TABLE OF CONTENTS

Level IV Data Package

MWH Group 209942

Method: EPA 218.6

2707110558
2707110559

√by MW 071207

No.	Sample Name	Time	Dil.Fac.	Amount	Comment	Analyst:	tlh
				CRVI-LOW			
				UV VIS 1		Criteria	
1,	Standard 1 - 0.1 ppb	06/26/07 13:26,	1.0,	0.107	Diluted from TLH070514-3		
2,	Standard 2 - 0.2ppb	06/26/07 13:35,	1.0,	0.210	TLH070514-2		
3,	Standard 3 - 2.0 ppb	06/26/07 13:43,	1.0,	1.990	TLH070514-3		
4,	Standard 4 - 10 ppb	06/26/07 13:51,	1.0,	10.331	TLH070514-4		
5,	Standard 5 - 20 ppb	06/26/07 13:59,	1.0,	20.465	TLH070514-5		
6,	Standard 6 - 50ppb	06/26/07 14:07,	1.0,	49.748	TLH070514-6		
7,	IPC 20	07/12/07 08:55,	1.0,	20.404			
8,	LRB	07/12/07 09:03,	1.0,	n.a.			
9,	LRB BUFFER	07/12/07 09:12,	1.0,	n.a.			
10,	MRL 0.1ppb	07/12/07 09:20,	1.0,	✓ 0.095			
11,	LCS 2.0ppb	07/12/07 09:28,	1.0,	✓ 2.051			
12,	LCS 2.0ppb Dup	07/12/07 09:36,	1.0,	✓ 2.041			
13,	2707120012	07/12/07 10:19,	1.0,	✓ 0.002			
14,	2707120012_MS	07/12/07 10:27,	1.0,	✓ 2.099	2.10 - 105% recovery		
15,	2707120012_MSD	07/12/07 10:35,	1.0,	✓ 2.148	2.15 - 107% recovery		
16,	2707120013	07/12/07 10:43,	1.0,	✓ n.a.		MRL 50%-150%	
17,	LRB	07/12/07 10:51,	1.0,	n.a.		0.05 - 0.15ppb	
18,	IPC 20	07/12/07 11:00,	1.0,	20.420		LCS 90%-110%	
19,	2707110558	07/12/07 11:15,	1.0,	✓ n.a.		Range: 1.80 - 2.20	
20,	2707110559	07/12/07 11:23,	1.0,	✓ 48.381		MS/MSD 90%-110%	
21,	2707100800	07/12/07 11:31,	1.0,	✓ 1.094		True Value = 2.0	
22,	2707100378	07/12/07 11:39,	1.0,	✓ 2.773		IPC 95%-105%	
23,	2707100379	07/12/07 11:47,	1.0,	✓ 1.316		20ppb - 19-21ppb	
24,	2707100361	07/12/07 11:55,	1.0,	✓ 2.443		10ppb - 9.5-10.5 ppb	
25,	2707100380	07/12/07 12:03,	1.0,	✓ 2.671			
26,	LRB	07/12/07 12:11,	1.0,	n.a.			
27,	IPC 20	07/12/07 12:19,	1.0,	20.579			

VB: NM 7/8/07

Title: CRVI-LOW
Datasource: Dionex_USPAS2SDIO2
Location: IC\IC5_ CRVI-LOW\2007\July
Timebase: IC-#5
#Samples: 27
Created: 7/12/2007 8:54:39 AM by Maria
(Modified, not saved)

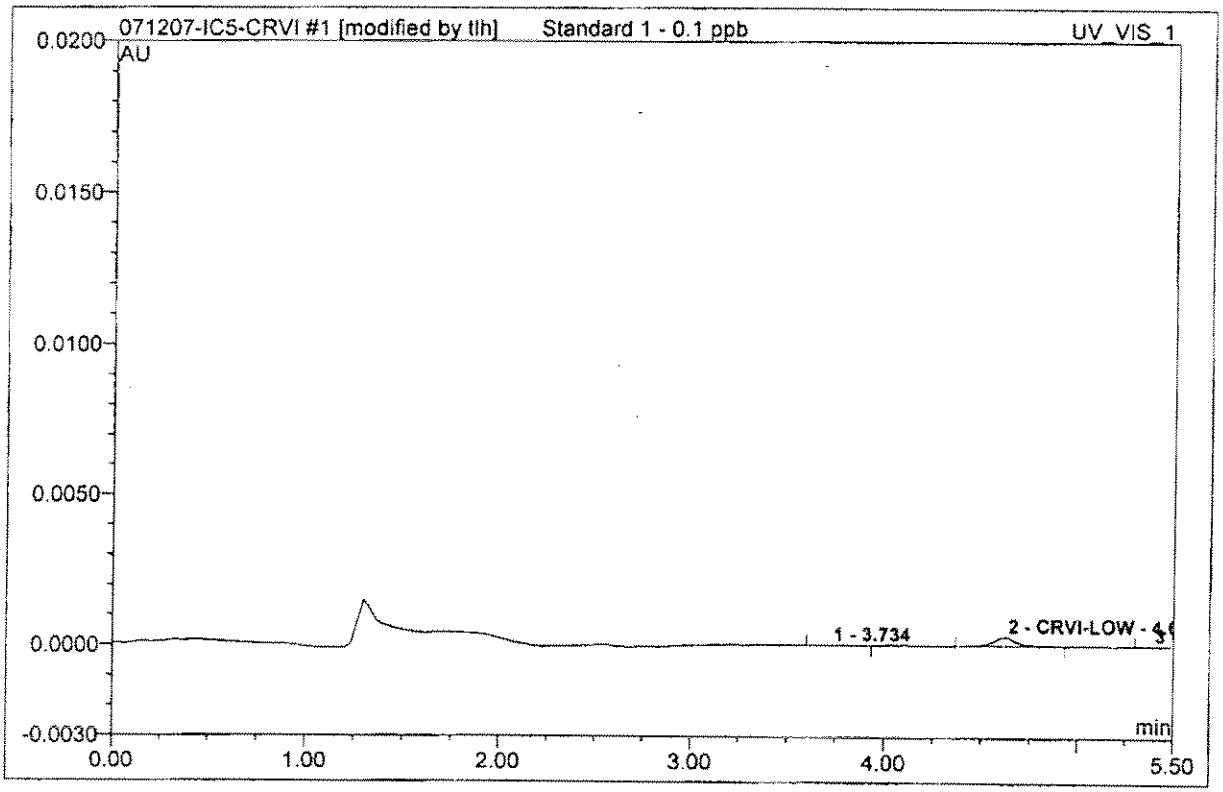
No.	Name	Dil. Factor	Type	Comment	Pos.	Inj. Vol.	Program
1	Standard 1 - 0.1 ppb	1.0000	Standard	Diluted from TLH070514-3	811	1.0	CRVI-LOW-loop
2	Standard 2 - 0.2ppb	1.0000	Standard	TLH070514-2	812	1.0	CRVI-LOW-loop
3	Standard 3 - 2.0 ppb	1.0000	Standard	TLH070514-3	812	1.0	CRVI-LOW-loop
4	Standard 4 - 10 ppb	1.0000	Standard	TLH070514-4	812	1.0	CRVI-LOW-loop
5	Standard 5 - 20 ppb	1.0000	Standard	TLH070514-5	812	1.0	CRVI-LOW-loop
6	Standard 6 - 50ppb	1.0000	Standard	TLH070514-6	812	1.0	CRVI-LOW-loop
7	IPC 20	1.0000	Unknown		812	1.0	CRVI-LOW-loop
8	LRB	1.0000	Unknown		812	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		813	1.0	CRVI-LOW-loop
12	LCS 2.0ppb Dup	1.0000	Unknown		814	1.0	CRVI-LOW-loop
13	2707120012	1.0000	Unknown		815	1.0	CRVI-LOW-loop
14	2707120012_MS	1.0000	Unknown	2.10 - 105% recovery	816	1.0	CRVI-LOW-loop
15	2707120012_MSD	1.0000	Unknown	2.15 - 107% recovery	817	1.0	CRVI-LOW-loop
16	2707120013	1.0000	Unknown		818	1.0	CRVI-LOW-loop
17	LRB	1.0000	Unknown		819	1.0	CRVI-LOW-loop
18	IPC 20	1.0000	Unknown		820	1.0	CRVI-LOW-loop
19	2707110558	1.0000	Unknown		821	1.0	CRVI-LOW-loop
20	2707110559	1.0000	Unknown		822	1.0	CRVI-LOW-loop
21	2707100800	1.0000	Unknown		823	1.0	CRVI-LOW-loop
22	2707100378	1.0000	Unknown		824	1.0	CRVI-LOW-loop
23	2707100379	1.0000	Unknown		825	1.0	CRVI-LOW-loop
24	2707100361	1.0000	Unknown		826	1.0	CRVI-LOW-loop
25	2707100380	1.0000	Unknown		827	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

Title: CRVI-LOW
Datasource: Dionex_USPAS2SDIO2
Location: IC\IC5_CRVI-LOW\2007\July
Timebase: IC-#5
#Samples: 27
Created: 7/12/2007 8:54:39 AM by Maria
(Modified, not saved)

No.	Method	Status	Inj. Date/Time	*Analyst	*operator	*Spike
1	1-IC#5-CrVi	Finished	6/26/2007 1:26:58 PM	tlh		
2	1-IC#5-CrVi	Finished	6/26/2007 1:35:04 PM	tlh		
3	1-IC#5-CrVi	Finished	6/26/2007 1:43:10 PM	tlh		
4	1-IC#5-CrVi	Finished	6/26/2007 1:51:16 PM	tlh		
5	1-IC#5-CrVi	Finished	6/26/2007 1:59:22 PM	tlh		
6	1-IC#5-CrVi	Finished	6/26/2007 2:07:28 PM	tlh		
7	1-IC#5-CrVi	Finished	7/12/2007 8:55:52 AM	tlh		
8	1-IC#5-CrVi	Finished	7/12/2007 9:03:58 AM	tlh		
9	1-IC#5-CrVi	Finished	7/12/2007 9:12:04 AM	tlh		
10	1-IC#5-CrVi	Finished	7/12/2007 9:20:10 AM	tlh		
11	1-IC#5-CrVi	Finished	7/12/2007 9:28:16 AM	tlh		
12	1-IC#5-CrVi	Finished	7/12/2007 9:36:22 AM	tlh		
13	1-IC#5-CrVi	Finished	7/12/2007 10:19:34 AM	tlh		
14	1-IC#5-CrVi	Finished	7/12/2007 10:27:40 AM	tlh		
15	1-IC#5-CrVi	Finished	7/12/2007 10:35:46 AM	tlh		
16	1-IC#5-CrVi	Finished	7/12/2007 10:43:52 AM	tlh		
17	1-IC#5-CrVi	Finished	7/12/2007 10:51:58 AM	tlh		
18	1-IC#5-CrVi	Finished	7/12/2007 11:00:04 AM	tlh		
19	1-IC#5-CrVi	Finished	7/12/2007 11:15:06 AM	tlh		
20	1-IC#5-CrVi	Finished	7/12/2007 11:23:12 AM	tlh		
21	1-IC#5-CrVi	Finished	7/12/2007 11:31:18 AM	tlh		
22	1-IC#5-CrVi	Finished	7/12/2007 11:39:24 AM	tlh		
23	1-IC#5-CrVi	Finished	7/12/2007 11:47:30 AM	tlh		
24	1-IC#5-CrVi	Finished	7/12/2007 11:55:36 AM	tlh		
25	1-IC#5-CrVi	Finished	7/12/2007 12:03:42 PM	tlh		
26	1-IC#5-CrVi	Finished	7/12/2007 12:11:49 PM	tlh		
27	1-IC#5-CrVi	Finished	7/12/2007 12:19:54 PM	tlh		

1 Standard 1 - 0.1 ppb

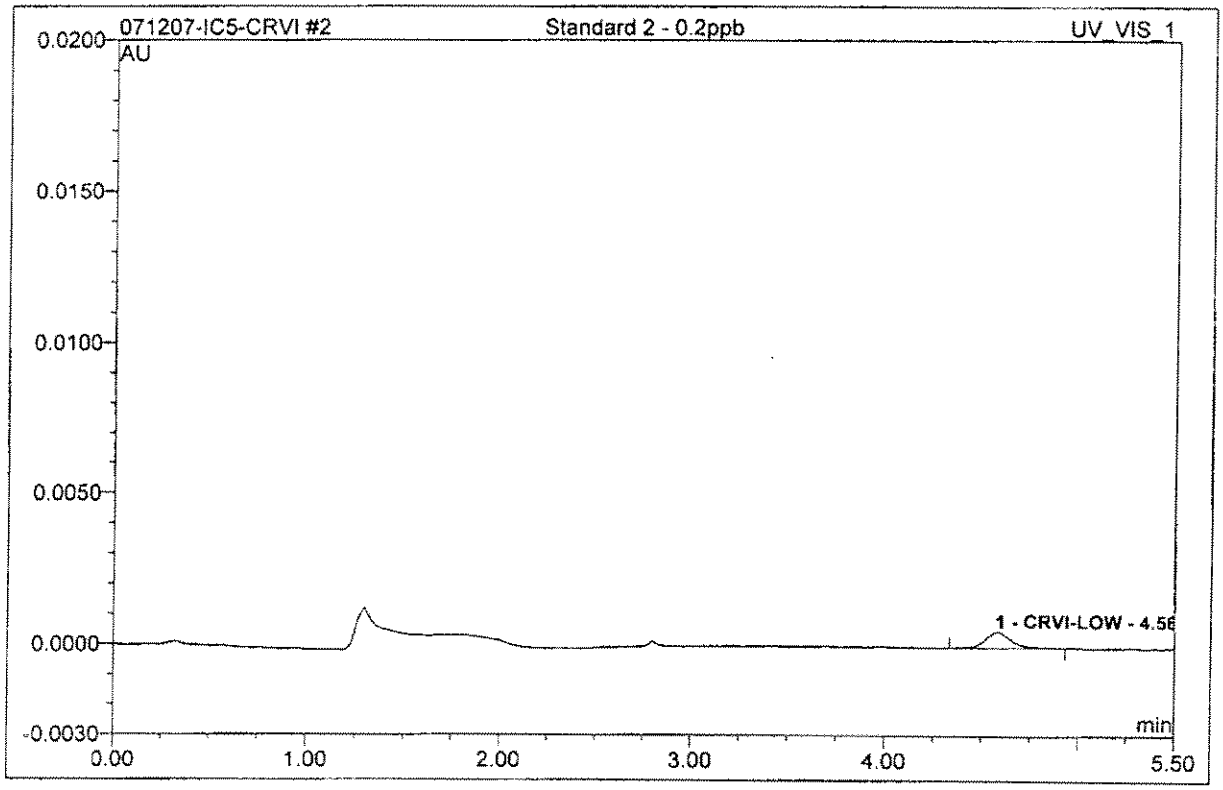
Sample Name:	**Standard 1 - 0.1 ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**standard**	*Recording Time:*	**6/26/2007 13:26**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.73	n.a.	0.000	0.0000027	5.64	n.a.	BMB
2	4.63	CRVI-LOW	0.000	0.0000439	91.71	0.107	BMB*
3	5.40	n.a.	0.000	0.0000013	2.65	n.a.	BMB
Total:			0.000	0.000	100.00	0.107	

2 Standard 2 - 0.2ppb

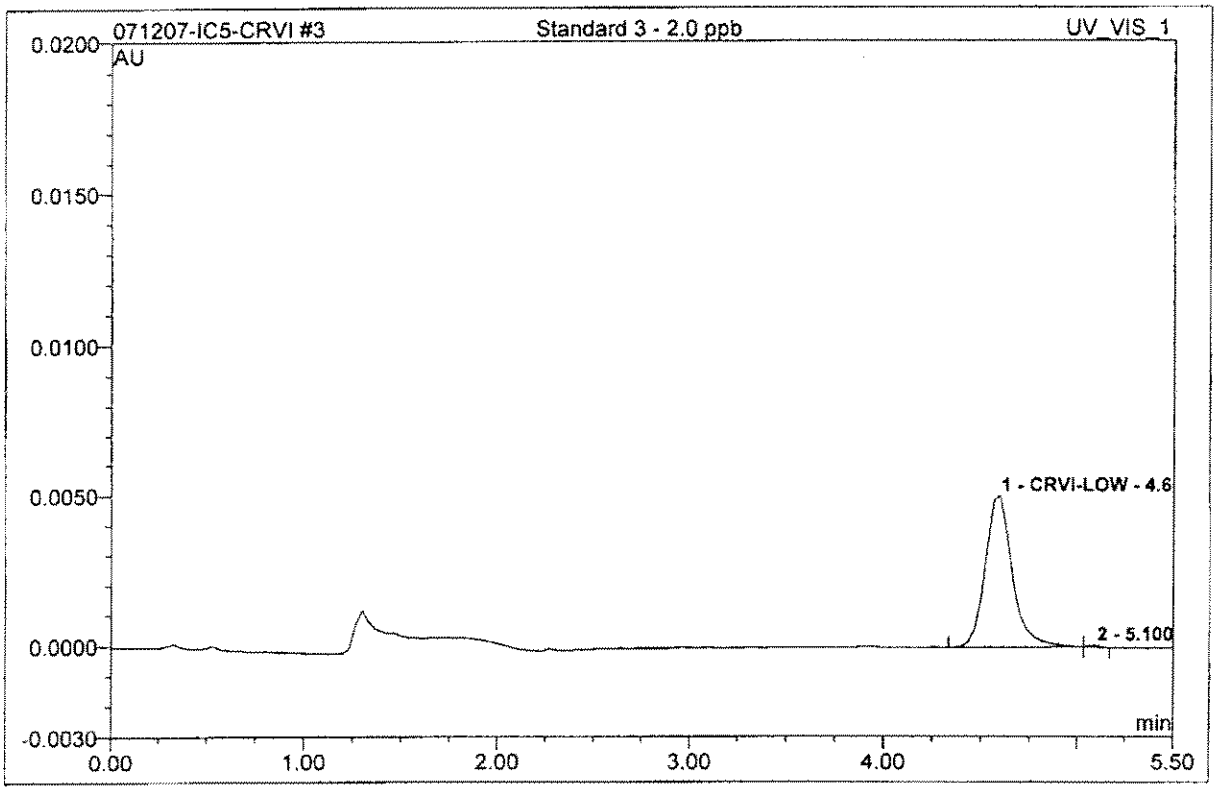
Sample Name:	**Standard 2 - 0.2ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**standard**	*Recording Time:*	**6/26/2007 13:35**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.57	CRVI-LOW	0.001	0.0000860	100.00	0.210	BMB
Total:			0.001	0.000	100.00	0.210	

3 Standard 3 - 2.0 ppb

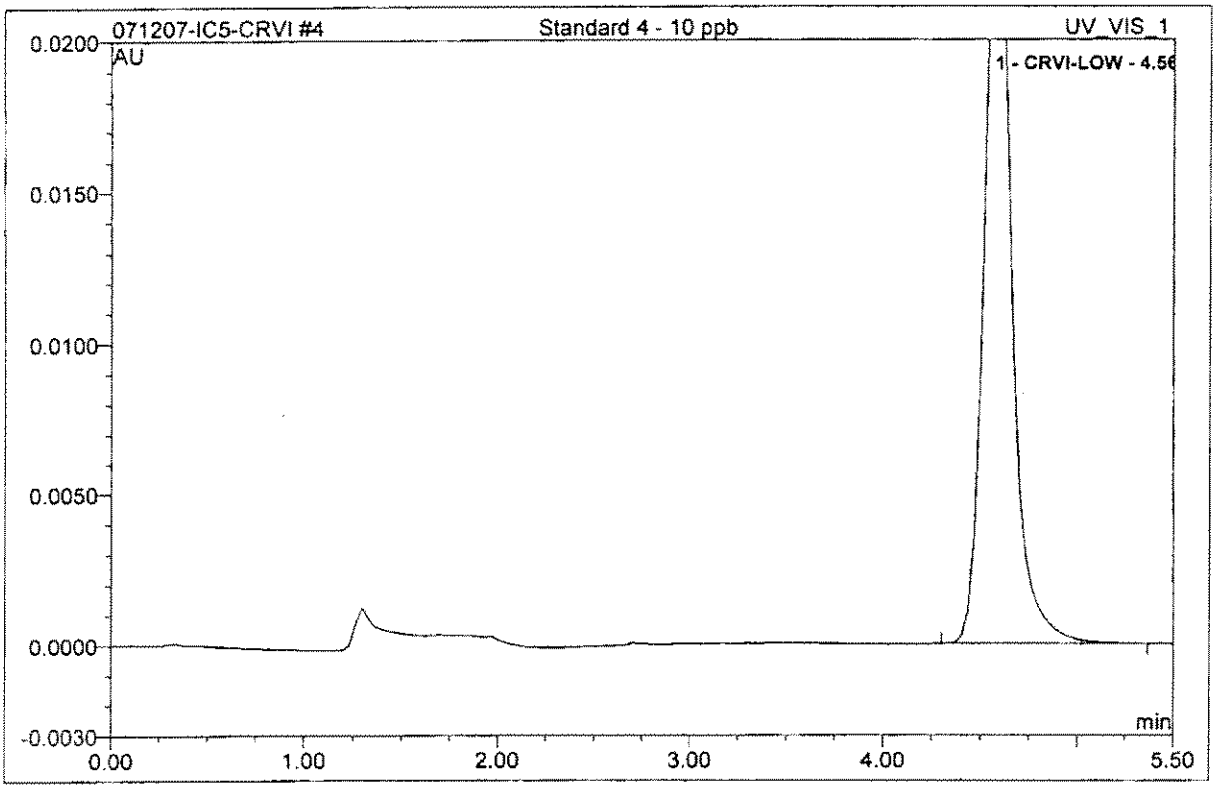
Sample Name:	**Standard 3 - 2.0 ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**standard**	*Recording Time:*	**6/26/2007 13:43**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.60	CRVI-LOW	0.005	0.0008128	99.52	1.990	BMb
2	5.10	n.a.	0.000	0.0000039	0.48	n.a.	bMB
Total:			0.005	0.001	100.00	1.990	

4 Standard 4 - 10 ppb

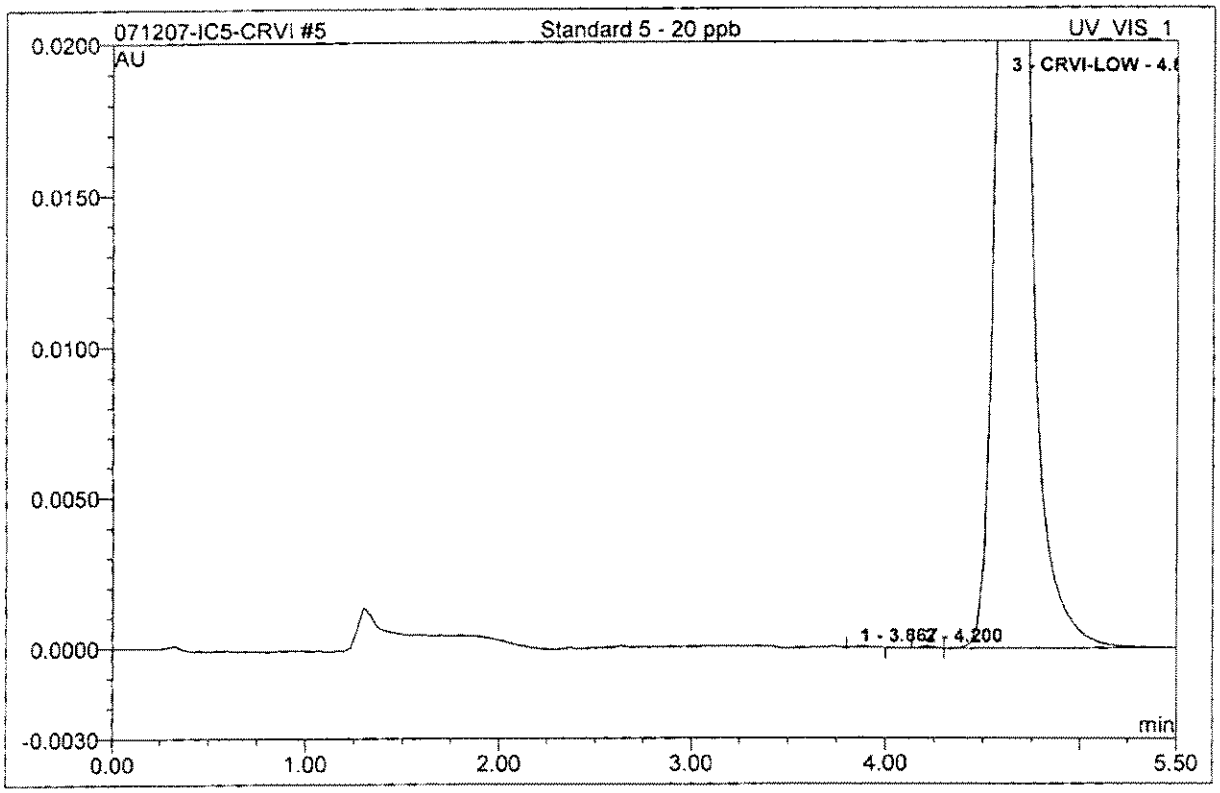
Sample Name:	**Standard 4 - 10 ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**standard**	*Recording Time:*	**6/26/2007 13:51**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.57	CRVI-LOW	0.026	0.0042197	100.00	10.331	BMB
Total:			0.026	0.004	100.00	10.331	

5 Standard 5 - 20 ppb

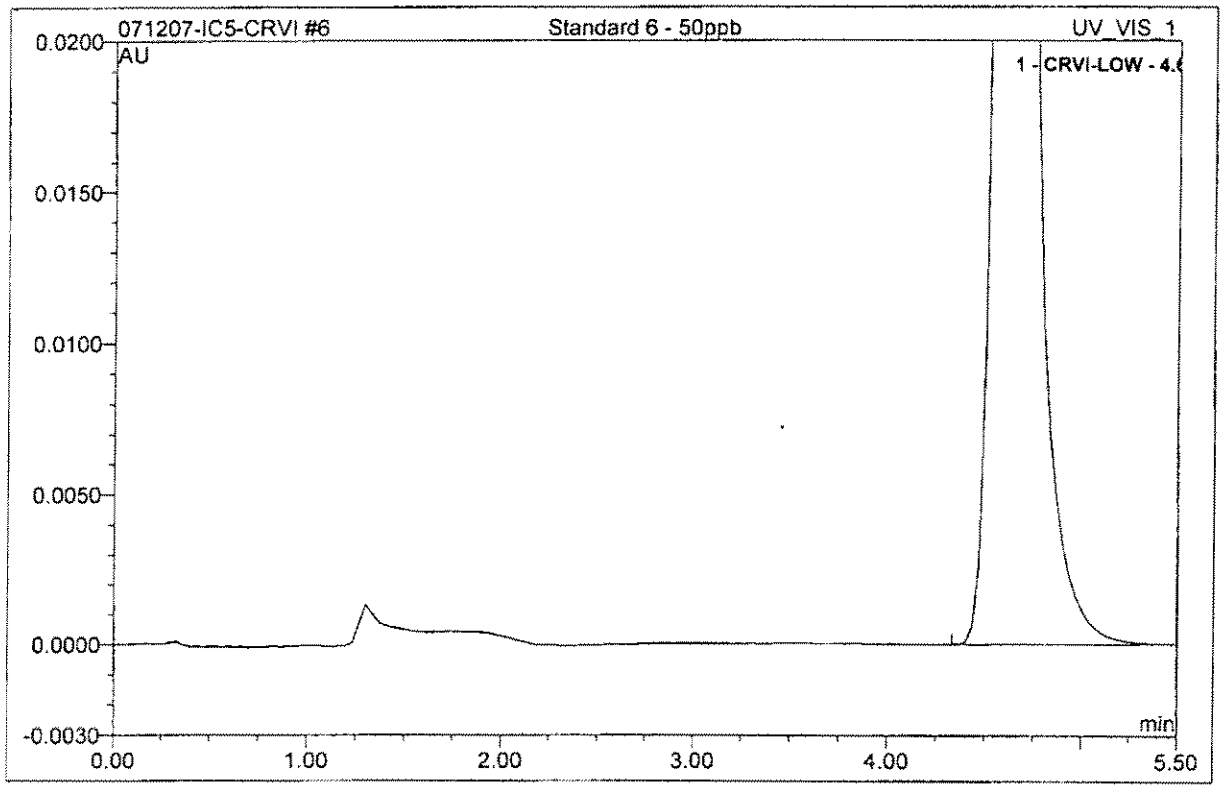
Sample Name:	**Standard 5 - 20 ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**standard**	*Recording Time:*	**6/26/2007 13:59**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.87	n.a.	0.000	0.0000036	0.04	n.a.	BMB
2	4.20	n.a.	0.000	0.0000045	0.05	n.a.	BMb
3	4.63	CRVI-LOW	0.052	0.0083592	99.90	20.465	bMB
Total:			0.052	0.008	100.00	20.465	

6 Standard 6 - 50ppb

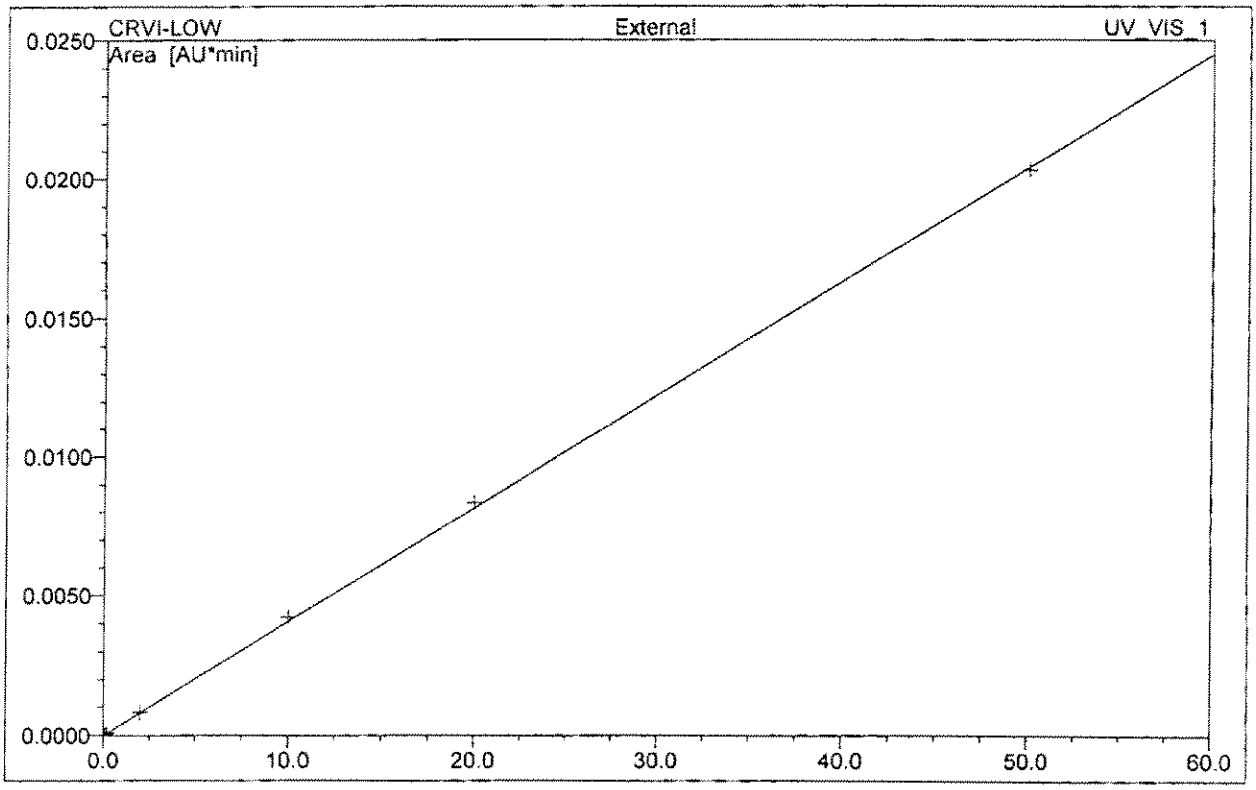
Sample Name:	**Standard 6 - 50ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**standard**	*Recording Time:*	**6/26/2007 14:07**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.63	CRVI-LOW	0.128	0.0203205	100.00	49.748	BMB
Total:			0.128	0.020	100.00	49.748	

6 Standard 6 - 50ppb

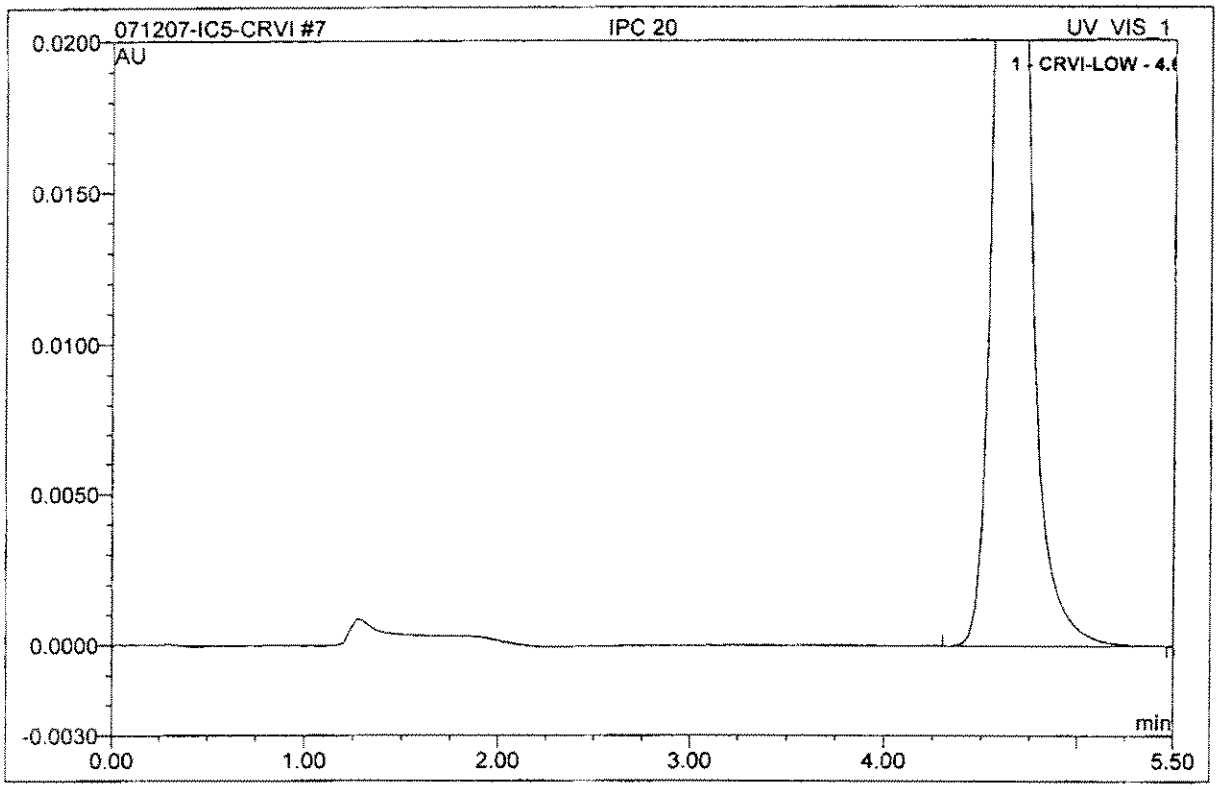
Sample Name:	**Standard 6 - 50ppb**	*Control Program:*	**CRVI-LOW-loop**
Sample Type:	**standard**	*Quantif. Method:*	**1-IC#5-CrVi**
Recording Time:	**6/26/2007 14:07**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	4.63	CRVI-LOW	Lin	6	99.9917	0.0000	0.0004085	0.0000
Average:					99.9917	0.0000	0.0004	0.0000

7 IPC 20

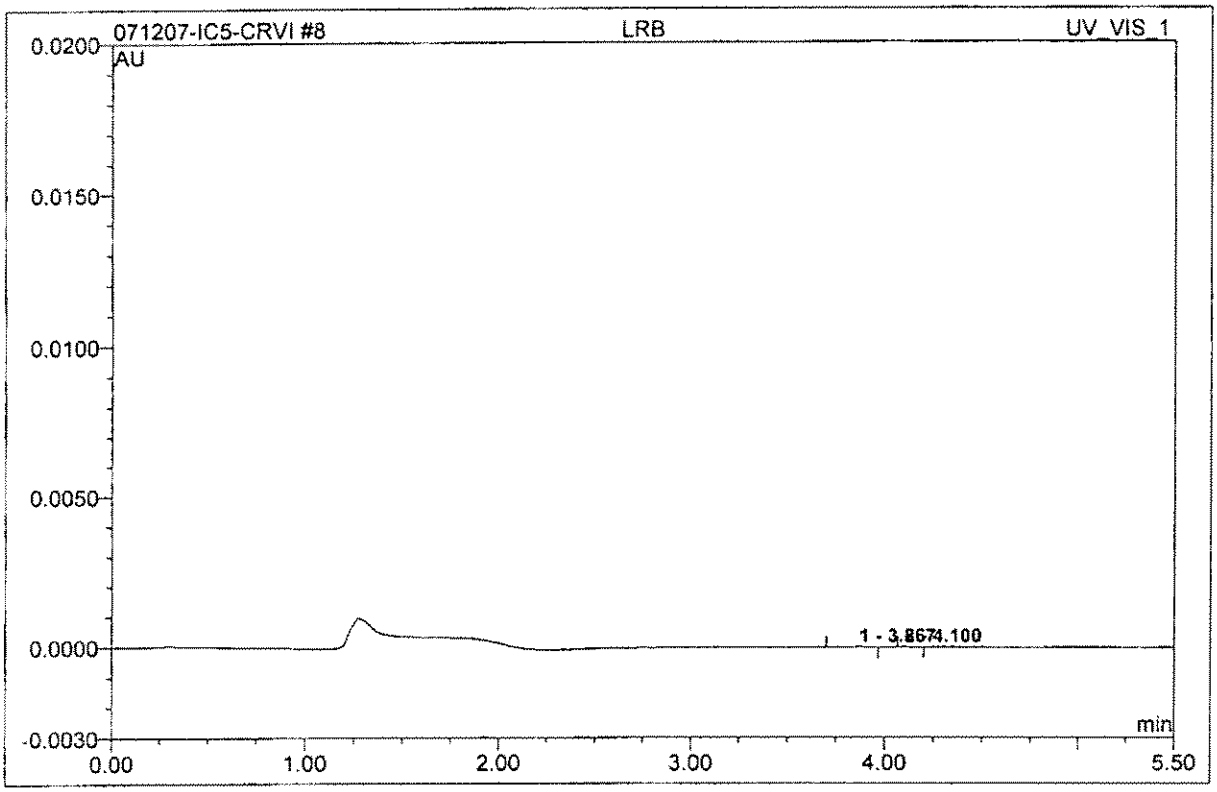
Sample Name:	**IPC 20**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 8:55**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.63	CRVI-LOW	0.048	0.0083341	100.00	20.404	BMB
Total:			0.048	0.008	100.00	20.404	

8 LRB

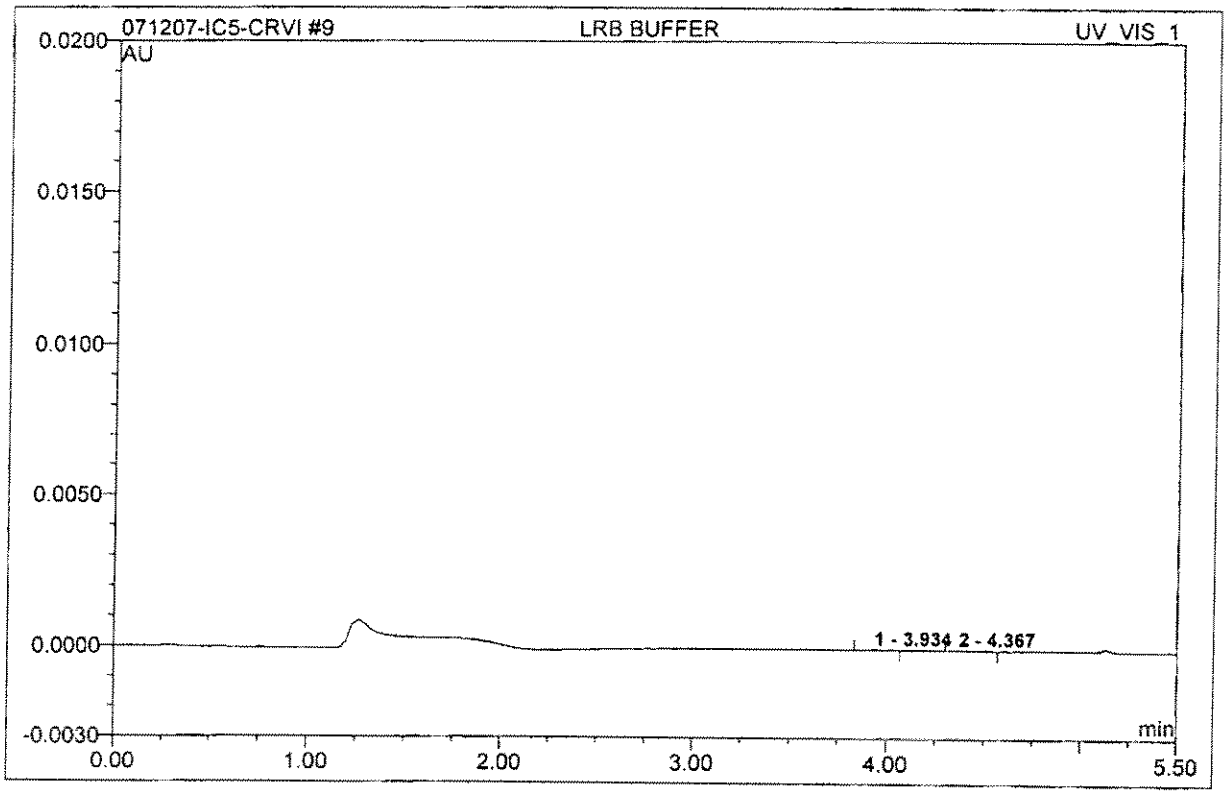
Sample Name:	**LRB**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 9:03**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.87	n.a.	0.000	0.0000011	79.01	n.a.	BMB
2	4.10	n.a.	0.000	0.0000003	20.99	n.a.	BMB
Total:			0.000	0.000	100.00	0.000	

9 LRB BUFFER

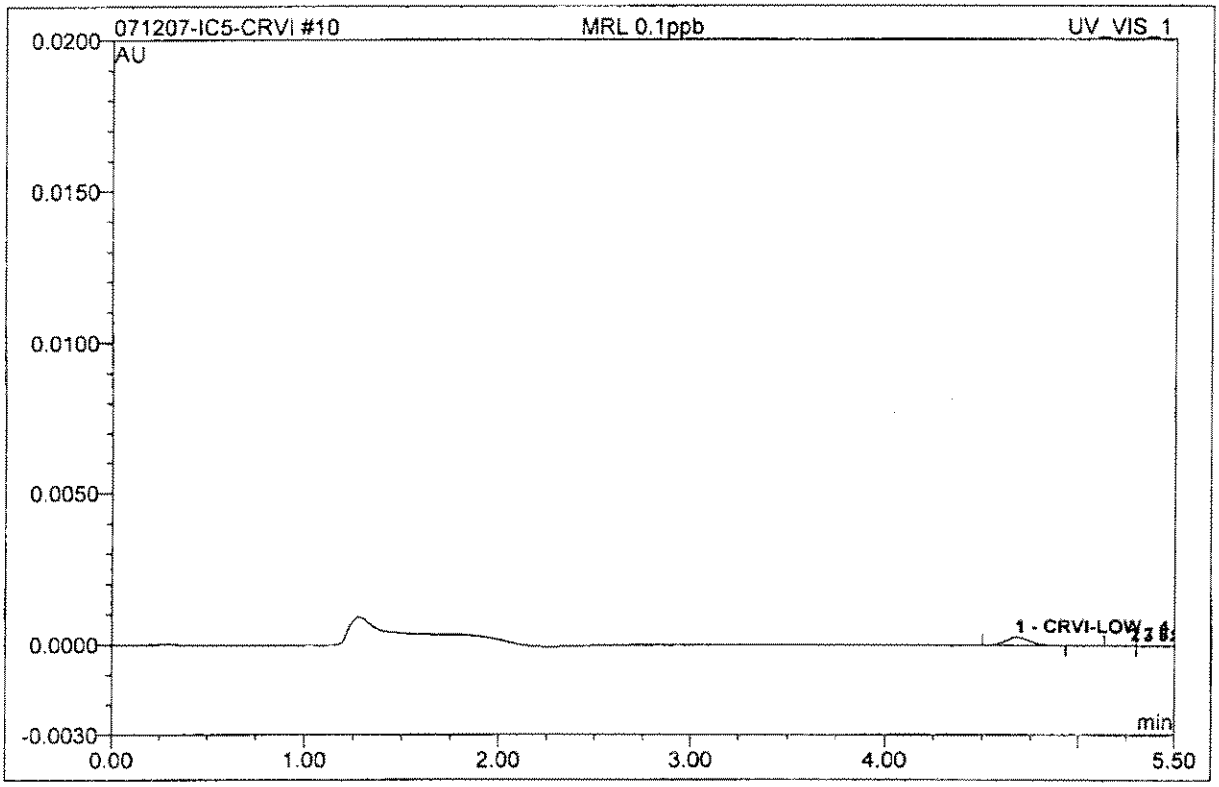
Sample Name:	**LRB BUFFER**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 9:12**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.93	n.a.	0.000	0.0000007	27.16	n.a.	BMB
2	4.37	n.a.	0.000	0.0000020	72.84	n.a.	BMB
Total:			0.000	0.000	100.00	0.000	

10 MRL 0.1ppb

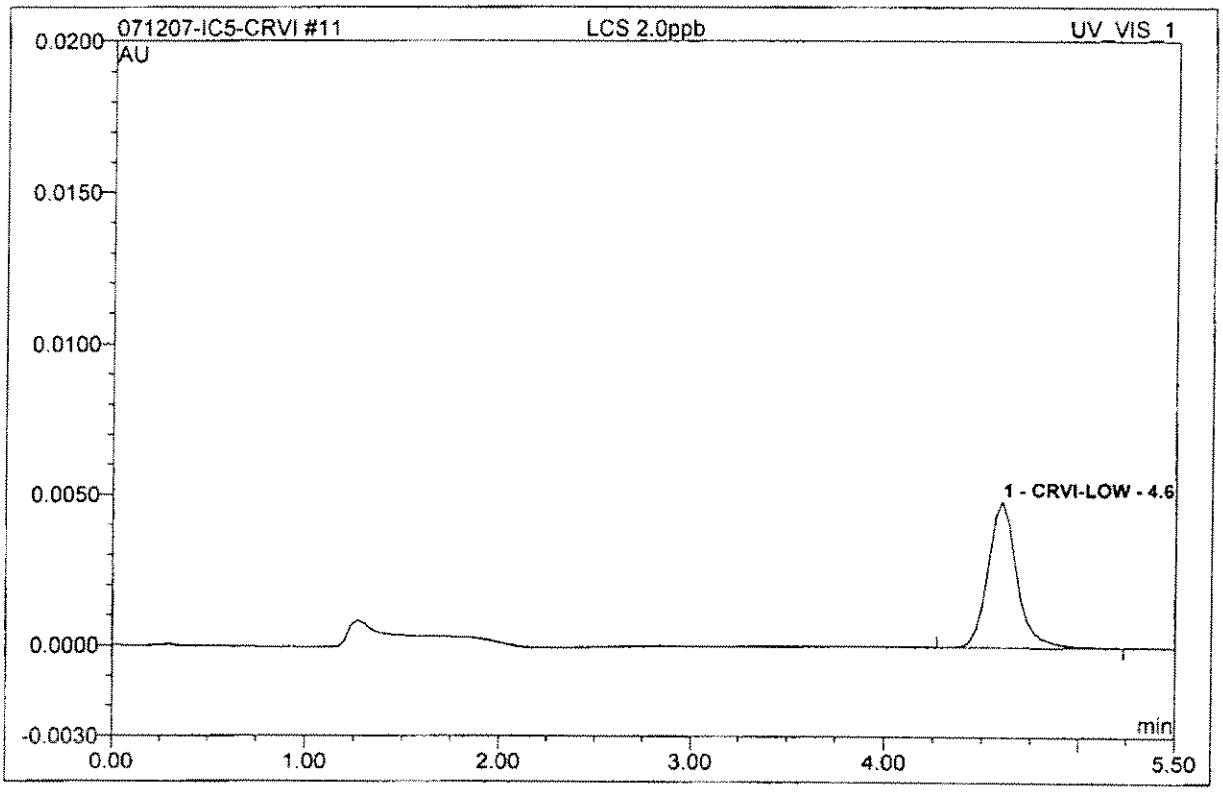
Sample Name:	**MRL 0.1ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 9:20**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.67	CRVI-LOW	0.000	0.0000390	97.87	0.095	BMB
2	5.27	n.a.	0.000	0.0000006	1.59	n.a.	BMb
3	5.33	n.a.	0.000	0.0000002	0.54	n.a.	bMB
Total:			0.000	0.000	100.00	0.095	

11 LCS 2.0ppb

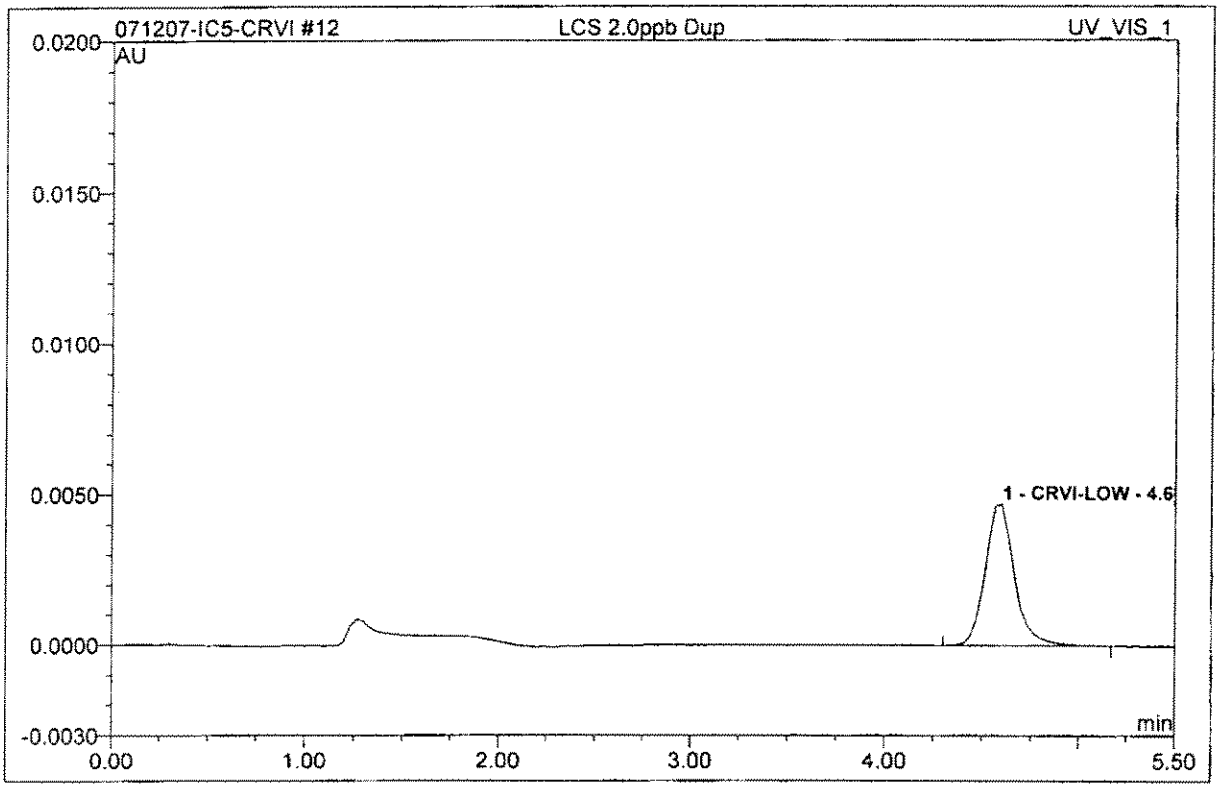
Sample Name:	**LCS 2.0ppb**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 9:28**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.60	CRVI-LOW	0.005	0.0008379	100.00	2.051	BMB
Total:			0.005	0.001	100.00	2.051	

12 LCS 2.0ppb Dup

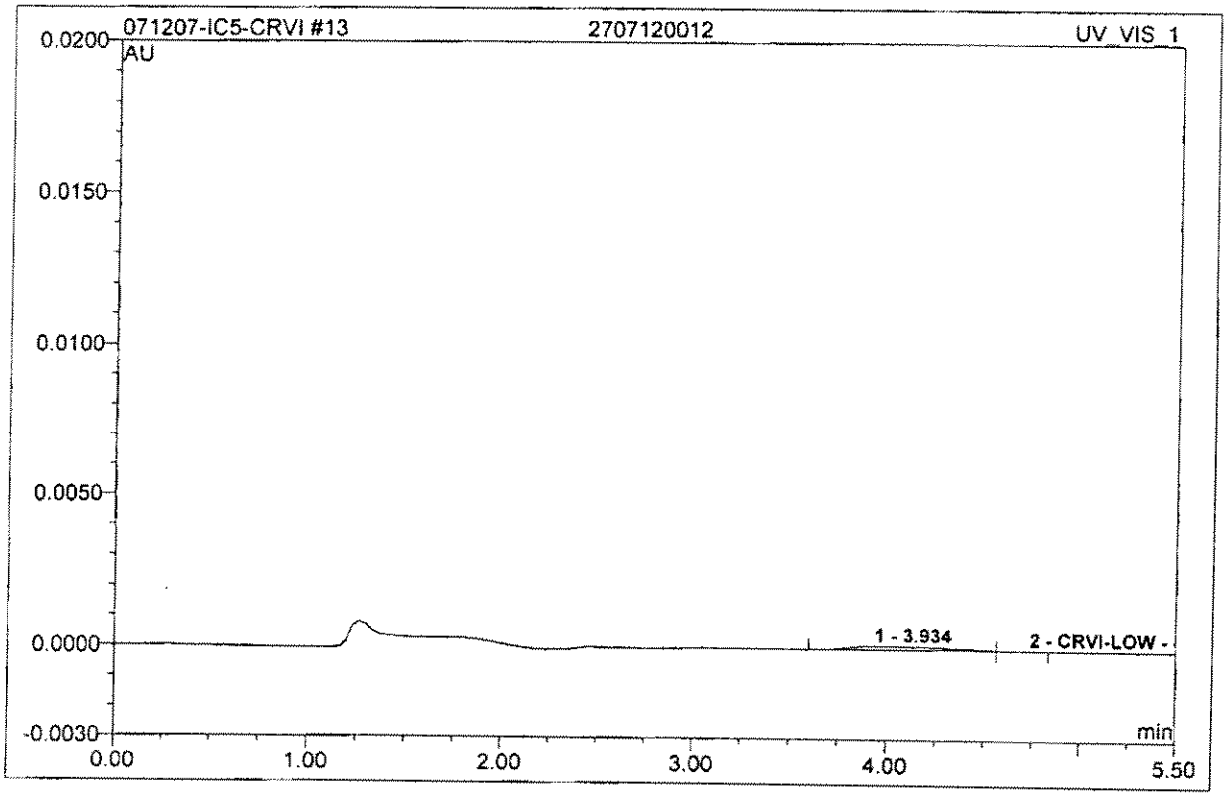
Sample Name:	**LCS 2.0ppb Dup**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 9:36**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.60	CRVI-LOW	0.005	0.0008336	100.00	2.041	BMB
Total:			0.005	0.001	100.00	2.041	

13 2707120012

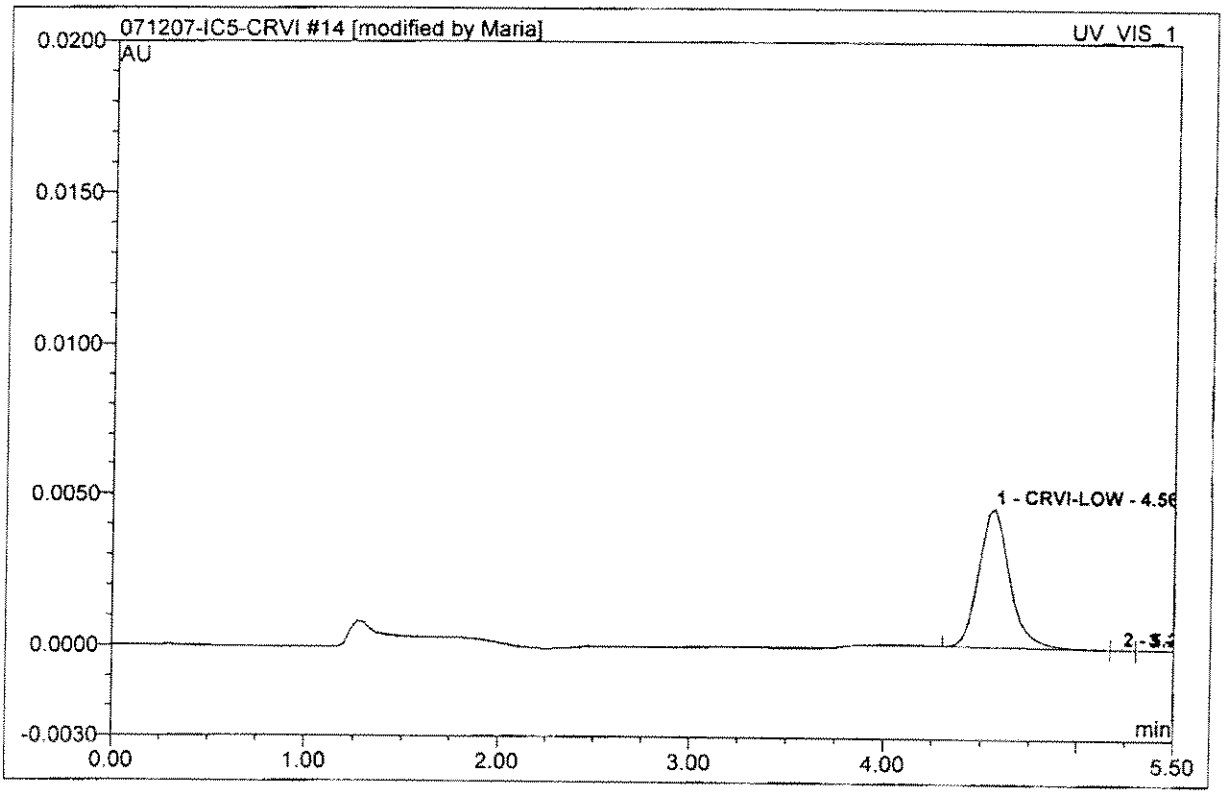
Sample Name:	**2707120012**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 10:19**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.93	n.a.	0.000	0.0000659	98.58	n.a.	BMB
2	4.73	CRVI-LOW	0.000	0.0000009	1.42	0.002	bMB
Total:			0.000	0.000	100.00	0.002	

14 2707120012_MS

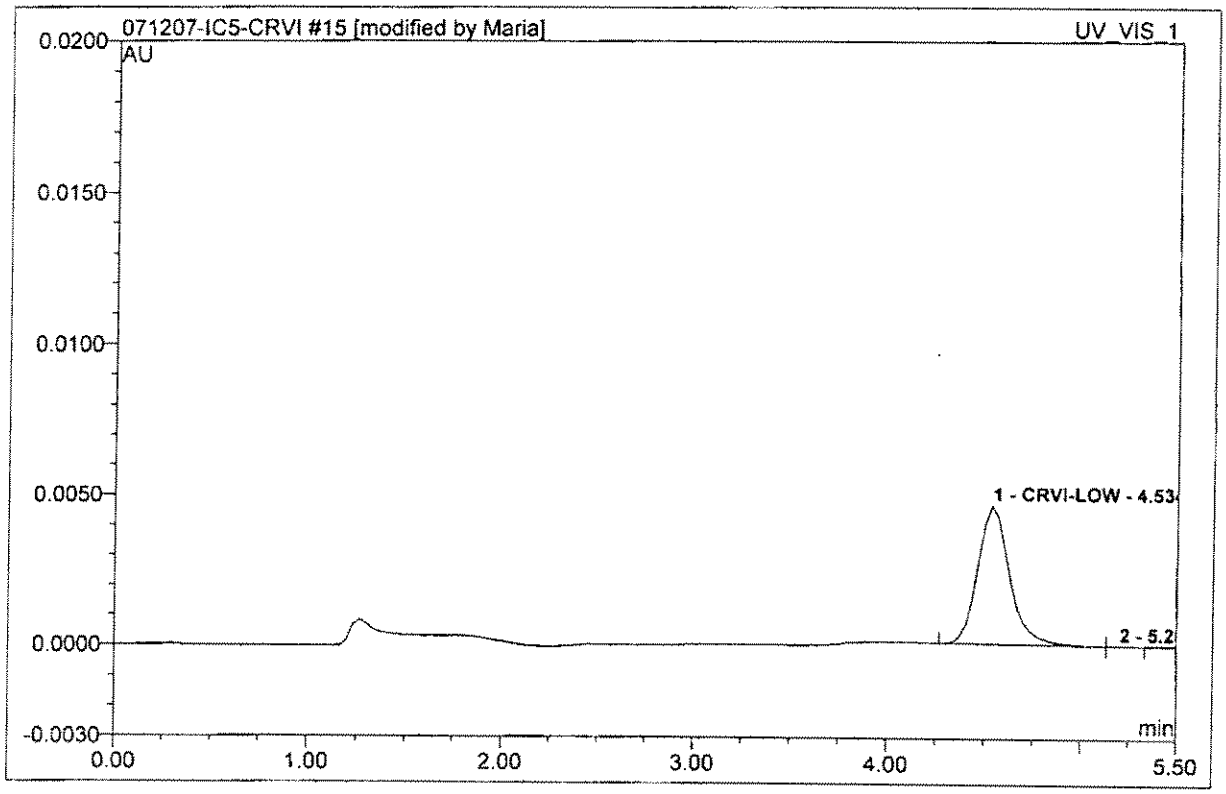
Sample Name:	**2707120012_MS**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 10:27**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.57	CRVI-LOW	0.005	0.0008574	99.90	2.099	BMb*
2	5.23	n.a.	0.000	0.0000004	0.05	n.a.	bMb
3	5.37	n.a.	0.000	0.0000004	0.04	n.a.	bMB
Total:			0.005	0.001	100.00	2.099	

15 2707120012_MSD

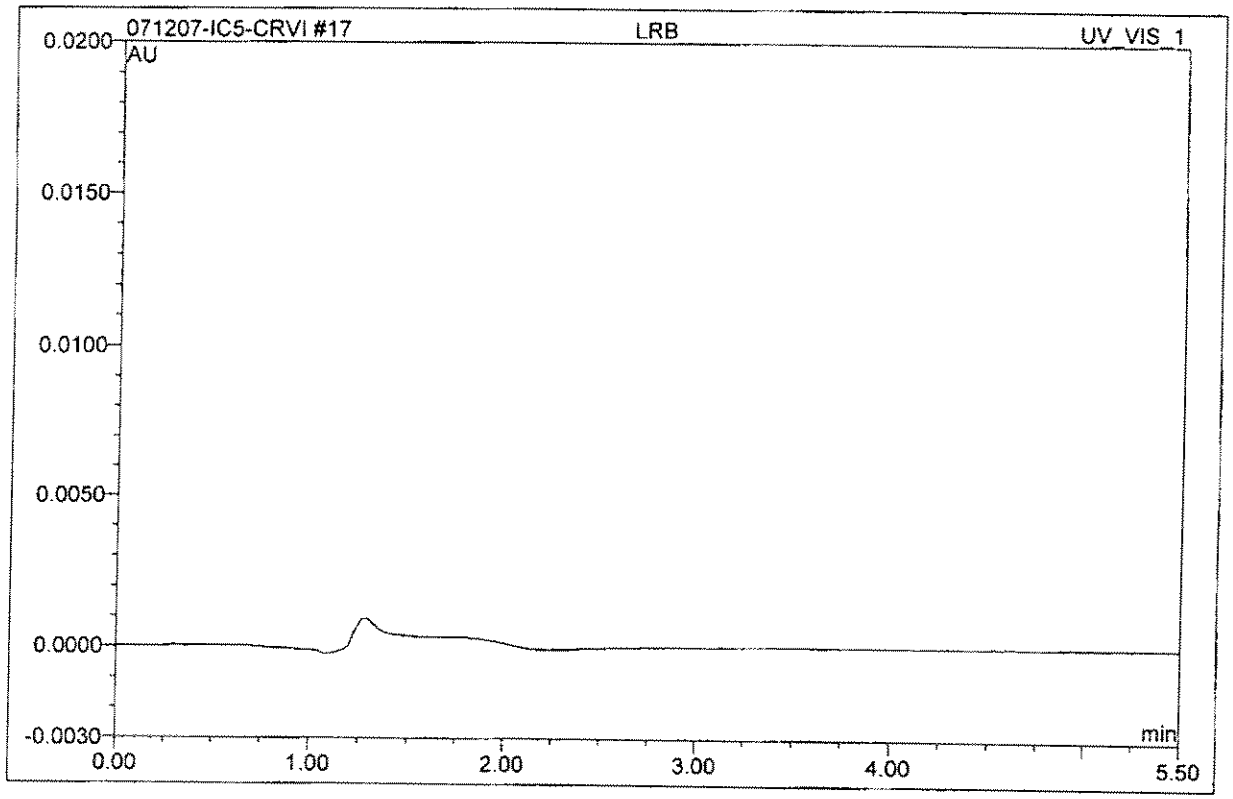
Sample Name:	**2707120012_MSD**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 10:35**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.53	CRVI-LOW	0.005	0.0008773	99.97	2.148	BMb*
2	5.20	n.a.	0.000	0.0000003	0.03	n.a.	bMB
Total:			0.005	0.001	100.00	2.148	

17 LRB

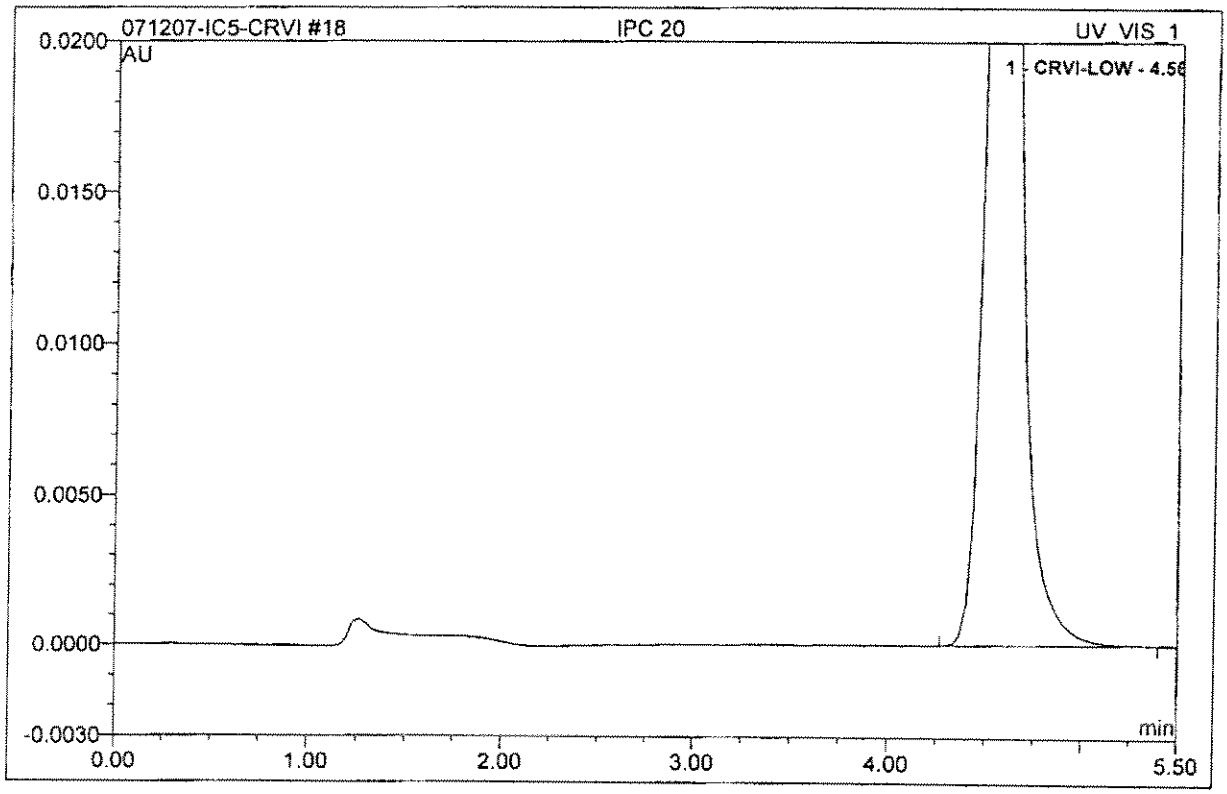
Sample Name:	**LRB**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 10:51**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



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

18 IPC 20

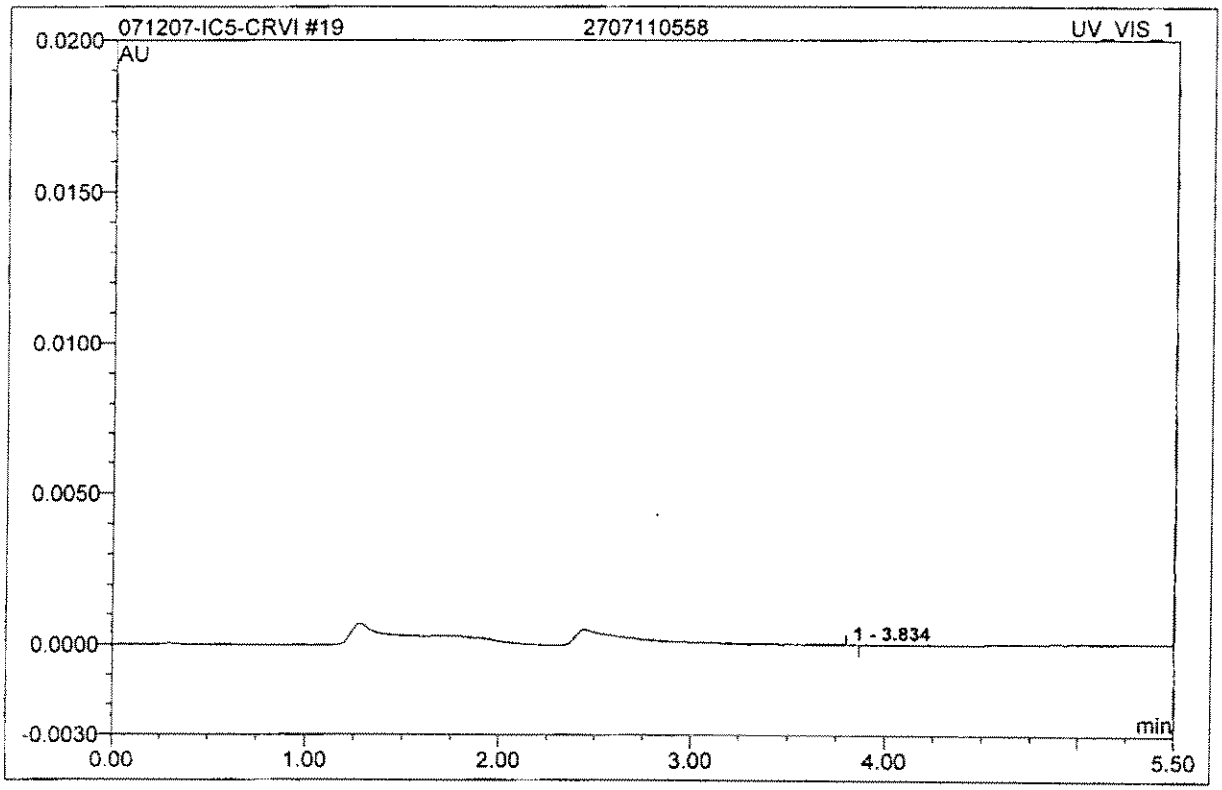
Sample Name:	**IPC 20**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 11:00**
Analyst:	**tih**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.57	CRVI-LOW	0.048	0.0083410	100.00	20.420	BMB
Total:			0.048	0.008	100.00	20.420	

19 2707110558

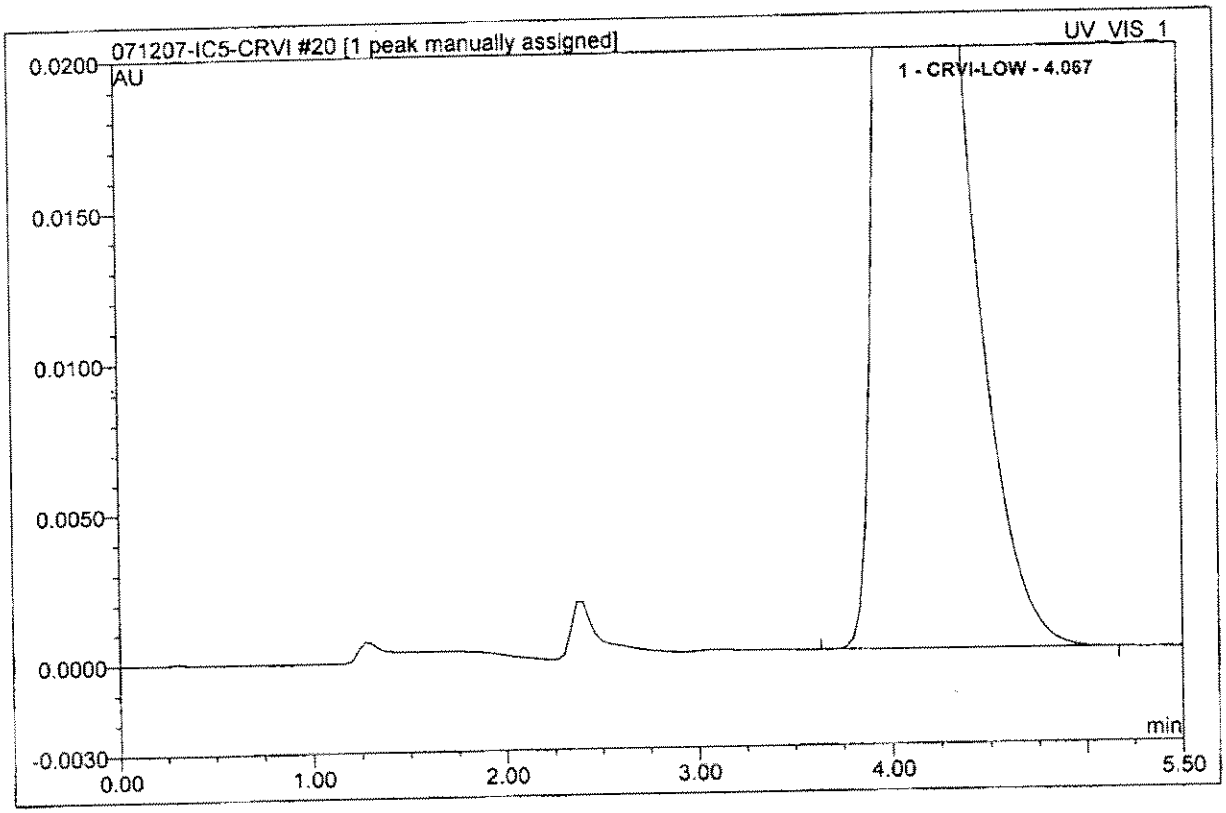
Sample Name:	**2707110558**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 11:15**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.83	n.a.	0.000	0.0000001	100.00	n.a.	BMB
Total:			0.000	0.000	100.00	0.000	

20 2707110559

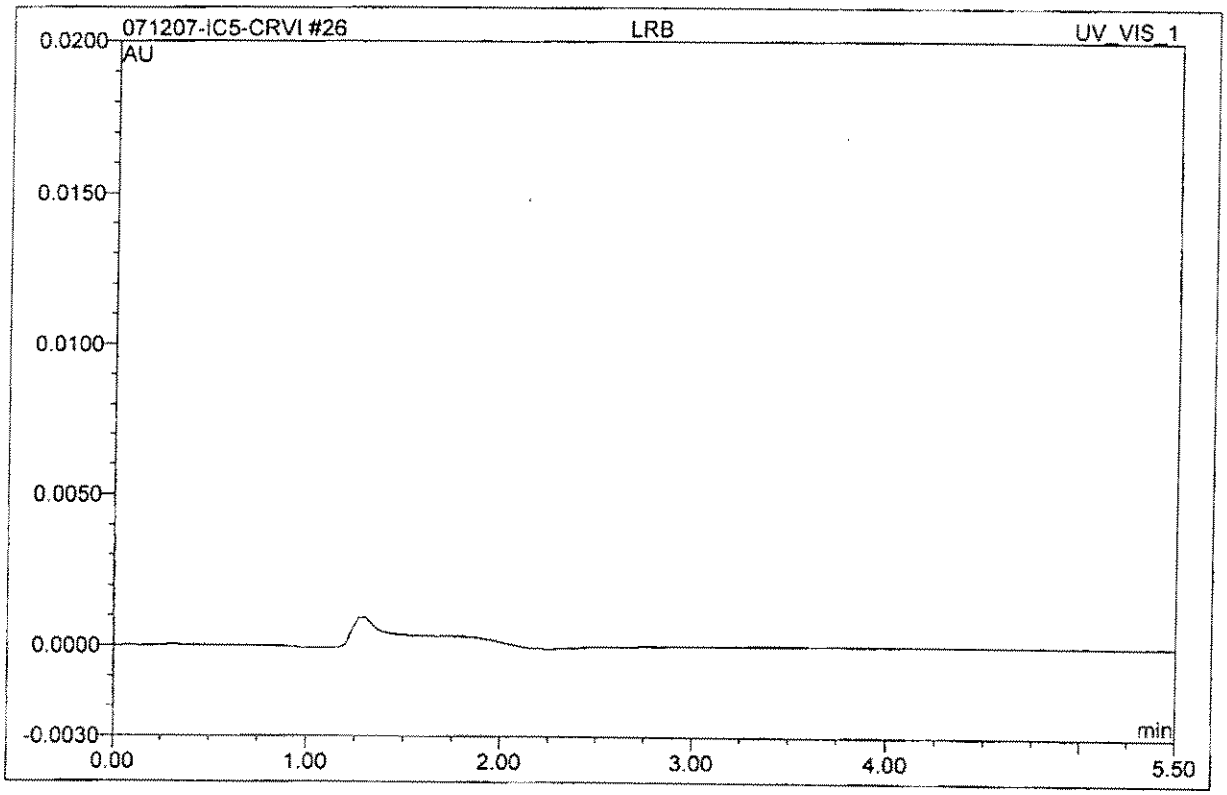
Sample Name:	**2707110559**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 11:23**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.07	CRVI-LOW	0.043	0.0197619	100.00	48.381	BMB^
Total:			0.043	0.020	100.00	48.381	

26 LRB

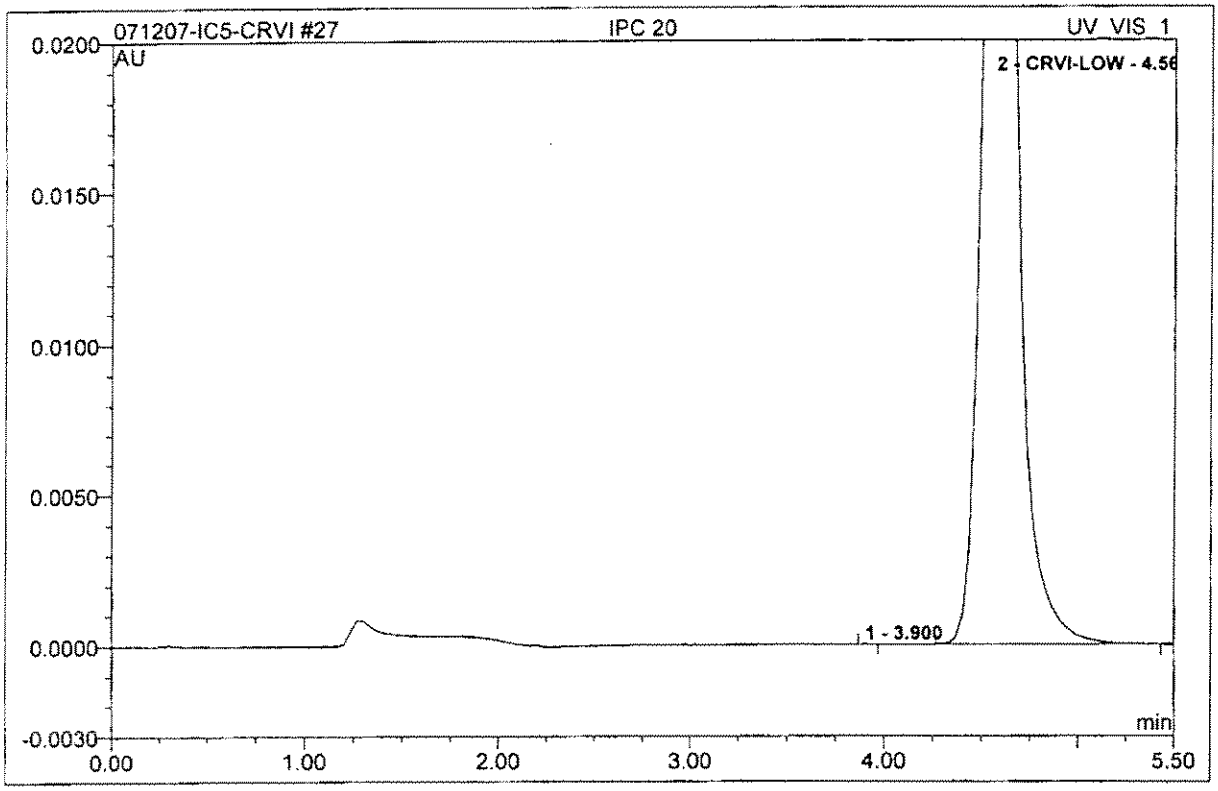
Sample Name:	**LRB**	*Control Program:*	**CRVI-LOW-loop**
Dilution Factor:	**1.0000**	*Quantif. Method:*	**1-IC#5-CrVi**
Sample Type:	**unknown**	*Recording Time:*	**7/12/2007 12:11**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



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

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:*	**7/12/2007 12:19**
Analyst:	**tlh**	*Channel:*	**UV_VIS_1**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.90	n.a.	0.000	0.0000002	0.00	n.a.	BMB
2	4.57	CRVI-LOW	0.047	0.0084057	100.00	20.579	BMB
Total:			0.047	0.008	100.00	20.579	

Standard Preparation Worksheet & Certificate of Analysis

HACH COMPANY

P.O.Box 389
Loveland, CO 80539
(970) 669-3050

An ISO 9001 Certified Company

Certificate of Analysis

COMMODITY: **Chromium Reference Standard Solution 1000 \ 10 mg/L as total Cr**
COMMODITY NUMBER: **14664-42**
LOT NUMBER: **A5005**
MANUFACTURE DATE: **12/31/2004**
DATE OF ANALYSIS: **1/4/2005**

TEST	*SPECIFICATIONS*	*RESULTS*
Hexavalent Chromium Concentration	995 to 1005 ppm	1001.0 ppm
pH of the solution	12 to 14	12.0

The expiration date is Jan 2010

The item 1466442 is traceable to NIST standards SRM 136e Potassium Dichromate LOT N/A.

R 201090

Certified by _____

Paul Kleinwolterink
Analytical Services Chemist

Reagent Documentation

Reagent: Chromium VI Std 1000 ppm
Date Received: 31 Jan 05
Date Expired: Jan '10
Manufacturer: HACH
Storage Condition: room temp 10-30°C

Reagent #: 201090
By: LMR
Matrix: aq
Amount: 100 ml
Lot #: A5205

Component	Comment	Standard	Concentration
	HACH Cat # 14664-42		

Comment:

Reagent: Turbidity Std - 20 NTU
Date Received: 3 Feb 05
Date Expired: Jan 2006
Manufacturer: GFS Chemicals
Storage Condition: room temp

Reagent #: 201091
By: LMR
Matrix: aq
Amount: 1-L
Lot #: P460346

Component	Comment	Standard	Concentration
	VWR # 66115-150		

Comment:

Reagent: Potassium Phosphate Monobasic
Date Received: 3 Feb 05
Date Expired: Feb 10
Manufacturer: JT Baker
Storage Condition: room temp

Reagent #: 201092
By: LMR
Matrix: solid
Amount: 2 x 500g
Lot #: A33142

Component	Comment	Standard	Concentration
	VWR # JT3246-1		

Comment:

INORGANIC VENTURES
195 Lehigh Avenue, Suite 4
Lakewood, New Jersey 08701 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 - 732.901.1900
fax: 732.901.1903
info@inorganicventures.com

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 Principals."

RA 201632

2.0 DESCRIPTION OF CRM — 1000 µg/mL Chromium (+6) in H20

Catalog Number:	CGCR(6)1-1, CGCR(6)1-2, and CGCR(6)1-5
Lot Number:	**Z-CR02152**
Starting Material:	$(NH_4)_2Cr_2O_7$
Starting Material Purity (%):	99.989259
Starting Material Lot No:	F04N14
Matrix:	H20

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:

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

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

$(\bar{x})$ = mean
x_i = individual results
n = number of measurements
Σs_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

Reagent Documentation

Reagent: Antifoam B Silicone Emulsion
Date Received: 08 May 07
Date Expired: May 2010
Manufacturer: JT Baker
Storage Condition: room temp

Reagent #: 201630
By: RH
Matrix: aq
Amount: 125mL
Lot #: C47613

Component	Comment	Standard	Concentration
	JT Baker # B531-05		

Comment:

Reagent: Cyanide, 1000ug/mL
Date Received: 09 May 07
Date Expired: 30 April 08
Manufacturer: High Purity Standards
Storage Condition: room temp

Reagent #: 201631
By: RH
Matrix: aq
Amount: 125mL
Lot #: 629323

Component	Comment	Standard	Concentration
	HP # IC-CN-M		

Comment:

Reagent: Chromium +6 (Cr+6) 1000ppm
Date Received: 5/11/07
Date Expired: 6/11/08
Manufacturer: Inorganic Ventures
Storage Condition:

Reagent #: 201632
By: NSH
Matrix: AQ
Amount: 125mL
Lot #: Z-CR02152

Component	Comment	Standard	Concentration
Cr+6	PN = CGCR(6)1-1		

Comment:

Reagent Preparation Documentation

Page: 17

Reagent: BrO_3 Color Reagent
Date Received/Prepped: 3/12/07 | 3/29/07 x1 | 3/30/07 x2 | 4/6/07 x1 | 4/26/07 x2
~~Date Expired:~~ 5/14/07 x11 | 5/20/07 x2 | | | |
Manufacturer:
Storage Condition: room temperature

MW #: TLH070312-1
By: TLH
Matrix: aq
Amount: 2x2L
Lot #:

Component	Comment	Standard	Concentration
HPLC Grade Methanol	400mL	R201577	
o-dianisidine (ODA)	1.0g dissolved in methanol	R201466	
KBr	10.0g dissolved in ~1.4L DI H_2O	R201284	
Ultrex HNO_3	116mL	R201576	

Comment: Add ODA to methanol & dissolve. To a 2L flask dissolve KBr into DI H_2O. Add HNO_3 to KBr soln. Add ODA to KBr & HNO_3 soln & dilute to mark w/ DI H_2O. Soln must be clear w/in 30mins. Soln must stand a minimum of 6hrs. before using. Overnight is better.

Reagent: Cr^{+6} Low LCS Stock Solution - 1ppm
Date Received/Prepped: 3/23/07 | 5/14/07 | | | |
Date Expired: | | | | |
Manufacturer:
Storage Condition: room temperature

MW #: TLH070323-1
By: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Hach 1000ppm exp Jan 2010	100µL in 100mL DI H_2O	R201090	1ppm

Comment:

Reagent: Cr^{+6} Low LCS Working Standard - 2ppb
Date Received/Prepped: 3/23/07 | 4/6/07 | 5/14/07 | 6/4/07 | 6/13/07
Date Expired: | | | | |
Manufacturer:
Storage Condition: room temperature

MW #: TLH070323-2
By: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr^{+6} Low LCS Stock (TLH070323-1)	200µL into ~90mL DI H_2O Bring to 100mL final vol. w/ DI H_2O	TLH070323-1	2ppb
Cr^{+6} Buffer Soln	1mL added AFTER soln @ final vol	TLH060815-4	

Comment:

Reagent Preparation Documentation

Reagent: Cr^{+6}-Low Calibration Stocks Soln - 1000ppb
Date Received/Prepped: 5/14/07 / / / / /
Date Expired: / / / / /
Manufacturer:
Storage Condition: room temperature

MW #: TLH070514-1
By: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Inorganic Ventures 1000ppm	100µL diluted to 100mL w/ DI H_2O	R201632	1000ppb
exp. 01-Jun-08			
rec'd & prep'd 5-11-07			
lot # Z-CR02152			

Comment:

Reagent: Cr^{+6} 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: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr^{+6} Low Calibration Stock	20µL diluted to 100mL w/DI H_2O	TLH070514-1	0.2ppb
Cr^{+6} Buffer Solution	1mL added AFTER diluted to final volume	TLH060815-4	

Comment:

Reagent: Cr^{+6} 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: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr^{+6} Low Calibration Stock	200µL diluted to 100mL w/DI H_2O	TLH070514-1	2.0ppb
Cr^{+6} Buffer Solution	1mL added AFTER diluted to final volume.	TLH060815-4	

Comment:

Reagent Preparation Documentation

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

MW #: ~~TLH051K~~ TLH070514-4
By: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr+6 Low Calibration Stock	1.0mL diluted to 100mL w/ DI H_2O	TLH070514-1	10.0ppb
Cr+6 Buffer Solution	1.0mL added AFTER diluted to final volume	TLH060815-4	

Comment:

Reagent: Cr+6 Low Calibration Std. - 20ppb
Date Received/Prepped: 5/14/07 | 6/4/07 | 6/13/07
Date Expired:
Manufacturer:
Storage Condition: room temperature

MW #: TLH070514-5
By: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr+6 Low Calibration Stock	2.0mL diluted to 100mL w/ DI H_2O	TLH070514-1	20ppb
Cr+6 Buffer Solution	1.0mL added AFTER diluted to final volume	TLH060815-4	

Comment:

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

MW #: TLH070514-6
By: TLH
Matrix: aq
Amount: 100mL
Lot #:

Component	Comment	Standard	Concentration
Cr+6 Low Calibration Stock	5.0mL diluted to 100mL w/ DI H_2O	TLH070514-1	50ppb
Cr+6 Buffer Solution	1.0mL added AFTER diluted to final volume	TLH060815-4	

Comment: