

TABLE OF CONTENTS

COVER PAGE.....	1
RUNLOG.....	2
INITIAL CALIBRATION.....	5
PERIODIC QC.....	12
QC: (LRB, MRL, LCS1, LCS2)	13
SAMPLES	18
PERIODIC QC.....	20
SAMPLE (2709170200).....	22
QC: (MS/MSD 2709170200)	23
CLOSING QC	25
STANDARDS PREPARATION WORKSHEET AND CERTIFICATES OF ANALYSIS.	27

Level IV Data Package

MWH Group 216651

Method: EPA 218.6

2709180347
2709180348

No.	Sample Name	Time	Dil.Fac.	Amount	Comment	Analyst:	j kz
				CRVI-LOW			
				UV VIS 1			
					Criteria		
1.	Standard 1 - 0.1 ppb	09/18/07 08:40.	1.0.	0.094	Diluted from JKZ070820-3		
2.	Standard 2 - 0.2ppb	09/18/07 08:48.	1.0.	0.240	JKZ070820-2		
3.	Standard 3 - 2.0 ppb	09/18/07 08:56.	1.0.	1.982	JKZ070820-3		
4.	Standard 4 - 10 ppb	09/18/07 09:04.	1.0.	10.022	JKZ070820-4		
5.	Standard 5 - 20 ppb	09/18/07 09:12.	1.0.	19.792	JKZ070820-5		
6.	Standard 6 - 50ppb	09/18/07 09:20.	1.0.	50.079	JKZ070820-6		
7.	IPC 20	09/18/07 09:29.	1.0.	19.889			
8.	LRB	09/18/07 09:37.	1.0.	0.005			
9.	LRB BUFFER	09/18/07 09:45.	1.0.	n.a.			
10.	MRL 0.1ppb	09/18/07 09:53.	1.0.	0.113	✓		
11.	LCS 2.0ppb	09/18/07 10:01.	1.0.	1.968	✓		
12.	LCS 2.0ppb Dup	09/18/07 10:09.	1.0.	2.019	✓		
13.	2709170200DNR	09/18/07 10:17.	1.0.	2.906			
14.	2709170200_MSDNR	09/18/07 10:25.	1.0.	2.919			
15.	2709170200_MSDDNR	09/18/07 10:33.	1.0.	2.909			
16.	2709180347	09/18/07 10:41.	1.0.	n.a.	✓		
17.	2709180348	09/18/07 10:50.	1.0.	0.970	✓		
18.	IPC 20	09/18/07 11:19.	1.0.	19.855			
19.	LRB	09/18/07 11:27.	1.0.	0.001		MRL 50%-150%	
20.	2709170200	09/18/07 12:22.	1.0.	2.956	✓	0.05 - 0.15ppb	
21.	2709170200_MS	09/18/07 12:30.	1.0.	5.002	✓ 2.04 - 102% recovery	LCS 90%-110%	
22.	2709170200_MSD	09/18/07 12:38.	1.0.	5.034	✓ 2.08 - 104% recovery	Range: 1.80 - 2.20	
23.	2709180556	09/18/07 13:19.	1.0.	0.022	✓	MS/MSD 90%-110%	
24.	2709180476	09/18/07 13:27.	1.0.	1.688	✓	True Value = 2.0	
25.	2709180481 (1:5)	09/18/07 13:35.	5.0.	42.898	✓	IPC 95%-105%	
26.	2709180483	09/18/07 13:43.	1.0.	1.356	✓	20ppb - 19-21ppb	
27.	2709180546	09/18/07 13:52.	1.0.	7.638	✓	10ppb - 9.5-10.5 ppb	
28.	2709180593	09/18/07 14:11.	1.0.	4.271	✓		
29.	IPC 20	09/18/07 14:35.	1.0.	20.130			
30.	LRB	09/18/07 14:43.	1.0.	0.009			

VB:MM 9/19/07

Sequence: 091807-IC5-CRVI
Operator: jkz

Page 1 of 2
Printed: 9/19/2007 12:17:48 PM

Title: CRVI-LOW

Datasource: Dionex_USPAS2SDIO2
Location: IC\IC5_ CRVI-LOW\2007\September
Timebase: IC-#5
#Samples: 30

Created: 9/18/2007 8:15:07 AM by jkz
(Modified, not saved)

No.	Name	Dil. Factor	Type	Comment	Program	Method
1	Standard 1 - 0.1 ppb	1.0000	Standard	Diluted from JKZ070820-3	CRVI-LOW-loop	1-IC#5-CrVi
2	Standard 2 - 0.2ppb	1.0000	Standard	JKZ070820-2	CRVI-LOW-loop	1-IC#5-CrVi
3	Standard 3 - 2.0 ppb	1.0000	Standard	JKZ070820-3	CRVI-LOW-loop	1-IC#5-CrVi
4	Standard 4 - 10 ppb	1.0000	Standard	JKZ070820-4	CRVI-LOW-loop	1-IC#5-CrVi
5	Standard 5 - 20 ppb	1.0000	Standard	JKZ070820-5	CRVI-LOW-loop	1-IC#5-CrVi
6	Standard 6 - 50ppb	1.0000	Standard	JKZ070820-6	CRVI-LOW-loop	1-IC#5-CrVi
7	IPC 20	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
8	LRB	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
9	LRB BUFFER	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
10	MRL 0.1ppb	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
11	LCS 2.0ppb	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
12	LCS 2.0ppb Dup	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
13	2709170200DNR	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
14	2709170200_MSDNR	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
15	2709170200_MSDDNR	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
16	2709180347	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
17	2709180348	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
18	IPC 20	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
19	LRB	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
20	2709170200	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
21	2709170200_MS	1.0000	Unknown	2.04 - 102% recovery	CRVI-LOW-loop	1-IC#5-CrVi
22	2709170200_MSD	1.0000	Unknown	2.08 - 104% recovery	CRVI-LOW-loop	1-IC#5-CrVi
23	2709180556	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
24	2709180476	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
25	2709180481 (1:5)	5.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
26	2709180483	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
27	2709180546	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
28	2709180593	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
29	IPC 20	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi
30	LRB	1.0000	Unknown		CRVI-LOW-loop	1-IC#5-CrVi

Sequence: 091807-IC5-CRVI
Operator: jkz

Page 2 of 2
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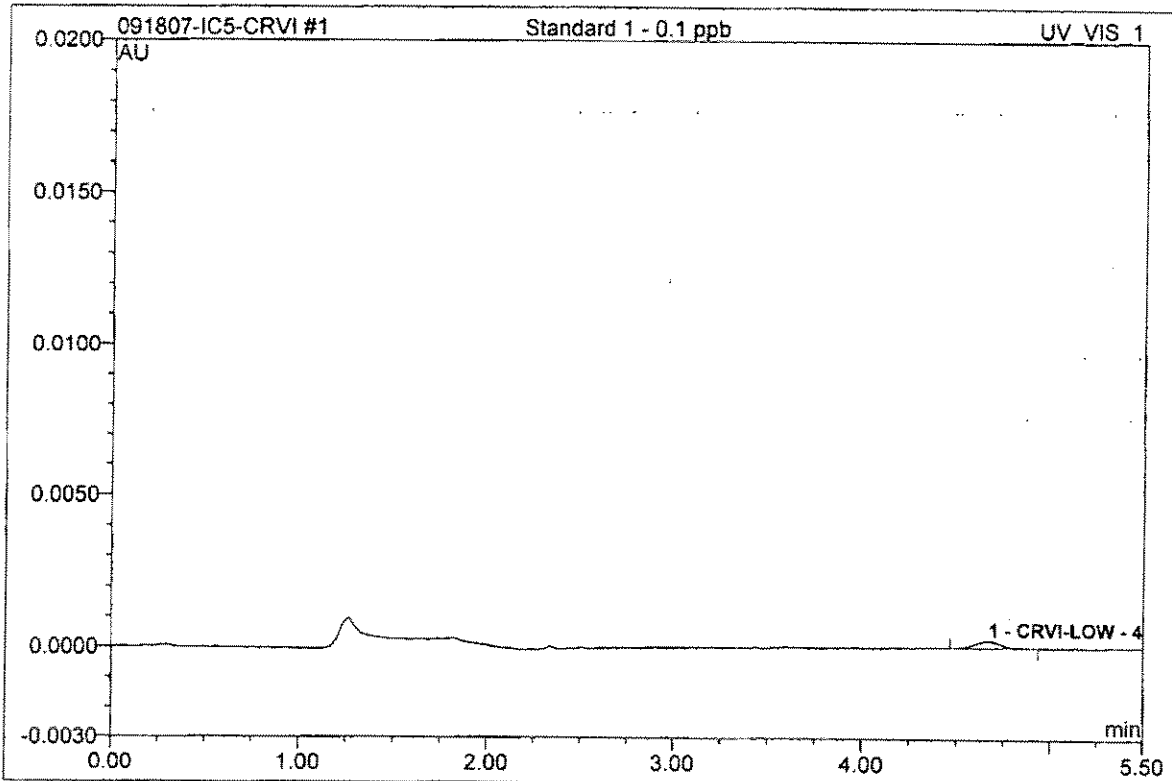
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Datasource: Dionex_USPAS2SDIO2
Location: ICIC5_CRVI-LOW\2007\September
Timebase: IC-#5
#Samples: 30

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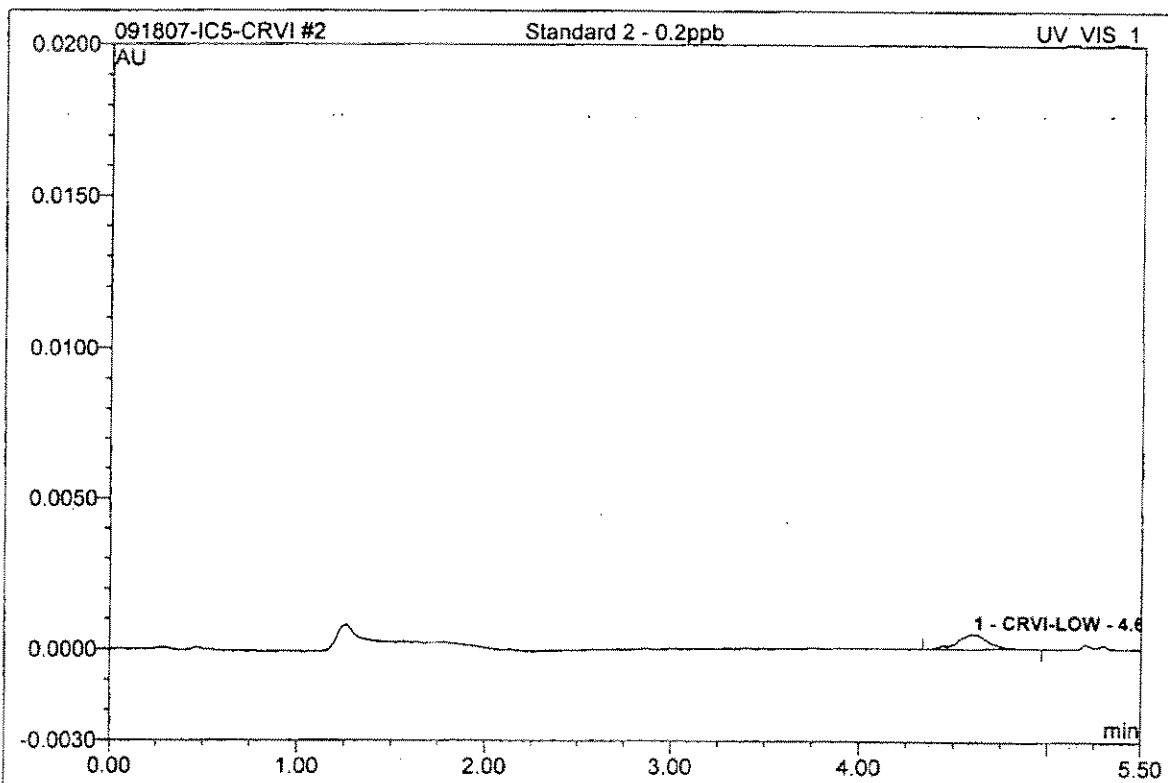
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2	Finished	9/18/2007 8:48:33 AM	jkz		
3	Finished	9/18/2007 8:56:40 AM	jkz		
4	Finished	9/18/2007 9:04:45 AM	jkz		
5	Finished	9/18/2007 9:12:51 AM	jkz		
6	Finished	9/18/2007 9:20:57 AM	jkz		
7	Finished	9/18/2007 9:29:04 AM	jkz		
8	Finished	9/18/2007 9:37:09 AM	jkz		
9	Finished	9/18/2007 9:45:15 AM	jkz		
10	Finished	9/18/2007 9:53:21 AM	jkz		
11	Finished	9/18/2007 10:01:28 AM	jkz		
12	Finished	9/18/2007 10:09:33 AM	jkz		
13	Finished	9/18/2007 10:17:39 AM	jkz		
14	Finished	9/18/2007 10:25:45 AM	jkz		
15	Finished	9/18/2007 10:33:52 AM	jkz		
16	Finished	9/18/2007 10:41:57 AM	jkz		
17	Finished	9/18/2007 10:50:03 AM	jkz		
18	Finished	9/18/2007 11:19:50 AM	jkz		
19	Finished	9/18/2007 11:27:55 AM	jkz		
20	Finished	9/18/2007 12:22:47 PM	jkz		
21	Finished	9/18/2007 12:30:51 PM	jkz		
22	Finished	9/18/2007 12:38:57 PM	jkz		
23	Finished	9/18/2007 1:19:37 PM	jkz		
24	Finished	9/18/2007 1:27:43 PM	jkz		
25	Finished	9/18/2007 1:35:49 PM	jkz		
26	Finished	9/18/2007 1:43:55 PM	jkz		
27	Finished	9/18/2007 1:52:01 PM	jkz		
28	Finished	9/18/2007 2:11:18 PM	jkz		
29	Finished	9/18/2007 2:35:01 PM	jkz		
30	Finished	9/18/2007 2:43:07 PM	jkz		

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:	9/18/2007 8:40
Analyst:	j kz	Channel:	UV_VIS_1



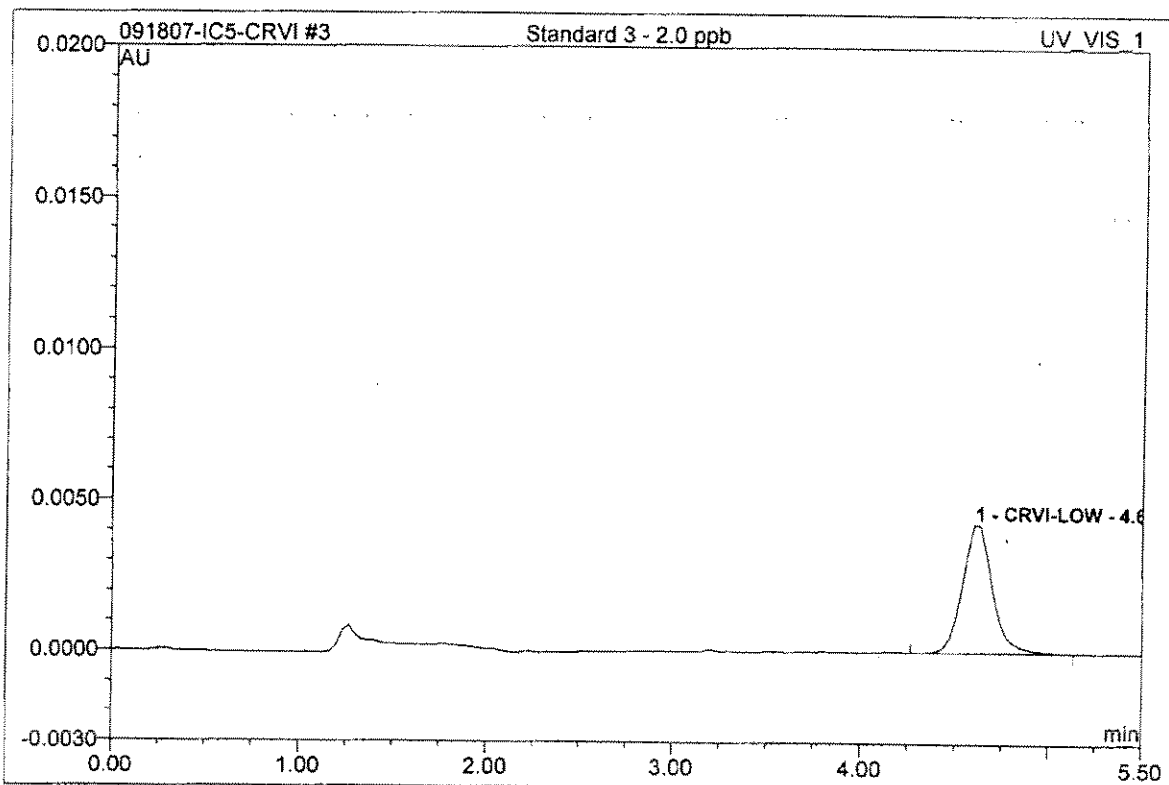
No.	Ret. Time min	Peak Name	Height AU	Area AU*min	Rel. Area %	Amount	Type
1	4.67	CRVI-LOW	0.000	0.0000376	100.00	0.094	BMB
Total:			0.000	0.000	100.00	0.094	

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:	9/18/2007 8:48
Analyst:	jkz	Channel:	UV_VIS_1



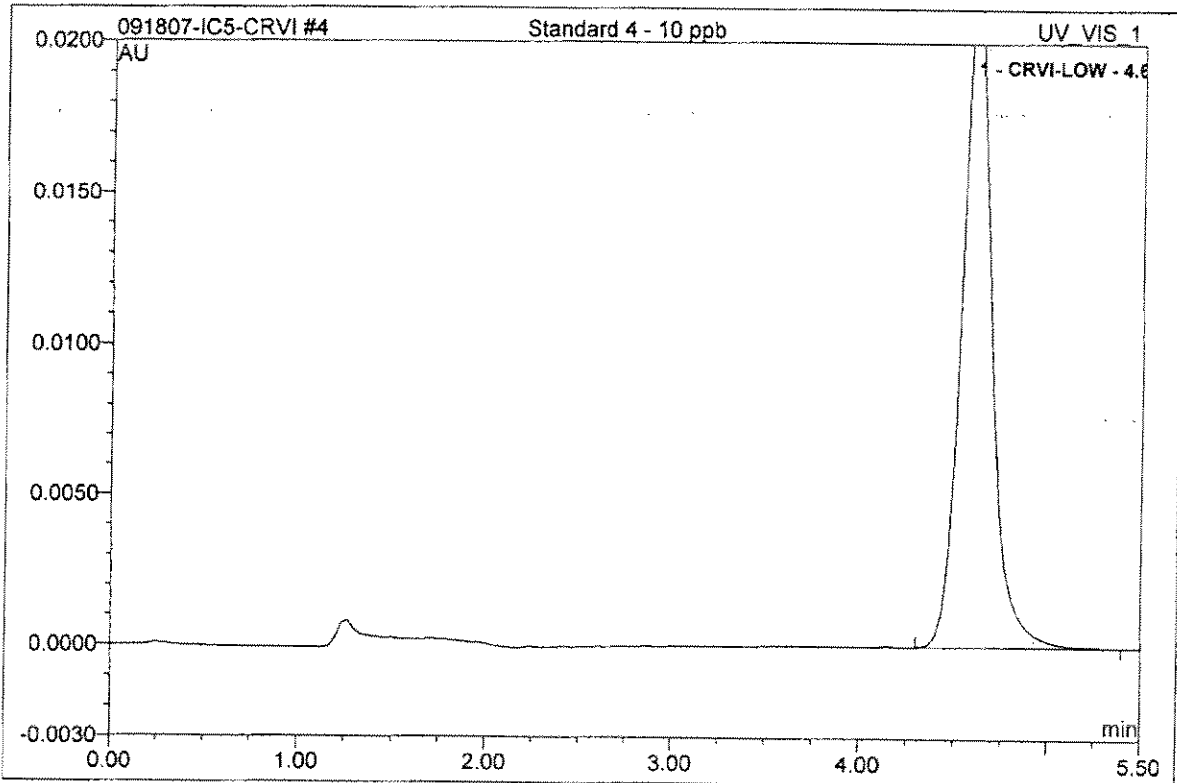
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1	4.60	CRVI-LOW	0.000	0.0000967	100.00	0.240	BMB
Total:			0.000	0.000	100.00	0.240	

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:	9/18/2007 8:56
Analyst:	j kz	Channel:	UV_VIS_1



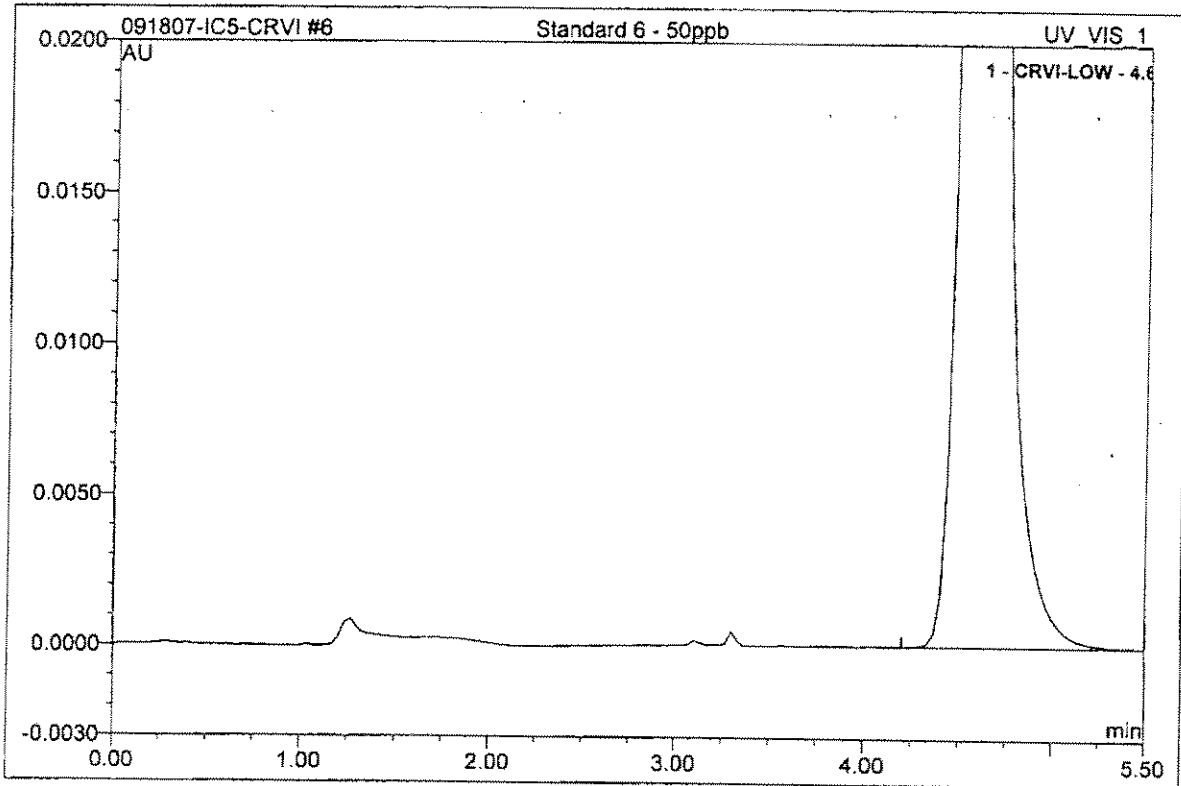
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.60	CRVI-LOW	0.004	0.0007975	100.00	1.982	BMB
Total:			0.004	0.001	100.00	1.982	

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:	9/18/2007 9:04
Analyst:	jkz	Channel:	UV_VIS_1



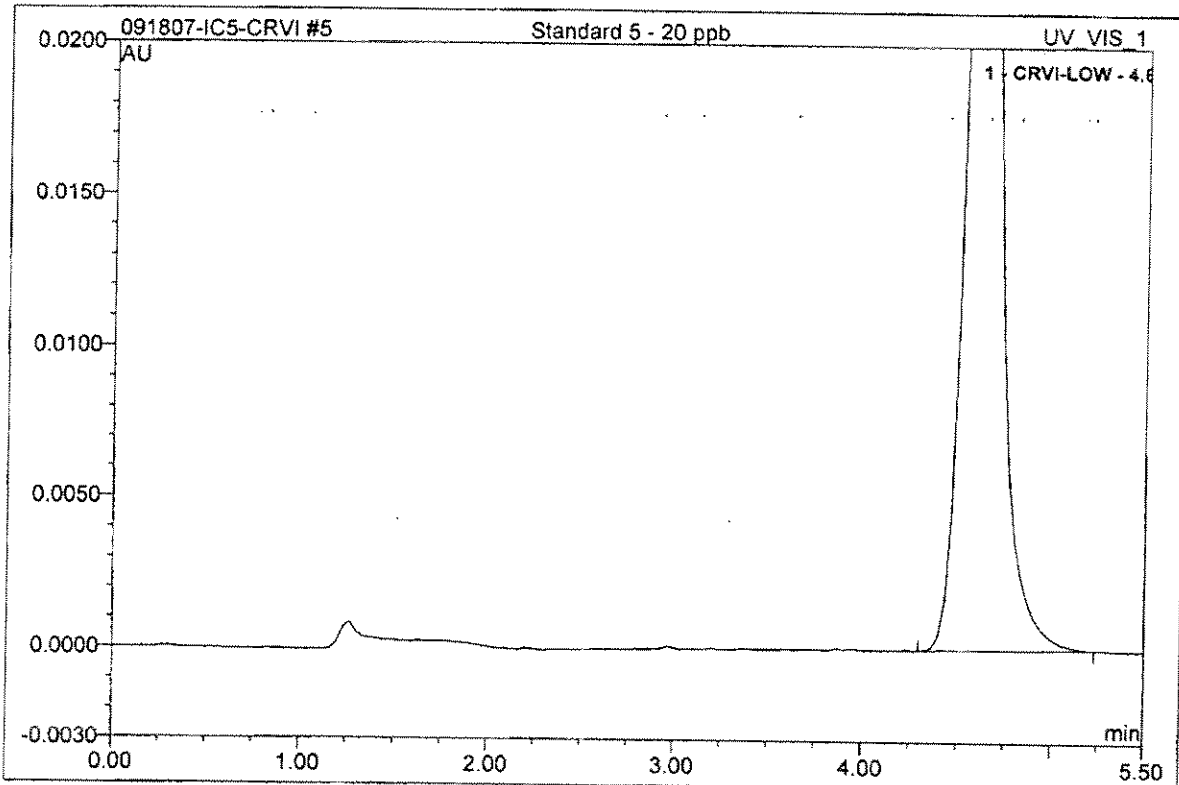
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.60	CRVI-LOW	0.022	0.0040320	100.00	10.022	BMB
Total:			0.022	0.004	100.00	10.022	

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:	9/18/2007 9:20
Analyst:	jkz	Channel:	UV_VIS_1



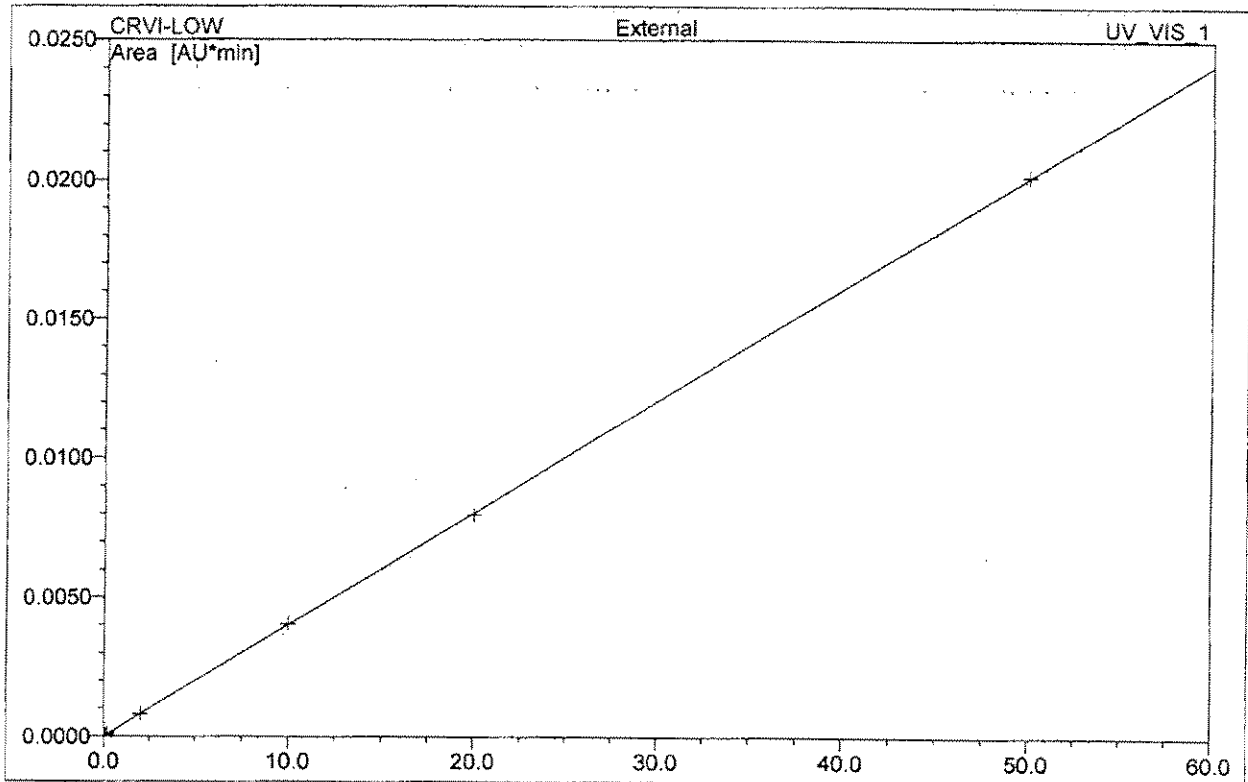
No.	Ret. Time min	Peak Name	Height AU	Area AU*min	Rel. Area %	Amount	Type
1	4.60	CRVI-LOW	0.110	0.0201471	100.00	50.079	BMB
Total:			0.110	0.020	100.00	50.079	

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:	9/18/2007 9:12
Analyst:	jkz	Channel:	UV_VIS_1



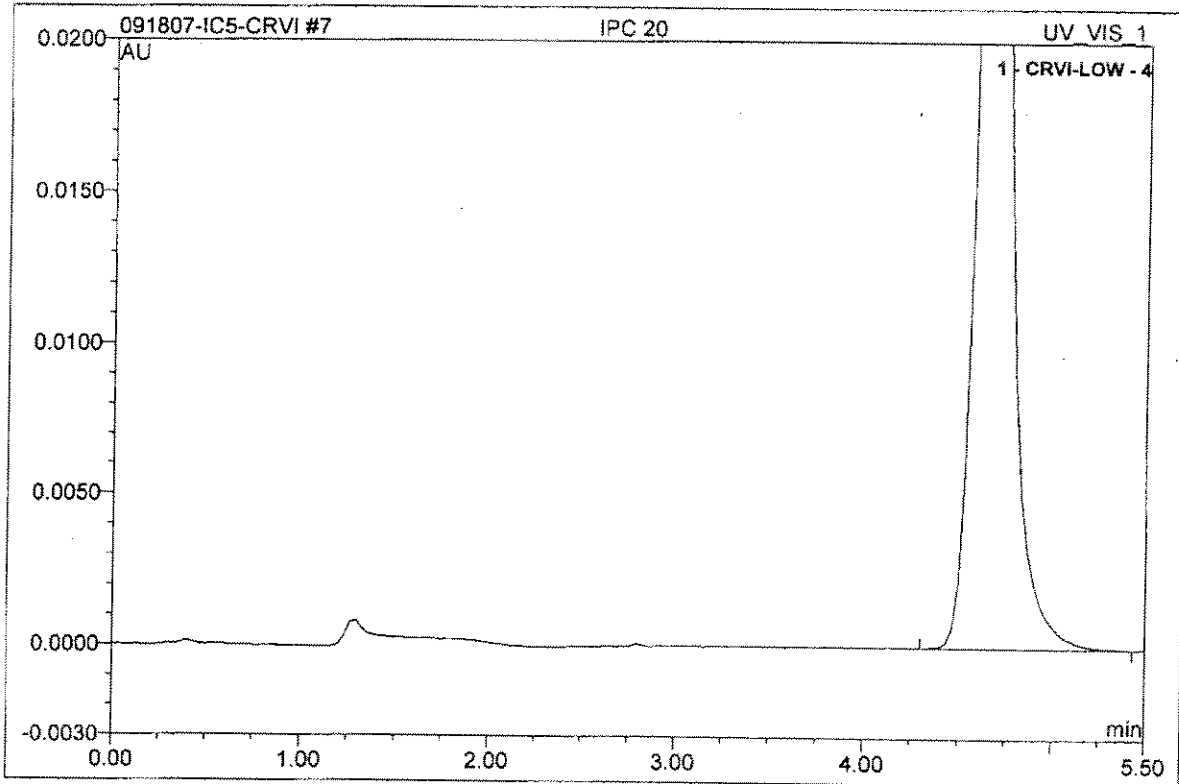
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.60	CRVI-LOW	0.043	0.0079625	100.00	19.792	BMB
Total:			0.043	0.008	100.00	19.792	

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:	9/18/2007 9:20	Channel:	UV_VIS_1



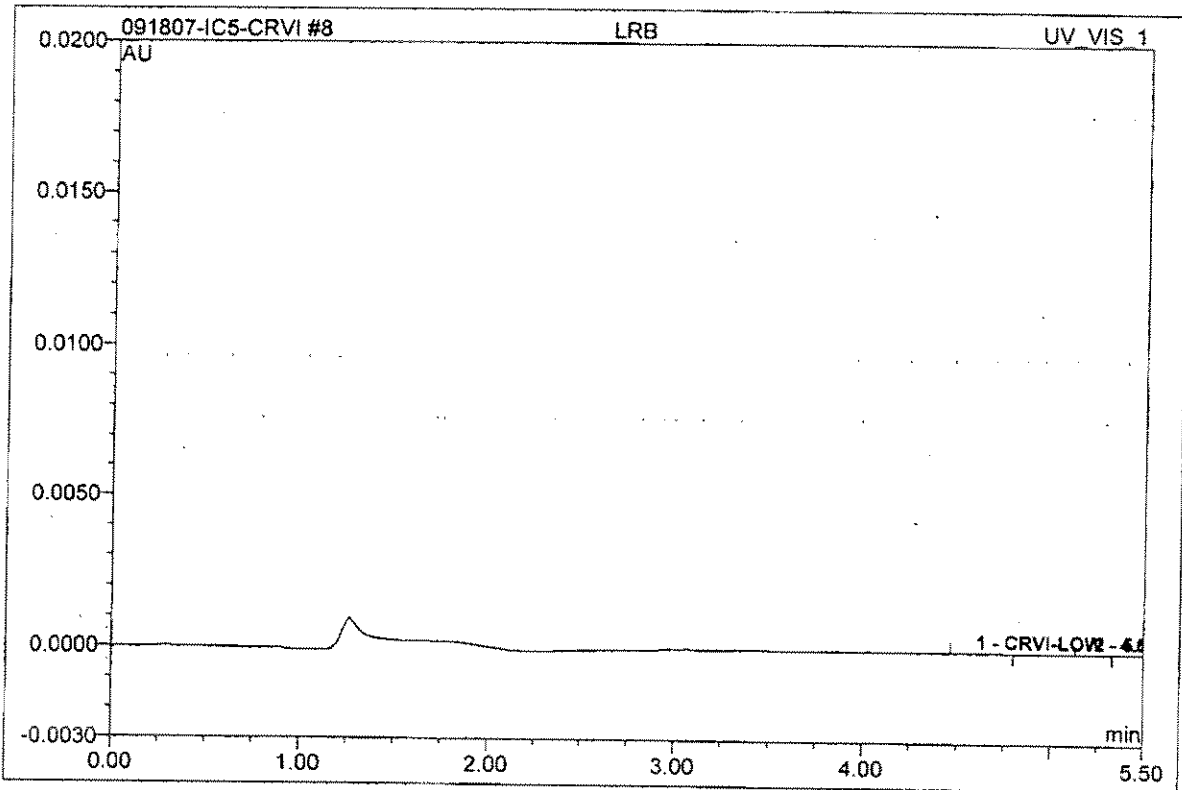
No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	4.60	CRVI-LOW	Lin	6	99.9987	0.0000	0.0004023	0.0000
Average:					99.9987	0.0000	0.0004	0.0000

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:	9/18/2007 9:29
Analyst:	jkz	Channel:	UV_VIS_1



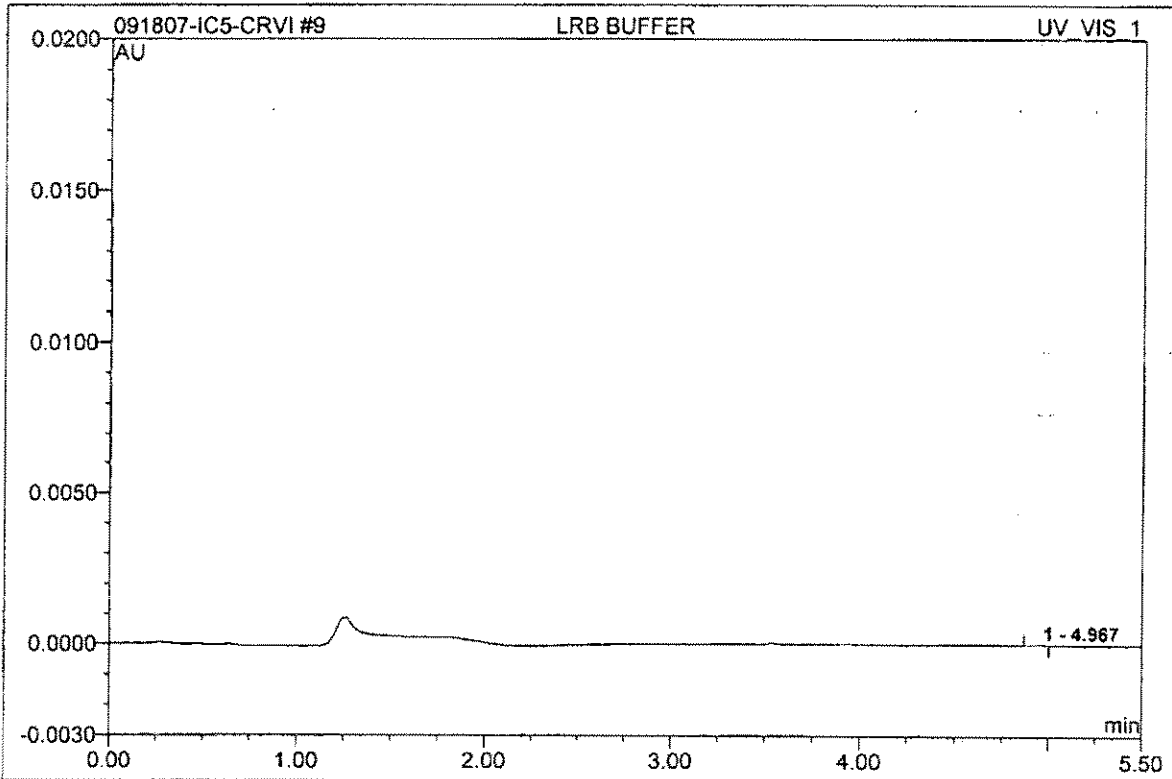
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.67	CRVI-LOW	0.044	0.0080015	100.00	19.889	BMB
Total:			0.044	0.008	100.00	19.889	

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:	9/18/2007 9:37
Analyst:	jkz	Channel:	UV_VIS_1



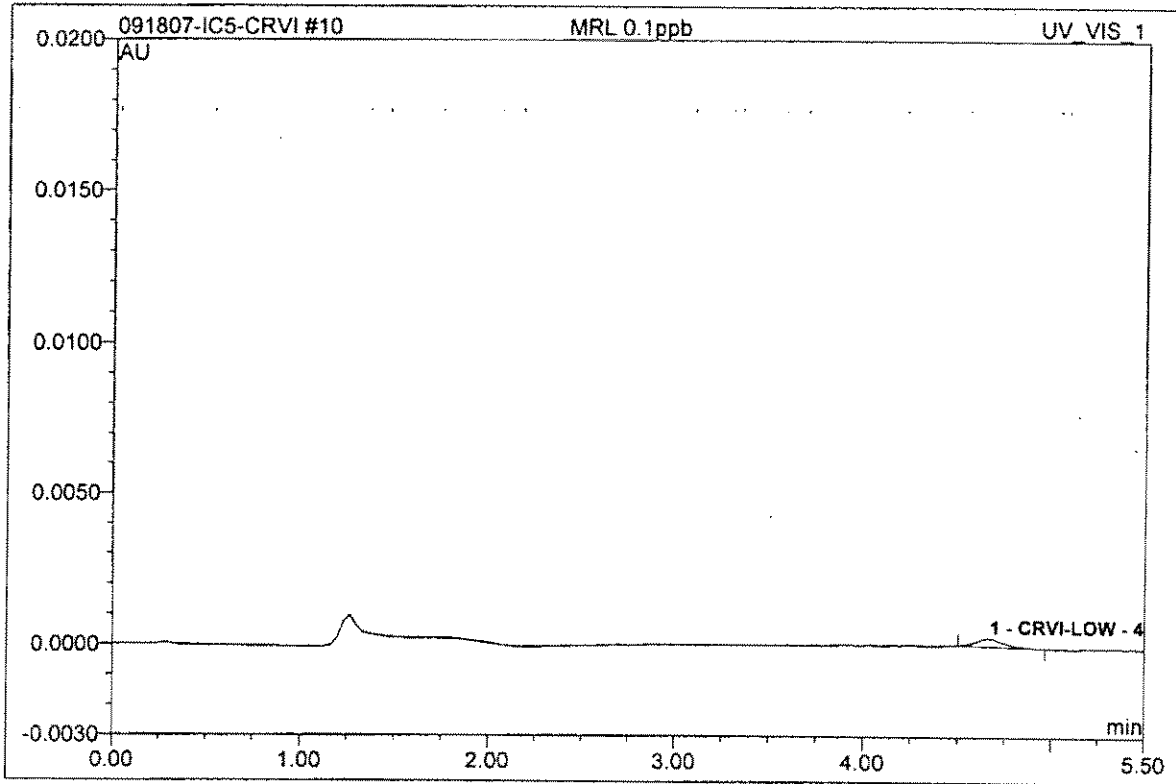
No.	Ret. Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.60	CRVI-LOW	0.000	0.0000020	70.76	0.005	BMB
2	5.23	n.a.	0.000	0.0000008	29.24	n.a.	BMB
Total:			0.000	0.000	100.00	0.005	

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:	9/18/2007 9:45
Analyst:	jkz	Channel:	UV_VIS_1



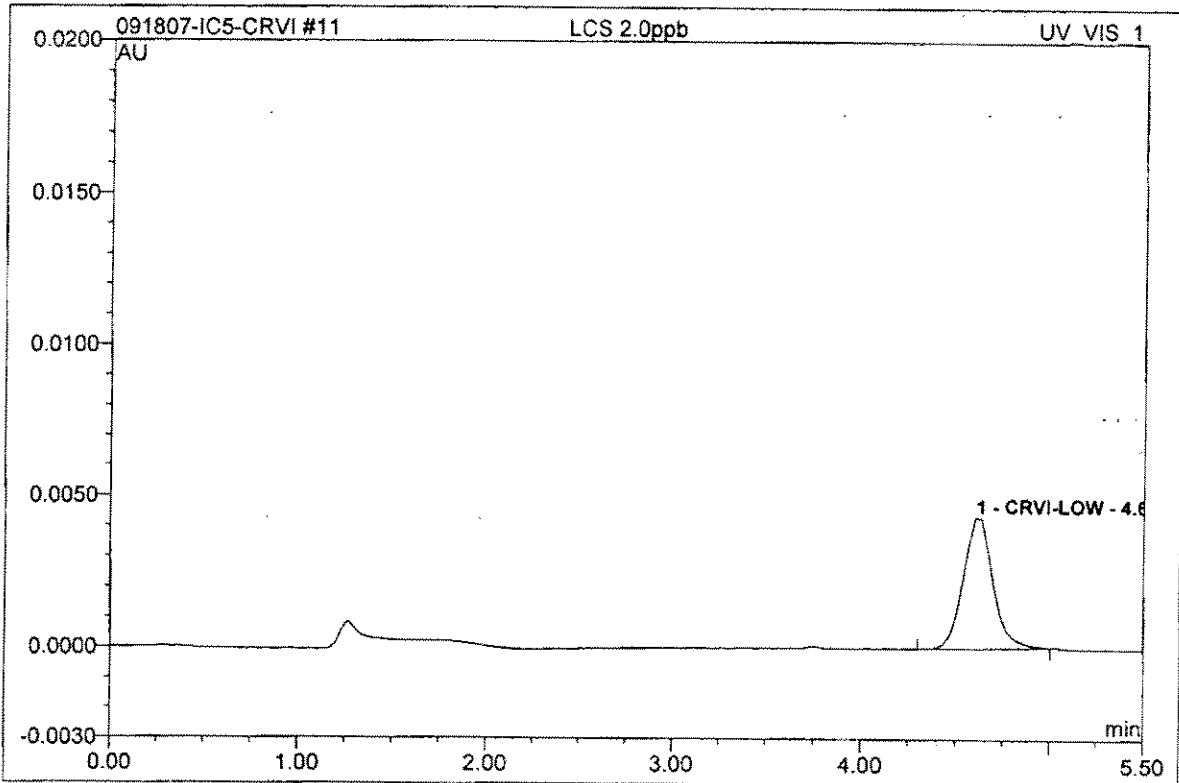
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.97	n.a.	0.000	0.0000009	100.00	n.a.	BMB
Total:			0.000	0.000	100.00	0.000	

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:	9/18/2007 9:53
Analyst:	j kz	Channel:	UV_VIS_1



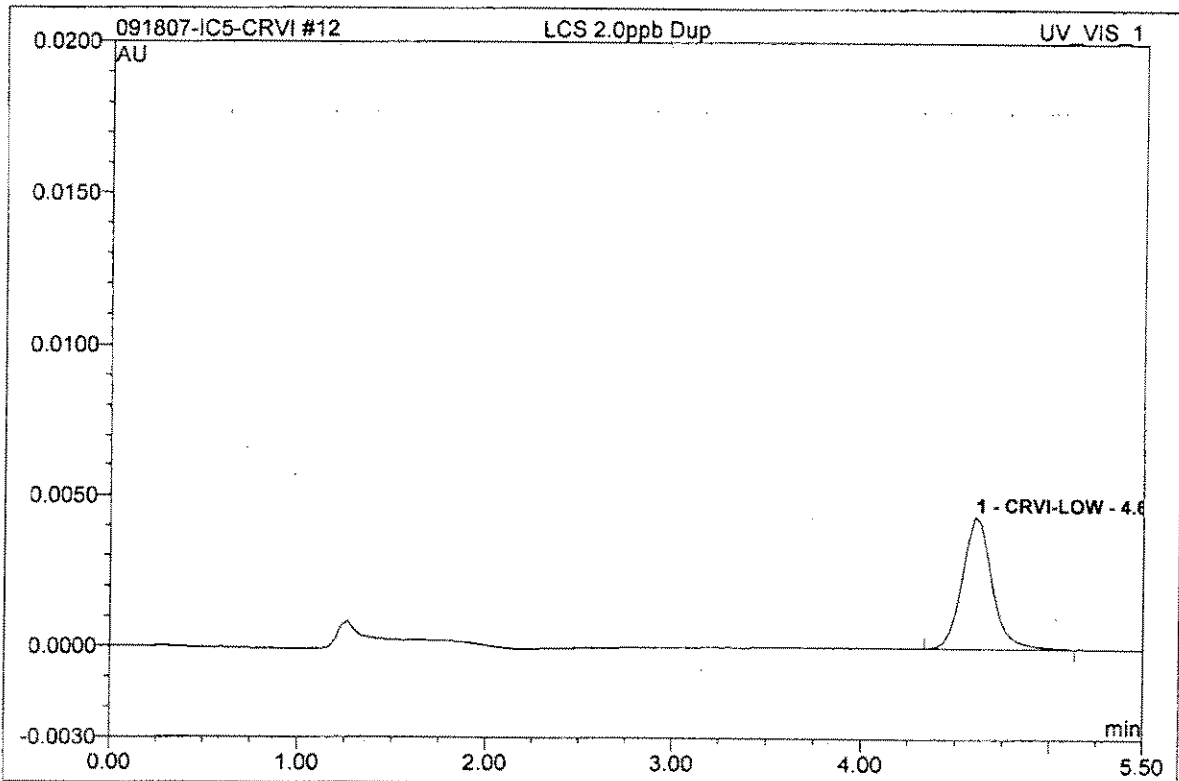
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.67	CRVI-LOW	0.000	0.0000456	100.00	0.113	BMB
Total:			0.000	0.000	100.00	0.113	

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:	9/18/2007 10:01
Analyst:	jkz	Channel:	UV_VIS_1



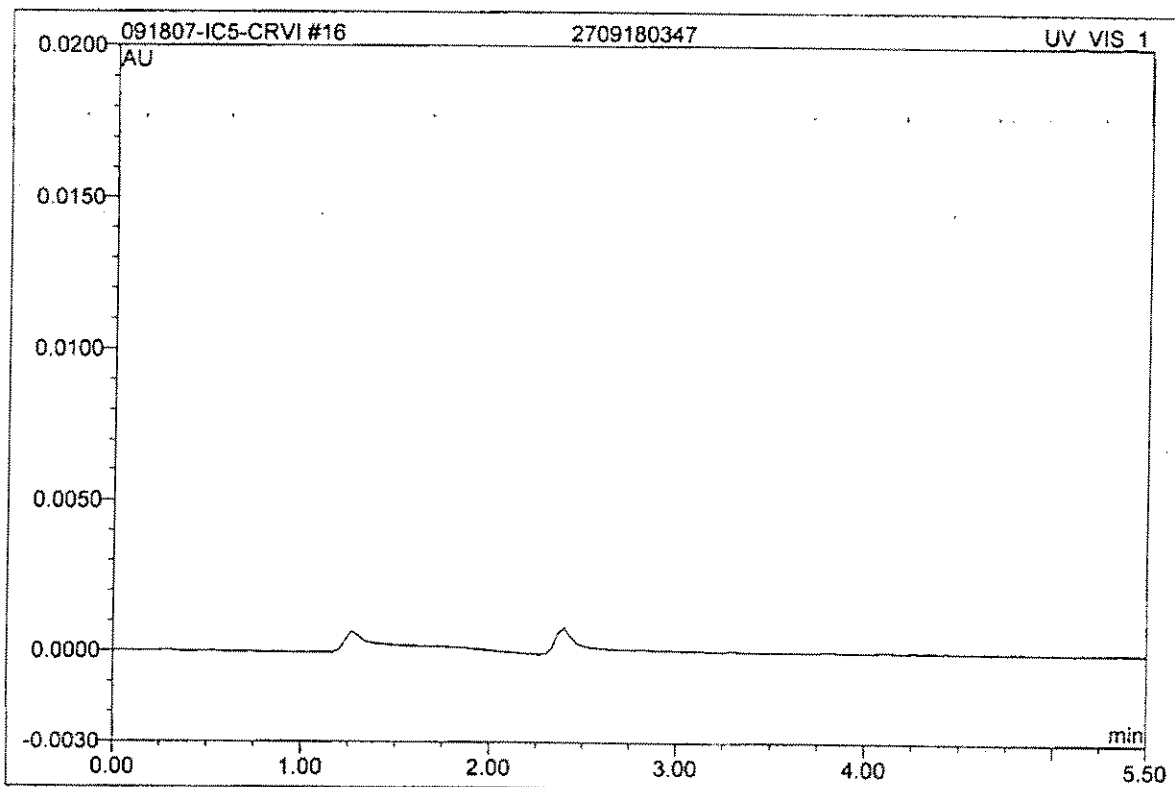
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1	4.60	CRVI-LOW	0.004	0.0007919	100.00	1.968	BMB
Total:			0.004	0.001	100.00	1.968	

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:	9/18/2007 10:09
Analyst:	jkz	Channel:	UV_VIS_1



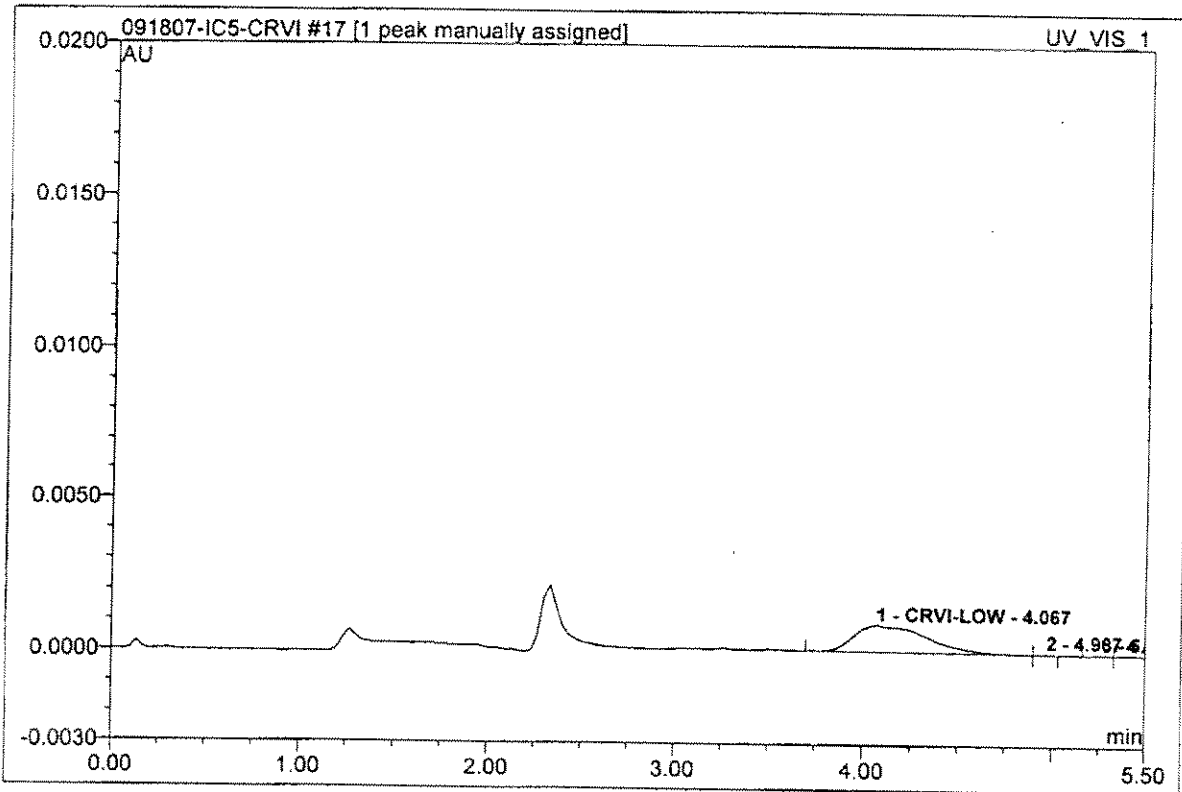
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.60	CRVI-LOW	0.004	0.0008124	100.00	2.019	BMB
Total:			0.004	0.001	100.00	2.019	

16 2709180347			
Sample Name:	2709180347	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	9/18/2007 10:41
Analyst:	jkz	Channel:	UV_VIS_1



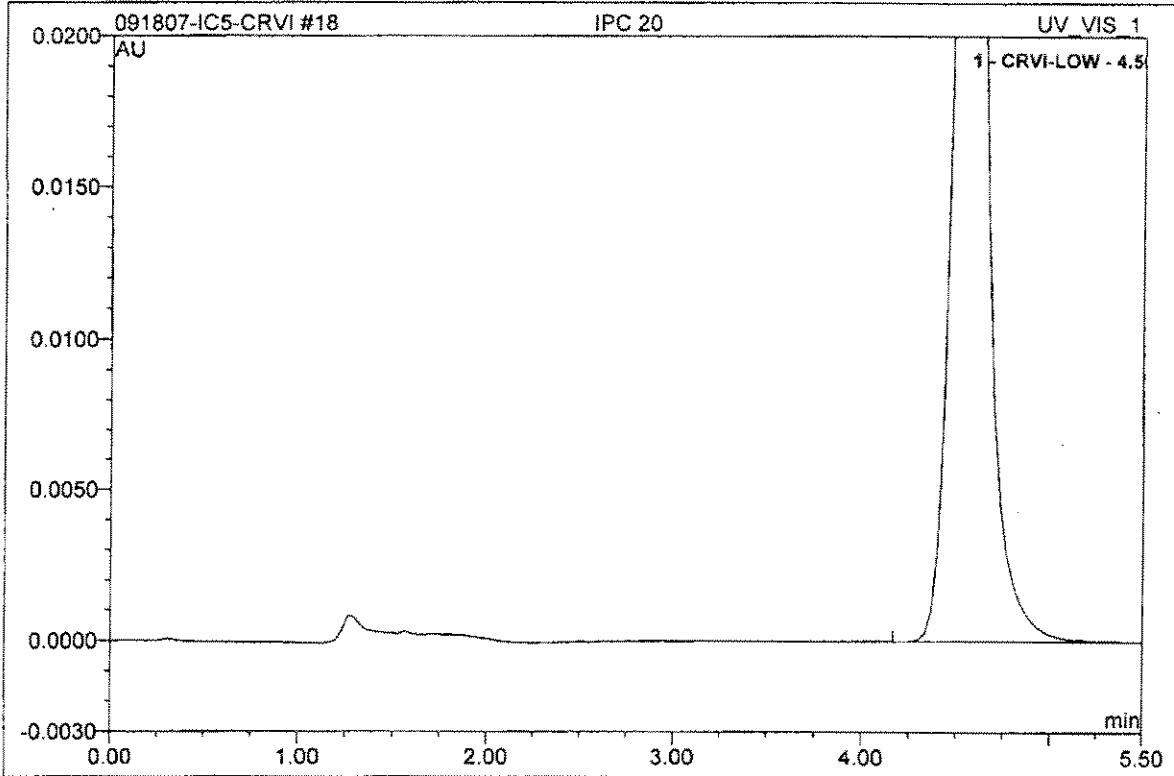
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

17 2709180348			
Sample Name:	2709180348	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	9/18/2007 10:50
Analyst:	jkz	Channel:	UV_VIS_1



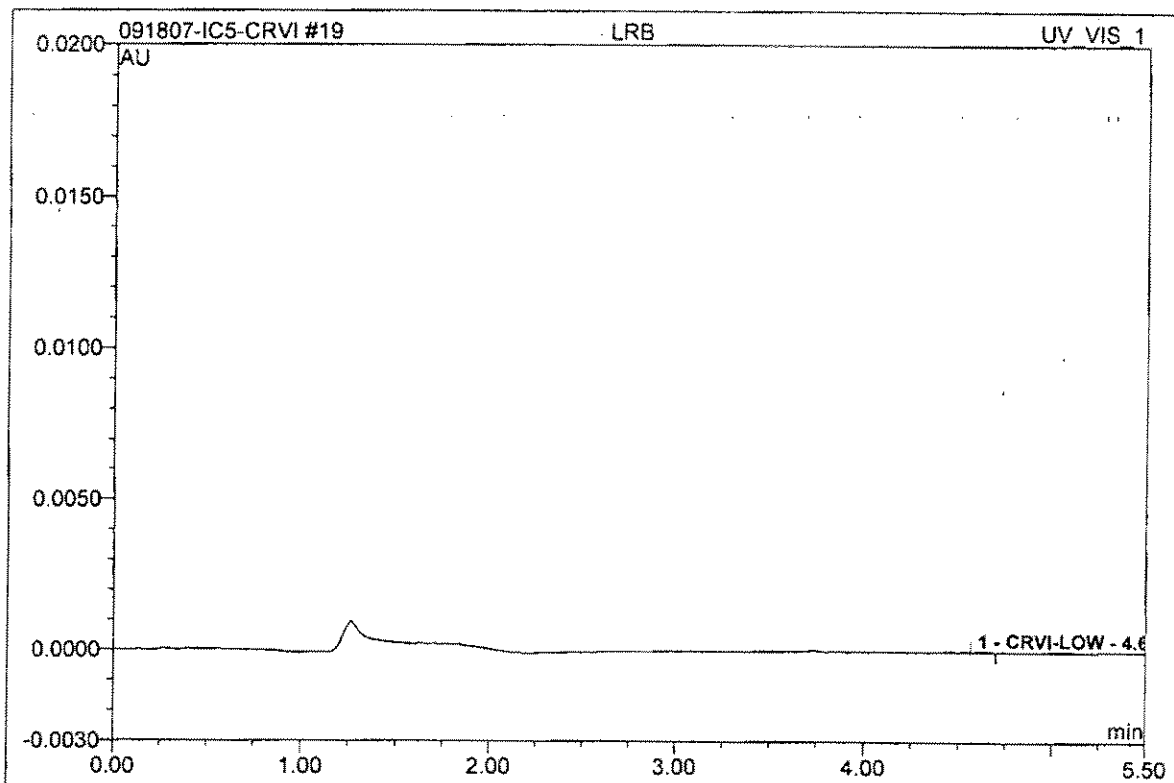
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.07	CRVI-LOW	0.001	0.0003903	99.28	0.970	BMb^
2	4.97	n.a.	0.000	0.0000013	0.33	n.a.	bMB
3	5.27	n.a.	0.000	0.0000009	0.23	n.a.	BMb
4	5.40	n.a.	0.000	0.0000006	0.16	n.a.	bMB
Total:			0.001	0.000	100.00	0.970	

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:	9/18/2007 11:19
Analyst:	jkz	Channel:	UV_VIS_1



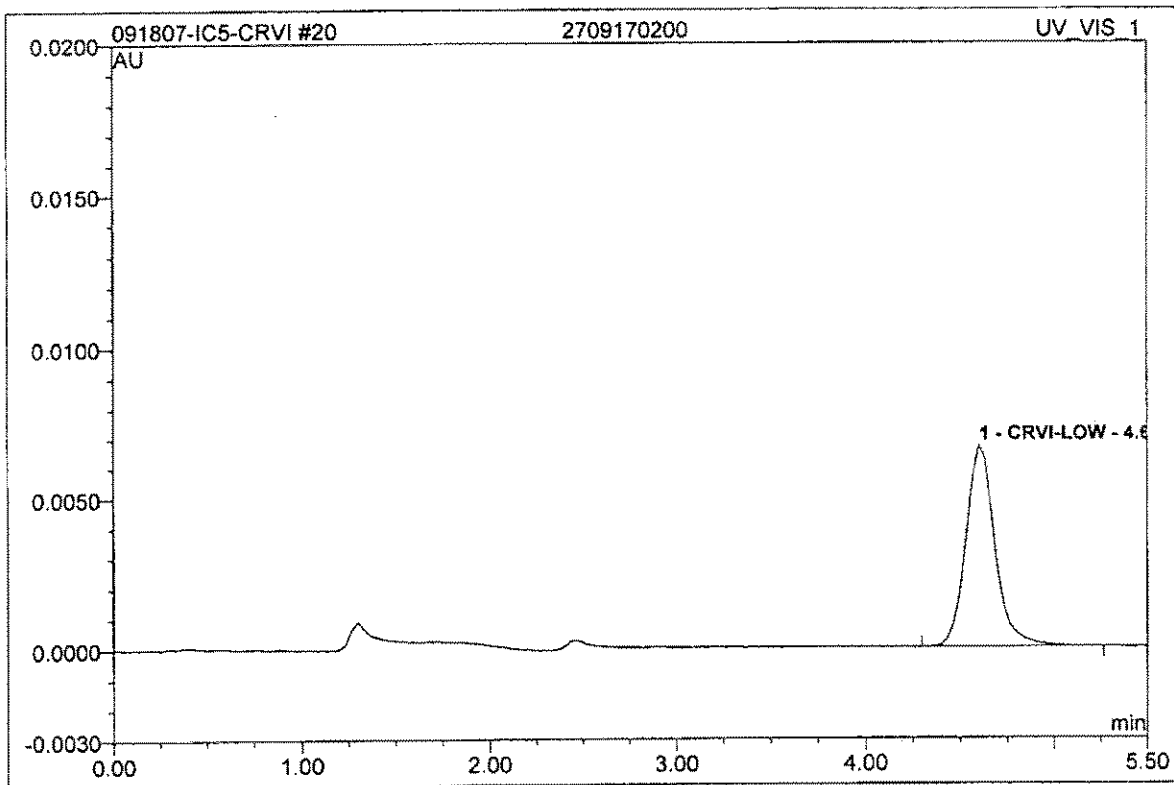
No.	Ret. Time min	Peak Name	Height AU	Area AU*min	Rel. Area %	Amount	Type
1	4.57	CRVI-LOW	0.044	0.0079879	100.00	19.855	BMB
Total:			0.044	0.008	100.00	19.855	

19 LRB			
Sample Name:	LRB	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	9/18/2007 11:27
Analyst:	jkz	Channel:	UV_VIS_1



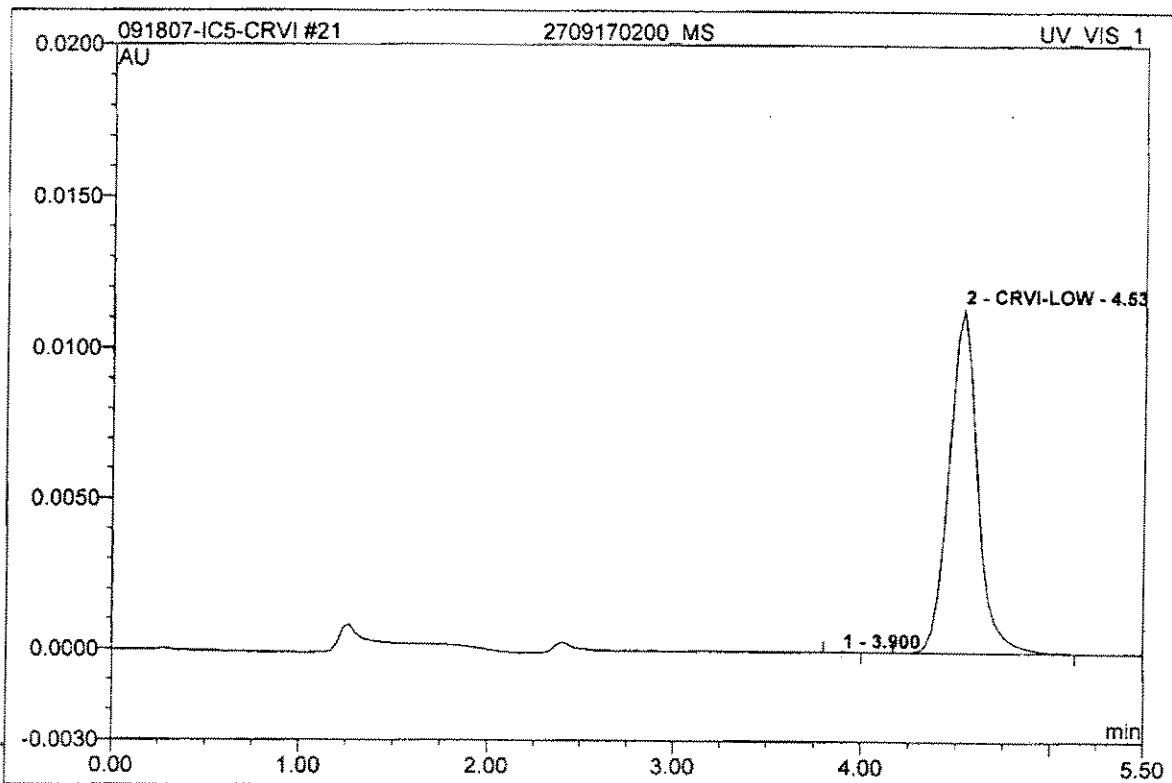
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.60	CRVI-LOW	0.000	0.0000004	100.00	0.001	BMB
Total:			0.000	0.000	100.00	0.001	

20 2709170200			
Sample Name:	2709170200	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	unknown	Recording Time:	9/18/2007 12:22
Analyst:	j kz	Channel:	UV_VIS_1



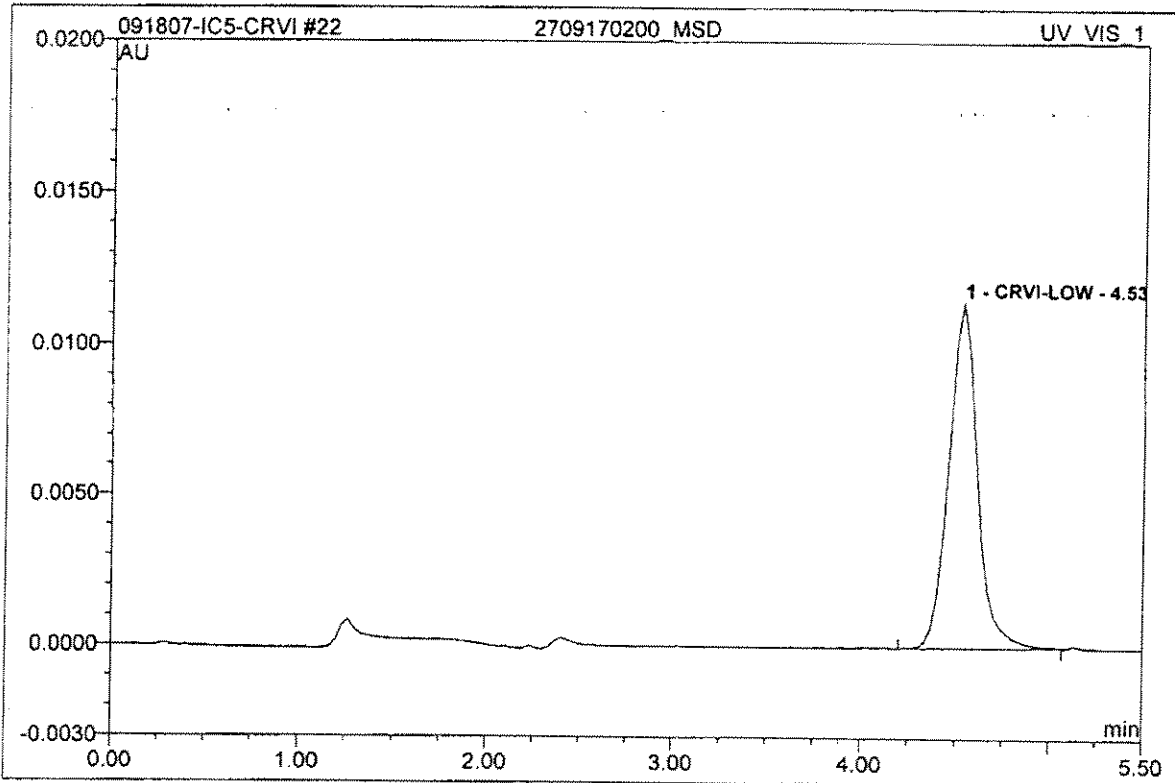
No.	Ret. Time min	Peak Name	Height AU	Area AU*min	Rel. Area %	Amount	Type
1	4.60	CRVI-LOW	0.007	0.0011891	100.00	2.956	BMB
Total:			0.007	0.001	100.00	2.956	

21 2709170200_MS			
Sample Name:	2709170200_MS	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	9/18/2007 12:30
Analyst:	jkz	Channel:	UV_VIS_1



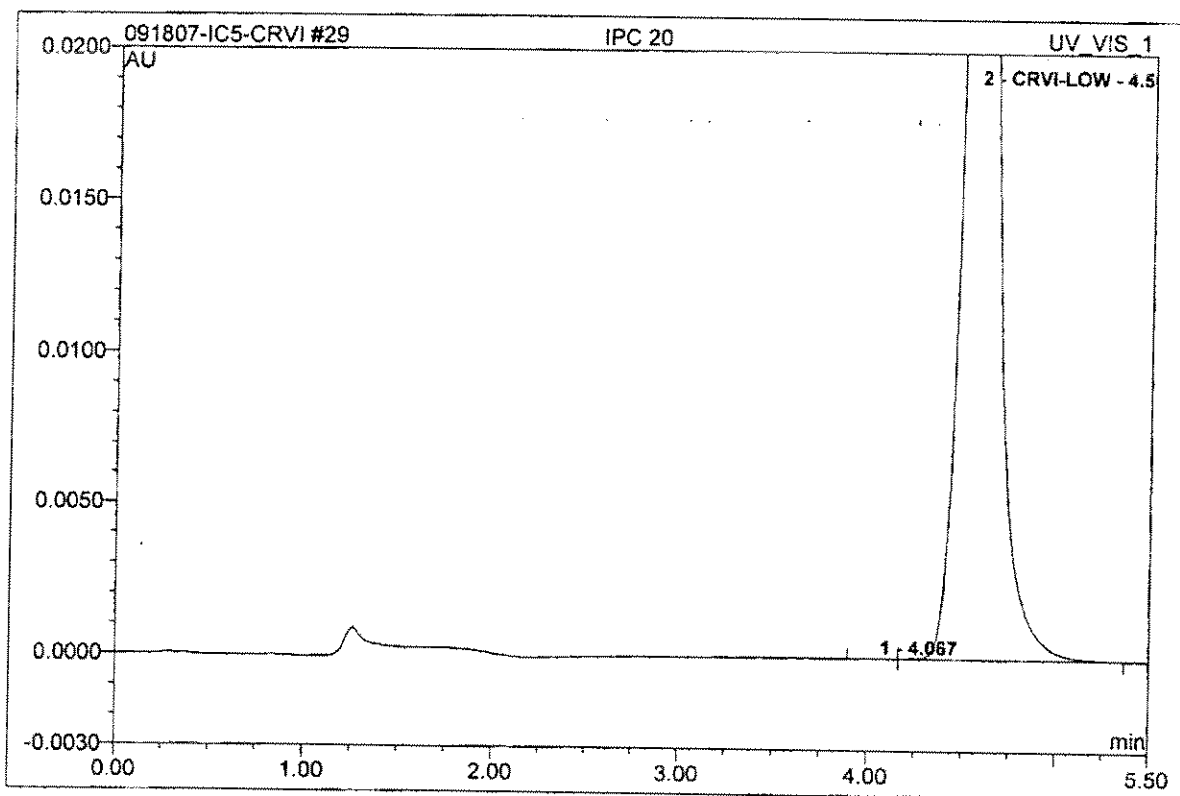
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	3.90	n.a.	0.000	0.0000007	0.03	n.a.	BMB
2	4.53	CRVI-LOW	0.011	0.0020125	99.97	5.002	BMB
Total:			0.011	0.002	100.00	5.002	

22 2709170200_MSD			
Sample Name:	2709170200_MSD	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVi
Sample Type:	unknown	Recording Time:	9/18/2007 12:38
Analyst:	jkz	Channel:	UV_VIS_1



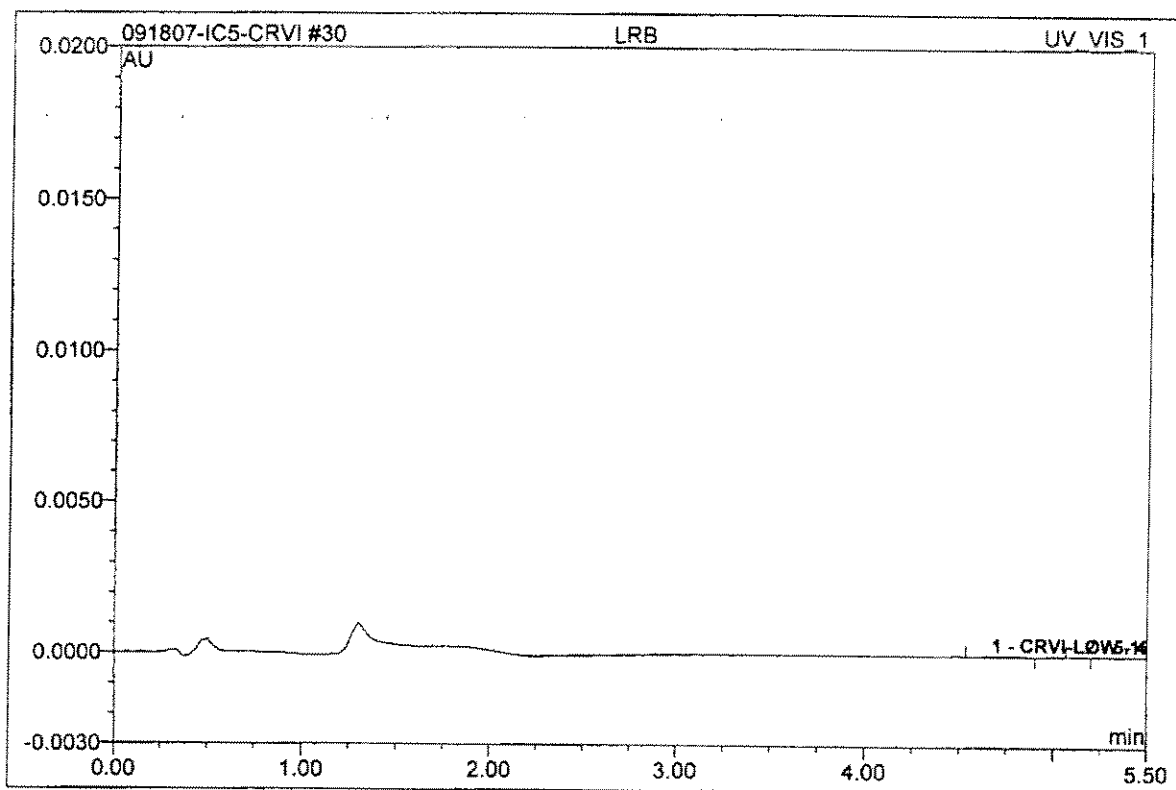
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.53	CRVI-LOW	0.012	0.0020250	100.00	5.034	BMB
Total:			0.012	0.002	100.00	5.034	

29 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:	9/18/2007 14:35
Analyst:	jkg	Channel:	UV_VIS_1



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.07	n.a.	0.000	0.0000021	0.03	n.a.	BM
2	4.57	CRVI-LOW	0.045	0.0080983	99.97	20.130	MB
Total:			0.045	0.008	100.00	20.130	

30 LRB			
Sample Name:	LRB	Control Program:	CRVI-LOW-loop
Dilution Factor:	1.0000	Quantif. Method:	1-IC#5-CrVI
Sample Type:	unknown	Recording Time:	9/18/2007 14:43
Analyst:	jkz	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	0.0000036	95.96	0.009	BMB
2	5.17	n.a.	0.000	0.0000001	4.04	n.a.	BMB
Total:			0.000	0.000	100.00	0.009	

**Standard
Preparation
Worksheet
&
Certificate of
Analysis**

Reagent Preparation Documentation

Reagent: Cr⁶⁺ Low Calibration Stock Soln 1000 ppb MW #: 070820-1
Date Received/Prepped: 08/20/07 1 1 1 1 MW #: JKZ 082001-1 jky
Date Expired: 1 1 1 1 1 By: JKZ
Manufacturer: _____ Matrix: aq
Storage Condition: Room Temp Amount: 100 ml
 Lot #: _____

Component	Comment	Standard	Concentration
Dreger Ventures 1000 ppm	100 ml diluted to 100 ml w/ DI H ₂ O	R201632	1000 ppb
Exp. 06/01/08			
Rec'd + opened: 05/11/07			
Lot # Z-CR02152			

Comment:

Reagent: Cr⁶⁺ Low Calib. Std 0.2 ppb MW #: 070820-2 jky
Date Received/Prepped: 08/20/07 1 1 1 1 MW #: JKZ 082001-2
Date Expired: 1 1 1 1 1 By: JKZ
Manufacturer: _____ Matrix: aq
Storage Condition: Room Temp Amount: 100 ml
 Lot #: _____

Component	Comment	Standard	Concentration
Cr ⁶⁺ low calib stock	20 ml diluted to 100 ml w/ DI H ₂ O	JKZ 082001-1	0.2 ppb
Cr ⁶⁺ Buffer Soln	1 ml added after dilution to final volume	TLH 060815-4	

Comment:

Reagent: Cr⁶⁺ Low Calib. Std. 2.0 ppb MW #: 070820-3 jky
Date Received/Prepped: 08/20/07 1 1 1 1 MW #: JKZ 082001-3
Date Expired: 1 1 1 1 1 By: JKZ
Manufacturer: _____ Matrix: aq
Storage Condition: Room Temp Amount: 100 ml
 Lot #: _____

Component	Comment	Standard	Concentration
Cr ⁶⁺ low calib. stock	200 ml diluted to 100 ml w/ DI H ₂ O	JKZ 082001-1	2.0 ppb
Cr ⁶⁺ Buffer Soln	1 ml added after dilution to final volume	TLH 060815-4	

Comment:

Reagent Preparation Documentation

Page: 47

Reagent: Cr⁶⁺ low Calib Std 10 ppb
 Date Received/Prepped: 08/20/07 / / / /
 Date Expired: / / / / /
 Manufacturer: _____
 Storage Condition: Room Temp

JKZ
 MW #: 070820-4
 By: JKZ
 Matrix: aq
 Amount: 100 ml
 Lot #: _____

Component	Comment	Standard	Concentration
Cr ⁶⁺ low Calib stock	1.0 ml diluted to 100 ml w/ DI H ₂ O	JKZ 070820-1	100 ppb
		070820-1	
Cr ⁶⁺ buffer soln	1.0 ml added after dilution to final volume	TUH 060815-4	

Comment: _____

Reagent: Cr⁶⁺ low Calib Std 20 ppb
 Date Received/Prepped: 08/20/07 / / / /
 Date Expired: / / / / /
 Manufacturer: _____
 Storage Condition: Room Temp

JKZ
 MW #: 070820-5
 By: JKZ
 Matrix: aq
 Amount: 100 ml
 Lot #: _____

Component	Comment	Standard	Concentration
Cr ⁶⁺ low Calib stock	2.0 ml diluted to 100 ml w/ DI H ₂ O	JKZ 070820-1	20 ppb
Cr ⁶⁺ Buffer Soln	1.0 ml added after dilution to final volume	TUH 060815-4	

Comment: _____

Reagent: Cr⁶⁺ low Calib. Std. 50 ppb
 Date Received/Prepped: 08/20/07 / / / /
 Date Expired: / / / / /
 Manufacturer: _____
 Storage Condition: Room Temp

JKZ
 MW #: JKZ-070820-6
 By: JKZ
 Matrix: aq
 Amount: 100 ml
 Lot #: _____

Component	Comment	Standard	Concentration
Cr ⁶⁺ low Calib stock	5.0 ml diluted to 100 ml w/ DI H ₂ O	JKZ 070820-1	50 ppb
Cr ⁶⁺ Buffer Soln	1.0 ml added after dilution to final volume		

Comment: _____

Reagent Preparation Documentation

Page: 48

Reagent: Cr⁶⁺ low LCS Stock Soln 1 ppm
Date Received/Prepped: 08/20/07 1 1 1 1
Date Expired: 1 1 1 1
Manufacturer: _____
Storage Condition: Room Temp

MW #: JKZ 070820-7
By: JKZ
Matrix: aq
Amount: 100 ml
Lot #: _____

Component	Comment	Standard	Concentration
<u>HACH 1000 ppm exp. 01/10</u>	<u>100 µL in 100 mL DI H₂O</u>	<u>R201090</u>	<u>1 ppm</u>

Comment: _____

Reagent: Cr⁶⁺ low working std. soln 2 ppb
Date Received/Prepped: 08/20/07 1 1 1 1
Date Expired: 1 1 1 1
Manufacturer: _____
Storage Condition: Room Temp

MW #: JKZ 070820-8
By: JKZ
Matrix: aq 100 ml
Amount: _____
Lot #: _____

Component	Comment	Standard	Concentration
<u>Cr⁶⁺ low LCS stock (JKZ 070820-7)</u>	<u>200 µL into ~ 90 mL DI H₂O Bring to 100 mL final vol w/ DI H₂O</u>	<u>JKZ 070820-7</u>	<u>2 ppb</u>
<u>Cr⁶⁺ Buffer</u>	<u>1 mL added after soln at final volume</u>		

Comment: _____

Reagent: Cr⁶⁺ Buffer Soln
Date Received/Prepped: 05/14/07 1 1 1 1
Date Expired: 1 1 1 1
Manufacturer: _____
Storage Condition: Room Temp

MW #: TLH 060815-4
By: TLH
Matrix: aq
Amount: 100 ml
Lot #: _____

Component	Comment	Standard	Concentration
<u>Ammonium Sulfate</u>	<u>33 g dissolved in ~ 60 mL DI H₂O</u>	<u>R201208</u>	
<u>Ammonium Hydroxide</u>	<u>6.5 mL added bring to volume w/ DI H₂O</u>	<u>R201403</u>	

Comment: _____



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CERTIFICATE OF ANALYSIS

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fax: 732.931.1906
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 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

Reagent Documentation

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

Reagent #: 201630
 By: GH
 Matrix: ag
 Amount: 125ml
 Lot #: C47613

Component	Comment	Standard	Concentration
	AT 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: GH
 Matrix: ag
 Amount: 125ml
 Lot #: 629323

Component	Comment	Standard	Concentration
	HP # 10-CN-M		

Comment:

Reagent: Chromium +6 (Cr+6) 1000ppm
 Date Received: 5/11/07
 Date Expired: 6/1/08
 Manufacturer: Inorganic Ventures
 Storage Condition:

Reagent #: 201632
 By: WBH
 Matrix: AR
 Amount: 125ml
 Lot #: Z-CR02152

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

Comment: