

TABLE OF CONTENTS

Cover page	2
Summary Sheet	3
Sequence Log	4
Initial Calibration	6
Periodic QC.....	13
QC: (LRB; MRL Check; LCS; Matrix Spike 2706120332 (MS)).....	14
2706120332.....	19
2706120335.....	21
QC: (Matrix Spike 2706120332 (MSD)).....	22
Closing QC.....	23
Standard Preparation Worksheet and Certificate of Analysis	27

Level IV Data Package

MWH Group 207230

Method: 218.6

Sample No.:
2706120332
2706120335

No.	Sample Name	Time	Dil.Fac.	Amount	Comment	Analyst:	tlh
				CRVI-LOW			
				UV VIS 1			
						Criteria	
1.	Standard 1 - 0.1 ppb	05/15/07 09:28	1.0	0.094	Diluted from TLH070514-3		
2.	Standard 2 - 0.2ppb	05/15/07 09:36	1.0	0.222	TLH070514-2		
3.	Standard 3 - 2.0 ppb	05/15/07 09:44	1.0	1.971	TLH070514-3		
4.	Standard 4 - 10 ppb	05/15/07 09:52	1.0	9.953	TLH070514-4		
5.	Standard 5 - 20 ppb	05/15/07 10:00	1.0	20.102	TLH070514-5		
6.	Standard 6 - 50ppb	05/15/07 10:08	1.0	49.970	TLH070514-6		
7.	IPC 20	06/12/07 12:30	1.0	19.541			
8.	LRB	06/12/07 12:38	1.0	n.a.			
9.	LRB BUFFER	06/12/07 12:46	1.0	n.a.			
10.	MRL 0.1ppb	06/12/07 12:54	1.0	0.090	✓		
11.	LCS 2.0ppb	06/12/07 13:03	1.0	2.059	✓	TLH070323-2	
12.	LCS 2.0ppb Dup	06/12/07 13:11	1.0	2.010	✓		
13.	2706120332	06/12/07 13:19	1.0	n.a.	✓		
14.	2706120332_MS	06/12/07 13:27	1.0	2.169	✓	2.17 - 109% recovery	
15.	2706120332_MSD	06/12/07 13:35	1.0	2.228	✓	rerun	
16.	2706120335	06/12/07 13:43	1.0	8.458	✓		
17.	2706120317	06/12/07 13:51	1.0	10.373	✓		
18.	2706120311	06/12/07 13:59	1.0	13.021	✓		
19.	2706120332_MSD	06/12/07 14:07	1.0	2.142	✓	2.14 - 107% recovery	
20.	2706120312 (1:5)	06/12/07 14:15	5.0	55.519	✓		
21.	2706120313 (1:5)	06/12/07 14:24	5.0	58.101	✓		
22.	2706110382	06/12/07 14:32	1.0	0.114	✓		
23.	2706110385	06/12/07 14:40	1.0	0.129	✓		
24.	2706110386	06/12/07 14:48	1.0	0.658	✓		
25.	2706110387	06/12/07 14:56	1.0	0.289	✓		
26.	LRB	06/12/07 15:04	1.0	0.007		MRL 50%-150%	
27.	IPC 20	06/12/07 15:12	1.0	19.808		0.05 - 0.15ppb	
28.	2706110393	06/12/07 15:20	1.0	220.743	✓	LCS 90%-110%	
29.	2706110392	06/12/07 15:28	1.0	1.080	✓	Range: 1.80 - 2.20	
30.	2706110396	06/12/07 15:36	1.0	n.a.	✓	MS/MSD 90%-110%	
31.	2706110394	06/12/07 15:45	1.0	n.a.	✓	True Value = 2.0	
32.	2706110395	06/12/07 16:01	1.0	n.a.	✓	IPC 95%-105%	
33.	2706110394_MS	06/12/07 16:09	1.0	2.164	✓	20ppb - 19-21ppb	
34.	2706110393 (1:10)	06/12/07 16:17	10.0	223.982	✓	2.16 - 108% recovery	10ppb - 9.5-10.5 ppb
35.	LRB	06/12/07 16:25	1.0	n.a.			
36.	IPC 20	06/12/07 16:33	1.0	19.480			

Rev:lu

V.B. NMM 4/7/07

Sequence: 061207-IC5-CRVI
Operator: tlh

Page 1 of 2
Printed: 6/14/2007 10:26:31 AM

Title: CRVI-LOW

Datasource: Dionex_USPAS2SDIO2
Location: IC\IC5_CRVI-LOW\2007\June
Timebase: IC-#5
#Samples: 36

Created: 6/12/2007 12:29:22 PM by tlh
Last Update: 6/14/2007 10:26:00 AM by tlh

No.	Name	Dil.	Factor	Type	Comment	Pos.	Inj. Vol.	Program
1	Standard 1 - 0.1 ppb	1.0000		Standard	Diluted from TLH070514-3	810	1.0	CRVI-LOW-loop
2	Standard 2 - 0.2ppb	1.0000		Standard	TLH070514-2	810	1.0	CRVI-LOW-loop
3	Standard 3 - 2.0 ppb	1.0000		Standard	TLH070514-3	810	1.0	CRVI-LOW-loop
4	Standard 4 - 10 ppb	1.0000		Standard	TLH070514-4	810	1.0	CRVI-LOW-loop
5	Standard 5 - 20 ppb	1.0000		Standard	TLH070514-5	810	1.0	CRVI-LOW-loop
6	Standard 6 - 50ppb	1.0000		Standard	TLH070514-6	810	1.0	CRVI-LOW-loop
7	IPC 20	1.0000		Unknown		809	1.0	CRVI-LOW-loop
8	LRB	1.0000		Unknown		810	1.0	CRVI-LOW-loop
9	LRB BUFFER	1.0000		Unknown		814	1.0	CRVI-LOW-loop
10	MRL 0.1ppb	1.0000		Unknown		815	1.0	CRVI-LOW-loop
11	LCS 2.0ppb	1.0000		Unknown	TLH070323-2	813	1.0	CRVI-LOW-loop
12	LCS 2.0ppb Dup	1.0000		Unknown		814	1.0	CRVI-LOW-loop
13	2706120332	1.0000		Unknown		815	1.0	CRVI-LOW-loop
14	2706120332_MS	1.0000		Unknown	2.17 - 109% recovery	816	1.0	CRVI-LOW-loop
15	2706120332_MSD	1.0000		Unknown	rerun	817	1.0	CRVI-LOW-loop
16	2706120335	1.0000		Unknown		818	1.0	CRVI-LOW-loop
17	2706120317	1.0000		Unknown		819	1.0	CRVI-LOW-loop
18	2706120311	1.0000		Unknown		820	1.0	CRVI-LOW-loop
19	2706120332_MSD	1.0000		Unknown	2.14 - 107% recovery	821	1.0	CRVI-LOW-loop
20	2706120312 (1:5)	5.0000		Unknown		821	1.0	CRVI-LOW-loop
21	2706120313 (1:5)	5.0000		Unknown		822	1.0	CRVI-LOW-loop
22	2706110382	1.0000		Unknown		823	1.0	CRVI-LOW-loop
23	2706110385	1.0000		Unknown		824	1.0	CRVI-LOW-loop
24	2706110386	1.0000		Unknown		825	1.0	CRVI-LOW-loop
25	2706110387	1.0000		Unknown		826	1.0	CRVI-LOW-loop
26	LRB	1.0000		Unknown		828	1.0	CRVI-LOW-loop
27	IPC 20	1.0000		Unknown		829	1.0	CRVI-LOW-loop
28	2706110393	1.0000		Unknown		830	1.0	CRVI-LOW-loop
29	2706110392	1.0000		Unknown		831	1.0	CRVI-LOW-loop
30	2706110396	1.0000		Unknown		832	1.0	CRVI-LOW-loop
31	2706110394	1.0000		Unknown		833	1.0	CRVI-LOW-loop
32	2706110395	1.0000		Unknown		834	1.0	CRVI-LOW-loop
33	2706110394_MS	1.0000		Unknown	2.16 - 108% recovery	835	1.0	CRVI-LOW-loop
34	2706110393 (1:10)	10.0000		Unknown		836	1.0	CRVI-LOW-loop
35	LRB	1.0000		Unknown		837	1.0	CRVI-LOW-loop
36	IPC 20	1.0000		Unknown		838	1.0	CRVI-LOW-loop

Sequence: 061207-IC5-CRVI
Operator: tlh

Page 2 of 2
Printed: 6/14/2007 10:26:31 AM

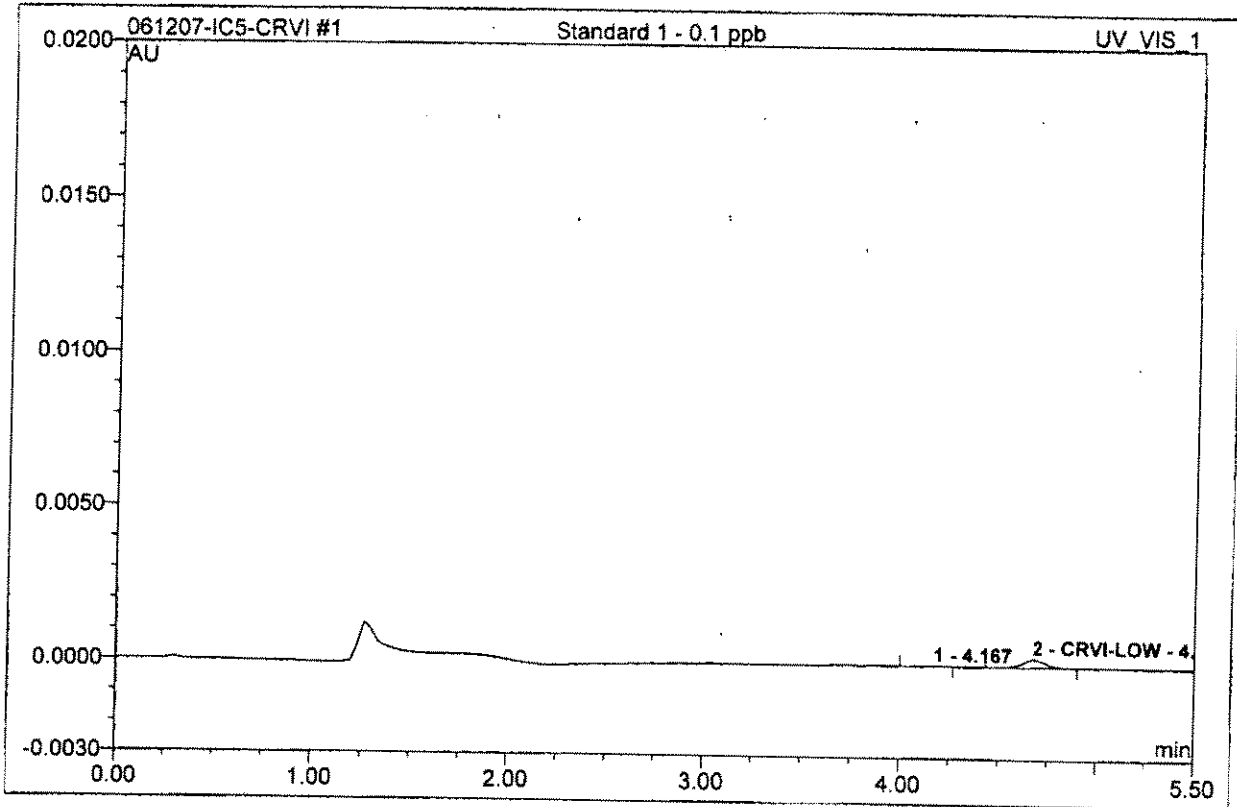
Title: CRVI-LOW

Datasource: Dionex_USPAS2SDIO2
Location: IC\IC5_CRVI-LOW\2007\June
Timebase: IC-#5
#Samples: 36

Created: 6/12/2007 12:29:22 PM by tlh
Last Update: 6/14/2007 10:26:00 AM by tlh

No.	Method	Status	Inj. Date/Time	*Analyst	*operator
1	1-IC#5-CrVi	Finished	5/15/2007 9:28:11 AM	tlh	
2	1-IC#5-CrVi	Finished	5/15/2007 9:36:17 AM	tlh	
3	1-IC#5-CrVi	Finished	5/15/2007 9:44:23 AM	tlh	
4	1-IC#5-CrVi	Finished	5/15/2007 9:52:29 AM	tlh	
5	1-IC#5-CrVi	Finished	5/15/2007 10:00:35 AM	tlh	
6	1-IC#5-CrVi	Finished	5/15/2007 10:08:40 AM	tlh	
7	1-IC#5-CrVi	Finished	6/12/2007 12:30:36 PM	tlh	
8	1-IC#5-CrVi	Finished	6/12/2007 12:38:42 PM	tlh	
9	1-IC#5-CrVi	Finished	6/12/2007 12:46:48 PM	tlh	
10	1-IC#5-CrVi	Finished	6/12/2007 12:54:54 PM	tlh	
11	1-IC#5-CrVi	Finished	6/12/2007 1:03:00 PM	tlh	
12	1-IC#5-CrVi	Finished	6/12/2007 1:11:06 PM	tlh	
13	1-IC#5-CrVi	Finished	6/12/2007 1:19:12 PM	tlh	
14	1-IC#5-CrVi	Finished	6/12/2007 1:27:18 PM	tlh	
15	1-IC#5-CrVi	Finished	6/12/2007 1:35:24 PM	tlh	
16	1-IC#5-CrVi	Finished	6/12/2007 1:43:30 PM	tlh	
17	1-IC#5-CrVi	Finished	6/12/2007 1:51:36 PM	tlh	
18	1-IC#5-CrVi	Finished	6/12/2007 1:59:42 PM	tlh	
19	1-IC#5-CrVi	Finished	6/12/2007 2:07:48 PM	tlh	
20	1-IC#5-CrVi	Finished	6/12/2007 2:15:54 PM	tlh	
21	1-IC#5-CrVi	Finished	6/12/2007 2:24:00 PM	tlh	
22	1-IC#5-CrVi	Finished	6/12/2007 2:32:06 PM	tlh	
23	1-IC#5-CrVi	Finished	6/12/2007 2:40:12 PM	tlh	
24	1-IC#5-CrVi	Finished	6/12/2007 2:48:18 PM	tlh	
25	1-IC#5-CrVi	Finished	6/12/2007 2:56:24 PM	tlh	
26	1-IC#5-CrVi	Finished	6/12/2007 3:04:30 PM	tlh	
27	1-IC#5-CrVi	Finished	6/12/2007 3:12:36 PM	tlh	
28	1-IC#5-CrVi	Finished	6/12/2007 3:20:42 PM	tlh	
29	1-IC#5-CrVi	Finished	6/12/2007 3:28:48 PM	tlh	
30	1-IC#5-CrVi	Finished	6/12/2007 3:36:54 PM	tlh	
31	1-IC#5-CrVi	Finished	6/12/2007 3:45:00 PM	tlh	
32	1-IC#5-CrVi	Finished	6/12/2007 4:01:28 PM	tlh	
33	1-IC#5-CrVi	Finished	6/12/2007 4:09:34 PM	tlh	
34	1-IC#5-CrVi	Finished	6/12/2007 4:17:40 PM	tlh	
35	1-IC#5-CrVi	Finished	6/12/2007 4:25:46 PM	tlh	
36	1-IC#5-CrVi	Finished	6/12/2007 4:33:52 PM	tlh	

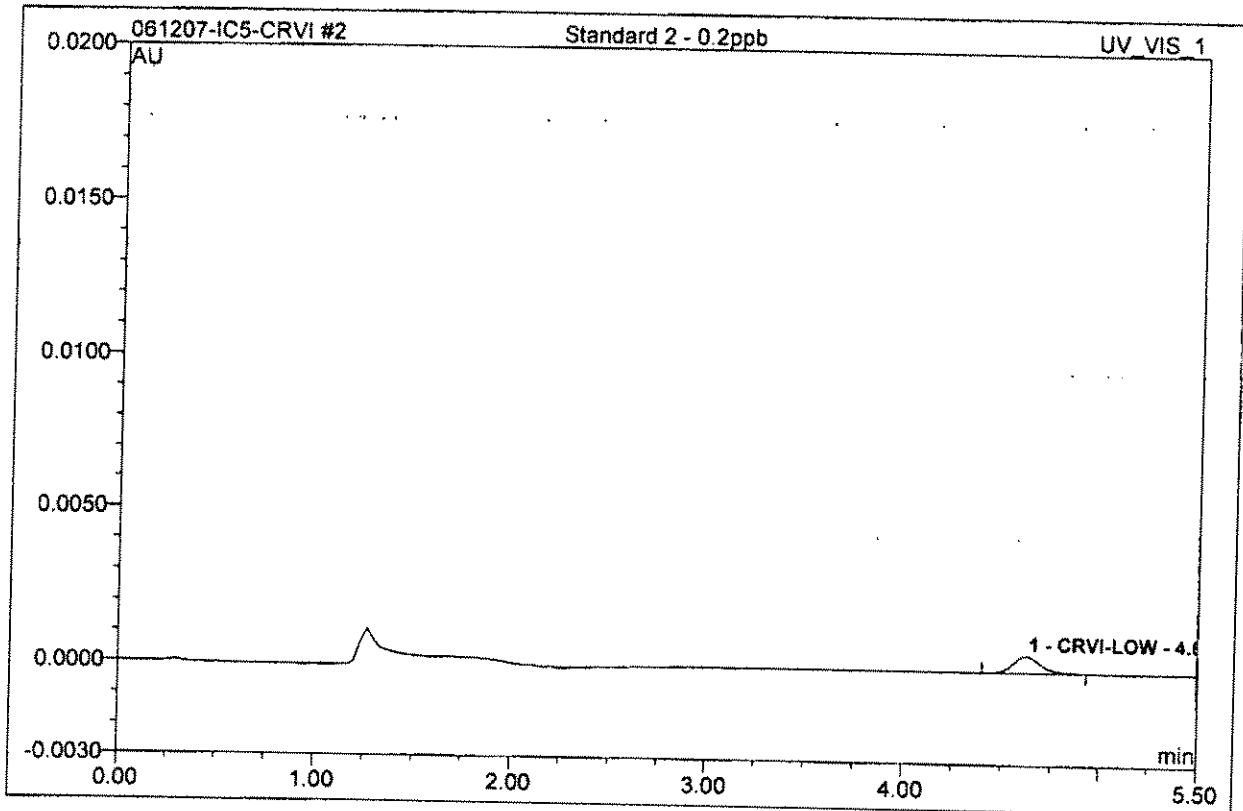
1 Standard 1 - 0.1 ppb			
Sample Name:	Standard 1 - 0.1 ppb	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	standard	Recording Time:	5/15/2007 9:28
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.17	n.a.	0.000	0.0000010	2.61	n.a.	BMB
2	4.67	CRVI-LOW	0.000	0.0000386	97.39	0.094	BMB
Total:			0.000	0.000	100.00	0.094	

2 Standard 2 - 0.2ppb

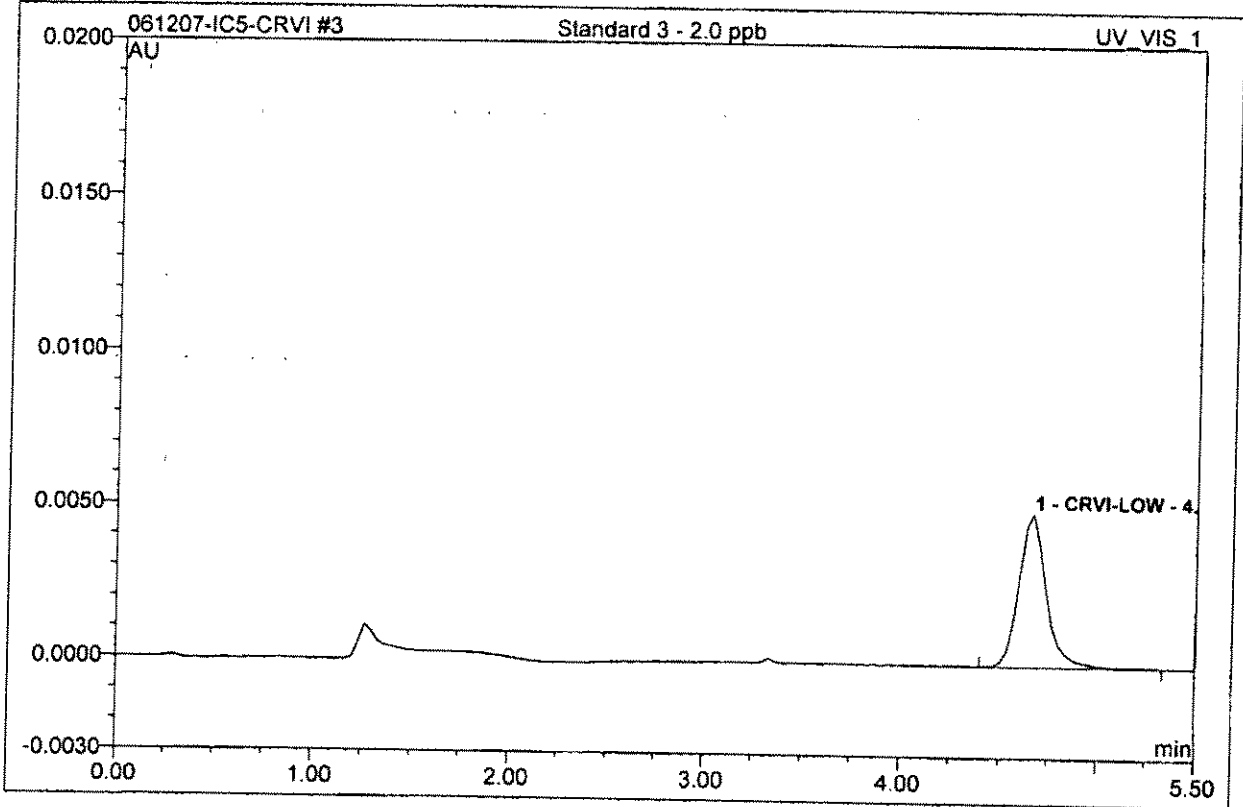
Sample Name:	Standard 2 - 0.2ppb	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	standard	Recording Time:	5/15/2007 9:36
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.63	CRVI-LOW	0.001	0.0000911	100.00	0.222	BMB
Total:			0.001	0.000	100.00	0.222	

3 Standard 3 - 2.0 ppb

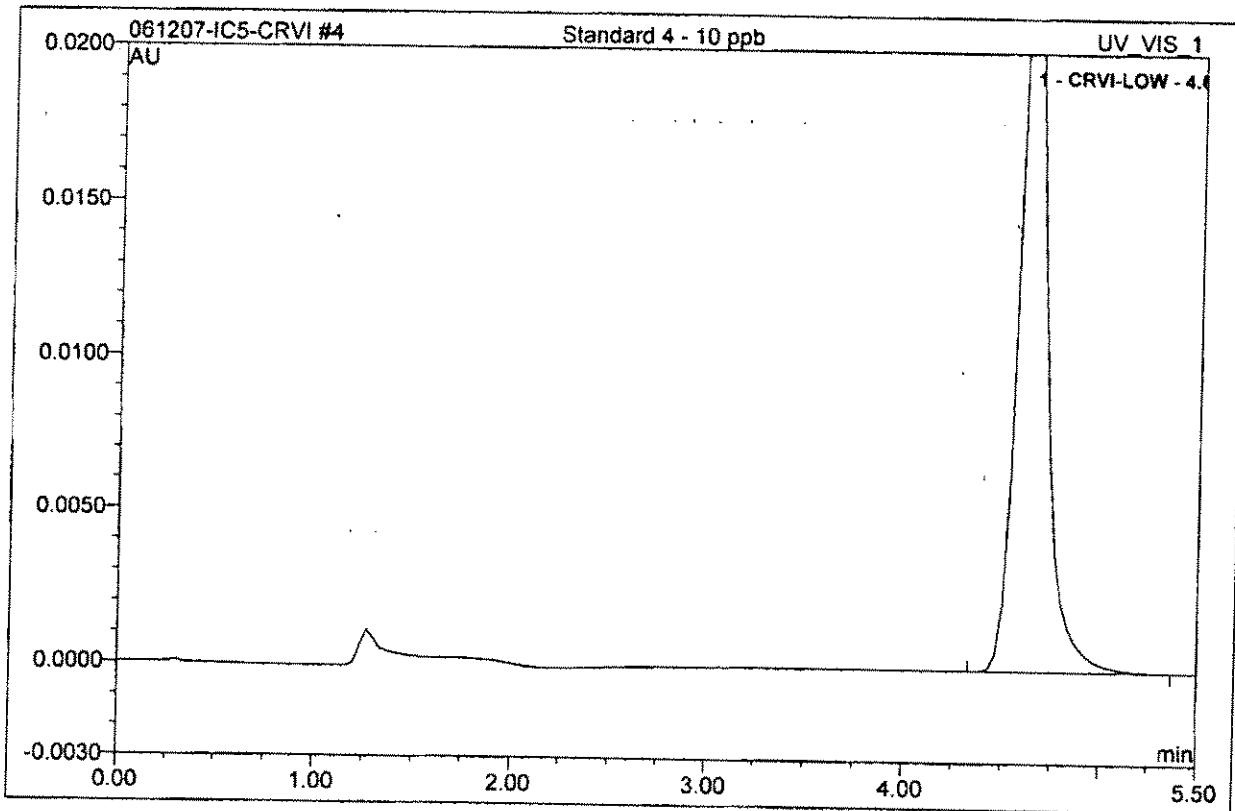
Sample Name:	Standard 3 - 2.0 ppb	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	standard	Recording Time:	5/15/2007 9:44
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.67	CRVI-LOW	0.005	0.0008087	100.00	1.971	BMB
Total:			0.005	0.001	100.00	1.971	

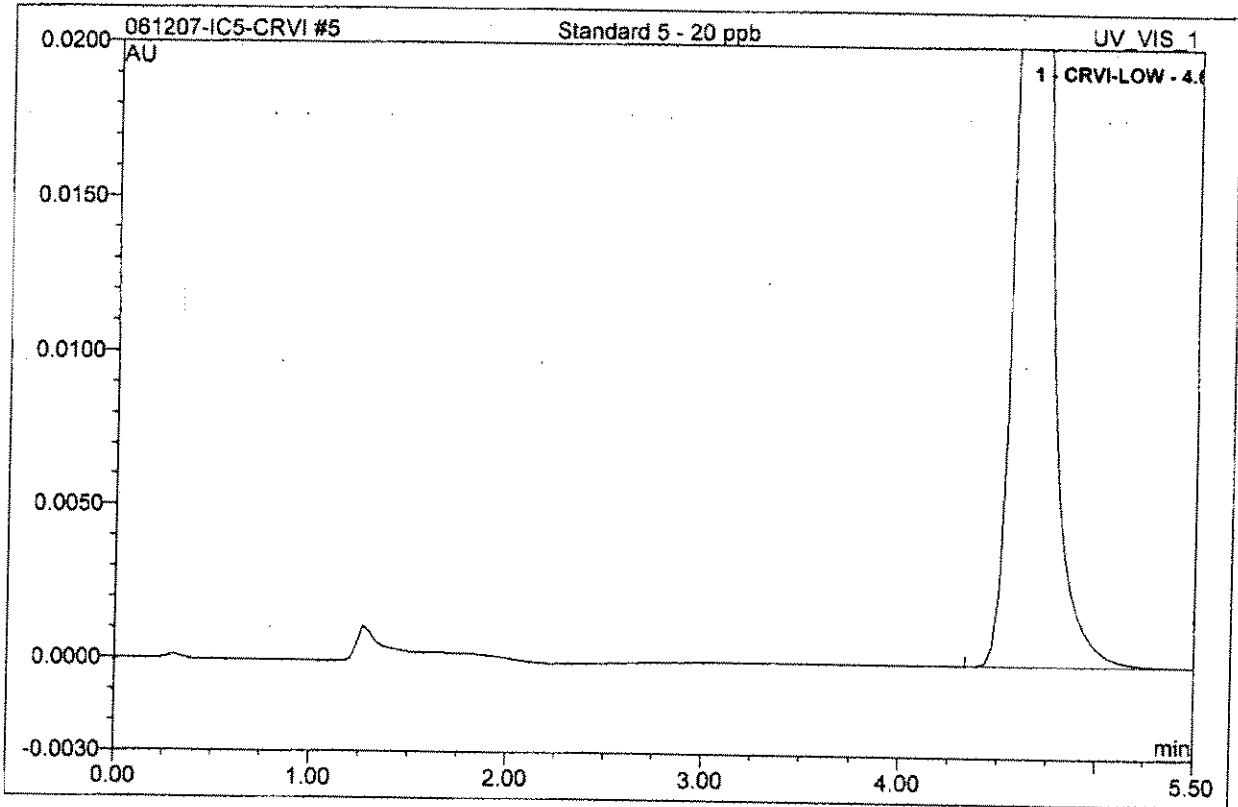
4 Standard 4 - 10 ppb

Sample Name:	Standard 4 - 10 ppb	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	standard	Recording Time:	5/15/2007 9:52
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.63	CRVI-LOW	0.025	0.0040838	100.00	9.953	BMB
Total:			0.025	0.004	100.00	9.953	

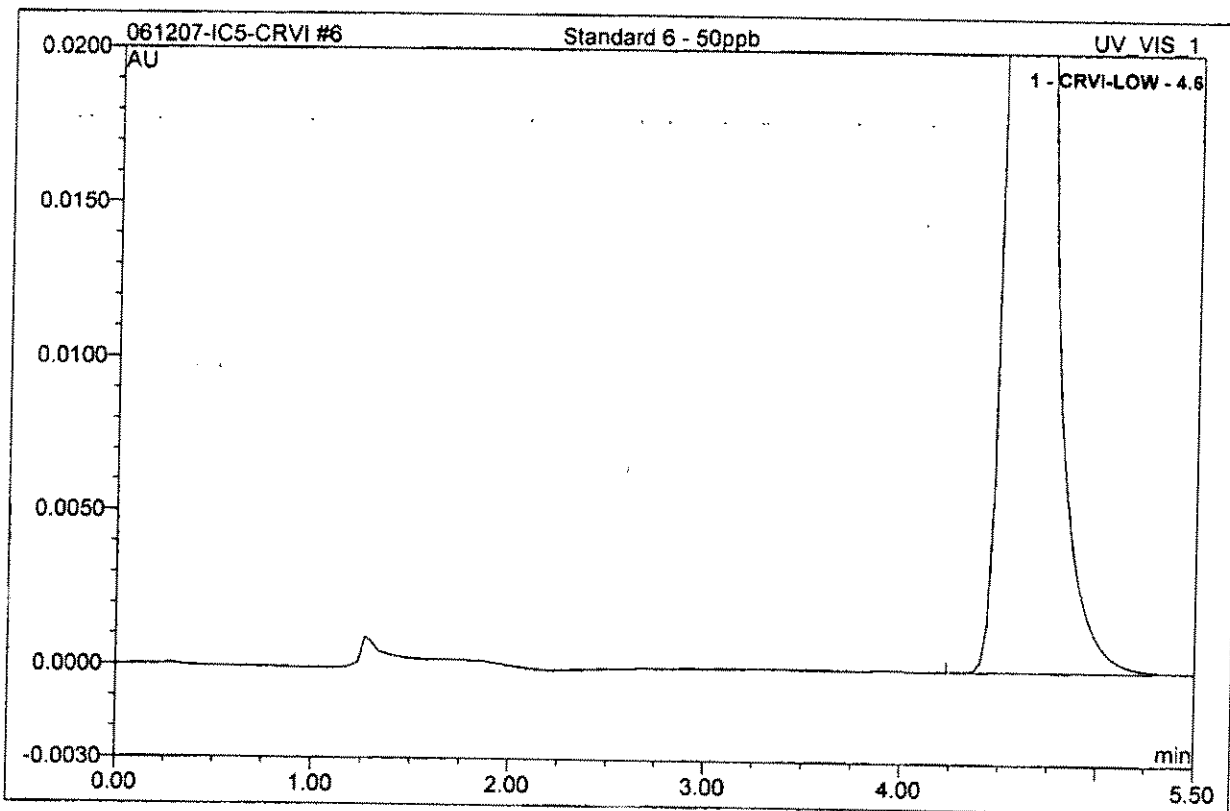
5 Standard 5 - 20 ppb			
Sample Name:	Standard 5 - 20 ppb	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	standard	Recording Time:	5/15/2007 10:00
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.63	CRVI-LOW	0.050	0.0082484	100.00	20.102	BMB
Total:			0.050	0.008	100.00	20.102	

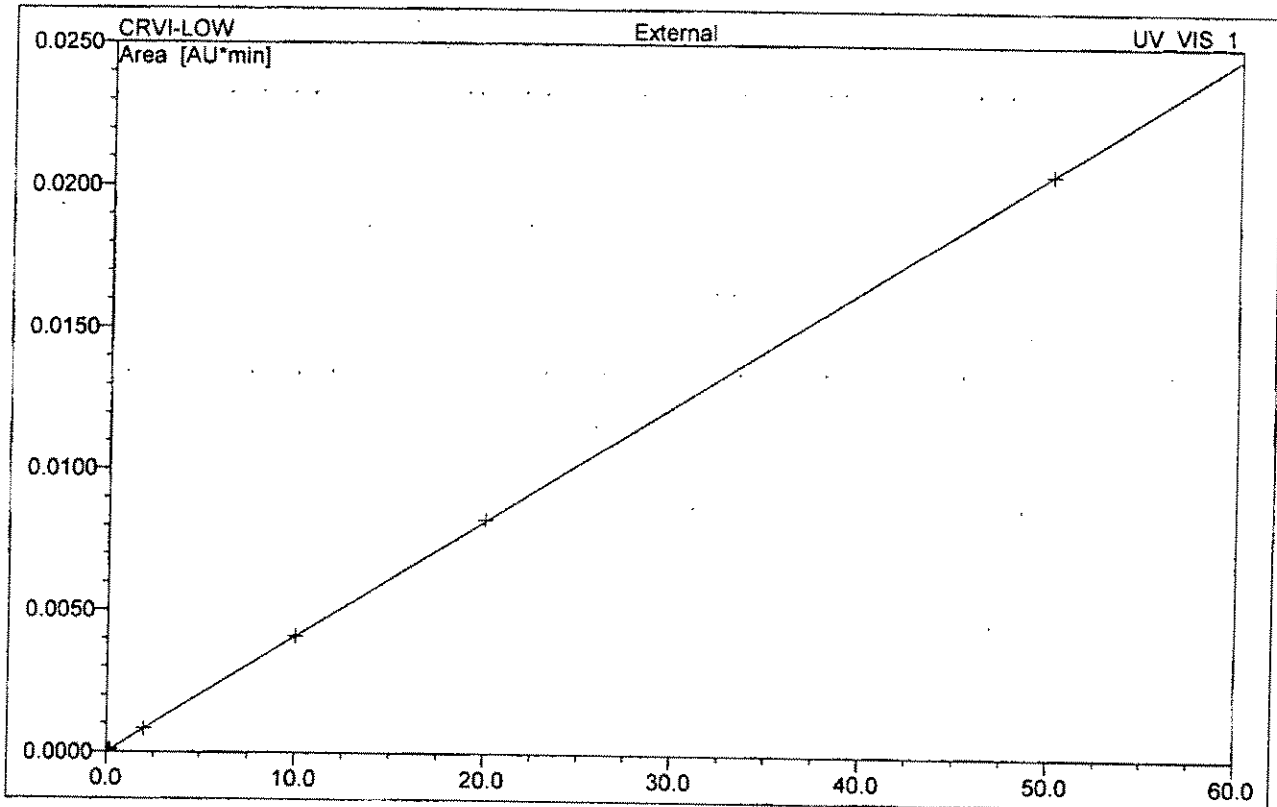
6 Standard 6 - 50ppb

Sample Name:	Standard 6 - 50ppb	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	standard	Recording Time:	5/15/2007 10:08
Analyst:	tlh	Channel:	UV_VIS_1



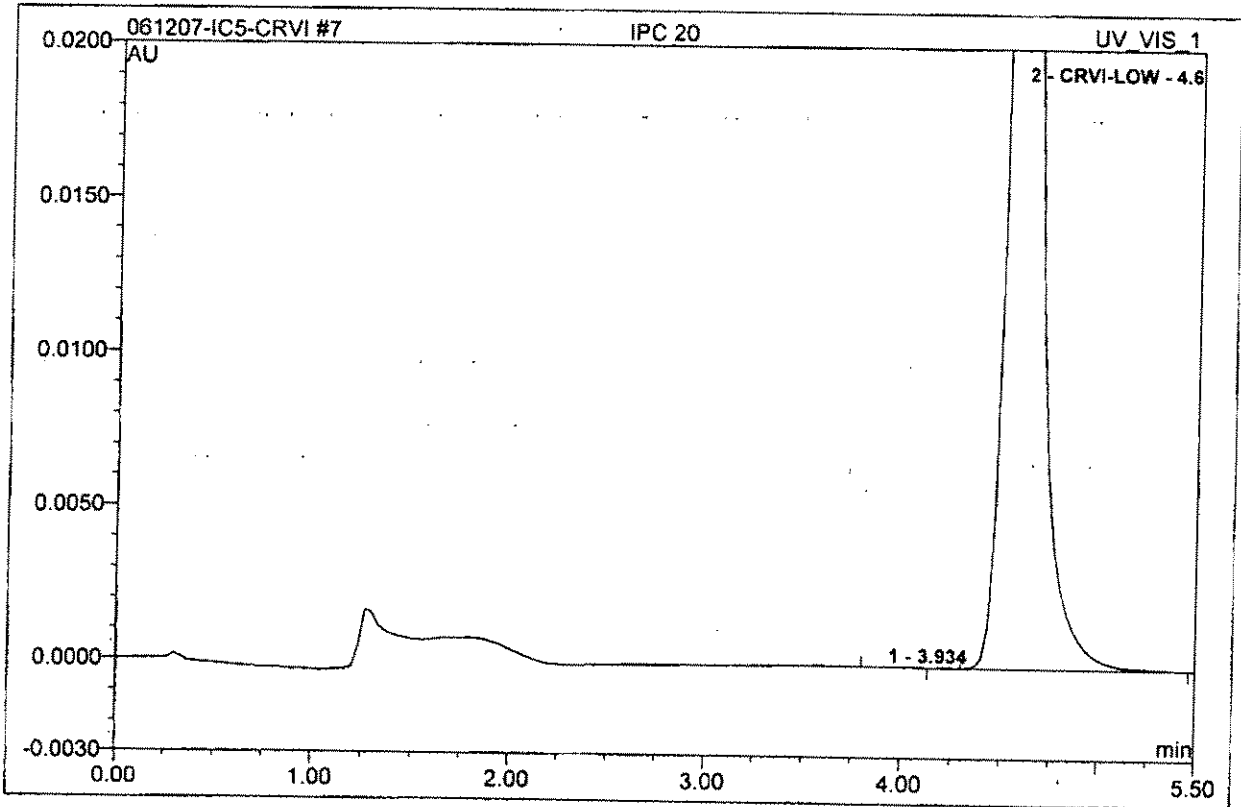
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.60	CRVI-LOW	0.125	0.0205040	100.00	49.970	BMB
Total:			0.125	0.021	100.00	49.970	

6 Standard 6 - 50ppb			
Sample Name:	Standard 6 - 50ppb	Control Program:	CRVI-LOW-loop
Sample Type:	standard	Quantif. Method:	1-IC#5-CrVi
Recording Time:	5/15/2007 10:08	Channel:	UV_VIS_1



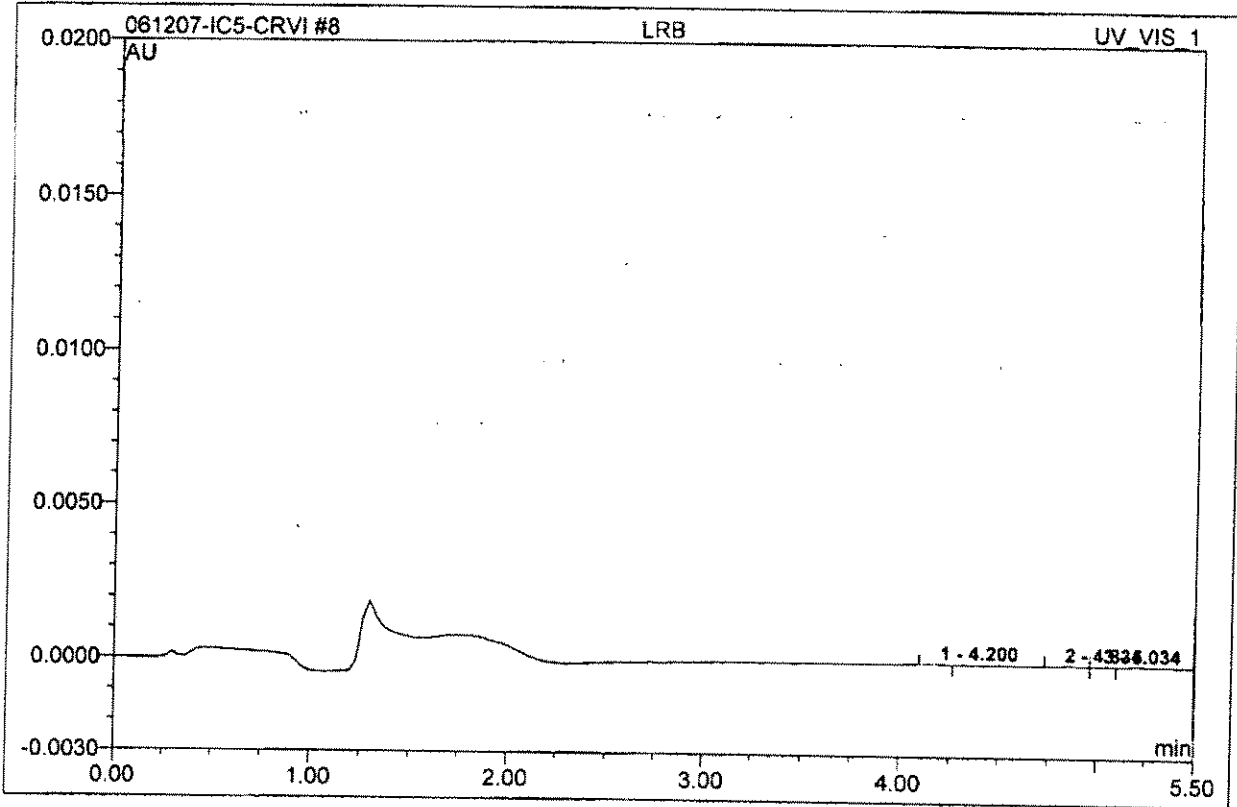
No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	4.60	CRVI-LOW	Lin	6	99.9996	0.0000	0.0004103	0.0000
Average:					99.9996	0.0000	0.0004	0.0000

7 IPC 20			
Sample Name:	IPC 20	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	unknown	Recording Time:	6/12/2007 12:30
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.93	n.a.	0.000	0.0000020	0.03	n.a.	BMB
2	4.60	CRVI-LOW	0.050	0.0080183	99.97	19.541	BMB
Total:			0.050	0.008	100.00	19.541	

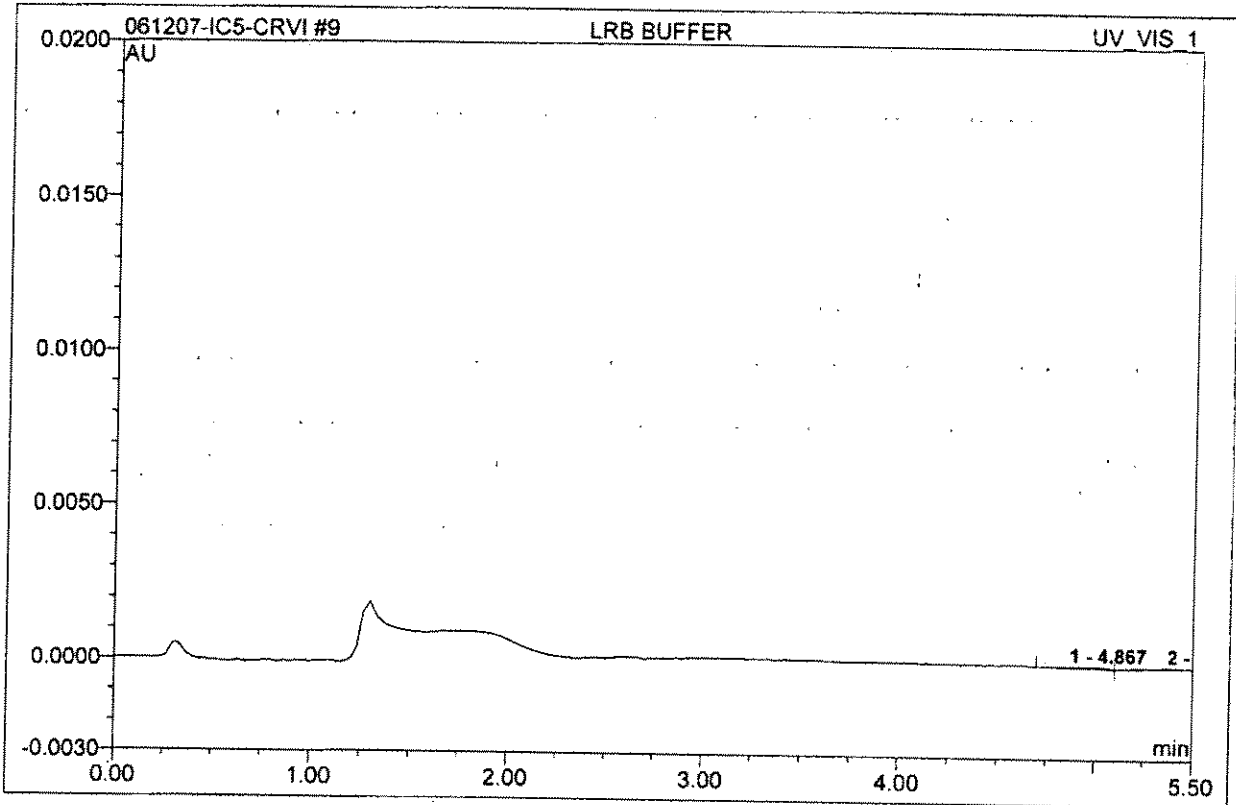
8 LRB			
Sample Name:	LRB	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	unknown	Recording Time:	6/12/2007 12:38
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.20	n.a.	0.000	0.0000008	35.94	n.a.	BMB
2	4.83	n.a.	0.000	0.0000011	53.13	n.a.	BMB
3	5.03	n.a.	0.000	0.0000002	10.94	n.a.	bMB
Total:			0.000	0.000	100.00	0.000	

9 LRB BUFFER

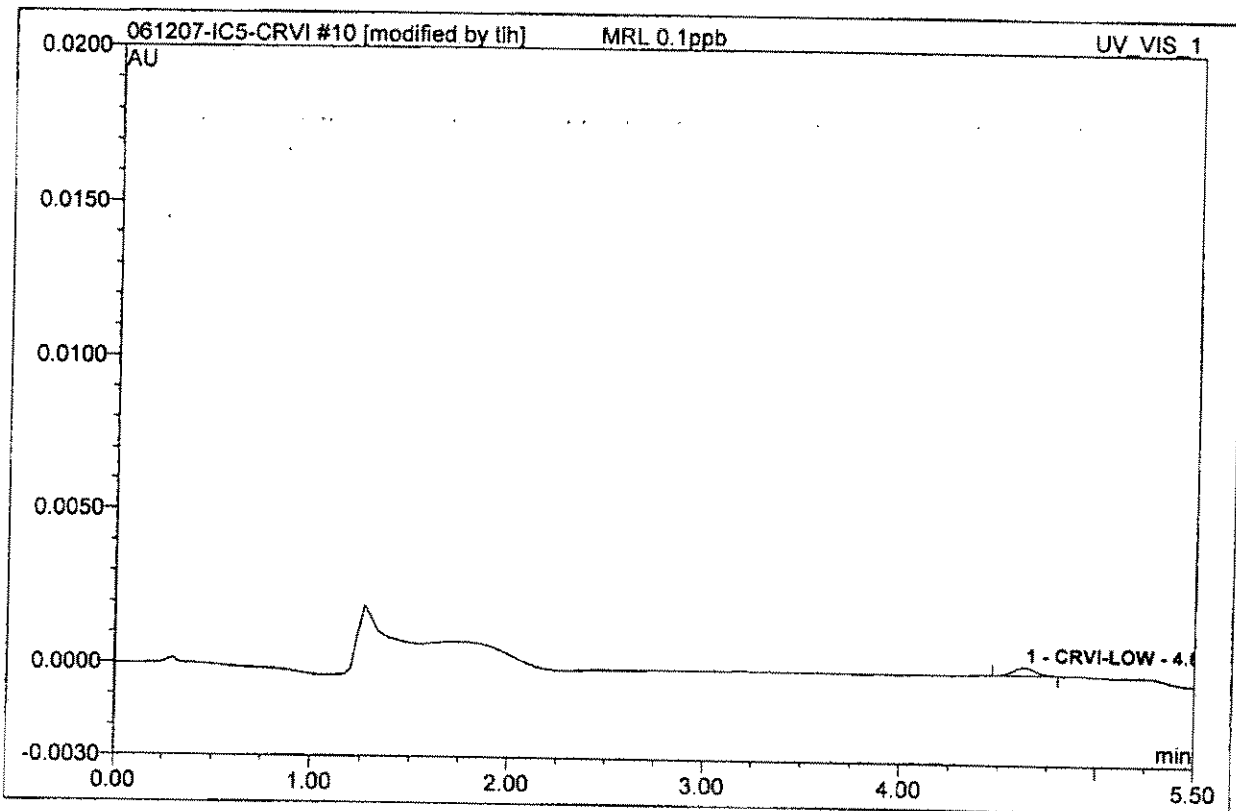
Sample Name:	LRB BUFFER	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	6/12/2007 12:46
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret. Time min	Peak Name	Height AU	Area AU*min	Rel. Area %	Amount	Type
1	4.87	n.a.	0.000	0.0000118	65.83	n.a.	BMb
2	5.37	n.a.	0.000	0.0000061	34.17	n.a.	bMB
Total:			0.000	0.000	100.00	0.000	

10 MRL 0.1ppb

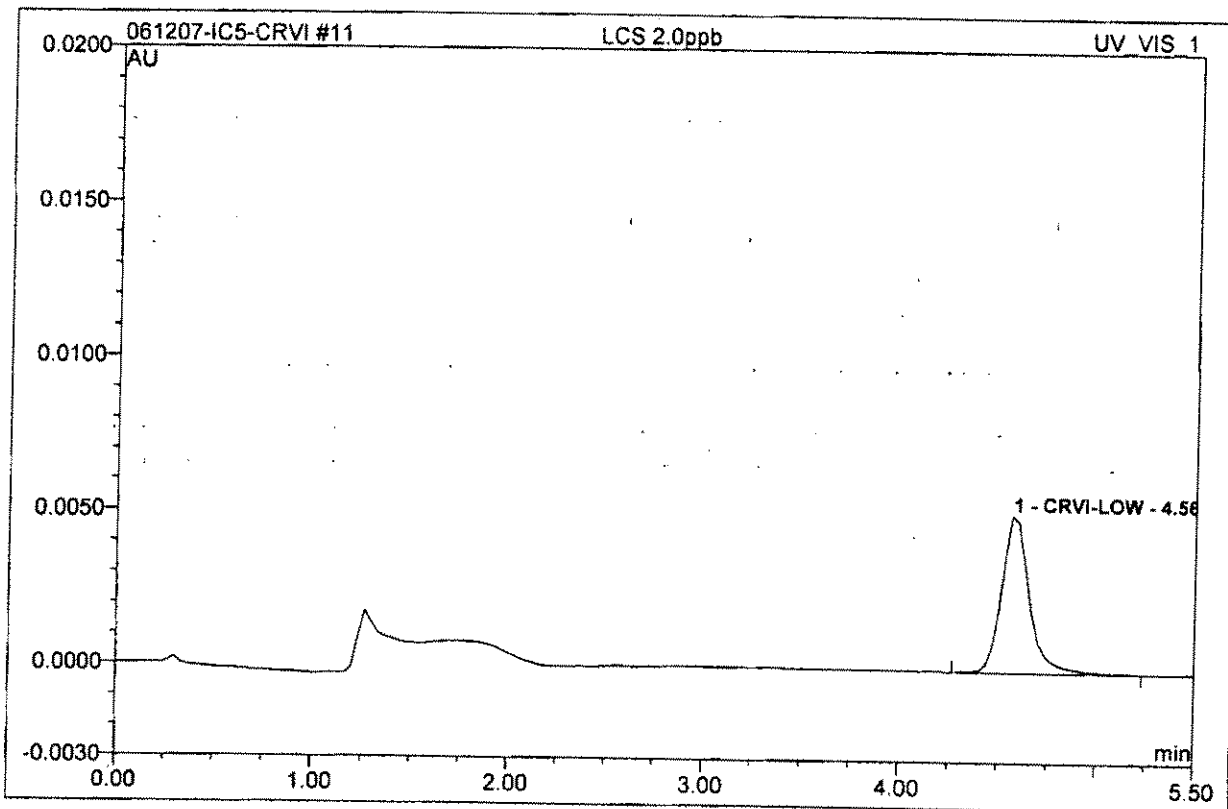
Sample Name:	MRL 0.1ppb	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	unknown	Recording Time:	6/12/2007 12:54
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.63	CRVI-LOW	0.000	0.0000370	100.00	0.090	BMB*
Total:			0.000	0.000	100.00	0.090	

11 LCS 2.0ppb

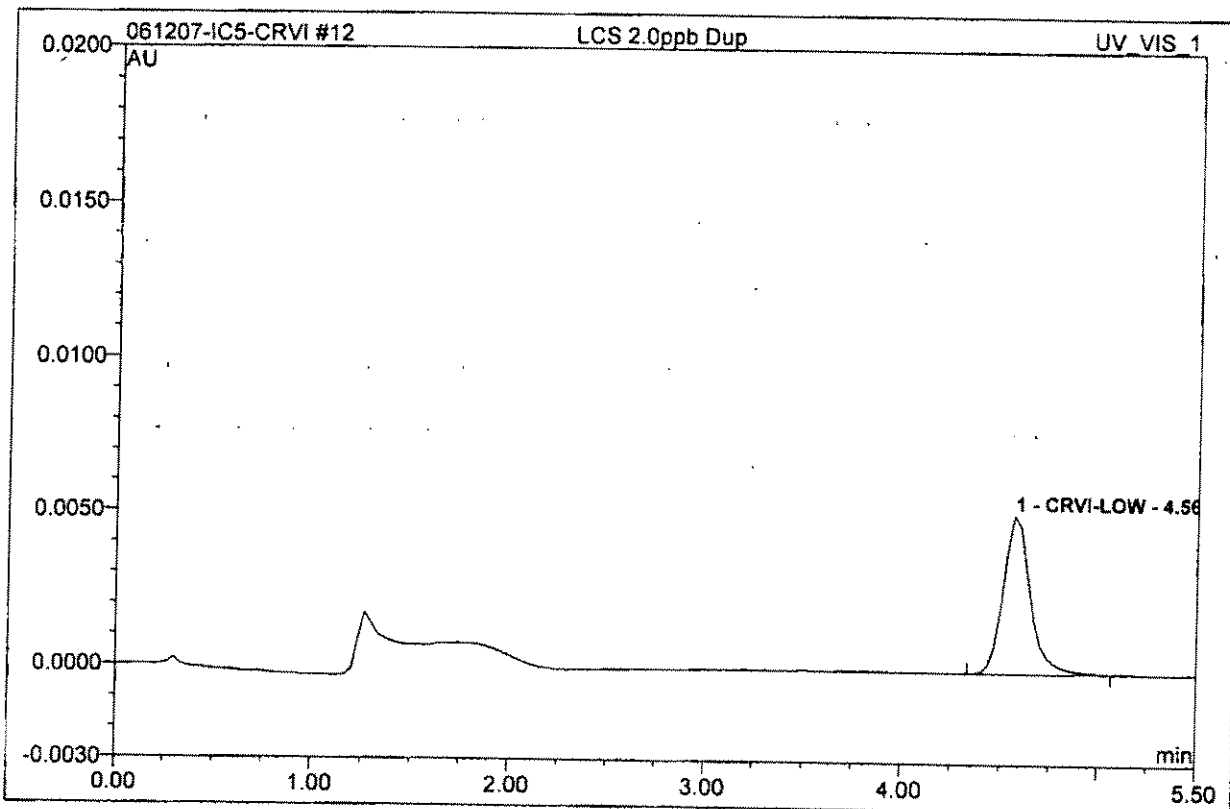
Sample Name:	LCS 2.0ppb	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	unknown	Recording Time:	6/12/2007 13:03
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.57	CRVI-LOW	0.005	0.0008450	100.00	2.059	BMB
Total:			0.005	0.001	100.00	2.059	

12 LCS 2.0ppb Dup

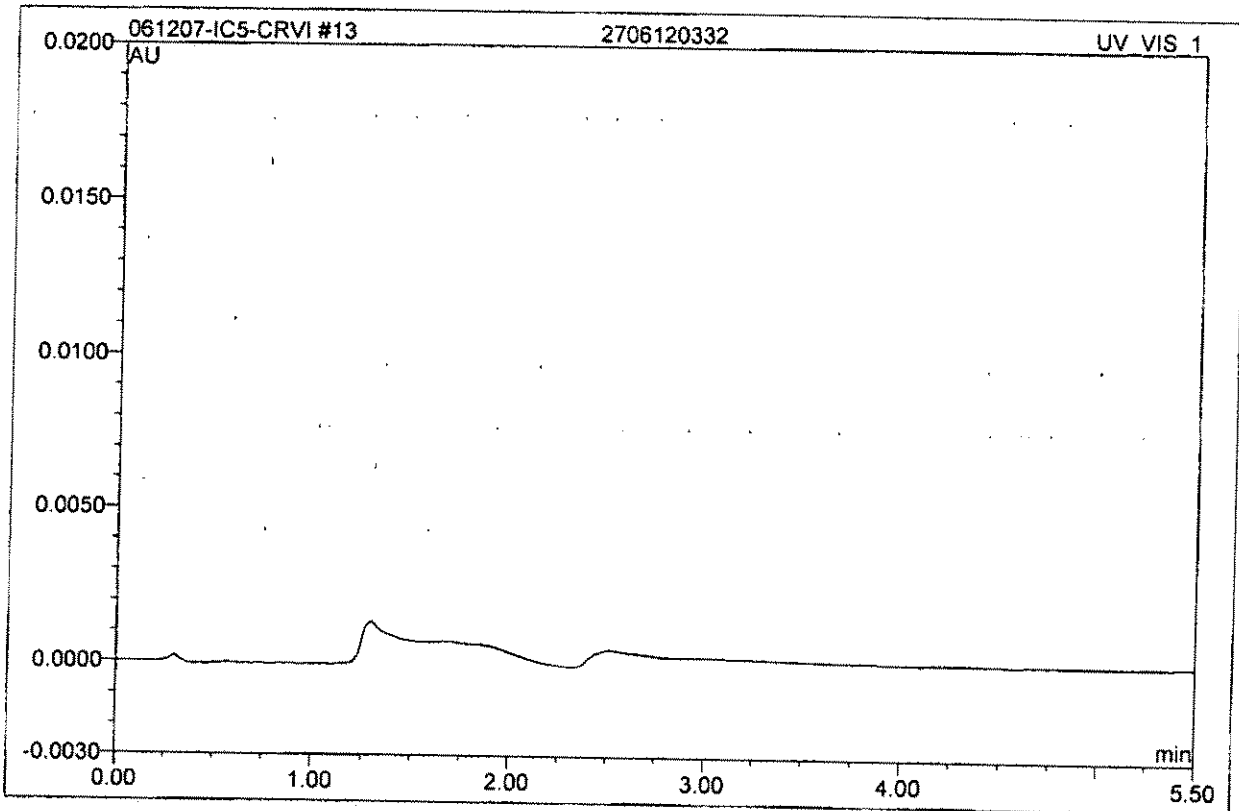
Sample Name:	LCS 2.0ppb Dup	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	6/12/2007 13:11
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.57	CRVI-LOW	0.005	0.0008247	100.00	2.010	BMB
Total:			0.005	0.001	100.00	2.010	

13 2706120332

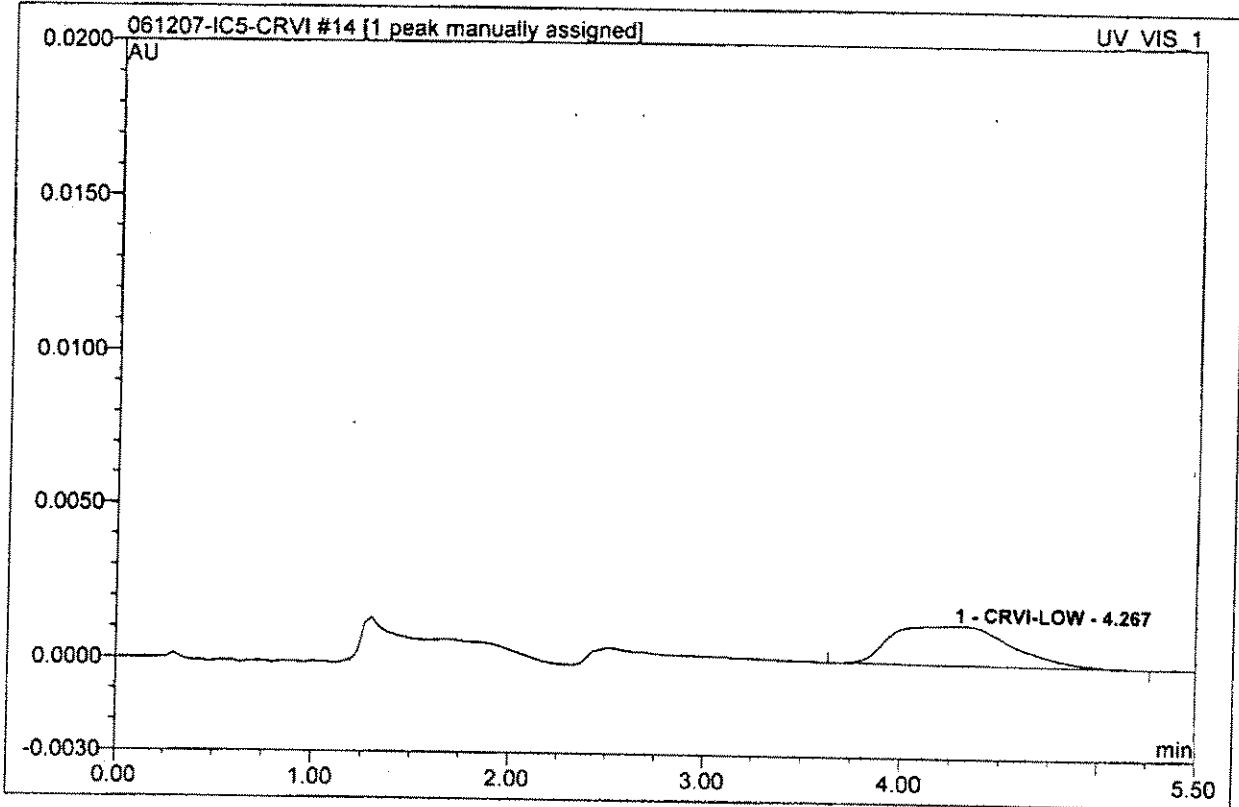
Sample Name:	2706120332	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	unknown	Recording Time:	6/12/2007 13:19
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

14 2706120332_MS

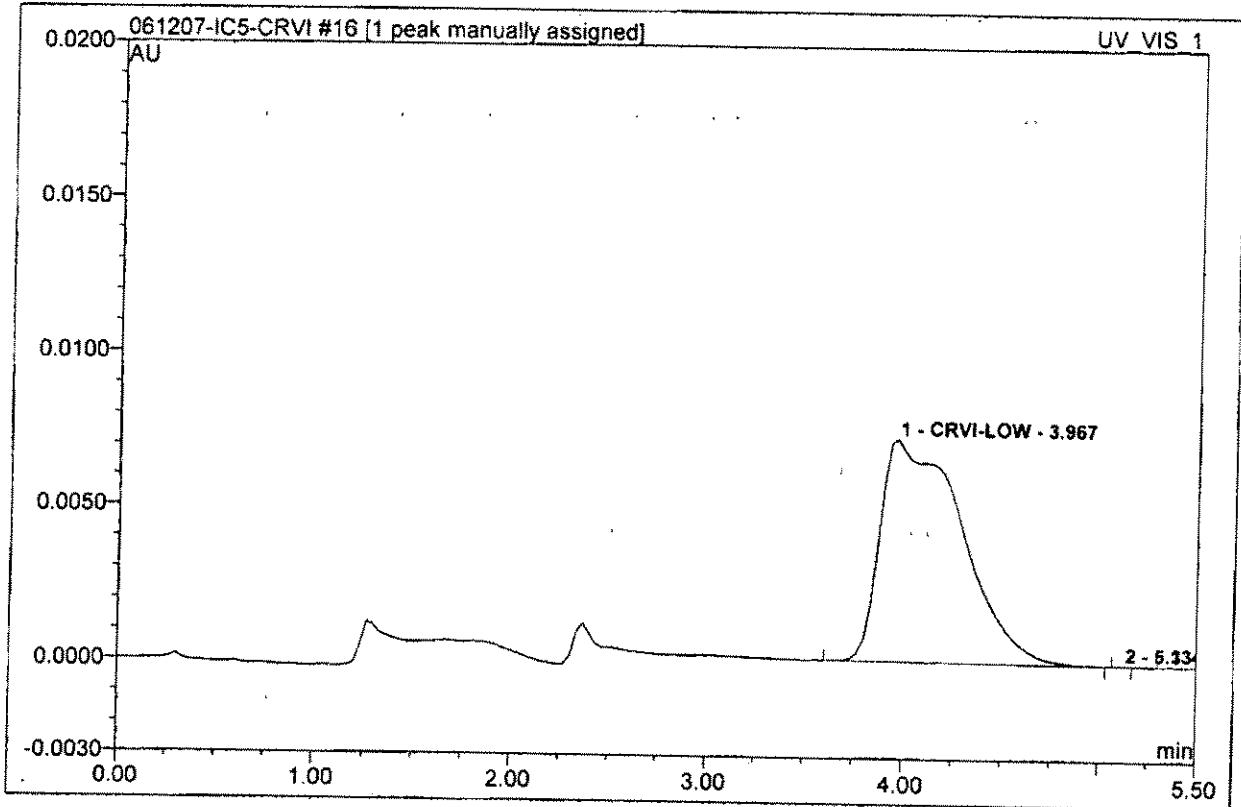
Sample Name:	2706120332_MS	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	6/12/2007 13:27
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.27	CRVI-LOW	0.001	0.0008902	100.00	2.169	BMB^
Total:			0.001	0.001	100.00	2.169	

16 2706120335

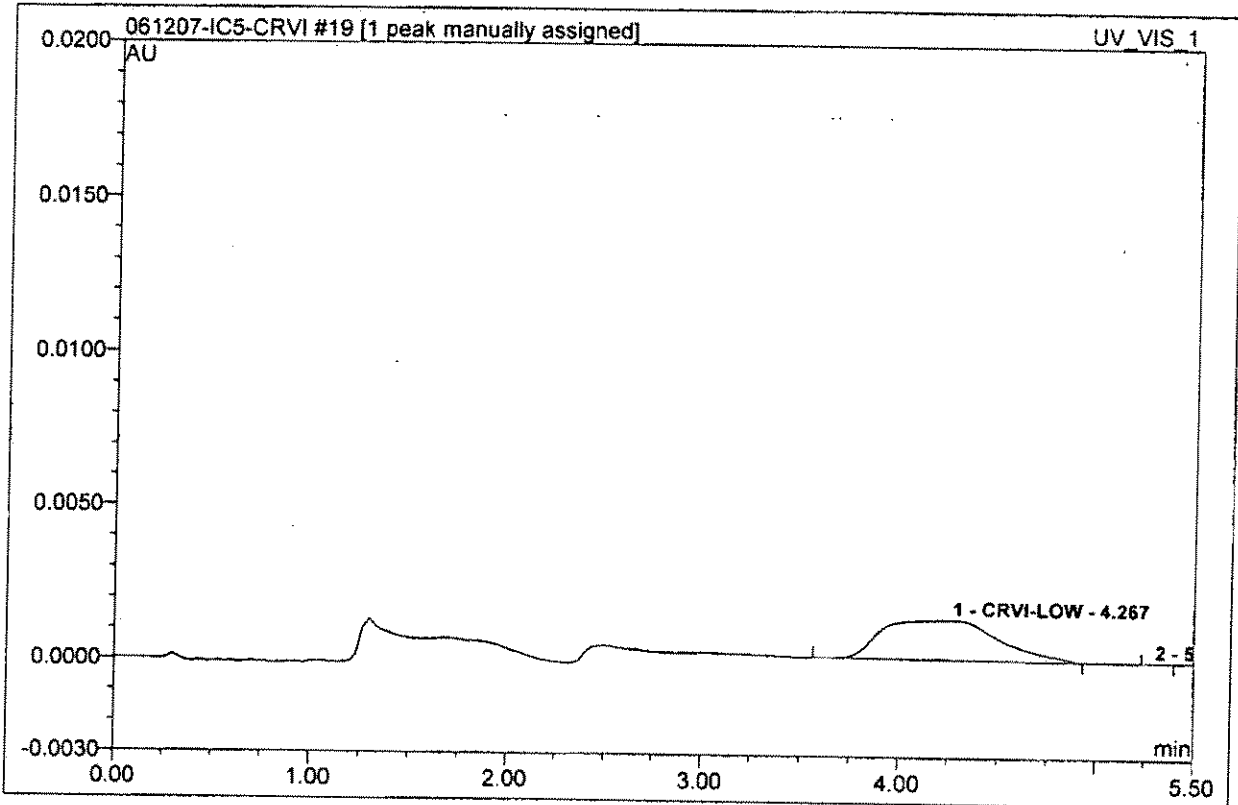
Sample Name:	2706120335	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	6/12/2007 13:43
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.97	CRVI-LOW	0.007	0.0034706	99.97	8.458	BMB [^]
2	5.13	n.a.	0.000	0.0000003	0.01	n.a.	BMB
3	5.37	n.a.	0.000	0.0000006	0.02	n.a.	BMB
Total:			0.007	0.003	100.00	8.458	

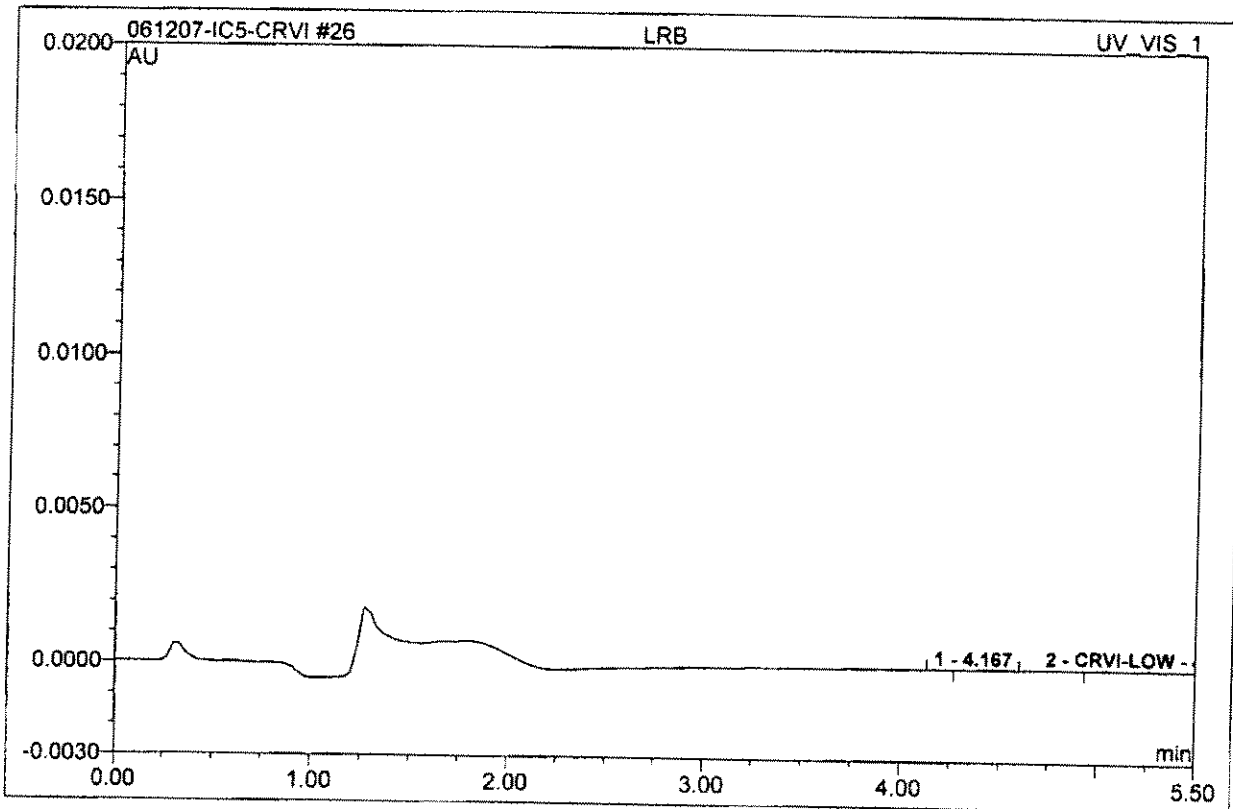
19 2706120332_MSD

Sample Name:	2706120332_MSD	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	6/12/2007 14:07
Analyst:	tlh	Channel:	UV_VIS_1



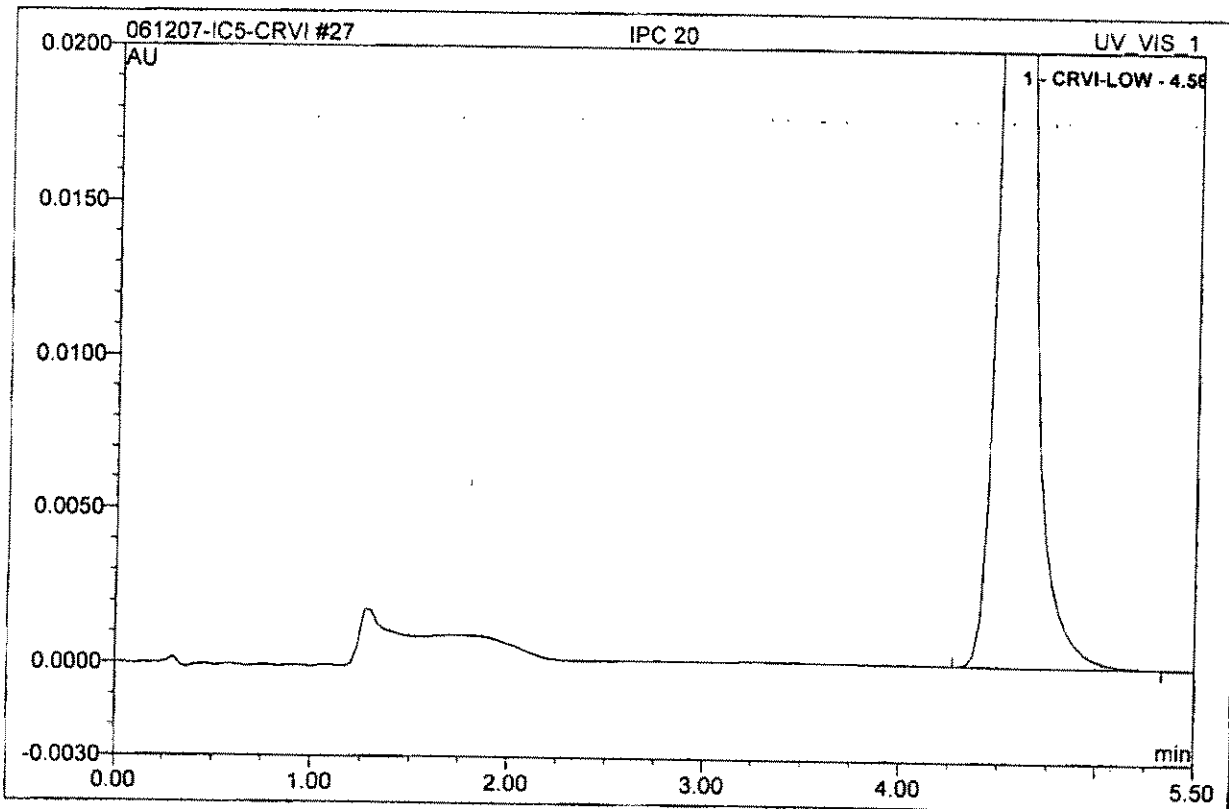
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.27	CRVI-LOW	0.001	0.0008791	99.95	2.142	BMB^
2	5.30	n.a.	0.000	0.0000004	0.05	n.a.	BMB
Total:			0.001	0.001	100.00	2.142	

26 LRB			
Sample Name:	LRB	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	unknown	Recording Time:	6/12/2007 15:04
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.17	n.a.	0.000	0.0000006	17.76	n.a.	BMB
2	4.73	CRVI-LOW	0.000	0.0000029	82.24	0.007	BMB
Total:			0.000	0.000	100.00	0.007	

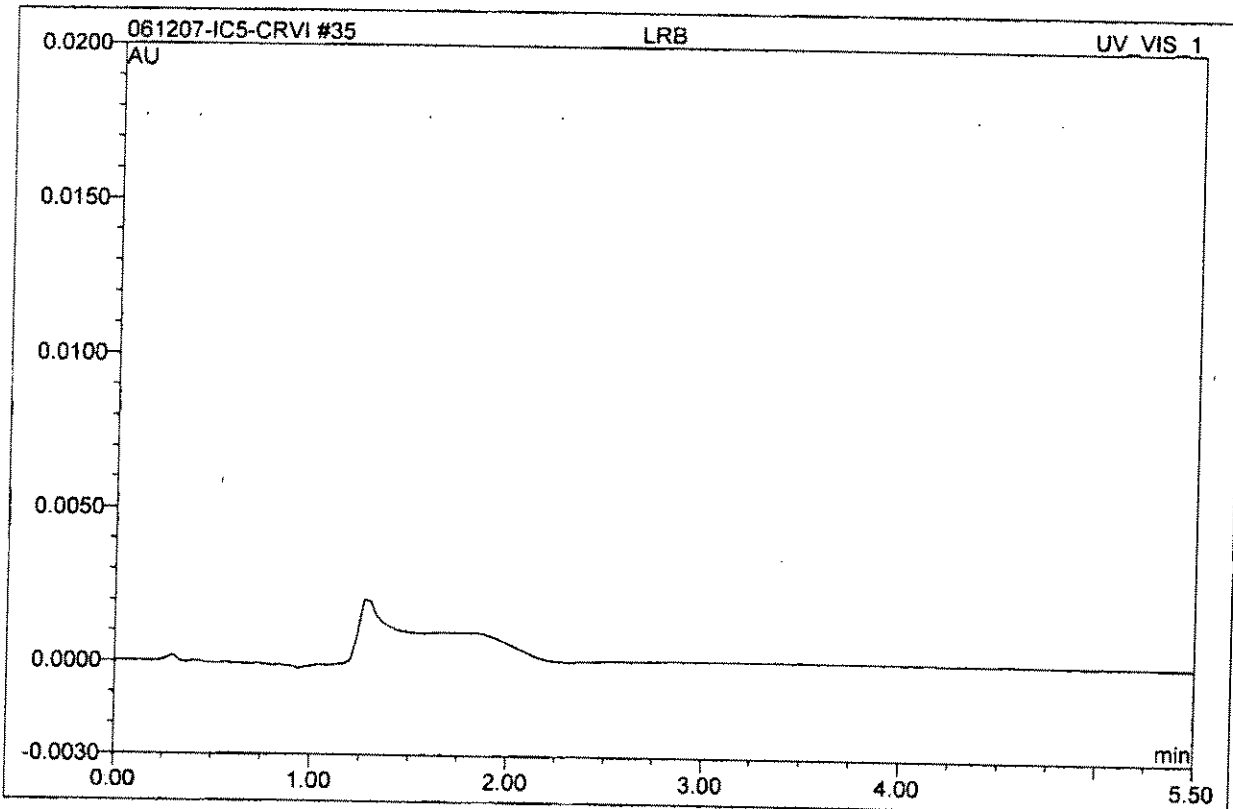
27 IPC 20			
Sample Name:	IPC 20	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	6/12/2007 15:12
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min.	Rel.Area %	Amount	Type
1	4.57	CRVI-LOW	0.050	0.0081277	100.00	19.808	BMB
Total:			0.050	0.008	100.00	19.808	

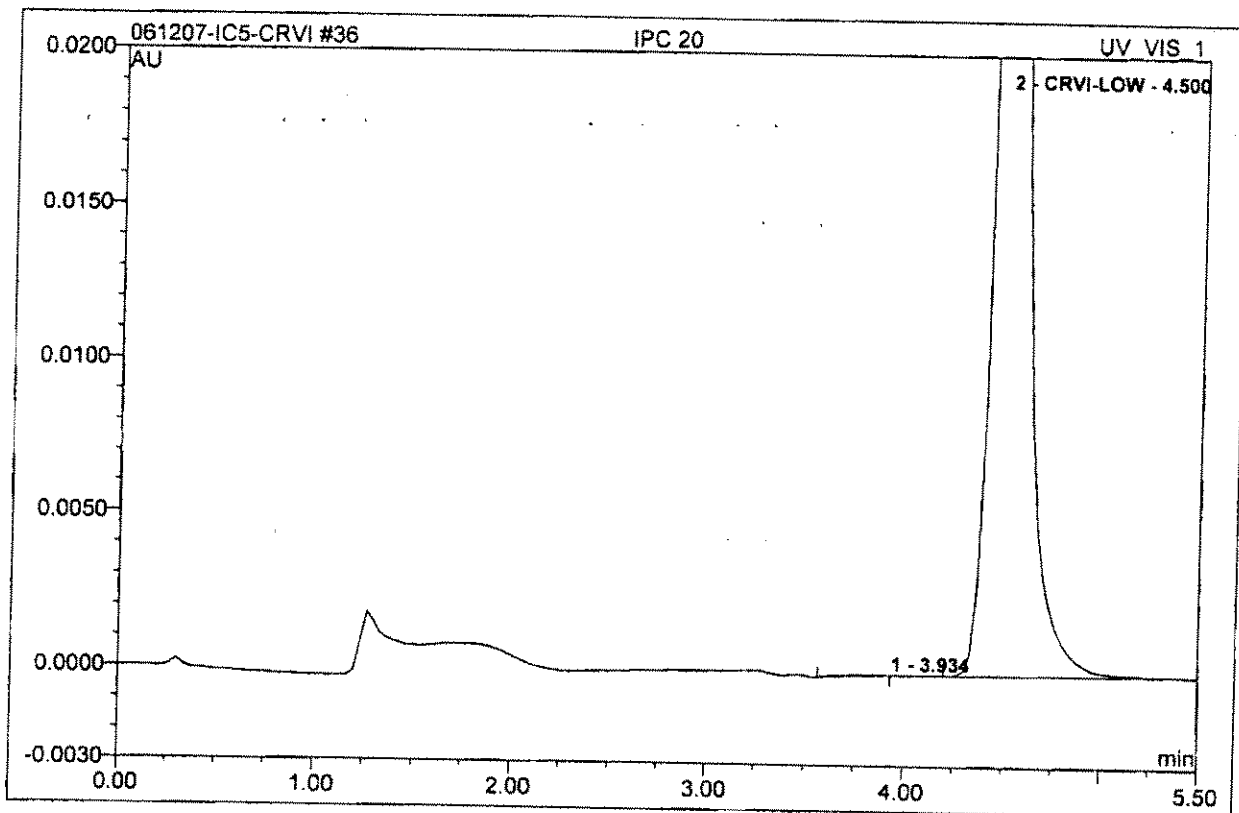
35 LRB

Sample Name:	LRB	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	6/12/2007 16:25
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

36 IPC 20			
Sample Name:	IPC 20	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	unknown	Recording Time:	6/12/2007 16:33
Analyst:	tlh	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.93	n.a.	0.000	0.0000092	0.11	n.a.	BMB
2	4.50	CRVI-LOW	0.050	0.0079932	99.89	19.480	BMB
Total:			0.050	0.008	100.00	19.480	

**Standard
Preparation
Worksheet
&
Certificate of
Analysis**

Reagent Preparation Documentation

Reagent: Cr^{VI} Low Calibration Stock Soln - 1000ppb
 Date Received/Prepped: 5/14/07 | | | |
 Date Expired: | | | | |
 Manufacturer: _____
 Storage Condition: room temperature

MW #: TLH070514-1
 By: 92H
 Matrix: aq
 Amount: 100mL
 Lot #: _____

Component	Comment	Standard	Concentration
Inorganic Ventures 1000ppm exp 01/11/08 rec'd 5/11/07 lot # Z-CRO2152	100uL diluted to 100ml w/ DI H ₂ O	R201632	1000ppb

Comment: _____

Reagent: Cr^{VI} Low Calibration Std - 0.2ppb
 Date Received/Prepped: 5/14/07 | 6/13/07 | | | |
 Date Expired: | | | | |
 Manufacturer: _____
 Storage Condition: room temperature

MW #: TLH070514-2
 By: 92H
 Matrix: aq
 Amount: 100mL
 Lot #: _____

Component	Comment	Standard	Concentration
Cr ^{VI} Low Calibration Stock	20uL diluted to 100ml w/DI H ₂ O	TLH070514-1	0.2ppb
Cr ^{VI} Buffer Solution	1ml added AFTER diluted to final volume.	TLH060815-4	

Comment: _____

Reagent: Cr^{VI} Low Calibration Std - 2.0ppb
 Date Received/Prepped: 5/14/07 | 6/4/07 | 6/13/07 | | | |
 Date Expired: | | | | |
 Manufacturer: _____
 Storage Condition: room temperature

MW #: TLH070514-3
 By: 92H
 Matrix: aq
 Amount: 100mL
 Lot #: _____

Component	Comment	Standard	Concentration
Cr ^{VI} Low Calibration Stock	20uL diluted to 100ml w/DI H ₂ O	TLH070514-1	2.0ppb
Cr ^{VI} Buffer Solution	1ml added AFTER diluted to final volume.	TLH060815-4	

Comment: _____

Reagent Preparation Documentation

Page: 22

Reagent: Cr¹⁶ Low Calibration Std. - 10ppb
 Date Received/Prepped: 5/14/07 6/13/07 | | | |
 Date Expired: | | | | |
 Manufacturer: _____
 Storage Condition: room temperature

MW #: ~~TLH0514~~ ^{TLH} TLH070514-4
 By: 9CH
 Matrix: ag
 Amount: 100mL
 Lot #: _____

Component	Comment	Standard	Concentration
<u>Cr¹⁶ Low Calibration</u> <u>Stock</u>	<u>1.0ml diluted to 100ml w/ DI H₂O</u>	<u>TLH070514-1</u>	<u>10.0ppb</u>
<u>Cr¹⁶ Buffer Solution</u>	<u>1.0ml added AFTER diluted to</u> <u>final volume</u>	<u>TLH060815-4</u>	

Comment: _____

Reagent: Cr¹⁶ Low Calibration Std. - 20ppb
 Date Received/Prepped: 5/14/07 6/13/07 | | | |
 Date Expired: | | | | |
 Manufacturer: _____
 Storage Condition: room temperature

MW #: TLH070514-5
 By: 9CH
 Matrix: ag
 Amount: 100mL
 Lot #: _____

Component	Comment	Standard	Concentration
<u>Cr¹⁶ Low Calibration</u> <u>Stock</u>	<u>2.0ml diluted to 100ml w/ DI H₂O</u>	<u>TLH070514-1</u>	<u>20ppb</u>
<u>Cr¹⁶ Buffer Solution</u>	<u>1.0ml added AFTER diluted to</u> <u>final volume</u>	<u>TLH060815-4</u>	

Comment: _____

Reagent: Cr¹⁶ Low Calibration Std. - 50ppb
 Date Received/Prepped: 5/14/07 6/13/07 | | | |
 Date Expired: | | | | |
 Manufacturer: _____
 Storage Condition: room temperature

MW #: TLH070514-6
 By: 9CH
 Matrix: ag
 Amount: 100mL
 Lot #: _____

Component	Comment	Standard	Concentration
<u>Cr¹⁶ Low Calibration</u> <u>Stock</u>	<u>5.0ml diluted to 100ml w/ DI H₂O</u>	<u>TLH070514-1</u>	<u>50ppb</u>
<u>Cr¹⁶ Buffer Solution</u>	<u>1.0ml added AFTER diluted to</u> <u>final volume</u>	<u>TLH060815-4</u>	

Comment: _____

Reagent Preparation Documentation

Reagent: Cr⁶⁺ Buffer Solution
Date Received/Prepped: 8/15/06 | 11/1/06 | 5/14/07 | | |
Date Expired: 9/15/06 | 12/1/06 | | | |
Manufacturer: _____
Storage Condition: room temperature

MW #: TLH060815-4
By: TLH
Matrix: ag
Amount: 100mL
Lot #: _____

Component	Comment	Standard	Concentration
Ammonium Sulfate	33g dissolved in ~60mL DI H ₂ O	R201208	
Ammonium Hydroxide	6.5 mL added bring to volume w/ DI H ₂ O	R201403	

Comment: _____

Reagent: Cr⁶⁺ Calibration Std. - 0.2 ppb
Date Received/Prepped: 8/16/06 | 9/22/06 | 10/31/06 | 11/28/06 | 11/30/06 | 1/20/07
Date Expired: 8/23/06 | 9/21/06 | | | |
Manufacturer: _____
Storage Condition: room temperature

MW #: TLH060816-1
By: TLH
Matrix: ag
Amount: 100mL
Lot #: _____

Component	Comment	Standard	Concentration
Cr ⁶⁺ Calibration Stock	200ul diluted to 100mL w/ DI H ₂ O	TLH060815-3	0.2 ppb
Buffer Solution	1mL added AFTER diluted to final volume.	TLH060815-4	

Comment: 3/9/07 3/23/07 4/4/07

Reagent: Cr⁶⁺ Calibration Std. - 2.0 ppb
Date Received/Prepped: 8/16/06 | 8/25/06 | 9/15/06 | 10/13/06 | 9/21/06 | 10/22/06
Date Expired: 8/23/06 | 9/1/06 | 10/12/06 | 10/20/06 | 9/28/06 | 9/31/06
Manufacturer: _____
Storage Condition: room temperature

MW #: TLH060816-2
By: TLH
Matrix: ag
Amount: 100mL
Lot #: _____

Component	Comment	Standard	Concentration
Cr ⁶⁺ Calibration Stock	200ul diluted to 100mL w/ DI H ₂ O	TLH060815-3	2.0 ppb
Buffer Solution	1mL added AFTER diluted to final volume.	TLH060815-4	

Comment: 10/2/06 10/20/06 10/31/06 11/28/06 11/30/06 1/20/07 3/9/07 3/23/07 4/4/07

1.0 INORGANIC VENTURES is an ISO Guide 34:2000 registered Certified Reference Material (CRM) Manufacturer (Certificate #883-02). The certificate is designed and the data is determined in accordance with ISO Guide 31:2000 (Reference Materials-Contents of Certificates and Labels), ISO Guide 34:2000 "Quality System Guidelines for the Production of Reference Materials," and ISO Guide 35:1989 "Certification of Reference Materials - General and Statistical Principles."

2.0 DESCRIPTION OF CRM **1000 µg/mL Chromium (+6) in H2O**

RF 201632

Catalog Number: CGCR(6)1-1, CGCR(6)1-2, and CGCR(6)1-5
 Lot Number: **Z-CR02152**
 Starting Material: (NH₄)₂Cr₂O₇
 Starting Material Purity (%): 99.989259
 Starting Material Lot No: F04N14
 Matrix: H₂O

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Concentration: 1000 ± 3 µg/mL

Certified Density: 0.999 g/mL (measured at 22° C)

The Certified Value is based upon the most precise method used to analyze this CRM. The following equations are used in the calculation of the certified value and the uncertainty:

$$\text{Certified Value } (\bar{x}) = \frac{\sum x_i}{n}$$

(\bar{x}) = mean

x_i = individual results

n = number of measurements

$$\text{Uncertainty } (\pm) = \frac{2[(\sum s_i)^2]^{1/2}}{(n)^{1/2}}$$

$\sum s_i$ = The summation of all significant estimated errors

(Most common are the errors from instrumental measurement, weighing, dilution to volume, and the fixed error reported on the NIST SRM certificate of analysis.)

The independent samples t-test was used to determine if there is agreement between the above assay methods at the 95% confidence interval. Both methods were compared and showed agreement within the stated uncertainties. This agreement is a confirmation of the accuracy of this CRM.

4.0 TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS

· "Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)

· This product is Traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRMs are available, the term 'in-house std.' is specified.

4.1 Assay Method #1 **1000 ± 3 µg/mL**
 Redox NIST SRM 136e Lot Number: 980702

Assay Method #2 **1001 ± 4 µg/mL**
 ICP Assay NIST SRM 3112a Lot Number: 990607

11.0 DATE OF CERTIFICATION AND PERIOD OF VALIDITY

11.1 Shelf Life - The period of time during which the concentration of the analyte(s) in a properly packaged, unopened, and unused standard stored under environmentally controlled and monitored conditions will remain within the specified uncertainty range. Shelf life is limited primarily by transpiration (loss of water from the solution) and infrequently, by chemical instability. Transpiration studies of chemically-stable solutions performed at the manufacturer's facility show a CRM shelf-life of twenty one months for solutions packaged in 125-mL low density polyethylene bottles. When stored under special conditions that minimize transpiration and instability, the shelf life can be extended past this limit.

11.2 Expiration Date - The date after which a CRM should not be used. Routine laboratory use of a CRM increases transpiration losses and the chance of contamination which affect the integrity of the CRM and limit its useful life. Manufacturer concurs with state and federal regulatory agencies' recommendations that solution standards be assigned a one-year expiration date.

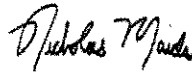
Certification Date: December 06, 2006

Expiration Date:

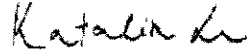
EXPIRES
01/2008

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By: Nick Maida, Product Documentation Administrator



Certificate Approved By: Katalin Le, QC Manager



Certifying Officer: Paul Gaines, PhD., Senior Technical Director

