00	0.00E+00	0.00E+00	1.03E+06	0.00E+00	0.00E+00	2.07E+05
%RSD			0.23	0.24	ERR	ERR	ERR	200.00	ERR	ERR	4.15
											-0.261

Sample I.D. Number 93 - 408

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-408.prm	10.11	34723484E	2.77	10.05	C	C	05.4	0	C	23.01	350581*	C
	10.11	34745508E	2.772	10.05	C	C	0	0	C	22.06	11438E	0
	10.11	34854330E	2.781	10.05	C	C	C	C	C	22.00	7094E	C
	10.11	34970680E	2.76	10.05	C	C	C	C	C	C	C	C
Average		3.48E+08	2.778		0.00E+00	0.000		0.00E+00	0.000		9.47E+05	0.000
Standard Deviation		1.14E+06	0.009		0.00E+00	0.000		0.00E+00	0.000		1.77E+06	0.000
%RSD		0.33	0.33		ERR	ERR		ERR	ERR		186.46	ERR

Sample I.D. Number 93 - 409

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-409.prm	10.13	30711005E	2.45	10.05	C	C	0	0	C	23.01	294077E	C
	10.13	30420224E	2.427	10.05	C	C	0	0	C	23.03	0	C
	10.13	30205948E	2.415	10.05	C	C	0	0	C	0	0	C
	10.13	30415485E	2.427	10.05	0	C	0	0	C	0	0	C
Average		3.05E+08	2.430		0.00E+00	0.000		0.00E+00	0.000		7.10E+05	0.000
Standard Deviation		1.86E+06	0.015		0.00E+00	0.000		0.00E+00	0.000		1.42E+06	0.000
%RSD		0.61	0.60		ERR	ERR		ERR	ERR		200.00	ERR

Sample I.D. Number 93 - 410

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-410.prm	10.11	33053200E	2.706	10.05	C	C	C	0	C	23.03	350309E	C
	10.11	34035020E	2.715	10.05	C	C	C	0	C	22.06	0077E	0
	10.11	34020007E	2.715	10.05	0	C	C	0	C	22.05	7814E	0
	10.11	34055530E	2.717	10.05	C	C	C	0	C	C	0	C
Average		3.40E+08	2.714		0.00E+00	0.000		0.00E+00	0.000		9.42E+05	0.000
Standard Deviation		4.47E+05	0.003		0.00E+00	0.000		0.00E+00	0.000		1.77E+06	0.000
%RSD		0.13	0.13		ERR	ERR		ERR	ERR		187.66	ERR

Sample I.D. Number 93 - 411

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-411.prm	10.13	30767152E	2.455	10.05	C	C	0	0	C	23.03	280884E	0
	10.13	30508018E	2.441	10.05	C	C	C	0	C	C	0	0
	10.13	30804851E	2.442	C	C	C	C	0	C	C	0	C
	10.13	30405008E	2.426	C	C	C	C	0	C	C	0	C
Average		3.06E+08	2.441		0.00E+00	0.000		0.00E+00	0.000		7.24E+05	0.000
Standard Deviation		1.48E+06	0.012		0.00E+00	0.000		0.00E+00	0.000		1.45E+06	0.000
%RSD		0.48	0.49		ERR	ERR		ERR	ERR		200.00	ERR

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0.278
0.004

Sample I.D. Number 93 - 412

Sample Ref Number	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-412.prm	10 13	335973531	2 681	19 95	0	0	85 72	0	0	23 05	5250023	0.005	24 75	41850624	0.104
	10 13	335968824	2 681	19 95	0	0	85 72	0	0	22 65	103593	0	24 75	43224040	0.17
	10 13	336017312	2 681	19 95	0	0	85 72	0	0	0	0	0	24 73	41849844	0.105
	10 13	336188446	2 708	0	0	0	85 72	0	0	0	0	0	24 75	16907946	0.077
Average		3.37E+08	2.687		0.00E+00	0.000		0.00E+00	0.000		1.35E+06	0.001		3.66E+07	0.166
Standard Deviation		1.59E+06	0.012		0.00E+00	0.000		0.00E+00	0.000		2.63E+06	0.003		1.13E+07	0.003
%RSD		0.47	0.47		ERR	ERR		ERR	ERR		194.94	200.00		30.99	31.07

Sample I.D. Number 93 - 413

Sample Name	Channel "A" (%)						Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-413.prm	10 15	303446731	2 421	0	0	0	85 25	29173631	1 275	23 05	1184580	0 00	24.75	48555504	0 10
	10 15	301739988	2 407	0	0	0	85 25	0	0	0	0	0	24 75	50400768	0 106
	10 15	301861408	2 407	0	0	0	85 25	0	0	0	0	0	24.75	48542204	0 105
	10 15	300853728	2 4	0	0	0	85 25	0	0	0	0	0	24 75	48741232	0 102
Average		3.02E+08	2 409		0.00E+00	0.000		9 53E+07	0 318		2.86E+05	0 000		4.93E+07	0.194
Standard Deviation		1.09E+06	0 009		0.00E+00	0.000		1.99E+08	0 638		5 92E+05	0.001		8 44E+05	0 003
%RSD		0 36	0 37		ERR	ERR		200 00	200 00		200 00	200 00		1.71	1.63

Sample I.D. Number 93 - 414

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)									
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen			
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-414.D.m	10 15	336048446	2.686	0	0	0	85 25	0	0	0	23 05	3662570	0.004	24.77	40655876	0.10
	10 15	338935904	2.704	0	0	0	85 25	0	0	0	23 05	93140	0	24.77	42053440	0.106
	10 15	341220894	2.722	0	0	0	85 25	0	0	0	22 05	89108	0	24.77	38825836	0.153
	10 15	341251776	2.723	0	0	0	85 25	0	0	0	22 05	86780	0	24.77	39136412	0.154
Average		3.40E+06	2.709		0.00E+00	0.000		0.00E+00	0.000			1.06E+06	0.001		4.04E+07	0.159
Standard Deviation		2.07E+06	0.017		0.00E+00	0.000		0.00E+00	0.000			1.95E+06	0.002		1.89E+06	0.007
%RSD		0.61	0.61		ERR	ERR		ERR	ERR			184.35	200.00		4.68	4.62

Sample I.D. Number 93 - 415

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-415.prm	10 17	301760544	2 408	0	0	0	85 25	0	0	23 05	2421300	0 002	24 79	49285156	0 107
	10 17	300550336	2 398	0	0	0	85 25	0	0	0	0	0	24 79	49878292	0 106
	10 16	299107200	2 384	0	0	0	85 25	0	0	0	0	0	24 79	47849884	0 186
	10 16	300833952	2 356	0	0	0	85 25	0	0	0	0	0	24 79	49218200	0 197
Average		3 01E+08	2 398		0 00E+00	0 000		0 00E+00	0 000		6 05E+05	0 001		4.94E+07	0 195
Standard Deviation		1.10E+06	0 009		0 00E+00	0 000		0 00E+00	0 000		1 21E+06	0 001		1 04E+06	0 004
%RSD		0 37	0 38		ERR	ERR		ERR	ERR		200 00	200 00		2 11	2 24

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Sample I.D. Number: 93 - 416

	Channel "A" (%)						Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-416.prm	10 17	352036704	2 813	C	C	0	56 4	657241192	2 105	23 05	3287056	0 003	24 76	38048136	0 15
	10 17	348170592	2 776	C	C	0	56 4	C	0	23 05	192330	C	24 76	37574120	0 148
	10 19	340458112	2 786	C	C	0	56 4	C	0	23 05	92008	C	24 76	38275004	0 151
	10 16	345744092	2 756	C	C	0	56 4	C	0	23 05	78160	C	24 76	39010500	0 154
Average		3.49E+08	2.784		0.00E+00	0.000		1.64E+08	0.527		9.07E+05	0.001		3.82E+07	0.151
Standard Deviation		2.87E+06	0.023		0.00E+00	0.000		3.29E+08	1.055		1.57E+06	0.002		6.02E+05	0.003
%RSD		0.82	0.82		ERR	ERR		200.00	200.00		173.46	200.00		1.58	1.66

Sample I.D. Number: 93 - 417

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-417.prm	10 21	267051072	2 375	C	C	C	56 4	C	0	C	C	0	24 81	40088408	0 103
	10 21	267054832	2 375	C	C	C	56 4	C	0	23 05	5597513	0 005	24 81	50035024	0 107
	10 21	268420832	2 381	C	C	0	56 83	576930320	1 656	C	C	0	24 81	50035024	0 107
	10 21	268358400	2 36	C	C	0	56 65	570011036	1 656	C	C	0	24 81	51137328	0 201
Average		2.98E+08	2 378		0.00E+00	0 000		2.75E+08	0.882		1.86E+06	0.002		3.76E+07	0 197
Standard Deviation		4.35E+05	0 003		0.00E+00	0 000		3.18E+08	1.021		3.21E+06	0.002		2.51E+07	0 002
%RSD		0 15	0 13		ERR	ERR		115 80	115 80		173 21	173 21		66 70	66 70

Sample I.D. Number: 93 - 418

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-418.prm	10 21	307070496	2 457	C	C	C	05 75	3575652	0 012	23 11	4434635	0 004	24 83	53517864	0 211
	10 21	307084092	2 452	C	C	C	05 72	3335708	0 011	23 05	71032	C	24 83	52643506	0 207
	10 21	307055486	2 455	C	C	C	05 72	C	0	C	0	0	24 83	53587706	0 211
	10 23	308855744	2 446	C	C	C	05 76	0	0	C	0	0	24 83	0	C
Average		3.08E+08	2 454		0.00E+00	0 000		3.51E+08	0 012		1.13E+06	0 001		4.00E+07	0 210
Standard Deviation		4.79E+05	0 004		0.00E+00	0 000		2.41E+08	0 001		2.21E+06	0 002		2.66E+07	0 105
%RSD		0 16	0 16		ERR	ERR		6 87	6 15		195.77	200.00		66.68	66 68

Sample I.D. Number: 93 - 419

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-419.prm	10 23	301493152	2 405	C	C	C	05 75	5500685	0 016	23 11	2724756	0 003	24 83	60021744	0 272
	10 23	301177020	2 403	C	C	C	05 75	5759818	0 016	C	C	C	24 83	68841416	0 27
	10 23	299911936	2 393	C	C	C	05 72	5602325	0 016	C	C	C	24 83	69392792	0 273
	10 23	298420920	2 351	C	C	C	05 75	C	C	C	C	C	24 83	69274404	0 273
Average		3 00E+08	2 396		0 00E+00	0 000		5 77E+08	0 016		6 81E+05	0 001		6 91E+07	0 272
Standard Deviation		1.39E+06	0 011		0 00E+00	0 000		1 53E+08	0 001		1 36E+06	0 002		3.32E+05	0 001
%RSD		0 46	0 46		ERR	ERR		2 66	3 09		200 00	200 00		0 48	0 52

Sample I.D. Number

93 - 42C

Channel A* Nitrous Oxide	Carbon Dioxide			Channel C* (%)			Channel D* (%)			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-420.ppt	10 25	250104304	2.357	0	0	0	0	0	0	23.12	4027881	0.002
	10 25	255705944	2.34	0	0	0	0	0	0	0	0	0
	10 25	257020016	2.372	0	0	0	0	0	0	0	0	0
	10 25	260373120	2.386	0	0	0	0	0	0	0	0	0
Average		2.88E+08	2.378	0.00E+00	0.00E+00	0.000	0.00E+00	0.00E+00	0.000	23.06	20350	0.001
Standard Deviation		1.66E+06	0.013	0.00E+00	0.00E+00	0.000	1.55E+05	1.72E+07	0.055	1.24E+06	1.22E+08	0.001
%RSD		0.56	0.55	ERR	ERR	ERR	0.90	0.90	1.27	2.46E+06	2.44E+08	0.003
										198.57	200.00	200.00

Sample I.D. Number

93 - 421

Channel A* Nitrous Oxide	Carbon Dioxide			Channel C* (%)			Channel D* (%)			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-421.ppt	10 23	307216006	2.451	0	0	0	0	0	0	23.11	1136000	0.001
	10 23	303504150	2.442	0	0	0	0	0	0	0	0	0
	10 23	307424396	2.452	0	0	0	0	0	0	0	0	0
	10 23	304701376	2.432	0	0	0	0	0	0	0	0	0
Average		3.06E+08	2.446	0.00E+00	0.00E+00	0.000	8.12E+06	10073810	0.032	2.84E+05	7.92E+07	0.003
Standard Deviation		1.21E+06	0.009	0.00E+00	0.00E+00	0.000	2.77E+05	34.16	0.008	5.68E+05	7.31E+05	0.003
%RSD		0.40	0.35	ERR	ERR	ERR	32.64	32.64	32.64	200.00	0.92	0.88

Sample I.D. Number

93 - 422

Channel A* Nitrous Oxide	Carbon Dioxide			Channel C* (%)			Channel D* (%)			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-422.ppt	10 27	200400400	2.356	0	0	0	0	0	0	23.17	12376008	0.011
	10 27	208095520	2.376	0	0	0	0	0	0	0	0	0
	10 27	207553536	2.374	0	0	0	0	0	0	0	0	0
	10 27	207020030	2.37	0	0	0	0	0	0	0	0	0
Average		2.98E+08	2.376	0.00E+00	0.00E+00	0.000	1.88E+06	6.66E+06	0.024	3.14E+06	1.06E+08	0.003
Standard Deviation		1.07E+06	0.008	0.00E+00	0.00E+00	0.000	3.76E+06	5.0E+8	0.006	6.16E+06	2.24E+08	0.009
%RSD		0.36	0.34	ERR	ERR	ERR	200.00	200.00	200.00	198.26	2.12	2.16

Sample I.D. Number

93 - 423

Channel A* Nitrous Oxide	Carbon Dioxide			Channel C* (%)			Channel D* (%)			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-423.ppt	10 23	402050086	3.92	0	0	0	0	0	0	23.06	540570	0.001
	10 23	503339456	4.032	0	0	0	0	0	0	0	0	0
	10 23	500044472	3.894	0	0	0	0	0	0	0	0	0
	10 23	402140000	3.952	0	0	0	0	0	0	0	0	0
Average		4.89E+08	3.985	0.00E+00	0.00E+00	0.000	4.17E+05	500400	0.000	1.25E+05	0.001	0.001
Standard Deviation		5.25E+06	0.042	0.00E+00	0.00E+00	0.000	1.35E+05	0.000	0.000	2.57E+05	0.001	0.001
%RSD		1.06	1.06	ERR	ERR	ERR	0.00	0.00	0.00	0.00	200.00	200.00

Sample I.D. Number 93 - 424

Oct 29, 199 Channel 'A' (%) 16.29 294826688

Oct 29, 1995 Channel "A"	16.29 294826688						Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-424.ppt	16.29	334388006	2.606	0	0	0	65.72	8857346	0.026	23.15	149202	0	24.01	137095000	0.54
	16.29	334680071	2.67	0	0	0	65.72	8879936	0.026	23.15	122983	0	24.01	140746560	0.554
	16.29	334049376	2.607	0	0	0	65.72	8637416	0.026	23.15	91256	0	24.01	141730884	0.556
	16.29	333792992	2.603	0	0	0	65.72	0	0	23.05	82310	0	24.01	134809546	0.531
Average		3.34E+08	2.667		0.00E+00	0.000		8.86E+06	0.028		1.06E+05	0.000		1.39E+08	0.546
Standard Deviation		3.88E+05	0.003		0.00E+00	0.000		1.98E+04	0.000		3.76E+04	0.000		3.22E+06	0.013
%RSD		0.12	0.12		ERR	ERR		0.22	0.00		35.44	ERR		2.32	2.29

Sample I.D. Number 93 - 425

	Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-425.ppt	16.29	322630992	2.574	0	0	0	65.72	0	0	0	0	0	24.01	207556126	0.817
	16.29	321408224	2.555	0	0	0	65.72	0	0	0	0	0	24.01	207454000	0.817
	16.29	319106952	2.546	0	0	0	65.72	0	0	0	0	0	24.01	208101440	0.82
	16.29	320920526	2.56	0	0	0	65.72	9935455	0.032	0	0	0	24.03	213423606	0.84
Average		3.21E+08	2.561		0.00E+00	0.000		9.94E+06	0.032		0.00E+00	0.000		2.09E+08	0.824
Standard Deviation		1.45E+06	0.012		0.00E+00	0.000		ERR	ERR		0.00E+00	0.000		2.86E+06	0.011
%RSD		0.45	0.46		ERR	ERR		ERR	ERR		ERR	ERR		1.37	1.35

Sample I.D. Number 93 - 426

	Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-426.ppt	16.31	265576286	2.356	0	0	0	65.72	14424054	0.046	23.16	448942	0	24.03	332488824	1.306
	16.31	265224384	2.355	0	0	0	65.72	14303467	0.046	0	0	0	24.03	330910208	1.303
	16.31	264060046	2.345	0	0	0	65.72	14350186	0.046	0	0	0	24.03	348493072	1.306
	16.31	263504950	2.345	0	0	0	65.72	0	0	0	0	0	24.03	332580800	1.31
Average		2.95E+08	2.350		0.00E+00	0.000		1.44E+07	0.046		1.12E+05	0.000		3.36E+08	1.307
Standard Deviation		9.29E+05	0.007		0.00E+00	0.000		6.08E+04	0.000		2.23E+05	0.000		8.27E+06	0.032
%RSD		0.32	0.32		ERR	ERR		0.42	0.00		200.00	ERR		2.46	2.45

Sample I.D. Number 93 - 427

	Channel 'A' (%)						Channel 'C' (%)			Channel 'D' (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-427.ppt	16.31	26536846	2.36	0	0	0	65.72	11282175	0.036	23.27	164955	0	24.05	426588672	1.66
	16.31	262527104	2.334	0	0	0	65.72	1126000	0.036	0	0	0	24.05	432314206	1.702
	16.31	262813406	2.336	0	0	0	65.4	12794765	0.041	0	0	0	24.05	408522756	1.606
	16.31	263470332	2.341	0	0	0	65.4	0	0	0	0	0	24.05	409836932	1.61
Average		2.94E+08	2.343		0.00E+00	0.000		1.19E+07	0.038		4.12E+04	0.000		4.19E+08	1.650
Standard Deviation		1.46E+06	0.012		0.00E+00	0.000		7.38E+05	0.000		8.23E+04	0.000		1.22E+07	0.046
%RSD		0.50	0.51		ERR	ERR		6.11	6.57		200.00	ERR		2.91	2.50

WMC-SD-WM-TRP-212, Rev. 0

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Sample I.D. Number		93 - 428											
Channel "A" (%)		Carbon Dioxide					Channel "C" (%)						
Nitrous Oxide		RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Channel "D" (%)		
		helium					hydrogen						
93-428.prm		10.31	32035894E	2.62E	C	C	C	65.4	0	0	24.65	30570026F	1.53E
		10.31	33015104E	2.68E	0	0	C	25.4	0	0	24.65	30527225E	1.53E
		10.31	3301513104	2.68E	0	0	C	25.4	0	0	24.65	30555500E	1.53E
		10.31	331151302	2.64E	0	0	C	65.4	0	0	24.65	37145275E	1.40E
Average		3.33E+08	2.65E	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.91E+05	0.00E+00	0.00E+00	3.87E+08	1.52E	
Standard Deviation		3.49E+06	0.02E	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.83E+05	0.00E+00	0.00E+00	1.05E+07	0.04E	
%RSD		1.05	1.04	ERR	ERR	ERR	ERR	200.00	200.00	200.00	2.72	2.72	

Sample I.D. Number		93 - 429											
Channel'A' (%)		Carbon Dioxide					Channel'C' (%)						
Nitrous Oxide		RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Channel'D' (%)		
		helium					hydrogen						
93-429.prm		10.31	31409050C	2.50E	C	C	C	23.23	18507E	C	24.0E	44850602E	1.72E
		10.31	32388402E	2.56E	C	0	C	C	C	C	24.0E	30914004E	1.21E
		10.31	32357724E	2.58E	C	C	C	23.13	75344	0	24.0E	37051029E	1.40E
		10.31	33572601E	2.67E	0	0	C	23.1E	170150	0	24.67	36888948E	1.43E
Average		3.24E+08	2.58E	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E+05	0.00E+00	0.00E+00	3.76E+08	1.48E	
Standard Deviation		8.86E+06	0.07E	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.68E+04	0.00E+00	0.00E+00	5.75E+07	0.22E	
%RSD		2.73	2.74	ERR	ERR	ERR	ERR	79.80	200.00	200.00	15.29	15.29	

Sample I.D. Number		93 - 430											
Channel 'A' (%)		Carbon Dioxide					Channel 'C' (%)						
Nitrous Oxide		RT	AREA	AMT	RT	AREA	AMT	Carbon Monoxide		Channel 'D' (%)			
		helium					hydrogen						
93-430.prm		10.35	20334005E	2.34	C	C	C	65.4	0	0	24.67	50700360E	1.907
		10.35	20103312E	2.30E	C	0	C	45.4	0	0	24.67	40003764E	1.90E
		10.35	20311520E	2.33E	C	0	C	65.3E	0	0	24.67	36888948E	C
		10.35	20202400E	2.33E	C	0	C	65.4	0	0	24.67	36888948E	C
Average		2.83E +08	2.33E	0.00E +00	0.00E	0.00E	0.00E	1.76E +08	0.59E	0.59E	2.97E +04	2.52E +08	1.981
Standard Deviation		6.24E +05	0.00E	0.00E +00	0.00E	0.00E	0.00E	1.06E +07	0.03E	0.03E	5.94E +04	2.90E +08	0.023

Sample I.D. Number		93 - 431												
Channel 'A' (%)		Carbon Dioxide					Channel 'C' (%)							
Nitrous Oxide		RT	AREA	AMT	F ⁻	AREA	AMT ⁻	Carbon	R ⁻	AREA	AMT ⁻	Channel 'D' (%)		
		helium												
		hydrogen												
93-431.DIR		10.33	322220824	2.571	0	0	C	65.72	23.25	2282370	0.003	24.60	44120512	1.73E
		10.33	322507440	2.572	C	0	C	65.72	C	0	0	24.67	43350124E	1.707
		10.33	322525376	2.573	C	0	C	65.72	C	0	0	24.67	434682240	1.712
		10.33	324306460	2.582	C	0	C	65.72	C	0	0	24.66	450277824	1.772
Average		3.22E +08		2.576	0.00E +00	0.00E +00	0.00E	1.42E +07	5.71E +05	0.001	0.001	4.43E +06	1.732	
Standard Deviation		8.03E +05		0.00E	0.00E +00	0.00E	ERR	1.14E +06	0.001	0.001	0.001	7.67E +06	0.032	
		0.25		0.24	ERR	ERR	ERR	200.00	200.00	200.00	200.00	1.81	1.82	

Sample I.D. Number 93 - 432

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-432.ppt	16.35	203320404	2.34	0	0	0	65.72	16823735	0.054	23.27	1271206	0.001	24.00	521627046	2.054
	16.35	203034304	2.343	0	0	0	65.72	0	0	0	0	0	24.00	510145006	2.006
	16.35	203749760	2.344	0	0	0	65.72	0	0	0	0	0	24.00	497601344	1.959
	16.35	203072416	2.343	0	0	0	65.72	0	0	0	0	0	24.00	514072000	2.027
Average		2.04E+08	2.343		0.00E+00	0.000		1.68E+07	0.054		3.18E+05	0.000		5.11E+08	2.012
Standard Deviation		1.86E+05	0.002		0.00E+00	0.000		ERR	ERR		6.36E+05	0.001		1.01E+07	0.040
%RSD		0.06	0.07		ERR	ERR		ERR	ERR		200.00	200.00		1.98	1.99

Sample I.D. Number 93 - 433

Sample ID	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-433.ppt	16.35	332410112	2.652	0	0	0	65.72	0	0	23.27	1388516	0.001	24.00	415412832	1.836
	16.35	333271806	2.659	0	0	0	65.72	0	0	0	0	0	24.00	412770076	1.825
	16.35	332459176	2.652	0	0	0	65.72	0	0	0	0	0	24.00	440000056	1.76
	16.35	331544896	2.645	0	0	0	65.72	0	0	23.27	59553	0	24.00	420508126	1.856
Average		3.32E+08	2.652		0.00E+00	0.000		0.00E+00	0.000		3.62E+05	0.000		4.24E+08	1.669
Standard Deviation		7.05E+05	0.005		0.00E+00	0.000		0.00E+00	0.000		6.85E+05	0.001		1.57E+07	0.062
%RSD		0.21	0.22		ERR	ERR		ERR	ERR		189.16	200.00		3.70	3.71

Sample I.D. Number 93 - 434

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-434.ppt	16.35	330309886	2.694	0	0	0	65.04	14135606	0.045	23.27	308026	0	24.00	425617504	1.876
	16.35	338520512	2.701	0	0	0	65.04	0	0	0	0	0	24.00	419843006	1.853
	16.35	337008672	2.686	0	0	0	65.04	0	0	23.27	60412	0	24.00	403088126	1.591
	16.35	337640176	2.695	0	0	0	65.04	0	0	23.27	60506	0	25.01	433403872	1.707
Average		3.37E+08	2.693		0.00E+00	0.000		1.41E+07	0.045		1.12E+05	0.000		4.21E+08	1.657
Standard Deviation		9.34E+05	0.007		0.00E+00	0.000		ERR	ERR		1.35E+05	0.000		1.25E+07	0.049
%RSD		0.28	0.27		ERR	ERR		ERR	ERR		120.32	ERR		2.97	2.96

Sample I.D. Number 93 - 435

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-435.ppt	16.35	342518572	2.733	0	0	0	65.72	9375486	0.03	23.27	362922	0	25.01	10578406	0.000
	16.35	340803840	2.716	0	0	0	65.04	13929184	0.045	23.16	87082	0	24.00	398505246	1.566
	16.35	341301406	2.723	0	0	0	65.04	0	0	0	0	0	25.01	411797406	1.822
	16.35	341802240	2.726	0	0	0	65.04	0	0	0	0	0	24.00	395747392	1.556
Average		3.42E+08	2.726		0.00E+00	0.000		1.17E+07	0.038		1.20E+05	0.000		3.04E+08	1.583
Standard Deviation		7.93E+05	0.006		0.00E+00	0.000		3.22E+06	0.011		1.86E+05	0.000		1.96E+08	0.634
%RSD		0.23	0.24		ERR	ERR		27.63	26.28		155.21	ERR		64.39	64.37

Sample I.D. Number 93 - 436

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
			helium			hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-436.pm								
19.37	316357488	2.564	C	C	C	23.27	346132	0
19.37	315870040	2.52	C	C	C	23.27	0	0
19.37	316541086	2.522	C	C	C	23.27	0	0
19.37	315380092	2.518	C	C	C	23.27	0	0
Average	3.16E+08	2.521	0.00E+00	0.000	1.43E+07	0.046	1.03E+05	0.000
Standard Deviation	5.22E+05	0.004	0.00E+00	0.000	2.55E+05	0.008	1.65E+05	0.000
%RSD	0.17	0.16	ERR	ERR	17.91	18.35	160.15	ERR

1.848
0.0955

Sample I.D. Number 93 - 437

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
			helium			hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-437.pm								
19.37	323189440	2.576	C	C	C	23.26	3714956	0.002
19.37	322824026	2.576	C	C	C	23.26	0	0
19.37	323704894	2.582	C	C	C	23.26	0	0
19.37	324308940	2.56	C	C	C	23.26	0	0
Average	3.24E+08	2.582	0.00E+00	0.000	1.42E+07	0.045	9.28E+05	0.001
Standard Deviation	7.46E+05	0.006	0.00E+00	0.000	ERR	ERR	1.86E+05	0.002
%RSD	0.23	0.24	ERR	ERR	ERR	ERR	200.00	200.00

Sample I.D. Number 93 - 438

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
			helium			hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-438.pm								
19.39	293920026	2.345	C	C	C	23.26	0	0
19.39	293980384	2.345	C	C	C	23.26	0	0
19.39	293447776	2.341	C	C	C	23.26	0	0
19.39	294450840	2.346	C	C	C	23.26	0	0
Average	2.94E+08	2.345	0.00E+00	0.000	1.67E+07	0.054	0.00E+00	0.000
Standard Deviation	4.14E+05	0.003	0.00E+00	0.000	ERR	ERR	0.00E+00	0.000
%RSD	0.14	0.14	ERR	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number 93 - 439

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
			helium			hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-439.pm								
19.39	304843806	2.432	C	C	C	23.26	472802	0
19.39	303251584	2.416	C	C	C	23.26	0	0
19.39	302507744	2.414	C	C	C	23.26	0	0
19.39	301864224	2.405	C	C	C	23.26	0	0
Average	3.03E+08	2.418	0.00E+00	0.000	1.64E+07	0.053	1.18E+05	0.000
Standard Deviation	1.27E+05	0.010	0.00E+00	0.000	ERR	ERR	2.36E+05	0.000
%RSD	0.42	0.41	ERR	ERR	ERR	ERR	200.00	ERR

1.923

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Sample I.D. Number	93 - 440													
	Channel "A" (%)		Channel "C" (%)						Channel "D" (%)					
	Nitrous Oxide		Carbon Dioxide						Carbon Monoxide					
	R ²	AREA	AMT	R ²	AREA	AMT	RT	AREA	AMT	R ²	AREA	AMT	R ²	AREA
93-440.prm	16.35	46600164	3.69E	C	C	C	60.04	118273684	0.3E	23.2"	15287560	0.014	25.07	234336
	19.35	502627520	4.01E	C	C	C	65.04	110150834	0.38E	23.2"	14564467	0.013	25.07	0
	16.32	503625144	4.00E	C	C	C	65.05	371381620	1.16E	23.2"	14488553	0.013	24.00	7536E
	19.32	502323136	4.00E	C	C	C	65.06	281328112	0.71	23.2"	14360031	0.013	24.00	0
Average		5.02E+08	4.00E		0.00E+00	0.00E		1.18E+08	0.38E		1.47E+07	0.013		7.74E+04
Standard Deviation		2.15E+06	0.02E		0.00E+00	0.00E		4.50E+05	0.00E		4.20E+05	0.00E		1.10E+05
%RSD		0.63	0.63		ERR	ERR		0.38	0.37		2.87	3.77		142.69
														200.00

Sample I.D. Number	92 - 442											
	Channel "A" (%)		Channel "C" (%)					Channel "D" (%)				
	Nitrous Oxide		Carbon Dioxide					helium				
	RT	AREA	AMT	RT	AREA	AMT	RT	AMT	RT	AREA	AMT	hydrogen
92-442.DM	10.13	516437022	4.132	C	0	C	04.44	43170608	0.103	12033758	0.012	24.70
	10.13	523763300	4.170	C	0	C	04.44	42918748	0.103	141071	0	24.77
	10.13	520373088	4.152	C	0	C	04.44	42511070	0.102	0	0	24.77
	10.13	521804480	4.103	C	0	C	04.44	42845840	0.102	0	0	24.77
Average		5.21E+08	4.158		0.00E+00	0.000		4.28E+07	0.103	2.21E+06	0.003	1.88E+06
Standard Deviation		2.28E+06	0.018		0.00E+00	0.000		2.57E+05	0.001	6.32E+06	0.006	8.70E+04
%RSD		0.43	0.44		ERR	ERR		0.60	0.48	187.08	200.00	4.62

Sample I.D. Number	92 - 443											
	Channel "A" (%)		Channel "C" (%)					Channel "D" (%)				
	Nitrous Oxide		Carbon Dioxide					helium				
	RT	AREA	AMT	RT	AREA	AMT	RT	AMT	RT	AREA	AMT	hydrogen
92-443.DM	10.13	521587200	4.101	C	0	C	04.44	41562625	0.1	2230085	0.002	24.81
	10.13	520409768	4.153	C	0	C	04.44	41617204	0.1	0	0	24.77
	10.13	520176384	4.112	C	0	C	04.44	41235112	0.095	0	0	24.81
	10.15	518109736	4.116	C	0	C	04.44	41324552	0.092	0	0	24.81
Average		5.20E+08	4.146		0.00E+00	0.000		4.15E+07	0.100	5.58E+05	0.001	1.41E+06
Standard Deviation		2.38E+06	0.019		0.00E+00	0.000		1.34E+05	0.001	1.12E+06	0.001	1.41E+04
%RSD		0.45	0.46		ERR	ERR		0.32	0.58	200.00	200.00	1.00

Sample I.D. Number	92 - 444											
	Channel "A" (%)		Channel "C" (%)					Channel "D" (%)				
	Nitrous Oxide		Carbon Dioxide					helium				
	RT	AREA	AMT	RT	AREA	AMT	RT	AMT	RT	AREA	AMT	hydrogen
92-444.DM	10.15	516863024	4.117	C	0	C	04.44	655482	0.002	7501404	0.007	24.81
	10.15	518270872	4.132	C	0	C	04.12	432311	0.001	89150	0	24.81
	10.15	514747392	4.107	C	0	C	04.44	422002	0.001	0	0	24.81
	10.15	515771016	4.112	C	0	C	04.44	585282	0.001	0	0	24.81
Average		5.16E+08	4.119		0.00E+00	0.000		6.35E+05	0.001	1.90E+06	0.002	0.00E+00
Standard Deviation		1.48E+06	0.012		0.00E+00	0.000		1.02E+05	0.001	3.74E+06	0.004	0.00E+00
%RSD		0.29	0.29		ERR	ERR		16.12	0.001	196.98	200.00	ERR

Sample I.D. Number	92 - 445											
	Channel "A" (%)		Channel "C" (%)					Channel "D" (%)				
	Nitrous Oxide		Carbon Dioxide					helium				
	RT	AREA	AMT	RT	AREA	AMT	RT	AMT	RT	AREA	AMT	hydrogen
92-445.DM	10.17	510304128	4.112	C	0	C	04.44	12541416	0.03	195100	0	24.77
	10.17	514773280	4.107	C	0	C	04.44	2468570	0.059	45076	0	0
	10.17	514083440	4.102	C	0	C	04.44	12437668	0.03	0	0	24.81
	10.17	511001552	4.082	C	0	C	04.44	12405552	0.03	0	0	24.81
Average		5.14E+08	4.103		0.00E+00	0.000		1.55E+07	0.037	6.02E+04	0.000	2.06E+04
Standard Deviation		1.84E+06	0.016		0.00E+00	0.000		6.11E+06	0.015	8.25E+04	0.000	2.43E+04
%RSD		0.38	0.38		ERR	ERR		39.38	0.015	153.62	ERR	117.95

Sample I.D. Number 93 - 447

Channel 'A' (%)		Carbon Dioxide				Carbon Monoxide				Channel 'C' (%)				Channel 'D' (%)			
Nitrous Oxide		RT	AREA	AMT	R ²	AREA	AMT	R ²	AREA	AMT	R ²	AREA	AMT	helium	R ²	AREA	AMT
93-447.prm		10.10	513154752	4.094	C	C	C	0.44	20033300	0.046	23.13	2342375	0.002		24.81	34093	C
		10.10	514015008	4.108	C	C	C	0.44	20087200	0.046	C	C	C		24.81	55477	C
		10.10	514102305	4.102	C	C	C	0.44	20124046	0.046	C	C	C		24.81	0	C
		10.10	511814272	4.082	C	C	C	0.44	19989904	0.046	C	C	C		24.81	0	C
Average		5.14E+08	4.087			C.00E+00	0.000		2.01E+07	0.048		5.86E+05	0.001			2.38E+04	0.000
Standard Deviation		1.35E+06	0.011			C.00E+00	0.000		6.08E+04	0.000		1.17E+06	0.001			2.94E+04	0.000
%RSD		C.26				ERR	ERR		C.30			200.00	200.00			123.49	ERR

Sample I.D. Number 93 - 448

Channel 'A' (%)		Carbon Dioxide				Carbon Monoxide				Channel 'C' (%)				Channel 'D' (%)			
Nitrous Oxide		RT	AREA	AMT	R ²	AREA	AMT	R ²	AREA	AMT	R ²	AREA	AMT	helium	R ²	AREA	AMT
93-448.prm		10.10	511525152	4.081	C	C	C	0.44	23472600	0.065	23.13	40209	0		24.81	84017	0
		10.10	512308804	4.086	C	C	C	0.44	23226024	0.065	C	C	C		24.81	52213	0
		10.10	511803504	4.064	C	C	C	0.44	23922048	0.057	C	C	C		24.85	68750	0
		10.10	510811632	4.074	C	C	C	0.44	87644824	0.21	0	0	0		24.89	69783	0
Average		5.12E+08	4.082			C.00E+00	0.000		3.96E+07	0.095		1.01E+06	0.000			6.89E+04	0.000
Standard Deviation		7.53E+05	0.006			C.00E+00	0.000		3.22E+07	0.077		2.01E+06	0.000			1.34E+04	0.000
%RSD		0.15				ERR	ERR		8.19			200.00	ERR			16.39	ERR

Sample I.D. Number 93 - 449

Channel 'A' (%)		Carbon Dioxide				Carbon Monoxide				Channel 'C' (%)				Channel 'D' (%)			
Nitrous Oxide		RT	AREA	AMT	R ²	AREA	AMT	R ²	AREA	AMT	R ²	AREA	AMT	helium	R ²	AREA	AMT
93-449.prm		10.10	511844100	4.064	C	C	C	0.44	27102800	0.085	23.13	670854	0.001		24.85	117383	C
		10.10	511407532	4.081	C	C	C	0.44	29738436	0.094	C	0	0		24.85	130931	0.001
		10.10	512477600	4.086	C	C	C	0.44	27305116	0.082	23.06	41382	0		24.85	63995	C
		10.10	512003132	4.06	C	C	C	0.44	27140156	0.085	C	0	0		24.85	118604	0
Average		5.12E+08	4.085			C.00E+00	0.000		2.71E+07	0.085		2.53E+05	0.000			1.16E+05	0.000
Standard Deviation		5.24E+05	0.004			C.00E+00	0.000		2.66E+05	0.001		4.79E+05	0.001			1.77E+04	0.001
%RSD		0.10				ERR	ERR		0.98			186.26	200.00			15.23	200.00

Sample I.D. Number 93 - 450

Channel 'A' (%)		Carbon Dioxide				Carbon Monoxide				Channel 'C' (%)				Channel 'D' (%)			
Nitrous Oxide		RT	AREA	AMT	R ²	AREA	AMT	R ²	AREA	AMT	R ²	AREA	AMT	helium	R ²	AREA	AMT
93-450.prm		10.10	512315808	4.087	C	C	C	0.44	37056804	0.088	23.17	1829907	0.002		24.85	148402	0.001
		10.10	508025800	4.081	C	C	C	0.44	37455040	0.06	C	C	C		24.85	154083	0.001
		10.21	510818288	4.072	C	C	C	0.44	37322232	0.082	C	C	C		24.82	150036	0.001
		10.21	511146448	4.075	C	C	C	0.44	37184848	0.088	C	C	C		24.85	113111	0
Average		5.11E+08	4.076			C.00E+00	0.000		3.73E+07	0.089		4.82E+05	0.001			1.43E+05	0.001
Standard Deviation		1.39E+06	0.011			C.00E+00	0.000		1.65E+05	0.001		5.65E+05	0.001			2.08E+04	0.001
%RSD		0.27				ERR	ERR		C.44			200.00	200.00			14.51	66.67

Sample I.D. Number: 93 - 451

	Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-451.prn	10.21	510545144	4.122	C	C	C	04.44	37828940	0.091	23.17	17153850	0.010
	10.21	520477184	4.153	C	C	C	04.44	30840804	0.088	23.17	330150	0
	10.21	515100846	4.11	C	C	C	04.44	30405584	0.087	23.13	100014	0
	10.21	517842752	4.132	C	C	C	04.44	30033050	0.086	0	0	0
Average		5.18E+08	4.129	0.00E+00			0.000			0.089		
Standard Deviation		2.27E+06	0.018	0.00E+00			0.000			0.002		
%RSD		0.44	0.44	ERR			ERR			1.96		

Sample I.D. Number: 93 - 452

	Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-452.prn	10.21	510200000	4.110	C	C	C	04.44	41408004	0.090	23.17	313050	0
	10.21	515900330	4.114	C	C	C	04.44	41448590	0.090	0	0	0
	10.21	514212100	4.103	C	C	C	04.44	41567300	0.1	23.15	50570	0
	10.21	514058404	4.101	C	C	C	04.44	41334184	0.090	0	0	0
Average		5.15E+08	4.109	0.00E+00			0.000			0.099		
Standard Deviation		1.10E+06	0.009	0.00E+00			0.000			0.001		
%RSD		0.21	0.21	ERR			ERR			0.50		

Sample I.D. Number: 93 - 453

	Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-453.prn	10.21	514358810	4.104	C	C	C	04.44	13057646	0.031	23.16	1754480	0.002
	10.21	513205280	4.090	C	C	C	04.44	12814000	0.031	23.13	43815	0
	10.21	513007720	4.094	C	C	C	04.44	12600550	0.031	23.13	0	0
	10.21	512022404	4.092	C	C	C	04.44	13035001	0.031	23.13	0	0
Average		5.13E+08	4.096	0.00E+00			0.000			0.031		
Standard Deviation		6.47E+05	0.005	0.00E+00			0.000			0.000		
%RSD		0.13	0.13	ERR			ERR			0.00		

Sample I.D. Number: 93 - 454

	Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-454.prn	10.21	512481800	4.086	C	C	C	04.44	10411452	0.045	23.16	3500702	0.003
	10.21	511519104	4.081	C	C	C	04.44	10410004	0.045	23.16	0	0
	10.21	511002080	4.080	C	C	C	04.44	10447072	0.047	23.16	0	0
	10.21	511729400	4.083	C	C	C	04.44	10336000	0.045	23.16	0	0
Average		5.12E+08	4.085	0.00E+00			0.000			0.046		
Standard Deviation		4.14E+05	0.003	0.00E+00			0.000			0.001		
%RSD		0.08	0.08	ERR			ERR			0.08		

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Sample I.D. Number 93 - 455

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-455.prn	10.21	51202784	4.087	C	C	C	04.44	21087246	0.053	23.10	3709445	0.003
	10.21	51347801e	4.097	C	C	C	04.44	22071292	0.053	23.10	0	0
	10.21	51320400e	4.095	C	C	C	04.76	22124756	0.053	23.10	0	0
	10.21	51085407e	4.076	C	C	C	04.44	22009340	0.053	23.11	55922	0
Average		5.12E+08	4.086		0.00E+00	0.000		2.21E+07	0.053		9.41E+05	0.001
Standard Deviation		1.20E+06	0.010		0.00E+00	0.000		5.67E+04	0.000		1.85E+06	0.002
%RSD		0.23	0.23		ERR	ERR		0.26	0.00		196.06	200.00

Sample I.D. Number 93 - 456

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-456.prn	10.21	50971433e	4.097	C	C	C	04.44	C	C	0	0	0
	10.21	51315708e	4.094	C	C	C	04.76	20208176	0.07	0	0	0
	10.21	50016084e	4.053	C	C	C	04.76	2008403e	0.07	0	0	0
	10.21	51004700e	4.077	C	C	C	04.44	2027364e	0.07	0	0	0
Average		5.11E+08	4.075		0.00E+00	0.000		2.92E+07	0.070		0.00E+00	0.000
Standard Deviation		1.76E+06	0.014		0.00E+00	0.000		9.61E+04	0.000		0.00E+00	0.000
%RSD		0.34	0.34		ERR	ERR		0.33	0.00		ERR	ERR

Sample I.D. Number 93 - 457

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-457.prn	10.21	51345548e	4.097	C	C	C	04.44	3043105e	0.073	23.10	2514020	0.002
	10.21	51247207e	4.086	C	C	C	04.76	2053024e	0.071	0	0	0
	10.21	51241523e	4.086	C	C	C	04.44	2023042e	0.07	0	0	0
	10.21	51213048e	4.085	C	C	C	04.76	2056576e	0.071	0	0	0
Average		5.13E+08	4.090		0.00E+00	0.000		2.97E+07	0.071		6.29E+05	0.001
Standard Deviation		5.75E+05	0.005		0.00E+00	0.000		5.05E+05	0.001		1.26E+06	0.001
%RSD		0.11	0.12		ERR	ERR		1.70	1.77		200.00	200.00

Sample I.D. Number 93 - 458

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)					
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-458.prn	10.23	51089161e	4.076	C	C	C	04.44	3725059e	0.086	23.10	4321400	0.004
	10.21	51152744e	4.082	C	C	C	04.44	3722267e	0.086	0	0	0
	10.21	51201840e	4.084	C	C	C	04.44	3740718e	0.06	0	0	0
	10.21	51101420e	4.084	C	C	C	04.76	3750260e	0.06	0	0	0
Average		5.12E+08	4.082		0.00E+00	0.000		3.74E+07	0.080		1.08E+06	0.001
Standard Deviation		5.08E+05	0.004		0.00E+00	0.000		2.05E+05	0.001		2.16E+06	0.002
%RSD		0.10	0.10		ERR	ERR		0.55	0.65		200.00	200.00

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WHC-SD-MM-TRP-212, Rev. 0

Sample I.D. Number 93 - 459

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
10.23	511467632	4.061	0	0	0	04.44	34633252	0.083
10.23	510397248	4.072	0	0	0	04.70	34453000	0.082
10.23	510640006	4.070	0	0	0	04.70	34378744	0.082
10.23	511043450	4.082	0	0	0	04.70	34051004	0.082
Average	5.11E+08	4.078	0.00E+00	0.000	0.000	3.44E+07	0.082	6.58E+05
Standard Deviation	5.82E+05	0.005	0.00E+00	0.000	0.000	3.21E+05	0.001	1.28E+06
%RSD	0.11	0.11	ERR	ERR	ERR	0.93	0.61	194.81

Sample I.D. Number 93 - 460

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
10.23	510821004	4.070	0	0	0	04.44	40261326	0.090
10.23	509693508	4.087	0	0	0	04.70	40229884	0.090
10.23	511407520	4.061	0	0	0	04.44	40201772	0.090
10.23	509573508	4.000	0	0	0	04.44	40182612	0.090
Average	5.10E+08	4.073	0.00E+00	0.000	0.000	4.02E+07	0.090	9.38E+05
Standard Deviation	9.13E+05	0.007	0.00E+00	0.000	0.000	4.65E+04	0.000	1.88E+06
%RSD	0.16	0.18	ERR	ERR	ERR	0.12	0.00	200.00

Sample I.D. Number 93 - 461

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
10.23	511360000	4.06	0	0	0	04.44	35427026	0.085
10.23	512510302	4.080	0	0	0	04.44	34579592	0.082
10.23	511420000	4.06	0	0	0	04.44	34532922	0.083
10.23	509015080	4.051	0	0	0	04.44	34305804	0.082
Average	5.11E+08	4.078	0.00E+00	0.000	0.000	3.47E+07	0.083	6.85E+05
Standard Deviation	1.47E+06	0.012	0.00E+00	0.000	0.000	4.76E+05	0.001	1.32E+06
%RSD	0.29	0.29	ERR	ERR	ERR	1.37	1.51	192.58

Sample I.D. Number 93 - 462

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Nitrous Oxide			Carbon Dioxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
10.23	511080086	4.070	0	0	0	04.44	40652144	0.090
10.23	511441084	4.06	0	0	0	04.70	41774086	0.1
10.23	509760900	4.087	0	0	0	04.70	40646406	0.090
10.23	509059300	4.060	0	0	0	04.70	40652706	0.090
Average	5.11E+08	4.074	0.00E+00	0.000	0.000	4.11E+07	0.090	9.83E+05
Standard Deviation	8.28E+05	0.006	0.00E+00	0.000	0.000	4.48E+05	0.001	1.97E+06
%RSD	0.16	0.16	ERR	ERR	ERR	1.09	1.02	200.00

Sample I.D. Number 93 - 463

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-463.prm	19.23	51123881e	4.076	0	0	0	64.44	3554032e	0.085	23.21	313970e	0.003	24.89	127527	0.001
	19.23	51070558e	4.075	0	0	0	64.44	3483086e	0.083	0	0	0	24.89	113806	0
	19.23	51129899e	4.076	0	0	0	64.44	3492516e	0.084	0	0	0	24.89	123508	0
	19.23	51061737e	4.074	0	0	0	64.44	3460465e	0.083	0	0	0	24.89	127676	0.001
Average		5.11E+08	4.077	0.00E+00			3.50E+07			0.084			7.85E+05		
Standard Deviation		3.44E+05	0.003	0.00E+00			3.74E+05			0.001			1.23E+05		
%RSD		0.07	0.06	ERR			1.07			1.14			200.00		

Sample I.D. Number 93 - 464

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-464.prm	19.23	50900646e	4.051	0	0	0	64.44	4127653e	0.095	23.21	221406	0	24.89	132778	0.001
	19.23	50847232e	4.057	0	0	0	64.44	4126840e	0.096	0	0	0	24.89	121785	0
	19.23	50760305e	4.053	0	0	0	64.44	4133073e	0.096	0	0	0	24.89	124090	0
	19.23	50924405e	4.052	0	0	0	64.44	4075540e	0.098	0	0	0	24.89	120246	0
Average		5.09E+08	4.052	0.00E+00			4.12E+07			0.096			5.54E+04		
Standard Deviation		5.60E+05	0.004	0.00E+00			2.75E+05			0.001			1.11E+05		
%RSD		0.11	0.11	ERR			0.67			0.51			200.00		

Sample I.D. Number 93 - 465

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Nitrous Oxide			Carbon Dioxide			Carbon Monoxide			helium			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-465.prm	19.23	50701734e	4.045	0	0	0	64.76	4043481e	0.097	23.19	145880	0	24.89	144126	0.001
	19.23	50899272e	4.051	0	0	0	64.76	4072100e	0.097	0	0	0	24.89	146705	0.001
	19.23	50850602e	4.056	0	0	0	64.76	4083437e	0.096	0	0	0	24.89	129356	0.001
	19.23	50756558e	4.05	0	0	0	64.76	4040000e	0.097	0	0	0	24.89	119405	0
Average		5.08E+08	4.054	0.00E+00			4.08E+07			0.097			3.64E+04		
Standard Deviation		9.02E+05	0.007	0.00E+00			2.14E+05			0.001			7.28E+04		
%RSD		0.18	0.18	ERR			0.53			0.51			200.00		

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Sample I.D. Number 93 - 466

	Channel "A" (%)						Channel "C" (%)						Channel "D" (%)		
	Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-466.prm	22.85	1204380	0.003	0	0	0	18.12	1217940	0.2	58.86	C	0	24.77	253228386	0.083
	22.85	1138722	0.002	0	0	0	18.1	572570	0.11	65.08	28170044	0.006	24.77	250005880	0.074
	22.85	1115854	0.003	0	0	0	18.00	048570	0.155	65.08	0	0	24.77	0	0
Average		1.15E+06	0.003		0.00E+00	0.000		9.45E+05	0.155		9.59E+06	0.023		1.68E+08	0.652
Standard Deviation		4.60E+04	0.000		0.00E+00	0.000		2.73E+05	0.045		1.66E+07	0.040		1.45E+08	0.555
%RSD		3.99	0.00		ERR	ERR		28.86	29.03		173.21	173.21		86.61	86.61

Sample I.D. Number 93 - 467

Sample ID: Number	Channel "A" (%)						Channel "C" (%)						Channel "D" (%)					
	Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-467.prm	22.85	988743	0.003	0	0	0	18.12	1260000	0.207	65.06	0	0	24.77	250258006	1.007			
	22.85	889740	0.002	0	0	0	18.12	1240427	0.205	65.06	0	0	24.73	255883776	0.994			
	22.85	800570	0.002	0	0	0	18.12	1177638	0.193	65.06	0	0	24.73	256084502	0.998			
Average		9.14E+05	0.003		0.00E+00	0.000		1.23E+06	0.202		0.00E+00	0.000		2.57E+08	1.000			
Standard Deviation		6.37E+04	0.001		0.00E+00	0.000		4.48E+04	0.008		0.00E+00	0.000		1.73E+06	0.007			
%RSD		6.97	21.65		ERR	ERR		3.65	3.75		ERR	ERR		0.67	0.67			

Sample I.D. Number 93 - 468

	Channel "A" (%)						Channel "C" (%)						Channel "D" (%)		
	Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-468.prm	22.89	1355944	0.004	0	0	0	18.12	0	0	65.08	0	0	24.77	22722018	0.086
	22.89	1240941	0.004	0	0	0	0	0	0	65.08	0	0	24.77	23150000	0.00
	22.89	1200567	0.004	0	0	0	18.1	81340	0.01	65.08	0	0	24.77	24141704	0.004
Average		1.30E+06	0.004		0.00E+00	0.000		2.04E+04	0.003 0.01		0.00E+00	0.000		2.33E+07	0.091
Standard Deviation		5.38E+04	0.000		0.00E+00	0.000		3.54E+04	0.005		0.00E+00	0.000		7.27E+05	0.003
%RSD		4.15	0.00		ERR	ERR		173.21	173.21		ERR	ERR		3.12	3.37

Sample I.D. Number 93 - 469

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)								
	Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-469.prm	22.85	1032193	0.003	0	0	0	0	0	0	65.08	0	0	24.77	0	0
	22.87	870640	0.002	0	0	0	18.1	48050	0.008	65.08	0	0	24.73	22008972	0.085
	22.87	831335	0.002	0	0	0	18.1	47400	0.008	65.08	0	0	24.73	23148812	0.00
Average		9.11E+05	0.002		0.00E+00	0.000		3.21E+04	0.008		0.00E+00	0.000		2.26E+07	0.088
Standard Deviation		1.06E+05	0.001		0.00E+00	0.000		2.78E+04	0.005		0.00E+00	0.000		8.06E+05	0.004
%RSD		11.67	24.74		ERR	ERR		86.62	86.60		ERR	ERR		3.57	4.04

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 470

	Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)									
	Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			hydrogen			
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-470.prm	22.85	1122506	0.003	C	0	0	18.1	37450	0.002	65.08	0	0	24.77	23700250	0.002	
	22.87	884671	0.002	C	0	0	18.1	40363	0.007	65.08	0	0	24.73	23214072	0.00	
	22.87	912036	0.003	C	0	0	C	0	0.004	65.08	0	0	24.73	22940804	0.086	
Average		9.73E+05	0.003		0.00E+00	0.000		2.59E+04	0.004	0.006		0.00E+00	0.000		2.33E+07	0.090
Standard Deviation		1.30E+05	0.001		0.00E+00	0.000		2.25E+04	0.004			0.00E+00	0.000		3.86E+05	0.032
%RSD		13.35	21.65		ERR	ERR		86.78	87.37			ERR	ERR		1.66	1.69

Sample I.D. Number 93 - 471

	Channel "A" (%)						Channel "C" (%)						Channel "D" (%)			
	Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			hydrogen			
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-471.prn	22.85	1186754	0.003	C	0	C	18.11	35405	0.005	65.08	0	0	24.73	23173776	0.00	
	22.87	693105	0.003	C	0	C	C	0	0	65.08	0	0	24.73	21003800	0.085	
	22.87	955021	0.003	C	0	C	C	0	0	65.08	0	0	24.73	22526640	0.087	
Average		1.04E+06	0.003		0.00E+00	0.000		1.18E+04	0.002	0.006		0.00E+00	0.000		2.26E+07	0.087
Standard Deviation		1.24E+05	0.000		0.00E+00	0.000		2.04E+04	0.003	0.003		0.00E+00	0.000		5.91E+05	0.003
%RSD		11.89	0.00		ERR	ERR		173.21	173.21			ERR	ERR		2.62	2.88

Sample I.D. Number 93 - 472

	Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)								
	Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-472.prm	22.85	779937	0.002	0	0	0	0	0	0	65.08	0	0	0	0	0
	22.87	563585	0.002	0	0	0	18.1	817184	0.134	65.08	0	0	24.73	250850166	0.096
	22.87	573273	0.002	0	0	0	18.1	668526	0.102	65.08	0	0	24.77	201914255	1.017
Average		6.39E+05	0.002		0.00E+00	0.000		6.02E+05	0.085	0.148		0.00E+00	0.000	2.59E+08	1.008
Standard Deviation		1.22E+05	0.000		0.00E+00	0.000		5.28E+05	0.087			0.00E+00	0.000	3.57E+06	0.013
%RSD		19.10	0.00		ERR	ERR		87.76	87.76			ERR	ERR	1.38	1.33

Sample I.D. Number 93 - 473

	Channel 'A' (%)						Channel 'C' (%)						Channel 'D' (%)		
	Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-473.prm	22.87	1518819	0.004	C	C	C	18.11	1224454	0.201	65.06	0	0	24.77	257074006	0.006
	22.85	1209435	0.003	C	C	C	18.12	1220250	0.202	65.06	0	0	24.73	257074006	0.006
	22.85	1213066	0.003	C	C	C	18.12	1240076	0.202	65.06	0	0	24.73	257016416	0.006
Average	1.31E+06		0.003	0.00E+00		0.000	1.23E+06		0.202	0.00E+00		0.000	2.57E+08		0.998
Standard Deviation	1.76E+05		0.001	0.00E+00		0.000	8.00E+03		0.001	0.00E+00		0.000	4.08E+04		0.000
%RSD	13.44		17.32	ERR		ERR	0.65		0.50	ERR		ERR	0.02		0.00

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MHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 474

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-474.pm	22.85	794044	0.002	0	0	18.11	1160732	0.19
	22.85	758740	0.002	0	0	18.06	953090	0.150
	22.85	754887	0.002	0	0	18.1	954130	0.108
Average		7.69E+05	0.002	0.00E+00	0.000		9.24E+05	0.151
Standard Deviation		2.16E+04	0.000	0.00E+00	0.000		2.52E+05	0.041
%RSD		2.81	0.00	ERR	ERR		27.27	27.22

Sample I.D. Number 93 - 475

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-475.pm	22.85	1056076	0.003	0	0	18.1	1163384	0.195
	22.85	977105	0.003	0	0	18.12	1145008	0.186
	22.85	943782	0.003	0	0	18.11	1183755	0.194
Average		1.01E+06	0.003	0.00E+00	0.000		1.17E+06	0.193
Standard Deviation		7.98E+04	0.000	0.00E+00	0.000		2.51E+04	0.004
%RSD		7.94	0.00	ERR	ERR		2.14	2.16

Sample I.D. Number 93 - 476

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-476.pm	22.87	1651771	0.005	0	0	18.12	1125056	0.165
	22.87	1593477	0.004	0	0	18.12	1132007	0.165
	22.87	1606733	0.005	0	0	18.12	1127828	0.165
Average		1.62E+06	0.005	0.00E+00	0.000		1.13E+06	0.185
Standard Deviation		3.58E+04	0.001	0.00E+00	0.000		3.59E+03	0.001
%RSD		2.21	12.37	ERR	ERR		0.32	0.31

Sample I.D. Number 93 - 477

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-477.pm	22.89	1650046	0.005	0	0	18.11	80432	0.014
	22.89	1776745	0.005	0	0	18.11	80235	0.015
	22.89	1720942	0.005	0	0	18.11	72616	0.012
Average		1.78E+06	0.005	0.00E+00	0.000		8.28E+04	0.014
Standard Deviation		6.51E+04	0.000	0.00E+00	0.000		8.90E+03	0.002
%RSD		3.65	0.00	ERR	ERR		10.75	11.18

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 478

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-478.prn	22.03	0403105	0.027	C	0	C	18.11	0
	22.03	0022372	0.025	0	0	0	17.10	04004
	22.03	0201210	0.026	0	0	0	17.2	48001
Average	9.24E+06	0.026	0.00E+00	0.000	4.80E+04	0.008	0.024	0.00E+00
Standard Deviation	2.89E+05	0.001	0.00E+00	0.000	4.75E+04	0.008	0.00E+00	0.000
%RSD	3.13	3.85	ERR	ERR	98.99	100.00	ERR	ERR

Sample I.D. Number 93 - 479

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-479.prn	22.87	3325432	0.009	C	0	C	0	0
	22.89	2992602	0.006	C	0	C	0	0
	22.89	2035067	0.006	0	0	C	0	0
Average	3.08E+06	0.008	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	2.11E+05	0.001	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
%RSD	6.83	6.93	ERR	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number 93 - 480

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-480.prn	22.03	8835042	0.025	C	0	C	18.11	52382
	22.03	8851004	0.025	C	0	C	18.11	0
	22.03	8834283	0.025	C	0	C	18.11	0
Average	8.84E+06	0.025	0.00E+00	0.000	1.75E+04	0.003	0.009	0.00E+00
Standard Deviation	1.00E+04	0.000	0.00E+00	0.000	3.02E+04	0.005	0.00E+00	0.000
%RSD	0.11	0.00	ERR	ERR	173.21	173.21	ERR	ERR

Sample I.D. Number 93 - 481

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-481.prn	22.87	4242721	0.012	C	0	C	18.12	107204
	22.89	3784010	0.011	C	0	C	18.11	04407
	22.89	3770630	0.011	C	0	C	18.1	137004
Average	3.93E+06	0.011	0.00E+00	0.000	1.13E+05	0.019	0.00E+00	0.000
Standard Deviation	2.74E+05	0.001	0.00E+00	0.000	2.24E+04	0.004	0.00E+00	0.000
%RSD	6.99	5.09	ERR	ERR	19.75	21.65	ERR	ERR

Sample I.D. Number 93 - 482

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-482 pm	22.93	10351351	0.029	0	0	18.12	89840	0.015
	22.93	10239715	0.029	0	0	18.12	92642	0.015
	22.93	10179204	0.029	0	0	18.00	150552	0.020
Average		1.03E+07	0.029	0.00E+00	0.000		1.14E+05	0.019
Standard Deviation		8.73E+04	0.000	0.00E+00	0.000		3.94E+04	0.006
%RSD		0.85	0.00	ERR	ERR		34.51	34.02

Sample I.D. Number 93 - 483

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-483 pm	22.87	4537012	0.013	0	0	18.12	89840	0.015
	22.87	4382835	0.012	0	0	18.12	92642	0.015
	22.87	4389717	0.012	0	0	18.11	117140	0.019
Average		4.43E+06	0.012	0.00E+00	0.000		3.90E+04	0.006
Standard Deviation		9.30E+04	0.001	0.00E+00	0.000		6.76E+04	0.011
%RSD		2.10	4.68	ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 484

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-484 pm	22.91	7751657	0.022	0	0	18.12	89840	0.015
	22.91	7719206	0.022	0	0	18.12	92642	0.015
	22.91	7720836	0.022	0	0	18.05	843232	0.138
Average		7.73E+06	0.022	0.00E+00	0.000		2.81E+05	0.046
Standard Deviation		1.70E+04	0.000	0.00E+00	0.000		4.87E+05	0.080
%RSD		0.22	0.00	ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 485

Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-485 pm	22.87	4357602	0.012	0	0	18.12	89840	0.015
	22.87	4205032	0.012	0	0	18.12	366874	0.081
	22.87	4272173	0.012	0	0	18.12	383730	0.083
Average		4.31E+06	0.012	0.00E+00	0.000		3.76E+05	0.062
Standard Deviation		4.41E+04	0.000	0.00E+00	0.000		1.05E+04	0.001
%RSD		1.02	0.00	ERR	ERR		2.79	2.28

Sample I.D. Number 93 - 486

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.03	9408506	0.024	C	0	0	18.11	380606	0.063
22.01	8111200	0.023	C	0	C	16.12	380614	0.063
22.01	8133126	0.023	C	0	0	16.16	3909976	0.033
Average	8.24E+06	0.023	0.00E+00	0.000	3.23E+05	0.053	0.063	0.00E+00
Standard Deviation	2.12E+05	0.001	0.00E+00	0.000	1.06E+05	0.017	0.00E+00	0.000
%RSD	2.57	2.47	ERR	ERR	32.92	32.68	ERR	ERR

Sample I.D. Number 93 - 487

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.87	3032755	0.011	C	0	0	18.13	600536	0.106
22.80	3409155	0.01	C	0	C	C	0	0
22.87	3842234	0.011	C	0	0	C	0	0
Average	3.76E+06	0.011	0.00E+00	0.000	2.22E+05	0.036	0.109	0.00E+00
Standard Deviation	2.29E+05	0.001	0.00E+00	0.000	3.85E+05	0.063	0.00E+00	0.000
%RSD	6.09	5.41	ERR	ERR	173.21	173.21	ERR	ERR

Sample I.D. Number 93 - 488

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.87	3433436	0.01	C	0	C	18.12	836704	0.137
22.87	3351936	0.009	C	0	C	16.12	2200336	0.401
22.87	3380725	0.009	C	0	C	16.12	1228289	0.202
Average	3.38E+06	0.009	0.00E+00	0.000	1.69E+06	0.277	0.137	0.00E+00
Standard Deviation	4.34E+04	0.001	0.00E+00	0.000	1.15E+06	0.188	0.00E+00	0.000
%RSD	1.28	6.19	ERR	ERR	68.08	68.11	ERR	ERR

Sample I.D. Number 93 - 489

Channel 'A' (%)			Channel 'C' (%)			Channel 'D' (%)		
Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.87	3078002	0.006	C	0	C	C	0	0
22.86	2753680	0.006	C	0	C	16.14	948700	0.136
22.86	2692841	0.006	C	0	C	16.14	709342	0.131
Average	2.84E+06	0.008	0.00E+00	0.000	8.21E+05	0.135	0.00E+00	0.000
Standard Deviation	2.08E+05	0.001	0.00E+00	0.000	3.07E+04	0.005	0.00E+00	0.000
%RSD	7.30	6.93	ERR	ERR	3.73	3.68	ERR	ERR

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WMC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 490

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
	Carbon Dioxide			Nitrous Oxide			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-490.pn	22.87	750526	0.002	0	0	0	0	0	0
	22.89	777008	0.002	0	0	0	18.12	1173102	0.192
	22.89	745185	0.002	0	0	0	18.11	1193244	0.198
Average		7.61E+05	0.002		0.00E+00	0.000		7.89E+05	0.129
Standard Deviation		1.59E+04	0.000		0.00E+00	0.000		6.83E+05	0.112
%RSD		2.10	0.00		ERR	ERR		86.61	85.62

Sample I.D. Number 93 - 491

	Channel "A" (%)			Channel "C" (%)			Channel "D" (%)		
	Carbon Dioxide			Nitrous Oxide			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-491.pn	22.89	730087	0.002	0	0	0	18.12	1178024	0.193
	22.89	650417	0.002	0	0	0	18.11	1313152	0.215
	22.89	631402	0.002	0	0	0	18.1	1025144	0.106
Average		6.74E+05	0.002		0.00E+00	0.000		1.17E+06	0.192
Standard Deviation		5.07E+04	0.000		0.00E+00	0.000		1.44E+05	0.024
%RSD		7.52	0.00		ERR	ERR		12.25	12.25

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WHC-SD-WM-TRP-212, Rev. 0

93 - 492														
Channel 'A' (ppm)			Channel 'B' (%)			Channel 'C' (%)			Channel 'D' (%)					
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.80	782020	5.301	0	0	0	10.02	258454502	44.522	50.70	0	0	24.93	751574330	0.700
22.80	780257	5.207	0	0	0	10.02	257912050	44.426	50.70	0	0	0	0	0
22.80	788007	5.300	0	0	0	10.02	258112400	44.403	50.70	0	0	24.93	747705706	0.700
	7.80E+05	5.341		0.00E+00	0.000		2.58E+08	44.471		0.00E+00	0.000		5.00E+08	0.472 0.708
Deviation	9.72E+03	0.067		0.00E+00	0.000		2.74E+05	0.047		0.00E+00	0.000		4.33E+08	0.408 0.002
	1.25	1.25		ERR	ERR		0.11	0.11		ERR	ERR		86.60	86.60

Sample I.D. Number:	93 - 493														
	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-493.ppm	22.80	650826	4.467	0	0	0	10.02	250572040	44.715	50.70	0	0	24.85	753885500	0.711
	22.80	621212	4.253	0	0	0	10.02	250353488	44.677	50.70	0	0	24.93	758516288	0.716
	22.80	502430	4.050	0	0	0	10.02	258511210	44.532	50.70	0	0	0	0	0
Average		6.23E+05	4.269		0.00E+00	0.000		2.59E+08	44.641		0.00E+00	0.000		7.56E+08	0.714
Standard Deviation		3.23E+04	0.221		0.00E+00	0.000		5.60E+05	0.097		0.00E+00	0.000		3.49E+06	0.004
%RSD		5.17	5.18		ERR	ERR		0.22	0.22		ERR	ERR		0.46	0.50

Sample I.D. Number	93 - 494														
	Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)			Channel "D" (%)		
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-494.ppm	22.80	2042400	20.140	0	0	0	10.02	252505048	43.508	50.70	0	0	24.85	131311584	0.124
	22.87	2609203	18.412	0	0	0	10.02	253042266	43.50	50.70	0	0	24.85	132004730	0.125
	22.87	2004319	18.447	0	0	0	10.02	252793504	43.547	50.70	0	0	24.85	131775726	0.124
Average		2.78E+06	19.002		0.00E+00	0.000		2.53E+08	43.548		0.00E+00	0.000		1.32E+08	0.124
Standard Deviation		1.45E+05	0.991		0.00E+00	0.000		2.38E+05	0.041		0.00E+00	0.000		3.53E+05	0.001
%RSD		5.22	5.22		ERR	ERR		0.09	0.09		ERR	ERR		0.27	0.46

Sample I.D. Number	93 - 495														
	Channel 'A' (ppm)			Channel 'B' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-495.ppm	22.87	2607800	17.787	0	0	0	10.02	252180000	43.441	50.70	0	0	24.85	130922192	0.132
	22.87	2400028	10.884	0	0	0	10.02	252027824	43.518	50.70	0	0	24.85	137142208	0.120
	22.87	2448790	10.700	0	0	0	10.02	251142012	43.203	50.70	0	0	24.85	138228080	0.13
Average		2.50E+06	17.146		0.00E+00	0.000		2.52E+08	43.407		0.00E+00	0.000		1.38E+08	0.130
Standard Deviation		8.16E+04	0.559		0.00E+00	0.000		7.62E+05	0.131		0.00E+00	0.000		1.40E+06	0.002
%RSD		3.26	3.26		ERR	ERR		0.30	0.30		ERR	ERR		1.01	1.17

Sample I.D. Number 93 - 496

	Channel 'A' (ppm)			Channel 'B' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-496.prm	22.86	2406088	16.896	0	0	0	16.02	251000072	43.255	50.76	0	0	24.85	132867060	0.125
	22.87	2254052	15.508	0	0	0	16.02	251213006	43.275	50.76	0	0	24.85	135460704	0.128
	22.87	2200810	15.541	0	0	0	16.02	250483632	43.149	50.76	0	0	24.85	134521552	0.127
Average		2.33E+06	15.982		0.00E+00	0.000		2.51E+08	43.226		0.00E+00	0.000		1.34E+08	0.127
Standard Deviation		1.16E+05	0.793		0.00E+00	0.000		3.92E+05	0.068		0.00E+00	0.000		1.30E+06	0.002
%RSD		4.97	4.96		ERR	ERR		0.16	0.16		ERR	ERR		0.97	1.21

Sample I.D. Number 93 - 497

	Channel 'A' (ppm)			Channel 'B' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-497.prm	22.87	2008742	14.104	C	0	0	16.02	251100440	43.272	50.76	0	0	24.56	140148880	0.141
	22.87	1631147	13.222	C	0	0	16.02	250680392	43.219	50.76	0	0	24.85	132307060	0.125
	22.87	1000272	13.483	0	0	0	16.02	250002680	43.17	50.76	0	0	24.83	130649888	0.132
Average		1.99E+06	13.623		0.00E+00	0.000		2.51E+08	43.220		0.00E+00	0.000		1.36E+08	0.129
Standard Deviation		7.10E+04	0.486		0.00E+00	0.000		2.98E+05	0.051		0.00E+00	0.000		5.33E+06	0.005
%RSD		3.57	3.57		ERR	ERR		0.12	0.12		ERR	ERR		3.92	3.85

Sample I.D. Number 93 - 498

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-498.prm	22.87	1016730	13.117	0	0	0	16.02	251240900	43.279	50.76	0	0	24.85	120874086	0.123
-	22.87	1010040	12.396	0	0	0	16.02	252000026	43.576	50.76	0	0	24.85	0	0
	22.87	1022510	12.476	0	0	0	16.02	253300840	43.636	50.76	0	0	24.85	133521384	0.120
Average		1.85E+06	12.665		0.00E+00	0.000		2.53E+08	43.497		0.00E+00	0.000		8.78E+07	0.000
Standard Deviation		5.75E+04	0.394		0.00E+00	0.000		1.11E+06	0.191		0.00E+00	0.000		7.61E+07	0.072
%RSD		3.11	3.11		ERR	ERR		0.44	0.44		ERR	ERR		86.63	86.62

Sample I.D. Number 93 - 499

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-499.prm	22.87	1745444	11.951	0	0	0	16.02	253102480	43.61	50.76	0	0	24.85	134002848	0.127
	22.87	1677920	11.486	0	0	0	16.02	253402784	43.602	50.76	0	0	24.85	133071512	0.126
	22.87	1684053	11.53	0	0	0	16.02	252775380	43.544	50.76	0	0	24.83	137622432	0.13
Average		1.70E+06	11.656		0.00E+00	0.000		2.53E+08	43.605		0.00E+00	0.000		1.35E+08	0.128
Standard Deviation		3.73E+04	0.256		0.00E+00	0.000		3.45E+05	0.059		0.00E+00	0.000		2.40E+06	0.002
%RSD		2.19	2.20		ERR	ERR		0.14	0.14		ERR	ERR		1.77	1.63

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WHC-SD-WM-TRP-212, Rev. 0

0.125
0.002

Sample I.D. Number 93 - 500

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-500.prn	22.87	2507701	17.17	0	0	0	19.02	247405888	42.619	56.44	4207104	0.011	24.85	104873472	0.156
	22.87	2435201	16.074	0	0	0	19.02	248021440	42.725	56.76	5502558	0.014	24.85	107510256	0.158
	22.87	2430146	16.030	0	0	0	19.02	248745424	42.85	56.79	0	0	24.85	100340216	0.10
Average		2.46E+06	16.828		0.00E+00	0.000		2.48E+08	42.731		4.88E+06	0.013		1.67E+08	0.158
Standard Deviation		4.34E+04	0.297		0.00E+00	0.000		6.70E+05	0.116		9.58E+05	0.002		2.25E+06	0.002
%RSD		1.76	1.76		ERR	ERR		0.27	0.27		19.62	16.97		1.35	1.27

Sample I.D. Number 93 - 501

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-501.prn	22.87	3502736	23.982	0	0	0	19.02	246801776	42.515	56.70	0	0	24.85	208983360	0.197
	22.87	3429443	23.481	0	0	0	19.02	246817024	42.517	56.70	0	0	24.85	220142112	0.208
	22.87	3444005	23.58	0	0	0	19.02	247050448	42.601	56.70	7761260	0.02	24.85	214515712	0.202
Average		3.46E+06	23.681		0.00E+00	0.000		2.47E+08	42.554		7.78E+06	0.020		2.15E+08	0.202
Standard Deviation		3.88E+04	0.265		0.00E+00	0.000		4.86E+05	0.084		ERR	ERR		5.58E+06	0.006
%RSD		1.12	1.12		ERR	ERR		0.20	0.20		ERR	ERR		2.60	2.72

Sample I.D. Number 93 - 502

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-502.prn	22.87	3708087	25.006	0	0	0	19.02	246022004	42.535	56.70	9997108	0.026	24.85	301327040	0.284
	22.87	3700305	25.378	0	0	0	19.02	247071246	42.581	56.70	10025724	0.026	24.85	301461296	0.285
	22.87	3675991	25.169	0	0	0	19.02	247851204	42.690	56.70	10143640	0.026	24.81	284933216	0.280
Average		3.73E+06	25.517		0.00E+00	0.000		2.47E+08	42.597		1.01E+07	0.026		2.96E+08	0.279
Standard Deviation		6.36E+04	0.435		0.00E+00	0.000		4.99E+05	0.086		7.77E+04	0.000		9.51E+06	0.009
%RSD		1.71	1.71		ERR	ERR		0.20	0.20		0.77	0.00		3.21	3.21

Sample I.D. Number 93 - 503

	Channel 'A' (ppm)			Channel 'B' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-503.prn	22.85	1947056	13.331	0	0	0	19.02	250131520	43.086	56.70	21224272	0.055	24.89	738068400	0.697
	22.89	9223184	63.149	0	0	0	19.02	247003312	42.546	56.70	21339426	0.055	24.71	732023424	0.691
	22.91	12274483	64.04	0	0	0	19.02	240767136	41.476	56.70	0	0	0	0	0
Average		7.81E+06	53.507		0.00E+00	0.000		2.46E+08	42.372		2.13E+07	0.055		7.35E+08	0.694
Standard Deviation		5.31E+05	35.327		0.00E+00	0.000		4.76E+05	0.819		8.14E+04	0.000		4.72E+06	0.004
%RSD		67.89	67.89		ERR	ERR		1.93	1.93		0.38	0.00		0.64	0.61

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WHC-SD-MM-TRP-212, Rev. 0

Sample I.D. Number 93 - 504

	Channel 'A' (ppm)			Channel 'B' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-504.prm	22.87	3452432	23.705	0	0	0	10.02	247488288	42.633	0	0	0	24.85	453320532	0.428
	22.87	3400083	23.276	0	0	0	10.02	247940590	42.711	0	0	0	24.83	435062255	0.411
	22.87	3434677	23.516	0	0	0	10.02	247001184	42.549	50.75	12008735	0.033	24.85	445018355	0.422
Average		3.43E+06	23.501		0.00E+00	0.000		2.47E+08	42.631		1.29E+07	0.033		4.45E+08	0.420
Standard Deviation		3.12E+04	0.214		0.00E+00	0.000		4.70E+05	0.081		ERR	ERR		9.25E+06	0.009
%RSD		0.91	0.91		ERR	ERR		0.19	0.19		ERR	ERR		2.08	2.05

Sample I.D. Number 93 - 505

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-505.prm	22.87	3000501	20.954	0	0	0	10.02	244049300	42.041	50.75	0	0	24.85	-8885	0
	22.87	3003448	20.504	0	0	0	10.02	245088800	42.216	50.75	0	0	24.85	-8888	0
	22.87	3039284	20.809	0	0	0	10.02	245263024	42.253	50.75	15217932	0.039	24.85	-8885	0
Average		3.03E+06	20.776		0.00E+00	0.000		2.45E+08	42.171		1.52E+07	0.039		-8.9E+03	0.000
Standard Deviation		2.88E+04	0.197		0.00E+00	0.000		6.63E+05	0.114		ERR	ERR		0.00E+00	0.000
%RSD		0.95	0.95		ERR	ERR		0.27	0.27		ERR	ERR		0.00	ERR

Sample I.D. Number 93 - 506

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-506.prm	22.87	2647010	18.123	0	0	0	10.02	250000384	43.222	50.44	110373595	0.31	24.85	670893632	0.633
	22.85	2485222	17.023	0	0	0	10.02	251586112	43.330	50.76	18175265	0.047	24.85	673763552	0.636
	22.85	2497000	17.005	0	0	0	10.02	251547906	43.332	50.44	2242304	0.006	24.85	685162046	0.648
Average		2.54E+06	17.414		0.00E+00	0.000		2.51E+08	43.298		4.66E+07	0.121		6.77E+08	0.639
Standard Deviation		8.99E+04	0.615		0.00E+00	0.000		3.82E+05	0.065		6.35E+07	0.165		8.11E+06	0.008
%RSD		3.53	3.53		ERR	ERR		0.15	0.15		136.33	136.33		1.20	1.24

Sample I.D. Number 93 - 507

	Channel 'A' (ppm)			Channel 'B' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-507.prm	22.85	2165924	14.905	0	0	0	10.02	248987326	42.891	50.75	10227076	0.05	24.85	0	0
	22.85	2040025	13.995	0	0	0	10.02	246839808	42.805	50.75	18088544	0.049	24.85	723443328	0.683
	22.85	2045083	14.002	0	0	0	10.02	250187052	43.1	50.75	24834804	0.054	24.85	724224704	0.684
Average		2.09E+06	14.312		0.00E+00	0.000		2.49E+08	42.952		2.10E+07	0.054		4.83E+08	0.684
Standard Deviation		8.28E+04	0.567		0.00E+00	0.000		7.45E+05	0.128		3.31E+06	0.008		4.18E+08	0.007
%RSD		3.96	3.96		ERR	ERR		0.30	0.30		15.74	15.44		85.60	85.60

B-86

WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number	93 - 508														
	Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)			Channel "D" (%)		
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-508.pm	22.80	3381901	23.165	0	0	0	19.02	235706090	40.604	55.44	10859520	0.026	24.89	728301292	0.697
	22.86	3210440	22.043	0	0	0	20	236230400	40.695	55.44	10592102	0.04	24.89	730384706	0.695
	22.89	3211778	21.99	0	0	0	19.02	235544144	40.670	55.44	10104040	0.05	24.89	728430648	0.687
Average		3.27E+06	22.396		0.00E+00	0.000		2.36E+08	40.625		1.52E+07	0.039		7.31E+08	0.690
Standard Deviation		9.61E+04	0.658		0.00E+00	0.000		3.62E+05	0.062		4.14E+06	0.011		4.60E+06	0.005
%RSD		2.94	2.94		ERR	ERR		0.15	0.15		27.25	28.00		0.63	0.67

Sample I.D. Number	93 - 509														
	Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)			Channel "D" (%)		
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-509.pm	22.80	2702423	18.914	0	0	0	19.02	241604206	41.635	50.70	20692526	0.054	24.89	748170008	0.706
	22.80	2600377	18.256	0	0	0	19.02	242040046	41.6	50.70	21135010	0.055	24.89	731860000	0.691
	22.85	2672400	18.296	0	0	0	19.02	241390424	41.684	50.70	21147450	0.055	24.89	743485335	0.702
Average		2.70E+06	18.489		0.00E+00	0.000		2.42E+08	41.673		2.11E+07	0.055		7.41E+08	0.700
Standard Deviation		5.38E+04	0.368		0.00E+00	0.000		6.54E+05	0.113		1.44E+05	0.001		8.39E+06	0.008
%RSD		1.99	1.99		ERR	ERR		0.27	0.27		0.68	1.06		1.13	1.11

Sample I.D. Number	93 - 510														
	Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)			Channel "D" (%)		
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-510.prm	22.80	6132452	41.927	0	0	0	20.06	205621536	35.455	55.44	16920086	0.044	24.85	662680720	0.654
	22.86	6025424	41.255	0	0	0	20.06	206505506	35.584	55.44	17401086	0.045	24.85	675131204	0.637
	22.86	6027916	41.272	0	0	0	20.06	205008250	35.315	55.70	17007020	0.046	24.85	685578880	0.647
Average		6.06E+06	41.505		0.00E+00	0.000		2.06E+08	35.451		1.73E+07	0.045		6.85E+08	0.646
Standard Deviation		6.11E+04	0.418		0.00E+00	0.000		7.79E+05	0.135		4.42E+05	0.001		8.92E+06	0.009
%RSD		1.01	1.01		ERR	ERR		0.38	0.38		2.55	2.22		1.30	1.32

Sample I.D. Number	93 - 511			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
Channel "A" (ppm)				Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
Carbon Dioxide	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-511.pm	22.87	1504342	10.916	0	0	0	19.02	251075164	43.251	55.44	13202848	0.034	0	0	0
	22.85	1381004	9.455	0	0	0	19.02	251033840	43.399	55.44	9804800	0.025	24.89	8688	0
	22.85	1388692	9.372	0	0	0	19.02	251100720	43.255	55.44	91403290	0.028	24.89	751705048	0.71
Average		1.45E+06	9.914		0.00E+00	0.000		2.51E+08	43.302		1.48E+07	0.038		2.51E+08	0.71
Standard Deviation		1.27E+05	0.858		0.00E+00	0.000		4.89E+05	0.084		5.99E+06	0.016		4.34E+08	0.410
%RSD		8.76	8.76		ERR	ERR		0.19	0.19		40.34	41.60		173.21	173.21

WMC-SD-MM-TRP-212, Rev. 0

Sample I.D. Number 93 - 512

	Channel 'A' (ppm)			Channel 'B' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-512.prm	22.87	2430697	18.842	0	0	0	10.02	242009408	41.844	50.76	21318880	0.055	24.85	717889725	0.676
	22.86	2403387	18.800	0	0	0	10.02	239683952	41.323	50.76	21124304	0.055	24.81	723377620	0.653
	22.85	2857171	19.631	0	0	0	10.02	239195200	41.032	50.76	20468800	0.053	24.81	706853312	0.667
Average		2.59E+06	17.713		0.00E+00	0.000		2.40E+08	41.400		2.10E+07	0.054		7.16E+08	0.676
Standard Deviation		2.43E+05	1.665		0.00E+00	0.000		2.39E+06	0.411		4.34E+05	0.001		8.42E+06	0.008
%RSD		9.40	9.40		ERR	ERR		0.99	0.99		2.07	2.13		1.18	1.21

Sample I.D. Number 93 - 513

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
	Carbon Dioxide			Carbon Dioxide			Carbon Monoxide			hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-513.ppm	22.87	1355351	8.26	0	0	0	10.02	250087472	43.081	50.76	0	0	24.81	0	0
	22.87	1224597	8.384	0	0	0	10.02	250069784	43.083	50.76	0	0	24.81	-8888	0
	22.87	1208143	8.272	0	0	0	10.02	248759040	42.852	50.76	0	0	24.81	-8898	0
Average		1.26E+06	8.645		0.00E+00	0.000		2.50E+08	43.005		0.00E+00	0.000		-5.9E+03	0.000
Standard Deviation		8.07E+04	0.552		0.00E+00	0.000		7.70E+05	0.133		0.00E+00	0.000		5.13E+03	0.000
%RSD		6.39	6.39		ERR	ERR		0.31	0.31		ERR	ERR		-86.60	ERR

Sample I.D. Number 93 - 514

	Channel 'A' (ppm)			Channel 'B' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-51 4.prm	22.87	1210880	8.286	0	0	0	10.02	250332388	43.123	50.76	21058176	0.057	24.89	761770432	0.716
	22.87	1090380	7.507	0	0	0	10.02	251057920	43.351	50.76	21408064	0.056	24.86	757853440	0.716
	22.87	1048271	7.177	0	0	0	10.02	250067006	43.077	50.76	21032224	0.058	24.89	751774464	0.71
Average		1.12E+06	7.658		0.00E+00	0.000		2.51E+08	43.184		2.17E+07	0.056		7.57E+08	0.715
Standard Deviation		8.34E+04	0.571		0.00E+00	0.000		8.52E+05	0.147		2.37E+05	0.001		5.04E+06	0.005
%RSD		7.46	7.46		ERR	ERR		0.34	0.34		1.09	1.02		0.67	0.63

Sample I.D. Number 93 - 515

	Channel 'A' (ppm)			Channel 'B' (%)			Channel 'C' (%)			Channel 'D' (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-515.prm	22.87	1287716	6.817	0	0	0	10.02	240067920	42.905	50.76	0	0	24.89	736520152	0.697
	22.87	1027301	7.034	0	0	0	10.02	240500576	42.981	50.76	0	0	24.81	-8888	0
	22.87	1012109	6.92	0	0	0	10.02	249132576	42.916	50.44	7592800	0.02	24.81	-8888	0
Average		1.11E+06	7.594		0.00E+00	0.000		2.49E+08	42.934		2.55E+06	0.007		2.46E+08	0.692
Standard Deviation		1.55E+05	1.061		0.00E+00	0.000		2.37E+05	0.041		4.44E+05	0.012		4.26E+08	0.482
%RSD		13.97	13.97		ERR	ERR		0.10	0.10		173.21	173.21		173.21	173.21

Sample I.D. Number	93 - 516														
	Channel 'A' (ppm)			Channel 'B' (%)						Channel 'C' (%)			Channel 'D' (%)		
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-516.prm	22.89	2040506	18.12	0	0	0	10.02	235049004	40.594	50.76	20201728	0.052	24.86	730706160	0.69
	22.86	2520507	17.316	0	0	0	10.02	230570192	40.753	50.76	18147584	0.047	24.89	744260082	0.702
	22.89	2530044	17.364	0	0	0	10.02	237237152	40.887	50.76	20442176	0.053	24.89	741470336	0.7
Average		2.57E+06	17.601		0.00E+00	0.000		2.36E+08	40.738		1.96E+07	0.051		7.39E+08	0.697
Standard Deviation		6.58E+04	0.450		0.00E+00	0.000		7.97E+05	0.137		1.26E+06	0.003		7.11E+06	0.006
%RSD		2.56	2.56		ERR	ERR		0.34	0.34		6.44	6.34		0.96	0.92

Sample I.D. Number	93 - 517														
	Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)			Channel "D" (%)		
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-517.pn	22.87	730876	5.004	0	0	0	10.02	248712100	42.644	50.76	20336952	0.052	24.81	730941700	0.698
	22.87	540208	3.669	0	0	0	10.02	251009984	43.24	50.76	22174104	0.058	24.81	745080182	0.703
	22.87	657388	3.885	0	0	0	10.02	250312256	43.119	50.76	21766044	0.058	24.81	751308286	0.700
Average		6.16E+05	4.216		0.00E+00	0.000		2.50E+08	43.068		2.14E+07	0.055		7.45E+08	0.703
Standard Deviation		1.08E+05	0.740		0.00E+00	0.000		1.18E+06	0.203		1.02E+06	0.003		5.69E+06	0.006
%RSD		17.57	17.56		ERR	ERR		0.47	0.47		4.78	5.52		0.76	0.78

Sample I.D. Number	93 - 518			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
	Channel "A" (ppm)			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-518.pn	22.89	1150895	7.941	0	0	0	10.02	247084448	42.653	50.76	21838000	0.057	24.81	752812028	0.71
	22.87	1112396	7.616	0	0	0	10.02	247008480	42.716	50.76	21408700	0.056	24.81	750057024	0.714
	22.87	1101932	7.545	0	0	0	10.02	247821536	42.86	50.76	21608880	0.056	24.81	737058256	0.698
Average		1.12E+06	7.701		0.00E+00	0.000		2.48E+08	42.656		2.16E+07	0.056		7.49E+08	0.707
Standard Deviation		3.09E+04	0.211		0.00E+00	0.000		4.74E+05	0.082		2.15E+05	0.001		9.64E+06	0.009
%RSD		2.75	2.74		ERR	ERR		0.19	0.19		0.99	1.02		1.29	1.34

B-89

MHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 519

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)						
Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-519 ppm	0	0	0	23.07	1832264	26.478	0	0	0	21.04	270348	0.038	0	0	0	58.44	47821824	0.115	34.85	7448788	0.008
	0	0	0	23.03	1908180	21.101	0	0	0	21.04	287948	0.038	0	0	0	58.44	47908382	0.115	34.85	5383851	0.004
	0	0	0	23.03	1587343	20.591	0	0	0	21.04	272902	0.037	0	0	0	58.44	47354800	0.114	34.85	5225038	0.004
Average	0.00E+00	0.000		1.70E+08	22.390		0.00E+00	0.000		2.70E+05	0.036		0.00E+00	0.000		4.76E+07	0.115		6.02E+08	0.005	
Standard Deviation	0.00E+00	0.000		2.04E+05	2.686		0.00E+00	0.000		2.48E+03	0.001		0.00E+00	0.000		2.27E+05	0.001		1.24E+08	0.001	
%RSD	ERR	ERR		12.00	12.00		ERR	ERR		0.92	1.59		ERR	ERR		0.48	0.50		20.61	24.74	

Sample I.D. Number 93 - 520

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)						
Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-520 ppm	0	0	0	23.03	1835848	34.12	0	0	0	21.04	234834	0.031	0	0	0	58.44	47333234	0.114	34.85	2287534	0.002
	0	0	0	23.06	1831408	21.423	0	0	0	21.04	238878	0.032	0	0	0	58.44	47318040	0.114	34.81	1829823	0.001
	0	0	0	23.06	1817838	21.285	0	0	0	21.04	218387	0.029	0	0	0	58.44	47685048	0.115	34.81	1843183	0.001
Average	0.00E+00	0.000		1.70E+08	22.269		0.00E+00	0.000		2.30E+05	0.031		0.00E+00	0.000		4.75E+07	0.114		1.97E+08	0.001	
Standard Deviation	0.00E+00	0.000		1.22E+05	1.605		0.00E+00	0.000		9.93E+03	0.002		0.00E+00	0.000		1.34E+05	0.001		2.26E+05	0.001	
%RSD	ERR	ERR		7.21	7.21		ERR	ERR		4.32	4.98		ERR	ERR		0.28	0.50		11.50	43.30	

Sample I.D. Number 93 - 521

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)						
Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-521 ppm	0	0	0	23.01	4185488	54.987	20.18	41125	0.005	21	130907	0.018	0	0	0	58.44	13828820	0.034	34.81	302351	0
	0	0	0	23.01	3734588	48.083	20.18	41842	0.006	21	132584	0.018	0	0	0	58.44	14152952	0.034	34.81	317487	0
	0	0	0	23.01	3782514	48.825	20.18	38327	0.006	21	134402	0.018	0	0	0	58.44	13987107	0.034	34.81	320813	0
Average	0.00E+00	0.000		3.90E+08	51.292		4.08E+04	0.005		1.33E+05	0.018		0.00E+00	0.000		1.40E+07	0.034		3.13E+05	0.000	
Standard Deviation	0.00E+00	0.000		2.45E+05	3.223		1.30E+03	0.000		1.82E+03	0.000		0.00E+00	0.000		1.21E+05	0.000		9.73E+03	0.000	
%RSD	ERR	ERR		6.28	6.28		3.27	0.00		1.37	0.00		ERR	ERR		0.88	0.00		3.10	ERR	

Sample I.D. Number 93 - 522

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-522 ppm	0	0	0	23.01	7304170	86.858	20.18	77227	0.01	21.04	114888	0.018	0	0	0	58.44	0	0	0	0
	0	0	0	23.01	7219855	34.848	20.18	78387	0.01	21.04	114505	0.018	0	0	0	58.44	17085814	0.041	34.81	268171
	0	0	0	23.01	7247791	86.218	20.18	74891	0.008	21.04	113688	0.018	0	0	0	58.44	15878503	0.038	34.85	445410
Average	0.00E+00	0.000		7.26E+08	95.342		7.62E+04	0.010		1.14E+05	0.015		0.00E+00	0.000		1.10E+07	0.025		2.34E+05	0.000
Standard Deviation	0.00E+00	0.000		4.30E+04	0.565		1.13E+03	0.001		5.27E+02	0.000		0.00E+00	0.000		9.55E+06	0.004		2.24E+05	0.000
%RSD	ERR	ERR		0.59	0.59		1.49	5.97		0.46	0.00		ERR	ERR		88.74	88.79		95.69	ERR

Sample I.D. Number 93 - 523

Channel "A" (ppm)	Channel "B" (%)						Channel "C" (%)						Channel "D" (%)								
	Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-523.ppm	0	0	0	23.03	11382728	148.842	20.18	121263	0.018	21.04	132078	0.018	0	0	0	58.44	20871008	0.06	34.81	238164	0
	0	0	0	23.03	11388358	148.829	20.18	120233	0.018	21.04	134821	0.018	0	0	0	58.44	21118098	0.051	34.81	235818	0
	0	0	0	23.03	11808143	181.18	20.18	117408	0.018	21.04	131487	0.018	0	0	0	58.44	21343188	0.051	34.81	0	0
Average	0.00E+00	0.000		1.14E+07	150.120		1.20E+05	0.015		1.33E+05	0.018		0.00E+00	0.000		2.11E+07	0.051		1.58E+05	0.000	
Standard Deviation	0.00E+00	0.000		7.06E+04	0.927		1.95E+03	0.000		1.84E+03	0.000		0.00E+00	0.000		1.36E+05	0.001		1.37E+05	0.000	
%RSD	ERR	ERR		0.62	0.62		1.67	0.00		1.38	0.00		ERR	ERR		0.65	1.14		88.81	ERR	

Sample I.D. Number 93 - 524

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)								
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-524 pm	0	0	0	23.01	9119377	116.807	20.18	33337	0.011	21.04	73371	0.01	0	0	0	0	0	0
	0	0	0	23.01	9040947	116.777	20.18	99931	0.011	21.04	74798	0.01	0	0	0	59.44	33179632	0.08
	0	0	0	23.01	9873423	117.898	20.18	87017	0.018	21.06	73791	0.01	0	0	0	59.44	33052820	0.08
Average		0.00E+00	0.000		9.04E+08	118.824		8.97E+04	0.011		7.40E+04	0.010		0.00E+00	0.000		2.21E+07	0.059
Standard Deviation		0.00E+00	0.000		7.30E+04	0.960		8.40E+03	0.001		7.32E+02	0.000		0.00E+00	0.000		1.91E+07	9.94E-03
%ASD		ERR	ERR		0.81	0.81		7.14	5.09		0.99	0.00		ERR	ERR		88.60	88.60

Sample I.D. Number 93 - 525

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)											
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-525.ppm	0	0	0	23.03	9620486	125.486	20.18	108919	0.013	21.08	57417	0.008	0	0	0	59.44	36290068	0.092	24.81	382036	0
	0	0	0	23.03	9633482	125.234	20.18	108327	0.013	21.08	56328	0.007	0	0	0	59.44	36582952	0.093	24.81	382570	0
	0	0	0	23.03	9469187	124.403	20.18	100463	0.013	21.08	54054	0.007	0	0	0	59.44	36043394	0.092	24.81	395898	0
Average		0.00E+00	0.000		9.54E+08	125.377		1.02E+05	0.013		5.56E+04	0.007		0.00E+00	0.000		3.84E+07	0.092		3.01E+05	0.000
Standard Deviation		0.00E+00	0.000		8.02E+04	1.053		1.27E+03	0.000		1.70E+03	0.001		0.00E+00	0.000		1.32E+05	0.001		2.06E+04	0.000
%ASD		ERR	ERR		0.84	0.84		1.25	0.00		3.05	7.87		ERR	ERR		0.34	0.63		8.88	ERR

Sample I.D. Number 93 - 526

Channel "A" (ppm)	Channel "B" (%)						Channel "C" (%)						Channel "D" (%)								
	Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-526 pm	0	0	0	23.03	9476960	86.082	0	0	0	21.04	1098638	0.148	0	0	0	59.44	48127368	0.108	24.81	715733	0.001
	0	0	0	23.03	9617943	85.829	20.18	86527	0.008	21.08	120472	0.018	0	0	0	59.44	45381818	0.108	24.81	302357	0
	0	0	0	23.03	9480437	85.298	20.18	94218	0.008	21.04	73183	0.01	0	0	0	59.44	45132752	0.108	24.81	271184	0
Average	0.00E+00	0.000		6.49E+08	85.320		4.56E+04	0.008		4.28E+05	0.057		0.00E+00	0.000		4.52E+07	0.109		4.30E+05	0.000	
Standard Deviation	0.00E+00	0.000		2.18E+04	0.287		3.95E+04	0.005		5.74E+05	0.077		0.00E+00	0.000		1.34E+05	0.000		2.48E+05	0.001	
%ASD	ERR	ERR		0.34	0.34		86.60	86.60		134.12	134.03		ERR	ERR		0.30	0.00		57.74	173.21	

Sample I.D. Number 93 - 527

Channel "A" (ppm)	Channel "B" (%)			Channel "C" (%)			Channel "D" (%)														
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-527 pm	0	0	0	23.03	9048390	118.898	20.18	87375	0.012	21.04	63791	0.011	0	0	0	59.44	39801488	0.095	24.81	241072	0
	0	0	0	23.03	9003304	118.282	20.18	84805	0.012	21.04	75204	0.01	0	0	0	59.44	39480878	0.095	24.81	218581	0
	0	0	0	23.03	9182874	118.834	20.18	90728	0.012	21.04	78813	0.011	0	0	0	59.44	39898904	0.096	24.81	241008	0
Average	0.00E+00	0.000		9.06E+08	119.008		9.82E+04	0.012		7.92E+04	0.011		0.00E+00	0.000		3.97E+07	0.095		2.34E+05	0.000	
Standard Deviation	0.00E+00	0.000		8.04E+04	0.793		1.46E+03	0.000		4.29E+03	0.001		0.00E+00	0.000		2.06E+05	0.001		1.30E+04	0.000	
%ASD	ERR	ERR		0.87	0.67		1.51	0.00		5.41	5.41		ERR	ERR		0.52	0.61		5.65	ERR	

Sample I.D. Number 93 - 528

	Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
	Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-528.ppt	0	0	0	23.03	4904316	53.117	20.18	50066	0.009	21.04	54088	0.007	0	0	0	59.44	49824312	0.112	24.81	0	0
	0	0	0	23.03	4983798	51.271	20.18	48274	0.009	21.04	52952	0.007	0	0	0	59.44	49818812	0.113	24.81	0	0
	0	0	0	23.03	4587018	60.394	20.18	48241	0.009	21.04	52183	0.007	0	0	0	59.44	48818812	0.113	24.81	225068	0
Average	0.00E+00	0.000	0.000	4.69E+08	51.594	4.89E+04	0.008	5.34E+04	0.007	0.00E+00	0.000	4.67E+07	0.113	0.00	1.13E+05	0.000					
Standard Deviation	0.00E+00	0.000	0.000	1.06E+05	1.390	1.04E+03	0.000	6.00E+02	0.000	0.00E+00	0.000	1.36E+05	0.001	0.00	1.60E+05	0.000					
%ASD	ERR	ERR	ERR	2.26	2.26	2.12	0.00	1.12	0.00	ERR	ERR	0.29	0.63	ERR	141.42	ERR					

Sample I.D. Number 93 - 529

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-529 ppm	0	0	23.01	4366427	56.775	20.18	43502	0.006	21	159521	0.021
	0	0	23.03	4140179	54.292	20.18	41420	0.006	21	162070	0.022
	0	0	23.03	4072782	53.607	20.18	43919	0.009	21	167924	0.022
Average	0.00E+00	0.000		4.15E+06	54.558		4.30E+04	0.005		1.63E+05	0.022
Standard Deviation	0.00E+00	0.000		8.70E+04	1.143		1.33E+03	0.001		3.97E+03	0.001
%RSD	ERR	ERR		2.10	2.10		3.10	10.83		2.44	2.66

Sample I.D. Number 93 - 530

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-530 ppm	0	0	23.03	3667729	50.881	20.18	38745	0.006	21.04	26298	0.004
	0	0	22.96	3751870	48.288	20.18	37500	0.006	21.04	27597	0.004
	0	0	22.96	3762101	48.426	20.18	38072	0.006	21.04	28284	0.004
Average	0.00E+00	0.000		3.79E+06	49.798		3.88E+04	0.005		2.80E+04	0.004
Standard Deviation	0.00E+00	0.000		5.85E+04	0.768		1.15E+03	0.000		4.14E+02	0.000
%RSD	ERR	ERR		1.54	1.54		2.97	0.00		1.48	0.00

Sample I.D. Number 93 - 531

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-531 ppm	0	0	22.96	3470436	46.593	20.18	34963	0.006	21.04	30630	0.007
	0	0	22.96	3378892	44.394	20.18	33298	0.004	21.04	52988	0.007
	0	0	22.96	3318862	43.877	20.18	33634	0.004	21.04	56236	0.008
Average	0.00E+00	0.000		3.39E+06	44.511		3.44E+04	0.004		5.35E+04	0.007
Standard Deviation	0.00E+00	0.000		7.73E+04	1.016		1.41E+03	0.001		2.84E+03	0.001
%RSD	ERR	ERR		2.28	2.28		4.10	13.32		5.30	7.87

Sample I.D. Number 93 - 532

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-532 ppm	0	0	22.96	3343686	43.928	20.18	30670	0.004	21.04	22986	0.003
	0	0	22.96	3100978	40.738	20.18	31402	0.004	21.04	20638	0.003
	0	0	22.96	3067187	40.104	20.18	30791	0.004	21.04	21366	0.003
Average	0.00E+00	0.000		3.17E+06	41.609		3.21E+04	0.004		2.17E+04	0.003
Standard Deviation	0.00E+00	0.000		1.54E+05	2.028		1.69E+03	0.000		9.09E+02	0.000
%RSD	ERR	ERR		4.87	4.87		5.26	0.00		4.19	0.00

Sample I.D. Number 93 - 533

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-533 ppm	0	0	22.96	3181200	41.006	20.18	30648	0.004	21.04	34387	0.006
	0	0	22.96	2884087	38.418	20.18	29215	0.004	21.04	36508	0.005
	0	0	22.96	2962236	38.917	20.18	30483	0.004	21.04	37600	0.006
Average	0.00E+00	0.000		3.00E+06	39.448		3.00E+04	0.004		3.58E+04	0.005
Standard Deviation	0.00E+00	0.000		1.05E+05	1.373		7.17E+02	0.000		1.60E+03	0.000
%RSD	ERR	ERR		3.48	3.48		2.39	0.00		4.48	0.00

B-92

Sample I.D. Number 93 - 534

Channel A* (ppm)	Channel B* (%)			Channel C* (%)			Channel D* (%)		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
Methane									
Carbon Dioxide	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-534 pm	0	0	0	23.03	2878180	37.812	20.18	27849	0.004
	0	0	0	23.03	2794189	36.708	20.18	28062	0.004
	0	0	0	23.03	2791716	36.546	20.18	28353	0.004
Average	0.00E+00	0.000	0.000	2.82E+08	37.022	2.81E+04	0.004	1.96E+04	0.003
Standard Deviation	0.00E+00	0.000	0.000	5.25E+04	0.689	2.44E+02	0.000	3.42E+02	0.000
%RSD	ERR	ERR	ERR	1.86	1.86	0.87	0.00	1.74	0.00

Sample I.D. Number 93 - 535

Channel A* (ppm)	Channel B* (%)			Channel C* (%)			Channel D* (%)		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
Methane									
Carbon Dioxide	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-535 pm	0	0	0	23.04	2988562	38.282	0	0	0
	0	0	0	23.04	2720027	35.94	0	0	0
	0	0	0	23.04	2783120	35.775	20.18	28181	0.003
Average	0.00E+00	0.000	0.000	2.81E+08	36.959	8.73E+03	0.001	6.82E+04	0.009
Standard Deviation	0.00E+00	0.000	0.000	1.52E+05	1.995	1.51E+04	0.002	2.42E+04	0.004
%RSD	ERR	ERR	ERR	5.40	5.40	173.21	173.21	35.51	40.06

Sample I.D. Number 93 - 536

Channel A* (ppm)	Channel B* (%)			Channel C* (%)			Channel D* (%)		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
Methane									
Carbon Dioxide	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-536 pm	0	0	0	23.03	1807310	23.744	20.18	0	0
	0	0	0	23.03	1580180	20.881	20.18	0	0
	0	0	0	23.03	1816813	21.229	20.18	0	0
Average	0.00E+00	0.000	0.000	1.67E+06	21.955	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.000	1.19E+05	1.559	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	7.10	7.10	ERR	ERR	ERR	ERR

Sample I.D. Number 93 - 537

Channel A* (ppm)	Channel B* (%)			Channel C* (%)			Channel D* (%)		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
Methane									
Carbon Dioxide	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-537 pm	0	0	0	23.03	1803141	21.081	20.18	0	0
	0	0	0	23.03	1580874	18.257	20.18	0	0
	0	0	0	23.03	1564738	17.798	20.18	0	0
Average	0.00E+00	0.000	0.000	1.45E+06	19.039	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.000	1.34E+05	1.766	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	9.28	9.28	ERR	ERR	ERR	ERR

Sample I.D. Number **93 - 538**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Hydrogen	Carbon Monoxide	hydrogen
23.03	1891942	26.025	20.18	188750	0.025	21.12	21846	0.003	0	0	0
23.03	1860030	24.432	20.18	182975	0.024	21.12	21072	0.003	0	0	0
23.03	1748555	22.048	20.18	182915	0.023	21.12	17480	0.002	0	0	0
Average	1.86E+06	24.470	1.82E+05	0.024		2.02E+04	0.003		0.00E+00	0.000	4.22E+07
Standard Deviation	1.17E+05	1.542	8.00E+03	0.001		2.36E+03	0.001		0.00E+00	0.000	2.80E+05
%RSD	6.30	6.30	4.18	4.17		11.71	21.85		ERR	ERR	0.69

Sample I.D. Number **93 - 539**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Hydrogen	Carbon Monoxide	hydrogen
23.03	1878417	22.084	20.18	189332	0.021	21.12	0	0	0	0	0
23.03	1835740	20.172	20.18	181330	0.02	21.12	0	0	0	0	0
23.03	1488450	19.551	20.18	182818	0.02	21.12	0	0	0	0	0
Average	1.57E+06	20.598	1.64E+05	0.020		0.00E+00	0.000		0.00E+00	0.000	4.32E+07
Standard Deviation	9.95E+04	1.307	4.13E+03	0.001		0.00E+00	0.000		0.00E+00	0.000	1.28E+05
%RSD	6.34	6.34	2.51	2.84		ERR	ERR		ERR	ERR	0.30

Sample I.D. Number **93 - 540**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Hydrogen	Carbon Monoxide	hydrogen
23.01	8812475	88.872	20.18	710496	0.089	21.12	0	0	0	0	0
23.05	8505782	85.47	20.18	704421	0.089	21.12	0	0	0	0	0
23.01	8507408	85.482	20.18	703227	0.088	21.12	0	0	0	0	0
Average	6.54E+06	85.945	7.06E+05	0.089		0.00E+00	0.000		0.00E+00	0.000	7.89E+06
Standard Deviation	6.11E+04	0.803	3.92E+03	0.001		0.00E+00	0.000		0.00E+00	0.000	2.92E+05
%RSD	0.93	0.93	0.65	0.65		ERR	ERR		ERR	ERR	3.70

Sample I.D. Number **93 - 541**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Hydrogen	Carbon Monoxide	hydrogen
23.01	10284463	134.061	20.18	1114823	0.14	21.12	0	0	0	0	0
23.01	10280543	134.379	20.18	1111890	0.14	21.12	0	0	0	0	0
23.01	10233389	134.443	20.18	1114255	0.14	21.12	0	0	0	0	0
Average	1.02E+07	134.558	1.11E+06	0.140		0.00E+00	0.000		0.00E+00	0.000	1.59E+07
Standard Deviation	1.95E+04	0.258	1.71E+03	0.000		0.00E+00	0.000		0.00E+00	0.000	1.80E+05
%RSD	0.19	0.19	0.15	0.00		ERR	ERR		ERR	ERR	1.20

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WIC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 542

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
23.01	12227800	180.842	20.18	1327792	0.187	21.12	0	0	0	0	0
23.02	12188882	180.230	20.18	1327610	0.187	21.12	0	0	0	0	0
23.03	12095503	188.906	20.18	1314827	0.185	21.12	0	0	0	0	0
Average	1.22E+07	158.928		1.32E+06	0.186		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation	6.91E+04	0.908		7.35E+03	0.001		0.00E+00	0.000		0.00E+00	0.000
%RSD	0.67	0.67		0.56	0.69		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 543

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.99	12182621	180.051	20.18	1318089	0.187	21.12	0	0	0	0	0
23.03	12114684	189.187	20.18	1312885	0.185	21.12	0	0	0	0	0
23.03	12110597	159.103	20.18	1311833	0.185	21.12	0	0	0	0	0
Average	1.21E+07	158.437		1.31E+06	0.165		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation	4.05E+04	0.532		2.08E+03	0.000		0.00E+00	0.000		0.00E+00	0.000
%RSD	0.33	0.33		0.16	0.00		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 544

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
23.03	10783413	141.881	20.18	1159195	0.148	21.12	0	0	0	0	0
23.03	10807515	139.358	20.18	1161830	0.148	21.12	0	0	0	0	0
22.99	10897406	140.536	20.18	1160223	0.145	21.12	0	0	0	0	0
Average	1.07E+07	140.522		1.16E+06	0.145		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation	8.80E+04	1.155		4.83E+03	0.001		0.00E+00	0.000		0.00E+00	0.000
%RSD	0.82	0.82		0.42	0.40		ERR	ERR		ERR	ERR

Sample I.D. Number 93 - 545

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.99	8958412	117.886	20.18	968734	0.122	21.12	0	0	0	0	0
22.99	8671882	113.929	20.18	943477	0.110	21.12	0	0	0	0	0
22.99	8607425	115.843	20.18	952222	0.12	21.12	0	0	0	0	0
Average	8.81E+06	115.746		9.54E+05	0.120		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation	1.42E+05	1.871		1.22E+04	0.002		0.00E+00	0.000		0.00E+00	0.000
%RSD	1.62	1.62		1.28	1.67		ERR	ERR		ERR	ERR

WIC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 546

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.89	7409591	97.344	20.01	798883	0.1	21.12	0	0	0	0	0
22.89	7208348	94.701	20.08	798144	0.099	21.12	0	0	0	0	0
22.89	7293677	95.822	20.08	785904	0.099	21.12	0	0	0	0	0
Average	7.30E+06	95.956	7.80E+05	0.099	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	1.01E+05	1.327	7.39E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	1.38	1.38	0.94	0.58	ERR	ERR	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number 93 - 547

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.89	8408006	84.182	20.08	884827	0.088	21.12	0	0	0	0	0
22.87	8226035	81.835	20.08	875720	0.087	21.12	0	0	0	0	0
22.89	8252600	82.144	20.08	870378	0.085	21.12	0	0	0	0	0
Average	6.30E+06	82.726	6.80E+05	0.085	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	9.78E+04	1.284	4.48E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	1.55	1.55	0.66	0.68	ERR	ERR	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number 93 - 548

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.89	6848555	74.209	20.08	602518	0.078	21.12	0	0	0	0	0
23.01	6501638	72.271	20.08	597480	0.075	21.12	0	0	0	0	0
23.01	5485918	73.072	20.08	595598	0.076	21.12	0	0	0	0	0
Average	5.55E+06	72.853	5.99E+05	0.075	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	8.97E+04	1.179	3.19E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	1.62	1.62	0.53	0.77	ERR	ERR	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number 93 - 549

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.87	6028646	68.037	20.01	641050	0.088	21.12	0	0	0	0	0
23.01	4893127	64.204	20.08	539882	0.087	21.12	0	0	0	0	0
22.87	4803212	64.417	20.01	629563	0.087	21.12	0	0	0	0	0
Average	4.84E+06	64.813	5.35E+05	0.087	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	7.43E+04	0.976	5.80E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	1.50	1.50	1.08	0.86	ERR	ERR	ERR	ERR	ERR	ERR	ERR

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number **B3 - 550**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.09	4708899	63.048	20.01	505891	0.006	21.12	0	0	0	0	0
22.07	4887183	61.576	20.01	601852	0.002	21.12	0	0	0	0	0
22.07	4888046	61.574	20.01	495979	0.002	21.12	0	0	0	0	0
Average	4.72E+06	62.066		5.01E+05	0.063		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation	6.46E+04	0.849		5.05E+03	0.001		0.00E+00	0.000		0.00E+00	0.000
%RSD	1.37	1.37		1.01	1.59		ERR	ERR		ERR	ERR

Sample I.D. Number **B3 - 551**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.07	4339812	57.018	20.01	458210	0.057	21.12	0	0	0	0	0
22.07	4341714	54.412	20.01	450707	0.057	21.12	0	0	0	0	0
22.07	4120925	54.136	20.01	453482	0.057	21.12	0	0	0	0	0
Average	4.20E+06	55.189		4.54E+05	0.057		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation	1.21E+05	1.588		2.81E+03	0.000		0.00E+00	0.000		0.00E+00	0.000
%RSD	2.88	2.88		0.62	0.00		ERR	ERR		ERR	ERR

Sample I.D. Number **B3 - 552**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.07	4089521	53.727	20.01	428747	0.054	21.12	0	0	0	0	0
22.07	3995231	51.174	20.01	422316	0.053	21.12	0	0	0	0	0
22.07	3043573	50.495	20.01	422026	0.052	21.12	0	0	0	0	0
Average	3.94E+06	51.799		4.25E+05	0.053		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation	1.33E+05	1.704		4.38E+03	0.001		0.00E+00	0.000		0.00E+00	0.000
%RSD	3.28	3.29		1.03	1.08		ERR	ERR		ERR	ERR

Sample I.D. Number **B3 - 553**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
23.01	3052082	50.907	20.01	409493	0.051	21.12	0	0	0	0	0
22.07	3064930	49.611	20.01	409829	0.05	21.12	0	0	0	0	0
22.07	3067043	48.436	20.01	392497	0.049	21.12	0	0	0	0	0
Average	3.74E+06	49.152		4.00E+05	0.050		0.00E+00	0.000		0.00E+00	0.000
Standard Deviation	9.59E+04	1.260		7.04E+03	0.001		0.00E+00	0.000		0.00E+00	0.000
%RSD	2.56	2.56		1.76	2.00		ERR	ERR		ERR	ERR

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 554

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Hydrogen			hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	3851295	50.334	20.08	3890115	0.07	21.12	0	0	0	0	0
22.97	3855731	47.371	20.08	385337	0.046	21.12	0	0	0	0	0
22.97	3814747	47.489	20.08	385343	0.047	21.12	0	0	17.87	882370	0.187
Average	3.68E+06	48.398		3.90E+05	0.049		0.00E+00	0.000		2.21E+05	0.042
Standard Deviation	1.28E+05	1.678		7.92E+03	0.001		0.00E+00	0.000		3.82E+05	0.073
%RSD	3.47	3.47		2.03	2.37		ERR	ERR		173.21	173.21

Sample I.D. Number 93 - 555

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Hydrogen			hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.89	1855308	21.747	20.16	1733112	0.022	0	0	0	0	0	0
22.89	1484692	19.505	20.16	185181	0.021	0	0	0	0	0	0
22.89	1518938	19.821	20.16	182620	0.02	0	0	0	0	0	0
Average	1.55E+06	20.393		1.67E+05	0.021		0.00E+00	0.000		4.26E+07	0.105
Standard Deviation	9.07E+04	1.191		5.51E+03	0.001		0.00E+00	0.000		1.37E+06	0.003
%RSD	5.84	5.84		3.30	4.76		ERR	ERR		3.22	2.74

Sample I.D. Number 93 - 556

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Hydrogen			hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.89	2135877	28.06	20.16	211785	0.027	0	0	0	0	0	0
22.89	1780808	23.527	20.16	183207	0.023	0	0	0	0	0	0
22.89	1747633	22.96	20.16	182930	0.023	0	0	0	0	0	0
Average	1.88E+06	24.848		1.93E+05	0.024		0.00E+00	0.000		4.29E+07	0.106
Standard Deviation	2.13E+05	2.785		1.66E+04	0.002		0.00E+00	0.000		9.59E+04	0.000
%RSD	11.25	11.25		8.61	9.48		ERR	ERR		0.22	0.00

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number **B3 - 557**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
Carbon Dioxide			Carbon Dioxide			Hydrogen			Carbon Monoxide			hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
23.01	1634256	23.906	20.16	163753	0.023	0	0	0	54.62	43432680	0.106	24.85	1690104	0.007
23.01	1670053	21.841	20.16	178626	0.022	0	0	0	54.62	42092804	0.104	24.87	1694814	0.007
23.01	1667607	21.906	20.16	160916	0.023	0	0	0	54.62	43452736	0.103	24.85	1698812	0.007
Average	1.72E+06	22.605	1.81E+05	0.023	0.00E+00	0.000	0.00E+00	0.000	4.29E+07	0.104	1.56E+06	0.007		
Standard Deviation	8.97E+04	1.178	2.57E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	5.12E+05	0.002	3.29E+04	0.000		
%RSD	5.22	5.21	1.42	2.55	ERR	ERR	ERR	ERR	1.20	1.46	2.11	0.00		

Sample I.D. Number **B3 - 558**

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)						Channel "D" (%)					
	Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			hydrogen:		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT									
	23.01	1608216	23.756	20.16	163889	0.023	C	C	C	C	C	C	54.52	42267780	0.103	24.86	624064	0.007
	23.02	1621546	21.302	20.16	176677	0.022	C	C	C	C	C	C	54.52	42092834	0.104	24.87	602234	0.007
	23.03	1341025	22.873	20.16	169874	0.024	C	C	C	C	C	C	54.54	42342081	0.105	24.86	601581	0.007
Average		1.72E+06	22.644		1.84E+05	0.023		0.00E+00	0.000		0.00E+00	0.000		4.24E+07	0.103		8.76E+05	0.007
Standard Deviation		9.45E+04	1.242		4.50E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		2.53E+05	0.001		6.55E+04	0.000
%RSD		5.48	5.48		2.45	2.47		ERR	ERR		ERR	ERR		0.60	0.56		7.48	0.00

Sample I.D. Number **B3 - 559**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	Carbon Monoxide		
22.89	5183992	69.104	20.08	665175	0.071	0	0	0	54.52	6602916	0.014
22.89	5133901	67.447	20.08	557037	0.07	0	0	0	54.52	5304986	0.013
22.89	5097918	66.875	20.08	552033	0.069	0	0	0	54.52	5022908	0.014
Average	5.14E+06	67.508	5.58E+05	0.070	0.00E+00	0.000	0.00E+00	0.000	5.58E+06	0.014	1.54E+05
Standard Deviation	4.32E+04	0.567	6.63E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	2.60E+05	0.001	2.01E+04
%RSD	0.84	0.84	1.19	1.43	ERR	ERR	ERR	ERR	4.66	4.22	13.10

Sample I.D. Number **B3 - 560**

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)					
Carbon Dioxide			Carbon Dioxide			Hydrogen			Carbon Monoxide			hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT						
22.89	10405596	136.705	20.08	1123947	0.143	0	0	0	0	54.52	12010284	0.031	24.81	105415
22.89	10412022	136.769	20.08	1143282	0.144	0	0	0	0	54.52	12047690	0.031	24.81	197548
22.89	10494346	137.869	20.08	1141814	0.143	0	0	0	0	54.52	13052202	0.032	24.85	222615
Average	1.04E+07	137.121	1.14E+06	0.143	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	1.28E+07	0.031	2.05E+05	0.000
Standard Deviation	4.94E+04	0.649	4.98E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	2.21E+05	0.001	1.51E+04	0.000
%RSD	0.47	0.47	0.44	0.40	ERR	ERR	ERR	ERR	ERR	ERR	1.72	1.84	7.34	ERR

B-99

WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 561

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
23.01	12500103	104.222	20.09	1253429	0.17	0	0	0	54.52	18157432	0.044
22.89	12443389	103.477	20.09	1350188	0.17	0	0	0	54.52	16203230	0.044
22.09	12474677	103.689	20.08	1358714	0.171	0	0	0	54.52	18082520	0.044
Average	1.25E+07	183.862	1.35E+08	0.170	0.00E+00	0.000	0.00E+00	0.000	1.82E+07	0.044	2.04E+05
Standard Deviation	2.84E+04	0.373	3.32E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	5.66E+04	0.000	9.72E+03
%RSD	0.23	0.23	0.25	0.34	ERR	ERR	ERR	ERR	0.31	0.00	4.78

Sample I.D. Number 93 - 562

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.09	14047188	105.057	20.09	1811481	3.203	0	0	0	54.52	18228204	0.047
22.09	15030844	107.471	20.09	1833570	0.205	0	0	0	54.52	20321748	0.05
22.09	15081088	108.289	20.09	1840879	3.208	0	0	0	54.52	20283738	0.049
Average	1.50E+07	196.932	1.63E+08	0.205	0.00E+00	0.000	0.00E+00	0.000	1.99E+07	0.049	1.81E+05
Standard Deviation	1.27E+05	1.872	1.52E+04	0.002	0.00E+00	0.000	0.00E+00	0.000	6.22E+05	0.002	1.29E+04
%RSD	0.85	0.85	0.93	0.75	ERR	ERR	ERR	ERR	3.12	3.14	7.13

Sample I.D. Number 93 - 563

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.09	14050128	105.085	20.09	1812292	0.203	0	0	0	54.52	24794490	0.09
22.07	14884442	106.283	20.09	1808347	0.202	0	0	0	54.52	25184424	0.091
22.07	14040473	104.989	20.09	1812151	0.203	0	0	0	54.52	25178754	0.091
Average	1.48E+07	195.118	1.61E+08	0.203	0.00E+00	0.000	0.00E+00	0.000	2.51E+07	0.091	1.59E+05
Standard Deviation	1.21E+04	0.158	2.30E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	2.27E+05	0.001	4.20E+04
%RSD	0.08	0.08	0.14	0.28	ERR	ERR	ERR	ERR	0.90	0.95	26.35

Sample I.D. Number 93 - 564

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.09	14089083	105.67	20.09	1811145	0.203	0	0	0	54.52	28904234	0.07
22.07	14621181	102.087	20.09	1503800	0.2	0	0	0	54.52	28050594	0.071
22.07	14048787	102.45	20.09	1587817	0.2	0	0	0	54.52	28751278	0.07
Average	1.47E+07	193.402	1.60E+08	0.201	0.00E+00	0.000	0.00E+00	0.000	2.89E+07	0.070	1.64E+05
Standard Deviation	1.50E+05	1.972	1.22E+04	0.002	0.00E+00	0.000	0.00E+00	0.000	1.50E+05	0.001	9.71E+03
%RSD	1.02	1.02	0.77	0.86	ERR	ERR	ERR	ERR	0.52	0.82	5.91

B-100

WIC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 565

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	13704697	160.048	20.08	1485591	0.187	0	0	0	0	0	0
22.97	13705598	160.069	20.08	1491407	0.187	0	0	0	0	0	0
22.97	13642373	178.228	20.08	1487191	0.187	0	0	0	0	0	0
Average	1.37E+07	179.779	1.48E+06	0.187	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	3.63E+04	0.477	3.00E+03	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	0.27	0.27	0.20	0.00	ERR	ERR	ERR	ERR	0.40	0.73	5.15

Sample I.D. Number 93 - 566

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	12719170	167.1	20.08	1374514	0.173	0	0	0	0	0	0
22.97	12685748	168.368	20.08	1377918	0.173	0	0	0	0	0	0
22.97	12634094	165.082	20.08	1379761	0.173	0	0	0	0	0	0
Average	1.27E+07	168.493	1.38E+06	0.173	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	4.30E+04	0.565	1.73E+03	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	0.34	0.34	0.13	0.00	ERR	ERR	ERR	ERR	0.05	0.67	7.78

Sample I.D. Number 93 - 567

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	11182836	147.047	20.08	1220171	0.153	0	0	0	0	0	0
22.97	11114900	146.023	20.08	1218481	0.153	0	0	0	0	0	0
22.97	11029054	144.058	20.08	1209435	0.152	0	0	0	0	0	0
Average	1.11E+07	145.975	1.22E+06	0.153	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	8.35E+04	1.096	6.34E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	0.75	0.75	0.52	0.38	ERR	ERR	ERR	ERR	0.43	0.63	13.49

Sample I.D. Number 93 - 568

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	10530088	136.34	20.08	1133025	0.142	0	0	0	0	0	0
22.97	10489358	137.541	20.08	1134850	0.143	0	0	0	0	0	0
22.97	10375792	136.313	20.08	1129623	0.142	0	0	0	0	0	0
Average	1.05E+07	137.398	1.13E+06	0.142	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	7.77E+04	1.021	2.68E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	0.74	0.74	0.24	0.41	ERR	ERR	ERR	ERR	0.45	0.82	8.26

B-101

MHC-SD-MT-TRP-212, Rev. 0

Sample I.D. Number 93 - 569

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	9065655	118.485	20.01	988505	0.122	C	C	0	0	0	0
22.97	8914278	117.112	20.01	983330	0.121	C	C	0	0	0	0
22.97	8938996	117.437	20.01	982251	0.121	C	C	0	0	0	0
Average	8.98E+06	118.015		9.65E+05	0.121		0.00E+00	0.000		3.98E+07	0.097
Standard Deviation	9.84E+04	1.292		2.34E+03	0.001		0.00E+00	0.000		1.31E+05	0.000
%RSD	1.09	1.10		0.35	0.48		ERR	ERR		0.33	0.00

Sample I.D. Number 93 - 570

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.99	9144947	120.143	20.01	943505	0.124	C	C	0	0	0	0
22.99	9100910	119.804	20.01	933555	0.124	C	C	0	0	0	0
22.99	9051200	119.911	20.01	925500	0.124	C	C	0	0	0	0
Average	9.10E+06	119.539		9.83E+05	0.124		0.00E+00	0.000		3.85E+07	0.094
Standard Deviation	4.69E+04	0.616		5.77E+02	0.000		0.00E+00	0.000		2.39E+05	0.001
%RSD	0.52	0.52		0.06	0.00		ERR	ERR		0.62	0.62

Sample I.D. Number 93 - 571

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	7277017	95.602	20.01	789953	0.098	C	C	0	0	0	0
22.97	7116404	93.493	20.01	779953	0.098	C	C	0	0	0	0
22.97	7142702	93.838	20.01	778976	0.098	C	C	0	0	0	0
Average	7.18E+06	94.311		7.81E+05	0.098		0.00E+00	0.000		4.09E+07	0.100
Standard Deviation	8.61E+04	1.132		5.12E+03	0.001		0.00E+00	0.000		4.00E+05	0.001
%RSD	1.20	1.20		0.66	0.68		ERR	ERR		0.98	1.16

Sample I.D. Number 93 - 572

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	7122795	93.577	20.01	782268	0.098	C	C	0	0	0	0
22.97	7061232	93.182	20.12	769754	0.097	C	C	0	0	0	0
22.97	7141206	93.816	20.01	771002	0.097	C	C	0	0	0	0
Average	7.12E+06	93.619		7.68E+05	0.097		0.00E+00	0.000		4.04E+07	0.098
Standard Deviation	2.53E+04	0.332		4.71E+03	0.001		0.00E+00	0.000		6.76E+05	0.002
%RSD	0.36	0.36		0.61	0.60		ERR	ERR		1.67	1.55

WHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 573

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	8032138	76.248	20.01	852986	0.081	C	C	C	54.52	41525522	0.101
22.97	8060024	78.034	20.01	834887	0.081	C	C	C	54.52	40878782	0.1
22.97	8003422	77.644	20.01	847093	0.081	C	C	C	54.52	41539212	0.101
Average	5.83E+06	77.908	6.48E+05	0.081	0.00E+00	0.000	0.00E+00	0.000	4.13E+07	0.101	1.55E+05
Standard Deviation	9.13E+04	1.199	7.09E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	3.77E+05	0.001	4.98E+03
%RSD	1.54	1.54	1.10	1.23	ERR	ERR	ERR	ERR	0.91	0.57	3.21

Sample I.D. Number 93 - 574

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	8000429	78.51	20.01	848270	0.081	C	C	C	54.52	40973800	0.1
22.97	8064803	78.621	20.01	851057	0.081	C	C	C	54.52	40956744	0.1
22.97	8069532	78.334	20.01	848537	0.081	C	C	C	54.52	40838800	0.099
Average	5.98E+06	78.623	6.49E+05	0.082	0.00E+00	0.000	0.00E+00	0.000	4.09E+07	0.100	1.46E+05
Standard Deviation	2.19E+04	0.288	1.49E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	7.93E+04	0.001	4.54E+03
%RSD	0.37	0.37	0.23	0.74	ERR	ERR	ERR	ERR	0.19	0.68	3.11

Sample I.D. Number 93 - 575

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
22.97	5087227	66.834	20.01	555838	0.07	C	C	C	54.52	41938924	0.102
22.97	5017026	65.912	20.01	547708	0.069	C	C	C	54.52	42382964	0.103
22.97	4989275	65.976	20.01	545575	0.069	C	C	C	54.52	41888372	0.102
Average	5.03E+06	66.142	5.53E+05	0.069	0.00E+00	0.000	0.00E+00	0.000	4.21E+07	0.102	1.43E+05
Standard Deviation	4.65E+04	0.611	5.41E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	2.49E+05	0.001	7.39E+03
%RSD	0.92	0.92	0.96	0.83	ERR	ERR	ERR	ERR	0.59	0.56	5.15

B-103

WIC-SD-MM-TRP-212, Rev. 0

Sample I.D. Number 93 - 576

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-576.ppt	0	0	0	22.97	5318923	61.829	20.08	570341	0.072	0	0	0	0	0	54.52	41340472	0.101	24.81	153953	0
	0	0	0	22.97	5384184	70.473	20.08	583487	0.073	0	0	0	0	0	54.52	41110840	0.1	24.81	141588	0
	0	0	0	22.97	5294253	58.554	20.08	579108	0.072	0	0	0	0	0	54.52	40783258	0.088	24.81	135088	0
Average	0.00E+00	0.000		5.32E+06	59.955		5.76E+05	0.072		0.00E+00	0.000		0.00E+00	0.000		4.11E+07	0.100		1.44E+05	0.000
Standard Deviation	0.00E+00	0.000		3.68E+04	0.470		8.07E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		2.90E+05	0.001		1.07E+04	0.000
%RSD	ERR	ERR		0.67	0.67		1.05	0.80		ERR	ERR		ERR	ERR		0.70	1.00		7.43	ERR

Sample I.D. Number 93 - 577

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-577.ppt	0	0	0	22.95	4809671	90.649	20.08	490487	0.063	0	0	0	0	0	54.52	43490112	0.104	24.81	168012	0
	0	0	0	22.97	4480438	58.882	20.08	479208	0.06	0	0	0	0	0	54.52	42191752	0.103	24.81	140822	0
	0	0	0	22.97	4483121	58.888	20.08	481818	0.081	0	0	0	0	0	54.52	43402908	0.103	24.81	149535	0
Average	0.00E+00	0.000		4.52E+06	59.440		4.83E+05	0.061		0.00E+00	0.000		0.00E+00	0.000		4.24E+07	0.103		1.53E+05	0.000
Standard Deviation	0.00E+00	0.000		7.38E+04	0.970		5.74E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		1.53E+05	0.001		1.38E+04	0.000
%RSD	ERR	ERR		1.63	1.63		1.19	1.64		ERR	ERR		ERR	ERR		0.36	0.56		9.08	ERR

Sample I.D. Number 93 - 578

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-578.ppt	0	0	0	22.96	8943304	91.732	20.08	754381	0.095	0	0	0	0	0	54.52	38190032	0.083	24.81	131074	0
	0	0	0	22.96	7720987	101.431	20.08	827274	0.104	0	0	0	0	0	54.52	39310032	0.089	24.81	13485	0
	0	0	0	22.96	7823947	102.794	20.08	845488	0.118	0	0	0	0	0	54.52	38779344	0.089	24.81	0	0
Average	0.00E+00	0.000		7.51E+06	98.658		8.43E+05	0.106		0.00E+00	0.000		0.00E+00	0.000		3.71E+07	0.090		7.49E+04	0.000
Standard Deviation	0.00E+00	0.000		4.58E+05	6.017		9.81E+04	0.012		0.00E+00	0.000		0.00E+00	0.000		8.97E+05	0.002		6.75E+04	0.000
%RSD	ERR	ERR		6.10	6.10		11.63	11.44		ERR	ERR		ERR	ERR		2.42	2.56		90.17	ERR

Sample I.D. Number 93 - 579

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-579.ppt	0	0	0	22.97	1591898	20.914	20.08	183350	0.021	0	0	0	0	0	54.52	42904448	0.104	24.81	145305	0
	0	0	0	22.97	1483145	18.222	20.08	191113	0.02	0	0	0	0	0	54.52	42949338	0.104	24.81	168802	0
	0	0	0	22.97	1448400	18.002	20.08	180893	0.02	0	0	0	0	0	54.52	42813432	0.104	24.81	182953	0
Average	0.00E+00	0.000		1.50E+06	19.713		1.62E+05	0.020		0.00E+00	0.000		0.00E+00	0.000		4.28E+07	0.104		1.58E+05	0.000
Standard Deviation	0.00E+00	0.000		7.96E+04	1.046		1.43E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		6.92E+04	0.000		1.15E+04	0.000
%RSD	ERR	ERR		5.31	5.31		0.88	2.84		ERR	ERR		ERR	ERR		0.18	0.00		7.24	ERR

Sample I.D. Number 93 - 580

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-580.ppt	0	0	0	22.98	4359996	57.341	20.08	448358	0.068	0	0	0	0	0	54.52	38780352	0.094	24.81	153917	0
	0	0	0	22.98	4081838	53.754	20.08	428078	0.054	0	0	0	0	0	54.52	36804440	0.086	24.81	183578	0
	0	0	0	22.98	4048188	53.189	20.08	429641	0.063	0	0	0	0	0	54.52	38940644	0.085	24.81	147021	0
Average	0.00E+00	0.000		4.17E+06	54.730		4.34E+05	0.054		0.00E+00	0.000		0.00E+00	0.000		3.89E+07	0.095		1.56E+05	0.000
Standard Deviation	0.00E+00	0.000		1.67E+05	2.192		1.36E+04	0.002		0.00E+00	0.000		0.00E+00	0.000		1.04E+05	0.001		8.34E+03	0.000
%RSD	ERR	ERR		4.00	4.01		3.14	2.81		ERR	ERR		ERR	ERR		0.27	0.61		5.39	ERR

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SampleID Number 93 - 581

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-581 pm	0	0	0	22.99	4716435	42.002	20.08	489187	0.093	0	0	0	0	0	54.52	37900304	0.082	34.81	1547046	0.001
	0	0	0	22.95	6482052	66.187	20.08	703810	0.089	0	0	0	0	0	54.52	34873406	0.056	34.81	1490980	0.001
	0	0	0	22.99	7281874	66.093	20.08	739490	0.090	0	0	0	0	0	54.52	34258932	0.083	34.81	1872309	0.001
Average	0.00E+00	0.000		6.16E+06	90.944		6.64E+05	0.083		0.00E+00	0.000		0.00E+00	0.000		3.56E+07	0.087		1.57E+06	0.001
Standard Deviation	0.00E+00	0.000		1.31E+06	17.223		1.50E+05	0.018		0.00E+00	0.000		0.00E+00	0.000		1.78E+07	0.005		9.29E+04	0.000
%RSD		ERR		ERR	ERR		21.28	21.28		22.56	22.14		ERR	ERR		ERR	ERR		5.92	0.00

SampleID Number 93 - 582

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-582 pm	0	0	0	22.95	4916354	64.378	20.08	523128	0.096	0	0	0	0	0	54.52	37995612	0.082	34.81	1003161	0.001
	0	0	0	22.97	4731118	62.158	20.08	511770	0.094	0	0	0	0	0	54.52	37593340	0.082	34.81	1039918	0.001
	0	0	0	22.95	4704290	62.054	20.08	513783	0.095	0	0	0	0	0	54.52	37343440	0.091	34.81	1039527	0.001
Average	0.00E+00	0.000		4.81E+06	53.195		5.16E+05	0.085		0.00E+00	0.000		0.00E+00	0.000		3.75E+07	0.092		1.03E+06	0.001
Standard Deviation	0.00E+00	0.000		9.48E+04	1.246		6.06E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		2.21E+05	0.001		2.11E+04	0.000
%RSD		ERR		ERR	ERR		1.97	1.97		1.17	1.54		ERR	ERR		0.59	0.63		2.05	0.00

SampleID Number 93 - 583

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-583 pm	0	0	0	22.96	4783740	62.678	20.08	513308	0.096	0	0	0	0	0	54.52	9445454	0.023	34.81	0	0
	0	0	0	22.95	4482937	60.822	20.08	505371	0.094	0	0	0	0	0	54.52	9506101	0.021	34.81	29993	0
	0	0	0	22.95	4898101	61.301	20.1	503101	0.093	0	0	0	0	0	54.52	9516003	0.021	34.77	43545	0
Average	0.00E+00	0.000		4.70E+06	61.700		5.07E+05	0.084		0.00E+00	0.000		0.00E+00	0.000		8.84E+06	0.022		2.44E+04	0.000
Standard Deviation	0.00E+00	0.000		8.62E+04	1.132		5.40E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		5.23E+05	0.001		2.22E+04	0.000
%RSD		ERR		ERR	ERR		1.83	1.83		1.07	1.56		ERR	ERR		5.92	5.33		91.13	ERR

SampleID Number 93 - 584

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-584 pm	0	0	0	22.96	11258014	147.904	20.08	1215297	0.153	0	0	0	0	0	54.52	10250418	0.025	34.77	0	0
	0	0	0	22.95	11173268	146.78	20.08	1205181	0.151	0	0	0	0	0	54.52	10604551	0.026	34.77	36988	0
	0	0	0	22.96	11146337	146.438	20.08	1215440	0.153	0	0	0	0	0	54.52	10688508	0.027	34.77	44311	0
Average	0.00E+00	0.000		1.12E+07	147.043		1.21E+06	0.152		0.00E+00	0.000		0.00E+00	0.000		1.06E+07	0.026		2.70E+04	0.000
Standard Deviation	0.00E+00	0.000		5.83E+04	0.766		6.18E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		3.26E+05	0.001		2.37E+04	0.000
%RSD		ERR		ERR	ERR		0.52	0.52		0.51	0.76		ERR	ERR		3.07	3.85		87.75	ERR

SampleID Number 93 - 585

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-585 pm	0	0	0	22.96	9673732	131.031	20.08	1074958	0.135	0	0	0	0	0	54.52	14904983	0.037	34.77	0	0
	0	0	0	22.95	9642706	128.559	20.08	1075183	0.135	0	0	0	0	0	54.52	15387799	0.038	34.77	0	0
	0	0	0	22.96	9605086	128.667	20.08	1072542	0.135	0	0	0	0	0	54.52	15064222	0.037	34.78	184970	0
Average	0.00E+00	0.000		9.91E+06	130.156		1.07E+06	0.135		0.00E+00	0.000		0.00E+00	0.000		1.52E+07	0.037		8.17E+04	0.000
Standard Deviation	0.00E+00	0.000		5.88E+04	0.773		1.46E+03	0.000		0.00E+00	0.000		0.00E+00	0.000		2.11E+05	0.001		1.07E+05	0.000
%RSD		ERR		ERR	ERR		0.59	0.59		0.14	0.00		ERR	ERR		1.39	1.55		173.21	ERR

[illegible]

Sample ID Number 93 - 591

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-591 ppm	0	0	0	22.87	7087282	12.847	20.08	783017	0.098	0	0
	0	0	0	22.87	8918008	90.01	20.08	757545	0.095	0	0
	0	0	0	22.87	8803108	90.01	20.08	751631	0.094	0	0
Average	0.00E+00	0.000		6.96E+06	91.483		7.57E+05	0.095	0.00E+00	0.000	0.00E+00
Standard Deviation	0.00E+00	0.000		9.03E+04	1.187		5.75E+03	0.001	0.00E+00	0.000	0.00E+00
%RSD		ERR		1.30	1.30		0.76	1.05		ERR	ERR

Sample ID Number 93 - 592

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-592 ppm	0	0	0	22.98	9708358	116.189	20.08	947439	0.119	0	0
	0	0	0	23.01	9741182	114.838	20.08	948205	0.118	0	0
	0	0	0	22.97	8873712	113.982	20.08	942128	0.118	0	0
Average	0.00E+00	0.000		8.73E+06	114.653		9.46E+05	0.119	0.00E+00	0.000	0.00E+00
Standard Deviation	0.00E+00	0.000		4.79E+04	0.629		2.74E+03	0.000	0.00E+00	0.000	0.00E+00
%RSD		ERR		0.55	0.55		0.29	0.00		ERR	ERR

Sample ID Number 93 - 593

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-593 ppm	0	0	0	22.98	5634183	74.02	20.08	904772	0.078	0	0
	0	0	0	22.98	5482074	72.1	20.08	598148	0.075	0	0
	0	0	0	22.98	5608733	72.378	20.08	508718	0.075	0	0
Average	0.00E+00	0.000		5.54E+06	72.831		6.01E+05	0.075	0.00E+00	0.000	0.00E+00
Standard Deviation	0.00E+00	0.000		7.91E+04	1.039		3.38E+03	0.001	0.00E+00	0.000	0.00E+00
%RSD		ERR		1.43	1.43		0.56	0.77		ERR	ERR

Sample ID Number 93 - 594

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-594 ppm	0	0	0	22.98	5180873	58.004	20.08	554268	0.07	0	0
	0	0	0	23.01	5002947	65.727	20.08	548148	0.068	0	0
	0	0	0	22.98	5021859	66.975	20.08	543908	0.068	0	0
Average	0.00E+00	0.000		5.07E+06	66.589		5.48E+05	0.069	0.00E+00	0.000	0.00E+00
Standard Deviation	0.00E+00	0.000		9.77E+04	1.284		5.55E+03	0.001	0.00E+00	0.000	0.00E+00
%RSD		ERR		1.93	1.93		1.01	1.45		ERR	ERR

Sample ID Number 93 - 595

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-595 ppm	0	0	0	22.98	4867434	95.128	20.08	525814	0.088	0	0
	0	0	0	22.98	4795088	82.906	20.08	516433	0.085	0	0
	0	0	0	22.98	4700958	82.544	20.08	513304	0.085	0	0
Average	0.00E+00	0.000		4.84E+06	93.558		5.18E+05	0.085	0.00E+00	0.000	0.00E+00
Standard Deviation	0.00E+00	0.000		1.05E+05	1.379		6.57E+03	0.001	0.00E+00	0.000	0.00E+00
%RSD		ERR		2.17	2.17		1.27	0.88		ERR	ERR

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MHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number 93 - 596

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)										
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen										
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT								
93-596 ppm	0	0	0	22.99	4491796	58.012	20.08	478505	3.06	0	0	0	54.52	42239472	0.103	34.81	185190	0		
	0	0	0	22.99	4373000	57.005	20.08	489088	0.058	0	0	0	54.52	42281212	0.103	34.81	118538	0		
	0	0	0	22.99	4350058	57.15	20.08	484981	0.058	0	0	0	54.52	41335888	0.101	34.81	148331	0		
Average		0.00E+00	0.000		4.39E+06	57.722		4.70E+05	0.059		0.00E+00	0.000		0.00E+00	0.000		4.20E+07	0.102	1.51E+05	0.000
Standard Deviation		0.00E+00	0.000		8.52E+04	1.119		5.96E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		5.60E+05	0.001	3.34E+04	0.000
%RSD		ERR	ERR		1.94	1.94		1.27	1.69		ERR	ERR		ERR	ERR		1.33	1.13	22.16	ERR

Sample I.D. Number 93 - 597

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)								
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen								
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT						
93-597 ppm	0	0	0	22.99	4217022	58.402	20.08	449448	0.058	0	0	0	54.52	42799820	0.104	34.81	0	0
	0	0	0	22.99	3949820	58.832	20.08	439575	0.058	0	0	0	54.52	42257800	0.103	34.85	104468	0
	0	0	0	22.99	4028533	58.825	20.08	435318	0.058	0	0	0	54.52	42454340	0.103	34.83	157340	0
Average	0.00E+00	0.000		4.08E+06	53.620		4.41E+05	0.056	0.00E+00	0.000		1.68E+05	0.032	4.25E+07	0.103	1.06E+05	0.000	
Standard Deviation	0.00E+00	0.000		1.18E+05	1.556		6.70E+03	0.001	0.00E+00	0.000		2.91E+05	0.056	2.58E+05	0.001	9.20E+04	0.000	
%RSD		ERR		2.90	2.90		1.52	1.04		ERR			173.21	173.21	0.61	0.56	88.63	ERR

Sample I.D. Number 93 - 598

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)								
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen								
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT						
93-598 ppm	0	0	0	22.99	3041825	38.882	20.18	309821	0.039	0	0	0	54.52	40799820	0.098	34.81	157328	0
	0	0	0	23.01	2839474	37.304	20.18	297501	0.037	0	0	0	54.52	40799820	0.098	34.81	157328	0
	0	0	0	23.01	2839474	37.304	20.18	296202	0.037	0	0	0	54.52	40542800	0.098	34.81	151298	0
Average		0.00E+00	0.000		2.91E+06	38.191		3.01E+05	0.038		0.00E+00	0.000		4.07E+07	0.099		1.54E+05	0.000
Standard Deviation		0.00E+00	0.000		1.17E+05	1.534		7.57E+03	0.001		0.00E+00	0.000		1.82E+05	0.000		4.26E+03	0.000
%RSD		ERR			4.02	4.02		2.51	3.07		ERR	ERR		ERR	0.45	0.00	2.76	ERR

Sample I.D. Number 93 - 599

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)								
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen								
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT						
93-599 ppm	0	0	0	22.99	1737754	22.83	20.18	179000	0.023	0	0	0	54.52	42981824	0.105	34.81	188585	0
	0	0	0	22.99	1569098	20.828	20.08	184719	0.021	0	0	0	54.52	42589444	0.104	34.81	106834	0
	0	0	0	22.99	1569098	20.828	20.08	172145	0.022	0	0	0	54.52	42638400	0.104	34.81	156332	0
Average		0.00E+00	0.000		1.62E+06	21.337		1.73E+05	0.022		0.00E+00	0.000		4.28E+07	0.104		1.50E+05	0.000
Standard Deviation		0.00E+00	0.000		9.84E+04	1.293		5.24E+03	0.001		0.00E+00	0.000		1.84E+05	0.001		4.20E+04	0.000
%RSD		ERR	ERR		6.06	6.06		3.02	4.55		ERR	ERR		ERR	0.43	0.55	27.98	ERR

Sample I.D. Number 93 - 600

93-600.ppm	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)											
	Methane			Carbon Dio			Nitrous Oxi			Hydrogen			Carbon Mo			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
	0	0	0	23.01	1787901	23.223	20.18	186333	0.034	0	0	0	0	0	0	54.2	43706652	0.108	34.81	483372	0
	0	0	0	23.03	1800157	21.028	20.18	179568	0.022	0	0	0	0	0	0	54.2	43200294	0.104	34.81	483301	0
	0	0	0	23.03	1814298	21.208	20.18	179390	0.023	0	0	0	0	0	0	54.2	43411294	0.103	34.81	483930	0
Average		0.00E+00	0.000		1.66E+06	21.818		1.82E+05	0.023		0.00E+00	0.000		0.00E+00	0.000		4.31E+07	0.104		4.87E+05	0.000
Standard Deviation		0.00E+00	0.000		9.29E+04	1.221		5.43E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		6.52E+05	0.002		5.64E+03	0.000
%RSD		ERR	ERR		5.59	5.59		2.98	4.35		ERR	ERR		ERR	ERR		1.51	1.46		1.18	ERR

Sample ID Number	93 - 601																				
Channel A* (ppm)	Channel B* (%)						Channel C* (%)						Channel D* (%)								
Methane	Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen					
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT				
93-601 ppm	0	0	0	23.03	2130125	27.605	20.10	218927	0.027	0	0	0	0	0	0	54.52	41904840	0.101	24.81	378299	0
	0	0	0	23.01	1950087	25.794	20.10	210425	0.028	0	0	0	0	0	0	54.52	42531629	0.103	24.81	316440	0
	0	0	0	23.01	2005958	28.364	20.10	207008	0.028	0	0	0	0	0	0	54.52	43489258	0.103	24.81	304088	0
Average	0.00E+00	0.000		2.03E+06	26.688		2.12E+05	0.008	0.00E+00	0.000		0.00E+00	0.000		4.23E+07	0.102		3.33E+05	0.000		0.000
Standard Deviation	0.00E+00	0.000		8.88E+04	1.187		5.02E+03	0.001	0.00E+00	0.000		0.00E+00	0.000		4.08E+05	0.001		3.97E+04	0.000		0.000
%RSD		ERR		ERR	4.37		4.37	2.37	2.19		ERR	ERR		ERR	ERR		0.98	1.13	11.94		ERR

Sample ID Number	93 - 602																				
Channel A* (ppm)	Channel B* (%)						Channel C* (%)						Channel D* (%)								
Methane	Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-602.ppm	0	0	0	23.03	2381029	30.443	20.10	246878	0.031	0	0	0	0	0	0	54.2	8320939	0.016	24.81	0	0
	0	0	0	23.03	2349250	28.55	20.10	244233	0.03	0	0	0	0	0	0	54.2	8182109	0.015	24.81	0	0
	0	0	0	23.03	2209048	28.983	20.10	243285	0.031	0	0	0	0	0	0	54.2	8220037	0.015	24.81	0	0
Average	0.00E+00 0.000			2.26E+06 29.879			2.45E+05 0.031			0.00E+00 0.000			0.00E+00 0.000			6.24E+06 0.015			0.00E+00 0.000		
Standard Deviation	0.00E+00 0.000			5.77E+04 0.758			3.46E+03 0.001			0.00E+00 0.000			0.00E+00 0.000			7.18E+04 0.000			0.00E+00 0.000		
%RSD	ERR			ERR			ERR			ERR			ERR			ERR			ERR		

Sample ID Number	93 - 603																			
Channel A* (ppm)	Channel B* (%)						Channel C* (%)						Channel D* (%)							
Methane	Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen				
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-603.ppm	0	0	0	23.03	7016268	82.177	20.10	752001	0.046	0	0	0	0	0	54.52	11896078	0.028	24.81	0	0
	0	0	0	23.03	6935091	81.122	20.10	746008	0.046	0	0	0	0	0	54.52	12121555	0.029	24.81	0	0
	0	0	0	23.03	6851391	81.325	20.10	747934	0.046	0	0	0	0	0	54.52	11901650	0.029	24.81	0	0
Average	0.00E+00	0.000		6.97E+06	91.541		7.50E+05	0.034		0.00E+00	0.000		0.00E+00	0.000		1.19E+07	0.029		0.00E+00	0.000
Standard Deviation	0.00E+00	0.000		4.26E+04	0.560		2.72E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		2.18E+05	0.001		0.00E+00	0.000
%RSD	ERR	ERR		0.61	0.61		0.36	0.61		ERR	ERR		ERR	ERR		1.83	2.01		ERR	ERR

Sample ID Number	93 - 604																				
Channel A* (ppm)	Channel B* (%)						Channel C* (%)						Channel D* (%)								
Methane	Carbon D10			Carbon D10			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen					
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT				
93-604 ppm	0	0	0	23.01	9749051	56.078	20.10	728877	0.042	0	0	0	0	0	0	54.52	16000058	0.041	24.81	0	0
	0	0	0	23.01	9647507	57.334	20.10	717405	0.04	0	0	0	0	0	0	54.52	16557118	0.04	24.81	0	0
	0	0	0	23.01	9803988	56.78	20.10	713218	0.04	0	0	0	0	0	0	54.52	16720277	0.04	24.81	0	0
Average	0.00E+00	0.000		6.67E+06	87.591		7.20E+05	0.041		0.00E+00	0.000		0.00E+00	0.000		1.67E+07	0.040		0.00E+00	0.000	
Standard Deviation	0.00E+00	0.000		7.49E+04	0.984		8.11E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		1.72E+05	0.001		0.00E+00	0.000	
%RSD		ERR		1.12	1.12		1.13	1.27		ERR	ERR		ERR	ERR		1.03	1.43		ERR	ERR	

Sample ID Number	93 - 605																	
Channel A* (ppm)	Channel B* (%)						Channel C* (%)						Channel D* (%)					
Methane	Carbon D10			Carbon D10			Nitrous Ox10			Hydrogen			Carbon Mo			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-605.ppt	0	0	0	23.03	9020028	118.602	20.10	977800	0.123	0	0	0	54.52	18931104	0.048	24.81	56088	
	0	0	0	23.03	9607582	116.792	20.10	986358	0.121	0	0	0	54.52	19559488	0.047	24.81	53734	
	0	0	0	23.03	9887461	118.206	20.10	982353	0.121	0	0	0	54.52	19812290	0.047	24.81	56348	
Average	0.00E+00	0.000		8.97E+06	117.823		9.69E+05	0.122		0.00E+00	0.000		0.00E+00	0.000		1.94E+07	0.047	
Standard Deviation	0.00E+00	0.000		7.09E+04	0.931		7.86E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		3.79E+05	0.001	
%RSD		ERR		0.79	0.79		0.81	0.95		ERR	ERR		ERR	ERR		1.98	1.24	
																38.30	ERR	

B-109

Sample I.D. Number 93 - 606

93-606 ppm	Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
	0	0	0	23.06	8101300	106.433	20.18	969611	0.109	0	0	0	0	0	0	54.52	25826028	0.063	24.91	34492	0
	0	0	0	23.06	7911308	103.839	20.18	982099	0.108	0	0	0	0	0	0	54.52	25839100	0.062	24.95	47350	0
	0	0	0	23.06	7830707	104.191	20.18	954882	0.107	0	0	0	0	0	0	54.52	25832134	0.062	24.85	0	0
Average		0.00E+00	0.000		7.58E+05	104.853		8.62E+05	0.108		0.00E+00	0.000		0.00E+00	0.000		2.58E+07	0.062		2.74E+04	0.000
Standard Deviation		0.00E+00	0.000		1.05E+05	1.374		7.31E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		1.52E+05	0.001		2.45E+04	0.000
%RSD		ERR	ERR		1.31	1.31		0.85	0.93		ERR	ERR		ERR	ERR		0.59	0.93		89.55	ERR

Sample I.D. Number 93 - 607

Channel "A" (ppm)	Channel "B" (%)			Channel "C" (%)			Channel "D" (%)															
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen						
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT				
93-607 ppm				23.06	9040654	126.772	20.18	1040621	0.131							54.52	29122288	0.07	24.95	47040		
				23.03	9654008	126.043	20.18	1036898	0.13							54.52	29100122	0.07	24.91	77210		
				23.06	9436274	126.588	20.18	1034401	0.13							54.52	28729739	0.069	24.81	61368		
Average		0.00E+00	0.000		9.63E+05	126.474		1.04E+06	0.130		0.00E+00	0.000		0.00E+00	0.000		2.90E+07	0.070		6.85E+04	0.000	
Standard Deviation		0.00E+00	0.000		2.86E+04	0.375		3.26E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		2.21E+05	0.001		8.03E+03	0.000	
%RSD		ERR	ERR		0.30	0.30		0.31	0.44		ERR	ERR		ERR	ERR		0.76	0.83		11.71	ERR	

Sample I.D. Number 93 - 608

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)											
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen											
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT									
93-608 ppm	0	0	0	23.03	7329282	96.289	20.18	788754	0.094	0	0	0	54.52	35004700	0.065	24.95	125405	0			
	0	0	0	23.05	7138708	93.759	20.18	775328	0.097	0	0	0	54.52	37467072	0.061	24.65	106816	0			
	0	0	0	23.03	7220208	94.858	20.18	778821	0.098	0	0	0	54.52	37153420	0.06	24.85	130771	0			
Average		0.00E+00	0.000		7.23E+05	94.968		7.80E+05	0.098		0.00E+00	0.000		0.00E+00	0.000		3.65E+07	0.069	1.21E+05	0.000	
Standard Deviation		0.00E+00	0.000		9.66E+04	1.269		5.84E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		1.34E+05	0.003	1.32E+04	0.000	
%RSD		ERR	ERR		1.34	1.34		0.75	1.02		ERR	ERR		ERR	ERR			3.66	3.63	10.90	ERR

Sample I.D. Number 93 - 609

Channel "A" (ppm)	Channel "B" (%)									Channel "C" (%)									Channel "D" (%)								
	Methane			Carbon D1o			Carbon D1o			Nitrous Ox			Hydrogen			Carbon Mt			Hydrogen								
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT						
93-609 ppm	0	0	0	23.06	3822024	115.9	20.18	361338	0.12	0	0	0	0	0	0	54.52	38818144	0.068	24.85	122354	0						
	0	0	0	23.03	3694463	114.325	20.18	340022	0.118	0	0	0	0	0	0	54.52	35510200	0.066	24.85	108170	0						
	0	0	0	23.06	3731186	114.707	20.18	340067	0.118	0	0	0	0	0	0	54.52	35882332	0.066	24.85	17421	0						
Average	0.00E+00		0.000	8.75E+05		114.944	9.44E+05		0.119	0.00E+00		0.000	0.00E+00		0.000	3.59E+07		0.067	1.03E+05		0.000						
Standard Deviation	0.00E+00		0.000	3.67E+04		0.862	6.52E+03		0.001	0.00E+00		0.000	0.00E+00		0.000	5.97E+05		0.002	2.31E+04		0.000						
%RSD	ERR		ERR	0.75		0.75	0.69		0.97	ERR		ERR	ERR		ERR	1.68		1.99	22.43		ERR						

Sample I.D. Number 93 - 610

Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-610 ppm	0	0	23.03	5821818	78.499	20.18	929977	0.078	0	0	0
	0	0	23.05	5707878	74.988	20.18	923314	0.078	0	0	0
	0	0	23.01	5878782	74.679	20.18	921002	0.078	0	0	0
Average	0.00E+00	0.000	5.74E+05	75.351	6.25E+05	0.078	0.00E+00	0.000	0.00E+00	0.000	4.19E+07
Standard Deviation	0.00E+00	0.000	7.64E+04	1.004	4.66E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	3.39E+05
%RSD	ERR	ERR	1.33	1.33	0.75	0.74	ERR	ERR	ERR	ERR	0.81
											0.99
											19.22
											ERR

Sample ID Number	93 - 611																				
Channel A* (ppm)	Channel B* (%)						Channel C* (%)						Channel D* (%)								
Methane	Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-611 ppm	0	0	0	23.03	5020987	10.89	20.10	734228	0.093	3	0	0	0	0	0	54.52	38188579	0.095	24.88	170475	0
	0	0	0	23.03	5002106	18.377	20.10	734017	0.082	3	0	0	0	0	0	54.52	30306804	0.095	24.88	123465	0
	0	0	0	23.03	8785683	18.278	20.10	731859	0.092	3	0	0	0	0	0	54.52	39281820	0.095	24.88	140885	0
Average	0.00E+00	0.000		8.81E+06	89.449		7.34E+05	0.092		0.00E+00	0.000		0.00E+00	0.000		3.93E+07	0.095		1.47E+05	0.000	
Standard Deviation	0.00E+00	0.000		1.64E+04	0.216		2.24E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		1.14E+05	0.000		2.74E+04	0.000	
%RSD		ERR	ERR		0.24	3.24		0.31	0.63			ERR	ERR		ERR	ERR	0.29	0.00		18.71	ERR

Sample ID Number	93 - 612																				
Channel A* (ppm)	Methane			Carbon Dio			Channel B* (%)			Nitrous Ox			Channel C* (%)			Carbon Mo			Channel D* (%)		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-612.ppm	0	0	0	23.01	4833606	54.817	20.18	528053	0.068	3	0	0	0	0	0	54.52	43415434	0.103	24.81	146881	0
	0	0	0	23.01	4790670	52.865	20.18	518897	0.066	3	0	0	0	0	0	54.52	43480832	0.103	24.81	146820	0
	0	0	0	22.99	4758651	62.27	20.18	520125	0.065	3	0	0	0	0	0	54.2	43487779	0.103	24.81	157820	0
Average		0.00E+00	0.000		4.82E+06	63.324		5.22E+05	0.065		0.00E+00	0.000		0.00E+00	0.000		4.25E+07	0.103		1.50E+05	0.000
Standard Deviation		0.00E+00	0.000		1.01E+05	1.329		4.92E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		3.64E+04	0.000		6.28E+03	0.000
%RSD		ERR	ERR		2.10	2.10		0.94	0.88		ERR	ERR		ERR	ERR		0.09	0.00		4.18	ERR

Sample ID Number	93 - 613																				
Channel A* (ppm)	Channel B* (%)						Channel C* (%)						Channel D* (%)								
Methane	Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen					
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT				
93-613.ppm	0	0	0	22.99	4459511	54.587	20.10	475568	0.06	0	0	0	0	0	0	54.52	42390552	0.102	24.81	80781	0
	0	0	0	22.99	4322960	58.794	20.10	474887	0.06	0	0	0	0	0	0	54.52	43160312	0.104	24.81	100343	0
	0	0	0	22.99	4322762	58.781	20.10	487563	0.058	0	0	0	0	0	0	54.52	42500880	0.103	24.81	130655	0
Average	0.00E+00	0.000		4.37E+06	57.391		4.73E+05	0.060		0.00E+00	0.000		0.00E+00	0.000		4.27E+07	0.103		1.07E+05	0.000	
Standard Deviation	0.00E+00	0.000		7.89E+04	1.036		4.44E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		3.94E+05	0.001		3.00E+04	0.000	
%RSD		ERR	ERR		1.81	1.81		0.94	0.97			ERR	ERR		ERR	ERR	0.92	0.97		28.04	ERR

Sample ID Number	93 - 614																				
Channel A* (ppm)	Channel B* (%)						Channel C* (%)						Channel D* (%)								
Methane	Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-614 ppm	0	0	0	22.99	4143201	54.638	20.10	445354	0.058	3	0	0	3	0	0	54.52	42929360	0.104	24.81	186043	0
	0	0	0	22.99	4037302	53.042	20.10	437423	0.055	3	3	0	0	0	0	54.52	42819034	0.103	24.81	156790	0
	0	0	0	22.99	3883347	52.356	20.10	435218	0.055	3	0	3	0	0	0	54.52	42978329	0.104	24.81	143332	0
Average		0.00E+00	0.000		4.06E+06	53.277		4.39E+05	0.055		0.00E+00	0.000		0.00E+00	0.000		4.28E+07	0.104		1.49E+05	0.000
Standard Deviation		0.00E+00	0.000		8.04E+04	1.057		5.30E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		1.65E+05	0.001		1.65E+04	0.000
%RSD		ERR	ERR		1.98	1.98		1.21	1.04		ERR	ERR		ERR	ERR		0.39	0.56		11.03	ERR

Sample ID Number	93 - 615																				
Channel A* (ppm)	Channel B* (%)						Channel C* (%)						Channel D* (%)								
Methane	Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-615 ppm	0	0	0	22.99	4022404	52.048	20.10	434491	0.063	3	0	0	0	0	0	54.52	42334032	0.105	24.81	141787	0
	0	0	0	22.99	3886898	50.888	20.10	412854	0.052	3	0	0	0	0	0	54.52	42546346	0.103	24.81	147541	0
	0	0	0	22.97	3554166	50.842	20.10	413443	0.052	3	0	0	0	0	0	54.52	42825120	0.104	24.81	130666	0
Average		0.00E+00	0.000		3.92E+06	51.439		4.17E+05	0.052		0.00E+00	0.000		0.00E+00	0.000		4.29E+07	0.104		1.42E+05	0.000
Standard Deviation		0.00E+00	0.000		9.30E+04	1.222		6.73E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		3.93E+05	0.001		4.76E+03	0.000
%RSD		ERR	ERR		2.38	2.38		1.61	1.10		ERR	ERR		ERR	ERR		0.92	0.96		3.34	ERR

B-111

Sample I.D. Number 93 - 616

93-616 ppm	Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
	Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
	0	0	0	22.01	3690044	48.359	20.18	397454	0.06	0	0	0	0	0	0	54.52	4307084	0.104	34.81	106002	0
	0	0	0	22.87	3690040	47.293	20.18	396042	0.048	0	0	0	0	0	0	54.52	43481812	0.103	34.81	146307	0
	0	0	0	22.87	3688308	48.053	20.18	389109	0.048	0	0	0	0	0	0	54.52	42118500	0.102	34.81	131541	0
Average		0.00E+00	0.000		3.62E+05	47.498		3.92E+05	0.049		0.00E+00	0.000		0.00E+00	0.000		4.25E+07	0.103		1.54E+05	0.000
Standard Deviation		0.00E+00	0.000		5.90E+04	0.775		4.50E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		4.83E+05	0.001		1.06E+04	0.000
%RSD		ERR	ERR		1.53	1.53		1.17	1.17		ERR	ERR		ERR	ERR		1.14	0.97		5.88	ERR

Sample I.D. Number 93 - 617

93-617 ppm	Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
	Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
	0	0	0	22.87	3736906	48.094	20.18	397790	0.048	0	0	0	0	0	0	54.2	43415232	0.103	34.81	146294	0
	0	0	0	22.87	3623702	48.263	20.35	391281	0.048	0	0	0	0	0	0	54.52	42096048	0.102	34.81	85902	0
	0	0	0	22.87	3554018	48.891	20.08	380334	0.048	0	0	0	0	0	0	54.52	42785458	0.103	34.77	136829	0
Average		0.00E+00	0.000		3.60E+05	47.359		3.83E+05	0.048		0.00E+00	0.000		0.00E+00	0.000		4.24E+07	0.103		1.24E+05	0.000
Standard Deviation		0.00E+00	0.000		1.15E+05	1.515		3.86E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		3.47E+05	0.001		3.32E+04	0.000
%RSD		ERR	ERR		3.20	3.20		1.01	1.19		ERR	ERR		ERR	ERR		0.82	0.56		26.89	ERR

Sample I.D. Number 93 - 618

Sample Name	Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)					
	Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-618 ppm	0	0	0	22.87	1061874	22.093	20.18	172573	0.022	0	0	0	0	0	0	54.52	42718529	0.103	34.81	122371	0
	0	0	0	22.87	1629939	20.08	20.18	310454	0.039	0	0	0	0	0	0	54.2	42038704	0.104	34.89	136739	0
	0	0	0	22.87	1640687	20.34	20.18	187822	0.021	0	0	0	0	0	0	54.52	42909518	0.103	34.77	142348	0
Average		0.00E+00	0.000		1.58E+05	20.798		2.18E+05	0.027		0.00E+00	0.000		0.00E+00	0.000		4.28E+07	0.103		1.34E+05	0.000
Standard Deviation		0.00E+00	0.000		8.57E+04	1.125		8.22E+04	0.010		0.00E+00	0.000		0.00E+00	0.000		2.23E+05	0.001		1.06E+04	0.000
%RSD		ERR	ERR		5.41	5.41		37.76	37.01		ERR	ERR		ERR	ERR		0.52	0.56		7.89	ERR

Sample I.D. Number 93 - 619

Channel "A" (ppm)			Channel "B" (%)						Channel "C" (%)						Channel "D" (%)						
Methane			Carbon Dio			Carbon Dio			Nitrous Ox			Hydrogen			Carbon Mo			Hydrogen			
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	
93-619 ppm	0	0	0	22.87	1500348	18.711	20.18	159093	0.02	0	0	0	0	0	0	54.2	43095184	0.104	34.81	104588	0
	0	0	0	22.87	1418184	18.805	20.18	147404	0.019	0	0	0	0	0	0	54.52	42979598	0.104	34.81	158000	0
	0	0	0	22.87	1404213	18.448	20.18	148334	0.018	0	0	0	0	0	0	54.52	43276508	0.105	34.81	143899	0
Average	0.00E+00	0.000		1.44E+05	18.921		1.52E+05	0.019		0.00E+00	0.000		0.00E+00	0.000		4.31E+07	0.104		1.65E+05	0.000	
Standard Deviation	0.00E+00	0.000		5.24E+04	0.688		5.43E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		1.54E+05	0.001		2.65E+04	0.000	
%RSD	ERR	ERR		3.64	3.64		4.24	2.99		ERR	ERR		ERR	ERR		0.36	0.55		16.04	ERR	

B-112

Sample I.D. Number: 93 - 620

Channel A* (ppm)	Channel B* (%)			Channel C* (%)			Channel D* (%)		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
Methane									
Carbon Dioxide									
Carbon Dioxide									
Nitrous Oxide									
Hydrogen									
Carbon Monoxide									
Hydrogen									
93-620 ppm	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
Average	0.00E+00	0.000	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number: 93 - 621

Channel A* (ppm)	Channel B* (%)			Channel C* (%)			Channel D* (%)		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
Methane									
Carbon Dioxide									
Carbon Dioxide									
Nitrous Oxide									
Hydrogen									
Carbon Monoxide									
Hydrogen									
93-621 ppm	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
Average	0.00E+00	0.000	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number: 93 - 622

Channel A* (ppm)	Channel B* (%)			Channel C* (%)			Channel D* (%)		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
Methane									
Carbon Dioxide									
Carbon Dioxide									
Nitrous Oxide									
Hydrogen									
Carbon Monoxide									
Hydrogen									
93-622 ppm	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
Average	0.00E+00	0.000	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number: 93 - 623

Channel A* (ppm)	Channel B* (%)			Channel C* (%)			Channel D* (%)		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
Methane									
Carbon Dioxide									
Carbon Dioxide									
Nitrous Oxide									
Hydrogen									
Carbon Monoxide									
Hydrogen									
93-623 ppm	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
Average	0.00E+00	0.000	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

Sample I.D. Number: 93 - 624

Channel A* (ppm)	Channel B* (%)			Channel C* (%)			Channel D* (%)		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
Methane									
Carbon Dioxide									
Carbon Dioxide									
Nitrous Oxide									
Hydrogen									
Carbon Monoxide									
Hydrogen									
93-624 ppm	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
Average	0.00E+00	0.000	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.000	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR

B-113

MHC-SD-WM-TRP-212, Rev. 0

Sample I.D. Number: 93 - 625

Sample ID	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)												
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen						
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT				
93-625.ppt	0	0	0	0	0	0	20.32	1358644	0.171	21	0	0	0	0	0	0	50.62	16366434	0.047	34.73	0	0
	0	0	0	0	0	0	20.32	1370681	0.172	21	0	0	0	0	0	0	50.62	16003468	0.045	34.70	84.057	0
	0	0	0	0	0	0	20.32	1358201	0.171	21	0	0	0	0	0	0	50.62	16276920	0.046	34.77	61337	0
Average		0.00E+00	0.000		0.00E+00	0.000		1.36E+06	0.171		0.00E+00	0.000		0.00E+00	0.000		1.92E+07	0.046		3.53E+04	0.000	
Standard Deviation		0.00E+00	0.000		0.00E+00	0.000		7.82E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		2.47E+05	0.001		3.06E+04	0.000	
%RSD		ERR	ERR		ERR	ERR		0.57	0.34		ERR	ERR		ERR	ERR		1.29	2.17		85.73	ERR	

Sample I.D. Number: 93 - 626

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)											
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-626.ppt	0	0	0	0	0	0	20.32	1228630	0.154	21	0	0	0	0	0	50.52	20611672	0.004	34.73	62712	0
	0	0	0	0	0	0	20.32	1210822	0.152	21	0	0	0	0	0	50.52	20530394	0.004	34.77	65392	0
	0	0	0	0	0	0	20.32	1214030	0.153	21	0	0	0	0	0	50.52	20915442	0.002	34.77	66628	0
Average		0.00E+00	0.000		0.00E+00	0.000		1.22E+06	0.153		0.00E+00	0.000		0.00E+00	0.000		2.64E+07	0.063		5.82E+04	0.000
Standard Deviation		0.00E+00	0.000		0.00E+00	0.000		8.26E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		3.81E+05	0.001		7.38E+03	0.000
%RSD		ERR	ERR		ERR	ERR		0.68	0.65		ERR	ERR		ERR	ERR		1.44	1.82		12.68	ERR

Sample I.D. Number: 93 - 627

Channel "A" (ppm)	Channel "B" (%)						Channel "C" (%)						Channel "D" (%)								
	Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-627.ppt	0	0	0	0	0	0	20.32	1419185	0.178	21	0	0	0	0	0	60.62	27529920	0.068	94.77	97954	0
	0	0	0	0	0	0	20.32	1453062	0.183	21	0	0	0	0	0	60.62	27081640	0.065	94.77	112373	0
	0	0	0	0	0	0	20.32	1456794	0.183	21	0	0	0	0	0	60.62	27144658	0.065	94.77	92273	0
Average	0.00E+00	0.000	0.000	0.00E+00	0.000	0.000	1.44E+06	0.181	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000	2.73E+07	0.065	1.01E+05	0.000	0.000	0.000
Standard Deviation	0.00E+00	0.000	0.000	0.00E+00	0.000	0.000	2.07E+04	0.003	0.00E+00	0.000	0.00E+00	0.000	0.00E+00	0.000	0.000	2.41E+05	0.001	1.04E+04	0.000	0.000	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	1.43	1.59	ERR	ERR	ERR	ERR	ERR	ERR	ERR	0.88	0.88	10.29	ERR	ERR	ERR

Sample I.D. Number: 93 - 628

Sample Name	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)											
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-628.prn	0	0	0	0	0	0	20.32	1076413	0.135	21	0	0	0	0	0	50.52	36711784	0.089	34.77	115687	0
	0	0	0	0	0	0	20.32	1071256	0.132	21	0	0	0	0	0	50.52	36711784	0.089	34.77	115687	0
	0	0	0	0	0	0	20.32	1068884	0.134	21	0	0	0	0	0	50.52	36628448	0.089	34.77	127321	0
Average		0.00E+00	0.000		0.00E+00	0.000		1.07E+06	0.135		0.00E+00	0.000		0.00E+00	0.000		3.68E+07	0.089		1.21E+05	0.000
Standard Deviation		0.00E+00	0.000		0.00E+00	0.000		3.81E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		8.11E+04	0.001		9.64E+03	0.000
%RSD		ERR	ERR		ERR	ERR		0.35	0.43		ERR	ERR		ERR	ERR		0.22	0.80		8.00	ERR

Sample I.D. Number: 93 - 629

	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)											
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-629.ppt	0	0	0	0	0	0	20.4	129449C	0.155	21	0	0	0	0	0	60.52	34356232	0.007	34.01	106955	0
	0	0	0	0	0	0	20.4	1294711C	0.163	21	0	0	0	0	0	60.52	33589600C	0.002	34.77	149273	0
	0	0	0	0	0	0	20.4	1300180C	0.164	21	0	0	0	0	0	60.52	33560162	0.001	34.77	143047	0
Average		0.00E+00	0.000		0.00E+00	0.000		1.29E+06	0.162		0.00E+00	0.000		0.00E+00	0.000		3.39E+07	0.082		1.63E+05	0.000
Standard Deviation		0.00E+00	0.000		0.00E+00	0.000		2.15E+04	0.003		0.00E+00	0.000		0.00E+00	0.000		4.05E+05	0.001		1.23E+04	0.000
%RSD		ERR	ERR		ERR	ERR		1.67	1.63		ERR	ERR		ERR	ERR		1.19	1.22		8.07	ERR

B-114

WHC-SD-WM-TRP-212, Rev. 0

Sample ID Number: 93 - 630

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-630 ppm	0	0	0	0	0	20.4	810412	0.102	21	0	0
	0	0	0	0	0	20.4	813806	0.102	21	0	0
	0	0	0	0	0	20.4	808224	0.101	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	8.13E+05	0.102	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	6.14E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	0.76	0.98	ERR	ERR	ERR	ERR

Sample ID Number: 93 - 631

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-631 ppm	0	0	0	0	0	20.4	801782	0.123	21	0	0
	0	0	0	0	0	20.4	1037382	0.13	21	0	0
	0	0	0	0	0	20.4	1058174	0.133	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	1.03E+06	0.129	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	3.87E+04	0.005	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	3.77	3.99	ERR	ERR	ERR	ERR

Sample ID Number: 93 - 632

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-632 ppm	0	0	0	0	0	20.4	870016	0.06	21	0	0
	0	0	0	0	0	20.4	838851	0.063	21	0	0
	0	0	0	0	0	20.4	804606	0.064	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	6.65E+05	0.064	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	5.98E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	0.90	0.69	ERR	ERR	ERR	ERR

Sample ID Number: 93 - 633

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-633 ppm	0	0	0	0	0	20.4	732192	0.092	21	0	0
	0	0	0	0	0	20.4	728541	0.091	21	0	0
	0	0	0	0	0	20.4	722616	0.09	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	7.27E+05	0.091	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	4.81E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	0.66	0.63	ERR	ERR	ERR	ERR

Sample ID Number: 93 - 634

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-634 ppm	0	0	0	0	0	20.4	544134	0.068	21	0	0
	0	0	0	0	0	20.4	535886	0.067	21	0	0
	0	0	0	0	0	20.4	537264	0.068	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	5.39E+05	0.068	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	4.48E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	0.82	0.85	ERR	ERR	ERR	ERR

WHC-SD-MM-TRP-212, Rev. 0

Sample I.D. Number 93 - 635

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-635 ppm	0	0	0	0	0	20.4	514080	0.001	21	0	0
	0	0	0	0	0	20.4	507350	0.004	21	0	0
	0	0	0	0	0	20.4	509221	0.004	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	5.10E+05	0.064	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	3.47E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	0.68	0.90	ERR	ERR	0.23	0.56

Sample I.D. Number 93 - 636

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-636 ppm	0	0	0	0	0	20.4	322377	0.041	21	0	0
	0	0	0	0	0	20.4	314172	0.036	21	0	0
	0	0	0	0	0	20.4	305581	0.038	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	3.15E+05	0.040	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	6.94E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	2.20	2.91	ERR	ERR	0.40	0.57

Sample I.D. Number 93 - 637

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-637 ppm	0	0	0	0	0	20.4	219070	0.027	21	0	0
	0	0	0	0	0	20.32	207667	0.026	21	0	0
	0	0	0	0	0	20.32	206184	0.025	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	2.09E+05	0.026	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	2.79E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	1.33	2.19	ERR	ERR	0.25	0.00

Sample I.D. Number 93 - 638

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-638 ppm	0	0	0	0	0	20.32	169461	0.021	21	0	0
	0	0	0	0	0	20.32	155394	0.02	21	0	0
	0	0	0	0	0	20.32	157233	0.02	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	1.61E+05	0.020	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	6.74E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	4.19	2.84	ERR	ERR	0.43	0.55

Sample I.D. Number 93 - 639

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-639 ppm	0	0	0	0	0	20.32	423397	0.053	21	0	0
	0	0	0	0	0	20.32	412718	0.052	21	0	0
	0	0	0	0	0	20.32	415641	0.051	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	4.17E+05	0.052	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	5.44E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	1.30	1.10	ERR	ERR	0.37	0.00

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WHC-SD-WM-TRP-212, Rev. 0

Sample I.D Number: 93 - 640

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-640.prn	0	0	0	0	0	20.32	574401	0.072	21	0	0
	0	0	0	0	0	20.32	564202	0.07	21	0	0
	0	0	0	0	0	20.32	563514	0.071	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	5.68E+05	0.071	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	6.03E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	ERR	ERR	ERR	ERR	1.06	0.81	ERR	ERR	ERR	ERR	ERR

Sample I.D Number: 93 - 641

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-641.prn	0	0	0	0	0	20.32	1263644	0.18	21	0	0
	0	0	0	0	0	20.32	1272572	0.18	21	0	0
	0	0	0	0	0	20.32	1271643	0.18	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	1.28E+06	0.160	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	6.65E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	ERR	ERR	ERR	ERR	0.52	0.35	ERR	ERR	0.44	1.95	ERR

Sample I.D Number: 93 - 642

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-642.prn	0	0	0	0	0	20.32	1317372	0.186	21	0	0
	0	0	0	0	0	20.32	1308241	0.184	21	0	0
	0	0	0	0	0	20.32	1308822	0.185	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	1.31E+06	0.165	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	5.81E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	ERR	ERR	ERR	ERR	0.44	0.61	ERR	ERR	0.49	0.00	ERR

Sample I.D Number: 93 - 643

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-643.prn	0	0	0	0	0	20.32	1562872	0.197	21	0	0
	0	0	0	0	0	20.32	1652976	0.195	21	0	0
	0	0	0	0	0	20.32	1553334	0.195	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	1.56E+06	0.196	0.00E+00	0.000	0.00E+00	0.000	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	6.20E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.000
%RSD	ERR	ERR	ERR	ERR	0.40	0.59	ERR	ERR	0.78	0.00	ERR

Sample I.D Number: 93 - 644

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-644.prn	0	0	0	0	0	20.32	1368002	0.174	21	0	0
	0	0	0	0	0	20.32	1362664	0.174	21	0	0
	0	0	0	0	0	20.32	1374162	0.173	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	1.38E+06	0.174	0.00E+00	0.000	6.87E+02	0.000	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	7.02E+03	0.001	0.00E+00	0.000	1.19E+03	0.000	0.000
%RSD	ERR	ERR	ERR	ERR	0.51	0.23	ERR	ERR	173.21	0.63	0.82

Sample I.D. Number 93 - 645

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-645.ppm	0	0	0	0	0	20.32	1458072	0.183	21	0	0
	0	0	0	0	0	20.32	1458463	0.183	21	0	0
	0	0	0	0	0	20.32	1458502	0.183	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	1.46E+06	0.183	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	1.74E+03	0.000	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	0.12	0.00	ERR	ERR	0.92	0.76

Sample I.D. Number 93 - 646

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-646.ppm	0	0	0	0	0	20.32	1097102	0.139	21	0	0
	0	0	0	0	0	20.32	1083356	0.139	21	0	0
	0	0	0	0	0	20.32	1084292	0.139	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	1.09E+06	0.137	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	7.68E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	0.71	0.84	ERR	ERR	0.67	0.60

Sample I.D. Number 93 - 647

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-647.ppm	0	0	0	0	0	20.32	1317834	0.189	21	0	0
	0	0	0	0	0	20.32	1307401	0.184	21	0	0
	0	0	0	0	0	20.32	1317800	0.189	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	1.31E+06	0.165	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	5.96E+02	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	0.45	0.70	ERR	ERR	1.50	1.78

Sample I.D. Number 92 - 648

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-648.ppm	0	0	0	0	0	20.32	831347	0.104	21	0	0
	0	0	0	0	0	20.32	818911	0.103	21	0	0
	0	0	0	0	0	20.32	822142	0.102	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	8.24E+05	0.103	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	6.45E+03	0.001	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	0.78	0.56	ERR	ERR	0.35	0.00

Sample I.D. Number 93 - 649

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-649.ppm	0	0	0	0	0	20.32	1070484	0.135	21	0	0
	0	0	0	0	0	20.32	1073235	0.131	21	0	0
	0	0	0	0	0	20.32	1071874	0.131	21	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	0.000	1.07E+06	0.135	0.00E+00	0.000	0.00E+00	0.000
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	0.000	1.39E+03	0.000	0.00E+00	0.000	0.00E+00	0.000
%RSD	ERR	ERR	ERR	ERR	ERR	0.13	0.00	ERR	ERR	0.51	0.64

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MHC-SD-MM-TRP-212, Rev. 0

Sample I.D. Number: 93 - 650

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-650.prn	0	0	0	0	0	20.32	007235	0.004	0	0	0
	0	0	0	0	0	20.32	056267	0.083	0	0	0
	0	0	0	0	0	20.32	055774	0.042	0	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	6.60E+05	0.083	0.00E+00	0.000	0.00E+00	0.000	4.36E+07
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	6.02E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	3.59E+05
%RSD	ERR	ERR	ERR	ERR	0.91	1.20	ERR	ERR	ERR	ERR	0.82

Sample I.D. Number: 93 - 651

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-651.prn	0	0	0	0	0	20.32	076920	0.11	0	0	0
	0	0	0	0	0	20.32	071037	0.11	0	0	0
	0	0	0	0	0	20.32	070215	0.109	0	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	8.73E+05	0.110	0.00E+00	0.000	0.00E+00	0.000	3.89E+07
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	2.90E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	1.92E+05
%RSD	ERR	ERR	ERR	ERR	0.32	0.53	ERR	ERR	ERR	ERR	0.49

Sample I.D. Number: 93 - 652

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-652.prn	0	0	0	0	0	20.32	559026	0.07	0	0	0
	0	0	0	0	0	20.32	559502	0.07	0	0	0
	0	0	0	0	0	20.32	049412	0.069	0	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	5.55E+05	0.070	0.00E+00	0.000	0.00E+00	0.000	4.36E+07
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	4.98E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	4.18E+05
%RSD	ERR	ERR	ERR	ERR	0.90	0.82	ERR	ERR	ERR	ERR	0.96

Sample I.D. Number: 93 - 653

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-653.prn	0	0	0	0	0	20.32	061020	0.102	0	0	0
	0	0	0	0	0	20.32	050722	0.100	0	0	0
	0	0	0	0	0	20.32	057330	0.100	0	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	8.59E+05	0.100	0.00E+00	0.000	0.00E+00	0.000	3.78E+07
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	2.35E+03	0.000	0.00E+00	0.000	0.00E+00	0.000	1.04E+05
%RSD	ERR	ERR	ERR	ERR	0.27	0.00	ERR	ERR	ERR	ERR	0.27

Sample I.D. Number: 93 - 654

Channel A* (ppm)			Channel B* (%)			Channel C* (%)			Channel D* (%)		
Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen		
RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-654.prn	0	0	0	0	0	20.32	489700	0.081	0	0	0
	0	0	0	0	0	20.32	489700	0.08	0	0	0
	0	0	0	0	0	20.32	478310	0.08	0	0	0
Average	0.00E+00	0.000	0.00E+00	0.000	4.83E+05	0.080	0.00E+00	0.000	0.00E+00	0.000	4.34E+07
Standard Deviation	0.00E+00	0.000	0.00E+00	0.000	5.44E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	4.18E+05
%RSD	ERR	ERR	ERR	ERR	1.12	0.96	ERR	ERR	ERR	ERR	0.96

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Sample I.D. Number 93 - 655

Sample ID: Number	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)											
	Methane			Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			Hydrogen								
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT						
93-655.ppm	0	0	0	0	0	0	20.32	534692	0.067	0	0	0	0	0	0	60.36	43296472	0.102	34.73	110268	0
	0	0	0	0	0	0	20.32	627802	0.068	0	0	0	0	0	0	60.36	43276268	0.102	34.77	157082	0
	0	0	0	0	0	0	20.32	626852	0.068	0	0	0	0	0	0	60.36	43323018	0.104	34.73	110243	0
Average		0.00E+00	0.000		0.00E+00	0.000		5.30E+05	0.066		0.00E+00	0.000		0.00E+00	0.000		4.28E+07	0.103		1.22E+05	0.000
Standard Deviation		0.00E+00	0.000		0.00E+00	0.000		4.21E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		4.95E+05	0.001		1.37E+04	0.000
%RSD		ERR	ERR		ERR	ERR		0.79	0.87		ERR	ERR		ERR	ERR		1.16	1.12		11.18	ERR

Sample I.D. Number 93 - 656

Sample Name	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)											
	Methane			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen					
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT			
93-656.ppm	0	0	0	0	0	0	20.32	431856	0.064	0	0	0	0	0	0	60.36	43234972	0.104	94.73	143105	0
	0	0	0	0	0	0	20.32	4322634	0.053	0	0	0	0	0	0	60.36	43441392	0.104	94.77	196246	0
	0	0	0	0	0	0	20.32	4324362	0.053	0	0	0	0	0	0	60.36	43269392	0.103	94.77	0	0
Average	0.00E+00	0.000		0.00E+00	0.000		4.26E+05	0.053		0.00E+00	0.000		0.00E+00	0.000		4.32E+07	0.104		9.31E+04	0.000	
Standard Deviation	0.00E+00	0.000		0.00E+00	0.000		5.29E+03	0.001		0.00E+00	0.000		0.00E+00	0.000		2.21E+05	0.001		8.07E+04	0.000	
%RSD	ERR	ERR		ERR	ERR		1.24	1.08		ERR	ERR		ERR	ERR		0.51	0.56		86.68	ERR	

Sample I.D. Number 93 - 657

Channel "A" (ppm)	Channel "B" (%)						Channel "C" (%)						Channel "D" (%)								
	Methane			Carbon Dioxide			Carbon Dioxide			Nitrous Oxide			Hydrogen			Carbon Monoxide			Hydrogen		
	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-657.ppm	0	0	0	0	0	0	20.32	24.8876	0.031	C	0	0	0	0	0	60.36	42167844	0.101	24.77	165687	0
	0	0	0	0	0	0	20.32	239742	0.03	0	C	0	0	0	0	60.36	42045976	0.103	24.77	135681	0
	0	0	0	0	0	0	20.32	232414	0.028	C	0	0	0	0	0	60.36	42707168	0.103	24.77	143532	0
Average	0.00E+00		0.000	0.00E+00		0.000	2.39E+05		0.030	0.00E+00		0.000	0.00E+00		0.000	4.26E+07		0.102	1.45E+05		0.000
Standard Deviation	0.00E+00		0.000	0.00E+00		0.000	7.31E+03		0.001	0.00E+00		0.000	0.00E+00		0.000	4.04E+05		0.001	9.94E+03		0.000
%RSD	ERR		ERR	ERR		ERR	3.07		3.33	ERR		ERR	ERR		ERR	0.95		1.13	6.85		ERR

Sample I.D. Number 93 - 658

Sample Name	Channel "A" (ppm)			Channel "B" (%)			Channel "C" (%)			Channel "D" (%)						
				Carbon Dioxide			Nitrous Oxide			Carbon Monoxide			Hydrogen			
	Methane	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT	RT	AREA	AMT
93-658.ppm	0	0	0	0	0	0	20.31	103201	0.021	0	0	0	0	0	0	0
	0	0	0	0	0	0	20.31	154134	0.019	0	0	0	0	60.38	43949352	0.102
	0	0	0	0	0	0	20.31	155746	0.02	0	0	0	0	60.38	43017976	0.103
Average	0.00E+00	0.000	0.000	0.00E+00	0.000	0.000	1.58E+05	0.020	0.00E+00	0.000	0.00E+00	0.000	0.000	4.28E+07	0.103	1.35E+05
Standard Deviation	0.00E+00	0.000	0.000	0.00E+00	0.000	0.000	4.87E+03	0.001	0.00E+00	0.000	0.00E+00	0.000	0.000	3.67E+05	0.001	1.68E+04
%RSD	ERR	ERR	ERR	ERR	ERR	ERR	3.09	5.00	ERR	ERR	ERR	ERR	ERR	0.86	0.69	12.48

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APPENDIX C

MASS SPECTROMETER PROCEDURE: PNL-MA-299 ALO-284

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PNL TECHNICAL PROCEDURE

TITLE: PNL-ALO-284, (REPLACES 7-40.18 & HTA-4-34), QUANTITATIVE ANALYSIS OF GAS SAMPLES

1.0 APPLICABILITY

This procedure describes the mass spectrometer technique for the quantitative determination of atoms, molecules or isotopes in gas mixtures. The method is applicable to gases that are permanent gases (noncondensable at room temperature). Condensable gases may adsorb to the walls of the vacuum lines and chambers. Some reactive gases which may react with or chemisorb to the vacuum walls are very difficult to analyze.

2.0 DEFINITIONS

None.

3.0 RESPONSIBLE STAFF

Cognizant Scientist
Analyst

4.0 PROCEDURE**4.1 Equipment and Materials**

- Gas mass spectrometer.
- Mass spectrometer inlet.
- High vacuum/gas rack.
- Capacitance manometer.

Calibration gases pure and mixtures. Natural occurring gases (xenon, krypton, etc.) for isotopic analyses. Many calibration mixtures can be purchased, other mixtures which are not available commercially or can not be purchased in a reasonable time frame must be prepared on a gas mixing rack. For general work pure gases of the best quality available are usually used. Trace level impurities in gases used for standards can be corrected for by obtaining calibration data on the impurity gases.

NOTE: Anyone operating this type of equipment should be fully trained prior to any attempt to analyze samples.

Author	Date	Project Mgr.	Date	QAD Representative	Date
MW Goheen		N/A		LJ Ethridge	
Technical Reviewer	Date	Line Mgr.	Date	Other	Date
N/A		JJ McCowan		All original signatures on file	
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PNL TECHNICAL PROCEDURE

4.2 Performance Check and/or Calibration

A performance check should be made to ensure that the instrument is responding properly for the particular sample to be analyzed. Usually a standard, working standard or pure gas is used for this check. The frequency depends on the particular instrument and type of sample to be analyzed. The timing could be monthly or daily as determined by the Cognizant Scientist.

CValibration is done when a major change occurs, i.e., (filament replacement--refocus, etc.). For mixture analysis, calibraton is checked whenever the measured inlet pressure differs by more than 20 percent from the total of the analyzed partial pressures. Differences can be from condensible constituents such as water in the sample mixtures. Calibration factors for seldom encountered gases are run as determined by the Cognizant Scientist.

The Analyst shall perform the following steps unless otherwise specified.

- 4.2.1 Install a cylinder or bulb of the calibration gas on the vacuum/gas rack of the mass spectrometer.
- 4.2.2 Evacuate the connecting lines between the bulb/cylinder and all inlet lines.
- 4.2.3 Close the valves to the vacuum pumps and obtain a sample sized for the particular calibration. Record the reading of the manometer in the mass spectrometer diary book or log books.
- 4.2.4 Introduce the sample into the mass spectrometer.
- 4.2.5 On a timing sequence after the inlet valve is opened, scan or peak step through the mass spectra of intrest.
- 4.2.6 Identify and measure the recorded peaks. make corrections for interferences from background, moleculars fragments and multiple ionizations.
- 4.2.7 Calculate sensitivity/calibration factors from the measured isotopes, atoms, molecular ions, or ion fragments. Record the factors in the mass spectrometer operating guide book or in the appropriate log book.

4.3 Sample Analysis

The Analyst shall perform the following steps unless otherwise specified.

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PNL TECHNICAL PROCEDURE

- 4.3.1 Attach the cylinder/bulb containing the sample gas to the vacuum rack.
- 4.3.2 Evacuate the connecting lines containing the sample gas to the vacuum rack.
- 4.3.3 Close the valves to the vacuum pumps and obtain a sample sized for the particular calibration.
- 4.3.4 Introduce the sample into the ion source of the mass spectrometer.
- 4.3.5 On a timing sequence after the inlet valve is opened, scan or peak step through the mass spectra of interest.
- 4.3.6 Identify and measure the mass peaks. Make corrections for interferences from background, molecular fragments and multiple ionizations.

4.4 Calculations

Calculate the amount of each gas or isotope of interest. For gas mixture analysis, normalize the gases present in the mixture to volume or mole percent. At present this calculation is done by hand. The calculation could be done on a control and data reduction computer.

4.5 Records

Records will be maintained and controlled so as to conform with the requirements of MCS-033. Laboratory Record Books and Analytical Report forms provide a mechanism for control of most records. ~~Laboratory Record Books will be used in accordance with PAP-1704.~~ File a copy of the report and also file the recorder chart of computer print out (if any).

4.6 Procedure Qualification

None required. This procedure is considered self-qualifying due to its dependence on analytical standards. Additionally, it is considered qualified because it has independent technical review.

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APPENDIX D

ALTERNATE ANALYTICAL METHOD FOR AMMONIA AND WATER VAPOR

ALO 93-09260- 67

Pacific Northwest Laboratories
Battelle Boulevard
P.O. Box 999
Richland, Washington 99352
Telephone (509)

Mike Britton
S4-25

July 26, 1993

Gas Analysis

As you are aware, water and ammonia are difficult to measure in conventional sample cylinders such as you are using. The main problem is that both compounds adsorb on the container wall to some extent, causing a variety of memory effects. Milt Goheen and I always recommend that these compounds be monitored by on-line instruments which are available at modest costs. I have found that even these can take prolonged purging to come to a stable reading.

I have attempted to measure ammonia and water in a set of your samples by flushing the sample cylinders out and trapping the analytes in acid (ammonia) or desiccant (water). By putting several volumes of gas through the cylinders I removed most of the weakly adsorbed analyte. Depending on the treatment history of the cylinders, analytes from previous sampling runs may have been present and removed as well.

Another related error source is that if you flush sample gas through the cylinder during the sampling process, by the adsorption process the inner cylinder wall can act as a collector. This will result in more total analyte in the cylinder than in a comparable volume of sample gas. I observed this when I passed room air through one of your cylinders for several minutes, then analyzed the contents for water. The result was that the sample was 140% of the true value.

Listed here are the results of my analysis of the sample set. These are regarded as experimental and were not done to any QA level. By the nature of the process, only one compound can be measured on each cylinder.

#	<u>v% water</u>	<u>v% ammonia</u>
93-040		lost
93-041		0.0016
93-042	1.5	
93-043		<0.001
93-044	<0.1	
93-045	1.3	
93-046	0.8	
93-047	<0.1	

R. F. Keough 7/26/93
RF Keough

M. Goheen
Reviewer
7-26-93

APPENDIX E

SAMPLE LOG SHEETS

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 1

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-001	1	C-1	6/23/93	6	① 2	3.5	500	20	F1	in out	4% H ₂	
93-002	3	C-1	6-23-93	6	① 2	4	500	20	F1	in out	4% H ₂	
93-003	2	C1	6-23-93	6	① 2	1.5	500	20	F1	in out	4% H ₂	
93-004	4	C1	6-23-93	6	① 2	6.75	250	20	F1	in out	4% H ₂	
93-005	5	C1	6-23-93	6	① 2	4	500	20	F1	in out	0.5% CO	
93-006	6	C1	6-23-93	6	① 2	4	500	20	F1	in out	2.0% O ₂	
93-007	9	C1	6-23-93	6	① 2	4	500	20	F1	in out	0.5% CH ₄	
93-008	8	C1	6-24-93	6	① 2	4	500	20	F1	in out	4.0% N ₂ O	
93-009	7	F1	6-24-93	6	① 2	4	500	20	F1	in out	100% N ₂ O	
93-010	14	1	6/29/93	14	① 2	4	500	21	N1	in (out)	< 0.4% H ₂	inlet
93-011	16	1	6/29/93	14	① 2	3	500	21	N1	(in) out	20.4% H ₂	inlet, sitting on GSC with loose during sampling.
					1 2					in out		
					1 2					in out		
93-012	12	4	6/30/93	16	① 2	4	500	19	N1	in (out)	20.6% H ₂ , 40.6% N ₂	
93-013	15	4	6/30/93	16	① 2	5	500	19	N1	(in) out	0.6% H ₂ , 0.3% O ₂	
93-014	10	5	6/30/93	17	① 2	5	275	21	4	in (out)	H ₂ N ₂ O	
93-015	12	5	6/30/93	17	① 2	5	275	22	4	(in) out	H ₂ N ₂ O	
					1 2					in out		
93-016	18	6	7/6/93	19	① 2	5	250	21	4	in (out)	2.1% H ₂ , 2.2% N ₂	
93-017	11	6	7/6/93	19	① 2	5	250	21	4	(in) out	" "	
93-018	17	7	7/7/93	20	① 2	1.5	275	21	4	in (out)		
93-019	6	7	7/7/93	20	① 2	1.5	275	21	4	in (out)		
93-020	1	7	7/7/93	20	① 2	3.6	275	21	4	(in) out		
93-021	8	8	7/7/93	21	① 2	2.2	275	23	5	in (out)		
93-022	9	8	7/7/93	21	① 2	2.2	275	23	5	(in) out		
93-023	7	8	7/8/93	21	① 2	1005	275	22	5	in (out)		
93-024	2	8	7/8/93	21	① 2	1005	275	22	5	(in) out		

* First 9 samples C-1 calibration samples
 Sample 93-010 Test Run #1

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 2

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (lscm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-25	5	9	7/8/93	22	Q 2	240	275	20	1	in	N2: 0.1% H2: 0.1% H2O: 0.1% CO: 0.1% CO2: 0.1% N2O: 0.1%	but regulator was broken
93-26	3	9	7/8/93	22	Q 2	240	275	20	1	out	19% H2, 0.5% O2	off
93-27	10	10	7/9/93	23	A 2	955	275	21	7	in	19% H2, 0.1% CH4, 0.1% N2O	
93-28	16	10	7/9/93	23	Q 2	955	275	21	7	out	19% H2, 0.1% CH4, 0.1% N2O	
93-29	15	11	7/9/93	23	Q 2	1470	275	21	3	in	19% H2, 0.1% CH4, 0.1% N2O	
93-30	14	11	7/9/93	23	Q 2	1470	275	21	3	out	19% H2, 0.1% CH4, 0.1% N2O	
93-31	12	12	7/2/93	24	Q 2	1470	275	21	2	in	19% H2, 0.1% CH4, 0.1% N2O	
93-32	4	12	7/2/93	24	Q 2	1470	275	21	2	out	19% H2, 0.1% CH4, 0.1% N2O	
93-33	13	12	7/12/93	24	Q 2	170	275	21	2	in	19% H2, 0.1% CH4, 0.1% N2O	
93-34	7	13	7/15/93	26	Q 2	170	275	21	2	out	19% H2, 0.1% CH4, 0.1% N2O	
93-35	6	13	7/15/93	26	Q 2	170	275	21	2	in	19% H2, 0.1% CH4, 0.1% N2O	
93-36	2	13	7/15/93	26	Q 2	170	275	21	2	out	19% H2, 0.1% CH4, 0.1% N2O	
93-37	8	14	7/14/93	28	Q 2	180	275	19	8	in	19% H2, 0.1% CH4, 0.1% N2O	
93-38	11	14	7/14/93	28	Q 2	180	275	19	8	out	19% H2, 0.1% CH4, 0.1% N2O	
93-39	9	14	7/14/93	28	Q 2	180	275	19	8	in	19% H2, 0.1% CH4, 0.1% N2O	
93-40	15	15	7/16/93	30	Q 2	475	900	17	1	in	19% H2, 0.1% CH4, 0.1% N2O	
93-41	1	15	7/16/93	30	Q 2	475	900	17	1	out	19% H2, 0.1% CH4, 0.1% N2O	
93-42	14	16	7/20/93	70	Q 2	60	700	17	7	in	19% H2, 0.1% CH4, 0.1% N2O	
93-43	10	16	7/20/93	70	Q 2	60	700	17	7	out	19% H2, 0.1% CH4, 0.1% N2O	
93-44	6	16	7/20/93	70	Q 2	60	700	17	7	in	19% H2, 0.1% CH4, 0.1% N2O	
93-45	3	17	7/20/93	70	Q 2	60	700	17	7	out	19% H2, 0.1% CH4, 0.1% N2O	
93-46	18	17	7/20/93	70	Q 2	60	700	17	7	in	19% H2, 0.1% CH4, 0.1% N2O	
93-47	5	17	7/20/93	70	Q 2	60	700	17	7	out	19% H2, 0.1% CH4, 0.1% N2O	
93-48	8	17	7/21/93	71	Q 2	60	700	17	7	in	19% H2, 0.1% CH4, 0.1% N2O	
93-49	13	18	7/21/93	73	Q 2	60	700	17	7	out	19% H2, 0.1% CH4, 0.1% N2O	
93-50	8	18	7/21/93	73	Q 2	60	700	17	7	in	19% H2, 0.1% CH4, 0.1% N2O	

C-3

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HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 3

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-057	12	18	12/21/93	73	1 (2)	120	50	21	6	in out	< 1% H ₂ , < 1% CO, < 40% N ₂ O	
93-052	7	19	12/21/93	73	1 (2)	60	700	18	1	in out	< 1% H ₂ , < 1% H ₂ O, < 25% O ₂	
93-053	6	19	12/21/93	73	1 (2)	30	400	19	1	in out	< 1% H ₂ , < 1% H ₂ O, < 25% O ₂	
93-054	11	19	12/21/93	73	1 (2)	90	400	20	1	in out	< 1% H ₂ , < 1% H ₂ O, < 25% O ₂	
93-055	4	19	12/21/93	73	1 (2)	90	400	20	1	in out	< 1% H ₂ , < 0.5% O ₂	
93-056	2	21	12/21/93	31	1 (2)	60	275	19	7	in out	< 1% H ₂ , < 0.1% CH ₄ , < 1% H ₂ O, < 40% N ₂ O	
93-057	9	21	12/21/93	31	1 (2)	120	275	19	7	in out	< 1% H ₂ , < 0.1% CH ₄ , < 1% H ₂ O, < 40% N ₂ O	
93-058	12	21	12/21/93	31	1 (2)	120	275	19	7	in out	< 1% H ₂ , < 0.1% CH ₄ , < 40% N ₂ O	
93-059	24	22	12/21/93	74	1 (2)	110	650	21	5	in out	< 1% H ₂ , < 1% NH ₃ , < 2.5% H ₂ O, < 40% N ₂ O	
93-060	10	22	12/21/93	74	1 (2)	170	650	22	8	in out	< 1% H ₂ , < 1% NH ₃ , < 2.5% H ₂ O, < 40% N ₂ O	
93-061	15	22	12/21/93	74	1 (2)	170	650	22	5	in out	< 1% H ₂ , < 1% NH ₃ , < 40% N ₂ O	
93-062	5	23	12/21/93	32	1 (2)	45	275	22	3	in out	< 1% H ₂ , < 1% H ₂ O, < 10% N ₂ O	
93-063	1	23	12/21/93	32	1 (2)	105	275	22	3	in out	< 1% H ₂ , < 1% H ₂ O, < 10% N ₂ O	
93-064	16	23	12/21/93	32	1 (2)	105	275	22	3	in out	< 1% H ₂ , < 10% N ₂ O	
93-065	3	24	12/21/93	74	1 (2)	138	750	20	4	in out	< 1% H ₂ , < 1% H ₂ O, < 40% N ₂ O	
93-066	19	24	12/21/93	74	1 (2)	209	750	20	4	in out	< 1% H ₂ , < 1% H ₂ O, < 40% N ₂ O	
93-067	18	24	12/21/93	74	1 (2)	209	750	20	4	in out	< 1% H ₂ , < 40% N ₂ O	
93-068	20	25	12/21/93	75	1 (2)	124	750	21	2	in out	< 1% H ₂ , < 1% H ₂ O, < 1% N ₂ O	
93-069	22	25	12/21/93	75	1 (2)	205	750	21	2	in out	< 1% H ₂ , < 1% H ₂ O, < 1% N ₂ O	
93-070	21	25	12/21/93	75	1 (2)	205	750	21	2	in out	< 1% H ₂ , < 1% N ₂ O	
93-071	8	26	12/21/93	32	1 (2)	60	275	19	3	in out	< 1% H ₂ , < 1% H ₂ O, < 10% N ₂ O	
93-072	13	26	12/21/93	32	1 (2)	120	275	20	3	in out	< 1% H ₂ , < 1% H ₂ O, < 10% N ₂ O	
93-073	9	26	12/21/93	32	1 (2)	120	275	20	3	in out	< 1% H ₂ , < 40% N ₂ O	
93-074	11	27	12/21/93	75	1 (2)	60	750	20	5	in out	< 1% H ₂ , < 2.5% H ₂ O, < 40% N ₂ O	
93-075	17	27	12/21/93	75	1 (2)	120	750	21	5	in out	< 1% H ₂ , < 2.5% H ₂ O, < 40% N ₂ O	

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HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 4

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-076	12	27	9/22/93	75	1 (2)	120	750	21	5	in out	<1% H ₂ , <2.5% H ₂ , <40% H ₂ O	
93-077	4	28	9/22/93	75	1 (2)	60	888	22.2	5	in out	<1% H ₂ , <3.25% H ₂ , <40% H ₂ O	
93-078	6	28	9/22/93	75	1 (2)	120	888	22.7	5	in out	<1% H ₂ , <3.25% H ₂ , <40% H ₂ O	
93-079	2	28	9/22/93	78	1 (2)	120	888	22.7	5	in out	<1% H ₂ , <3.25% H ₂ , <40% H ₂ O	
93-080	7	28	9/22/93	78	1 (2)	120	888	22.7	5	in out	<1% H ₂ , <3.25% H ₂ , <40% H ₂ O	
93-081	32	30	9/22/93	78	1 (2)	60	750	21.0	2	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-082	31	30	9/22/93	78	1 (2)	130	750	21.0	2	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-083	33	30	9/22/93	78	1 (2)	130	750	21.0	2	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-084	35	31	9/22/93	79	1 (2)	60	750	21.4	1	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-085	23	31	9/22/93	79	1 (2)	120	750	22.1	1	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-086	25	31	9/22/93	79	1 (2)	120	750	22.1	1	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-087	34	29	9/28/93	53	1 (2)	120	25	18.7	6	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-088	24	29	9/28/93	53	1 (2)	120	25	18.7	6	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-089	28	33	9/28/93	33	1 (2)	75	875	19.2	1	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-090	11	33	9/28/93	34	1 (2)	120	275	19.1	1	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-091	26	33	9/28/93	34	1 (2)	120	275	19.1	1	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-092	30	32	9/28/93	79	1 (2)	150	50	19.3	6	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-093	29	32	9/28/93	79	1 (2)	220	50	19.4	6	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-094	29	33	9/28/93	79	1 (2)	220	50	19.4	6	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-095	34	34	9/28/93	34	1 (2)	60	275	19.8	8	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-096	5	34	9/28/93	34	1 (2)	120	275	20.3	8	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-097	4	34	9/28/93	34	1 (2)	120	275	20.3	8	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-098	17	35	9/28/93	79	1 (2)	60	750	22.2	4	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-099	6	35	9/28/93	50	1 (2)	120	750	22.8	4	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	
93-100	12	35	9/28/93	50	1 (2)	120	750	22.8	4	in out	<1% H ₂ , <1% H ₂ , <1% H ₂ O	

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 5

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-101	8	36	7/28/93	34	① 2	60	275	20.9	4	in (OUT)	<1% H ₂ , <1% H ₂ O, <40% N ₂ O	
93-102	10	36	7/28/93	34	① 2	120	275	21.6	4	in (OUT)	<1% H ₂ , <1% H ₂ O, <40% N ₂ O	
93-103	9	36	7/28/93	34	① 2	120	275	21.6	4	(in) out	<1% H ₂ , <40% N ₂ O	
93-104	1	37	7/28/93	80	① 2	60	650	22.8	8	in (OUT)	<1% H ₂ , <1% NH ₃ , <2.5% H ₂ O, <40% N ₂ O	
93-105	18	37	7/28/93	80	① 2	120	650	23.3	8	in (OUT)	<1% H ₂ , <1% NH ₃ , <2.5% H ₂ O, <40% N ₂ O	
93-106	13	37	7/28/93	80	① 2	120	650	23.3	8	(in) out	<1% H ₂ , <1% NH ₃ , <40% N ₂ O	
93-107	16	38	7/29/93	80	① 2	80	700	20.8	3	in (OUT)	<1% H ₂ , <1% H ₂ O, <10% N ₂ O	
93-108	21	38	7/29/93	80	① 2	140	700	21.0	3	in (OUT)	<1% H ₂ , <1% H ₂ O, <10% N ₂ O	
93-109	15	38	7/29/93	80	① 2	140	700	21.0	3	(in) out	<1% H ₂ , <10% N ₂ O	
93-110	3	39	7/29/93	35	① 2	70	275	18.8	2	in (OUT)	<1% H ₂ , <1% H ₂ O, <1% N ₂ O	
93-111	19	39	7/29/93	35	① 2	165	275	19.1	2	in (OUT)	<1% H ₂ , <1% H ₂ O, <1% N ₂ O	
93-112	14	39	7/29/93	35	① 2	165	275	19.1	2	(in) out	<1% H ₂ , <1% H ₂ O	
93-113	22	40	7/29/93	81	① 2	65	700	21.5	7	in (OUT)	<1% H ₂ , <0.1% CH ₄ , <1% H ₂ O, <40% N ₂ O	
93-114	7	40	7/29/93	81	① 2	155	700	21.8	7	in (OUT)	<1% H ₂ , <0.1% CH ₄ , <1% H ₂ O, <40% N ₂ O	
93-115	20	40	7/29/93	81	① 2	155	700	21.8	?	(in) out	<1% H ₂ , <0.1% CH ₄ , <40% N ₂ O	
93-116	35	41	7/29/93	81	① 2	60	750	22.1	4	in (OUT)	<1% H ₂ , <1% H ₂ O, <40% N ₂ O	
93-117	33	41	7/29/93	81	① 2	120	750	22.2	4	in (OUT)	<1% H ₂ , <1% H ₂ O, <40% N ₂ O	
93-118	31	41	7/29/93	81	① 2	120	750	22.2	4	(in) out	<1% H ₂ , <40% N ₂ O	
93-119	37	42	7/29/93	81	① 2	60	588	19.6	5	in (OUT)	<1% H ₂ , <3.25% H ₂ O, <40% N ₂ O	
93-120	32	42	7/29/93	81	① 2	120	588	19.9	5	in (OUT)	<1% H ₂ , <3.25% H ₂ O, <40% N ₂ O	
93-121	36	42	7/29/93	81	① 2	120	588	19.9	5	(in) out	<1% H ₂ , <3.25% H ₂ O, <40% N ₂ O	
93-122	34	43	7/30/93	86	① 2	60	650	20.0	3	in (OUT)	<1% H ₂ , <1% NH ₃ , <2.5% H ₂ O, <40% N ₂ O	
93-123	23	43	7/30/93	86	① 2	130	650	20.0	3	in (OUT)	<1% H ₂ , <1% NH ₃ , <2.5% H ₂ O, <40% N ₂ O	
93-124	24	43	7/30/93	86	① 2	130	650	20.0	3	(in) out	<1% H ₂ , <1% NH ₃ , <40% N ₂ O	
93-125	27	44	7/30/93	86	① 2	60	750	19.4	1	in (OUT)	<1% H ₂ , <1% H ₂ O, <0.25% CO	
93-126	29	44	7/30/93	86	① 2	120	750	19.6	1	in (OUT)	<1% H ₂ , <1% H ₂ O, <0.25% CO	
93-127	25	44	7/30/93	86	① 2	120	750	19.6	1	(in) out	<1% H ₂ , <0.5% CO	

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HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 6

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-128	25	45	8/2/93	86	1 ②	60	700	20.8	7	in out	<1% H ₂ , <0.1% CH ₄ , <1% H ₂ O, <4% N ₂ O	
93-129	26	45	8/2/93	86	1 ②	100	700	21.1	7	in out	<1% H ₂ , <0.1% CH ₄ , <1% H ₂ O, <4% N ₂ O	
93-130	30	45	8/2/93	86	1 ②	100	700	21.1	7	in out	<1% H ₂ , <0.1% CH ₄ , <4% N ₂ O	
93-131	6	46	8/2/93	35	① 2	150	275	19.4	5	in out	<1% H ₂ , <3.25% H ₂ O, <4% N ₂ O	
93-132	5	46	8/2/93	35	① 2	155	275	19.6	5	in out	<1% H ₂ , <3.25% H ₂ O, <4% N ₂ O	
93-133	4	46	8/2/93	35	① 2	155	275	19.6	5	in out	<1% H ₂ , <2.25% H ₂ O, <4% N ₂ O	
93-134	2	47	8/2/93	87	1 ②	60	700	21.2	3	in out	<1% H ₂ , <1% H ₂ O, <10% N ₂ O	
93-135	12	47	8/2/93	87	1 ②	120	700	21.6	3	in out	<1% H ₂ , <1% H ₂ O, <10% N ₂ O	
93-136	17	47	8/2/93	87	1 ②	120	700	21.6	3	in out	<1% H ₂ , <10% N ₂ O	
93-137	13	48	8/2/93	88	1 ②	60	750	21.2	2	in out	<1% H ₂ , <1% H ₂ O, <1% N ₂ O	
93-138	18	48	8/2/93	88	1 ②	120	750	21.6	2	in out	<1% H ₂ , <1% H ₂ O, <1% N ₂ O	
93-139	1	48	8/2/93	88	1 ②	120	750	21.6	2	in out	<1% H ₂ , <1% N ₂ O	
93-140	9	49	8/3/93	88	1 ②	1010	50	19.0	6	in out	<1% H ₂ , <1% H ₂ O, <0.1% CO, <0.1% CO ₂ , <4% N ₂ O	
93-141	10	49	8/3/93	88	1 ②	1070	50	19.2	6	in out	<1% H ₂ , <1% H ₂ O, <0.1% CO, <0.1% CO ₂ , <4% N ₂ O	
93-142	8	49	8/3/93	88	1 ②	1070	50	19.2	6	in out	<1% H ₂ , <1% CO, <4% N ₂ O	
93-143	3	50	8/3/93	90	1 ②	95	750	22.8	10	in out	<1% H ₂ , <1% H ₂ O, <0.01% CO, <0.01% CO ₂ , <4% N ₂ O	
93-144	15	50	8/3/93	90	1 ②	110	750	22.9	10	in out	<1% H ₂ , <1% H ₂ O, <0.01% CO, <0.01% CO ₂ , <4% N ₂ O	
93-145	14	50	8/3/93	90	1 ②	110	750	22.8	10	in out	<1% H ₂ , <0.01% CO, <4% N ₂ O	
93-146	16	N/A	8/4/93	91	1 ②	150	300	22.1	6	in out	<1% H ₂ , <1% H ₂ O, <0.1% CO, <0.1% CO ₂ , <4% N ₂ O	
93-147	7	N/A	8/4/93	91	1 ②	150	300	22.1	6	in out	<1% H ₂ , <1% H ₂ O, <4% N ₂ O	
93-148	20	N/A	8/5/93	91	1 ②	1105	300	19.9	6	in out	<1% H ₂ , <1% H ₂ O, <0.1% CO, <0.1% CO ₂ , <4% N ₂ O	
93-149	19	55	8/5/93	92	1 ②	60	888	23.2	6	in out	<1% H ₂ , <1% H ₂ O, <0.1% CO, <0.1% CO ₂ , <4% N ₂ O	
93-150	21	55	8/5/93	92	1 ②	60	888	23.2	6	in out	<1% H ₂ , <0.1% CO, <4% N ₂ O	
93-151	22	55	8/5/93	92	1 ②	75	888	23.2	6	in out	<1% H ₂ , <0.1% CO, <1% H ₂ O, <0.1% CO ₂ , <4% N ₂ O	
					1 2					in out		
					1 2					in out		
					1 2					in out		

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Run # 52

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 7

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-152	5	56	8/9/92	92	1 (2)	190	800	20.2	6	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-153	6	56	8/9/92	92	1 (2)	190	500	20.6	6	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-154	1	56	8/9/92	92	1 (2)	220	500	21.6	6	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-155	13	57	8/10/92	93	1 (2)	200	750	19.3	6	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-156	2	57	8/10/92	93	1 (2)	275	750	19.6	6	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-157	12	57	8/10/92	93	1 (2)	275	750	19.6	6	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-158	18	59	8/12/92	40	2	2265	200	18.9	6	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-159	17	59	8/12/92	40	2	2255	200	19.0	6	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-160	44	62	8/26/92	95	1 (2)	1740	750	21.2	8	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-161	33	62	8/26/92	95	1 (2)	1770	750	21.4	8	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-162	35	62	8/26/92	95	1 (2)	1770	750	21.4	8	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-163	100	63	8/31/92	96	1 (2)	1660	750	20.6	7	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-164	100	63	8/31/92	96	1 (2)	1690	750	20.8	7	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-165	100	63	8/31/92	96	1 (2)	1690	750	20.8	7	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-166	100	64	9/3/92	96	1 (2)		750	19.5	5	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-167	100	64	9/3/92	96	1 (2)		750	21.5	5	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-168	100	64	9/3/92	96	1 (2)		750	21.5	5	in (out)	$\angle 1\% H_2$, $\angle 0.1\% CO$, $\angle 40\% N_2$	
93-169	20	F	9/3/92	97	1 (2)					in out	$\angle 0.5\% CO$	
93-170	20	65	9/3/92	97	1 (2)	0	500	20.5	13	in out	$\angle 0.5\% CO$	
93-171	20	F	9/3/92	97	1 (2)					in out	$\angle 0.5\% CO$	
93-172			9/3/92	97	1 (2)	15	500	20.6	13	in (out)	$\angle 0.5\% CO$	
93-173			9/3/92	97	1 (2)	30	500	20.6	13	in (out)	$\angle 0.5\% CO$	
93-174	20	5	9/7/92		1 (2)	0	N/A			in out	$\angle 0.5\% CO$	
					1 (2)					in out		
					1 (2)					in out		
					1 (2)					in out		
					1 (2)					in out		

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

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SHEET 8

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-175	67	10/14	87	12	2	0	500	15	13	(in) out		
93-176	67	10/14	87	12	2	15	500	15	13	in (out)		
93-177	67	10/14	87	12	2	30	500	15	13	in (out)		
93-178	67	10/14	97	12	2	45	500	15	13	in (out)		
93-179	67	10/14	98	12	2	60	500	15	13	in (out)		
93-180	67	10/14	98	12	2	75	500	15	13	in (out)		
93-181	67	10/14	98	12	2	90	500	14	13	in (out)		
93-182	67	10/14	98	12	2	105	500	14	13	in (out)		
93-183	67	10/14	98	12	2	120	500	14	13	in (out)		
93-184	67	10/14	98	12	2	135	500	14	13	in (out)		
93-185	67	10/14	98	12	2	150	500	15	13	in (out)		
93-186	67	10/14	98	12	2	165	500	15	13	in (out)		
93-187	67	10/14	98	12	2	180	500	15	13	in (out)		
93-188	67	10/14	98	12	2	195	500	16	13	in (out)		
93-189	67	10/14	98	12	2	210	500	16	13	in (out)		
93-190	67	10/14	98	12	2	215	500	16	13	(in) out		
93-191	67	10/14	98	12	2	0	500	16	N ₂	in (out)		
93-192	67	10/14	98	12	2	15	500	16	N ₂	in (out)		
93-193	67	10/14	98	12	2	30	500	17	N ₂	in (out)		
93-194	67	10/14	98	12	2	45	500	17	N ₂	in (out)		
93-195	67	10/14	98	12	2	60	500	17	N ₂	in (out)		
93-196	68	10/14	98	12	2	75	500	17	13	(in) out		
93-197	68	10/14	98	12	2	0	500	17	13	(in) out		
93-198	68	10/14	98	12	2	15	500	19	13	in (out)		
93-199	68	10/14	98	12	2	30	500	19	13	in (out)		
93-200	68	10/14	98	12	2	45	500	19	13	in (out)		
93-201	68	10/14	98	12	2	60	500	19	13	in (out)		

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HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 9

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-202	68	10/14	98	1	(2)	75	500	20	13	in out		
93-203	68	11/14	98	1	(2)	90	500	20	13	in out		
93-204	68	10/14	98	1	(2)	0	500	20	N ₂	in out		
93-205	68	10/14	98	1	(2)	15	500	20	N ₂	in out		
93-206	68	10/14	98	1	(2)	30	500	20	N ₂	in out		
93-207	68	10/14	98	1	(2)	45	500	20	N ₂	in out		
93-208	68	10/14	98	1	(2)	60	500	20	N ₂	in out		
93-209	68	10/14	98	1	(2)	75	500	20	N ₂	in out		
93-210	69	10/18	99	1	(2)	0	500	14	13	in out		
93-211	69	10/18	99	1	(2)	10	500	14	13	in out		
93-212	69	10/18	99	1	(2)	20	500	14	13	in out		
93-213	69	10/18	99	1	(2)	30	500	15	13	in out		
93-214	69	10/18	99	1	(2)	40	500	16	13	in out		
93-215	69	10/18	99	1	(2)	50	500	16	13	in out		
93-216	69	10/18	99	1	(2)	60	500	16	13	in out		
93-217	69	10/18	99	1	(2)	70	500	17	13	in out		
93-218	69	10/18	99	1	(2)	80	500	17	13	in out		
93-219	69	10/18	99	1	(2)	90	500	16	13	in out		
93-220	69	10/18	99	1	(2)	100	500	17	13	in out		
93-221	69	10/18	99	1	(2)	110	500	16	13	in out		
93-222	69	10/18	99	1	(2)	120	500	17	13	in out		
93-223	69	10/18	99	1	(2)	130	500	17	13	in out		
93-224	69	10/18	99	1	(2)	140	500	17	13	in out		
93-225	69	10/18	99	1	(2)	150	500	17	13	in out		
93-226	69	10/18	99	1	(2)	170	500	18	13	in out		
93-227	69	10/18	99	1	(2)	185	500	19	13	in out		
93-228	69	10/18	99	1	(2)	190	500	19	N ₂	in out		

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WHC-SD-WM-TRP-212, Rev. 0

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 10

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Como in N2 balance)	Comments
93-229	69	69	10/18/99	1	2	200	500	19	13	in out		
93-230	69	69	10/18/99	1	2	210	500	19	13	in out		
93-231		69	10/18/99	1	2	220	500	19	13	in out		
93-232		69	10/18/99	1	2	230	500	19	13	in out		
93-233		69	10/18/99	1	2	240	500	20	13	in out		
93-234		69	10/18/99	1	2	250	500	20	13	in out		
93-235		69	10/18/99	1	2	260	500	21	13	in out		
93-236		69	10/18/100	1	2	270	500	21	13	in out		
93-237		69	10/18/100	1	2	280	500	21	13	in out		
93-238		69	10/18/100	1	2	290	500	20	13	in out		
					1 2					in out		
93-239		70	10/19/100	1	2	0	0	14	13	in out		
93-240		70	10/19/100	1	2	0	0	14	13	in out		
93-241		70	10/19/100	1	2	10	500	14	13	in out		
93-242		70	10/19/100	1	2	20	500	15	13	in out		
93-243		70	10/19/100	1	2	30	500	14	13	in out		
93-244		70	10/19/100	1	2	40	500	14	13	in out		
93-245		70	10/19/100	1	2	50	500	15	13	in out		
93-246		70	10/19/100	1	2	60	500	15	13	in out		
93-247		70	10/19/100	1	2	70	500	15	13	in out		
93-248		70	10/19/100	1	2	80	500	15	13	in out		
93-249		70	10/19/100	1	2	90	500	15	13	in out		
93-250		70	10/19/100	1	2	100	500	15	13	in out		
93-251		70	10/19/100	1	2	110	500	15	13	in out		
93-252		70	10/19/100	1	2	120	500	15	13	in out		
93-253		70	10/19/100	1	2	130	500	15	13	in out		
93-254		70	10/19/100	1	2	140	500	16	13	in out		

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HYDROGEN RECOMBINER CATALYST TEST -- SAMPLE LOG SHEET

SHEET 11

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-255		70	10/19	100	1	150	500	16	13	in out		
93-256		71	10/25	101	1	10	500	13	13	in out		
93-257		72	10/25	101	1	2	500	13	13	in out		
93-258		71	10/25	101	1	10	500	14	13	in out		
93-259		71	10/25	101	1	20	500	14	13	in out		
93-260		71	10/25	101	1	30	500	14	13	in out		
93-261		71	10/25	101	1	40	500	14	13	in out		
93-262		71	10/25	101	1	50	500	14	13	in out		
93-263		71	10/25	101	1	60	500	14	13	in out		
93-264		71	10/25	101	1	70	500	14	13	in out		
93-265		71	10/25	101	1	80	500	14	13	in out		
93-266		71	10/25	101	1	90	500	14	13	in out		
93-267		71	10/25	101	1	105	500	15	13	in out		
93-268		71	10/25	101	1	120	500	15	13	in out		
93-269		71	10/25	101	1	136	500	15	13	in out		
93-270		71	10/25	101	1	150	500	16	13	in out		
93-271		71	10/25	101	1	165	500	15	13	in out		
93-272		71	10/25	101	1	180	500	14	13	in out		
93-273		71	10/25	101	1	195	500	14	13	in out		
93-274		71	10/25	101	1	210	500	16	13	in out		
93-275		71	10/25	101	1	225	500	17	13	in out		
93-276		72	10/25	101	1	240	500	17	13	in out		
93-277		72	10/25	101	1	0	500	18	13	in out		
93-278		72	10/25	101	1	0	500	18	12	in out		
93-279		72	10/25	101	1	10	500	17	13	in out		
93-280		72	10/25	102	1	20	500	18	13	in out		
93-281		72	10/25	102	1	30	500	17	13	in out		

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 12

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-282	72	10/25	102	1	②	40	500	18	13	in out		
93-283	72	10/25	102	1	②	50	500	18	13	in out		
93-284	72	10/25	102	1	②	60	500	19	13	in out		
93-285	72	10/25	102	1	②	70	500	19	13	in out		
93-286	72	10/25	102	1	②	80	500	20	13	in out		
93-287	72	10/25	102	1	②	90	500	20	13	in out		
93-288	72	10/25	102	1	②	100	500	20	13	in out		
93-289	72	10/25	102	1	②	110	500	20	13	in out		
93-290	72	10/25	102	1	②	120	500	20	13	in out		
93-291	72	10/25	102	1	②	0	1000	21	N2	in out		
93-292	72	10/25	102	1	②	5	1000	21	N2	in out		
93-293	72	10/25	102	1	②	10	1000	21	N2	in out		
93-294	72	10/25	102	1	②	15	1000	21	N2	in out		
93-295	72	10/25	102	1	②	25	1000	21	N2	in out		
93-296	72	10/25	102	1	②	35	1000	21	N2	in out		
93-297	72	10/25	102	1	②	45	1000	21	N2	in out		
93-298	72	10/24	102	1	②	55	1000	21	N2	in out		
93-299	73	10/26	102	1	②	0	500	14	13	in out		
93-300	73	10/26	102	1	②	0	500	14	13	in out		
93-301	73	10/26	102	1	②	10	500	14	13	in out		
93-302	73	10/26	102	1	②	20	500	14	13	in out		
93-303	73	10/26	102	1	②	30	500	14	13	in out		
93-304	73	10/26	102	1	②	40	500	14	13	in out		
93-305	73	10/26	102	1	②	50	500	14	13	in out		
93-306	73	10/26	102	1	②	60	500	14	13	in out		
93-307	73	10/26	102	1	②	70	500	14	13	in out		

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HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 13

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Compo in N2 balance)	Comments
93-308		73	10/20	103	1	80	500	14	13	in out		
93-309		73	10/20	103	1	90	500	14	13	in out		
93-310		73	10/20	103	1	100	500	15	13	in out		
93-311		73	10/20	103	1	110	500	15	13	in out		
93-312		73	10/20	103	1	120	500	15	13	in out		
93-313		73	10/20	103	1	130	500	15	13	in out		
					1 2					in out		
93-314		74	10/20	103	1	0	500	17	13	in out		
93-315		74	10/20	103	1	0	500	17	13	in out		
93-316		74	10/20	103	1	10	500	17	13	in out		
93-317		74	10/20	103	1	20	500	17	13	in out		
93-318		74	10/20	103	1	30	500	17	13	in out		
93-319		74	10/20	103	1	40	500	17	13	in out		
93-320		74	10/20	103	1	50	500	17	13	in out		
93-321		74	10/20	103	1	60	500	17	13	in out		
93-322		74	10/20	103	1	70	500	17	13	in out		
93-323		74	10/20	103	1	80	500	17	13	in out		
93-324		74	10/20	103	1	90	500	16	13	in out		
93-325		74	10/20	103	1	100	500	16	13	in out		
93-326		74	10/20	103	1	110	500	16	13	in out		
93-327		74	10/20	103	1	120	500	15	13	in out		
93-328		74	10/20	103	1	130	500	14	13	in out		
93-329		74	10/20	103	1	140	500	14	13	in out		
93-330		74	10/20	103	1	150	500	14	13	in out		
93-331		74	10/20	103	1	160	500	13	13	in out		
93-332		74	10/20	103	1	170	500	13	13	in out		
93-333		74	10/20	103	1	180	500	14	13	in out		

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HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 14

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-334		74	10/26	103	1	190	500	14	13	in out		
93-335		74	10/26	103	1	200	500	15	13	in out		
93-336		74	10/26	103	1	210	500	15	13	in out		
93-337		74	10/26	103	1	220	500	16	13	in out		
93-338		74	10/26	103	1	230	500	17	13	in out		
93-339		74	10/26	104	1	240	500	16	13	in out		
93-340		74	10/26	104	1	250	500	17	13	in out		
93-341		74	10/26	104	1	260	500	17	13	in out		
93-342		74	10/26	104	1	270	500	17	13	in out		
93-343		74	10/26	104	1	280	500	17	13	in out		
93-344		74	10/26	104	1	290	500	17	13	in out		
					2					in out		
93-345		75	10/27	104	1	0	500	14.5	13	in out		
93-346		75	10/27	104	1	0	500	14.4	13	in out		
93-347		75	10/27	104	1	10	500	14.4	13	in out		
93-348		75	10/27	104	1	20	500	14.4	13	in out		
93-349		75	10/27	104	1	30	500	14.4	13	in out		
93-350		75	10/27	104	1	42 ^{min}	500	14.5	13	in out		
93-351		75	10/27	104	1	50	500	14.4	13	in out		
93-352		75	10/27	104	1	60	500	14.4	13	in out		
93-353		75	10/27	104	1	70	500	14.5	13	in out		
93-354		75	10/27	104	1	80	500	14.5	13	in out		
93-355		75	10/27	104	1	90	500	14.5	13	in out		
93-356		75	10/27	104	1	100	500	14.4	13	in out		
93-357		75	10/27	104	1	110	500	14.5	13	in out		
93-358		75	10/27	104	1	120	500	14.5	13	in out		
93-359		75	10/27	104	1	130	500	14.5	13	in out		

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WHC-SD-WM-TRP-212, Rev. 0

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 15

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-360		75	10/27	105	1	140	500	14.5	13	in out	MDR	
93-361		75	10/27	105	1	150	500	14.5	13	in out	MDR	
93-362		75	10/27	105	1	160	500	14.5	13	in out	MDR	
93-363		75	10/27	105	1	170	500	14.5	13	in out	MDR	
93-364		75	10/27	105	1	180	500	14.5	13	in out		
93-364		76	10/27	105	1	0	500	13.5	13	in out	MDR	
93-365		76	10/27	105	1	0	500	13.6	13	in out		
93-366		76	10/27	105	1	10	500	13.8	13	in out		
93-367		76	10/27	105	1	20	500	13.8	13	in out		
93-368		76	10/27	105	1	30	500	13.9	13	in out		
93-369		76	10/27	105	1	40	500	13.9	13	in out		
93-370		76	10/27	105	1	50	500	13.9	13	in out		
93-371		76	10/27	105	1	60	500	14.0	13	in out		
93-372		76	10/27	105	1	70	500	14.0	13	in out		
93-373		76	10/27	105	1	80	500	14.0	13	in out		
93-374		76	10/27	105	1	90	500	14.0	13	in out		
93-375		76	10/27	105	1	100	500	14.0	13	in out		
93-376		76	10/27	105	1	90	500	14.0	13	in out		
93-377		76	10/27	105	1	—	—	—	—	in out	C.5% CO from Leol bottle	
93-378		77	10/27	106	1	—	500	—	13	in out	MDR	
93-378		77	10/27	106	1	—	500	—	13	in out		
93-379		77	10/27	106	1	—	500	—	13	in out		
93-380		77	10/27	106	1	10	500	13.6	13	in out		
93-381		77	10/27	106	1	20	500	13.9	13	in out		
93-382		77	10/27	106	1	30	500	14.2	13	in out		
93-383		77	10/27	106	1	40	500	14.3	13	in out		
93-384		77	10/27	106	1	50	500	14.4	13	in out		

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WHC-SD-WM-TRP-212, Rev. 0

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 16

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-385		77	10/27/06	1	Q	60	500	14.5	13	in out		
93-386		77	10/27/06	1	Q	70	500	14.5	13	in out		
93-387		77	10/27/06	1	Q	80	500	14.6	13	in out		
93-388		77	10/27/06	1	Q	90	500	14.7	13	in out		
93-389		77	10/27/06	1	Q	100	500	14.6	13	in out		
93-390		77	10/27/06	1	Q	110	500	14.7	13	in out		
93-391		77	10/27/06	1	Q	120	500	14.7	13	in out		
93-392		77	10/27/06	1	Q	130	500	14.8	13	in out		
93-393		77	10/27/06	1	Q	140	500	14.8	13	in out		
93-394		77	10/27/06	1	Q	150	500	14.9	13	in out		
93-395		77	10/27/06	1	Q	155	500	14.9	13	in out		
93-396		77	10/27/06	1	Q	160	500	14.9	13	in out		
93-397		77	10/27/06	1	Q	—	—	—	—	in out		GA SD Gas from DSF2 CO: N2, but the 2nd
93-398		78	10/28/06	1	Q	0	500	—	4	in out		
93-399		78	10/28/06	1	Q	6	500	—	4	in out		
93-400		78	10/29/06	1	Q	0	500	535	4	in out		
93-401		78	10/29/06	1	Q	0	535	—	4	in out		
93-402		78	10/29/06	1	Q	10	535	15	4	in out		
93-403		78	10/29/06	1	Q	20	535	15.5	4	in out		
93-404		78	10/29/06	1	Q	30	535	15.6	4	in out		
93-405		78	10/29/06	1	Q	40	535	15.5	4	in out		
93-406		78	10/29/06	1	Q	50	535	15.7	4	in out		
93-407		78	10/29/06	1	Q	60	535	15.8	4	in out		
93-408		78	10/29/06	1	Q	70	535	15.8	4	in out		
93-409		78	10/29/06	1	Q	80	535	15.9	4	in out		

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 17

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-410		78	10/29	107	1 (2)	90	535	16.0	4	(in) out		
93-411		78	10/29	107	1 (2)	100	535	16.0	4	(in) out		
93-412		78	10/29	107	1 (2)	110	535	16.0	4	(in) out		
93-413		78	10/29	107	1 (2)	120	535	16.0	4	(in) out		
93-414		78	10/29	107	1 (2)	130	535	16.1	4	(in) out		
93-415		78	10/29	107	1 (2)	140	535	16.1	4	(in) out		
93-416		78	10/29	107	1 (2)	150	535	16.2	4	(in) out		
93-417		78	10/29	107	1 (2)	160	535	16.4	14	(in) out		
93-418		78	10/29	107	1 (2)	170	5490	16.5	14	in out		
93-419		78	10/29	107	1 (2)	180	475	16.6	14	in out		
93-420	16	78	10/29	107	1 (2)	190	475	16.6	14	in out		
93-421		78	10/29	107	1 (2)	190	475	16.6	14	in out		
93-422		78	10/29	107	1 (2)	200	475	16.7	14	in out		
93-423		78	10/29	107	1 (2)	210	475	16.9	14	in out		
93-424		78	10/29	107	1 (2)	220	475	16.9	14	in out		
93-425		78	10/29	107	1 (2)	230	475	17.0	14	in out		
93-426		78	10/29	107	1 (2)	240	475	17.0	14	in out		
93-427		78	10/29	107	1 (2)	250	475	17.0	14	in out		
93-428		78	10/29	107	1 (2)	260	475	17.0	14	in out		
93-429		78	10/29	107	1 (2)	270	475	17.1	14	in out		
93-430		78	10/29	107	1 (2)	280	475	17.3	14	in out		
93-431		78	10/29	107	1 (2)	290	475	17.3	14	in out		
93-432		78	10/29	107	1 (2)	300	475	17.4	14	in out		
93-433		78	10/29	108	1 (2)	310	475	17.6	14	in out		
93-434		78	10/29	108	1 (2)	320	475	17.7	14	in out		
93-435		78	10/29	108	1 (2)	330	475	17.8	14	in out		
93-436		78	10/29	108	1 (2)	340	475	17.9	14	in out		

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SHEET 18

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (lscm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Compo in N2 balance)	Comments
93-431		78	10/29	108	1	(2)	350	475	18.0	14	in (out)	
93-438		78	10/29	108	1	(2)	475	475	14	in (out)		
93-439		78	10/29	108	1	(2)	475	475	14	in (out)		
93-440		78	10/29	108	1	(2)	495	495	14	in (out)		
93-441		78	10/29	108	1	(2)	495	495	14	in (out)		
93-442		79	11/2	105	1	(2)	0	500	17	13	in (out)	
93-443		79	11/2	105	1	(2)	0	500	18	13	in (out)	
93-444		79	11/2	105	1	(2)	15	500	15.2	13	in (out)	
93-445		79	11/2	105	1	(2)	20	500	15.2	13	in (out)	
93-446		79	11/2	105	1	(2)	30	500	15.4	13	in (out)	
93-447		79	11/2	105	1	(2)	40	500	15.5	13	in (out)	
93-448		79	11/2	105	1	(2)	50	500	15.6	13	in (out)	
93-449		79	11/2	105	1	(2)	60	500	15.7	13	in (out)	
93-450		79	11/2	105	1	(2)	70	500	15.7	13	in (out)	
93-451		80	11/2	109	1	(2)	0	500	16.5	13	in (out)	
93-452		80	11/2	109	1	(2)	10	500	16.4	13	in (out)	
93-453		80	11/2	109	1	(2)	20	500	16.6	13	in (out)	
93-454		80	11/2	109	1	(2)	30	500	16.6	13	in (out)	
93-455		80	11/2	109	1	(2)	40	500	16.9	13	in (out)	
93-456		80	11/2	109	1	(2)	50	500	16.9	13	in (out)	
93-457		80	11/2	109	1	(2)	60	500	17.1	13	in (out)	
93-458		80	11/2	109	1	(2)	70	500	17.1	13	in (out)	
93-459		80	11/2	109	1	(2)	80	500	17.1	13	in (out)	

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 19

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-460		80	11/2	109	1 (2)	80	500	17.1	13	in out		
93-461		80	11/2	109	1 (2)	90	500	17.1	13	in out		
93-462		80	11/2	109	1 (2)	100	500	17.3	13	in out		
93-463		80	11/2	109	1 (2)	110	500	17.2	13	in out		
93-464		80	11/2	109	1 (2)	—	500	17.2	13	in out		
93-465		80	11/2	109	1 (2)	—	500	17.2	13	in out		
					1 2					in out		
93-466		81	11/23	109	1 (2)	—	7412	14.4	4	in out		
93-467		81	11/23	109	1 (2)	—	7412	14.4	4	in out		
93-468		81	11/23	110	1 (2)	30	450	14.7	4	in out		
93-469		81	11/23	110	1 (2)	45	416	14.7	4	in out		
93-470		81	11/23	110	1 (2)	60	416	14.7	4	in out		
93-471		81	11/23	110	1 (2)	75	450	14.7	4	in out		
93-472		81	11/23	110	1 (2)	75	416	14.8	4	in out		
93-473		81	11/23	110	1 (2)	75	416	14.8	4	in out		
93-474		81	11/23	110	1 (2)	75	—	14.8	14	in out		
93-475		81	11/23	110	1 (2)	75	—	14.8	14	in out		
93-476		81	11/23	110	1 (2)	0	—	—	14	in out		
93-477		81	11/23	110	1 (2)	10	460	14.6	14	in out		
93-478		81	11/23	110	1 (2)	20	460	14.8	14	in out		
93-479		81	11/23	110	1 (2)	30	460	14.9	14	in out		
93-480		81	11/23	110	1 (2)	40	460	15.0	14	in out		
93-481		81	11/23	110	1 (2)	50	460	15.0	14	in out		
93-482		81	11/23	110	1 (2)	60	460	15.0	14	in out		
93-483		81	11/23	110	1 (2)	70	460	15.0	14	in out		
93-484		81	11/23	110	1 (2)	80	460	15.0	14	in out		
93-485		81	11/23	110	1 (2)	90	460	14.9	14	in out		

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HYDROGEN RECOMBINER CATALYST TEST -- SAMPLE LOG SHEET

SHEET 24

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-484		81	11/27	110	1	2	100	460	14.9	14	in out	
93-487		81	11/27	110	1	2	110	460	14.9	14	in out	
93-488		81	11/27	110	1	2	120	460	14.8	14	in out	
93-489		81	11/27	110	1	2	130	460	14.8	14	in out	
93-490		81	11/27	110	1	2	132	460	14.8	14	in out	
93-491		81	11/27	110	1	2	137	460	14.7	14	in out	
					1	2					in out	
93-492		82	12/1	111	1	2	0	500	16.0	4	in out	
93-493		82	12/1	111	1	2	0	500	16.0	4	in out	
93-494		82	12/1	111	1	2	55	500	17.4	4	in out	
93-495		82	12/1	111	1	2	65	500	17.5	4	in out	
93-496		82	12/1	111	1	2	75	500	17.6	4	in out	
93-497		82	12/1	112	1	2	85	500	17.6	4	in out	
93-498		82	12/1	112	1	2	95	500	17.5	4	in out	
93-499		82	12/1	112	1	2	105	500	17.5	4	in out	
93-500		82	12/1	112	1	2	10	500	17.4	14	in out	
93-501		82	12/1	112	1	2	20	500	17.2	14	in out	
93-502		82	12/1	112	1	2	30	500	17.0	14	in out	
93-503		82	12/1	112	1	2	40	500	17.0	14	in out	
93-504		82	12/1	112	1	2	40	500	17.0	14	in out	
93-505		82	12/1	112	1	2	50	500	16.8	14	in out	
93-506		82	12/1	112	1	2	60	500	16.4	14	in out	
93-507		82	12/1	112	1	2	70	500	16.0	14	in out	
93-508		82	12/1	112	1	2	80	500	15.8	14	in out	
93-509		82	12/1	112	1	2	90	500	15.7	14	in out	
93-510		82	12/1	112	1	2	100	500	15.6	14	in out	
93-511		82	12/1	112	1	2	110	500	15.6	14	in out	

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 21

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-512	82	12/1	112	1	(2)	120	500	15.6	14	in (out)		
93-513	82	12/1	112	1	(2)	130	500	15.5	14	in (out)		
93-514	82	12/1	112	1	(2)	150	500	15.5	14	in out		
93-515	82	12/1	112	1	(2)	170	500	15.5	14	in (out)		
93-516	82	12/1	112	1	(2)	190	500	15.5	14	in (out)		
93-517	82	12/1	112	1	(2)	201	500	15.5	14	in out		
93-518	82	12/1	112	1	(2)	208	500	15.5	14	in out		
				1	2					in out		
93-519	83	12/2	113	1	(2)	0	475	18	13	in out		
93-520	83	12/2	113	1	(2)	0	475	18	13	in out		
93-521	83	12/2	113	1	(2)	10	475	15.8	13	in (out)		
93-522	83	12/2	113	1	(2)	20	475	15.8	13	in (out)		
93-523	83	12/2	113	1	(2)	30	475	15.8	13	in (out)		
93-524	83	12/2	113	1	(2)	40	475	15.9	13	in (out)		
93-525	83	12/2	113	1	(2)	50	475	15.9	13	in (out)		
93-526	83	12/2	113	1	(2)	60	475	15.9	13	in (out)		
93-527	83	12/2	113	1	(2)	70	475	15.9	13	in (out)		
93-528	83	12/2	113	1	(2)	80	475	15.9	13	in (out)		
93-529	83	12/2	113	1	(2)	90	475	15.9	13	in (out)		
93-530	83	12/2	113	1	(2)	100	475	15.9	13	in (out)		
93-531	83	12/2	113	1	(2)	110	475	16.0	13	in (out)		
93-532	83	12/2	113	1	(2)	120	475	16.0	13	in (out)		
93-533	83	12/2	113	1	(2)	130	475	16.0	13	in (out)		
93-534	83	12/2	113	1	(2)	140	475		13	in (out)		
93-535	83	12/2	113	1	(2)	150	475		13	in (out)		
93-536	83	12/2	113	1	(2)	0	—		13	in out		
93-537	83	12/2	113	1	(2)	0	—	16.1	17	in out		

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HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 22

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-538	—	84	12/7	114	1	0		15.4	13	in out		
93-539		84	12/7	114	1	0		15.5	13	in out		
93-540		84	12/7	114	1	10		15.6	13	in out		
93-541		84	12/7	114	1	20		15.7	13	in out		
93-542		84	12/7	114	1	30		15.7	13	in out		
93-543		84	12/7	114	1	40		15.7	13	in out		
93-544		84	12/7	114	1	50		15.7	13	in out		
93-545		84	12/7	114	1	60		15.7	13	in out		
93-546		84	12/7	114	1	70		15.7	13	in out		
93-547		84	12/7	114	1	80		15.7	13	in out		
93-548		84	12/7	114	1	90		15.7	13	in out		
93-549		84	12/7	114	1	100		15.7	13	in out		
93-550		84	12/7	114	1	110		15.6	13	in out		
93-551		84	12/7	114	1	120		15.6	13	in out		
93-552		84	12/7	114	1	130		15.5	13	in out		
93-553		84	12/7	114	1	140		15.5	13	in out		
93-554		84	12/7	114	1	150		15.5	13	in out		
93-555		84	12/7	114	1	153		15.5	13	in out		
93-556		84	12/7	114	1	168		15.5	13	in out		
					2					in out		
93-557		85	12/8	115	1	0		14.5	13	in out		
93-558		85	12/8	115	1	0		14.5	13	in out		
93-559		85	12/8	115	1	10	500	14.8	13	in out		
93-560		85	12/8	115	1	20	500	14.9	13	in out		
93-561		85	12/8	115	1	30	500	14.9	13	in out		
93-562		85	12/8	115	1	40	500	14.9	13	in out		
93-563		85	12/8	115	1	50	500	14.9	13	in out		

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HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 23

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Compo in N2 balance)	Comments
93-524		85	12/8	115	1	20	500	14.9	13	in out		
93-525		85	12/8	115	1	20	500	14.9	13	in out		
93-526		85	12/8	115	1	20	500	14.9	13	in out		
93-527		85	12/8	115	1	20	500	14.9	13	in out		
93-528		85	12/8	115	1	20	500	14.9	13	in out		
93-529		85	12/8	115	1	20	500	14.9	13	in out		
93-530		85	12/8	115	1	20	500	14.9	13	in out		
93-531		85	12/8	115	1	20	500	14.9	13	in out		
93-532		85	12/8	115	1	20	500	14.9	13	in out		
93-533		85	12/8	115	1	20	500	14.9	13	in out		
93-534		85	12/8	115	1	20	500	14.9	13	in out		
93-535		85	12/8	115	1	20	500	14.9	13	in out		
93-536		85	12/8	115	1	20	500	14.9	13	in out		
93-537		85	12/8	115	1	20	500	14.9	13	in out		
93-538		85	12/8	115	1	20	500	14.9	13	in out		
93-539		85	12/8	115	1	20	500	14.9	13	in out		
93-540		85	12/8	115	1	20	500	14.9	13	in out		
93-541		85	12/8	115	1	20	500	14.9	13	in out		
93-542		85	12/8	115	1	20	500	14.9	13	in out		
93-543		85	12/8	115	1	20	500	14.9	13	in out		
93-544		85	12/8	115	1	20	500	14.9	13	in out		
93-545		85	12/8	115	1	20	500	14.9	13	in out		
93-546		85	12/8	115	1	20	500	14.9	13	in out		
93-547		85	12/8	115	1	20	500	14.9	13	in out		
93-548		85	12/8	115	1	20	500	14.9	13	in out		
93-549		85	12/8	115	1	20	500	14.9	13	in out		
93-550		85	12/8	115	1	20	500	14.9	13	in out		
93-551		85	12/8	115	1	20	500	14.9	13	in out		
93-552		85	12/8	115	1	20	500	14.9	13	in out		
93-553		85	12/8	115	1	20	500	14.9	13	in out		
93-554		85	12/8	115	1	20	500	14.9	13	in out		
93-555		85	12/8	115	1	20	500	14.9	13	in out		
93-556		85	12/8	115	1	20	500	14.9	13	in out		
93-557		85	12/8	115	1	20	500	14.9	13	in out		
93-558		85	12/8	115	1	20	500	14.9	13	in out		
93-559		85	12/8	115	1	20	500	14.9	13	in out		

HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 24

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-590		86	12/8	116	1	80	500	14.7	13	in out		
93-591		86	12/8	116	1	90	500	14.8	13	in out		
93-592		86	12/8	116	1	100	500	14.7	13	in out		
93-593		86	12/8	116	1	110	500	14.7	13	in out		
93-594		86	12/8	116	1	120	500	14.7	13	in out		
93-595		86	12/8	116	1	130	500	14.7	13	in out		
93-596		86	12/8	116	1	140	500	14.7	13	in out		
93-597		86	12/8	116	1	150	500	14.8	13	in out		
93-598		86	12/8	116	1	153	500	14.8	13	in out		
93-599		86	12/8	116	1	158	500	14.8	13	in out		
					2					in out		
					2					in out		
93-600		87	12/9	117	1	0	-	-	13	in out		
93-601		87	12/9	117	1	0	-	-	13	in out		
93-602		87	12/9	117	1	10	500	16.4	13	in out		
93-603		87	12/9	117	1	20	500	16.4	13	in out		
93-604		87	12/9	117	1	30	500	16.5	13	in out		
93-605		87	12/9	117	1	40	500	16.5	13	in out		
93-606		87	12/9	117	1	50	500	16.5	13	in out		
93-607		87	12/9	117	1	60	500	16.6	13	in out		
93-608		87	12/9	117	1	70	500	16.6	13	in out		
93-609		87	12/9	117	1	80	500	16.6	13	in out		
93-610		87	12/9	117	1	90	500	16.7	13	in out		
93-611		87	12/9	117	1	100	500	16.7	13	in out		
93-612		87	12/9	117	1	110	500	16.7	13	in out		
93-613		87	12/9	117	1	120	500	16.8	13	in out		
93-614		87	12/9	117	1	130	500	16.8	13	in out		

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HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 25

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Comp in N2 balance)	Comments
93-615		87	12/9	117	1	140	500	16.7	13	in out		
93-616		87	12/9	117	1	150	500	16.6	13	in out		
93-617		87	12/9	117	1	160	500	16.6	13	in out		
93-618		87	12/9	117	1	162	500	16.5	13	in out		
93-619		87	12/9	117	1	167	500	16.6	13	in out		
					1 2					in out		
					1 2					in out		
93-620		88	12/20	118	1	0	500	—	13	in out		
93-621		88	12/20	118	1	0	500	—	13	in out		
93-622		88	12/20	118	1	10	500	15.6	13	in out		
93-623		88	12/20	118	1	20	500	15.6	13	in out		
93-624		88	12/20	118	1	30	500	15.6	13	in out		
93-625		88	12/20	118	1	40	500	15.6	13	in out		
93-626		88	12/20	118	1	50	500	15.7	13	in out		
93-627		88	12/20	118	1	60	500	15.7	13	in out		
93-628		88	12/20	118	1	70	500	15.8	13	in out		
93-629		88	12/20	118	1	80	500	15.8	13	in out		
93-630		88	12/20	118	1	90	500	15.8	13	in out		
93-631		88	12/20	118	1	100	500	15.8	13	in out		
93-632		88	12/20	118	1	110	500	15.8	13	in out		
93-633		88	12/20	118	1	120	500	15.9	13	in out		
93-634		88	12/20	118	1	130	500	15.9	13	in out		
93-635		88	12/20	118	1	140	500	15.9	13	in out		
93-636		88	12/20	118	1	—	500	15.9	13	in out		
93-637		88	12/20	118	1	—	500	15.9	13	in out		
					1 2					in out		
					1 2					in out		

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HYDROGEN RECOMBINER CATALYST TEST - SAMPLE LOG SHEET

SHEET 26

Sample #	GSC #	Run #	Date	Page	Appar.	Time (min)	Flowrate (sccm)	Temp (°C)	FM#	Inlet/Outlet	Expected Composition (% Como in N2 balance)	Comments
93-638		89	12/20	118	1 (2)	0	500	—	13	(in) out		
93-639		89	12/20	118	1 (2)	0	500	—	13	(in) out		
93-640		89	12/20	119	1 (2)	10	500	15.9	13	in (out)		
93-641		89	12/20	119	1 (2)	20	500	15.9	13	in (out)		
93-642		89	12/20	119	1 (2)	30	500	15.9	13	in (out)		
93-643		89	12/20	119	1 (2)	40	500	15.9	13	in (out)		
93-644		89	12/20	119	1 (2)	50	500	15.9	13	in (out)		
93-645		89	12/20	119	1 (2)	60	500	15.8	13	in (out)		
93-646		89	12/20	119	1 (2)	70	500	15.8	13	in (out)		
93-647		89	12/20	119	1 (2)	80	500	15.8	13	in (out)		
93-648		89	12/20	119	1 (2)	90	500	15.8	13	in (out)		
93-649		89	12/20	119	1 (2)	100	500	15.7	13	in (out)		
93-650		89	12/20	119	1 (2)	110	500	15.7	13	in (out)		
93-651		89	12/20	119	1 (2)	120	500	15.7	13	in (out)		
93-652		89	12/20	119	1 (2)	130	500	15.7	13	in (out)		
93-653		89	12/20	119	1 (2)	140	500	15.8	13	in (out)		
93-654		89	12/20	119	1 (2)	150	500	15.7	13	in (out)		
93-655		89	12/20	119	1 (2)	160	500	15.7	13	in (out)		
93-656		89	12/20	119	1 (2)	170	500	15.7	13	in (out)		
93-657		89	12/20	119	1 (2)	175	—	—	13	in out		
93-658		89	12/20	119	1 (2)	178	—	—	13	in out		
					1 2					in out		
					1 2					in out		
					1 2					in out		
					1 2					in out		
					1 2					in out		
					1 2					in out		

E-27

APPENDIX F

JOB SAFETY ANALYSIS

CEL JOB SAFETY ANALYSIS		JOB DESCRIPTION HYDROGEN RECOMBINER CATALYST PERFORMANCE AND DURABILITY TEST		CHARGE CODE D44L2	CEL-JSA-93-005
		COMPONENT			BUILDING 2703E
REVIEWED BY INDUSTRIAL SAFETY		PREPARED BY Michael D. Britton			DATE June 17, 1993
DATE 6-22-93	INITIALS <i>[Signature]</i>	MANAGER SIGNATURE M. J. Schliebe <i>[Signature]</i>			DATE 6/17/93
SAFETY EQUIPMENT REQUIRED		TOOLS & EQUIPMENT REQUIRED		JOB PREPARATION	
Safety glasses		Available in safety lockers: Ammonia gas masks Insulated gloves		Read following MSDS: H ₂ MSDS 1252 N ₂ O MSDS 1394 O ₂ MSDS 1406 CO in N ₂ MSDS 16617 14.3% CH ₄ in N ₂ MSDS 26351 NH ₃ MSDS 1039	
		HAZARDOUS MATERIALS		RELATED REQUIREMENTS	
		100% N ₂ O 10% N ₂ O in N ₂ 5% NH ₃ in N ₂ Non-hazardous gases 4% H ₂ in N ₂ 4% O ₂ in N ₂ 0.5% CO in N ₂ 0.5% CH ₄ in N ₂		RADIATION WORK PROCEDURE YES ___ NO <u>X</u> NUCLEAR SAFETY SPEC. YES ___ NO <u>X</u> QUALITY ASSURANCE YES ___ NO <u>X</u>	
JOB STEP		HAZARD		SAFETY RULES AND SAFE PRACTICES	
Unexpected gas leaks		Personnel exposure to N ₂ O and/or NH ₃		Experiment is performed in a large ventilated building. Pressure checks are performed each time the reactor head is removed or the tubing lines are reconfigured. Gas masks for NH ₃ are available for the lab personnel.	
Accidental high temperature operations		The catalyzed reaction is exothermic. Metallic equipment and lines could become hot.		The system is to be operated between 20 and 40°C. If equipment exceeds 60°C, the system will be shut down, a "Hot Surfaces" warning sign will be hung on the apparatus, and the system will be allowed to cool down. If the need to handle hot equipment arises, insulated gloves will be used to handle it.	

APPENDIX G

CERTIFICATE OF MIXTURE ANALYSIS FOR FEED GASES

C E R T I F I C A T E O F M I X T U R E A N A L Y S I S

MATHESON GAS PRODUCTS INC.
NEWARK, CALIFORNIA

TO: WESTINGHOUSE HANFORD

FROM: MATHESON GAS PRODUCTS
6775 CENTRAL AVENUE
NEWARK, CALIFORNIA 94560

P.O. WGS-YVV-279075

W.O. 103-74053 / M36-1222

PRODUCT: 4.00 PCT HYDROGEN, PREP
BAL NITROGEN, PREP

CYLINDER NO.

COMPONENT

ANALYSIS

AS-50620

HYDROGEN
NITROGEN

4.07%
BALANCE

AS-54718

HYDROGEN
NITROGEN

4.07%
BALANCE

.....
CYLINDER SIZE: 1A

TOP PRESSURE: 2000 PSIG

C.G.A. : 350

GAS VOLUME : 209 Cu.Ft.
.....

THE PRODUCT LISTED ABOVE AND FURNISHED UNDER THE REFERENCED
PURCHASE ORDER HAS BEEN TESTED AND FOUND TO CONTAIN THE COMPONENT
CONCENTRATION STATED ABOVE.

ANALYST

___06-02-93___
DATE

C E R T I F I C A T E O F M I X T U R E A N A L Y S I S

MATHESON GAS PRODUCTS INC.
NEWARK, CALIFORNIA

TO: WESTINGHOUSE HANFORD

FROM: MATHESON GAS PRODUCTS
6775 CENTRAL AVENUE
NEWARK, CALIFORNIA 94560

P.O. WGA-YVV-279075

W.O. 103-74053 / M36-1219

PRODUCT: 4.00 PCT NITROUS OXIDE, CP
BAL NITROGEN, PREP

CYLINDER NO.

COMPONENT

ANALYSIS

FF-15137

NITROUS OXIDE
NITROGEN3.87%
BALANCE.....
CYLINDER SIZE: 2

TOP PRESSURE: 1000 PSIG

C.G.A. : 350

GAS VOLUME : 40 Cu.Ft.
.....THE PRODUCT LISTED ABOVE AND FURNISHED UNDER THE REFERENCED
PURCHASE ORDER HAS BEEN TESTED AND FOUND TO CONTAIN THE COMPONENT
CONCENTRATION STATED ABOVE.
ANALYST___06-02-93___
DATE

C E R T I F I C A T E O F M I X T U R E A N A L Y S I S

MATHESON GAS PRODUCTS INC.
NEWARK, CALIFORNIA

TO: WESTINGHOUSE HANFORD

FROM: MATHESON GAS PRODUCTS
6775 CENTRAL AVENUE
NEWARK, CALIFORNIA 94560

P.O. WGA-YVV-279075

W.O. 103-74053 / M36-1218

PRODUCT: 2.00 PCT OXYGEN, EXTRA DRY
BAL NITROGEN, PREP

CYLINDER NO.

COMPONENT

ANALYSIS

FF-18921

OXYGEN
NITROGEN2.06%
BALANCE

CYLINDER SIZE: 2

TOP PRESSURE: 2000 PSIG

C.G.A. : 580

GAS VOLUME : 81 Cu.Ft.

THE PRODUCT LISTED ABOVE AND FURNISHED UNDER THE REFERENCED
PURCHASE ORDER HAS BEEN TESTED AND FOUND TO CONTAIN THE COMPONENT
CONCENTRATION STATED ABOVE.

ANALYST06-02-93
DATE

C E R T I F I C A T E O F M I X T U R E A N A L Y S I S

MATHESON GAS PRODUCTS INC.
NEWARK, CALIFORNIA

TO: WESTINGHOUSE HANFORD

FROM: MATHESON GAS PRODUCTS
6775 CENTRAL AVENUE
NEWARK, CALIFORNIA 94560

P.O. WGA-YVV-279075

W.O. 103-74053 / M36-1220

PRODUCT: 0.50 PCT CARBON MONOXIDE, CP
BAL NITROGEN, PREP

CYLINDER NO.	COMPONENT	ANALYSIS
FF-12928	CARBON MONOXIDE NITROGEN	0.50% BALANCE

.....
CYLINDER SIZE: 2

TOP PRESSURE: 1650 PSIG

C.G.A. : 350

GAS VOLUME : 67 Cu.Ft.
.....

THE PRODUCT LISTED ABOVE AND FURNISHED UNDER THE REFERENCED
PURCHASE ORDER HAS BEEN TESTED AND FOUND TO CONTAIN THE COMPONENT
CONCENTRATION STATED ABOVE.

ANALYST

___06-02-93___
DATE

C E R T I F I C A T E O F M I X T U R E A N A L Y S I S

MATHESON GAS PRODUCTS INC.
NEWARK, CALIFORNIA

TO: WESTINGHOUSE HANFORD

FROM: MATHESON GAS PRODUCTS
6775 CENTRAL AVENUE
NEWARK, CALIFORNIA 94560

P.O. WGA-YVV-279075

W.O. 103-74053 / M36-1221

PRODUCT: 0.50 PCT METHANE, CP
BAL NITROGEN, PREP

CYLINDER NO.

COMPONENT

ANALYSIS

FF-2899

METHANE
NITROGEN0.50%
BALANCE.....
CYLINDER SIZE: 2

TOP PRESSURE: 2000 PSIG

C.G.A. : 350

GAS VOLUME : 81 Cu.Ft.
.....THE PRODUCT LISTED ABOVE AND FURNISHED UNDER THE REFERENCED
PURCHASE ORDER HAS BEEN TESTED AND FOUND TO CONTAIN THE COMPONENT
CONCENTRATION STATED ABOVE.
ANALYST__06-02-93__
DATE

C E R T I F I C A T E O F M I X T U R E A N A L Y S I S

MATHESON GAS PRODUCTS INC.
NEWARK, CALIFORNIA

TO: WESTINGHOUSE HANFORD CO.
2355 STEVENS DRIVE
RICHLAND, WASHINGTON 99352

FROM: MATHESON GAS PRODUCTS
6775 CENTRAL AVENUE
NEWARK, CALIFORNIA 94560

PO: WGS-YVV-279078

W.O.: 103-74013

PRODUCT: 5.00% AMMONIA
BAL. NITROGEN

LOT NO.	CYLINDER NO.	COMPONENTS	ANALYSIS
M36-1217	FF-19852	AMMONIA NITROGEN	5.05% BAL.

.....
CYLINDER SIZE: 2P

TOP PRESSURE: 1800 PSIG

C.G.A. : 705

GAS VOLUME : 73 Cu.Ft.
.....

THE PRODUCT LISTED ABOVE AND FURNISHED UNDER THE REFERENCED
PURCHASE ORDER HAS BEEN TESTED AND FOUND TO CONTAIN THE COMPONENT
CONCENTRATION STATED ABOVE.

ANALYST

6-1-93
DATE

* * C E R T I F I C A T E O F C O M P L I A N C E * *

MATHESON GAS PRODUCTS INC.
6775 CENTRAL AVE.
NEWARK, CALIFORNIA 94560
510-793-2559

TO: WESTINGHOUSE HANFORD
2355 STEVENS DRIVE
RICHLAND, WASH. 99352

P.O. WGS-YVV-279075

PRODUCT

SPECIFICATION

NITROUS OXIDE, SFC PURITY

99.995%

LINDER SERIAL NUMBER(S)

SX-25334
SX-25338

THE PRODUCT LISTED ABOVE AND FURNISHED UNDER THE REFERENCED PURCHASE
ORDER COMPLIES WITH SPECIFICATIONS FOUND IN OUR CURRENT GENERAL CATALOG.

C E R T I F I C A T E O F M I X T U R E A N A L Y S I S

MATHESON GAS PRODUCTS INC.
NEWARK, CALIFORNIA

TO: WESTINGHOUSE HANFORD

FROM: MATHESON GAS PRODUCTS
6775 CENTRAL AVENUE
NEWARK, CALIFORNIA 94560

P.O. WGS-VVV-303944

W.O. 103-76064 / M36-1947

PRODUCT: 0.50 PCT CARBON MONOXIDE, CP
BAL NITROGEN, HP

CYLINDER NO.

COMPONENT

ANALYSIS.

FF-32813

CARBON MONOXIDE
NITROGEN

0.50%
BALANCE

.....
CYLINDER SIZE: 2

TOP PRESSURE: 1650 PSIG

C.G.A. : 350

GAS VOLUME : 71 Cu.Ft.
.....

THE PRODUCT LISTED ABOVE AND FURNISHED UNDER THE REFERENCED
PURCHASE ORDER HAS BEEN TESTED AND FOUND TO CONTAIN THE COMPONENT
CONCENTRATION STATED ABOVE.

ANALYST

09-09-93

DATE

APPENDIX H

FLOW CONTROLLER CALIBRATION CHECK

Figure H-1. Calibration Check for Flow Controller SN C18600.
Flow Controller Regression (R^2) = 0.999

Table H-1. Calibration Check for Flow Controller SN C18600.

Flow Controller SN C18600		Bios Flow Calibrator:			
Flow meter SN C18600		Base SN B588			
Channel 1		Cell SN 5525			
Run #	Controller Flowrate sccm	Gas Temp °C	Calibrator Flowrate as read mL/min	adj to 20°C sccm	% Error
1	102.0	20.2	111.2	108.5	6.0
2	12.0	20.3	16.9	16.5	27.2
3	500.0	20.1	520.5	507.8	1.5
4	202.0	20.2	229.8	224.1	9.9
5	304.0	20.1	325.7	317.8	4.3
6	402.0	20.1	425.3	415.0	3.1
7	102.0	20.2	120.4	117.4	13.1
8	302.0	20.2	318.8	310.9	2.9
9	202.0	20.2	218.8	213.4	5.3
10	20.0	20.3	27.0	26.3	24.0
11	500.0	20.1	519.3	506.7	1.3
12	402.0	20.2	430.8	420.2	4.3

Flow Controller SN C18600		Bios flow Calibrator:			
Flow meter SN C18601		Base SN B588			
Channel 2		Cell SN 5525			
Run #	Flow Contro Flowrate sccm	Gas Temp °C	Calibrator Flowrate as read mL/min	adj to 20°C sccm	% Error
1	100.0	18.8	107.2	105.1	4.8
2	10.0	18.5	11.4	11.2	10.6
3	24.8	18.6	26.9	26.4	6.0
4	50.0	18.7	53.7	52.6	5.0
5	74.8	18.5	82.3	80.7	7.4
6	10.0	18.5	11.5	11.3	11.4
7	50.0	18.5	54.9	53.9	7.2
8	24.8	18.7	27.4	26.9	7.7
9	100.0	18.6	102.7	100.7	0.7
10	74.8	18.6	80.7	79.1	5.5

Flow Controller SN C18600		Bios flow Calibrator:			
Flow meter SN C18602		Base SN B588			
Channel 3		Cell SN 5525			
Run #	Controller Flowrate sccm	Gas Temp °C	Calibrator Flowrate as read mL/min	adj to 20°C sccm	% Error
1	100.0	19.6	107.0	104.6	4.4
2	50.0	19.5	54.1	52.9	5.5
3	15.6	19.5	16.2	15.8	1.5
4	10.4	19.6	11.4	11.1	6.7
5	70.4	19.7	75.2	73.5	4.2
6	25.2	19.7	26.7	26.1	3.4
7	10.0	19.4	11.2	11.0	8.7
8	50.4	19.4	53.4	52.2	3.5
9	100.0	19.4	105.9	103.6	3.4
10	70.8	19.3	75.3	73.7	3.9

Flow Controller SN C18600		Bios flow Calibrator:			
Flow meter SN C18603		Base SN B588			
Channel 4		Cell SN 5525			
Run #	Flow Contro Flowrate sccm	Gas Temp °C	Calibrator Flowrate as read mL/min	adj to 20°C sccm	% Error
1	100.0	19.2	105.4	103.2	3.1
2	10.0	19.5	11.1	10.9	7.9
3	24.8	20.1	25.9	25.3	1.9
4	50.0	19.9	52.5	51.3	2.5
5	74.8	19.8	79.7	77.8	3.9
6	10.0	19.8	11.4	11.1	10.2
7	50.0	19.9	52.4	51.2	2.3
8	24.8	20.1	26.4	25.8	3.7
9	100.0	20.1	103.2	100.7	0.7
10	74.8	20.1	78.1	76.2	1.8

Flow Controller SN C18600		Bios flow Calibrator:			
Flow meter SN C18604		Base SN B588			
Channel 5		Cell SN 5525			
Run #	Flow Contro Flowrate sccm	Gas Temp °C	Calibrator Flowrate as read mL/min	adj to 20°C sccm	% Error
1	100.0	19.3	105.9	103.6	3.5
2	10.0	19.4	12.2	11.9	16.2
3	25.2	19.3	27.6	27.0	6.7
4	50.0	19.5	53.8	52.6	4.9
5	75.6	19.5	79.4	77.6	2.6
6	9.6	18.6	11.7	11.5	16.3
7	50.4	18.6	53.1	52.1	3.2
8	25.2	18.7	28.1	27.5	8.5
9	100.0	18.7	104.2	102.2	2.1
10	75.2	18.7	81.0	79.4	5.3

Figure H-2. Calibration Check for Flow Controller SN C18605.
Flow Controller Regression (R^2) = 0.999

Table H-2. Calibration Check for Flow Controller SN C18605.

Flow Controller SN C18605 Bios flow Calibrator:					
Flow meter SN C18605			Base SN B588		
Channel 1			Cell SN 5525		
Run #	Controller Flowrate sccm	Gas Temp °C	Calibrator Flowrate as read mL/min	adj to 20°C sccm	% Error
1	500.0	19.1	506.2	495.6	0.9
2	102.0	19.1	102.7	100.5	1.4
3	20.0	19.0	20.7	20.3	1.3
4	202.0	19.0	205.4	201.2	0.4
5	302.0	19.0	306.4	300.1	0.6
6	402.0	19.1	407.5	398.9	0.8
7	102.0	19.1	105.9	103.7	1.6
8	302.0	19.2	304.6	298.1	1.3
9	202.0	19.2	209.2	204.7	1.3
10	20.0	19.2	21.5	21.0	4.9
11	500.0	19.2	512.8	501.9	0.4
12	402.0	19.1	410.3	401.7	0.1

Flow Controller SN C18605 Bios flow Calibrator:					
Flow meter SN C18606			Base SN B588		
Channel 2			Cell SN 5525		
Run #	Controller Flowrate sccm	Gas Temp °C	Calibrator Flowrate as read mL/min	adj to 20°C sccm	% Error
1	500.0	17.3	499.9	492.4	1.5
2	100.0	17.3	99.7	98.2	1.8
3	18.0	17.4	15.4	15.2	18.7
4	200.0	17.5	200.7	197.6	1.2
5	300.0	17.6	302.7	297.9	0.7
6	400.0	17.6	402.1	395.7	1.1
7	100.0	17.6	101.9	100.3	0.3
8	300.0	17.7	301.3	296.4	1.2
9	200.0	17.8	202.7	199.3	0.3
10	20.0	17.9	16.4	16.1	24.1
11	500.0	18.0	498.8	490.2	2.0
12	400.0	18.1	407.8	400.6	0.2

Flow Controller SN C18605 Bios flow Calibrator:					
Flow meter SN C18607			Base SN B588		
Channel 3			Cell SN 5525		
Run #	Controller Flowrate sccm	Gas Temp °C	Calibrator Flowrate as read mL/min	adj to 20°C sccm	% Error
1	500.0	18.2	506.0	496.9	0.6
2	100.0	18.3	99.5	97.7	2.4
3	20.0	18.4	14.8	14.5	37.7
4	200.0	18.6	195.7	191.9	4.2
5	300.0	18.5	294.6	289.0	3.8
6	402.0	18.6	401.6	393.8	2.1
7	100.0	18.6	97.9	96.0	4.2
8	300.0	18.6	298.1	292.3	2.6
9	200.0	18.6	200.0	196.1	2.0
10	20.0	18.7	13.1	12.8	55.7
11	500.0	18.7	497.1	487.3	2.6
12	400.0	18.8	404.5	396.4	0.9

Flow Controller SN C18605 Bios flow Calibrator:					
Flow meter SN C18608			Base SN B588		
Channel 4			Cell SN 5525		
Run #	Controller Flowrate sccm	Gas Temp °C	Calibrator Flowrate as read mL/min	adj to 20°C sccm	% Error
1	100.0	16.9	97.3	96.0	4.2
2	10.0	18.5	18.9	18.5	46.1
3	25.2	17.8	20.3	20.0	26.2
4	50.0	17.9	46.5	45.7	9.4
5	75.2	18.0	72.5	71.2	5.5
6	50.0	18.6	46.7	45.8	9.2
7	10.0	19.2	25.0	24.5	59.1
8	25.2	19.4	20.9	20.4	23.3
9	100.0	19.5	99.1	96.9	3.2
10	75.2	19.5	73.8	72.2	4.2

Flow Controller SN C18605 Bios flow Calibrator:					
Flow meter SN C18609			Base SN B588		
Channel 5			Cell SN 5525		
Run #	Controller Flowrate sccm	Gas Temp °C	Calibrator Flowrate as read mL/min	adj to 20°C sccm	% Error
1	100.0	19.6	95.1	92.9	7.6
2	10.0	19.5	13.5	13.2	24.2
3	25.2	19.6	18.8	18.4	37.2
4	50.0	19.5	45.4	44.4	12.6
5	75.2	19.4	71.4	69.8	7.7
6	10.0	19.2	13.5	13.2	24.3
7	50.0	19.2	45.0	44.0	13.5
8	25.2	19.2	18.8	18.4	37.0

APPENDIX I

WESTINGHOUSE STANDARDS LABORATORY REPORT ON BOIS FLOW CALIBRATOR

WESTINGHOUSE STANDARDS LABORATORY PHYSICAL AND ELECTRICAL REPORT

CUSTODIAN/ADDRESS BRITTON MD 54-28		STANDARDS CODE NUMBER 817-28-02-008		NEW MODIFY	REFERENCE NUMBER 372237
INSTRUMENT N CALIBRATOR DROS DC-1SC DRY CAL		SERIAL NUMBER S-525	PROPERTY NUMBER N/A	RECALL STATUS 1 ACTIVE 2 NONRECALL 3 SUSPENDED 4 DELETED	ORGANIZATION CODE W12130 WORK ORDER D44L2
SENDER D PAINE 3-5134		ROOM N/A	BUILDING 2703E	SERVICE DEPARTMENT 9	RECALL CYCLE 360 DATE RECEIVED 930624
INSTRUMENT SPECIFICATIONS SEE CALCULATIONS below		COMMENTS		SHIPPING DAY TH	TOLERANCE HISTORY 1 IN 2 OUT 3 HA 4 EILED
STANDARD(S) USED IN CALIBRATION TRACEABLE TO NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY OR NATIONALLY RECOGNIZED STANDARDS 4:1 RATIO Y ☒ N ☐ 002-35-40-001 3-3-94 002-28-06-002 3-22-94 002-29-06-018 10-26-93				TRAINING HOURS CALIBRATION HOURS 3.0 REPAIR HOURS OTHER HOURS MATERIALS TOTAL CHARGE - (\$120 x SUM OF HOURS) + MATERIAL DATE CALIBRATED 6/30/93 DATE DUE 6/30/94 AMBIENT TEMPERATURE 22.1°C	
REMARKS NEW - NO WP DATA SHEET IN SYSTEM					
PROCEDURE NUMBER WHIC-9-LOWFLOW REV.0					
STANDARD SCCM	UNIT Avg.	CHANGE	STD. Dev.	% Error	
971.4	1005	-	-	3	
733.7	755.3	-	-	3	
495.4	499.8	4.	1.7	0.9	
401.5	405.3	5.5	2.1	0.9	
294.5	295.3	6.	2.7	0.3	
208.6	209.1	3.	1.5	0.2	
90.2	88.4	5.	2.2	2	
52.8	51.7	-	-	2	
-39.4	37.8	-	-	4	
34.5	30.4	-	-	12	
22.2	21.0	-	-	6	
13.6	12.0	-	-	12	
APPROVED BY JCBall 7-1-93					
CALIBRATED BY JCBall		Hartford Operations and Engineering Contractor for the United States Department of Energy		Westinghouse Hartford Company Subsidiary of Westinghouse Electric Corporation Box 1970, Richland, WA 99352	
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APPENDIX J

SORPTION CAPACITY TEST DATA, TABLES, AND GRAPHS

Table J-1. HRC Sorption Capacity Run 69.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	20	dW	0.1 g Cataly
		10		g Englehard Deoxo Type 184
		10		g AECL Hydrophobic Type 85-4
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		16		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL • atm/μmol/K
X _{CO,in}	COin	0.113	dCOin	0.001 %
CO SC	SC	18.5	dSC	2.0 μg CO/g Catalyst

Regeneration Method: Virgin Catalyst

L/min
psi
min
0 L of air, Total
0 L air/g catalyst

SAMPLE #	TIME CO INDEX (min)	X _{CO,in} (%)	dX _{CO,in} (%)	X _{CO,out} (%)	dX _{CO,out} actual (%)	X _{CO,out} (%)	dX _{CO,out} estimated (%)	CO absorbed SCi Accum μmoles H ₂ g Cat	Error Calculations (d-est) ²	(d-act) ²	(est-act)
93-227	180 180	0.116	0.000								
	-1 -1										
	250 250							18.5			
	50 50							18.5			
	400 400										
	0 1			0.000	0.000	0.007	0.000	0.1 0.1	0	0	0.0072
93-211	10 11			0.019	0.001	0.058	0.003	4.0 4.1	1.0E-06	9.4E-06	0.0394
93-212	20 21			0.049	0.001	0.085	0.002	3.7 7.8	1.0E-06	3.0E-06	0.0358
93-213	30 31			0.068	0.001	0.098	0.001	3.1 10.9	1.0E-06	2.1E-06	0.0304
93-214	40 41			0.084	0.001	0.105	0.001	2.2 13.1	1.0E-06	1.6E-06	0.0215
93-215	50 51			0.094	0.001	0.109	0.001	1.5 14.6	1.0E-06	1.3E-06	0.0151
93-216	60 61			0.100	0.001	0.111	0.001	1.1 15.7	1.0E-06	1.2E-06	0.0110
93-217	70 71			0.105	0.001	0.112	0.001	0.7 16.4	1.0E-06	1.1E-06	0.0070
93-218	80 81			0.107	0.001	0.112	0.001	0.6 17.0	1.0E-06	1.1E-06	0.0055
93-219	90 91			0.108	0.001	0.113	0.001	0.5 17.5	1.0E-06	1.1E-06	0.0047
93-220	100 101			0.111	0.001	0.113	0.001	0.2 17.7	1.0E-06	1.0E-06	0.0019
93-221	110 111			0.110	0.001	0.113	0.001	0.3 18.0	1.0E-06	1.1E-06	0.0029
93-222	120 121			0.112	0.001	0.113	0.001	0.1 18.1	1.0E-06	1.0E-06	0.0010
93-223	130 131			0.111	0.001	0.113	0.001	0.2 18.3	1.0E-06	1.0E-06	0.0020
93-224	140 141			0.114	0.001	0.113	0.001	-0.1 18.2	1.0E-06	9.8E-07	-0.0010
93-225	155 156			0.113	0.001	0.113	0.001	-0.0 18.2	1.0E-06	1.0E-06	-0.0000
93-226	170 171			0.111	0.001	0.113	0.001	0.3 18.5	1.0E-06	1.0E-06	0.0020
93-228	185 186			0.115		0.113					
93-229	195 196			0.061		0.058					
93-230	205 206			0.024		0.030					
93-231	215 216			0.010		0.016					
93-232	225 226			0.005		0.008					
93-233	235 236			0.023		0.004					
93-234	245 246			0.013		0.002					
93-235	255 256			0.008		0.001					
93-236	265 266			0.000		0.001					
93-237	275 276			0.000		0.000					
93-238	285 286			0.000		0.000					
Summations:									1.60E-05	2.92E-05	0.186167

Figure J-1. HRC Sorption Capacity Run 69.

20 g Catalyst 10 g Englehard Deoxo Type 1846710 g AECL Hydrophobic Type 85-42
 Reactor Volume 7571 mL, 1 atm, 16°C
 500 scfm 0.113% CO in Nitrogen
 Regeneration Method: Virgin Catalyst

Table J-2. HRC Sorption Capacity Run 72.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	20	dW	0.1 g Catalyst
		10		g Englehard Deoxo Type 18467
		10		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		18		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL • atm/μmol/K
X _{CO,in}	COin	0.124	dCOin	0.001 %
CO SC	SC	1.8	dSC	0.7 μg CO/g Catalyst

Regeneration Method: Nitrogen
0.5 L/min
- psi
20 min
10 L of air, Total
0.5 L air/g catalyst

SAMPLE #	TIME CO INDEX		X _{CO,in} dX _{CO,in}		X _{CO,out} dX _{CO,out}		X _{CO,out} dX _{CO,out}		CO absorbed		Error Calculations		
	(min)	(min)	(%)	(%)	(%)	(%)	(%)	(%)	SCi	Accum	(d-est) ²	(d-act) ²	(est-act)
93-277	0	0	0.115	0.001									
93-290	115	115	0.112	0.001									
93-278	0	1			0.000	0.001	0.008	0.000	0.1	0.1	1.0E-06	0	0.0079
93-279	10	11			0.047	0.001	0.064	0.001	1.7	1.8	1.0E-06	1.9E-06	0.0170
93-280	20	21			0.100	0.001	0.093	0.001	-0.7	1.1	1.0E-06	8.7E-07	-0.0070
93-281	30	31			0.114	0.001	0.108	0.001	-0.6	0.5	1.0E-06	9.0E-07	-0.0060
93-282	40	41			0.113	0.001	0.116	0.001	0.3	0.8	1.0E-06	1.0E-06	0.0027
93-283	50	51			0.120	0.001	0.120	0.001	-0.0	0.7	1.0E-06	1.0E-06	-0.0003
93-284	60	61			0.123	0.001	0.122	0.001	-0.1	0.6	1.0E-06	9.8E-07	-0.0012
93-286	80	81			0.121	0.001	0.123	0.001	0.5	1.1	1.0E-06	1.0E-06	0.0024
93-287	90	91			0.124	0.001	0.124	0.001	-0.0	1.1	1.0E-06	1.0E-06	-0.0003
93-288	101	102			0.127	0.001	0.124	0.001	-0.4	0.7	1.0E-06	9.5E-07	-0.0031
93-289	111	112			0.123	0.001	0.124	0.001	0.1	0.8	1.0E-06	1.0E-06	0.0009
OUTLYING AND SUSPECT POINTS													
93-285	70	71			0.113	0.001	0.123						
Summations:											1.10E-05	1.06E-05	0.013101

Figure J-2. HRC Sorption Capacity Run 72.

Sorption Capacity = $1.8 \pm 0.7 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18-467, 10 g AFCL Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 18°C
 500 sccm 0.124% CO in Nitrogen
 Regeneration Method: Nitrogen
 0.5 L/min for 20 min
 10 L of air, Total
 0.5 L air/g catalyst

Table J-3. HRC Sorption Capacity Run 73.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	20	dW	0.1 g Catalyst
		10		g Englehard Deoxo Type 18467
		10		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		14		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL • atm/μmol/K
X _{CO,in}	COin	0.123	dCOin	0.001 %
CO SC	SC	3.7	dSC	0.7 μg CO/g Catalyst

Regeneration Method: Nitrogen Flush	
0.5 L/min	
- psi	
984 min	
492 L of air, Total	
24.6 L air/g catalyst	

SAMPLE #	TIME CO INDEX		X _{CO,in}	dX _{CO,in}	X _{CO,out}	dX _{CO,out}	X _{CO,out}	dX _{CO,out}	CO absorbed		Error Calculations			
	(min)	(min)	(%)	(%)	(%)	(%)	(%)	(%)	SCi	Accum μmoles H ₂ g Cat	(d-est) ²	(d-act) ²	(est-act)	
93-299	0		0.123	0.001										
93-300	0	1			0.000	0.000	0.008	0.000	0.1	0.1	0	0	0.0079	
93-301	10	11			0.034	0.001	0.064	0.002	3.0	3.1	1.0E-06	3.5E-06	0.0295	
93-302	20	21			0.086	0.001	0.092	0.001	0.6	3.7	1.0E-06	1.2E-06	0.0063	
93-303	30	31			0.112	0.001	0.107	0.001	-0.5	3.2	1.0E-06	9.1E-07	-0.0049	
93-304	40	41			0.118	0.001	0.115	0.001	-0.3	2.9	1.0E-06	9.5E-07	-0.0032	
93-305	50	51			0.121	0.001	0.119	0.001	-0.2	2.7	1.0E-06	9.6E-07	-0.0022	
93-306	60	61			0.122	0.001	0.121	0.001	-0.1	2.6	1.0E-06	9.8E-07	-0.0012	
93-307	70	71			0.123	0.001	0.122	0.001	-0.1	2.4	1.0E-06	9.8E-07	-0.0011	
93-308	80	81			0.122	0.001	0.122	0.001	0.0	2.5	1.0E-06	1.0E-06	0.0004	
93-309	90	91			0.123	0.001	0.123	0.001	-0.0	2.5	1.0E-06	1.0E-06	-0.0003	
93-310	100	101			0.122	0.001	0.123	0.001	0.1	2.5	1.0E-06	1.0E-06	0.0008	
93-312	120	121			0.123	0.001	0.123	0.001	-0.0	2.5	1.0E-06	1.0E-06	-0.0000	
93-313	130	131			0.123	0.001	0.123	0.001	-0.0	2.5	1.0E-06	1.0E-06	-0.0000	
OUTLYING AND SUSPECT POINTS														
93-311	110	111			0.116		0.123							
Summations											1.20E-05	1.44E-05	0.031899	

Figure J-3. HRC Sorption Capacity Run 73.

Sorption Capacity = $3.7 \pm 0.7 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18-467, 10 g AECIL Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 14°C
 500 sccm 0.123% CO in Nitrogen
 Regeneration Method: Nitrogen Flush
 0.5 L/min for 984 min
 492 L of air, Total
 24.6 L air/g catalyst

Table J-4. HRC Sorption Capacity Run 74.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	20	dW	0.1 g Catalyst
		10		g Englehard Deoxo Type 18467
		10		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		17		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL·atm/μmol/K
X _{CO,in}	COin	0.120	dCOin	0.001 %
CO SC	SC	17.9	dSC	1.9 μg CO/g Catalyst

Regeneration Method: Virgin Catalyst	
	L/min
	psi
	min
	0 L of air, Total
	0 L air/g catalyst

SAMPLE #	TIME CO INDEX		X _{CO,in}	dX _{CO,in}	X _{CO,out}	dX _{CO,out}	X _{CO,out} dX _{CO,out}		CO absorbed SCi Accum μmoles H ₂ g Cat	Error Calculations		
	(min)	(min)					actual	estimated		(d-est) ²	(d-act) ²	(est-act)
93-314	0	1	0.123	0.002								
93-341	260	261	0.119	0.001								
93-342	265	266	0.121	0.000								
93-343	270	271	0.121	0.001								
93-344	275	276	0.119	0.001								
93-315	0	1			0.000	0.000	0.008	0.000	0.1 0.1	0	0	0.0077
93-316	10	11			0.029	0.001	0.062	0.002	3.4 3.4	1.0E-06	4.6E-06	0.0330
93-317	20	21			0.056	0.000	0.090	0.000	3.5 6.9	0	0	0.0340
93-318	30	31			0.074	0.001	0.105	0.001	3.1 10.0	1.0E-06	2.0E-06	0.0305
93-319	40	41			0.091	0.000	0.112	0.000	2.1 12.2	0	0	0.0210
93-320	50	51			0.103	0.001	0.116	0.001	1.3 13.5	1.0E-06	1.3E-06	0.0129
93-321	60	61			0.098	0.001	0.118	0.001	2.0 15.5	1.0E-06	1.4E-06	0.0199
93-322	70	71			0.114	0.001	0.119	0.001	0.5 16.0	1.0E-06	1.1E-06	0.0049
93-323	80	81			0.116	0.000	0.119	0.000	0.4 16.4	0	0	0.0034
93-324	90	91			0.111	0.000	0.120	0.000	0.9 17.3	0	0	0.0087
93-325	100	101			0.118	0.001	0.120	0.001	0.2 17.5	1.0E-06	1.0E-06	0.0018
93-326	110	111			0.116	0.001	0.120	0.001	0.4 17.9	1.0E-06	1.1E-06	0.0039
93-327	120	121			0.120	0.000	0.120	0.000	-0.0 17.9	0	0	-0.0000
93-328	130	131			0.117	0.000	0.120	0.000	0.3 18.2			
93-329	140	141			0.121	0.000	0.120	0.000	-0.1 18.1			
93-330	150	151			0.117	0.000	0.120	0.000	0.3 18.4			
93-331	160	161			0.121	0.001	0.120	0.001	-0.1 18.3			
93-332	170	171			0.117	0.001	0.120	0.001	0.3 18.6			
93-333	180	181			0.121	0.000	0.120	0.000	-0.1 18.5			
93-334	190	191			0.117	0.000	0.120	0.000	0.3 18.8			
93-335	200	201			0.120	0.001	0.120	0.001	-0.0 18.8			
93-337	220	221			0.117	0.001	0.120	0.001	0.6 19.4			
93-338	230	231			0.121	0.000	0.120	0.000	-0.1 19.3			
93-339	240	241			0.117	0.001	0.120	0.001	0.3 19.6			
93-340	250	251			0.122	0.001	0.120	0.001	-0.2 19.4			
OUTLYING AND SUSPECT POINTS												
93-336	210	211			0.106	0.001	0.120		1.4 20.2			
Summations										7.00E-06	1.25E-05	0.181649

Figure J-4. HRC Sorption Capacity Run 74.

Sorption Capacity = $17.9 \pm 1.9 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18467, 10 g Al₂Cl₃ Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 17°C
 500 sccm 0.120% CO in Nitrogen
 Regeneration Method: Virgin Catalyst

Table J-5. HRC Sorption Capacity Run 75.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	20	dW	0.1 g Catalyst
		10		g Englehard Deoxo Type 18467
		10		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		14.5		°C
Pressure		1		atm
Ref Temp	T	287.5	298	K
Ref Pres	P	1		atm
R	R	8.206E-05		mL • atm/μmol/K
X _{CO,in}	COin	0.135	dCOin	0.000 %
CO SC	SC	1.8	dSC	0.4 μg CO/g Catalyst

Regeneration Method: Virgin Catalyst	
12 L/min	
psi	
17 min	
204 L of air, Total	
10.2 L air/g catalyst	

SAMPLE #	TIME CO INDEX		X _{CO,in}	dX _{CO,in}	X _{CO,out}	dX _{CO,out}	X _{CO,out}	dX _{CO,out}	CO absorbed		Error Calculations		
	(min)	(min)	(%)	(%)	(%)	(%)	(%)	(%)	SCi	Accum	(d-est) ²	(d-act) ²	(est-act)
									μmoles H ₂	g Cat			
93-345	0	0	0.129	0.002									
93-360	140	140	0.135	0.000									
93-362	160	160	0.135	0.000									
93-363	170	170	0.135	0.001									
93-361	150	150	0.120	0.000									
93-346	0	0			0.000	0.000	0.000	0.000	0.0	0.0	0	0	0.0000
93-347	10	10			0.048	0.001	0.065	0.001	1.8	1.8	1.0E-06	1.8E-06	0.0173
93-348	20	20			0.112	0.000	0.099	0.000	-1.4	0.4	0	0	-0.0130
93-349	30	30			0.129	0.000	0.116	0.000	-1.3	-0.9	0	0	-0.0126
93-350	42	42			0.134	0.000	0.127	0.000	-0.9	-1.8	0	0	-0.0074
93-351	50	50			0.135	0.002	0.130	0.002	-0.4	-2.3	4.0E-06	3.7E-06	-0.0050
93-352	60	60			0.135	0.001	0.132	0.001	-0.2	-2.5	1.0E-06	9.7E-07	-0.0023
93-353	70	70			0.134	0.001	0.134	0.001	-0.1	-2.6	1.0E-06	9.9E-07	-0.0006
93-354	80	80			0.135	0.001	0.134	0.001	-0.0	-2.6	1.0E-06	9.9E-07	-0.0004
93-355	90	90			0.135	0.001	0.135	0.001	-0.0	-2.6	1.0E-06	9.9E-07	-0.0004
93-356	100	100			0.135	0.001	0.135	0.001	0.0	-2.6	1.0E-06	1.0E-06	0.0001
93-357	110	110			0.135	0.001	0.135	0.001	0.0	-2.6	1.0E-06	1.0E-06	0.0002
93-358	120	120			0.136	0.001	0.135	0.001	-0.1	-2.7	1.0E-06	9.9E-07	-0.0007
93-359	130	130			0.134	0.001	0.135	0.001	0.1	-2.6	1.0E-06	1.0E-06	0.0007
Summations											1.30E-05	1.35E-05	-0.02418

Figure J-5. HRC Sorption Capacity Run 75.

Sorption Capacity = $1.8 \pm 0.4 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18467, 10 g Al₂Cl₃ Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 15°C
 500 scfm 0.135% CO in Nitrogen
 Regeneration Method: Virgin Catalyst
 12 L/min for 17 min
 204 L of air, Total
 10.2 L air/g catalyst

Table J-6. HRC Sorption Capacity Run 76.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	20	dW	0.1 g Catalyst
		10		g Englehard Deoxo Type 18467
		10		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		14		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL·atm/μmol/K
X _{CO,in}	COin	0.132	dCOin	0.004 %
CO SC	SC	0.8	dSC	0.1 μg CO/g Catalyst

Regeneration Method: Nitrogen Flush	
30	L/min
10	psi
20	min
600	L of air, Total
30	L air/g catalyst

SAMPLE #	TIME CO INDEX		X _{CO,in}	dX _{CO,in}	X _{CO,out}	dX _{CO,out} actual	X _{CO,out}	dX _{CO,out} estimated	CO absorbed SCi Accum μmoles H ₂ g Cat		Error Calculations		
	(min)	(min)	(%)	(%)	(%)	(%)	(%)	(%)			(d-est) ²	(d-act) ²	(est-act)
93-364	0	0	0.135	0.000									
93-365	2	2	0.128	0.001									
93-375	95	95	0.131	0.014									
93-376	100	100	0.135	0.000									
93-366	0	0			0.000	0.000	0.000	0.000	0.0	0.0	0	0	0.0000
93-367	10	10			0.056	0.001	0.064	0.001	0.8	0.8	1.0E-06	1.3E-06	0.0079
93-368	20	20			0.104	0.001	0.097	0.001	-0.7	0.1	1.0E-06	8.7E-07	-0.0070
93-369	30	30			0.128	0.000	0.114	0.000	-1.4	-1.3	0	0	-0.0140
93-370	40	40			0.129	0.000	0.123	0.000	-0.6	-2.0	0	0	-0.0062
93-371	50	50			0.134	0.001	0.127	0.001	-0.7	-2.6	1.0E-06	9.0E-07	-0.0066
93-372	60	60			0.129	0.001	0.130	0.001	0.1	-2.6	1.0E-06	1.0E-06	0.0007
93-373	70	70			0.135	0.001	0.131	0.001	-0.4	-3.0	1.0E-06	9.4E-07	-0.0040
93-374	80	80			0.131	0.001	0.132	0.001	0.1	-2.9	1.0E-06	1.0E-06	0.0006
93-374	90	90			0.135	0.000	0.132	0.000	-0.3	-3.2	0	0	-0.0031
Summations											6.00E-06	6.04E-06	-3.17E-02

Figure J-6. HRC Sorption Capacity Run 76.

Sorption Capacity = $0.8 \pm 0.1 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18-467, 10 g Al:Cl Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 14 °C
 500 sccm 0.132% CO in Nitrogen
 Regeneration Method: Nitrogen Flush
 30 L/min @ 10 psi for 20 min
 600 L of air, Total
 30.0 L air/g catalyst

Table J-7. HRC Sorption Capacity Run 77.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	20	dW	0.1 g Catalyst
		10		g Englehard Deoxo Type 18467
		10		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dl	0.2 min
ResTime	Tr	14.0	dTr	1.5 min
Temperature		17		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL • atm/μmol/K
X _{CO,in}	COin	0.133	dCOin	0.001 %
CO SC	SC	28.5	dSC	3.0 μg CO/g Catalyst

Regeneration Method: Air Flush	
30 L/min	
10 psi	
15 min	
450 L of air, Total	
22.5 L air/g catalyst	

SAMPLE #	TIME CO INDEX (min) (min)	X _{CO,in} (%)	dX _{CO,in} (%)	X _{CO,out} (%)	dX _{CO,out} actual (%)	X _{CO,out} (%)	dX _{CO,out} estimated (%)	CO absorbed SCi Accum μmoles H ₂ g Cat	Error Calculations		
									(d-est) ²	(d-act) ²	(est-act)
93-378	0 1	0.134	0.001								
93-379	2 3	0.133	0.001								
93-395	155 156	0.134	0.001								
93-396	160 161	0.132	0.001								
	0 1			0.000	0.000	0.009	0.000	0.1 0.1	0	0	0.0092
93-380	10 11			0.052	0.001	0.073	0.001	2.1 2.2	1.0E-06	1.9E-06	0.0205
93-381	20 21			0.061	0.000	0.104	0.000	4.3 6.5	0	0	0.0425
93-382	30 31			0.067	0.000	0.119	0.000	5.3 11.8	0	0	0.0517
93-383	40 41			0.076	0.001	0.126	0.002	5.1 16.9	1.0E-06	2.8E-06	0.0501
93-384	50 51			0.087	0.001	0.130	0.001	4.4 21.3	1.0E-06	2.2E-06	0.0428
93-385	60 61			0.099	0.001	0.132	0.001	3.3 24.6	1.0E-06	1.8E-06	0.0325
93-386	70 71			0.113	0.001	0.132	0.001	2.0 26.6	1.0E-06	1.4E-06	0.0194
93-387	80 81			0.125	0.001	0.133	0.001	0.8 27.4	1.0E-06	1.1E-06	0.0078
93-388	90 91			0.128	0.001	0.133	0.001	0.5 27.9	1.0E-06	1.1E-06	0.0050
93-389	100 101			0.129	0.001	0.133	0.001	0.4 28.4	1.0E-06	1.1E-06	0.0042
93-390	110 111			0.132	0.001	0.133	0.001	0.1 28.5	1.0E-06	1.0E-06	0.0012
93-392	130 131			0.134	0.000	0.133	0.000	-0.2 28.3	0	0	-0.0008
93-394	150 151			0.134	0.001	0.133	0.001	-0.2 28.2	1.0E-06	9.9E-07	-0.0008
OUTLYING AND SUSPECT POINTS											
93-391	120 121			0.126	0.000	0.133	0.000	0.7 29.2			
93-393	140 141			0.128	0.000	0.133	0.000	0.5 28.9			
Summations									1.00E-05	1.53E-05	2.85E-01

Figure J-7. HRC Sorption Capacity Run 77.

Sorption Capacity = $28.5 \pm 3.0 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18-467, 10 g Al₂C₃L Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 17°C
 500 sccm 0.133% CO in Nitrogen
 Regeneration Method: Air Flush
 30 L/min @ 10 psi for 15 min
 450 L of air, Total
 22.5 L air/g catalyst

Note: The air was not purged from the reactor before this run, therefore the SC is artificially high and is not used for the average SC.

Table J-8. HRC Sorption Capacity Run 78.

Flowrate	Q	500	dQ	50	mL/min
Catalyst Mass	W	20	dW	0.1	g Catalyst (
		10			g Englehard Deoxo Type 18467,
		10			g AECL Hydrophobic Type 85-42)
Volume	V	7571			mL
Time Interval	I	10	dI	0.2	min
ResTime	Tr	15.1	dTr	1.5	min
Temperature	T	17			°C
Pressure	P	1			atm
Ref Temp	T	290			K
Ref Pres	P	1			atm
R	R	8.206E-05			mL*atm/μmol/K
X _{Co, in}	COin	0.054	dCOin	0.001	%
X _{H2, in,1}	H2in1	1.774	dH2in1	0.024	%
X _{H2, in,2}	H2in2	1.924	dH2in2		%
Reaction Rate	RR	1005.4	dRR	10.2	μg H ₂ /h/g Catalyst
CO SC	SC	22.7	dSC	3.4	μg CO/g Catalyst

Regeneration Method	Air Flush
	30 L/min
	10 psi
	15 min
	450 L of air Total
	22.5 L air/g catalyst

SAMPLE		TIME INDEX		CO	X _{H2,in}	X _{H2,in} actual	X _{H2,in} estimated	RR	dRR	[CO] ₁	[CO] _{in}	[CO] _{est}	CO absorbed	Error Calculations		
#			H ₂ (mn)		(%)	(%)		μmol H ₂ /h	g Cat	(%) dX _{CO}	(%) dX _{H2}	(%) dX _{CO}	μmoles H ₂ g Cat	(d-est) ²	(d-act) ²	(est-act)
93-400	0	0	1	1.757	-											
93-401	5	5	6	1.790	0.048											
93-420	190	190	191	1.925	-					0.056	0.001					
93-438	352	352	353	0.193	0.097					0.054	0.001					
93-439	355	355	356	1.923	-					0.053	0.000					
H ₂ Data Points																
93-402	0	1		0.000		0.113	71.4	7.2								
93-403	10	11		0.326	0.004	0.916	371.8	37.2								
93-404	20	21		0.275	0.001	1.330	655.2	66.6								
93-404	30	31		0.298	0.005	1.545	785.7	78.7								
93-405	40	41		0.277	0.005	1.655	868.7	87.0								
93-406	50	51		0.283	0.001	1.712	901.0	90.2								
93-407	60	61		0.272	0.009	1.742	926.5	92.8								
93-408	70	71		0.325	0.004	1.757	902.7	90.4								
93-409	80	81		0.278	0.004	1.765	937.3	93.9								
93-410	90	91		0.312	0.007	1.769	918.5	92.0								
93-411	100	101		0.282	0.005	1.771	938.7	94.0								
93-412	110	111		0.166	0.003	1.772	1012.5	101.4								
93-413	120	121		0.194	0.003	1.773	995.2	99.6								
93-414	130	131		0.159	0.007	1.773	1017.5	101.9								
93-415	140	141		0.195	0.004	1.773	994.9	99.6								
93-416	150	151		0.151	0.003	1.773	1022.6	102.4								
93-417	160	161		0.197	0.004	1.773	993.7	99.5								
93-418	170	171	42	1	0.210	0.002	1.804	1004.7	100.6							
93-419	180	181	52	11	0.272	0.001	1.862	1002.2	100.3							
93-421	190	191	62	19	0.312	0.003	1.892	995.9	99.7							
93-422	200	201	72	29	0.417	0.009	1.907	939.5	94.1							
93-424	220	221	92	49	0.546	0.013	1.920	865.8	86.7							
93-425	230	231	102	59	0.826	0.011	1.922	690.7	69.2							
93-426	240	241	112	69	1.324	0.032	1.923	377.4	37.8							
93-427	250	251	122	79	1.650	0.048	1.923	172.3	17.3							
93-428	260	261	132	91	1.523	0.041	1.924	252.6	25.3							
93-429	270	271	142	101	1.482	0.227	1.924	278.5	27.9							
93-430	280	281	152	111	1.981	0.023	1.924	-36.0	-3.6							
93-431	290	291	162	119	1.733	0.320	1.924	120.4	12.1							
93-432	300	301	172	129	2.012	0.040	1.924	-55.5	-5.6							
93-433	310	311	182	141	1.669	0.620	1.924	160.7	16.1							
93-434	320	321	192	149	1.657	0.490	1.924	168.3	16.9							
93-436	340	341	212	169	1.848	0.096	1.924	47.9	4.8							
93-437	350	351	222	179	1.783	0.066	1.924	88.9	8.9							
CO Data Points																
93-418	169	170	42	0						0	0	0.0	0.0	1.0E-05	8.4E-08	-0.0085
93-419	170	171	43	1						0.019	0.001	0.028	0.001	1.0E-06	2.2E-05	0.0031
93-421	190	191	63	19						0.026	0.008	0.039	0.012	0.000064	0.000143	0.0129
93-422	200	201	73	29						0.024	-	0.046	0.000	0	0	0.0223
93-424	220	221	93	49						0.028	0.000	0.052	0.000	0	0	0.0242
93-425	230	231	103	59						0.032	-	0.053	0.000	0	0	0.0212
93-426	240	241	113	69						0.046	0.000	0.054	0.000	0.0E+00	0	0.0079
93-427	250	251	123	79						0.038	0.003	0.054	0.004	9.0E-06	0.000018	0.0160
93-431	290	291	163	119						0.045	0.000	0.054	0.000	0	0	0.0093
93-432	300	301	173	129						0.054	0.000	0.054	0.000	0	0	0.0093
93-434	320	321	193	149						0.045	0.000	0.054	0.000	0	0	0.0093
93-436	340	341	213	169						0.046	0.000	0.054	0.000	0	0	0.0093
93-437	350	351	223	179						0.045	0.000	0.054	0.000	0	0	0.0093
OUTLYING AND SUSPECT POINTS																
93-423	210	211	82	41	0.002	0.001	1.915	1206.1	120.8							
93-428	260	261	133	91												
93-429	270	271	143	101						0.028	0.012					
93-430	280	281	153	111												
93-433	310	311	183	141												
Summations													7.50E-05	1.53E-04	1.42E-01	

Figure J-8. HRC Sorption Capacity Run 78.

Sorption Capacity = $22.7 \pm 3.4 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18467, 10 g Al:CL Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 17°C
 500 sccm 1.924 H₂ and 0.054% CO in Nitrogen
 Regeneration Method: Air Flush
 30 L/min @ 10 psi for 15 min
 450 L of air, Total
 22.5 L air/g catalyst

Figure J-9. HRC Sorption Capacity Run 78, Declining Reaction Rate.

Reaction Rate = $1005.4 \pm 10.2 \mu\text{mole H}_2/\text{h/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18467, 10 g AFCL Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 17°C
 500 sccm 1.774% H_2 in Nitrogen
 500 sccm 1.924 H_2 and 0.054% CO in Nitrogen
 Regeneration Method: Air Flush
 30 L/min @ 10 psi for 15 min
 450 L of air, Total
 22.5 L air/g catalyst

Table J-9. HRC Sorption Capacity Run 80.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	20	dW	0.1 g Catalyst
		10		g Englehard Deoxo Type 18467
		10		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		16.6		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL • atm/μmol/K
X _{CO,in}	COin	0.096	dCOin	0.001 %
CO SC	SC	13.8	dSC	1.4 μg CO/g Catalyst

Regeneration Method: Air Flush	
	17 L/min
	- psi
	10 min
	170 L of air, Total
	8.5 L air/g catalyst

SAMPLE #	TIME		X _{CO,in} (%)	dX _{CO,in} (%)	X _{CO,out} (%)	dX _{CO,out} actual (%)	X _{CO,out} estimated (%)	dX _{CO,out} estimated (%)	CO absorbed SCi Accum μmoles H ₂ g Cat	Error Calculations		
	(min)	INDEX (min)								(d-est) ²	(d-act) ²	(est-act)
93-451	0	1	0.089	0.002								
93-452	3	4	0.099	0.001								
93-464	115	116	0.099	0.001								
93-465	120	121	0.097	0.001								
	0	1			0.000	0.000	0.006	0.000	0.1 0.1	0	0	0.0061
93-453	10	11			0.031	0.000	0.050	0.000	1.9 2.0	0	0	0.0186
93-454	20	21			0.046	0.001	0.072	0.002	2.7 4.6	1.0E-06	2.5E-06	0.0260
93-455	30	31			0.053	0.000	0.084	0.000	3.1 7.8	0	0	0.0306
93-456	40	41			0.070	0.000	0.090	0.000	2.0 9.8	0	0	0.0196
93-457	50	51			0.071	0.001	0.093	0.001	2.2 12.0	1.0E-06	1.7E-06	0.0217
93-458	60	61			0.090	0.001	0.094	0.001	0.4 12.4	1.0E-06	1.1E-06	0.0043
93-459	70	71			0.082	0.001	0.095	0.001	1.3 13.8	1.0E-06	1.3E-06	0.0131
93-460	80	81			0.096	0.000	0.096	0.000	-0.0 13.7	0	0	-0.0005
93-461	90	91			0.083	0.001	0.096	0.001	1.3 15.0			
93-462	100	101			0.099	0.001	0.096	0.001	-0.3 14.7			
93-463	110	111			0.084	0.001	0.096	0.001	1.2 15.9			
Summations										4.00E-06	6.60E-06	1.40E-01

Figure J-10. HRC Sorption Capacity Run 80.

Sorption Capacity = $13.8 \pm 1.4 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18467, 10 g Al:CL Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 17°C
 500 sccm 0.096% CO in Nitrogen
 Regeneration Method: Air Flush
 17 L/min for 10 min
 170 L of air, Total
 8.5 L air/g catalyst

Table J-10. HRC Sorption Capacity Run 82.

Flowrate	Q	595	dQ	50	mL/min
Catalyst Mass	W	20	dW	0.1	g Catalyst (
		10			g Englehard Deoxo Type 18467
		10			g AECL Hydrophobic Type 85-42)
Volume	V	7571			mL
Time Interval	I	10	dI	0.2	min
Res Time	Tr	12.7	dTr	1.1	min
Temperature		16.8			°C
Pressure		1			atm
Ref Temp	T	290			K
Ref Pres	P	1			atm
R	R	8.206E-05			mL-atm/ μ mol/K
X _{CO, in}	CO _{in}	0.055	dCO _{in}	0.000	%
X _{H₂, in 1}	H ₂ _{in1}	0.711	dH ₂ _{in1}	0.003	%
X _{H₂, in 2}	H ₂ _{in2}	0.701	dH ₂ _{in2}	0.006	%
Reaction Rate	RR	435.8	dRR	36.8	μ g H ₂ /h/g Catalyst
CO SC	SC	14.9	dSC	2.1	μ g CO/g Catalyst

Regeneration Method	Ar Flush
	30 L/min
	10 psi
	15 min
	450 L of Ar, Total
	22.5 L Ar/g catalyst

SAMPLE #	TIME INDEX H ₂ CO (min)	X _{H₂, in} (%)	X _{H₂, in} actual (%)	X _{H₂, in} estimated (%)	RR μ mol H ₂ /h g Cat	dRR	[CO] _{in} (%) dX _{CO}	[CO] _{in} (%) dX _{CO}	[CO] _{in} (%) dX _{CO}	CO absorbed SC _i Accum μ moles H ₂ g Cat	Error Calculations (d-est) ² (d-act) ² (est-act)
33-492	0	0.708 0.002									
33-493	5	0.714 0.004									
33-503	105	0.694 0.004					0.055 0.000				
33-517	277	0.703 0.006					0.055 0.001				
33-518	284	0.707 0.009					0.056 0.000				
H ₂ Data Points											
33-494	55 55		0.124 0.001	0.702	433.52	36.59					
33-495	65 65		0.130 0.002	0.707	432.87	36.56					
33-496	75 75		0.127 0.002	0.709	436.88	36.90					
33-497	85 85		0.129 0.005	0.710	436.18	37.04					
33-498	95 95		0.125 0.002	0.711	439.55	37.13					
33-499	105 105		0.128 0.002	0.711	437.46	37.27					
33-500	116 116		0.158 0.002	0.711	415.02	35.34					
33-501	126 126		0.202 0.006	0.711	382.03	32.76					
33-502	136 136		0.279 0.009	0.711	324.25	28.01					
33-504	146 146		0.420 0.009	0.711	218.42	18.74					
33-506	166 166		0.639 0.008	0.711	54.04	4.53					
33-507	176 176		0.684 0.007	0.711	20.27	1.72					
33-508	186 186		0.690 0.005	0.711	15.76	1.33					
33-509	196 196		0.700 0.008	0.711	8.26	0.70					
33-510	206 206		0.646 0.009	0.711	48.79	4.15					
33-511	216 216		0.710	0.711	0.75	0.06					
33-512	226 226		0.676 0.008	0.711	26.27	2.23					
33-514	246 246		0.715 0.005	0.711	-3.00	-0.25					
33-515	256 256		0.697	0.711	10.51	0.89					
33-516	266 266		0.697 0.006	0.711	10.51	0.89					
CO Data Points											
33-499	105 105 0						0.000 0.000	0.000 0.000	0.000 0.000	0.0 0.0	0. 0 0.0000
33-500	116 116 11						0.013 0.001	0.032 0.002	2.6 2.6	1.0E-06 6.1E-06	0.0190
33-501	126 126 21						0.020 0.001	0.045 0.002	3.1 5.7	1.0E-06 5.0E-06	0.0247
33-502	136 136 31						0.026 0.000	0.050 0.000	3.1 8.9	0 0	0.0245
33-504	146 146 41						0.033 0.001	0.053 0.002	2.5 11.3	1.0E-06 2.6E-06	0.0201
33-505	156 156 51						0.039 0.001	0.054 0.001	1.9 13.2	1.0E-06 1.9E-06	0.0153
33-506	166 166 61						0.047 0.001	0.055 0.001	1.0 14.2	1.0E-06 1.4E-06	0.0079
33-507	176 176 71						0.054 0.008	0.055 0.008	0.1 14.3	6.4E-05 0.000027	0.0011
33-509	196 196 91						0.055 0.001	0.055 0.001	0.1 14.4	1.0E-06 1.0E-06	0.0003
33-512	226 226 121						0.054 0.001	0.055 0.001	0.5 14.9	1.0E-06 1.0E-06	0.0013
33-514	246 246 141						0.056 0.001	0.055 0.001	-0.2 14.7	1.0E-06 9.8E-07	-0.0007
OUTLYING AND SUSPECT POINTS											
33-508	186 186 81						0.04 0.001	0.055 0.001	2.2 16.5		
33-510	206 206 101						0.05 0.001	0.055 0.001	1.2 15.6		
33-511	216 216 111						0.04 0.001	0.055 0.001	2.2 17.7		
33-513	236 236 131						0.001	0.055	6.9 21.8		
33-515	256 256 151						0.02 0.001	0.055 0.003	4.4 19.2		
33-516	266 266 161						0.051 0.001	0.055 0.001	1.1 15.8		
Summations										7.20E-05 8.67E-05 1.14E-01	

Figure J-11. HRC Sorption Capacity Run 82.

Sorption Capacity = $14.9 \pm 2.1 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Inglehard Deoxo Type 18-467, 10 g Al₂Cl₃ Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 17°C
 595 sccm 0.701 H₂ and 0.055% CO in Nitrogen
 Regeneration Method: Air Flush
 30 L/min @ 10 psi for 15 min
 450 L of air, Total
 22.5 L air/g catalyst

Figure J-12. HRC Sorption Capacity Run 82, Declining Reaction Rate.

20 g Catalyst (10 g Englehard Deoxo Type 18467, 10 g AlCl₃ Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 17°C
 595 sccm 0.711% H₂ in Nitrogen
 595 sccm 0.701 H₂ and 0.055% CO in Nitrogen
 Regeneration Method: Air Flush
 30 L/min @ 10 psi for 15 min
 450 L of air, Total
 22.5 L air/g catalyst

Table J-11. HRC Sorption Capacity Run 83.

Flowrate	Q	500	dQ	50	mL/min
Catalyst Mass	W	20	dW	0.1	g Catalyst
		10			g Englehard Deoxo Type 18467
		10			g AECL Hydrophobic Type 85-42
Volume	V	7571			mL
Time Interval	I	10	dI	0.2	min
ResTime	Tr	15.1	dTr	1.5	min
Temperature		15.9			°C
Pressure		1			atm
Ref Temp	T	298			K
Ref Pres	P	1			atm
R	R	8.206E-05			mL • atm/μmol/K
X _{CO,in}	COin	0.115	dCOin	0.001	%
CO SC	SC	19.5	dSC	2.2	μg CO/g Catalyst

Regeneration Method: Air Flush	
30	L/min
10	psi
28	min
840	L of air, Total
42	L air/g catalyst

SAMPLE #	TIME CO INDEX		X _{CO,in}	dX _{CO,in}	X _{CO,out}	dX _{CO,out}	X _{CO,out}	dX _{CO,out}	CO absorbed		Error Calculations		
	(min)	(min)	(%)	(%)	(%)	(%)	(%)	(%)	SCi	Accum	(d-est) ²	(d-act) ²	(est-act)
									μmoles H ₂	g Cat			
93-519	0	1	0.115	0.001									
93-520	4	5	0.114	0.001									
93-536	155	156	0.114	0.001									
93-537	159	160	0.115	0.001									
	0	1			0.000	0.000	0.007	0.000	0.1	0.1	0	0	0.0073
93-521	10	11			0.034	0.000	0.059	0.000	2.6	2.6	0	0	0.0251
93-522	20	21			0.039	0.004	0.086	0.009	4.8	7.4	0.000016	0.000078	0.0469
93-523	30	31			0.051	0.001	0.100	0.002	5.0	12.4	1.0E-06	3.8E-06	0.0487
93-524	40	41			0.080	0.000	0.107	0.000	2.7	15.2	0	0	0.0269
93-525	50	51			0.092	0.001	0.111	0.001	1.9	17.1	1.0E-06	1.4E-06	0.0186
93-526	60	61			0.109	0.000	0.112	0.000	0.4	17.4	0	0	0.0035
93-527	70	71			0.095	0.001	0.113	0.001	1.9	19.3	1.0E-06	1.4E-06	0.0184
93-528	80	81			0.113	0.001	0.114	0.001	0.1	19.4	1.0E-06	1.0E-06	0.0010
93-529	90	91			0.114	0.001	0.114	0.001	0.0	19.4	1.0E-06	1.0E-06	0.0002
93-530	100	101			0.114	0.001	0.114	0.001	0.0	19.5	1.0E-06	1.0E-06	0.0004
93-531	110	111			0.115	0.026	0.114	0.001	-0.1	19.4			
93-532	120	121			0.114	0.001	0.114	0.001	0.0	19.4			
93-533	130	131			0.115	0.001	0.114	0.001	-0.1	19.4			
93-534	140	141			0.115	0.000	0.114	0.000	-0.1	19.3			
93-535	150	151			0.115	0.000	0.114	0.000	-0.1	19.3			
Summations											2.20E-05	8.73E-05	1.97E-01

Figure J-13. HRC Sorption Capacity Run 83.

Sorption Capacity = $19.5 \pm 2.2 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18467, 10 g Al:CL Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 16°C
 500 sccm 0.115% CO in Nitrogen
 Regeneration Method: Air Flush
 30 L/min @ 10 psi for 28 min
 840 L of air, Total
 42.0 L air/g catalyst

Table J-12. HRC Sorption Capacity Run 84.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	20	dW	0.1 g Catalyst
		10		g Englehard Deoxo Type 18467
		10		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		16		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL·atm/μmol/K
X _{CO,in}	COin	0.105	dCOin	0.001 %
CO SC	SC	16.2	dSC	1.7 μg CO/g Catalyst

Regeneration Method: Air Flush
30 L/min
7 psi
10 min
300 L of Air, Total
15 L air/g catalyst

SAMPLE #	TIME CO INDEX		X _{CO,in} (%)	dX _{CO,in} (%)	X _{CO,out} actual		dX _{CO,out} estimated		CO absorbed SCi Accum μmoles H ₂ g Cat		Error Calculations			
	(min)	(min)			(%)	(%)	(%)	(%)			f(est-act)	(d-est) ²	(d-act) ²	(est-act)
93-538	0	0	0.104	0.001										
93-539	2	2	0.107	0.000										
93-555	153	153	0.105	0.003										
93-556	168	168	0.106	0.000										
93-540	0	1			0.000	0.000	0.007	0.000	0.1	0.1	0.0067	0.000E+00	0.000E+00	0.00671
93-541	10	11			0.020	0.001	0.054	0.003	3.5	3.6	0.3422	1.000E-06	7.349E-06	0.03422
93-542	20	21			0.040	0.001	0.079	0.002	4.0	7.5	0.3877	1.000E-06	3.877E-06	0.03877
93-543	30	31			0.054	0.001	0.091	0.002	3.8	11.4	0.3745	1.000E-06	2.868E-06	0.03745
93-544	40	41			0.071	0.001	0.098	0.001	2.8	14.1	0.2700	1.000E-06	1.905E-06	0.02700
93-545	50	51			0.088	0.001	0.101	0.001	1.4	15.5	0.1338	1.000E-06	1.327E-06	0.01338
93-546	60	61			0.098	0.001	0.103	0.001	0.5	16.0	0.0513	1.000E-06	1.107E-06	0.00513
93-547	70	71			0.103	0.001	0.104	0.001	0.1	16.1	0.0103	1.000E-06	1.020E-06	0.00103
93-548	80	81			0.104	0.001	0.105	0.001	0.1	16.2	0.0050	1.000E-06	1.010E-06	0.00050
93-549	90	91			0.104	0.000	0.105	0.000	0.1	16.2	0.0074	0.000E+00	0.000E+00	0.00074
93-550	100	101			0.105	0.000	0.105		-0.0	16.2				
93-551	110	111			0.105		0.105		-0.0	16.2				
93-552	120	121			0.105		0.105		-0.0	16.2				
93-553	130	131			0.105		0.105		-0.0	16.2				
93-554	140	141			0.105		0.105		-0.0	16.2				
OUTLYING AND SUSPECT POINTS														
93-554	150	151			0.099		0.105		0.6	16.8				
Summations:											1.5889	8.0000E-06	2.0464E-05	0.1649

Figure J-14. HRC Sorption Capacity Run 84.

Sorption Capacity = $16.2 \pm 1.7 \mu\text{moles CO/g Catalyst}$

20 g Catalyst (10 g Englehard Deoxo Type 18467, 10 g AFCL Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 16°C
 500 sccm 0.105% CO in Nitrogen
 Regeneration Method: Air Flush
 30 L/min @ 7 psi for 10 min
 300 L of Air, Total
 15.0 L air/g catalyst

Table J-13. HRC Sorption Capacity Run 85.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	30	dW	0.1 g Catalyst
		15		g Englehard Deoxo Type 18467
		15		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		14.9		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL·atm/μmol/K
X _{CO,in}	COin	0.102	dCOin	0.001 %
CO SC	SC	21.5	dSC	2.3 μg CO/g Catalyst

Regeneration Method: Air Flush	
30 L/min	
10 psi	
15 min	
450 L of air, Total	
15 L air/g catalyst	

SAMPLE #	TIME CO INDEX		X _{CO,in}	dX _{CO,in}	X _{CO,out}	dX _{CO,out}	X _{CO,out}	dX _{CO,out}	CO absorbed		Error Calculations		
	(min)	(min)	(%)	(%)	(%)	(%)	(%)	(%)	SCi	Accum	(d-est) ²	(d-act) ²	(est-act)
									μmoles H ₂	g Cat			
93-557	0	1	0.104	0.002									
93-558	4	5	0.103	0.001									
93-579	203	204	0.104	0.000									
93-580	206	207	0.095	0.001									
	0	1			0.000	0.000	0.006	0.000	0.0	0.0	0	0	0.0065
93-559	10	11			0.014	0.001	0.052	0.004	2.6	2.7	1.0E-06	0.000014	0.0384
93-560	20	21			0.031	0.001	0.076	0.002	3.1	5.7	1.0E-06	6.0E-06	0.0451
93-561	30	31			0.044	0.000	0.088	0.000	3.0	8.8	0	0	0.0444
93-562	40	41			0.049	0.002	0.095	0.004	3.1	11.9	4.0E-06	0.000015	0.0457
93-563	50	51			0.061	0.001	0.098	0.002	2.5	14.4	1.0E-06	2.6E-06	0.0370
93-564	60	61			0.070	0.001	0.100	0.001	2.0	16.4	1.0E-06	2.0E-06	0.0297
93-565	70	71			0.079	0.001	0.101	0.001	1.5	17.9	1.0E-06	1.6E-06	0.0216
93-566	80	81			0.086	0.001	0.101	0.001	1.0	18.9	1.0E-06	1.4E-06	0.0150
93-567	90	91			0.091	0.001	0.101	0.001	0.7	19.6	1.0E-06	1.2E-06	0.0103
93-568	100	101			0.093	0.001	0.101	0.001	0.6	20.2	1.0E-06	1.2E-06	0.0084
93-569	110	111			0.097	0.000	0.101	0.000	0.3	20.5	0	0	0.0044
93-570	120	121			0.094	0.001	0.101	0.001	0.5	21.0	1.0E-06	1.2E-06	0.0075
93-571	130	131			0.100	0.001	0.101	0.001	0.1	21.1	1.0E-06	1.0E-06	0.0015
93-572	140	141			0.099	0.002	0.101	0.002	0.2	21.3	4.0E-06	4.2E-06	0.0025
93-573	150	151			0.101	0.001	0.101	0.001	0.0	21.3	1.0E-06	1.0E-06	0.0005
93-574	160	161			0.100	0.001	0.101	0.001	0.1	21.4	1.0E-06	1.0E-06	0.0015
93-575	170	171			0.102	0.001	0.101	0.001	-0.0	21.4	1.0E-06	9.9E-07	-0.0005
93-576	180	181			0.100	0.001	0.101	0.001	0.1	21.5	1.0E-06	1.0E-06	0.0015
93-577	190	191			0.103	0.001	0.101	0.001	-0.1	21.4			
93-578	200	201			0.090	0.002	0.101	0.002	0.8	22.2			
Summations											2.20E-05	5.55E-05	3.21E-01

Figure J-15. HRC Sorption Capacity Run 85.

Sorption Capacity = $21.5 \pm 2.3 \mu\text{moles CO/g Catalyst}$

30 g Catalyst (15 g Englehard Deoxo Type 18467, 15 g AlF_3Cl Hydrophobic Type 85-42)
Reactor Volume 7571 mL, 1 atm, 15 °C
500 scfm 0.102% CO in Nitrogen
Regeneration Method: Air Flush
30 L/min @ 10 psi for 15 min
450 L of air, Total
15.0 L air/g catalyst

Table J-14. HRC Sorption Capacity Run 86.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	30	dW	0.1 g Catalyst
		15		g Englehard Deoxo Type 18467
		15		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		14.5		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL • atm/μmol/K
X _{CO,in}	COin	0.103	dCOin	0.001 %
CO SC	SC	18.5	dSC	1.9 μg CO/g Catalyst

Regeneration Method: Air Flush
37.7 L/min
10 psi
20 min
754 L of air, Total
25.1 L air/g catalyst

SAMPLE	TIME		$X_{CO,in}$	$dX_{CO,in}$	$X_{CO,out}$	$dX_{CO,out}$	$X_{CO,out}$	$dX_{CO,out}$	CO absorbed	Error Calculations			
		CO INDEX			actual		estimated		SCI Accum				
#	(min)	(min)	(%)	(%)	(%)	(%)	(%)	(%)	$\mu\text{moles H}_2$ g Cat	(d-est) ²	(d-act) ²	(est-act)	
93-581	0	1	0.087	0.005									
93-582	2	3	0.092	0.001									
93-598	153	154	0.099	0.000									
93-599	168	169	0.104	0.001									
	0	1			0.000	0.000	0.007	0.000	0.0	0.0	0	0	0.0066
93-583	10	11			0.022	0.001	0.053	0.002	2.1	2.2	1.0E-06	5.8E-06	0.0312
93-584	20	21			0.026	0.001	0.077	0.003	3.5	5.7	1.0E-06	8.8E-06	0.0513
93-585	30	31			0.037	0.001	0.090	0.002	3.6	9.3	1.0E-06	5.9E-06	0.0527
93-586	40	41			0.046	0.000	0.096	0.000	3.4	12.7	0	0	0.0501
93-587	50	51			0.063	0.000	0.099	0.000	2.5	15.2	0	0	0.0365
93-588	60	61			0.073	0.000	0.101	0.000	1.9	17.1	0	0	0.0282
93-589	70	71			0.093	0.000	0.102	0.000	0.6	17.7	0	0	0.0091
93-590	80	81			0.092	0.001	0.103	0.001	0.7	18.4	1.0E-06	1.2E-06	0.0105
93-591	90	91			0.101	0.002	0.103	0.002	0.1	18.5	4.0E-06	4.1E-06	0.0017
93-593	110	111			0.103	0.000	0.103	0.000	-0.0	18.5	0	0	-0.0001
93-594	120	121			0.104	0.001	0.103	0.001	-0.1	18.4			
93-595	130	131			0.103	0.001	0.103	0.001	-0.0	18.4			
93-596	140	141			0.102	0.001	0.103	0.001	0.1	18.5			
93-597	150	151			0.103	0.001	0.103	0.001	-0.0	18.5			
OUTLYING AND SUSPECT POINTS													
93-592	100	101			0.092	0.000	0.103	0.000	0.7	19.3			
Summations										8.00E-06	2.59E-05	2.78E-01	

Figure J-16. HRC Sorption Capacity Run 86.

Sorption Capacity = $18.5 \pm 1.9 \mu\text{moles CO/g Catalyst}$

30 g Catalyst (15 g Englehard Deoxo Type 18467, 15 g ABCL Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 15°C
 500 sccm 0.103% CO in Nitrogen
 Regeneration Method: Air Flush
 37.7 L/min @ 10 psi for 20 min
 75.4 L of air, Total
 25.1 L air/g catalyst

Table J-15. HRC Sorption Capacity Run 87.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	30	dW	0.1 g Catalyst
		15		g Englehard Deoxo Type 18467
		15		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		16.6		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL * atm/μmol/K
X _{CO,in}	COin	0.103	dCOin	0.001 %
CO SC	SC	19.8	dSC	2.1 μg CO/g Catalyst

Regeneration Method: Air Flush
0.5 L/min
- psi
900 min
450 L of air, Total
15 L air/g catalyst

SAMPLE #	TIME CO INDEX		$X_{CO,in}$	$dX_{CO,in}$	$X_{CO,out}$	$dX_{CO,out}$	$X_{CO,out}$	$dX_{CO,out}$	CO absorbed SCI Accum μ moles H_2 g Cat	Error Calculations			
	(min)	(min)	(%)	(%)	(%)	(%)	(%)	(%)		(d-est) ²	(d-act) ²	(est-act)	
93-600	0	1	0.104	0.002									
93-601	3	4	0.102	0.001									
93-618	166	167	0.103	0.001									
93-619	170	171	0.104	0.001									
	0	0			0.000	0.000	0.000	0.000	0.0	0.0	0	0	0.0000
93-602	10	11			0.015	0.000	0.053	0.000	2.9	2.9	0	0	0.0383
93-603	20	21			0.029	0.001	0.077	0.003	3.3	6.2	1.0E-06	7.1E-06	0.0485
93-604	30	31			0.040	0.001	0.090	0.002	3.4	9.6	1.0E-06	5.1E-06	0.0499
93-605	40	41			0.047	0.001	0.096	0.002	3.4	12.9	1.0E-06	4.2E-06	0.0494
93-606	50	51			0.062	0.001	0.100	0.002	2.6	15.5	1.0E-06	2.6E-06	0.0377
93-607	60	61			0.070	0.001	0.101	0.001	2.1	17.7	1.0E-06	2.1E-06	0.0314
93-608	70	71			0.089	0.003	0.102	0.003	0.9	18.6	9.0E-06	0.000012	0.0133
93-609	80	81			0.087	0.002	0.103	0.002	1.1	19.6	4.0E-06	5.6E-06	0.0158
93-610	90	91			0.101	0.001	0.103	0.001	0.1	19.8	1.0E-06	1.0E-06	0.0020
93-612	110	111			0.103	0.000	0.103	0.000	0.0	19.8	0	0	0.0002
93-613	120	121			0.103	0.001	0.103	0.001	0.0	19.8	1.0E-06	1.0E-06	0.0002
93-614	130	131			0.104	0.001	0.103	0.001	-0.1	19.8			
93-615	140	141			0.104	0.001	0.103	0.001	-0.1	19.7			
93-616	150	151			0.103	0.001	0.103	0.001	0.0	19.7			
93-617	160	161			0.103	0.001	0.103	0.001	0.0	19.7			
OUTLYING AND SUSPECT POINTS													
93-611	100	101			0.095	0.000	0.103	0.000	0.6	20.3			
Summations										2.00E-05	4.06E-05	2.87E-01	

Figure J-17. HRC Sorption Capacity Run 87.

Sorption Capacity = $19.8 \pm 2.1 \mu\text{moles CO/g Catalyst}$

30 g Catalyst (15 g Englehard Deoxo Type 18467, 15 g AFCL Hydrophobic Type 85-42)
 Reactor Volume 7571 mL, 1 atm, 17°C
 500 sccm 0.103% CO in Nitrogen
 Regeneration Method: Air Flush
 0.5 L/min for 900 min
 450 L of air, Total
 15.0 L air/g catalyst

Table J-16. HRC Sorption Capacity Run 88.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	30	dW	0.1 g Catalyst
		15		g Englehard Deoxo Type 18467
		15		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		15.7		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL • atm/μmol/K
X _{CO,in}	COin	0.103	dCOin	0.001 %
CO SC	SC	18.7	dSC	1.9 μg CO/g Catalyst

Regeneration Method: Air Flush	
0.577 L/min	
- psi	
418 min	
241.186 L of air, Total	
8.04 L air/g catalyst	

SAMPLE #	TIME CO INDEX		$X_{CO,in}$	$dX_{CO,in}$	$X_{CO,out}$	$dX_{CO,out}$	$X_{CO,out}$	$dX_{CO,out}$	CO absorbed SCi Accum μ moles H_2 g Cat	Error Calculations		
	(min)	(min)	(%)	(%)	(%)	(%)	(%)	(%)		(d-est) ²	(d-act) ²	(est-act)
93-620	0	0	0.104	0.001								
93-621	3	3	0.103	0.001								
93-636	148	148	0.101	0.001								
93-637	150	150	0.104	0.000								
93-622	0	0			0.000	0.000	0.000	0.000	0.0	0.0	0	0.0000
93-623	10	11			0.017	0.000	0.053	0.000	2.7	2.7	0	0.0362
93-624	20	21			0.029	0.000	0.077	0.000	3.3	6.0	0	0.0487
93-624	30	31			0.041	0.001	0.090	0.002	3.3	9.3	1.0E-06	4.8E-06
93-625	40	41			0.046	0.001	0.096	0.002	3.4	12.7	1.0E-06	4.4E-06
93-626	50	51			0.063	0.001	0.099	0.002	2.5	15.2	1.0E-06	2.5E-06
93-627	60	61			0.065	0.001	0.101	0.002	2.5	17.7	1.0E-06	2.4E-06
93-628	70	71			0.089	0.001	0.102	0.001	0.9	18.6	1.0E-06	1.3E-06
93-630	90	91			0.102	0.001	0.103	0.001	0.1	18.7	1.0E-06	1.0E-06
93-631	100	101			0.090	0.001	0.103	0.001	0.9	19.6		
93-632	110	111			0.101	0.003	0.103	0.003	0.1	19.7		
93-633	120	121			0.098	0.000	0.103	0.000	0.3	20.0		
93-634	130	131			0.104	0.001	0.103	0.001	-0.1	20.0		
93-635	140	141			0.104	0.001	0.103	0.001	-0.1	19.9		
OUTLYING AND SUSPECT POINTS												
93-629	80	81			0.082	0.001	0.103	0.001	1.4	20.0		
Summations									6.00E-06	1.64E-05	2.70E-01	

Figure J-18. HRC Sorption Capacity Run 88.

Sorption Capacity = $18.7 \pm 1.9 \mu\text{moles CO/g Catalyst}$

30 g Catalyst (15 g Englehard Deoxo Type 18467, 15 g Al₂Cl₃ Hydrophobic Type 85--42)
 Reactor Volume 7571 mL, 1 atm, 16 °C
 500 sccm 0.103% CO in Nitrogen
 Regeneration Method: Air Flush
 0.58 L/min for 418 min
 241 L of air, Total
 8.0 L air/g catalyst

Table J-17. HRC Sorption Capacity Run 89.

Flowrate	Q	500	dQ	50 mL/min
Catalyst Mass	W	30	dW	0.1 g Catalyst
		15		g Englehard Deoxo Type 18467
		15		g AECL Hydrophobic Type 85-42
Volume	V	7571		mL
Time Interval	I	10	dI	0.2 min
ResTime	Tr	15.1	dTr	1.5 min
Temperature		15.9		°C
Pressure		1		atm
Ref Temp	T	298		K
Ref Pres	P	1		atm
R	R	8.206E-05		mL • atm/μmol/K
X _{CO,in}	COin	0.103	dCOin	0.001 %
CO SC	SC	17.0	dSC	1.8 μg CO/g Catalyst

Regeneration Method: Air Flush	
0.5 L/min	
— psi	
60 min	
30 L of air, Total	
1.0 L air/g catalyst	

SAMPLE #	TIME CO INDEX		X _{CO,in} (%)	dX _{CO,in} (%)	X _{CO,out} (%)	dX _{CO,out} actual (%)	X _{CO,out} estimated (%)	dX _{CO,out} estimated (%)	CO absorbed Sci Accum μmoles H ₂ g Cat	Error Calculations		
	(min)	(min)								(d-est) ²	(d-act) ²	(est-act)
93-638	0	1	0.106	0.001								
93-639	3	4	0.096	0.000								
93-657	180	181	0.102	0.001								
93-658	183	184	0.103	0.001								
93-640	0	0			0.000	0.000	0.000	0.000	0.0 0.0	0	0	0.0000
93-641	10	11			0.018	0.001	0.053	0.003	2.6 2.6	1.0E-06	8.6E-06	0.0349
93-642	20	21			0.030	0.001	0.077	0.003	3.2 5.8	1.0E-06	6.6E-06	0.0469
93-643	30	31			0.044	0.000	0.089	0.000	3.1 8.9	0	0	0.0453
93-644	40	41			0.052	0.000	0.096	0.000	3.0 11.9	0	0	0.0437
93-645	50	51			0.070	0.001	0.099	0.001	2.0 13.9	1.0E-06	2.0E-06	0.0290
93-646	60	61			0.076	0.001	0.101	0.001	1.7 15.5	1.0E-06	1.8E-06	0.0247
93-647	70	71			0.096	0.001	0.102	0.001	0.4 15.9	1.0E-06	1.1E-06	0.0056
93-648	80	81			0.086	0.002	0.102	0.002	1.1 17.0	4.0E-06	5.6E-06	0.0160
93-649	90	91			0.103	0.000	0.102	0.000	-0.1 17.0	0	0	-0.0008
93-650	100	101			0.091	0.001	0.102	0.001	0.8 17.7			
93-651	110	111			0.105	0.001	0.102	0.001	-0.2 17.6			
93-652	120	121			0.094	0.001	0.102	0.001	0.6 18.1			
93-653	130	131			0.105	0.001	0.102	0.001	-0.3 17.2			
93-654	140	141			0.091	0.000	0.102	0.000	1.6 19.7			
93-655	150	151			0.104	0.001	0.102	0.001	-0.2 17.0			
93-656	160	161			0.103	0.001	0.102	0.001	-0.1 19.6			
93-657	170	171			0.104	0.001	0.102	0.001	-0.2 16.8			
Summations										9.00E-06	2.57E-05	2.45E-01

Figure J-19. HRC Sorption Capacity Run 89.

Sorption Capacity = $17.0 \pm 1.8 \mu\text{moles CO/g Catalyst}$

30 g Catalyst (15 g Englehard Deoxo Type 18467, 15 g Al:Cl₂ Hydrophobic Type 85-42)
 Reactor Volume 7571 ml., 1 atm, 16°C
 500 sccm 0.103% CO in Nitrogen
 Regeneration Method: Air Flush
 0.5 L/min for 60 min
 30 L of air, Total
 1.0 L air/g catalyst