	0.000							•							
Date	Number	Batch Number	Start Time	BLK	STD1	STD2 20 3482	STD3	STD4	STD	5 End Ti	ne Correlation Coeficient	Stannous Chloride Prep	Comment	Analyst	Supervisc Signature
2114118	101694	m3 616-14	11	10/12	62797	1 Sott	S syau	Sasa	322	75 12:	1-32 666. SI	- me 10834	Edrie3	4.7.4.1	0 22
	1 1 2 A			\rightarrow		11111120						-	Cer - 877 , 88	1.7-9.1	Q,
	2	>	>		>	•	>	ـــــــــــــــــــــــــــــــــــــ	7		1.		C-3- 87, 88.	T T CHEV	
	1 							<u>.</u>	7			•			
1.181															
						<u></u>			2						
				•											
						2	8								
-															
1															
									8						-
				3				 •							2
					:										
								E							
			2) 1			•	*								
•••••,	1														
						•									
									er de me						
							7								
A Control #	^A3040930					Page 54			OA Contr	01# A3040030	a a	100	4-19		
						, ,					7 7	- - 1	;	Page 55	

Į. 1



03/14/12

MER 11:	CURY RAW D 05:28 14 M	ATA ar 2012		Folder: Protocol:	LB59714 chemtech				Page
Lin	e Conc.	Units	SD/RSD	1	2	3	4	5	
* * *	Standard:	1 Rep:	1 50) Seq:	1	11:05:28	l4 Mar	12	HG
Hg	.000	ppb	10212						
* * *	Standard:	2 Rep:	1 50.2	Seq:	2	11:15:40	l4 Mar	12	HG
Hg	.200	ppb	26254						
* * *	Standard:	3 Rep:	1 52.5	Seq:	3	11:23:09	l4 Mar	12	HG
Нg	2.50	ppb	203482						
* * *	Standard:	4 Rep:	1 55.0	Seq:	4	11:25:32 1	4 Mar	12	HG
Hg	5.00	dqq	411083						
* * *	Standard:	5 Rep:	1 57.5	Seq:	5	11:27:55 1	4 Mar	12	HG
Hg	7.50	dđđ	592325						가지 있다. 사람은 문서한
* * *	Standard:	6 Rep: 3	1 510.	• Seq:	6	11:30:16 1	4 Mar	12	HG
Нg	10.0	ppb	778078						

1

03/14/12 A-P.

MERC 11:3	CURY RAV 82:18 14	V DA 1 Ma	ATA Ar 2012	F P:	older: rotoco	1:	LB59714 chemtech					Page	2
Line	e Conc	2.	Units	SD/RSD	1		2	3	4		5		
***	Sample	ID:	ICV	ICV63	S	eq	: 7	11:32:18	14	Mar	12	HG	
нд	4.06		aqq	.000	4.06			11.04.10	1 4		1.0		
~ ~ ~	Sample	TD:	ICB	ICB63	S	eq	8	11:34:17	⊥4	Mar	12	HG	
Hg	060		ddd	.000	060								
* * *	Sample	ID:	CCV	CCV87	S	eq	: 9	11:36:29	14	Mar	12	HG	
Hg	5.09		ppb	.000	5.09								
* * *	Sample	ID:	CCB	CCP 87	S	eq	: 10	11:38:33	14	Mar	12	HG	
Hg	061		ppb	.000	061								
* * *	Sample	ID:	PB61674BI	J	S	eq	: 11	11:40:36	14	Mar	12	HG	
Hg	057		ppb	.000	057								
* * *	Sample	ID:	D1694-01		S	eq	: 12	11:43:06	14	Mar	12	HG	
Hg	054		ppb	MB8SJ .000	3 054								
* * *	Sample	ID:	D1694-02		S	eq	: 13	11:45:59	14	Mar	12	HG	
Hq	057		dqq	MB8SJ .000	3D 057								
***	Sample	тр:	D1694-03		S	ea	: 14	11:48:21	14	Mar	12	НG	
Ча	961	10	nnh	MB8SJ	3S 964	64		11 10 21		TIGE			
пу		TD .	P1020 01	.000	.904		. 15	11.51.01	1 4		1.0		
* * *	Sample	TD:	DI/38-01	MC05K	3	eq	15	11:51:21	14	Mar	12	HG	
Hg	116		ppb	.000	116								
* * *	Sample	ID:	D1738-02	MC05K	5 5	eq	: 16	11:53:44	14	Mar	12	HG	
Hg	116		ppb	.000	116								
* * *	Sample	ID:	D1738-03	MCOFK	S	eq	: 17	11:55:48	14	Mar	12	HG	
Hg	120		ppb	.000	120								
* * *	Sample	ID:	D1738-04	MOOF	S	eq	: 18	11:57:50	14	Mar	12	HG	
Hg	088		ppb	.000	088								

MERCURY RAW DATAFolder:LB5971411:59:5314 Mar2012Protocol:chemtech Page 3 Line Conc. Units SD/RSD 1 2 3 4 5 _____ _____ *** Sample ID: D1738-05 MC05K9D Seq: 19 11:59:53 14 Mar 12 HG Hg -.025 ppb .000 -.025 *** Sample ID: D1738-06 MC05K9S Seq: 20 12:02:26 14 Mar 12 HG МС05К9S Hg .925 ppb .000 .925 *** Sample ID: D1783-01 Seq: 21 12:04:26 14 Mar 12 HG MB9NG8 Hg -.027 ppb .000 -.027 *** Sample ID: D1783-02 MB9NG8D Seq: 22 12:06:56 14 Mar 12 HG Hg -.029 ppb .000 -.029 *** Sample ID: D1783-03 MB9NG8S Seq: 23 12:08:58 14 Mar 12 HG Hg .983 ppb .000 .983 *** Sample ID: D1783-04 MB9NG9 Seq: 24 12:11:12 14 Mar 12 ΗG Hg -.068 ppb .000 -.068 *** Sample ID: CCV Seq: 25 12:13:32 14 Mar 12 HG CCV88 Hg 5.07 ppb .000 5.07 Seq: 26 12:15:35 14 Mar 12 HG *** Sample ID: CCB CCB88 Hg -.085 ppb .000 -.085

LB59714.PRN 7,"",0,"14 Mar 12","10:57:32" 6,1,"Std01Rep1",1,"14 Mar 12","11:05:28","chemtech",1,1,1,"Hg ","ppb"," "," .000,10212 "Std02Rep1",2,"14 Mar 12","11:15:40","chemtech",2,1,1,"Hg ","ppb"," "," ,1, ,.200,26254 6,1,"Std03Rep1",3,"14 Mar 12","11:23:09","chemtech",3,1,1,"Hg ","ppb"," "," ,2.50,203482 ,1,"Std04Rep ,5.00,411083 6 ,7.50,592325 "Std06Rep1",6,"14 Mar 12","11:30:16","chemtech",6,1,1,"Hg ","ppb"," "," 6,1, ,10.0,778078 7,"14 Mar 12","11:32:18","chemtech","",1,1.00,1.00,1,"","Hg ","ppb"," ,1,"ICV ,4.06,.000,326136,4.06 ICB ",8,"14 Mar 12","11:34:17","chemtech","",2,1.00,1.00,1,"","Hg ","ppb"," ."ICB ",-.060,.000,8116,-.060 ,"ССV ".9."14 маг ''' ,́9,"14́ Mar 12","11:36:29","chemtech","",3,1.00,1.00,1,"","Hg ","ppb"," 2,1,"CCV ,9, 14 Mar 12 , 11.00.12 , "," ",5.09,.000,405880,5.09 2,1,"CCB ",10,"14 Mar 12","11:38:33","chemtech","",4,1.00,1.00,1,"","Hg ","ppb"," "," ",-.061,.000,8085,-.061 "," ",-.061,.000,1.00,1,"","Hg ","ppb"," 2,1,"PB61674BL ",11,"14 Mar 12","11:40:36","chemtech","",5,1.00,1.00,1,"","Hg ","ppb"," , -. 057, .000, 8333, -. 057 , ,1,"| ."D1694-01 Ď1694-Ó1 ",́12,"Í4 маr ,-.054,.000,8634,-.054 "14 Mar 12","11:43:06","chemtech","",6,1.00,1.00,1,"","Hg ","ppb"," ,"D1694-02 ,1, n. ,13,"14 маг 12","11:45:59","chemtech","",7,1.00,1.00,1,"","Hq ","ppb"," 2 ",-.057,.000,8346,-.057 ,"D1694-03 ",14,"14 Mar 12","11:48:21","chemtech","",8,1.00,1.00,1,"","Hg ","ppb",""Ď1694-03 2 ,",",",964,.000,87198,.964 ;1,"D1738-01 ",15,"14 Mar 12","11:51:21","chemtech","",9,1.00,1.00,1,"","Hg ","ppb"," ," ",-.116,.000,3789,-.116 ... ," ",-.116,.000,3789,-.116 ,1,"D1738-02 ",16,"14 Mar 12","11:53:44","chemtech","",10,1.00,1.00,1,"","Hg ,"ppb"," "," ",-.116,.000,3838,-.116 ,1,"D1738-03 ",17,"14 Mar 12","11:55:48","chemtech","",11,1.00,1.00,1,"","Hg ,"ppb"," "," ",-.120,.000,3482,-.120 ,1,"D1738-04 ",18,"14 Mar 12","11:57:50","chemtech","",12,1.00,1.00,1,"","Hg ,"ppb"," "," ",-.088,.000,5995,-.088 ,1,"D1738-05 ",19,"14 Mar 12","11:59:53","chemtech","",13,1.00,1.00,1,"","Hg ,"ppb"," "," ",-.025,.000,10846,-.025 ,1,"D1738-06 ",20,"14 Mar 12","12:02:26","chemtech","",14,1.00,1.00,1,"","Hg ,1, ,1,' 2,1,"D1738-05 ",19,"14 Mar 12","11:59:53","chemtech","",13,1.00,1.00,1,"","Hg ","ppb"," "," ",-.025,.000,10846,-.025 2,1,"D1738-06 ",20,"14 Mar 12","12:02:26","chemtech","",14,1.00,1.00,1,"","Hg ","ppb"," "," ",.925,.000,84167,.925 2,1,"D1783-01 ",21,"14 Mar 12","12:04:26","chemtech","",15,1.00,1.00,1,"","Hg ","ppb"," "," ",-.027,.000,10694,-.027 2,1,"D1783-02 ",22,"14 Mar 12","12:06:56","chemtech","",16,1.00,1.00,1,"","Hg ","ppb"," "," ",-.029,.000,10495,-.029 2,1,"D1783-03 ",23,"14 Mar 12","12:08:58","chemtech","",17,1.00,1.00,1,"","Hg ","ppb"," "," ", 983,.000,88646,.983 2,1,"D1783-04 ",24,"14 Mar 12","12:11:12","chemtech","",18,1.00,1.00,1,"","Hg ","ppb"," "," ",-.068,.000,7550,-.068 2,1,"CCV ",25,"14 Mar 12","12:13:32","chemtech","",19,1.00,1.00,1,"","Hg ,1,"CCV '',25,"14 Mar 12 , 12.13.32 , 2.13 ,"ppb"," "," ',5.07,.000,404030,5.07 ,1,"CCB '',26,"14 Mar 12","12:15:35","chemtech","",20,1.00,1.00,1,"","Hg ."ppb"," "," ',-.085,.000,6181,-.085

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

RecipeID	NAME	<u>NO.</u>	Prep Date	Expiration D	Prepared By
871	MERCURY INTERMEDIATE B 250PPB WORKING STD.	<u>MP10820</u>	03/13/2012	03/14/2012	ALPA
<u>FROM</u>	1.000ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 ug/ml(M2310) + 96.500ml of DI Water(W1152) =	L 5L)(M2298) + 2.5 = Final Quantity:	00ml of Mercury S 100.000 ml	L tock Solution, 10	
RecipeID	NAME	NO.	Prep Date	Expiration D	Prepared By
RecipelD 1340	NAME Hg 0.00 PPB STD	<u>NO.</u> MP10821	Prep Date 03/13/2012	Expiration D 03/14/2012	<u>Prepared By</u> ALPA

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

RecipeID 1341	NAME Hg 0.2 PPB STD	<u>NO.</u> MP10822	Prep Date 03/13/2012	Expiration D 03/14/2012	<u>Prepared By</u> ALPA
FROM	2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 of MERCURY INTERMEDIATE B 250PPB WOR	 5L)(M2298) + 247 RKING STD.(MP1	 7.300ml of DI Wate 10820) = Final Qu	 er(W1152) + 0.20 antity: 250.000	l Oml nl
		1	1	1	
RecipeID	NAME	<u>NO.</u>	Prep Date	Expiration D	Prepared By
1342	Hg 2.5 PPB STD	<u>MP10823</u>	03/13/2012	03/14/2012	ALPA
<u>FROM</u>	2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 of MERCURY INTERMEDIATE B 250PPB WOR	5L)(M2298) + 245 KING STD.(MP1	5.000ml of DI Wate 10820) = Final Qu	er(W1152) + 2.50 antity: 250.000 n	0ml nl

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

RecipelD 1343	NAME Hg 5.0 PPB STD	<u>NO.</u> <u>MP10824</u>	Prep Date 03/13/2012	Expiration D 03/14/2012	<u>Prepared By</u> ALPA
FROM	2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 of MERCURY INTERMEDIATE B 250PPB WOR	5L)(M2298) + 242 KING STD.(MP1	2.500ml of DI Wate 10820) = Final Qu	er(W1152) + 5.00 antity: 250.000 n	0ml nl
RecipeID	NAME	<u>NO.</u>	Prep Date	Expiration D	Prepared By
RecipelD 1344	NAME Hg 7.5 PPB STD	<u>NO.</u> <u>MP10825</u>	Prep Date 03/13/2012	Expiration D 03/14/2012	Prepared By ALPA
RecipelD 1344 <u>FROM</u>	NAME Hg 7.5 PPB STD 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 of MERCURY INTERMEDIATE B 250PPB WOR	<u>NO.</u> <u>MP10825</u> 5L)(M2298) + 240 KING STD.(MP1	Prep Date 03/13/2012 0.000ml of DI Wate 0820) = Final Qu	Expiration D 03/14/2012 er(W1152) + 7.50 antity: 250.000 n	Prepared By ALPA 0ml nl
RecipeID 1344 FROM	NAME Hg 7.5 PPB STD 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 of MERCURY INTERMEDIATE B 250PPB WOR	<u>NO.</u> <u>MP10825</u> 5L)(M2298) + 240 KING STD.(MP1	Prep Date 03/13/2012 0.000ml of DI Wate 10820) = Final Qu	Expiration D 03/14/2012 er(W1152) + 7.50 antity: 250.000 m	Prepared By ALPA 0ml nl
RecipelD 1344 <u>FROM</u>	NAME Hg 7.5 PPB STD 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 of MERCURY INTERMEDIATE B 250PPB WOR	<u>NO.</u> <u>MP10825</u> 5L)(M2298) + 240 RKING STD.(MP1	Prep Date 03/13/2012 0.000ml of DI Wate 10820) = Final Qu	Expiration D 03/14/2012 er(W1152) + 7.50 antity: 250.000 m	Prepared By ALPA 0ml nl
RecipelD 1344 <u>FROM</u>	NAME Hg 7.5 PPB STD 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 of MERCURY INTERMEDIATE B 250PPB WOR	<u>NO.</u> <u>MP10825</u> 5L)(M2298) + 240 KING STD.(MP1	Prep Date 03/13/2012 0.000ml of DI Wate 0820) = Final Qu	Expiration D 03/14/2012 er(W1152) + 7.50 antity: 250.000 m	Prepared By ALPA Oml nl
RecipelD 1344 <u>FROM</u>	NAME Hg 7.5 PPB STD 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.6 of MERCURY INTERMEDIATE B 250PPB WOR	<u>NO.</u> <u>MP10825</u> 5L)(M2298) + 240 KING STD.(MP1	Prep Date 03/13/2012 0.000ml of DI Wate 0820) = Final Qu	Expiration D 03/14/2012 er(W1152) + 7.50 antity: 250.000 m	Prepared By ALPA Oml nl
RecipelD 1344 <u>FROM</u>	NAME Hg 7.5 PPB STD 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 of MERCURY INTERMEDIATE B 250PPB WOR	<u>NO.</u> <u>MP10825</u> 5L)(M2298) + 240 RKING STD.(MP1	Prep Date 03/13/2012 0.000ml of DI Wate 10820) = Final Qu	Expiration D 03/14/2012 er(W1152) + 7.50 antity: 250.000 m	Prepared By ALPA 0ml nl
RecipelD 1344 <u>FROM</u>	NAME Hg 7.5 PPB STD 2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 of MERCURY INTERMEDIATE B 250PPB WOR	<u>NO.</u> <u>MP10825</u> 5L)(M2298) + 240 RKING STD.(MP1	Prep Date 03/13/2012 0.000ml of DI Wate 10820) = Final Qu	Expiration D 03/14/2012 er(W1152) + 7.50 antity: 250.000 m	Prepared By ALPA 0ml nl

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

RecipeID	NAME	<u>NO.</u>	Prep Date	Expiration D	Prepared By
1345	Hg 10.0 PPB STD	<u>MP10826</u>	03/13/2012	03/14/2012	ALPA
<u>FROM</u>	2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 10.000ml of MERCURY INTERMEDIATE B 250 250.000 ml	5L)(M2298) + 237 PB WORKING	7.500ml of DI Wate STD.(MP10820) =	er(W1152) + Final Quantity:	
RecipeID	NAME	<u>NO.</u>	Prep Date	Expiration D	Prepared By
RecipelD 1346	NAME Hg ICV SOLUTION	<u>NO.</u> MP10827	Prep Date 03/13/2012	Expiration D 03/14/2012	<u>Prepared By</u> ALPA

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

RecipeID 1351	NAME ICB (Hg 0.00 PPB SOLUTION)	<u>NO.</u> <u>MP10828</u>	Prep Date 03/13/2012	Expiration D 03/14/2012	<u>Prepared By</u> ALPA
<u>FROM</u>	2.500ml of Nitric Acid, Instra-Analyzed (cs/4x2.5 Quantity: 250.000 ml	L 5L)(M2298) + 247	7.500ml of DI Wate	L er(W1152) = Fina	al
RecipeiD	NAME	<u>NO.</u>	Prep Date	Expiration D	Prepared By
1358	NAME CCV (Hg 5.0 PPB SOLUTION)	<u>NO.</u> <u>MP10829</u>	Prep Date 03/13/2012	Expiration D 03/14/2012	<u>Prepared By</u> ALPA

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

RecipeID	NAME	<u>NO.</u>	Prep Date	Expiration D	<u>Prepared By</u>
1352	CCB (Hg 0.00 PPB SOLUTION)	<u>MP10830</u>	03/13/2012	03/14/2012	ALPA
<u>FROM</u>	495.000ml of DI Water(W1152) + 5.000ml of Niti Quantity: 500.000 ml	ric Acid, Instra-Ar	nalyzed (cs/4x2.5	(M2298) = Fina	al

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

RecipelD	NAME	<u>NO.</u>	Prep Date	Expiration D	<u>Prepared By</u>
68	STANNOUS CHLORIDE SOLUTION	<u>MP10834</u>	03/14/2012	03/15/2012	ALPA
<u>FROM</u>	450.000ml of DI Water(W1152) + 50.000gram of Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)(f Stannous Chlori M2284) = Final (ide (cs/4x500g)(M Quantity: 500.000	2180) + 50.000m ml	nl of

QATS INORGANIC REFERENCE MATERIAL INITIAL CALIBRATION VERIFICATION SOLUTIONS (ICVs)

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

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

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

QATS Form 20-007F057R10, 01-18-2010

M 2097 - M2101 Ree-duter 11/16/11 A.P.

Page 4 of 4

Q:\Forms\PEINSTR\ICV-R10.doc

PL	ASM	A-Pl	

Standard Certificate

Catalog Number: Lot Number: 610-8002 1199004 Starting Material: 99.999% purity Hg metal **Diluent/Matrix:** 5% HNO3 **Preparation Date:** Dec-11 **Expiration Date:** Dec-12 M2310 Jute 1 1 18/12 page Jute 1 01/18/12 Element Concentration Mercury Stock Solution Ηq $10.00 \pm 0.02 \, \mu g/ml$ **Residual Impurities** Concentration None Detected Impurities were determined via ICP Emission Spectroscopy. Only elements detected are reported. Traceability This standard is certified using wet chemistry assay procedures and/or plasma emission spectroscopy, traceable to primary or well-1. 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 MECHANTABILITY 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. **ELEDYNE** Leeman Labs QC Analyst: A Teledyne Technologies Company 6 Wentworth Drive Hudson, NH 03051 Tel: 603.886.8400 Fax: 603.886.9141 Date: December 1, 2011

