

MERCURY ANALYSIS LOGBOOK

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[illegible]

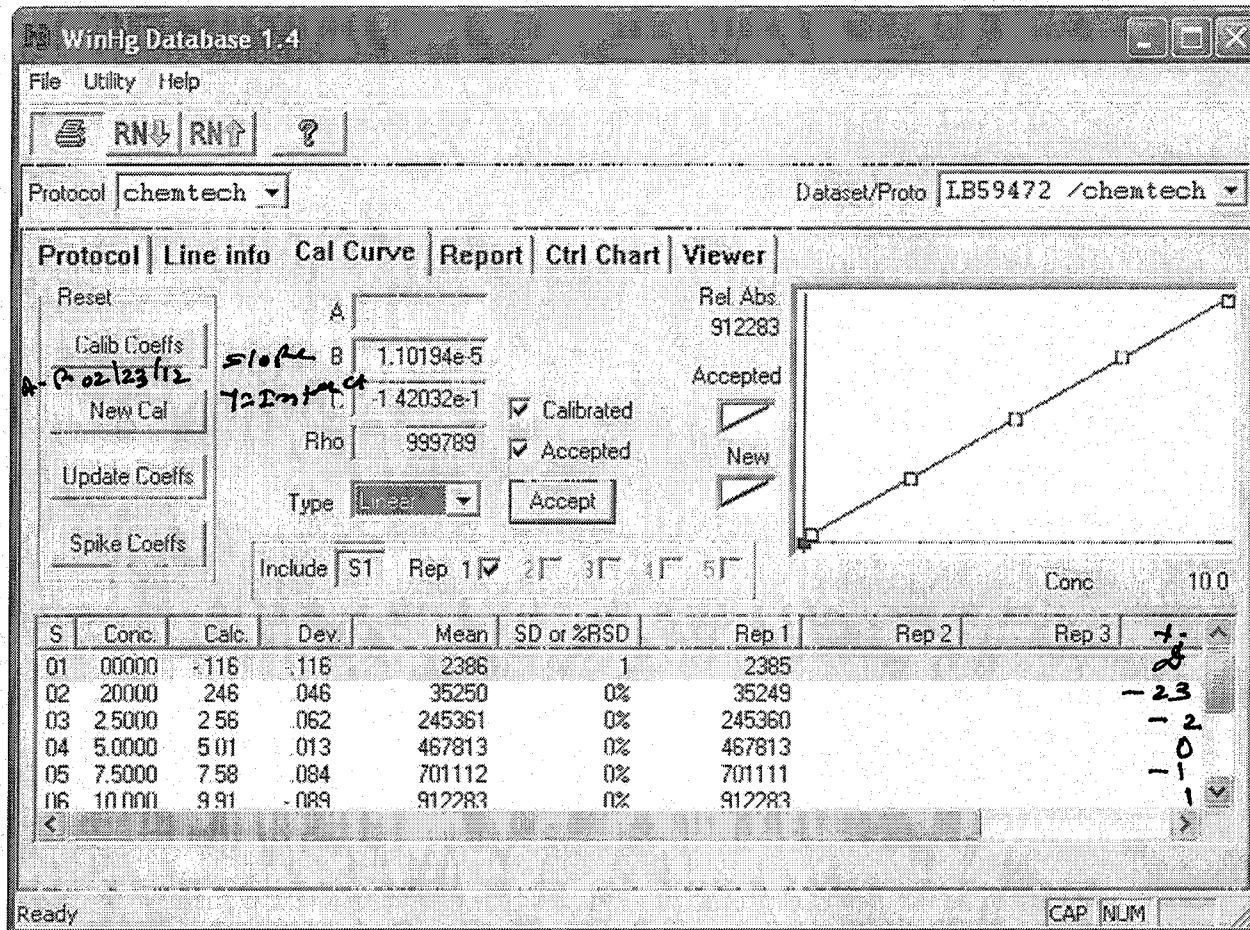
QA Control # A3040930

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Instrument ID: W2 LB59472 A-P

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1			50	Seq: 1		13:46:56 23 Feb 12		HG
Hg	.000	ppb	2385					
*** Standard: 2 Rep: 1			50.2	Seq: 2		13:49:35 23 Feb 12		HG
Hg	.200	ppb	35249					
*** Standard: 3 Rep: 1			52.5	Seq: 3		13:52:12 23 Feb 12		HG
Hg	2.50	ppb	245360					
*** Standard: 4 Rep: 1			55.0	Seq: 4		13:54:24 23 Feb 12		HG
Hg	5.00	ppb	467813					
*** Standard: 5 Rep: 1			57.5	Seq: 5		13:57:11 23 Feb 12		HG
Hg	7.50	ppb	701111					
*** Standard: 6 Rep: 1			510.0	Seq: 6		13:59:39 23 Feb 12		HG
Hg	10.0	ppb	912283					

02/23/12 A-P.

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: ICV								
					Seq: 7	14:01:47	23 Feb 12	HG
				ICV60				
Hg	4.02	ppb	.000	4.02				
=====								
*** Sample ID: ICB								
					Seq: 8	14:04:05	23 Feb 12	HG
				ICB60				
Hg	-.130	ppb	.000	-.130				
=====								
*** Sample ID: CCV								
					Seq: 9	14:06:06	23 Feb 12	HG
				CCV68				
Hg	5.05	ppb	.000	5.05				
=====								
*** Sample ID: CCB								
					Seq: 10	14:08:04	23 Feb 12	HG
				CCB68				
Hg	-.021	ppb	.000	-.021				
=====								
*** Sample ID: D1506-15								
					Seq: 11	14:10:03	23 Feb 12	HG
				MJRC13 X10				
Hg	6.30	ppb	.000	6.30				
=====								
*** Sample ID: D1506-16								
					Seq: 12	14:12:06	23 Feb 12	HG
				MJRC14 X2				
Hg	4.99	ppb	.000	4.99				
=====								
*** Sample ID: D1506-17								
					Seq: 13	14:14:39	23 Feb 12	HG
				MJRC15 X5				
Hg	3.48	ppb	.000	3.48				
=====								
*** Sample ID: D1506-18								
					Seq: 14	14:16:52	23 Feb 12	HG
				MJRC16 X10				
Hg	3.83	ppb	.000	3.83				
=====								
*** Sample ID: D1506-20								
					Seq: 15	14:19:04	23 Feb 12	HG
				MJRC18 X10				
Hg	3.10	ppb	.000	3.10				
=====								
*** Sample ID: D1506-04								
					Seq: 16	14:21:07	23 Feb 12	HG
				MJRC03 X10				
Hg	4.45	ppb	.000	4.45				
=====								

Protocol: chemtech

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5

***	Sample ID: CCV			Seq: 17	14:23:50 23 Feb 12			HG
			CCV69					
Hg	5.38	ppb	.000	5.38				
=====								
***	Sample ID: CCB			Seq: 19	14:35:00 23 Feb 12			HG
			CCB69					
Hg	-.019	ppb	.000	-.019				
=====								

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CHEMTECH

284, Sheffield Street, Mountainside NJ 07092 (908) 789 - 8900

Metals STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	MP10594	02/21/2012	02/22/2012	ALPA
FROM 1.000ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L)(M2265) + 2.500ml of Mercury Stock Solution, 10 ug/ml(M2035) + 96.500ml of DI Water(W1152) = Final Quantity: 100.000 ml					

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1340	Hg 0.00 PPB STD	MP10595	02/21/2012	02/22/2012	ALPA
FROM 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L)(M2265) + 247.500ml of DI Water(W1152) = Final Quantity: 250.000 ml					

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Metals STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1341	Hg 0.2 PPB STD	MP10596	02/21/2012	02/22/2012	ALPA
FROM 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L)(M2265) + 247.300ml of DI Water(W1152) + 0.200ml of MERCURY INTERMEDIATE B 250PPB WORKING STD.(MP10594) = Final Quantity: 250.000 ml					

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1342	Hg 2.5 PPB STD	MP10597	02/21/2012	02/22/2012	ALPA
FROM 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L)(M2265) + 245.000ml of DI Water(W1152) + 2.500ml of MERCURY INTERMEDIATE B 250PPB WORKING STD.(MP10594) = Final Quantity: 250.000 ml					

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Metals STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1343	Hg 5.0 PPB STD	MP10598	02/21/2012	02/22/2012	ALPA
FROM 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L)(M2265) + 242.500ml of DI Water(W1152) + 5.000ml of MERCURY INTERMEDIATE B 250PPB WORKING STD.(MP10594) = Final Quantity: 250.000 ml					

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1344	Hg 7.5 PPB STD	MP10599	02/21/2012	02/22/2012	ALPA
FROM 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L)(M2265) + 240.000ml of DI Water(W1152) + 7.500ml of MERCURY INTERMEDIATE B 250PPB WORKING STD.(MP10594) = Final Quantity: 250.000 ml					

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Metals STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1345	Hg 10.0 PPB STD	MP10600	02/21/2012	02/22/2012	ALPA
FROM 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L)(M2265) + 237.500ml of DI Water(W1152) + 10.000ml of MERCURY INTERMEDIATE B 250PPB WORKING STD.(MP10594) = Final Quantity: 250.000 ml					

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1346	Hg ICV SOLUTION	MP10601	02/21/2012	02/22/2012	ALPA
FROM 2.500ml of ICV (HG) STOCK SOLN(M2098) + 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L) (M2265) + 245.000ml of DI Water(W1152) = Final Quantity: 250.000 ml					

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Metals STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1351	ICB (Hg 0.00 PPB SOLUTION)	MP10602	02/21/2012	02/22/2012	ALPA
FROM 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L)(M2265) + 247.500ml of DI Water(W1152) = Final Quantity: 250.000 ml					

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1358	CCV (Hg 5.0 PPB SOLUTION)	MP10603	02/21/2012	02/22/2012	ALPA
FROM 485.000ml of DI Water(W1152) + 5.000ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L)(M2265) + 10.000ml of MERCURY INTERMEDIATE B 250PPB WORKING STD.(MP10594) = Final Quantity: 500.000 ml					

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Metals STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
1352	CCB (Hg 0.00 PPB SOLUTION)	MP10604	02/21/2012	02/22/2012	ALPA
FROM 495.000ml of DI Water(W1152) + 5.000ml of Nitric Acid, Instra-Analyzed (cs/4x2.5L)(M2265) = Final Quantity: 500.000 ml					

**QATS INORGANIC REFERENCE MATERIAL
INITIAL CALIBRATION VERIFICATION SOLUTIONS
(ICVs)**

m 2097 - m2101

*see data
11/16/11
A.P.*

ICV4-0499	
Element	Concentration (µg/L) (after 10 fold dilution)
Cd	98.7
Pb	99.8
Ag	101.9
Tl	98.8

ICV5-0508	
Element	Concentration (µg/L) (after 100 fold dilution)
Hg	4.0

ICV6-0400	
Element	Concentration (µg/L) (after 100 fold dilution)
CN-	99

PLASMA-PURE™

Standard Certificate

Catalog Number: 610-8002

Lot Number: 1183201

Starting Material: 99.999% purity Hg metal

Diluent/Matrix: 5% HNO₃

Preparation Date: Sep-11

Expiration Date: Sep-12

Element

Concentration

Mercury Stock Solution

Hg

10.00 ± 0.02 µg/ml

Residual Impurities *

Concentration

None Detected

m 2035
Rece date
09/20/11
A-P.

* Impurities were determined via ICP Emission Spectroscopy. Only elements detected are reported.

Traceability

1. This standard is certified using wet chemistry assay procedures and/or plasma emission spectroscopy, traceable to primary or well-characterized secondary standards. Traceable to: NIST SRM 3133, Hg
Lot#991304
2. Analytical balances are routinely calibrated using NIST weight sets.

Certification

Leeman Labs, Inc. certifies that PLASMA-PURE Standards have been formulated to the concentrations listed above (±0.5% of reported value). This certification does not apply and will be considered null and void if PLASMA-PURE Standards are used in a manner or in an environment not consistent with their intended purpose or are modified by the Customer in any manner.

Limitations

THE ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Limitation of Liability

In no event shall Leeman Labs, Inc. be liable for any indirect, incidental, special, or consequential damages, including loss of profits, revenue, or used incurred by Customer or any third party, whether in an action in contract or tort. Leeman Labs Inc's liability for damages hereunder shall in no event exceed the amounts paid for the PLASMA-PURE Standards.

QC Analyst: *SMS*

Date: September 15, 2011



TELEDYNE Leeman Labs

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Metals STANDARD PREPARATION LOG

RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
68	STANNOUS CHLORIDE SOLUTION	MP10608	02/22/2012	02/23/2012	ALPA
FROM 450.000ml of DI Water(W1152) + 50.000gram of Stannous Chloride (cs/4x500g)(M2177) + 50.000ml of Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)(M2285) = Final Quantity: 500.000 ml					