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Level IV Data Package

MWH Group 203814

Method: 300.0 CLO3

Sample No.:

2705080516

2705080517

DBP QC Checklist

Analysis Date: 5-10-07 Analyst: Paj

QC'd by IN Date 10 May 07

Instrument: IC 12

Calibration including QCS(Secondary Source)

Correlation Coefficient of calibration curve for linear curve is 0.995 or better. (0.99 for quadratic)
 CLO2 CLO3 BR

Initial QC Check Samples (MCV, CCB, MBLANK, MRL) to be analyzed with every batch (up to 20 samples) or part thereof

MCV is analyzed before samples:
 CLO2/CLO3: 90-110% (180-220ppb) BR: 90-110% (90-110ppb)

CCB is analyzed before samples and after MCV and HCV

MLBANK is analyzed before samples. CLO2/CLO3 BR, if present, is \leq half of the MRL.

CLO2: MRL at 10ppb is within 75%-125% (7.5-12.5ppb)

CLO3: MRL at 10ppb is within 75%-125% (7.5-12.5ppb)

BR: MRL at 5.0ppb is within 75%-125% (3.75-6.25ppb)

LCS/LCSD: Accepted criteria are between 90-110% recovery

CLO2: 180-220ppb for 200ppb

CLO3: 180-220ppb for 200ppb

BR: 90-110ppb for 100ppb

One pair analyzed per batch (up to 20 samples) or part thereof

MS/MSD: Acceptance criteria are between 75%-125% recovery.

CLO2: 75-125ppb for 100ppb spike

CLO3: 75-125ppb for 100ppb spike

BR: 37.5-62.5ppb for 50ppb spike

RPD between MS/MSD is within 15%

One pair, and one MS is analyzed per batch (up to 20 samples) or part thereof

Continuing Calibration Verification (MCV and HCV) are required

MCV recovery is between 90-110%

CLO2 (180-220ppb)

CLO3 (180-220ppb)

BR (90-110ppb)

HCV recovery is between 90-110%

CLO2 (720-880ppb)

CLO3 (720-880ppb)

BR (360-440ppb)

Samples

All samples for CLO3 and BR are analyzed within 28 days of collection.

All samples for CLO2 are analyzed within 14 days of collection.

QIR

QIR needed for failed QC

QIR needed for samples analyzed outside of hold time

No.	Sample Name	Comment	Time	Dil.Fac.	Amount ppb CLO3 CD 1	
1,	autocal1,		05/01/07 10:54,	1.0,	n.a.	
2,	autocal2,	RAJA060520-3	05/01/07 11:19,	1.0,	10.1329	
3,	autocal3,	RAJA060520-4	05/01/07 11:45,	1.0,	19.4092	
4,	autocal4,	RAJA060520-5	05/01/07 12:10,	1.0,	100.8718	
5,	autocal5,	RAJA060520-6	05/01/07 12:36,	1.0,	199.5885	
6,	autocal6,	RAJA060520-7	05/01/07 13:01,	1.0,	399.981	
7,	autocal7,	RAJA060520-8	05/01/07 13:26,	1.0,	800.0166	
8,	WASH,		05/10/07 21:08,	1.0,	n.a.	
9,	MCV,		05/10/07 21:33,	1.0,	199.7853	99.9%
10,	CCB,		05/10/07 21:59,	1.0,	n.a.	
11,	MRLCHK,		05/10/07 22:24,	1.0,	10.2958	100% ✓
12,	MBLK,		05/10/07 22:49,	1.0,	n.a.	
13,	LCS1,		05/10/07 23:15,	1.0,	200.5966	100% ✓
14,	LCS2,		05/10/07 23:40,	1.0,	194.0681	97.0% ✓
15,	2705020963_1/2,	BR	05/11/07 00:06,	2.0,	13.1085	
16,	2705040156,	BR	05/11/07 00:31,	1.0,	n.a.	
17,	2705040157,	BR	05/11/07 00:56,	1.0,	24.2053	
18,	2705040158,	BR	05/11/07 01:22,	1.0,	21.3573	
19,	2705040159,	BR	05/11/07 01:47,	1.0,	n.a.	
20,	2705070454_1/2,	CLO2	05/11/07 02:13,	2.0,	n.a.	
21,	2705070455_1/2,	CLO2	05/11/07 02:38,	2.0,	345.4803	
22,	2705080601,	CLO2/CLO3	05/11/07 03:03,	1.0,	86.9042	✓
23,	2705080636,	CLO2/CLO3	05/11/07 03:29,	1.0,	430.864	✓
24,	2705080636MS,		05/11/07 03:54,	1.0,	528.1494	97.3% ✓
25,	2705080636MSD,		05/11/07 04:19,	1.0,	520.4281	89.6% ✓
26,	2705090754,	CLO2/CLO3	05/11/07 04:45,	1.0,	31.1585	✓
27,	MCV,		05/11/07 05:10,	1.0,	200.1101	100%
28,	CCB,		05/11/07 05:36,	1.0,	n.a.	
29,	2705090973,	CLO2/CLO3	05/11/07 06:01,	1.0,	n.a. ✓	
30,	2705090973MS,		05/11/07 06:26,	1.0,	90.7377	90.7%
31,	2705090973MSD,		05/11/07 06:52,	1.0,	90.8997	90.9%
32,	2705080420-DNR,	CLO3	05/11/07 07:17,	1.0,	1032.996	
33,	2705080516_1/5,	CLO3	05/11/07 07:43,	5.0,	n.a. ✓	
34,	2705080517_1/5000-D	CLO3	05/11/07 08:08,	5000.0,	458528.6	
35,	2705091033,	CLO3	05/11/07 08:33,	1.0,	n.a. ✓	
36,	2705030184_1/5000,	CLO39056	05/11/07 08:59,	5000.0,	434317.4	✓
37,	2705080826_1/10000,	CLO39056	05/11/07 09:24,	10000.0,	6022807	✓
38,	2705090552,	CLO2	05/11/07 09:50,	1.0,	132.7659	
39,	2705090553,	CLO2	05/11/07 10:15,	1.0,	514.6359	
40,	2705090554,	CLO2	05/11/07 10:40,	1.0,	107.2314	
41,	HCV,		05/11/07 11:06,	1.0,	799.9812	100%
42,	CCB,		05/11/07 11:31,	1.0,	n.a.	

Sequence: 051007-DBP-IC12
Operator: raja

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Printed: 5/13/2007 5:55:57 PM

Title:
Datasource: IC-SERVER_local
Location: IC12\2007\MAY
Timebase: IC12
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Created: 5/8/2007 12:07:28 PM by raja
(Modified, not saved)

No.	Name	Comment	Dil. Factor	Sample ID	Type	Program
1	autocal1		1.0000		Standard	IC12 test Program
2	autocal2	RAJA060520-3	1.0000		Standard	IC12 test Program
3	autocal3	RAJA060520-4	1.0000		Standard	IC12 test Program
4	autocal4	RAJA060520-5	1.0000		Standard	IC12 test Program
5	autocal5	RAJA060520-6	1.0000		Standard	IC12 test Program
6	autocal6	RAJA060520-7	1.0000		Standard	IC12 test Program
7	autocal7	RAJA060520-8	1.0000		Standard	IC12 test Program
8	WASH		1.0000		Unknown	IC12 test Program
9	MCV		1.0000		Unknown	IC12 test Program
10	CCB		1.0000		Unknown	IC12 test Program
11	MRLCHK		1.0000		Unknown	IC12 test Program
12	MBLK		1.0000		Unknown	IC12 test Program
13	LCS1		1.0000		Unknown	IC12 test Program
14	LCS2		1.0000		Unknown	IC12 test Program
15	2705020963_1/2	BR	2.0000		Unknown	IC12 test Program
16	2705040156	BR	1.0000		Unknown	IC12 test Program
17	2705040157	BR	1.0000		Unknown	IC12 test Program
18	2705040158	BR	1.0000		Unknown	IC12 test Program
19	2705040159	BR	1.0000		Unknown	IC12 test Program
20	2705070454_1/2	CLO2	2.0000		Unknown	IC12 test Program
21	2705070455_1/2	CLO2	2.0000		Unknown	IC12 test Program
22	2705080601	CLO2/CLO3	1.0000		Unknown	IC12 test Program
23	2705080636	CLO2/CLO3	1.0000		Unknown	IC12 test Program
24	2705080636MS		1.0000		Unknown	IC12 test Program
25	2705080636MSD		1.0000		Unknown	IC12 test Program
26	2705090754	CLO2/CLO3	1.0000		Unknown	IC12 test Program
27	MCV		1.0000		Unknown	IC12 test Program
28	CCB		1.0000		Unknown	IC12 test Program
29	2705090973	CLO2/CLO3	1.0000		Unknown	IC12 test Program
30	2705090973MS		1.0000		Unknown	IC12 test Program
31	2705090973MSD		1.0000		Unknown	IC12 test Program
32	2705080420-DNR	CLO3	1.0000		Unknown	IC12 test Program
33	2705080516_1/5	CLO3	5.0000		Unknown	IC12 test Program
34	2705080517_1/5000-DNR	CLO3	5000.0000		Unknown	IC12 test Program
35	2705091033	CLO3	1.0000		Unknown	IC12 test Program
36	2705030184_1/5000	CLO39056	5000.0000		Unknown	IC12 test Program
37	2705080826_1/10000	CLO39056	10000.0000		Unknown	IC12 test Program
38	2705090552	CLO2	1.0000		Unknown	IC12 test Program
39	2705090553	CLO2	1.0000		Unknown	IC12 test Program
40	2705090554	CLO2	1.0000		Unknown	IC12 test Program
41	HCV		1.0000		Unknown	IC12 test Program
42	CCB		1.0000		Unknown	IC12 test Program

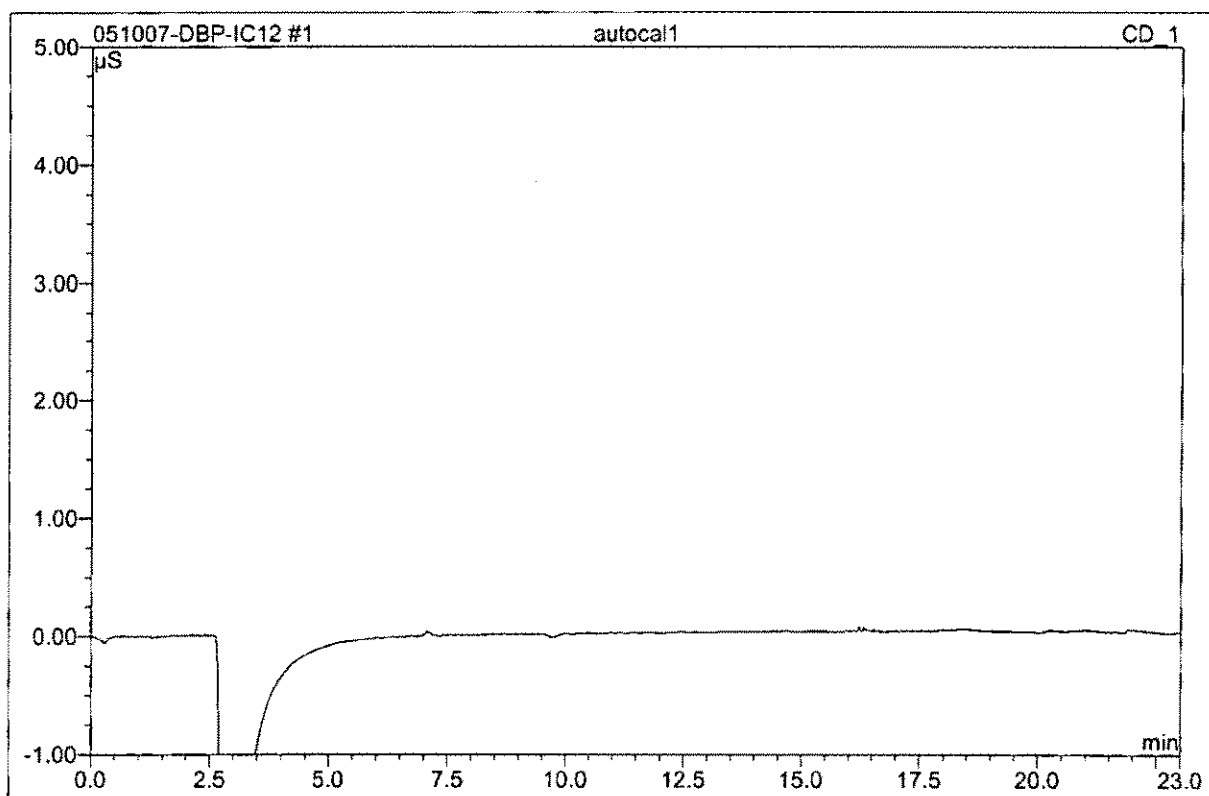
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Operator: raja

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Title:
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Created: 5/8/2007 12:07:28 PM by raja
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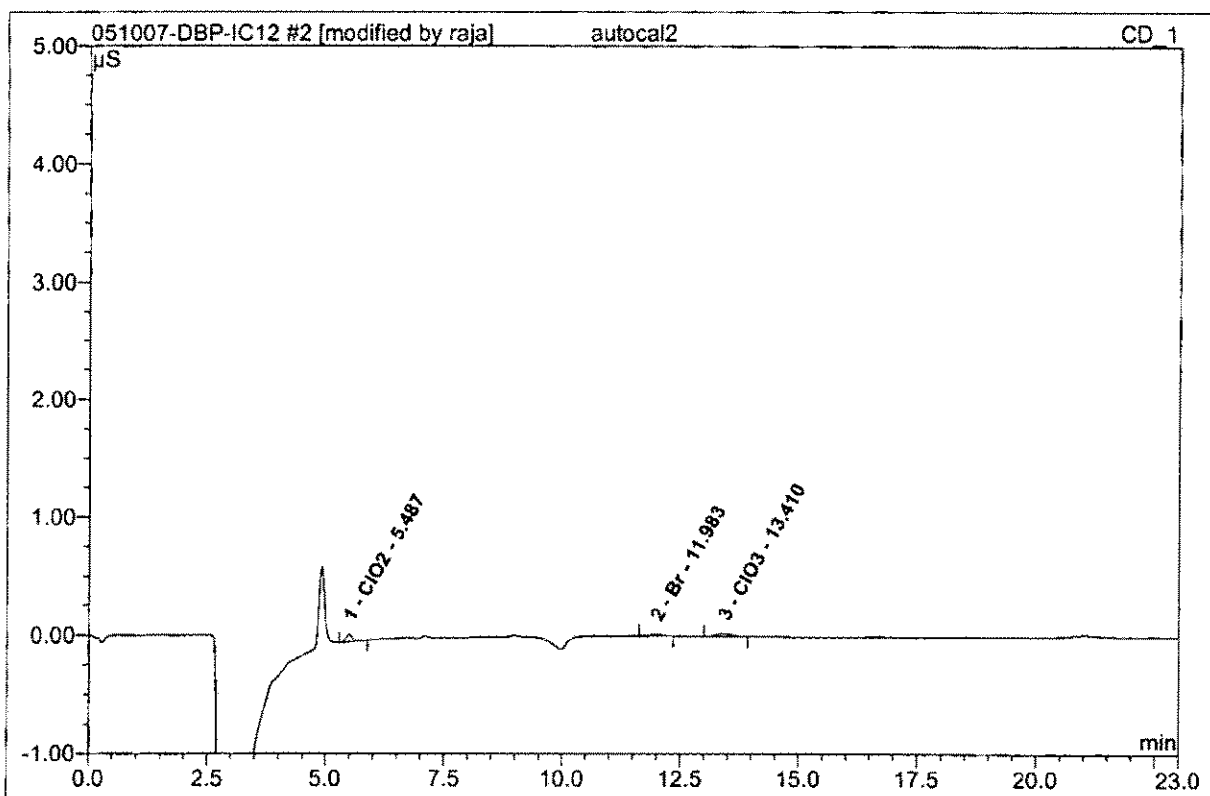
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1	autocal1	DBP-Method	Finished	5/1/2007 10:54:27 AM	raja
2	autocal2	DBP-Method	Finished	5/1/2007 11:19:51 AM	raja
3	autocal3	DBP-Method	Finished	5/1/2007 11:45:15 AM	raja
4	autocal4	DBP-Method	Finished	5/1/2007 12:10:39 PM	raja
5	autocal5	DBP-Method	Finished	5/1/2007 12:36:03 PM	raja
6	autocal6	DBP-Method	Finished	5/1/2007 1:01:26 PM	raja
7	autocal7	DBP-Method	Finished	5/1/2007 1:26:50 PM	raja
8	WASH	DBP-Method	Finished	5/10/2007 9:08:16 PM	raja
9	MCV	DBP-Method	Finished	5/10/2007 9:33:39 PM	raja
10	CCB	DBP-Method	Finished	5/10/2007 9:59:03 PM	raja
11	MRLCHK	DBP-Method	Finished	5/10/2007 10:24:27 PM	raja
12	MBLK	DBP-Method	Finished	5/10/2007 10:49:51 PM	raja
13	LCS1	DBP-Method	Finished	5/10/2007 11:15:14 PM	raja
14	LCS2	DBP-Method	Finished	5/10/2007 11:40:38 PM	raja
15	2705020963_1/2	DBP-Method	Finished	5/11/2007 12:06:02 AM	raja
16	2705040156	DBP-Method	Finished	5/11/2007 12:31:26 AM	raja
17	2705040157	DBP-Method	Finished	5/11/2007 12:56:49 AM	raja
18	2705040158	DBP-Method	Finished	5/11/2007 1:22:13 AM	raja
19	2705040159	DBP-Method	Finished	5/11/2007 1:47:37 AM	raja
20	2705070454_1/2	DBP-Method	Finished	5/11/2007 2:13:00 AM	raja
21	2705070455_1/2	DBP-Method	Finished	5/11/2007 2:38:24 AM	raja
22	2705080601	DBP-Method	Finished	5/11/2007 3:03:48 AM	raja
23	2705080636	DBP-Method	Finished	5/11/2007 3:29:11 AM	raja
24	2705080636MS	DBP-Method	Finished	5/11/2007 3:54:35 AM	raja
25	2705080636MSD	DBP-Method	Finished	5/11/2007 4:19:59 AM	raja
26	2705090754	DBP-Method	Finished	5/11/2007 4:45:22 AM	raja
27	MCV	DBP-Method	Finished	5/11/2007 5:10:46 AM	raja
28	CCB	DBP-Method	Finished	5/11/2007 5:36:10 AM	raja
29	2705090973	DBP-Method	Finished	5/11/2007 6:01:33 AM	raja
30	2705090973MS	DBP-Method	Finished	5/11/2007 6:26:57 AM	raja
31	2705090973MSD	DBP-Method	Finished	5/11/2007 6:52:21 AM	raja
32	2705080420-DNR	DBP-Method	Finished	5/11/2007 7:17:44 AM	raja
33	2705080516_1/5	DBP-Method	Finished	5/11/2007 7:43:08 AM	raja
34	2705080517_1/5000-DNR	DBP-Method	Finished	5/11/2007 8:08:29 AM	raja
35	2705091033	DBP-Method	Finished	5/11/2007 8:33:52 AM	raja
36	2705030184_1/5000	DBP-Method	Finished	5/11/2007 8:59:16 AM	raja
37	2705080826_1/10000	DBP-Method	Finished	5/11/2007 9:24:40 AM	raja
38	2705090552	DBP-Method	Finished	5/11/2007 9:50:03 AM	raja
39	2705090553	DBP-Method	Finished	5/11/2007 10:15:27 AM	raja
40	2705090554	DBP-Method	Finished	5/11/2007 10:40:51 AM	raja
41	HCV	DBP-Method	Finished	5/11/2007 11:06:15 AM	raja
42	CCB	DBP-Method	Finished	5/11/2007 11:31:38 AM	raja

1 autocal1			
Sample Name:	autocal1	Injection Volume:	1000.0
Vial Number:	334	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/1/2007 10:54	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



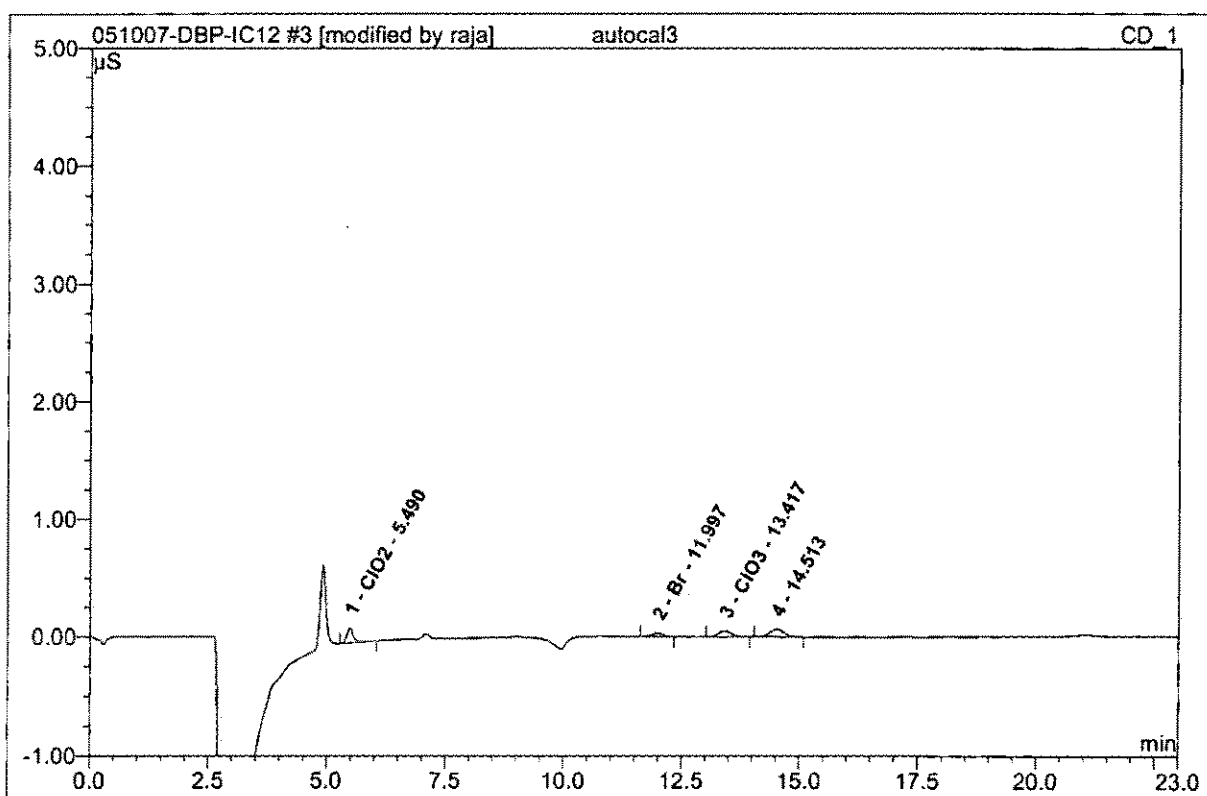
No.	Ret.Time min	Peak Name	Height μS	Area $\mu\text{S}\cdot\text{min}$	Rel.Area %	Amount ppb	Type
Total:			0.000	0.000	0.00	0.000	

2 autocal2			
RAJA060520-3			
Sample Name:	autocal2	Injection Volume:	1000.0
Vial Number:	335	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/1/2007 11:19	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



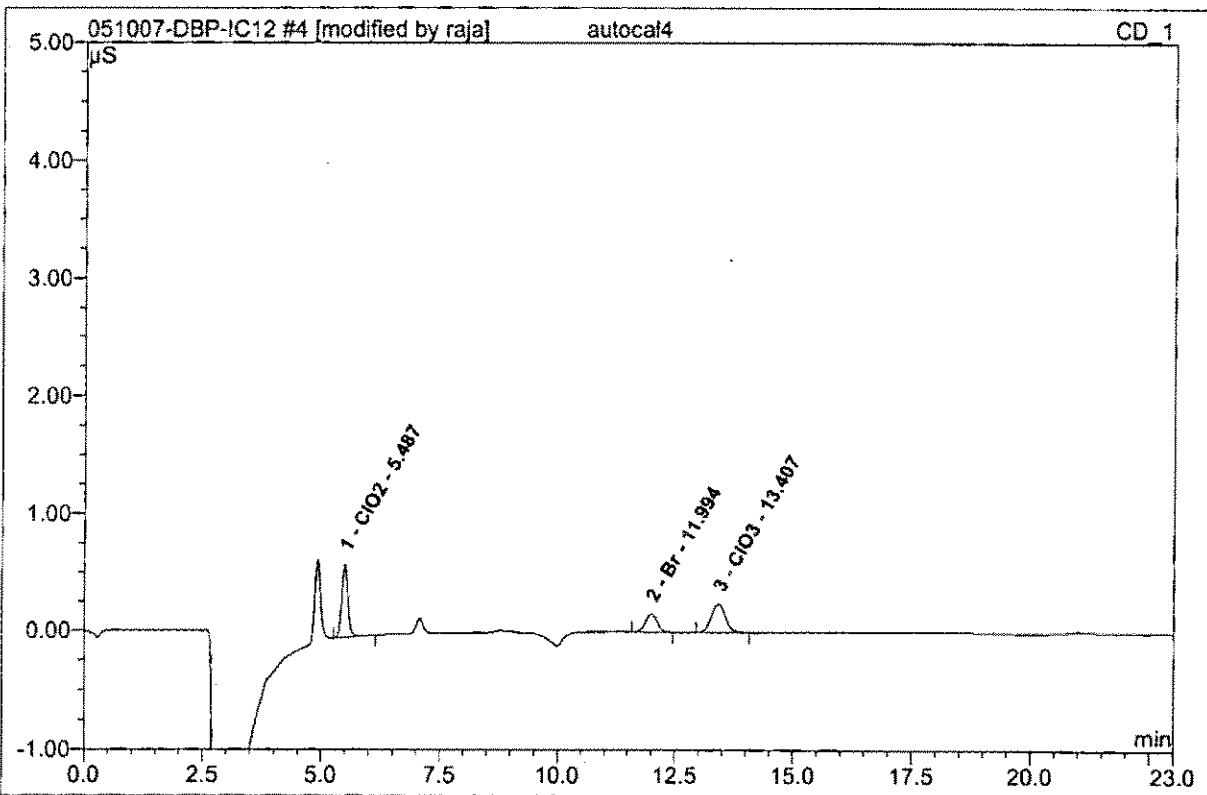
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.49	ClO2	0.064	0.010	42.54	9.926	BMB
2	11.98	Br	0.016	0.005	20.78	5.721	BMB*
3	13.41	ClO3	0.025	0.009	36.68	10.133	BMB*
Total:			0.105	0.024	100.00	25.780	

3 autocal3			
RAJA060520-4			
Sample Name:	autocal3	Injection Volume:	1000.0
Vial Number:	336	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/1/2007 11:45	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



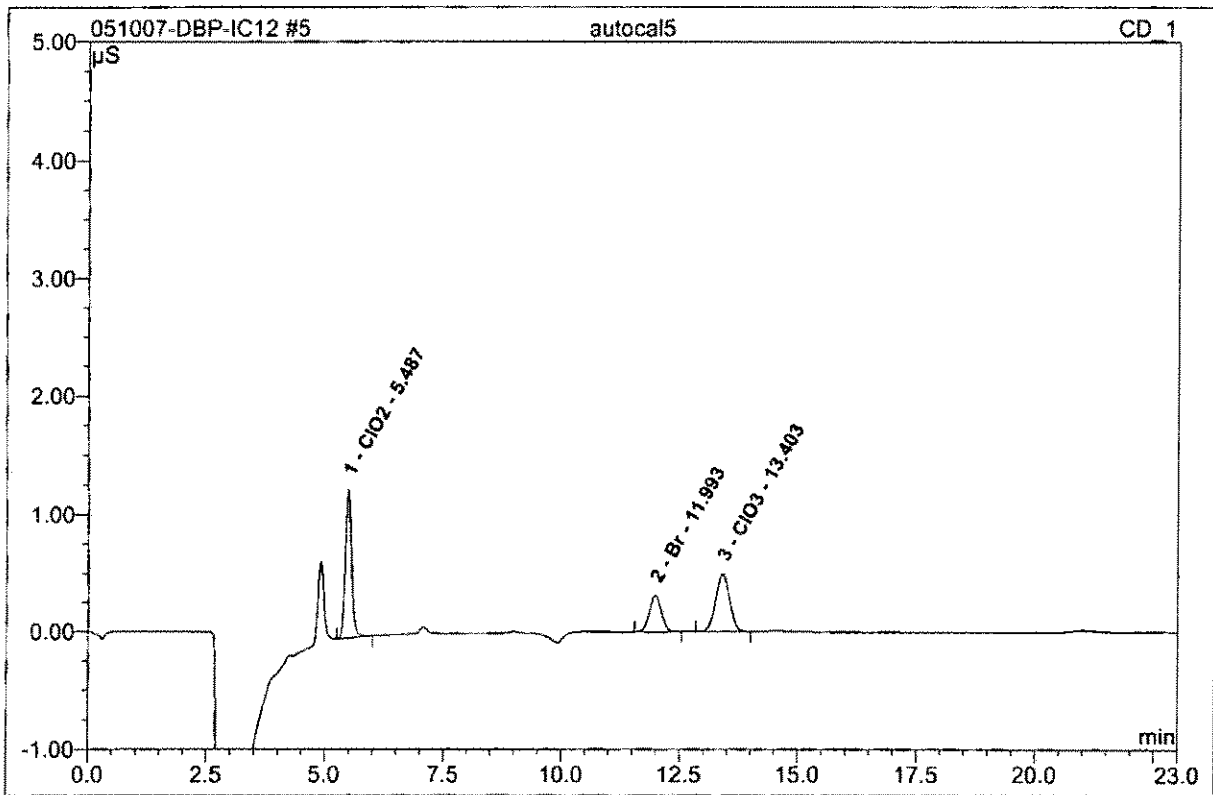
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.49	ClO2	0.126	0.020	29.66	20.367	BMB
2	12.00	Br	0.031	0.009	13.08	9.977	BMB*
3	13.42	ClO3	0.048	0.017	24.43	19.409	BMB*
4	14.51	n.a.	0.062	0.022	32.84	n.a.	BMB*
Total:			0.267	0.068	100.00	49.753	

4 autocal4			
RAJA060520-5			
Sample Name:	autocal4	Injection Volume:	1000.0
Vial Number:	337	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/1/2007 12:10	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



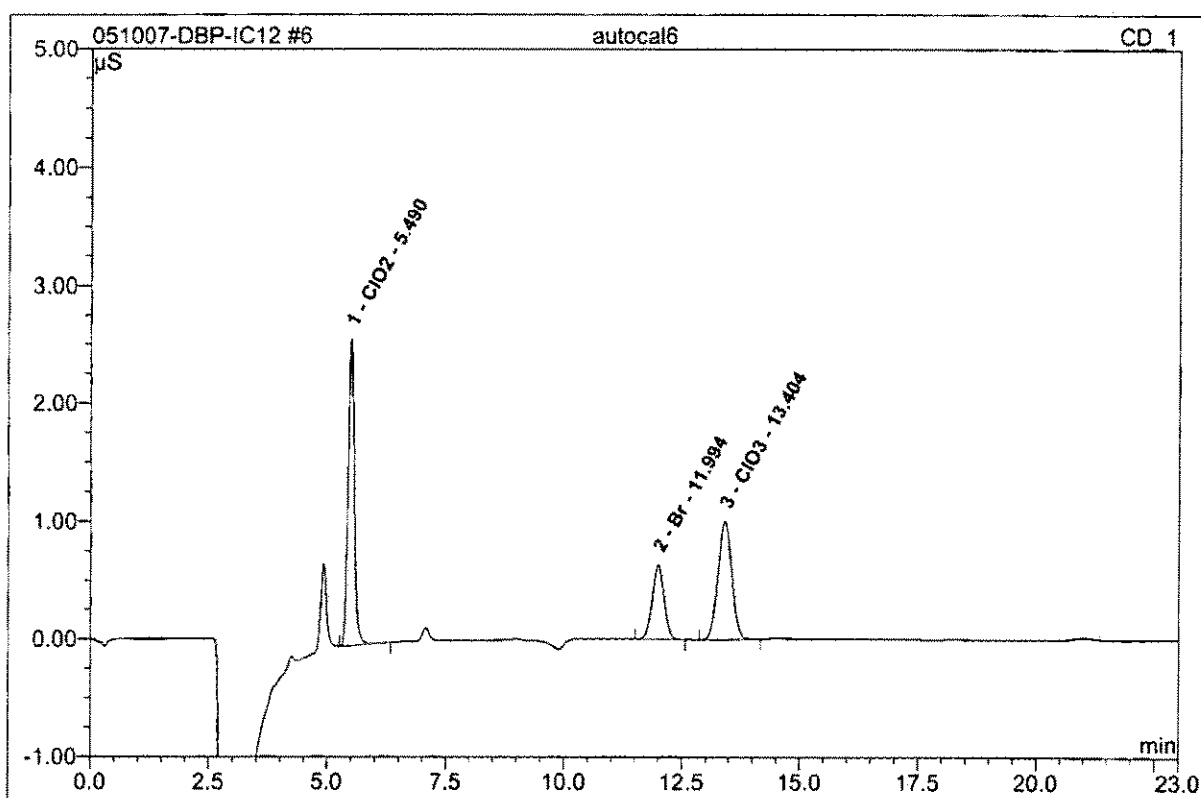
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.49	ClO2	0.628	0.097	42.52	99.774	BMB
2	11.99	Br	0.155	0.045	19.79	49.048	BMB*
3	13.41	ClO3	0.245	0.086	37.69	100.872	BMB*
Total:			1.027	0.228	100.00	249.694	

5 autocal5			
RAJA060520-6			
Sample Name:	autocal5	Injection Volume:	1000.0
Vial Number:	338	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/1/2007 12:36	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



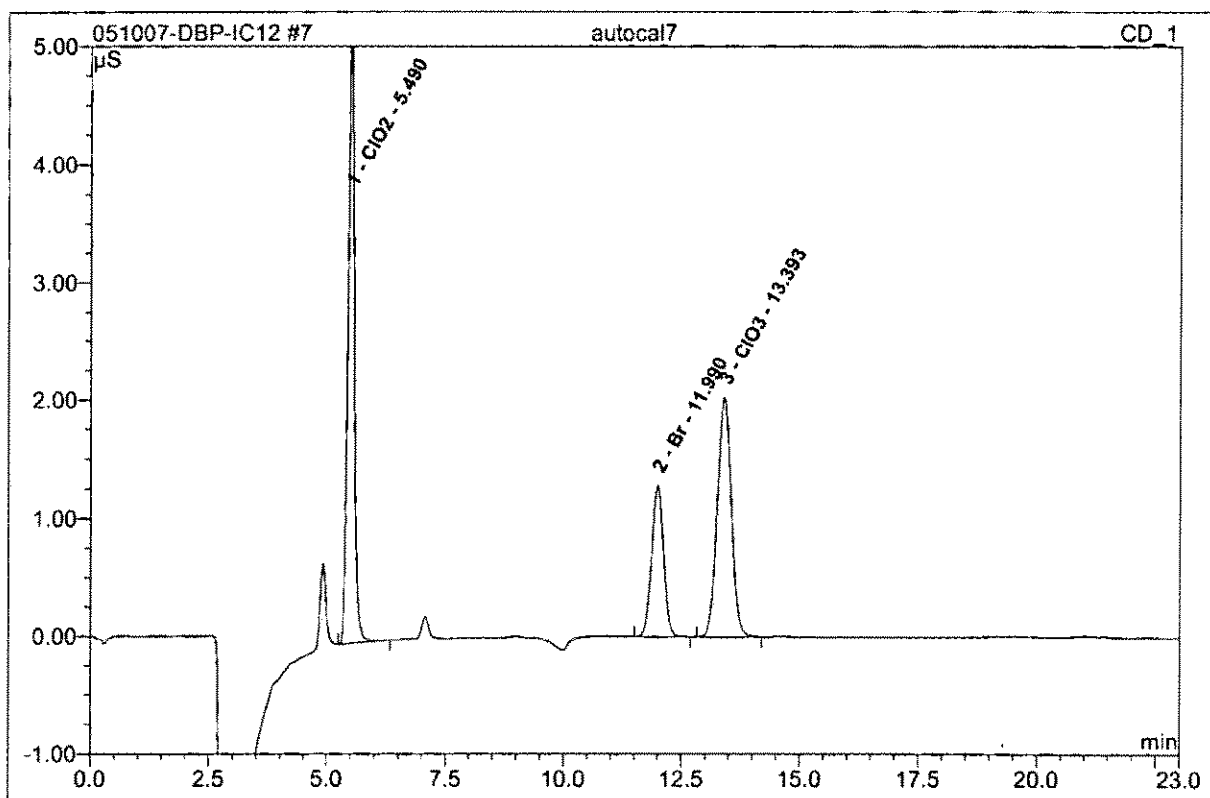
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount ppb	Type
1	5.49	ClO2	1.273	0.195	42.58	199.693	BMB
2	11.99	Br	0.314	0.092	20.19	99.881	BMB
3	13.40	ClO3	0.495	0.171	37.23	199.588	BMB
Total:			2.082	0.458	100.00	499.163	

6 autocal6			
RAJA060520-7			
Sample Name:	autocal6	Injection Volume:	1000.0
Vial Number:	334	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/1/2007 13:01	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



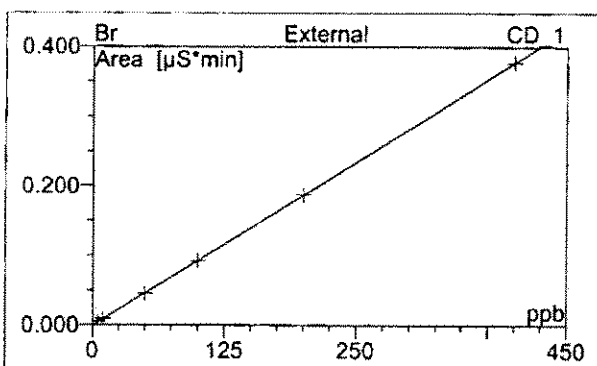
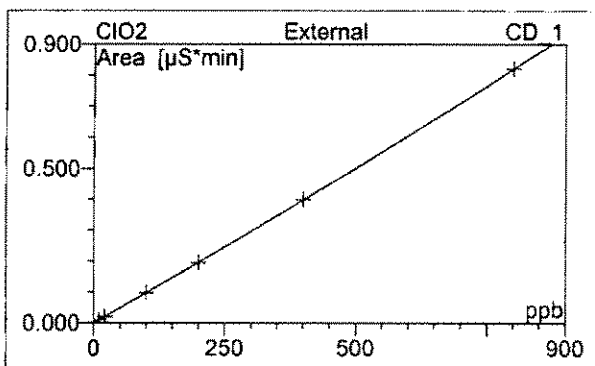
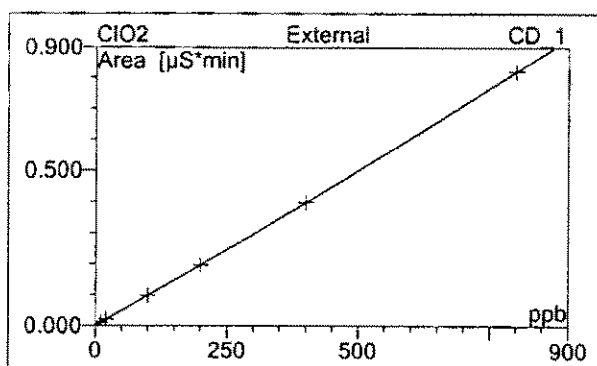
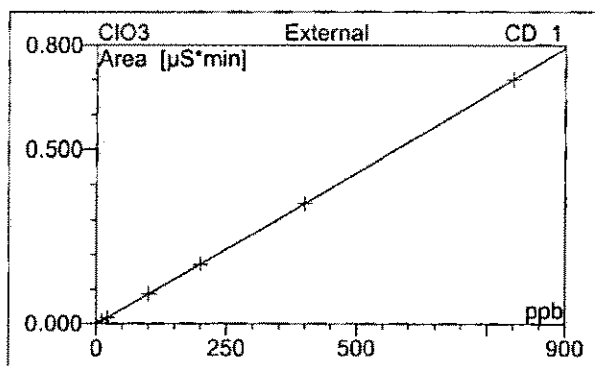
No.	Ret.Time min	Peak Name	Height μS	Area $\mu\text{S} \cdot \text{min}$	Rel.Area %	Amount ppb	Type
1	5.49	CIO2	2.606	0.397	42.77	400.286	BMB
2	11.99	Br	0.634	0.187	20.13	200.466	BMB
3	13.40	CIO3	1.002	0.345	37.10	399.981	BMB
Total:			4.242	0.929	100.00	1000.733	

7 autocal7			
RAJA060520-8			
Sample Name:	autocal7	Injection Volume:	1000.0
Vial Number:	334	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/1/2007 13:26	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



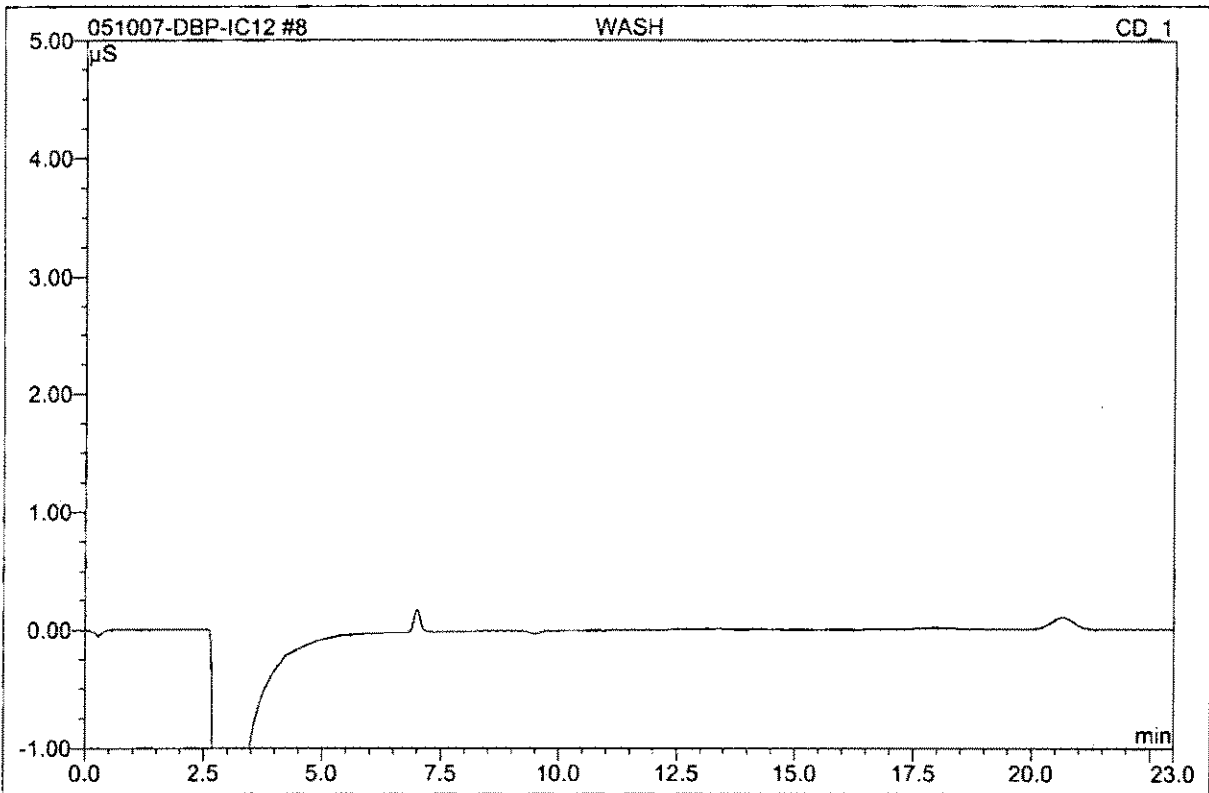
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount ppb	Type
1	5.49	CIO2	5.423	0.820	43.22	799.953	BMB
2	11.99	Br	1.278	0.377	19.86	399.907	BMB
3	13.39	CIO3	2.032	0.701	36.92	800.017	BMB
Total:			8.733	1.898	100.00	1999.877	

7 autocal7	
RAJA060520-8	
Sample Name: autocal7	Injection Volume: 1000.0
Vial Number: 334	Channel: CD_1
Sample Type: standard	Wavelength: n.a.
Control Program: IC12 test Program	Bandwidth: n.a.
Quantif. Method: DBP-Method	Dilution Factor: 1.0000
Recording Time: 5/1/2007 13:26	Sample Weight: 1.0000
Run Time (min): 23.00	Sample Amount: 1.0000



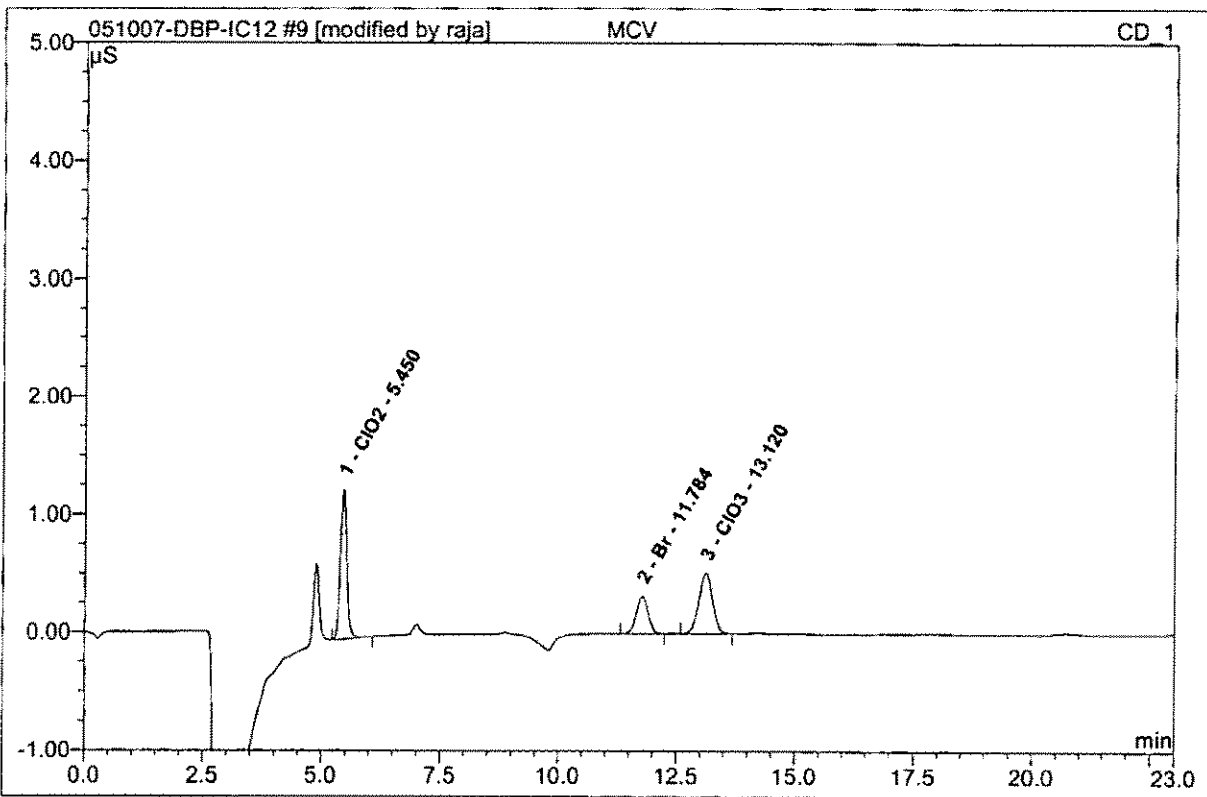
No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	5.49	ClO2	QOff	6	99.9837	0.0005	0.0010	0.0000
2	11.99	Br	QOff	6	99.9979	-0.0004	0.0009	0.0000
3	13.39	ClO3	QOff	6	99.9959	0.0000	0.0008	0.0000
Average:					99.9925	0.0000	0.0009	0.0000

8 WASH			
Sample Name:	WASH	Injection Volume:	1000.0
Vial Number:	336	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/10/2007 21:08	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



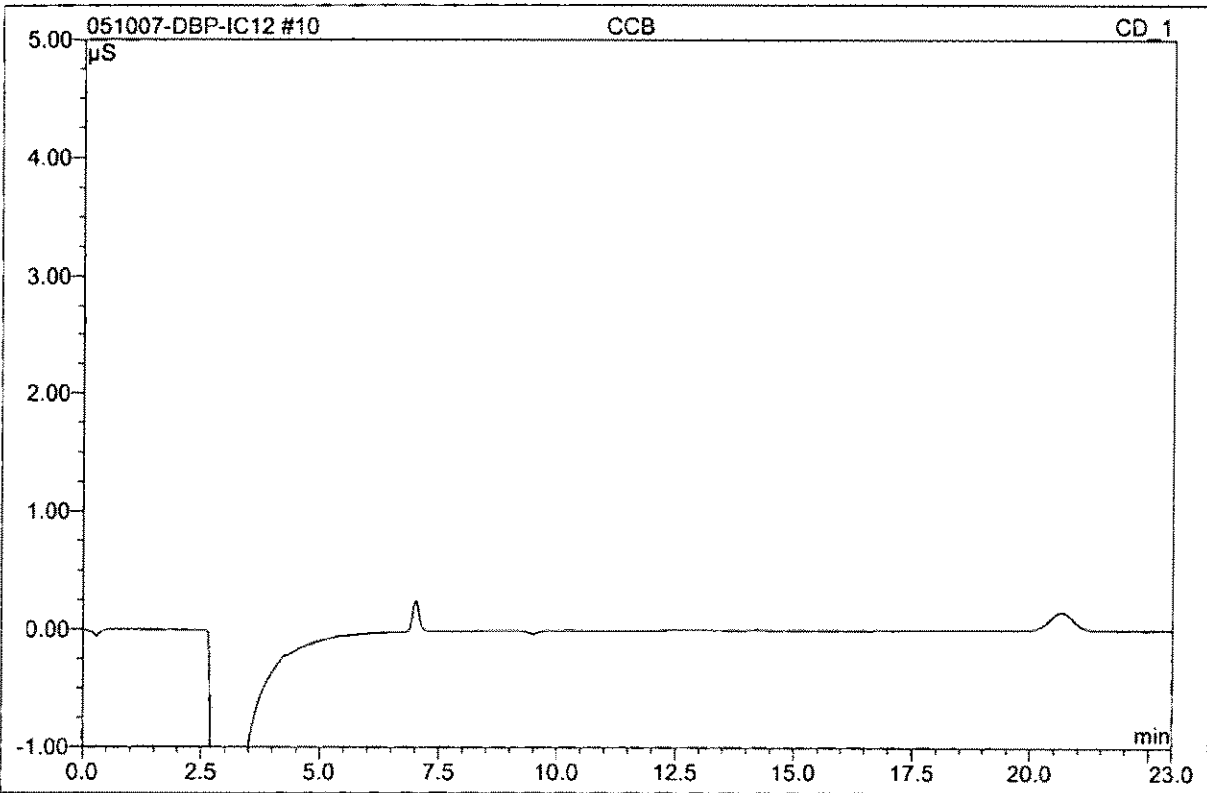
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
Total:			0.000	0.000	0.00	0.000	

9 MCV			
Sample Name:	MCV	Injection Volume:	1000.0
Vial Number:	337	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/10/2007 21:33	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



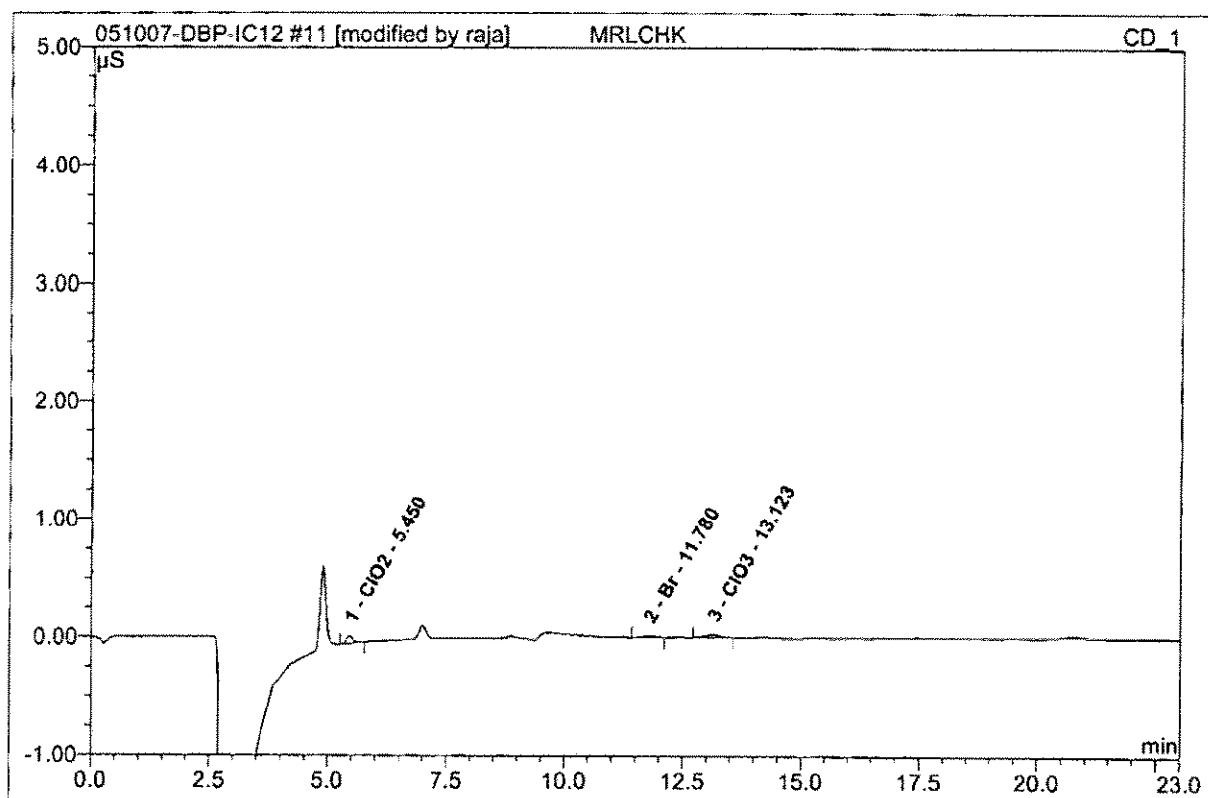
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.45	ClO2	1.268	0.196	42.67	200.557	BMB*
2	11.78	Br	0.318	0.093	20.15	99.923	BMB
3	13.12	ClO3	0.507	0.171	37.18	199.785	BMB
Total:			2.093	0.459	100.00	500.265	

10 CCB			
Sample Name:	CCB	Injection Volume:	1000.0
Vial Number:	336	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/10/2007 21:59	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



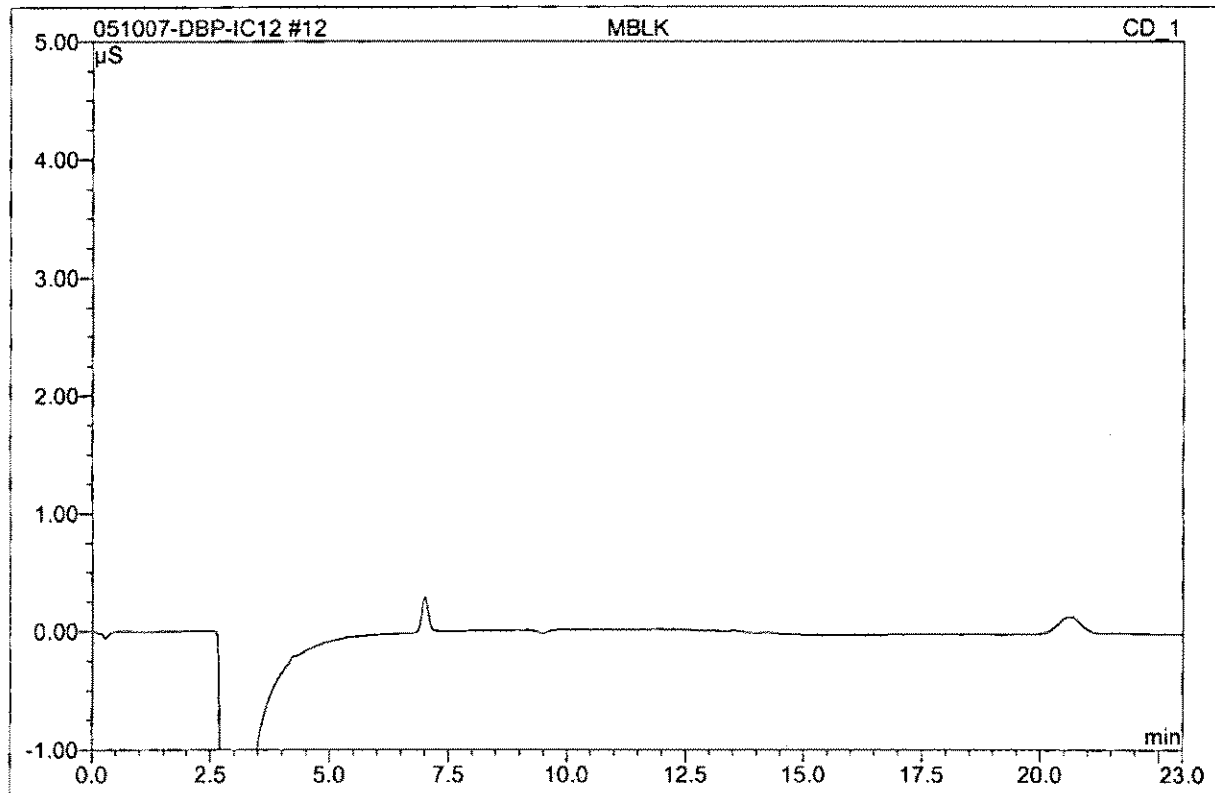
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount ppb	Type
Total:			0.000	0.000	0.00	0.000	

11 MRLCHK			
Sample Name:	MRLCHK	Injection Volume:	1000.0
Vial Number:	336	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/10/2007 22:24	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



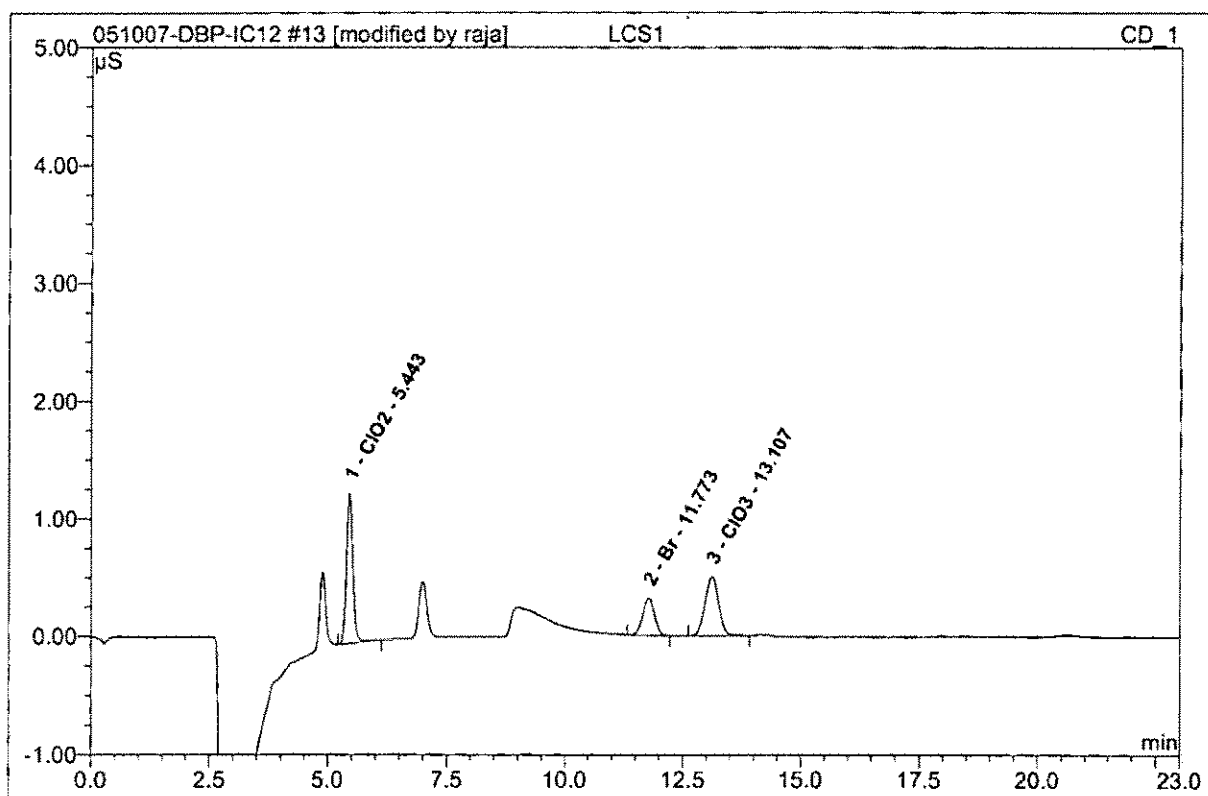
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.45	ClO2	0.064	0.010	43.18	9.740	BMB
2	11.78	Br	0.015	0.004	18.31	4.942	BMB*
3	13.12	ClO3	0.026	0.009	38.51	10.296	BMB
Total:			0.106	0.023	100.00	24.978	

12 MBLK			
Sample Name:	MBLK	Injection Volume:	1000.0
Vial Number:	336	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/10/2007 22:49	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



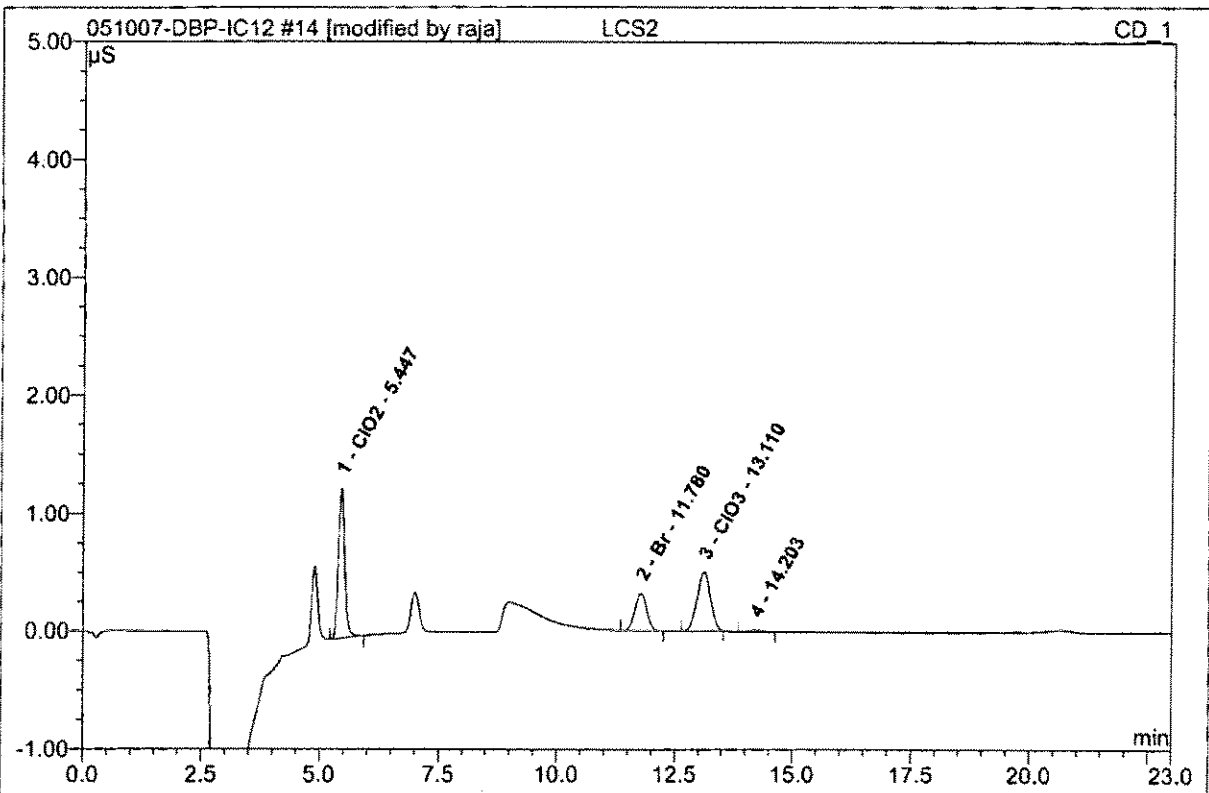
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
Total:			0.000	0.000	0.00	0.000	

13 LCS1			
Sample Name:	LCS1	Injection Volume:	1000.0
Vial Number:	522	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/10/2007 23:15	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



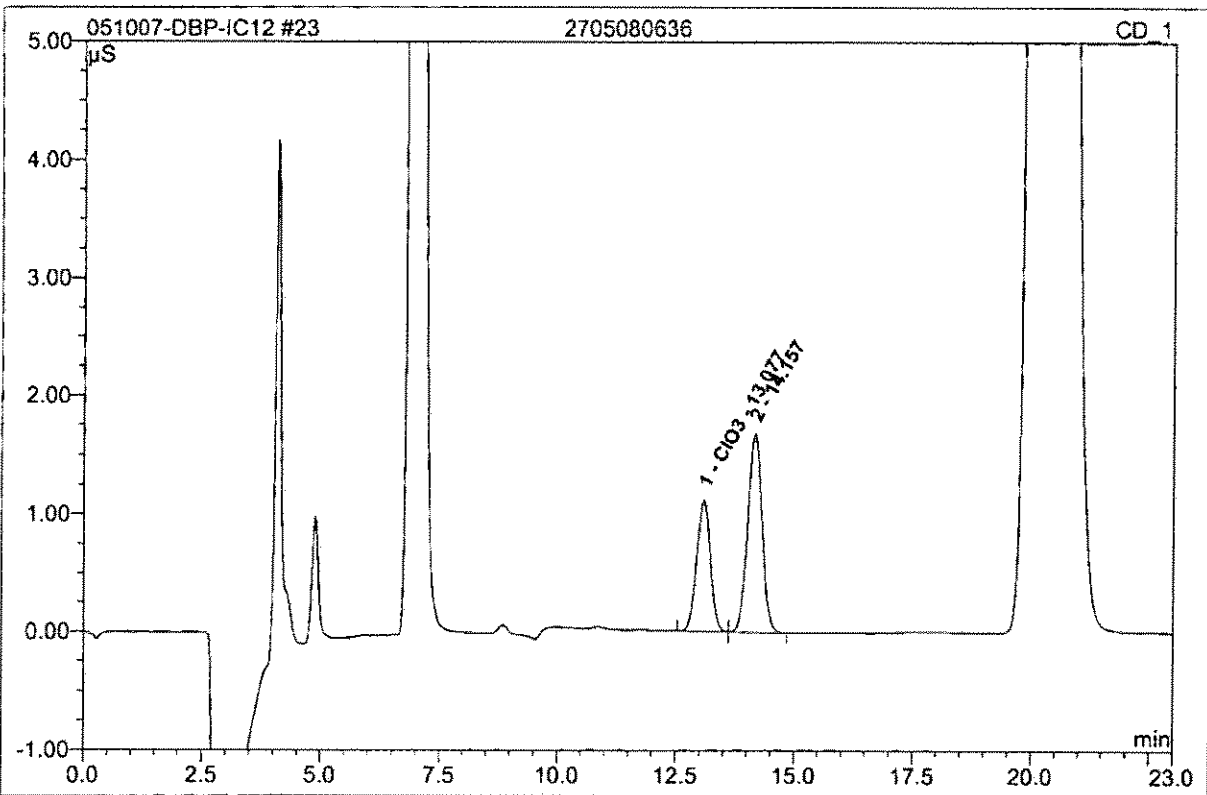
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.44	ClO2	1.279	0.200	43.16	204.648	BMB*
2	11.77	Br	0.317	0.092	19.83	99.243	BMB
3	13.11	ClO3	0.502	0.171	37.00	200.597	BMB
Total:			2.099	0.463	100.00	504.487	

14 LCS2			
Sample Name:	LCS2	Injection Volume:	1000.0
Vial Number:	523	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/10/2007 23:40	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



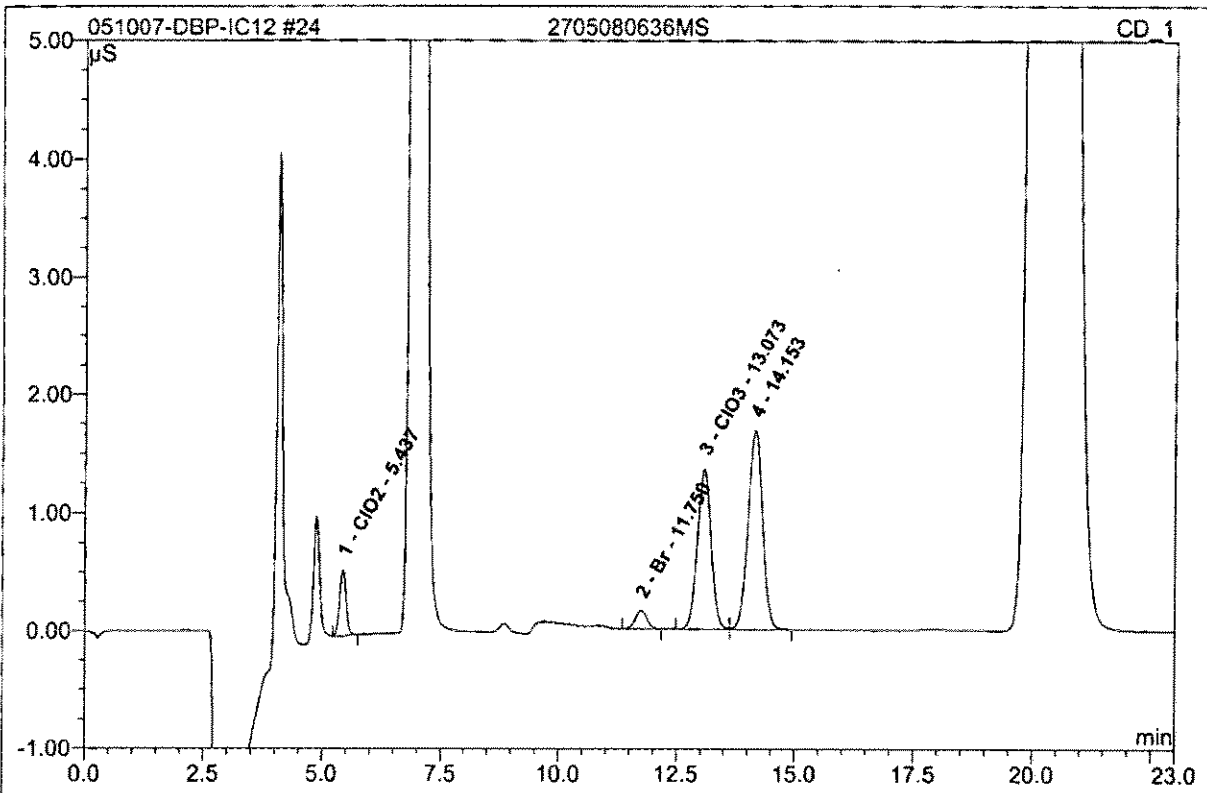
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.45	ClO2	1.279	0.199	42.99	203.513	BMB*
2	11.78	Br	0.318	0.092	19.96	99.717	BMB
3	13.11	ClO3	0.499	0.166	35.85	194.068	BMB
4	14.20	n.a.	0.016	0.006	1.20	n.a.	BMB
Total:			2.113	0.463	100.00	497.298	

23 2705080636			
CLO2/CLO3			
Sample Name:	2705080636	Injection Volume:	1000.0
Vial Number:	580	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/11/2007 3:29	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



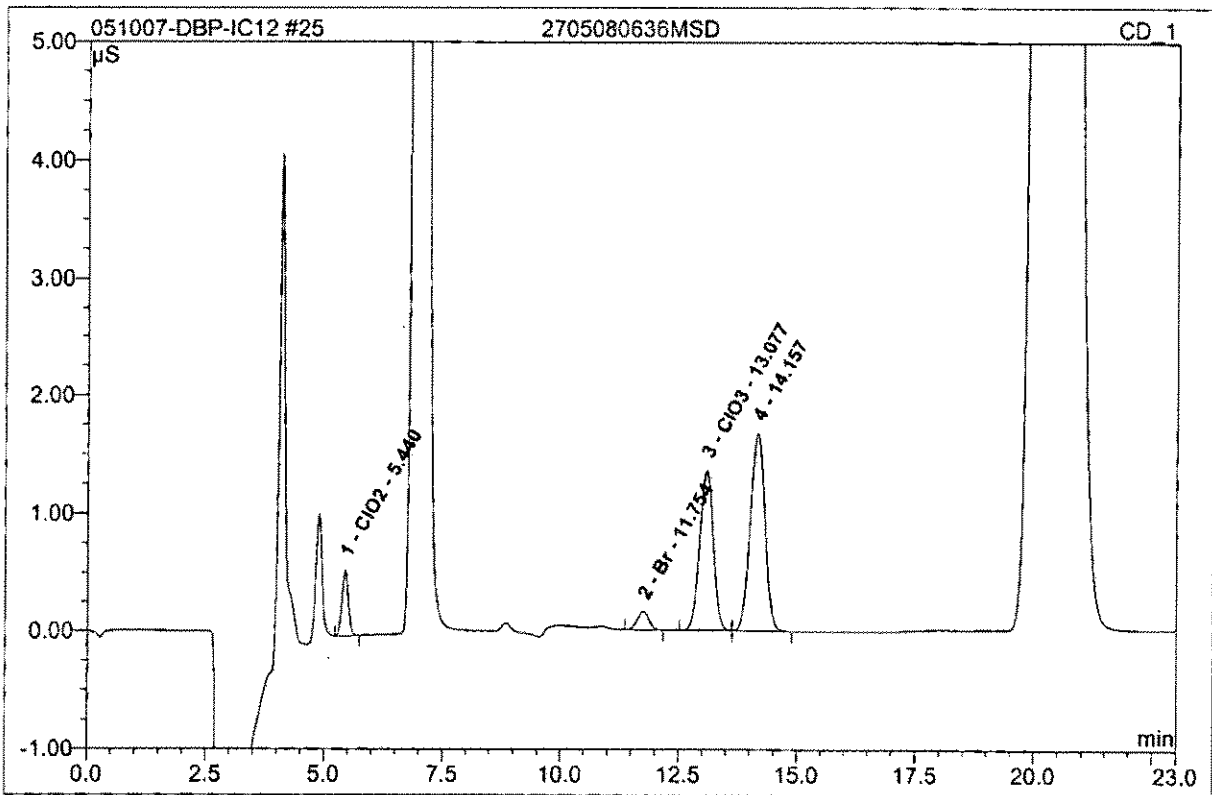
No.	Ret.Time min	Peak Name	Height μ S	Area μ S*min	Rel.Area %	Amount ppb	Type
1	13.08	ClO3	1.114	0.372	38.47	430.864	BMB
2	14.16	n.a.	1.679	0.594	61.53	n.a.	BMB
Total:			2.792	0.966	100.00	430.864	

24 2705080636MS			
Sample Name:	2705080636MS	Injection Volume:	1000.0
Vial Number:	582	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/11/2007 3:54	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



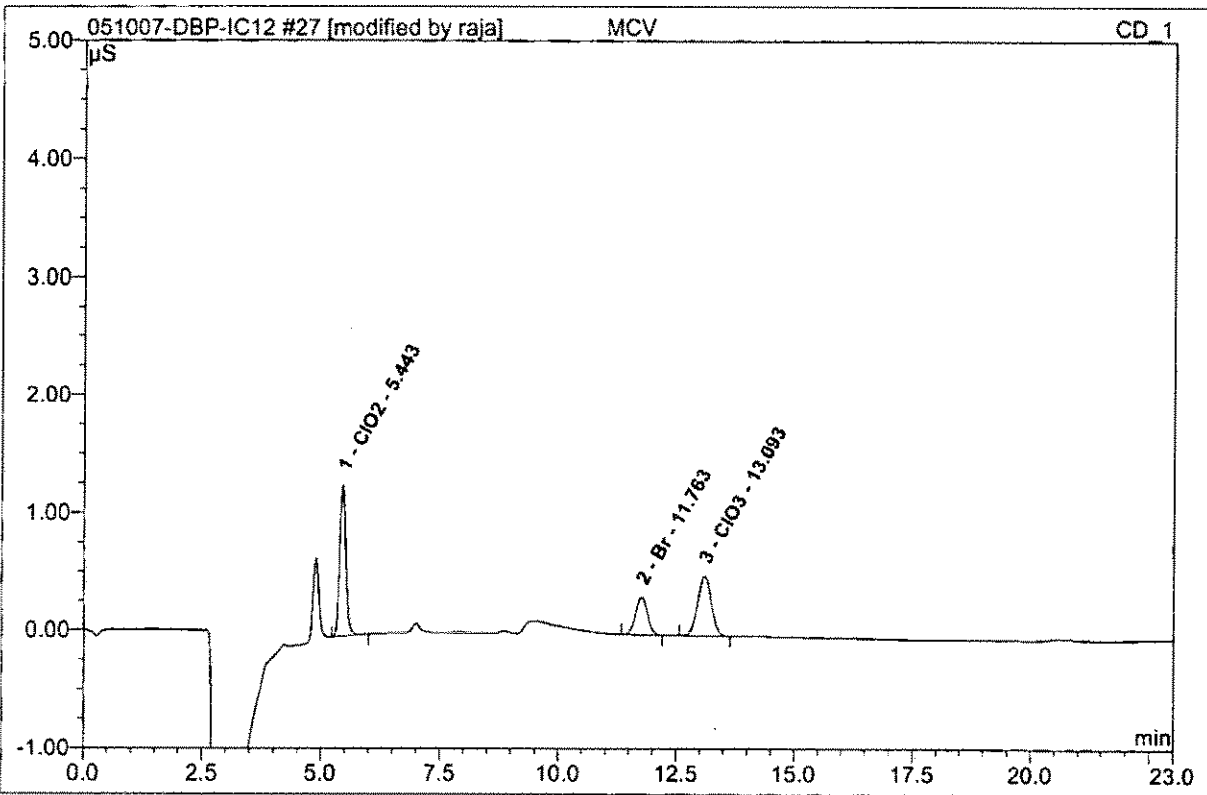
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount ppb	Type
1	5.44	ClO2	0.565	0.090	7.51	92.382	BMB
2	11.75	Br	0.155	0.044	3.72	48.280	BMB
3	13.07	ClO3	1.358	0.457	38.33	528.149	BM
4	14.15	n.a.	1.684	0.602	50.43	n.a.	MB
Total:			3.762	1.193	100.00	668.812	

25 2705080636MSD			
Sample Name:	2705080636MSD	Injection Volume:	1000.0
Vial Number:	583	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/11/2007 4:19	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



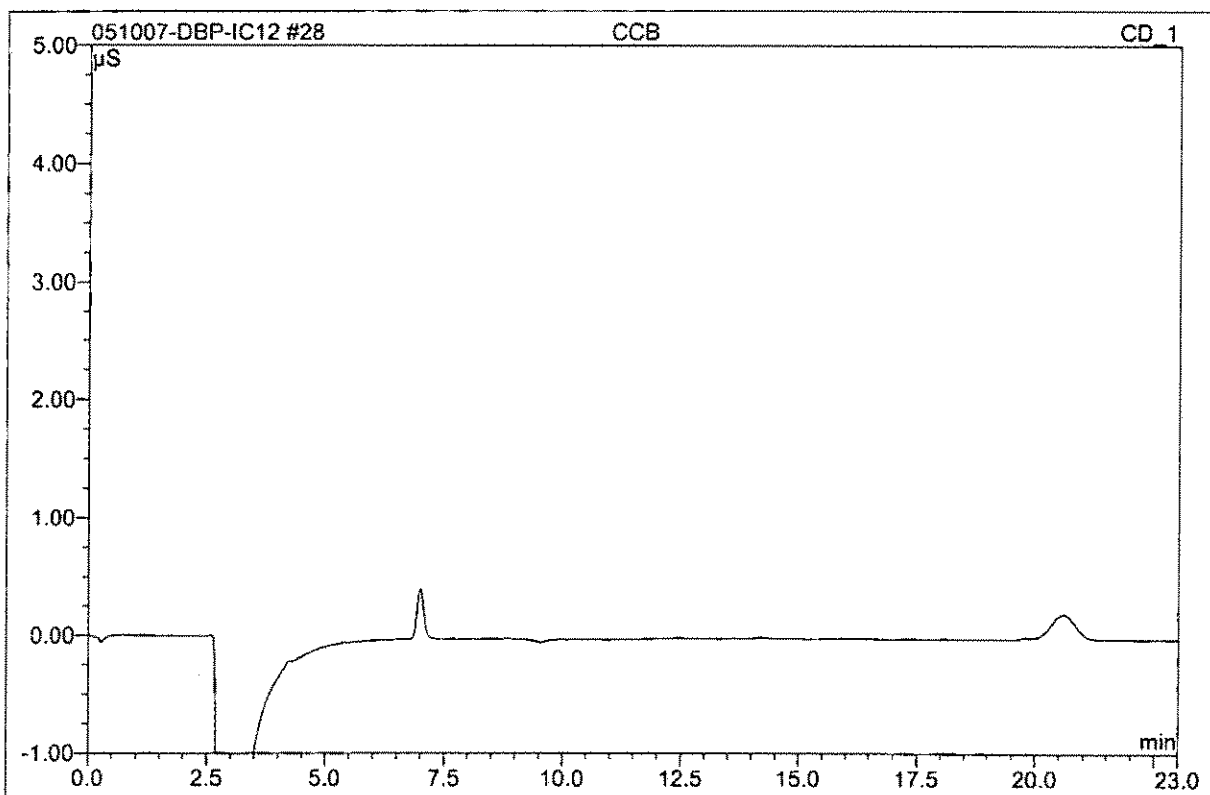
No.	Ret.Time min	Peak Name	Height μ S	Area μ S*min	Rel.Area %	Amount ppb	Type
1	5.44	ClO2	0.566	0.090	7.59	92.315	BMB
2	11.75	Br	0.154	0.044	3.74	47.955	BMB
3	13.08	ClO3	1.352	0.451	38.20	520.428	BMb
4	14.16	n.a.	1.679	0.596	50.47	n.a.	bMB
Total:			3.751	1.180	100.00	660.698	

27 MCV			
Sample Name:	MCV	Injection Volume:	1000.0
Vial Number:	585	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/11/2007 5:10	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



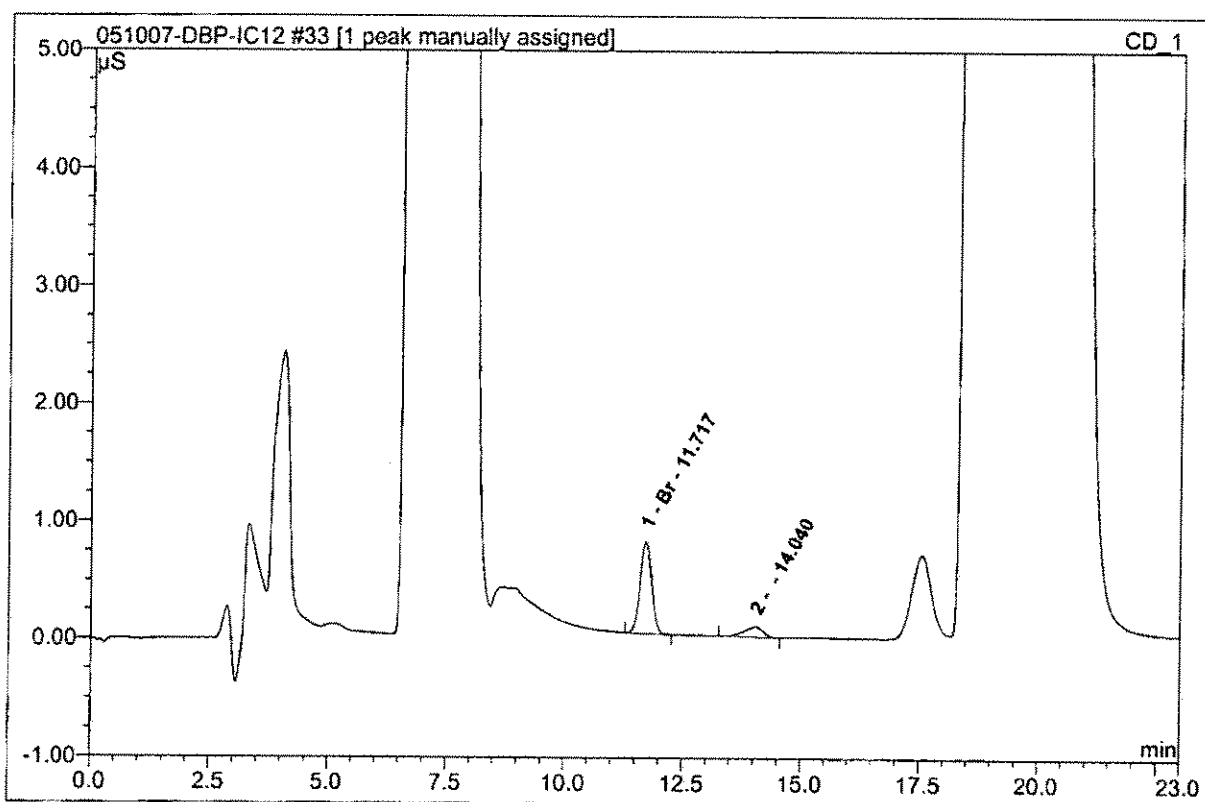
No.	Ret.Time min	Peak Name	Height μS	Area $\mu\text{S} \cdot \text{min}$	Rel.Area %	Amount ppb	Type
1	5.44	CIO ₂	1.294	0.196	42.69	200.904	BMB*
2	11.76	Br	0.320	0.092	20.11	99.832	BMB
3	13.09	CIO ₃	0.509	0.171	37.20	200.110	BMB
Total:			2.122	0.460	100.00	500.846	

28 CCB			
Sample Name:	CCB	Injection Volume:	1000.0
Vial Number:	586	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/11/2007 5:36	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



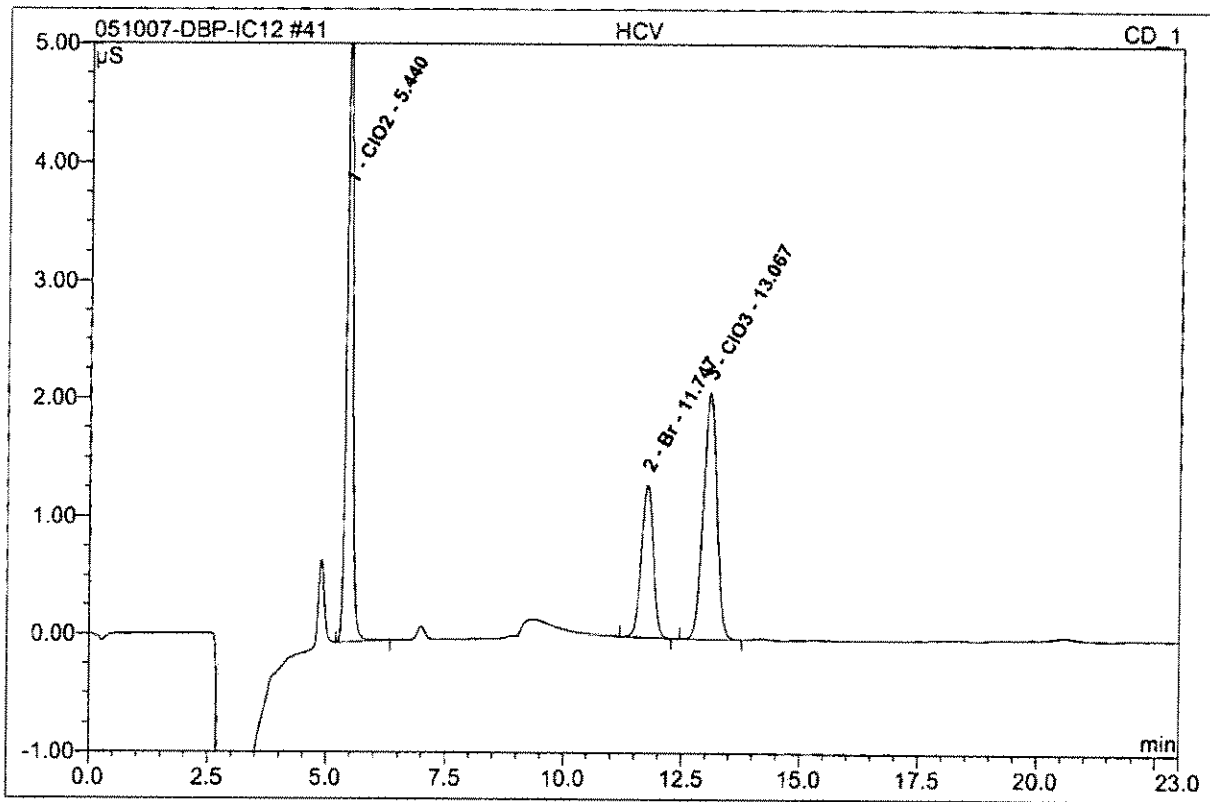
No.	Ret.Time min	Peak Name	Height μ S	Area μ S*min	Rel.Area %	Amount ppb	Type
Total:			0.000	0.000	0.00	0.000	

33 2705080516_1/5			
CLO3			
Sample Name:	2705080516_1/5	Injection Volume:	1000.0
Vial Number:	775	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	5.0000
Recording Time:	5/11/2007 7:43	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



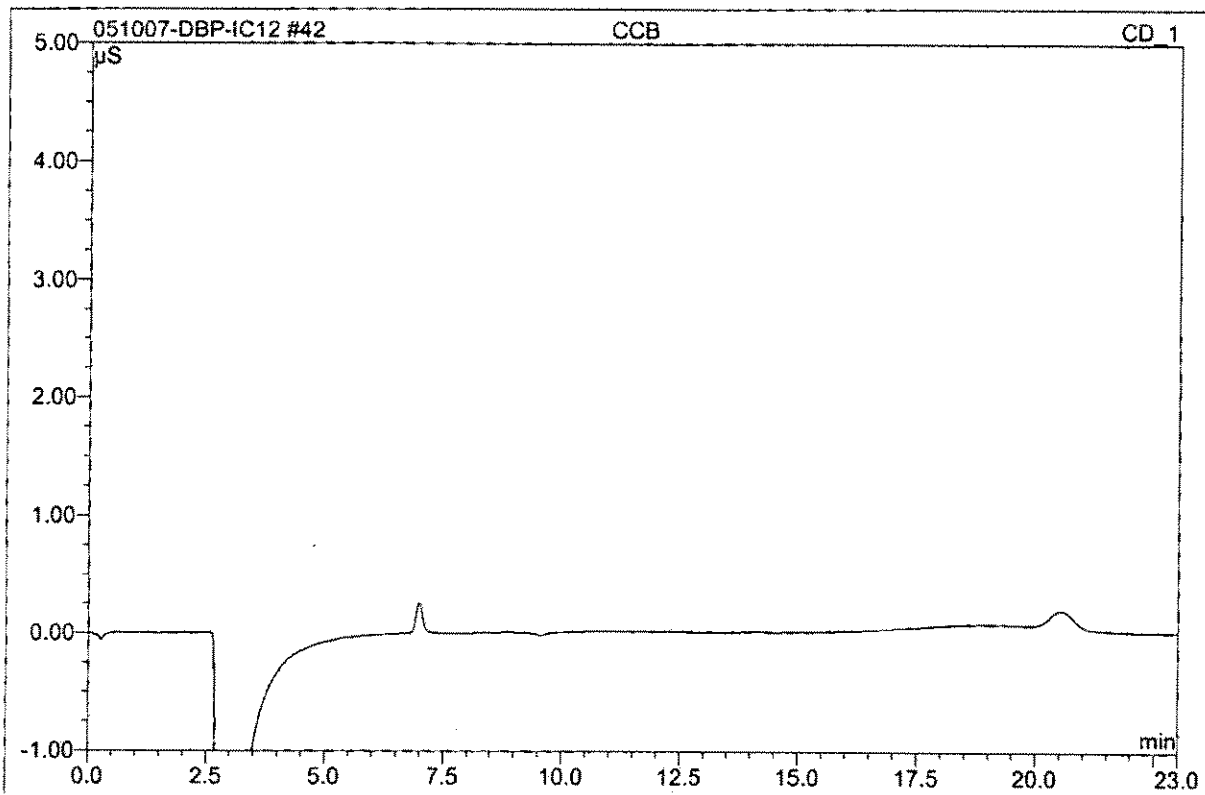
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount ppb	Type
1	11.72	Br	0.781	0.219	84.23	1172.622	BMB
2	14.04		0.087	0.041	15.77	n.a.	BMB^
Total:			0.868	0.260	100.00	1172.622	

41 HCV			
Sample Name:	HCV	Injection Volume:	1000.0
Vial Number:	783	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/11/2007 11:06	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.44	CIO2	5.496	0.826	43.39	804.840	BMB
2	11.75	Br	1.296	0.377	19.80	399.692	BMB
3	13.07	CIO3	2.089	0.701	36.82	799.981	BMB
Total:			8.881	1.903	100.00	2004.512	

42 CCB			
Sample Name:	CCB	Injection Volume:	1000.0
Vial Number:	784	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/11/2007 11:31	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



No.	Ret.Time min	Peak Name	Height μS	Area $\mu\text{S}\cdot\text{min}$	Rel.Area %	Amount ppb	Type
Total:			0.000	0.000	0.00	0.000	

DBP QC Checklist

Analysis Date: 5-18-07 Analyst: Raja

QC'd by M Date 23 May 07

Instrument: IC12

Calibration including QCS(Secondary Source)

Correlation Coefficient of calibration curve for linear curve is 0.995 or better. (0.99 for quadratic)

CLO2 CLO3 BR

Initial QC Check Samples (MCV, CCB, MBLANK, MRL) to be analyzed with every batch (up to 20 samples) or part thereof

MCV is analyzed before samples:

CLO2/CLO3: 90-110% (180-220ppb) BR: 90-110% (90-110ppb)

CCB is analyzed before samples and after MCV and HCV

MLBANK is analyzed before samples. CLO2/CLO3 BR, if present, is \leq half of the MRL.

CLO2: MRL at 10ppb is within 75%-125% (7.5-12.5ppb)

CLO3: MRL at 10ppb is within 75%-125% (7.5-12.5ppb)

BR: MRL at 5.0ppb is within 75%-125% (3.75-6.25ppb)

LCS/LCSD: Accepted criteria are between 90-110% recovery

CLO2: 180-220ppb for 200ppb

CLO3: 180-220ppb for 200ppb

BR: 90-110ppb for 100ppb

One pair analyzed per batch (up to 20 samples) or part thereof

MS/MSD: Acceptance criteria are between 75%-125% recovery.

CLO2: 75-125ppb for 100ppb spike

CLO3: 75-125ppb for 100ppb spike

BR: 37.5-62.5ppb for 50ppb spike

RPD between MS/MSD is within 15%

One pair, and one MS is analyzed per batch (up to 20 samples) or part thereof

Continuing Calibration Verification (MCV and HCV) are required

MCV recovery is between 90-110%

CLO2 (180-220ppb) CLO3 (180-220ppb) BR (90-110ppb)

HCV recovery is between 90-110%

CLO2 (720-880ppb) CLO3 (720-880ppb) BR (360-440ppb)

Samples

All samples for CLO3 and BR are analyzed within 28 days of collection.

All samples for CLO2 are analyzed within 14 days of collection.

QIR

N/A QIR needed for failed QC

N/A QIR needed for samples analyzed outside of hold time

No.	Sample Name	Comment	Time	Dil.Fac.	Amount ppb C1O3 CD 1	
1,	autocal1,		05/18/07 11:46,	1.0,	n.a.	
2,	autocal2,	RAJA060520-3	05/18/07 12:11,	1.0,	10.08	
3,	autocal3,	RAJA060520-4	05/18/07 12:37,	1.0,	19.8531	
4,	autocal4,	RAJA060520-5	05/18/07 13:02,	1.0,	99.8859	
5,	autocal5,	RAJA060520-6	05/18/07 13:28,	1.0,	200.3567	
6,	autocal6,	RAJA060520-7	05/18/07 13:53,	1.0,	399.7933	
7,	autocal7,	RAJA060520-8	05/18/07 14:18,	1.0,	800.0311	
8,	WASH,		05/18/07 14:44,	1.0,	n.a.	
9,	MCV,		05/18/07 15:09,	1.0,	204.1582	102%
10,	CCB,		05/18/07 15:35,	1.0,	n.a.	
11,	MRLCHK,		05/18/07 16:00,	1.0,	9.3065	98.1%
12,	MBLK,		05/18/07 16:25,	1.0,	n.a.	
13,	LCS1,		05/18/07 16:51,	1.0,	205.9571	103%
14,	LCS2,		05/18/07 17:16,	1.0,	203.5368	102%
15,	2705080787,	BR	05/18/07 17:42,	1.0,	n.a.	
16,	2705080787SPIKE,		05/18/07 18:07,	1.0,	94.5719	94.6%
17,	2705080517_1/5,	CLO3	05/18/07 18:32,	5.0,	n.a.	
18,	2705180355,	BR	05/18/07 18:58,	1.0,	n.a.	
19,	2705180357,	BR	05/18/07 19:23,	1.0,	n.a.	
20,	2705180358,	BR	05/18/07 19:49,	1.0,	n.a.	
21,	2705160480,	CLO2/CLO3	05/18/07 20:14,	1.0,	n.a.	
22,	2705160482,	CLO2/CLO3	05/18/07 20:39,	1.0,	n.a.	
23,	2705160486,	CLO2/CLO3	05/18/07 21:05,	1.0,	n.a.	
24,	2705160664,	CLO2/CLO3	05/18/07 21:30,	1.0,	36.2298	
25,	2705160664MS,		05/18/07 21:56,	1.0,	129.667	93.4%
26,	2705160664MSD,		05/18/07 22:21,	1.0,	132.5832	96.4%
27,	MCV,		05/18/07 22:46,	1.0,	196.7113	98.4%
28,	CCB,		05/18/07 23:12,	1.0,	n.a.	
29,	2705150639,	BR/CLO2	05/18/07 23:37,	1.0,	n.a.	
30,	2705160707,	CLO2/CLO3	05/19/07 00:03,	1.0,	n.a.	
31,	2705160710,	CLO2/CLO3	05/19/07 00:28,	1.0,	n.a.	
32,	2705160710MS,		05/19/07 00:53,	1.0,	95.9439	95.9%
33,	2705160710MSD,		05/19/07 01:19,	1.0,	96.4295	96.4%
34,	2705160822,	BR/CLO3	05/19/07 01:44,	1.0,	n.a.	
35,	2705160831,	CLO3	05/19/07 02:10,	1.0,	n.a.	
36,	2705160834-DNR,	BR/CLO3	05/19/07 02:35,	1.0,	n.a.	
37,	2705160837,	CLO3	05/19/07 03:00,	1.0,	n.a.	
38,	2705150411_1/5,	CLO3	05/19/07 03:26,	5.0,	n.a.	
39,	2705150413_1/5000,	CLO3	05/19/07 03:51,	5000.0,	451765.8	
40,	HCV,		05/19/07 04:17,	1.0,	802.6149	100%
41,	CCB,		05/19/07 04:42,	1.0,	n.a.	
42,	STOP,		05/19/07 05:07,	1.0,	n.a.	

Sequence: 051807-DBP-IC12
Operator: raja

Page 1 of 2
Printed: 5/21/2007 1:07:59 PM

Title:
Datasource: Dionex_USPAS2SDIO2
Location: IC12_DBP\2007\MAY
Timebase: IC12
#Samples: 42
Created: 5/18/2007 11:00:35 AM by raja
Last Update: 5/21/2007 11:14:00 AM by raja

No.	Name	Comment	Dil. Factor	Sample ID	Type	Program	Method
1	autocal1	/	1.0000		Standard	IC12 test Program	DBP-Method
2	autocal2	RAJA060520-3	1.0000		Standard	IC12 test Program	DBP-Method
3	autocal3	RAJA060520-4	1.0000		Standard	IC12 test Program	DBP-Method
4	autocal4	RAJA060520-5	1.0000		Standard	IC12 test Program	DBP-Method
5	autocal5	RAJA060520-6	1.0000		Standard	IC12 test Program	DBP-Method
6	autocal6	RAJA060520-7	1.0000		Standard	IC12 test Program	DBP-Method
7	autocal7	RAJA060520-8	1.0000		Standard	IC12 test Program	DBP-Method
8	WASH		1.0000		Unknown	IC12 test Program	DBP-Method
9	MCV		1.0000		Unknown	IC12 test Program	DBP-Method
10	CCB		1.0000		Unknown	IC12 test Program	DBP-Method
11	MRLCHK		1.0000		Unknown	IC12 test Program	DBP-Method
12	MBLK		1.0000		Unknown	IC12 test Program	DBP-Method
13	LCS1		1.0000		Unknown	IC12 test Program	DBP-Method
14	LCS2		1.0000		Unknown	IC12 test Program	DBP-Method
15	2705080787	BR	1.0000		Unknown	IC12 test Program	DBP-Method
16	2705080787SPIKE		1.0000		Unknown	IC12 test Program	DBP-Method
17	2705080517_1/5	CLO3	5.0000		Unknown	IC12 test Program	DBP-Method
18	2705180355	BR	1.0000		Unknown	IC12 test Program	DBP-Method
19	2705180357	BR	1.0000		Unknown	IC12 test Program	DBP-Method
20	2705180358	BR	1.0000		Unknown	IC12 test Program	DBP-Method
21	2705160480	CLO2/CLO3	1.0000		Unknown	IC12 test Program	DBP-Method
22	2705160482	CLO2/CLO3	1.0000		Unknown	IC12 test Program	DBP-Method
23	2705160486	CLO2/CLO3	1.0000		Unknown	IC12 test Program	DBP-Method
24	2705160664	CLO2/CLO3	1.0000		Unknown	IC12 test Program	DBP-Method
25	2705160664MS		1.0000		Unknown	IC12 test Program	DBP-Method
26	2705160664MSD		1.0000		Unknown	IC12 test Program	DBP-Method
27	MCV		1.0000		Unknown	IC12 test Program	DBP-Method
28	CCB		1.0000		Unknown	IC12 test Program	DBP-Method
29	2705150639	BR/CLO2	1.0000		Unknown	IC12 test Program	DBP-Method
30	2705160707	CLO2/CLO3	1.0000		Unknown	IC12 test Program	DBP-Method
31	2705160710	CLO2/CLO3	1.0000		Unknown	IC12 test Program	DBP-Method
32	2705160710MS		1.0000		Unknown	IC12 test Program	DBP-Method
33	2705160710MSD		1.0000		Unknown	IC12 test Program	DBP-Method
34	2705160822	BR/CLO3	1.0000		Unknown	IC12 test Program	DBP-Method
35	2705160831	CLO3	1.0000		Unknown	IC12 test Program	DBP-Method
36	2705160834-DNR	BR/CLO3	1.0000		Unknown	IC12 test Program	DBP-Method
37	2705160837	CLO3	1.0000		Unknown	IC12 test Program	DBP-Method
38	2705150411_1/5	CLO3	5.0000		Unknown	IC12 test Program	DBP-Method
39	2705150413_1/5000	CLO3	5000.0000		Unknown	IC12 test Program	DBP-Method
40	HCV		1.0000		Unknown	IC12 test Program	DBP-Method
41	CCB		1.0000		Unknown	IC12 test Program	DBP-Method
42	STOP		1.0000		Unknown	DPB Stop Program	DBP-Method

Sequence: 051807-DBP-IC12
Operator: raja

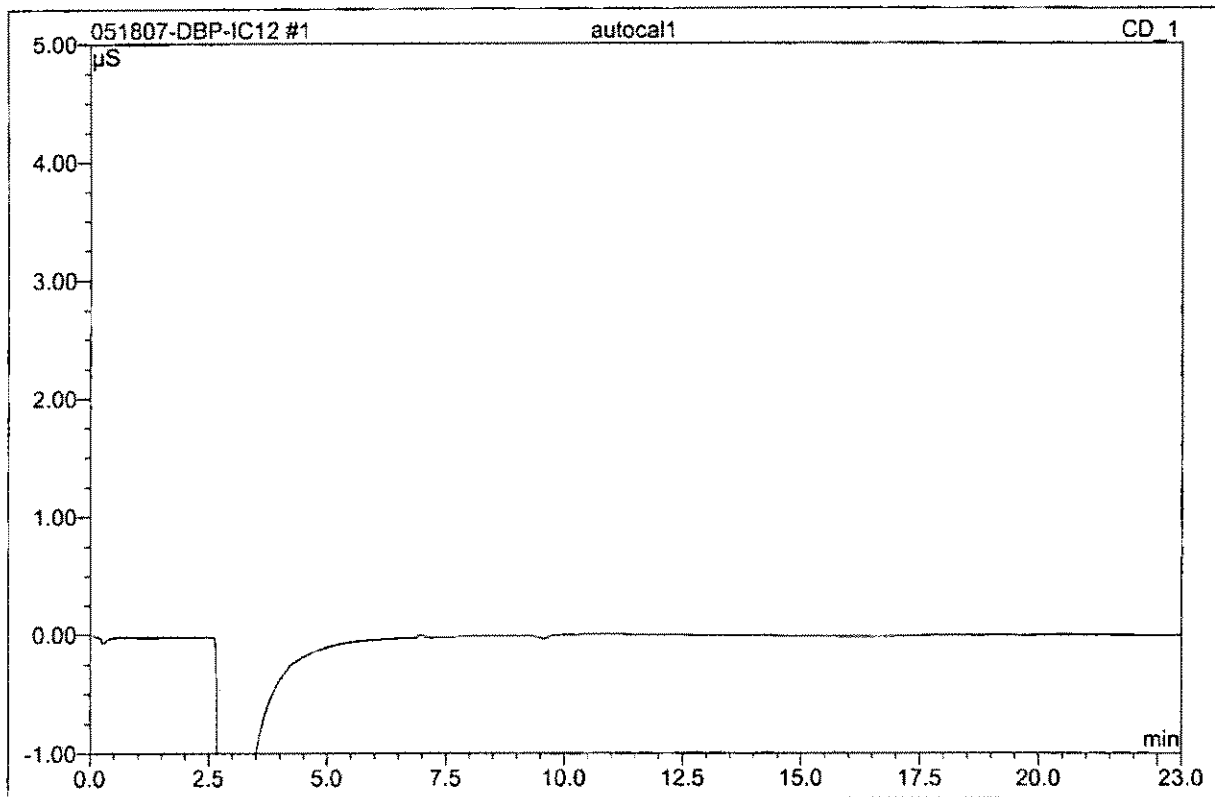
Page 2 of 2
Printed: 5/21/2007 1:07:59 PM

Title:
Datasource: Dionex_USPAS2SDIO2
Location: IC\IC12_DBP\2007\MAY
Timebase: IC12
#Samples: 42

Created: 5/18/2007 11:00:35 AM by raja
Last Update: 5/21/2007 11:14:00 AM by raja

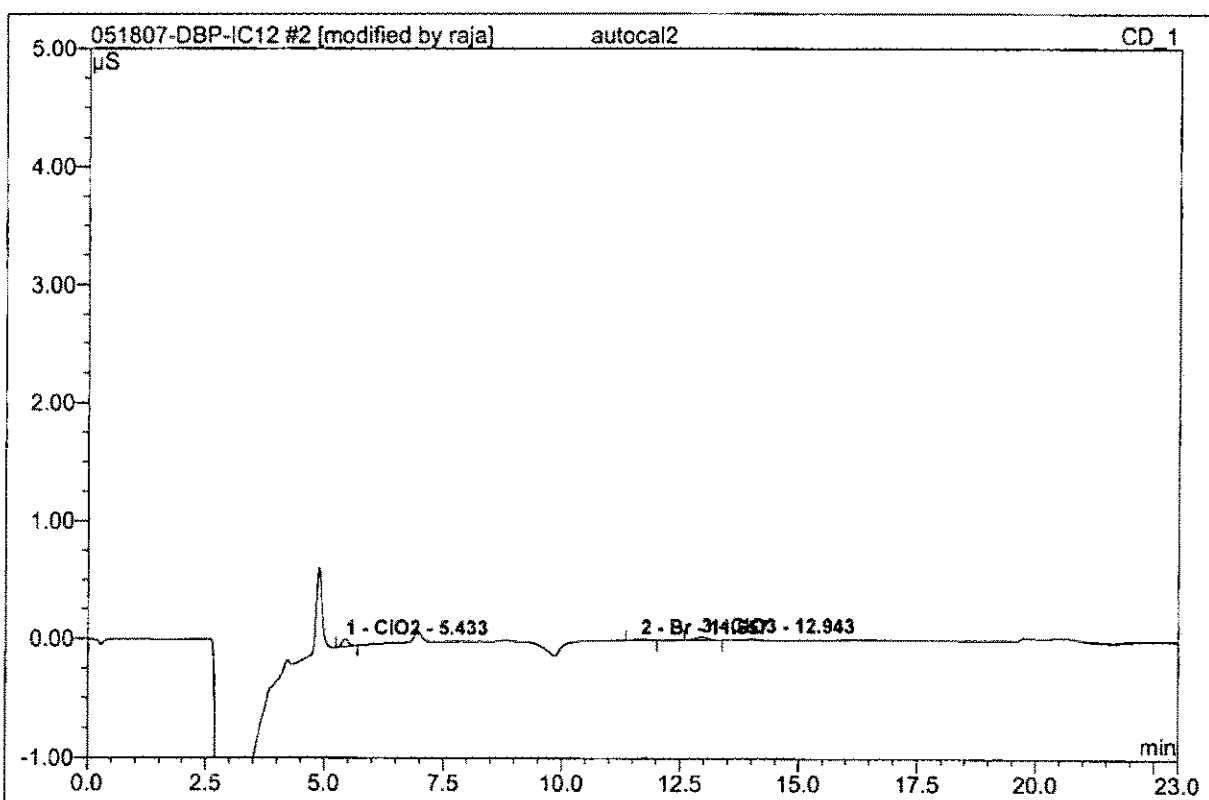
No.	Name	Status	Inj. Date/Time	*Analyst
1	autocal1	Finished	5/18/2007 11:46:34 AM	raja
2	autocal2	Finished	5/18/2007 12:11:58 PM	raja
3	autocal3	Finished	5/18/2007 12:37:21 PM	raja
4	autocal4	Finished	5/18/2007 1:02:45 PM	raja
5	autocal5	Finished	5/18/2007 1:28:10 PM	raja
6	autocal6	Finished	5/18/2007 1:53:33 PM	raja
7	autocal7	Finished	5/18/2007 2:18:57 PM	raja
8	WASH	Finished	5/18/2007 2:44:21 PM	raja
9	MCV	Finished	5/18/2007 3:09:45 PM	raja
10	CCB	Finished	5/18/2007 3:35:09 PM	raja
11	MRLCHK	Finished	5/18/2007 4:00:32 PM	raja
12	MBLK	Finished	5/18/2007 4:25:56 PM	raja
13	LCS1	Finished	5/18/2007 4:51:20 PM	raja
14	LCS2	Finished	5/18/2007 5:16:44 PM	raja
15	2705080787	Finished	5/18/2007 5:42:08 PM	raja
16	2705080787SPIKE	Finished	5/18/2007 6:07:31 PM	raja
17	2705080517_1/5	Finished	5/18/2007 6:32:55 PM	raja
18	2705180355	Finished	5/18/2007 6:58:19 PM	raja
19	2705180357	Finished	5/18/2007 7:23:43 PM	raja
20	2705180358	Finished	5/18/2007 7:49:07 PM	raja
21	2705160480	Finished	5/18/2007 8:14:30 PM	raja
22	2705160482	Finished	5/18/2007 8:39:54 PM	raja
23	2705160486	Finished	5/18/2007 9:05:18 PM	raja
24	2705160664	Finished	5/18/2007 9:30:41 PM	raja
25	2705160664MS	Finished	5/18/2007 9:56:05 PM	raja
26	2705160664MSD	Finished	5/18/2007 10:21:29 PM	raja
27	MCV	Finished	5/18/2007 10:46:52 PM	raja
28	CCB	Finished	5/18/2007 11:12:16 PM	raja
29	2705150639	Finished	5/18/2007 11:37:40 PM	raja
30	2705160707	Finished	5/19/2007 12:03:04 AM	raja
31	2705160710	Finished	5/19/2007 12:28:27 AM	raja
32	2705160710MS	Finished	5/19/2007 12:53:51 AM	raja
33	2705160710MSD	Finished	5/19/2007 1:19:15 AM	raja
34	2705160822	Finished	5/19/2007 1:44:39 AM	raja
35	2705160831	Finished	5/19/2007 2:10:02 AM	raja
36	2705160834-DNR	Finished	5/19/2007 2:35:26 AM	raja
37	2705160837	Finished	5/19/2007 3:00:50 AM	raja
38	2705150411_1/5	Finished	5/19/2007 3:26:13 AM	raja
39	2705150413_1/5000	Finished	5/19/2007 3:51:37 AM	raja
40	HCV	Finished	5/19/2007 4:17:01 AM	raja
41	CCB	Finished	5/19/2007 4:42:24 AM	raja
42	STOP	Finished	5/19/2007 5:07:48 AM	raja

1 autocal1			
Sample Name:	autocal1	Injection Volume:	1000.0
Vial Number:	334	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 11:46	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



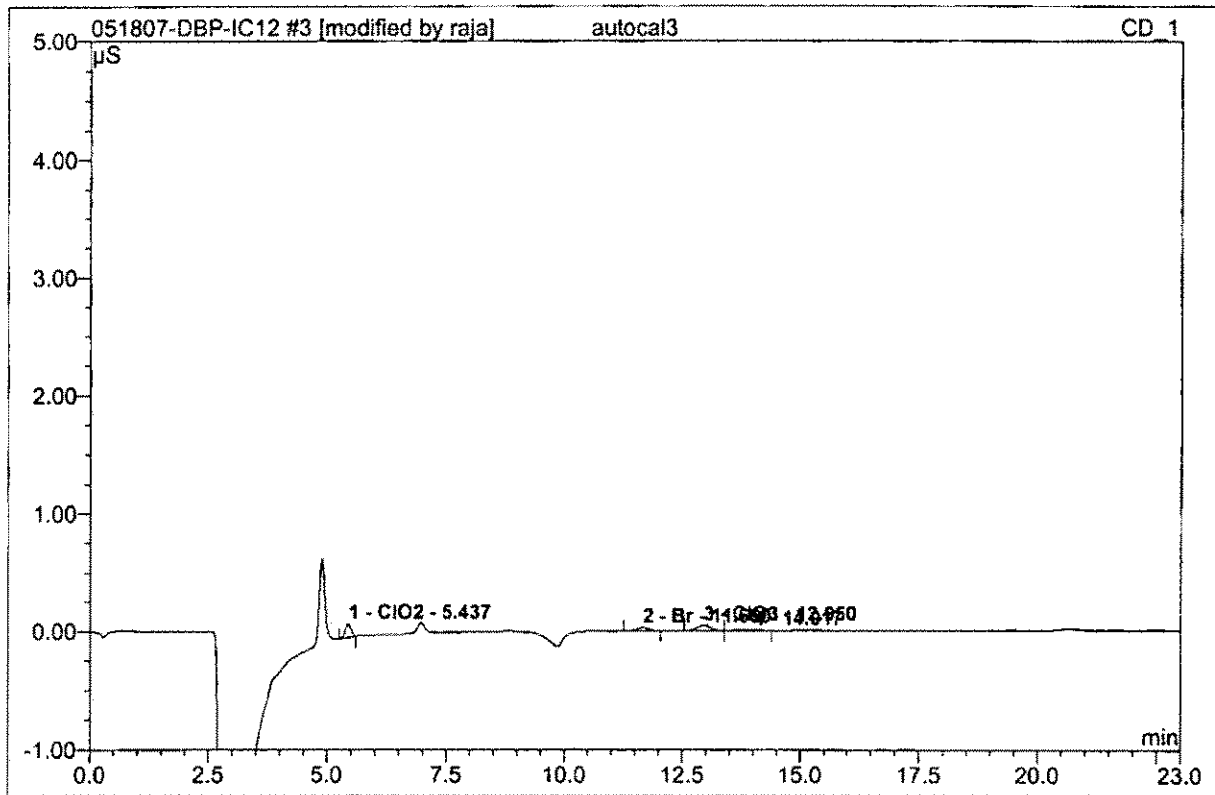
No.	Ret.Time min	Peak Name	Height μ S	Area μ S*min	Rel.Area %	Amount ppb	Type
Total:			0.000	0.000	0.00	0.000	

2 autocal2			
RAJA060520-3			
Sample Name:	autocal2	Injection Volume:	1000.0
Vial Number:	335	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 12:11	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



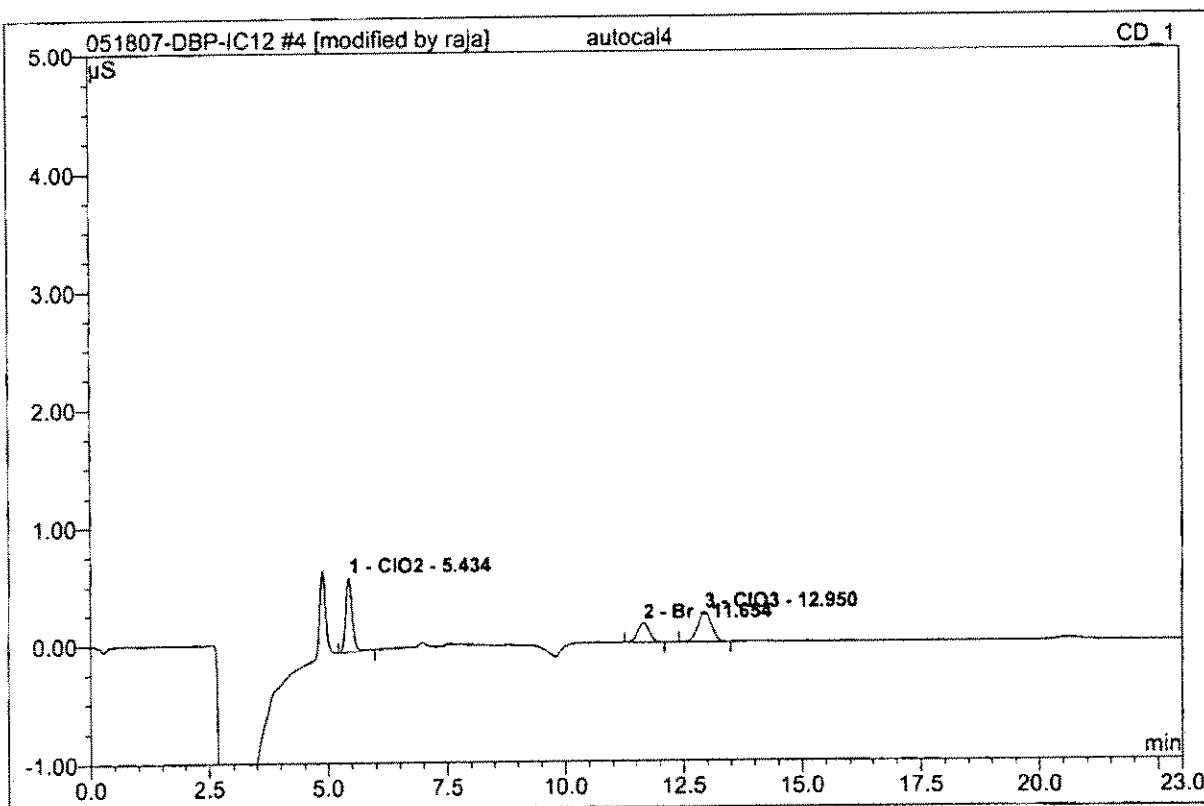
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount ppb	Type
1	5.43	ClO2	0.063	0.010	43.92	11.065	BMB*
2	11.66	Br	0.016	0.004	20.02	5.848	BMB*
3	12.94	ClO3	0.025	0.008	36.06	10.080	BMB*
Total:			0.104	0.022	100.00	26.993	

3 autocal3			
RAJA060520-4			
Sample Name:	autocal3	Injection Volume:	1000.0
Vial Number:	336	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 12:37	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



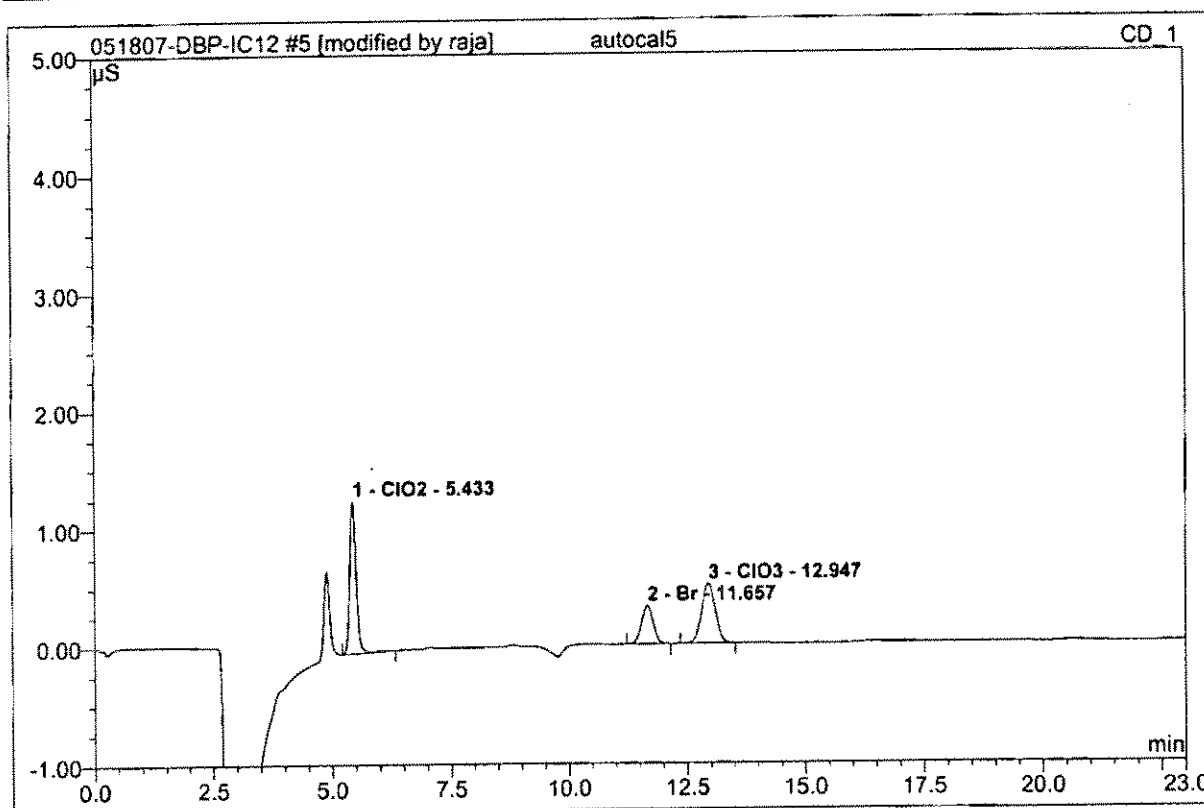
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.44	ClO2	0.119	0.017	35.46	18.521	BMB*
2	11.66	Br	0.031	0.009	18.72	10.567	BMB
3	12.95	ClO3	0.049	0.016	33.69	19.853	BM
4	14.02	n.a.	0.011	0.006	12.12	n.a.	MB
Total:			0.211	0.048	100.00	48.941	

4 autocal4			
RAJA060520-5			
Sample Name:	autocal4	Injection Volume:	1000.0
Vial Number:	337	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 13:02	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



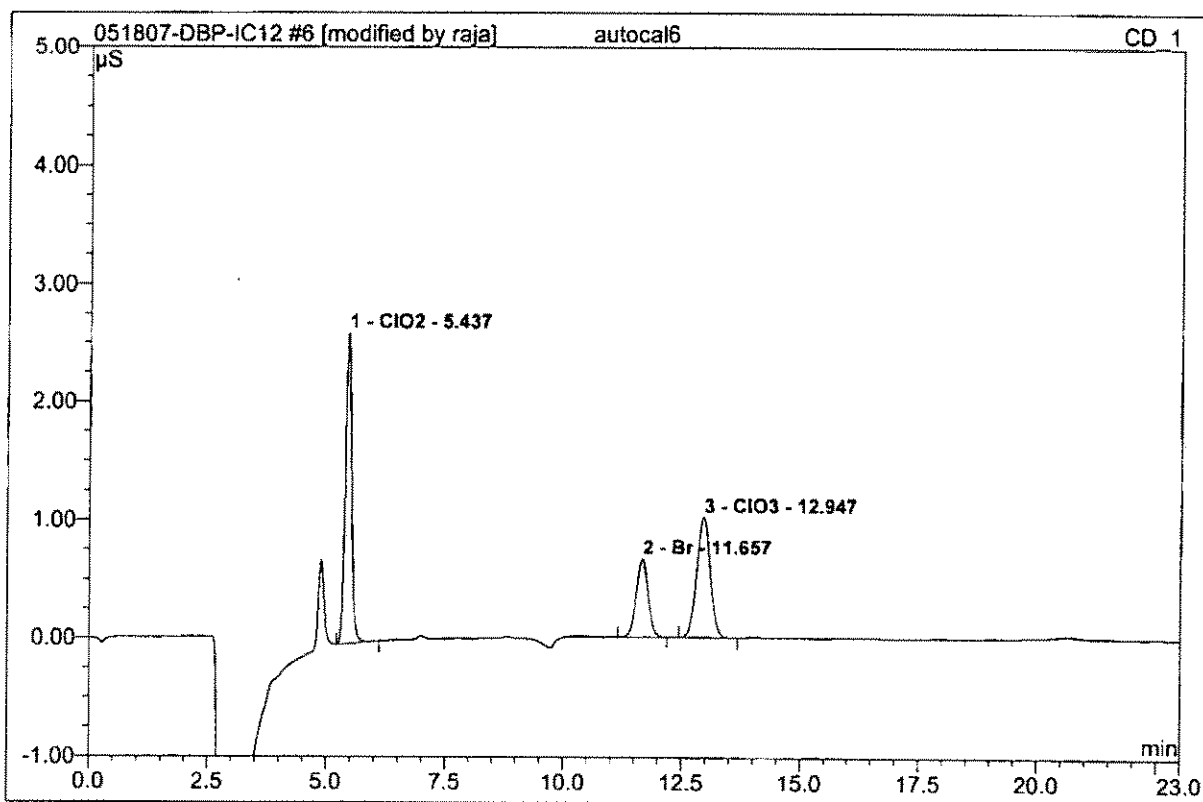
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount ppb	Type
1	5.43	ClO2	0.630	0.097	42.93	99.524	BMB*
2	11.65	Br	0.160	0.046	20.26	48.840	BMB*
3	12.95	ClO3	0.250	0.084	36.81	99.886	BMB
Total:			1.041	0.227	100.00	248.251	

5 autocal5			
RAJA060520-6			
Sample Name:	autocal5	Injection Volume:	1000.0
Vial Number:	338	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 13:28	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



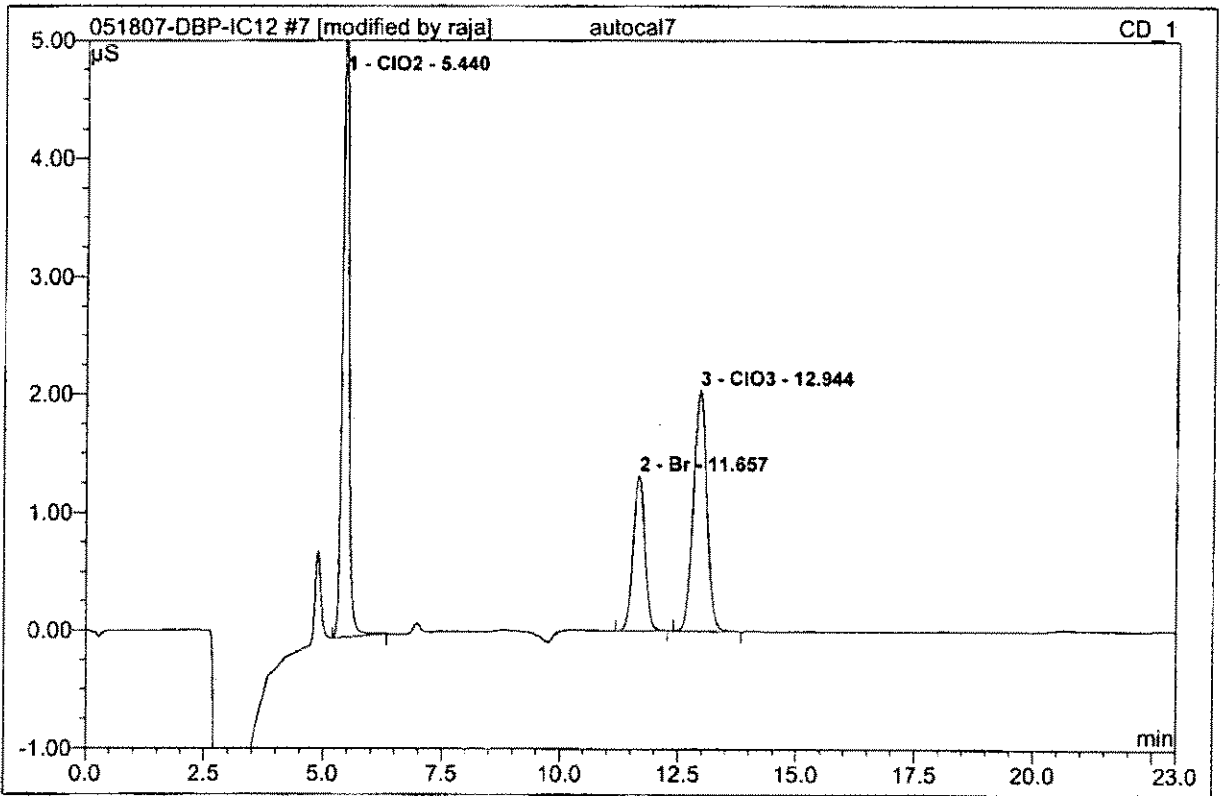
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount ppb	Type
1	5.43	ClO2	1.291	0.200	43.33	201.718	BMB
2	11.66	Br	0.326	0.094	20.27	98.426	BMB
3	12.95	ClO3	0.505	0.168	36.40	200.357	BMB*
Total:			2.123	0.462	100.00	500.501	

6 autocal6			
RAJA060520-7			
Sample Name:	autocal6	Injection Volume:	1000.0
Vial Number:	334	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 13:53	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



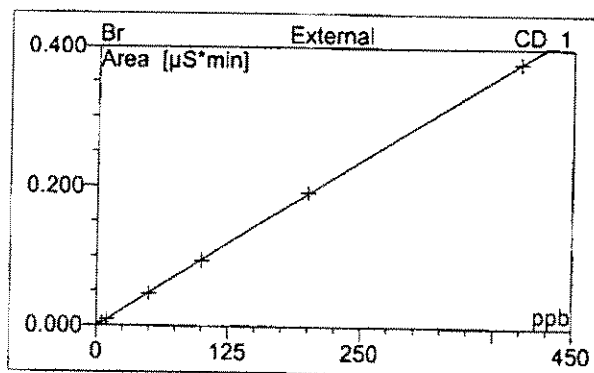
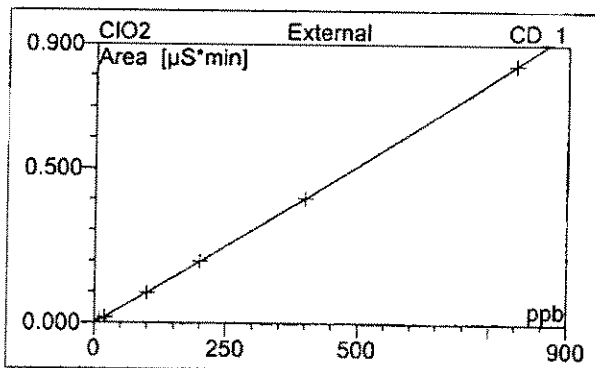
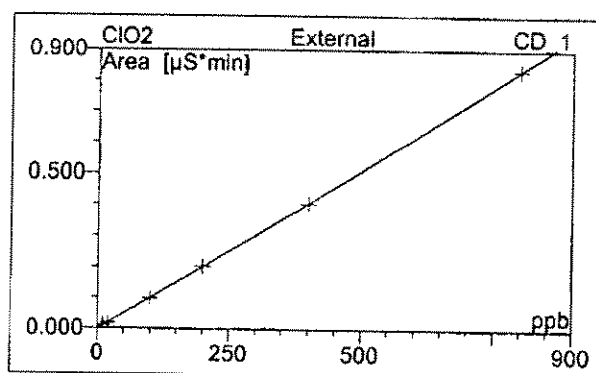
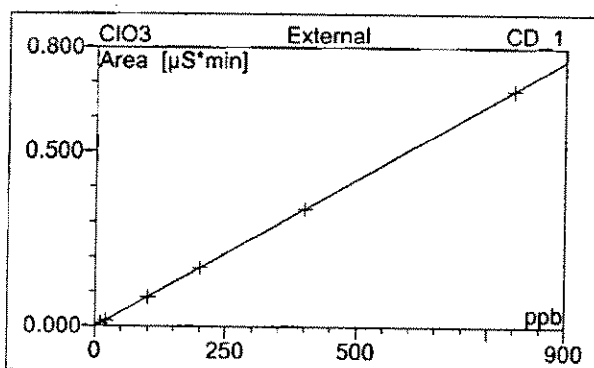
No.	Ret. Time min	Peak Name	Height μS	Area $\mu\text{S}\cdot\text{min}$	Rel. Area %	Amount ppb	Type
1	5.44	ClO ₂	2.634	0.403	43.24	399.033	BMB
2	11.66	Br	0.662	0.192	20.62	201.610	BMB*
3	12.95	ClO ₃	1.018	0.337	36.13	399.793	BMB*
Total:			4.315	0.932	100.00	1000.437	

7 autocal7			
RAJA060520-8			
Sample Name:	autocal7	Injection Volume:	1000.0
Vial Number:	334	Channel:	CD_1
Sample Type:	standard	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 14:18	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



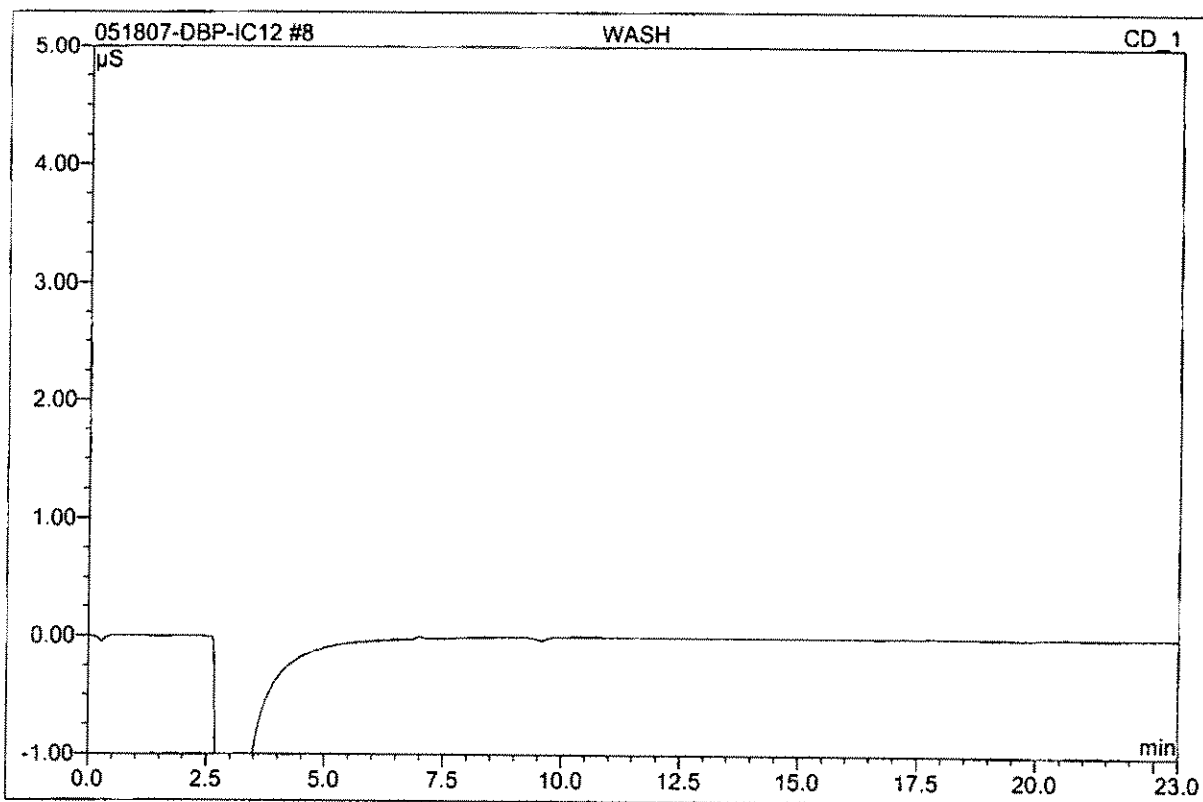
No.	Ret. Time min	Peak Name	Height µS	Area µS*min	Rel. Area %	Amount ppb	Type
1	5.44	ClO2	5.380	0.833	44.12	800.138	BMB
2	11.66	Br	1.312	0.378	20.03	399.708	BMB*
3	12.94	ClO3	2.040	0.677	35.85	800.031	BMB
Total:			8.732	1.888	100.00	1999.877	

7 autocal7	
RAJA060520-8	
Sample Name: autocal7	Injection Volume: 1000.0
Vial Number: 334	Channel: CD_1
Sample Type: standard	Wavelength: n.a.
Control Program: IC12 test Program	Bandwidth: n.a.
Quantif. Method: DBP-Method	Dilution Factor: 1.0000
Recording Time: 5/18/2007 14:18	Sample Weight: 1.0000
Run Time (min): 23.00	Sample Amount: 1.0000



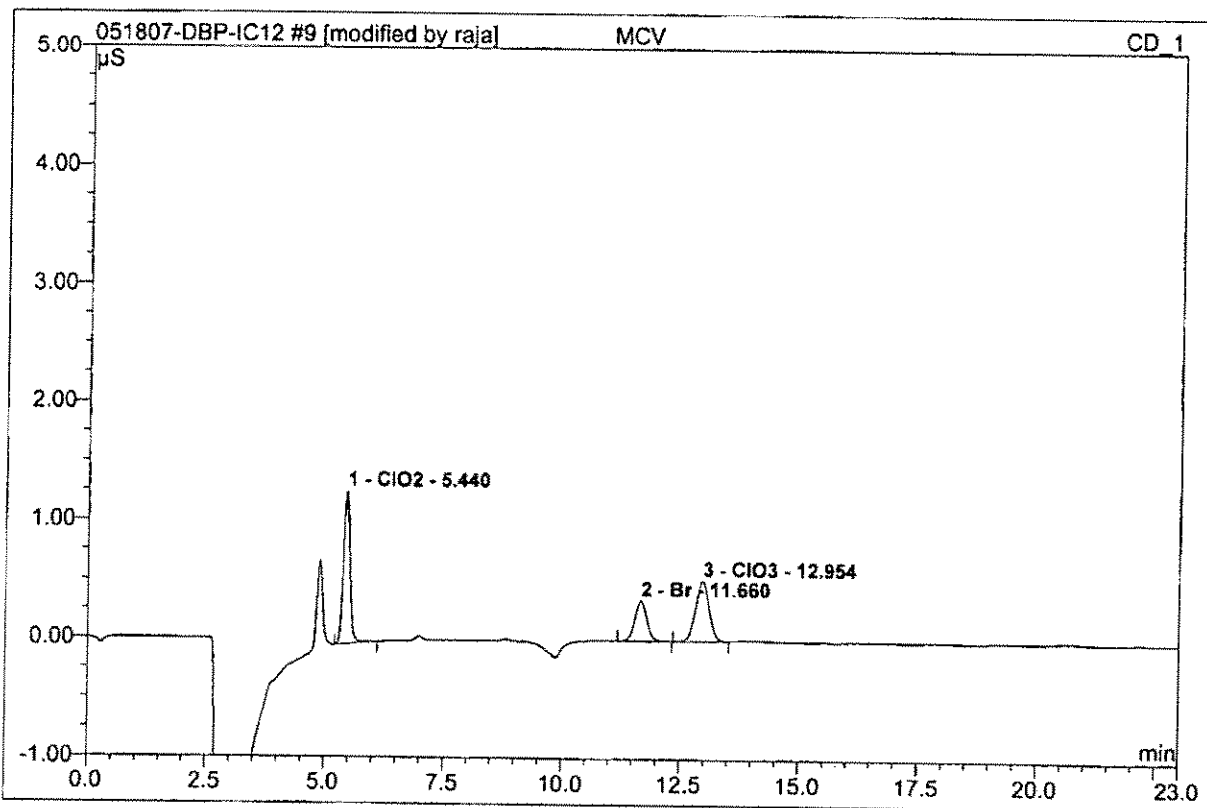
No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	5.44	ClO2	QOff	6	99.9879	-0.0013	0.0010	0.0000
2	11.66	Br	QOff	6	99.9948	-0.0013	0.0010	0.0000
3	12.94	ClO3	QOff	6	99.9999	-0.0006	0.0008	0.0000
Average:					99.9942	-0.0011	0.0009	0.0000

8 WASH			
Sample Name:	WASH	Injection Volume:	1000.0
Vial Number:	337	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 14:44	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



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

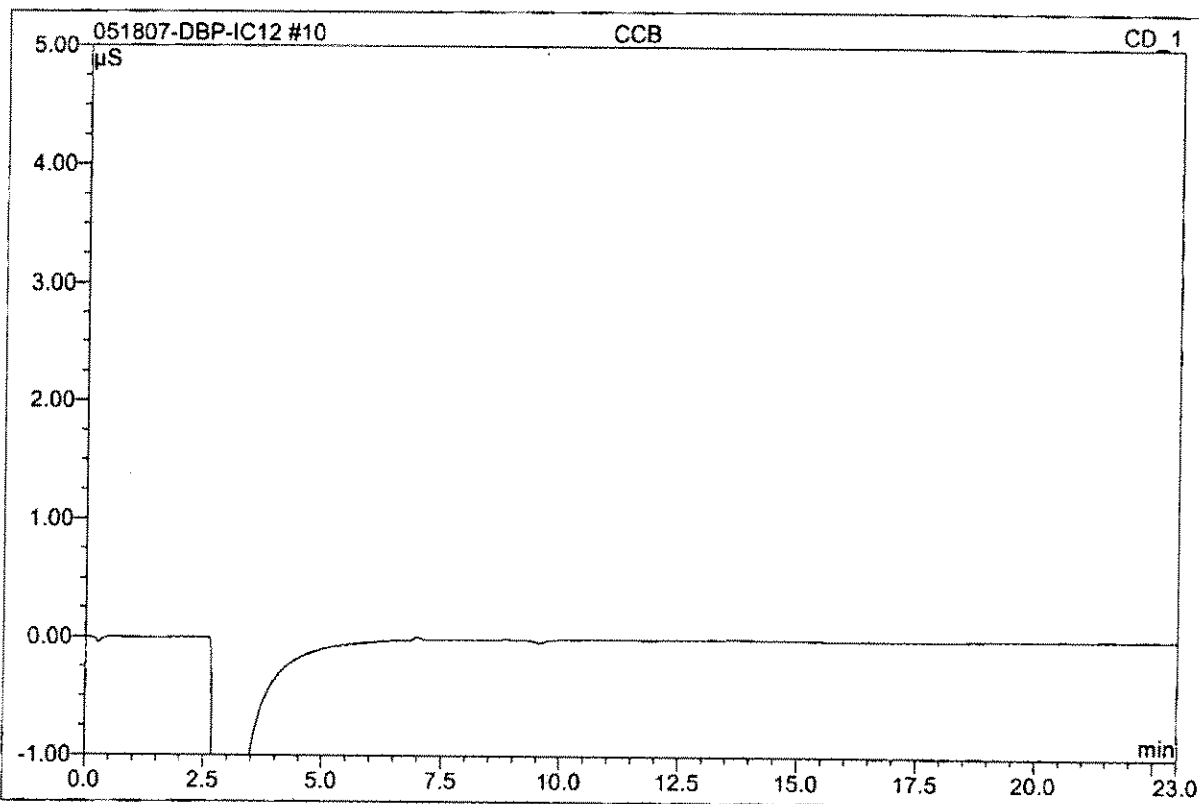
9 MCV			
Sample Name:	MCV	Injection Volume:	1000.0
Vial Number:	338	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 15:09	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount ppb	Type
1	5.44	ClO2	1.291	0.201	42.36	202.561	BMB*
2	11.66	Br	0.344	0.102	21.53	107.290	BMB*
3	12.95	ClO3	0.511	0.171	36.11	204.158	BMB
Total:			2.147	0.475	100.00	514.009	

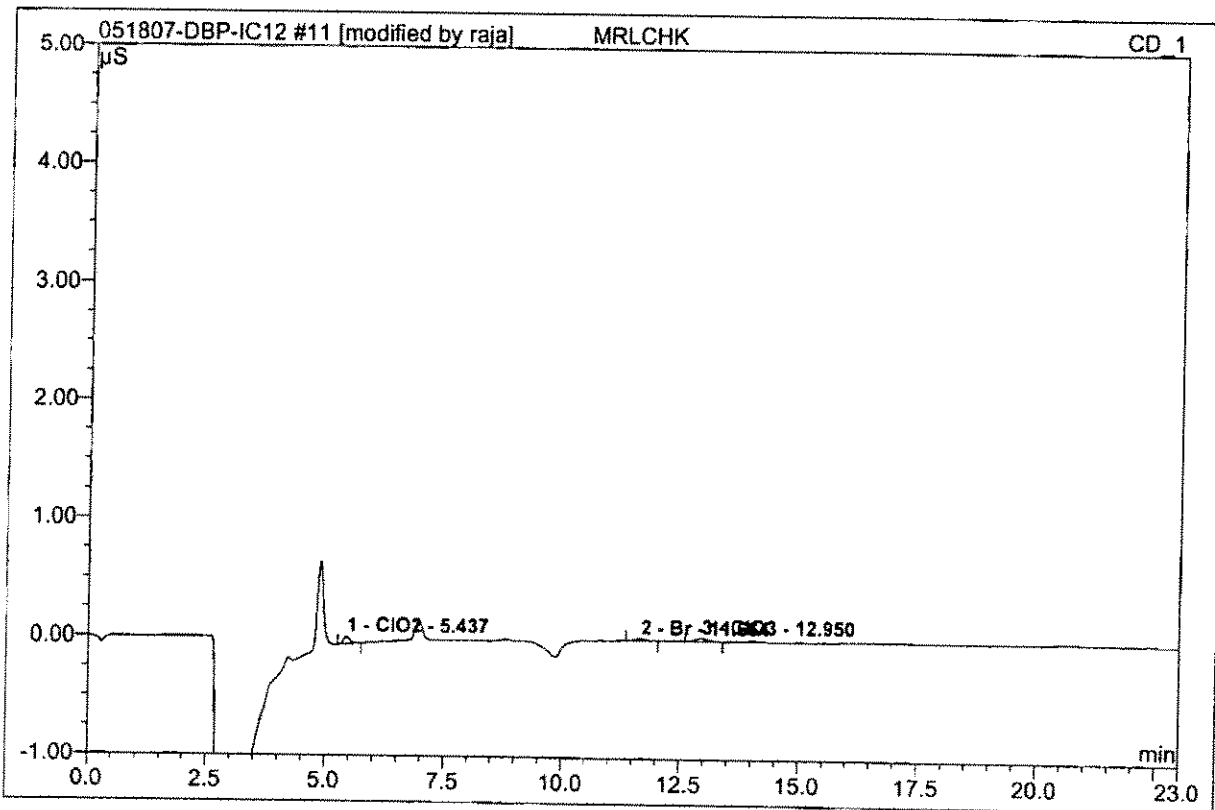
10 CCB

Sample Name:	CCB	Injection Volume:	1000.0
Vial Number:	336	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 15:35	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



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

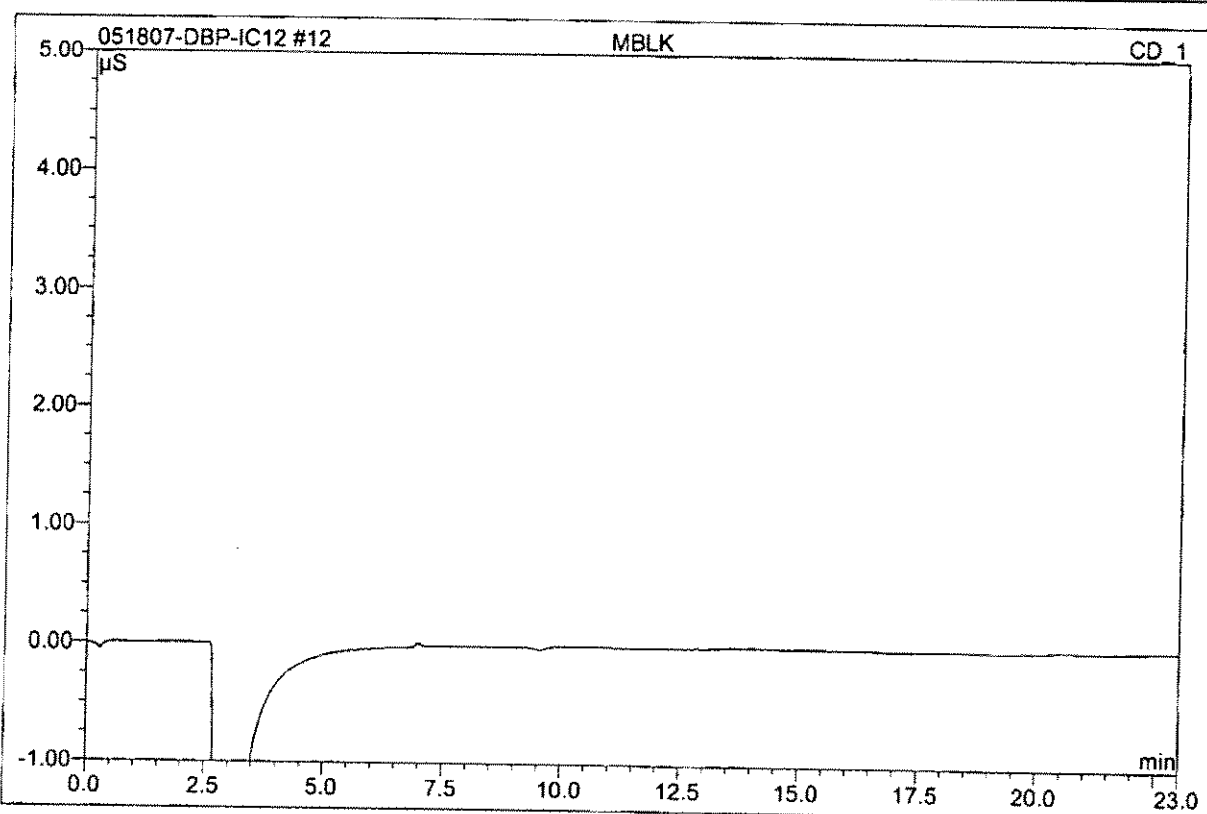
11 MRLCHK			
Sample Name:	MRLCHK	Injection Volume:	1000.0
Vial Number:	336	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 16:00	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



No.	Ret.Time min	Peak Name	Height μS	Area $\mu\text{S}\cdot\text{min}$	Rel.Area %	Amount ppb	Type
1	5.44	ClO2	0.063	0.010	46.34	11.240	BMB
2	11.66	Br	0.015	0.004	19.37	5.548	BMB*
3	12.95	ClO3	0.023	0.007	34.29	9.306	BMB
Total:			0.101	0.021	100.00	26.094	

12 MBLK

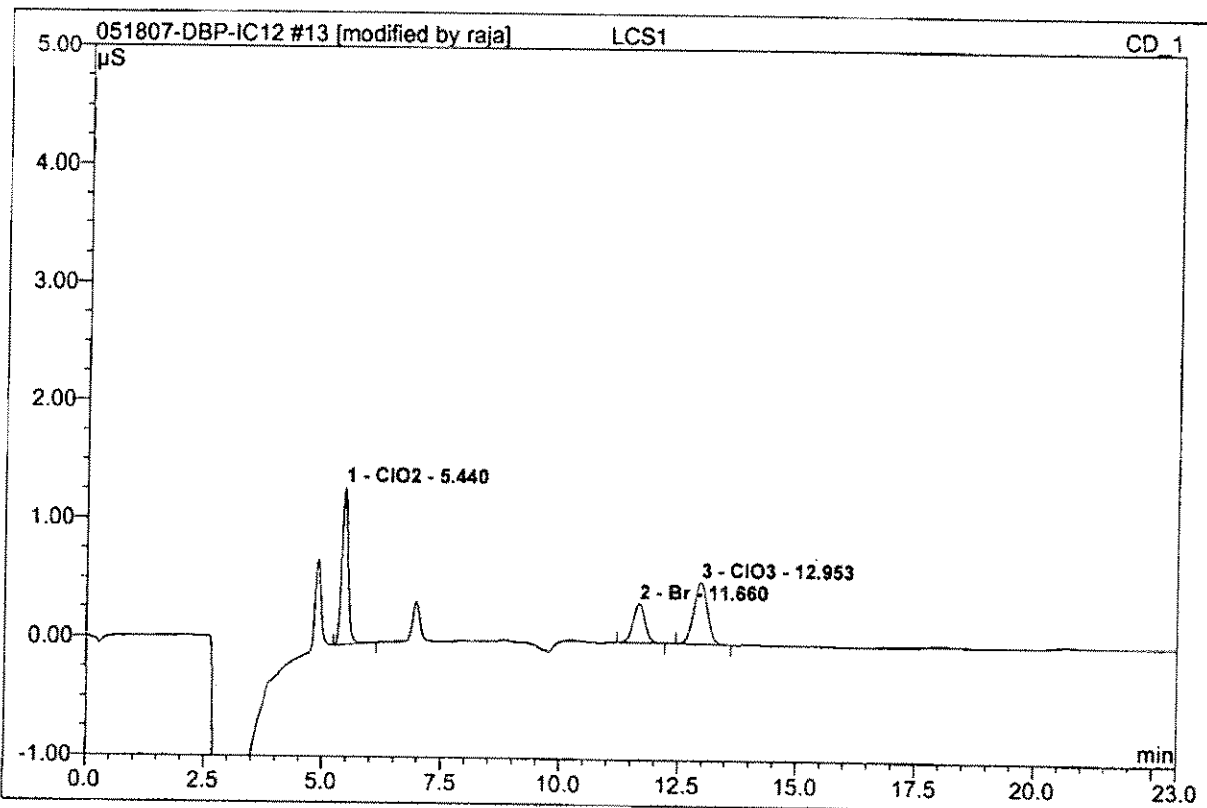
Sample Name:	MBLK	Injection Volume:	1000.0
Vial Number:	336	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 16:25	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



No.	Ret.Time min	Peak Name	Height μS	Area $\mu\text{S}\cdot\text{min}$	Rel.Area %	Amount ppb	Type
Total:			0.000	0.000	0.00	0.000	

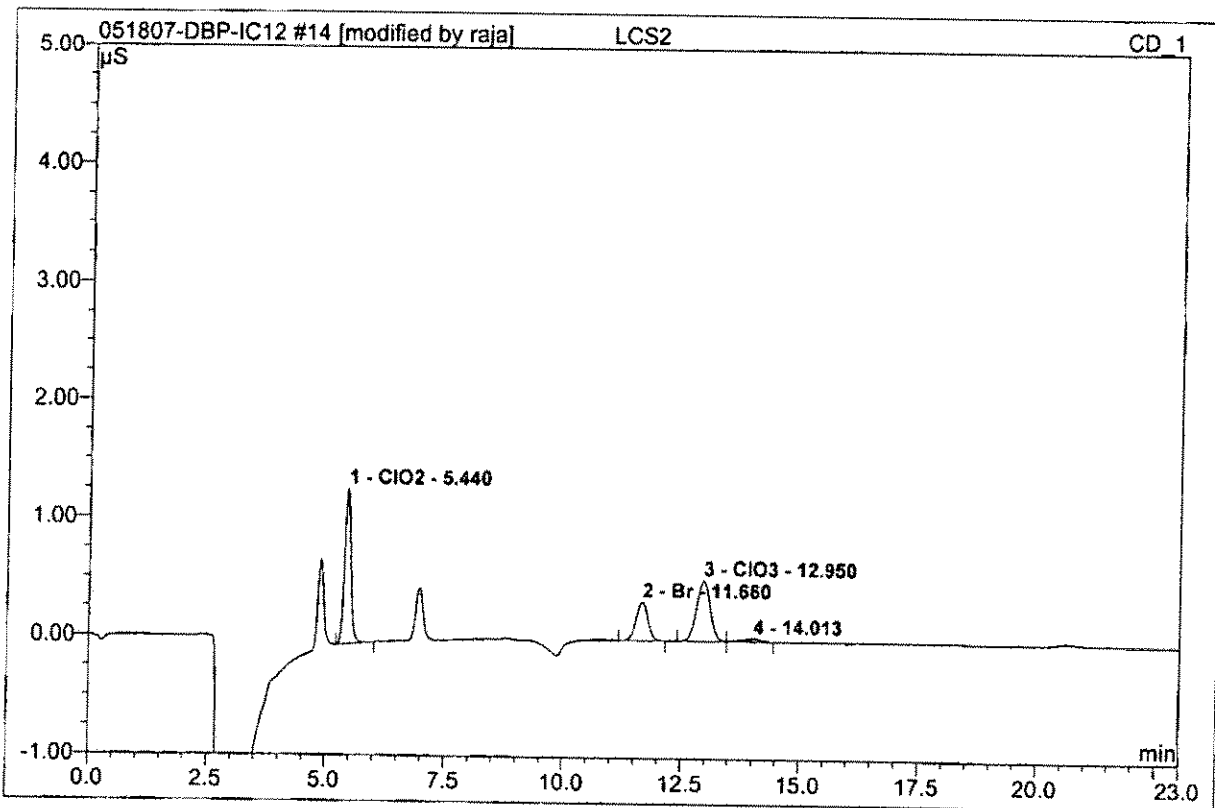
13 LCS1

Sample Name:	LCS1	Injection Volume:	1000.0
Vial Number:	522	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 16:51	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



No.	Ret. Time min	Peak Name	Height μS	Area $\mu\text{S} \cdot \text{min}$	Rel. Area %	Amount ppb	Type
1	5.44	ClO2	1.330	0.206	43.43	207.491	BMB*
2	11.66	Br	0.328	0.095	20.11	100.226	BMB*
3	12.95	ClO3	0.520	0.173	36.45	205.957	BMB*
Total:			2.179	0.475	100.00	513.673	

14 LCS2			
Sample Name:	LCS2	Injection Volume:	1000.0
Vial Number:	523	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 17:16	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000

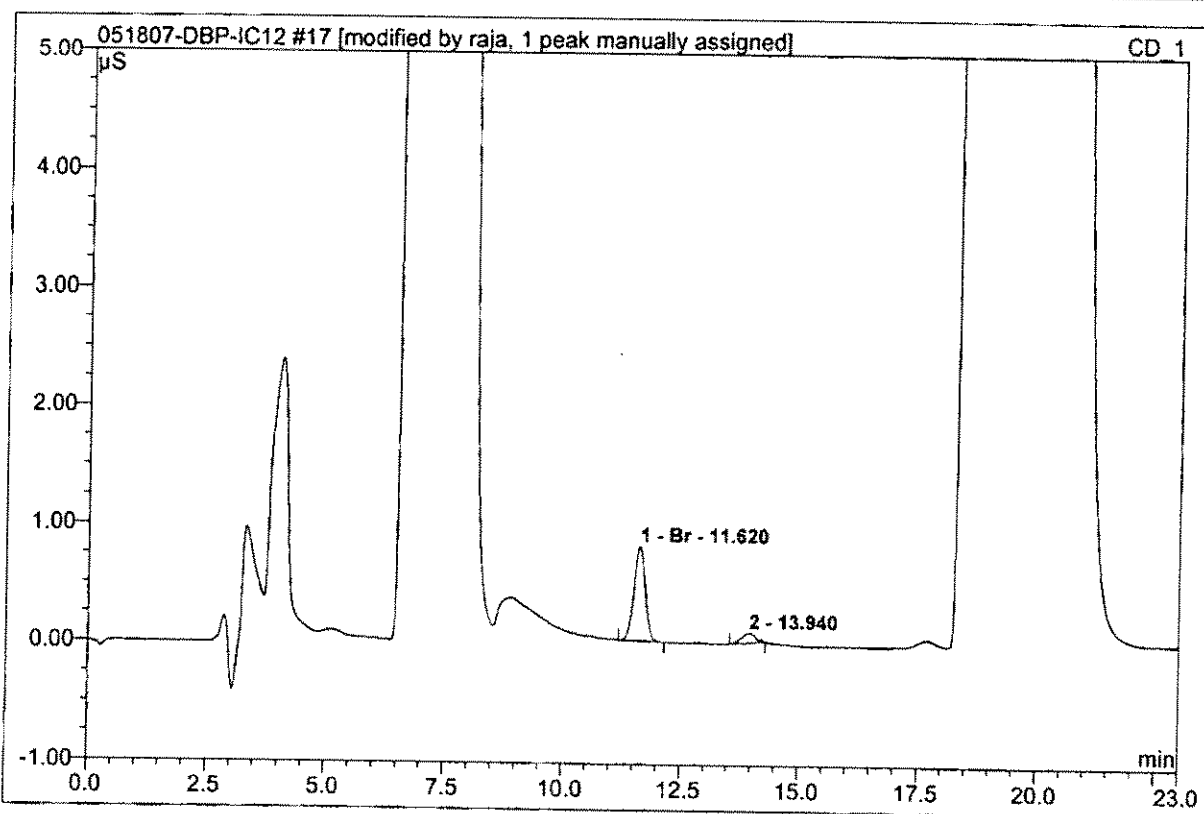


No.	Ret. Time min	Peak Name	Height μS	Area μS*min	Rel. Area %	Amount ppb	Type
1	5.44	ClO2	1.313	0.204	42.43	205.589	BMB*
2	11.66	Br	0.327	0.094	19.61	99.124	BMB*
3	12.95	ClO3	0.514	0.171	35.52	203.537	BM *
4	14.01	n.a.	0.026	0.012	2.45	n.a.	MB*
Total:			2.180	0.481	100.00	508.251	

17 2705080517_1/5

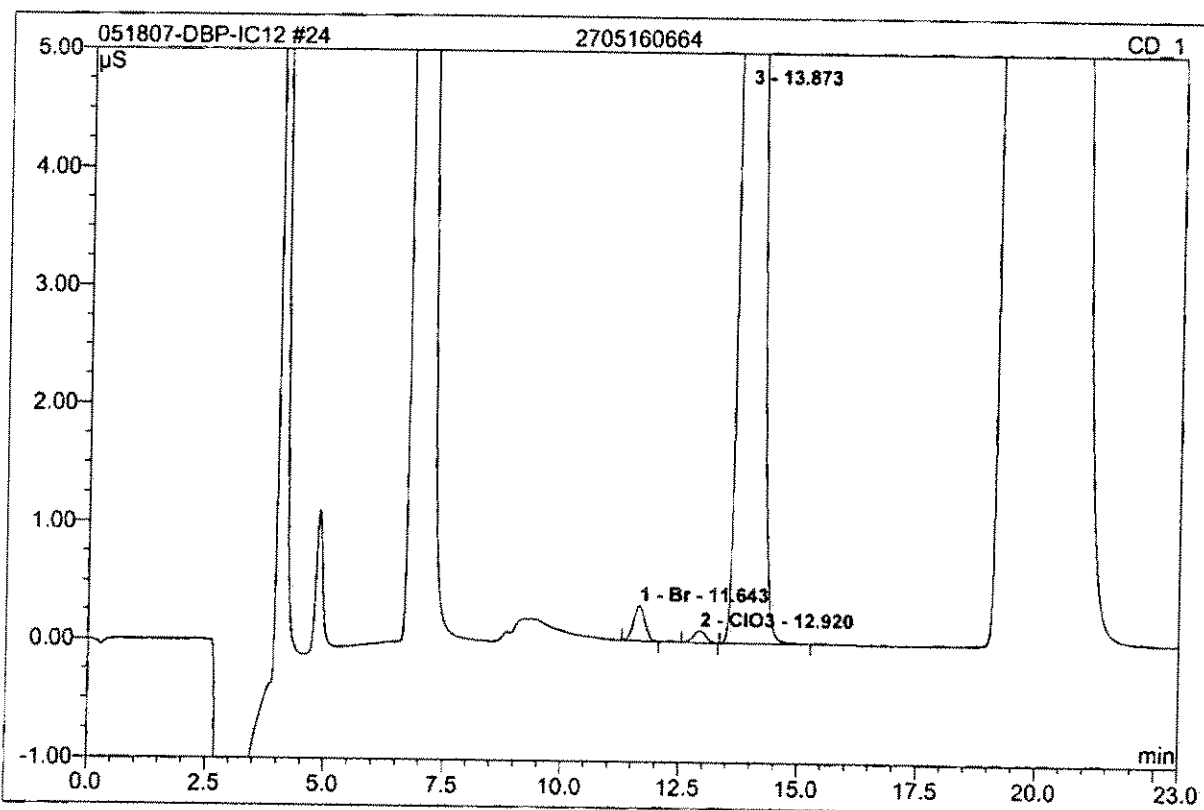
CLO3

Sample Name:	2705080517_1/5	Injection Volume:	1000.0
Vial Number:	573	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	5.0000
Recording Time:	5/18/2007 18:32	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	11.62	Br	0.798	0.221	89.12	1162.045	BMB
2	13.94	n.a.	0.079	0.027	10.88	n.a.	BMB^A
Total:			0.877	0.248	100.00	1162.045	

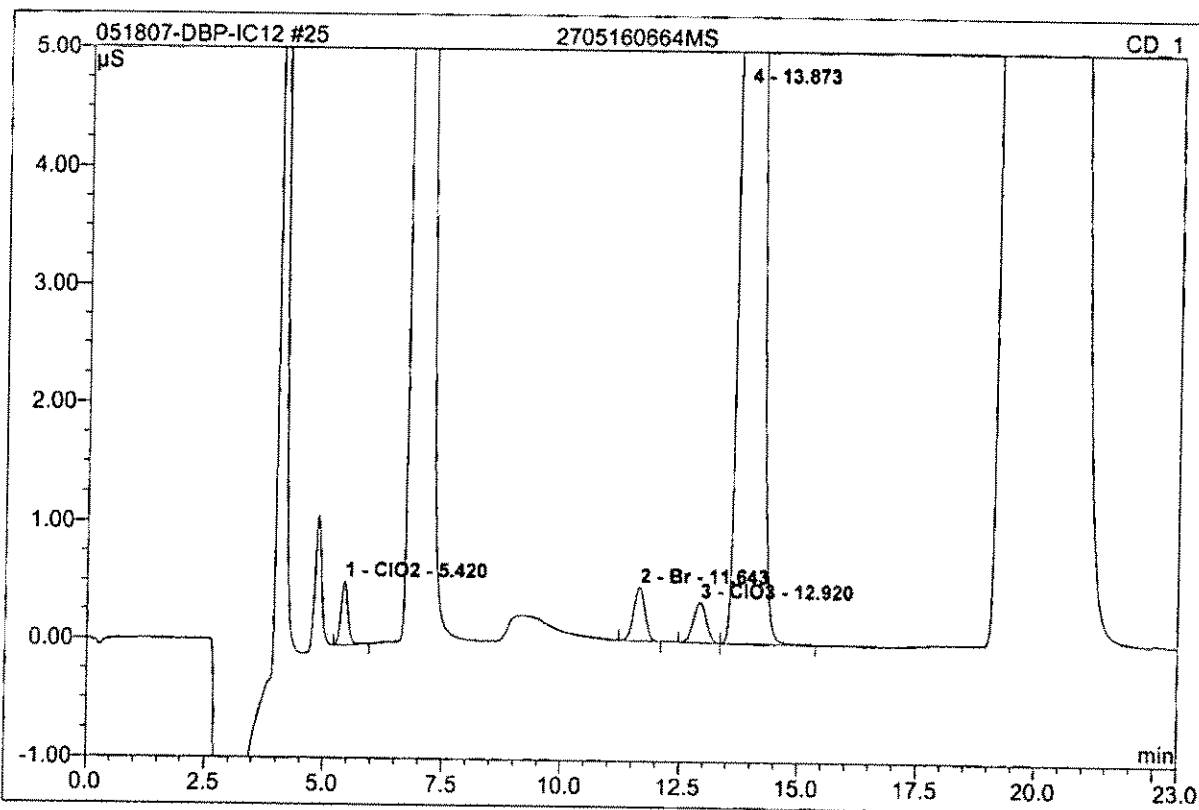
24 2705160664			
CLO2/CLO3			
Sample Name:	2705160664	Injection Volume:	1000.0
Vial Number:	582	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 21:30	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	11.64	Br	0.299	0.082	0.74	86.591	BMB
2	12.92	ClO3	0.097	0.030	0.27	36.230	BMB
3	13.87	n.a.	33.380	11.074	99.00	n.a.	BMB
Total:			33.775	11.186	100.00	122.820	

25 2705160664MS

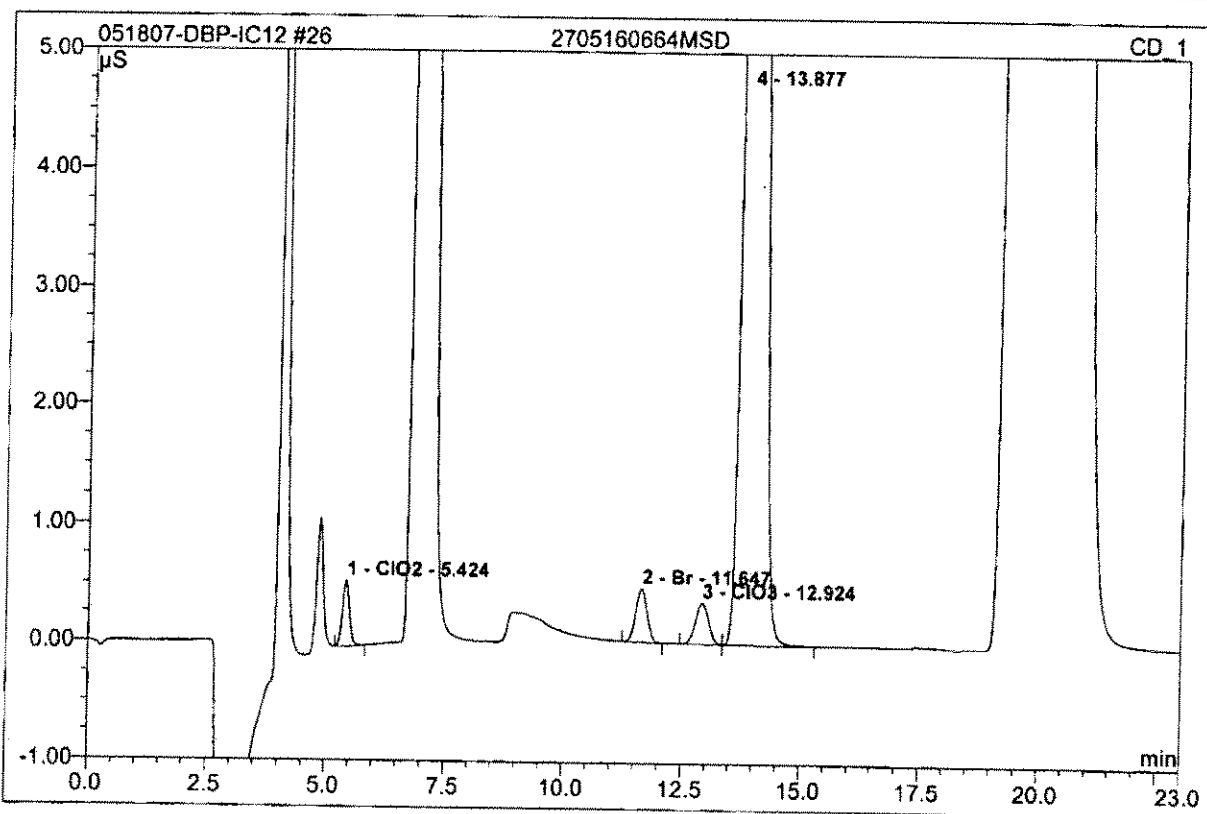
Sample Name:	2705160664MS	Injection Volume:	1000.0
Vial Number:	583	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 21:56	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.42	ClO2	0.546	0.092	0.82	94.421	BMB
2	11.64	Br	0.456	0.128	1.13	133.906	BMB
3	12.92	ClO3	0.344	0.109	0.96	129.667	BMB
4	13.87	n.a.	33.114	10.986	97.10	n.a.	BMB
Total:			34.460	11.315	100.00	357.995	

26 2705160664MSD

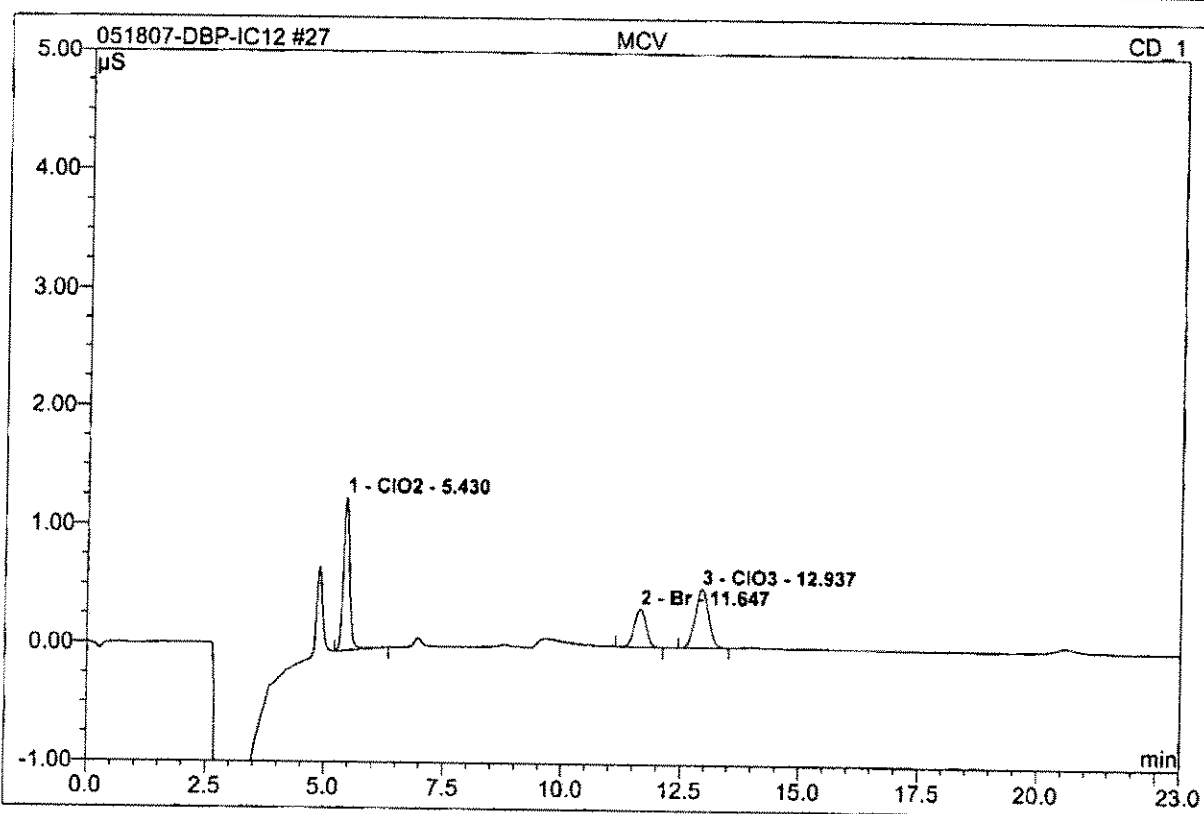
Sample Name:	2705160664MSD	Injection Volume:	1000.0
Vial Number:	584	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 22:21	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppb	Type
1	5.42	ClO2	0.563	0.095	0.85	97.534	BMB
2	11.65	Br	0.458	0.128	1.14	134.090	BMB
3	12.92	ClO3	0.351	0.111	0.99	132.583	BMB
4	13.88	n.a.	32.859	10.902	97.02	n.a.	BMB
Total:			34.232	11.237	100.00	364.208	

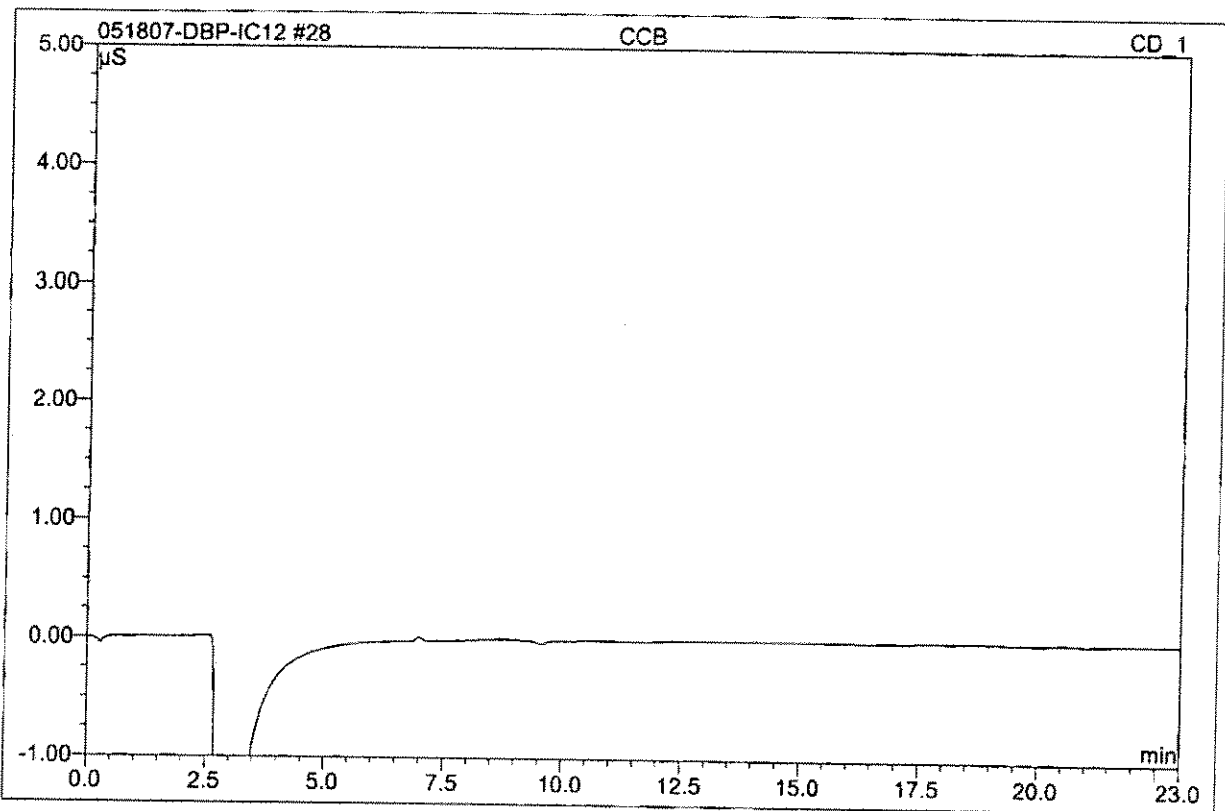
27 MCV

Sample Name:	MCV	Injection Volume:	1000.0
Vial Number:	585	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 22:46	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



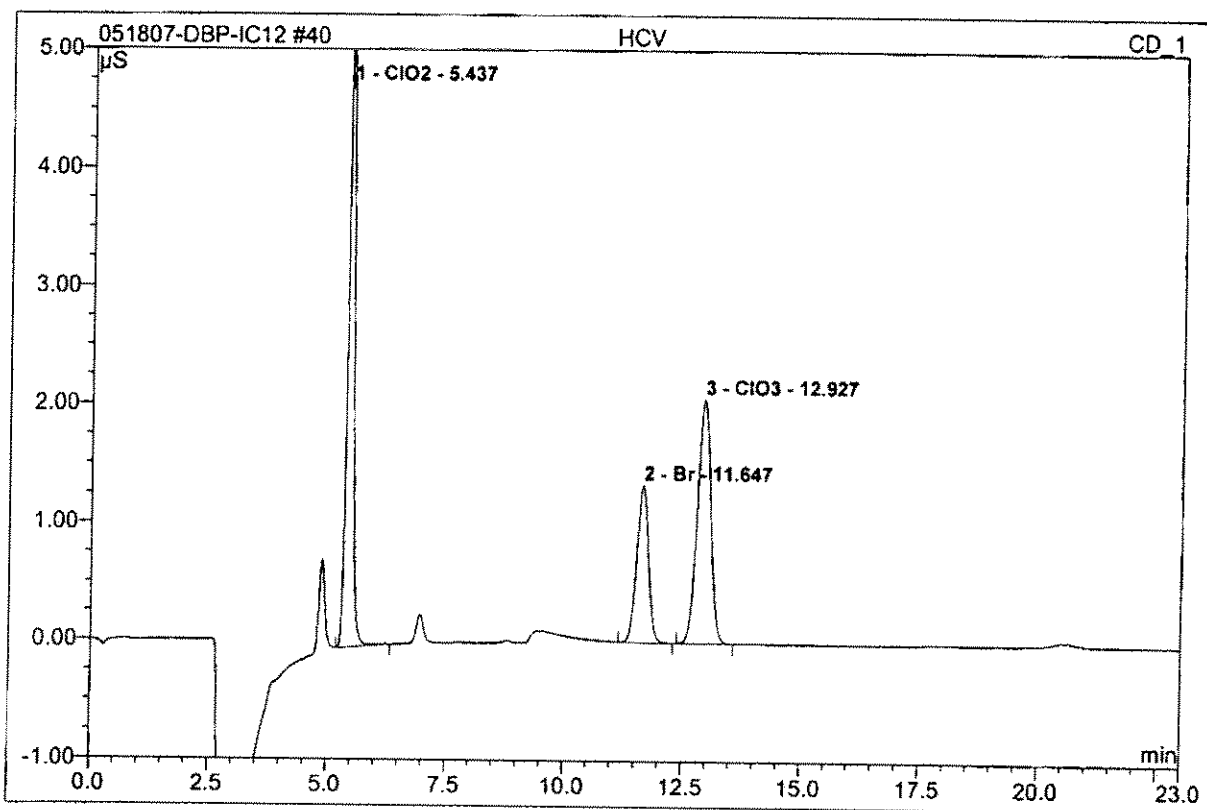
No.	Ret.Time min	Peak Name	Height μS	Area $\mu\text{S}^*\text{min}$	Rel.Area %	Amount ppb	Type
1	5.43	ClO ₂	1.291	0.201	43.69	201.999	BMB
2	11.65	Br	0.324	0.093	20.32	97.941	BMB
3	12.94	ClO ₃	0.499	0.165	35.99	196.711	BMB
Total:			2.115	0.459	100.00	496.651	

28 CCB			
Sample Name:	CCB	Injection Volume:	1000.0
Vial Number:	586	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/18/2007 23:12	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



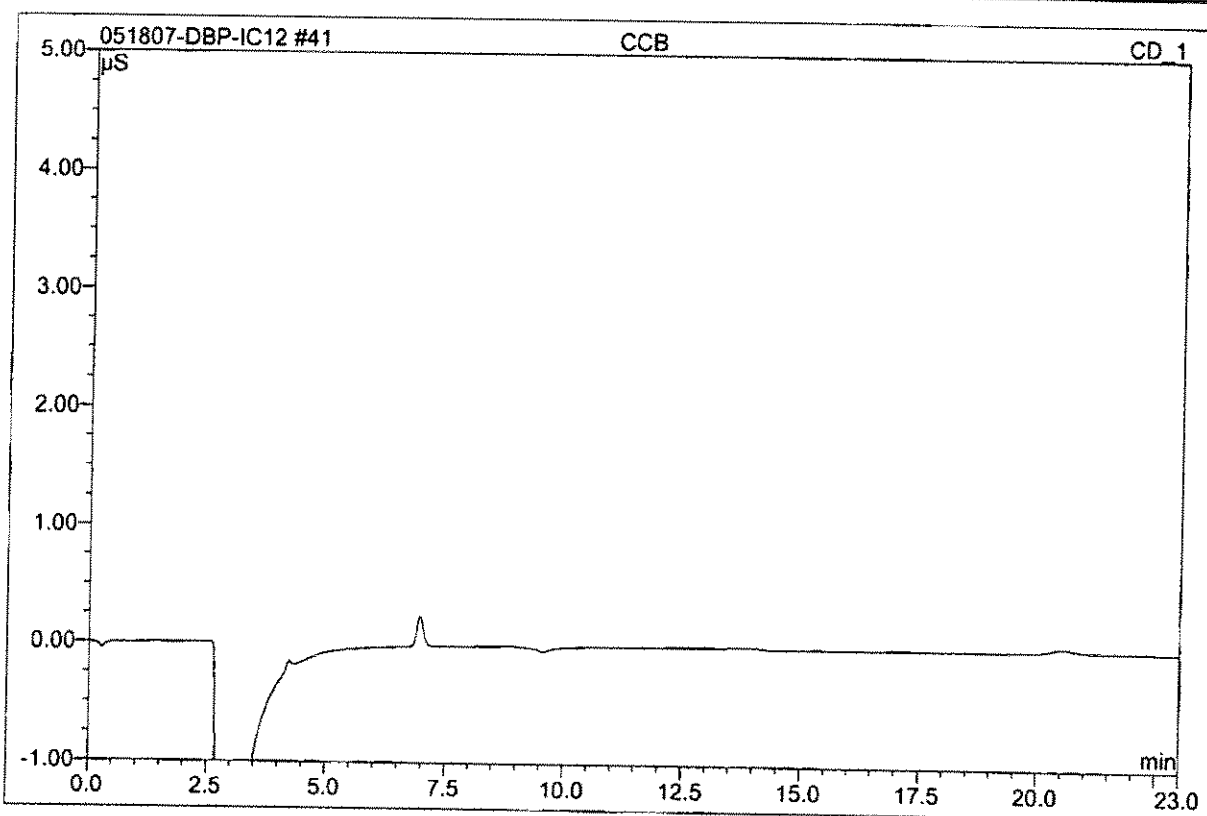
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount ppb	Type
Total:			0.000	0.000	0.00	0.000	

40 HCV			
Sample Name:	HCV	Injection Volume:	1000.0
Vial Number:	783	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/19/2007 4:17	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



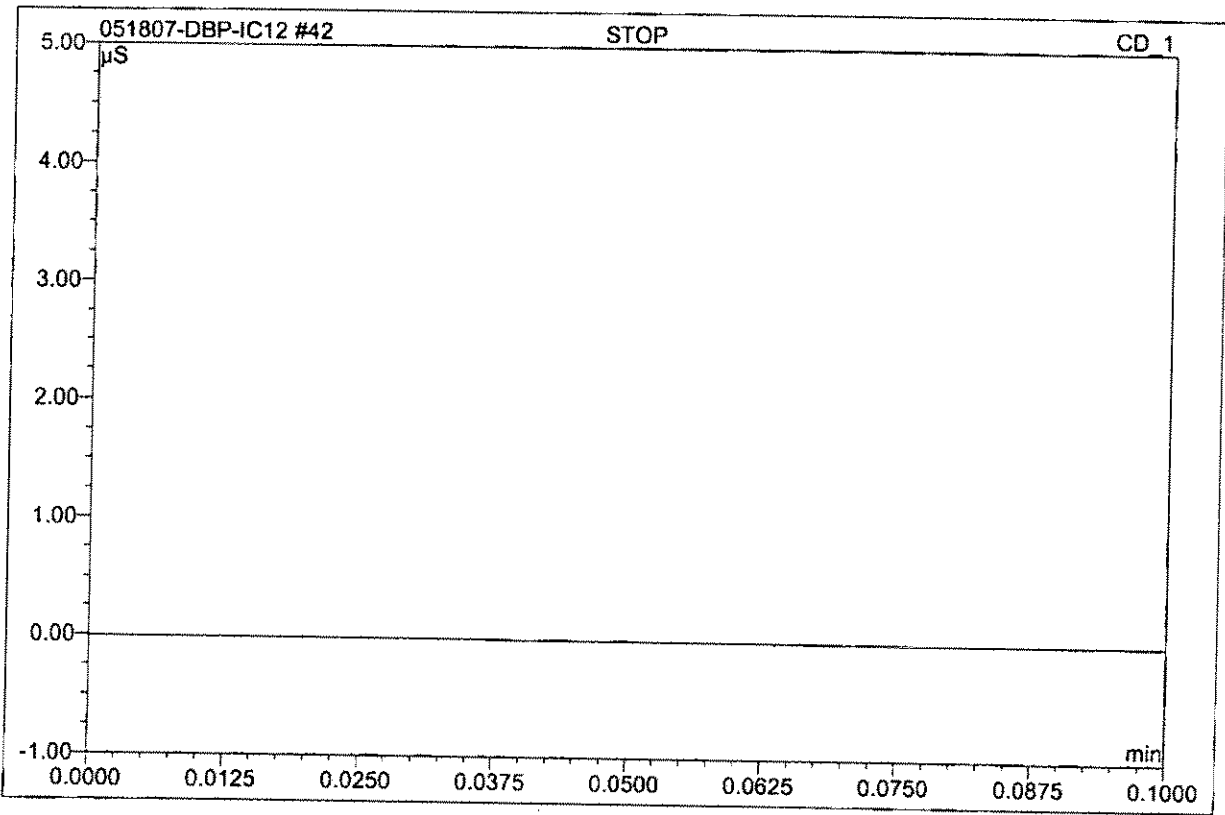
No.	Ret. Time min	Peak Name	Height μS	Area μS*min	Rel. Area %	Amount ppb	Type
1	5.44	ClO2	5.461	0.827	43.84	795.074	BMB
2	11.65	Br	1.333	0.381	20.17	402.339	BMB
3	12.93	ClO3	2.068	0.679	35.98	802.615	BMB
Total:			8.862	1.887	100.00	2000.028	

41 CCB			
Sample Name:	CCB	Injection Volume:	1000.0
Vial Number:	784	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	IC12 test Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/19/2007 4:42	Sample Weight:	1.0000
Run Time (min):	23.00	Sample Amount:	1.0000



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

42 STOP			
Sample Name:	STOP	Injection Volume:	1000.0
Vial Number:	785	Channel:	CD_1
Sample Type:	unknown	Wavelength:	n.a.
Control Program:	DPB Stop Program	Bandwidth:	n.a.
Quantif. Method:	DBP-Method	Dilution Factor:	1.0000
Recording Time:	5/19/2007 5:07	Sample Weight:	1.0000
Run Time (min):	0.10	Sample Amount:	1.0000



No.	Ret.Time min	Peak Name	Height μS	Area $\mu\text{S}\cdot\text{min}$	Rel.Area %	Amount ppb	Type
Total:			0.000	0.000	0.00	0.000	

**Standard
Preparation
Worksheet
&
Certificate of
Analysis**

Reagent Preparation Documentation

Reagent: DBP Calibration Stock Solution
Date Received/Prepped: 032207/041007/052007/051707/ 1
Date Expired: 042207/051007/060107/061707/ 1
Manufacturer: _____
Storage Condition: _____

MW #: Raja060520-2
By: Raja
Matrix: aq
Amount: 100ml
Lot #: _____

Component	Comment	Standard	Concentration
Bromide 1000ppm Exp: 06/07	500ml } Add 50ml EDA solution [LMR060129-12] then	R201373	5ppm
Chlorate 1000ppm Exp: 06/07	1000ml } dilute to 100ml with DI water	R201374	10ppm
Chloride 1000ppm Exp: 06/07	1000ml }	R201375	10ppm
Comment: _____			

Reagent: DBP Calibration Standard #1
Date Received/Prepped: 032207/041007/052007/051707/ 1
Date Expired: 042207/051007/060107/061707/ 1
Manufacturer: _____
Storage Condition: _____

MW #: Raja060520-3
By: Raja
Matrix: aq
Amount: 100ml
Lot #: _____

Component	Comment	Standard	Concentration
DBP cal. stock sol'n	1000ml } Dilute with DI water to 100ml	Raja060520-2	Br - 5ppb
EDA solution	500ml }	LMR060129-12	ClO ₂ 15103-10ppb
Comment: _____			

Reagent: DBP Calibration Standard #2
Date Received/Prepped: 032207/041007/052007/051707/ 1
Date Expired: 042207/051007/060107/061707/ 1
Manufacturer: _____
Storage Condition: _____

MW #: Raja060520-4
By: Raja
Matrix: aq
Amount: 100ml
Lot #: _____

Component	Comment	Standard	Concentration
DBP cal. stock sol'n	200ml } Dilute to 100ml with DI water	Raja060520-2	Br - 10ppb
EDA	500ml }	LMR060129-12	ClO ₂ - 20ppb ClO ₃ - 20ppb
Comment: _____			

Reagent Preparation Documentation

Reagent: DBP Calibration Standard #3
Date Received/Prepped: 03/22/07 04/01/07 05/01/07 05/17/07 1 1
Date Expired: 04/22/07 05/10/07 06/01/07 06/17/07 1 1
Manufacturer: _____
Storage Condition: _____

MW #: Raja060520-5
By: Raja
Matrix: aq
Amount: 100ml
Lot #: _____

Component	Comment	Standard	Concentration
DBP Cal. Stock soln	1ml ? Dilute to 100ml with D.I. water	Raja060520-2	Br - 50ppb
EDA	50ul	LMR060129-12	ClO ₂ - 100ppb ClO ₃ - 100ppb

Comment: _____

Reagent: DBP Calibration Standard #4
Date Received/Prepped: 03/22/07 04/01/07 05/01/07 05/17/07 1 1
Date Expired: 04/22/07 05/10/07 06/01/07 06/17/07 1 1
Manufacturer: _____
Storage Condition: _____

MW #: Raja060520-6
By: Raja
Matrix: aq
Amount: 100ml
Lot #: _____

Component	Comment	Standard	Concentration
DBP Cal. Stock soln	1ml ? Dilute to 100ml with D.I. water	Raja060520-2	Br - 100ppb
EDA	50ul	LMR060129-12	ClO ₂ - 200ppb ClO ₃ - 200ppb

Comment: _____

Reagent: DBP Calibration Standard #5
Date Received/Prepped: 03/22/07 04/01/07 05/01/07 05/17/07 1 1
Date Expired: 04/22/07 05/10/07 06/01/07 06/17/07 1 1
Manufacturer: _____
Storage Condition: _____

MW #: Raja060520-7
By: Raja
Matrix: aq
Amount: 100ml
Lot #: _____

Component	Comment	Standard	Concentration
DBP Cal. Stock soln	4ml ? with D.I. water dilute to 100ml	Raja060520-2	Br - 900ppb
EDA	50ul	LMR060129-12	ClO ₂ - 400ppb ClO ₃ - 400ppb

Comment: _____

Reagent Preparation Documentation

Reagent: DBP Calibration Standard #6
Date Received/Prepped: 032207/041007/050107/051707/ 1
Date Expired: 042207/051007/060107/061707/ 1
Manufacturer: _____
Storage Condition: _____

MW #: Rajac060520-8
By: Raja
Matrix: aq
Amount: 100ml
Lot #: _____

Component	Comment	Standard	Concentration
DBP Cal. Stock Soln	2ml } Dilute to 100ml with D.I. water	Rajac0520-2	Br - 400ppb
EDA			ClO ₂ - 800ppb
		LMR060129-12	ClO ₃ - 800ppb

Comment: _____

Reagent: DBP LCS Stock Solution
Date Received/Prepped: 032207/041007/050107/051707/052007/060207
Date Expired: 042207/051007/060107/061707/063007/060107
Manufacturer: _____
Storage Condition: _____

MW #: Rajac10322-1
By: Raja
Matrix: aq
Amount: 100ml
Lot #: _____

Component	Comment	Standard	Concentration
Chlorite 100ppm Exp: 01/08	1000ul } Add 50ul of EDA (LMR060129-12) and dilute to 100ml with D.I. water	R 201587	10ppm
Chlorate 100ppm Exp: 05/09			R 201400
Bromide 100ppm Exp: 10/07	500ul }	R 201369	5ppm

Comment: _____

Reagent: DBP LCS Solution
Date Received/Prepped: 032207/041007/050107/051707/052007/060207
Date Expired: 042207/051007/060107/061707/063007/060107
Manufacturer: _____
Storage Condition: _____

MW #: Rajac10322-2
By: Raja
Matrix: aq
Amount: 100ml
Lot #: _____

Component	Comment	Standard	Concentration
DBP LCS Stock Soln	2ml } Dilute to 100ml with D.I. water	Rajac10322-1	Br - 100ppb
EDA			ClO ₂ - 200ppb
		LMR060129-12	ClO ₃ - 200ppb

Comment: _____



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R# 201373

CERTIFICATE OF ANALYSIS

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 fax: 303.901.1903
 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 Principles."

2.0 DESCRIPTION OF CRM **1000 µg/mL Bromide in Water**

Catalog Number:	ICBR1-1 and ICBR1-5
Lot Number:	Y-BR01057
Starting Material:	Potassium Bromide
Starting Material Purity (%):	99.0000
Starting Material Lot No.:	09014BY
Matrix:	Water

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Concentration: 999 ± 3 µg/mL

Certified Density: 0.998 g/mL (measured at 22° C)

The Certified Value is the instrument analysis value. The following equations are used in the calculation of the certified value and the uncertainty:

$$\text{Certified Value } (\bar{x}) = \frac{\sum x_1}{n}$$

(\bar{x}) = mean
 x_1 = individual results
 n = number of measurements

$$\text{Uncertainty } (\pm) = \frac{2\sqrt{(\sum s_1)^2}}{(n)^{1/2}}$$

$\sum s_1$ = The summation of all significant estimated errors
 (Most common are the errors from instrumental measurement weighting, 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 IV 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.

Assay Method #1 **999 ± 3 µg/mL**
 IC Assay NIST SRM 3184 Lot Number: 020701

Assay Method #2 **997 ± 3 µg/mL**
 Volhard NIST SRM 999a Lot Number: 999a

10.0 QUALITY STANDARD DOCUMENTATION



R# 201373

10.1 ISO 9001:2000 Quality Management System Registration - QMI Certificate Number 010105

- Recognized by:
- Registrar Accreditation Board (ANSI-RAB)
- Standards Council of Canada (SCC)
- Dutch Council for Accreditation (RVA)
- Entidad Mexicana de Acreditacion, a.c.(EMA)

Members of IQ Net International Certification Network:

- Argentina (IRAM), Australia (QAS), Austria (ÖQS), Belgium (Avinter), Brazil (FCAV), Canada (QMI), Hong Kong (HKQAA), Columbia (ICONTEC), Czech Republic (CQS), Denmark (DS), Finland (SFS), France (AFAQ), Germany (DQS), Greece (ELOT), Hungary (MSZT), Ireland (NSAI), Israel (SII), Italy (CISQ), Japan (JQA), Korea (KSA-QA), Netherlands (KEMA), Norway (NCS), Poland(PCBC), Portugal (APCER), Singapore (PSB), Slovenia (SIQ), Spain (AENOR), Switzerland (SQS)

10.2 ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration" - Chemical Testing - Accredited A2LA Certificate Number 883.01

10.3 ISO/IEC Guide 34 - 2000 "General Requirements for the Competence of Reference Material Producers" - Reference Materials Production - Accredited A2LA Certificate Number 883.02

A2LA Mutual Recognition Agreement Partners:

- Australia (NATA), Austria (BmWA), Belgium (BELTEST) (BKO-OBE), Canada (SCC), Chinese Taipei (CNLA), Czech Republic (NAO), Denmark (DANAK), Finland (FINAS), France (COFRAC), Germany (DAR), Hong Kong (HKAS), Ireland (NAB), Italy (SIT) (SINAL), Japan (JAB) (JNLA), Republic of Korea (KOLAS), The Netherlands (RVA), New Zealand (IANZ), Norway (NA), Portugal (IPQ), Singapore (SAC-SINGLAS), Spain (ENAC), Sweden (SWEDAC), Switzerland (SAS), United Kingdom (UKAS) and United States (NVLAP) (ICBO ES)

10.4 10CFR50 Appendix B - Nuclear Regulatory Commission - Domestic Licensing of Production and Utilization Facilities

10.5 10CFR21 - Nuclear Regulatory Commission - Reporting Defects and Non-Compliance

10.6 MIL-STD-45662A (Obsolete/Observed)

11.0 DATE OF CERTIFICATION AND PERIOD OF VALIDITY

11.1 IV 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 (P-SP01020) of chemically-stable solutions performed at the Manufacture's facility shows a CRM shelf-life of four years for solutions packaged in 500-mL low density polyethylene bottles. When stored under special environmental controls 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. The manufacturer concurs with state and federal regulatory agencies' recommendations that solution standards be assigned a one-year expiration date.

Certification Date: February 28, 2006

Expiration Date: **EXPIRES**

1/1/2007-

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By: Nick Maida, QA Administrator

Certificate Approved By: Katalin Le, QC Manager

Certifying Officer: Paul Gaines, PhD., Technical Director



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CERTIFICATE OF ANALYSIS

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 info@inorganicventures.com

I-CAL ION CHROMATOGRAPHY SOLUTION 1000 µg/mL Chlorate in H₂O
 Catalog No: ICCLO31-1 and ICCLO31-5

Lot Number: **Y-CLOX01034**

Starting Material: Potassium Chlorate
 Starting Material Lot No: 02407TF

CERTIFIED CONCENTRATION: 1008 ± 3 µg/mL

The Certified Value is the Inductively Coupled Plasma Spectroscopy (ICP) value. The following equations are used in the calculation of the certified value and the uncertainty:

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

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

(\bar{x}) = mean

x_i = individual results

n = number of measurements

$\sum S_i$ = The summation of all significant estimated errors.

Calculated Value: 1001 ± 5 µg/mL

Method: Calculated, based on starting material.

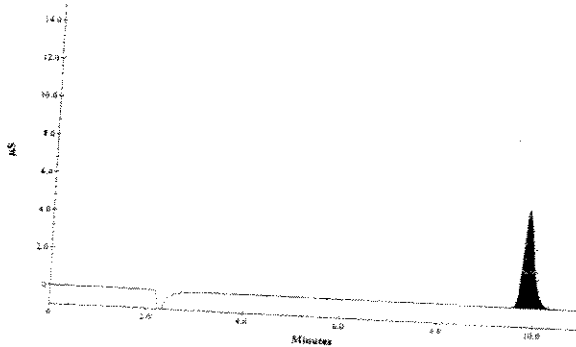
Instrument Value: 1006 ± 2 µg/mL

Method: Ion Chromatography vs an in-house standard.

Instrument Value: 1008 ± 3 µg/mL

Method: Analysis by Inductively Coupled Plasma Spectroscopy (ICP) vs NIST SRM 3182 Lot number: 990506.

ClO₃⁻ Y-CLOX01034



DIONEX DX-120 Ion Chromatograph
 Anal. Column: IonPac AS9-HC 4 x 250mm
 Guard Column: IonPac AG9-HC 4 x 50mm
 Anion self Generating Suppressor:
 ASRS-ULTRA II 4mm
 Suppressor Current: 100mA
 Eluent: 9.0 mM Na₂CO₃
 Eluent Flow Rate: 1.0 mL/min
 Cell Temp.: 35 °C
 Scale: Y-axis = 15µS scale
 X-axis = minutes
 Concentration: 20µg/g

ANALYZED DENSITY OF SOLUTION (measured at 22°C): **0.998 g/mL**

QA:MG

Rev 082405entm

Paul R. Gaines

Expires: **EXPIRES**
 1/2007



195 Lenigh Avenue, Suite 3
Lakewood, New Jersey 08701 USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

R# 201375

Tel: 800.669.6799 - 732.901.1900
Fax: 732.901.1903
http://inorganicventures.com

I-CAL ION CHROMATOGRAPHY SOLUTION 1000 µg/mL Chlorite in H₂O

Catalog No: ICCL021-1 and ICCL021-5

Lot Number: **Y-CLOX01036**

Starting Material: Sodium Chlorite
Starting Material Lot No: E02F39

CERTIFIED CONCENTRATION: 998 ± 3 µg/mL

* The Certified Concentration for Lot No. Y-CLOX01036 is only the ClO₂⁻. The value of Cl⁻ is 6 ± 1 µg/mL, and the value of ClO₃⁻ is 12 ± 1 µg/mL. This was determined by Ion Chromatography vs an in-house standard solutions traceable to NIST SRM 3182.

The Certified Value is based upon the wet assay value. The following equations are used in the calculation of the certified value and the uncertainty:

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

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

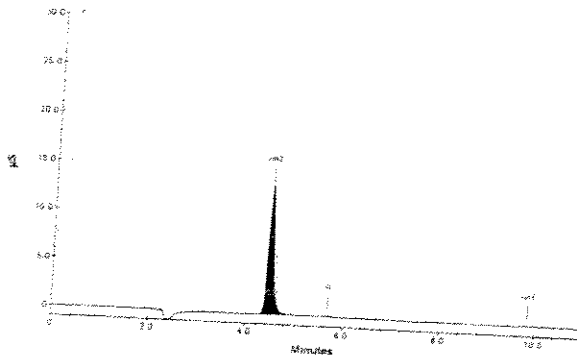
(\bar{x}) = mean x_i = individual results n = number of measurements

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

Instrument Value: 1002 ± 2 µg/mL
Method: Ion Chromatography vs NIST SRM 136e Lot number 980702.

Wet Analysis: 998 ± 3 µg/mL
Method: Iodometric Titration NIST SRM 136e Lot number 980702.

ClO₂⁻ Y-CLOX01036



DIONEX DX-120 Ion Chromatograph
Anal. Column: IonPac AS9-HC 4 x 250mm
Guard Column: IonPac AG9-HC 4 x 50mm
Anion self Generating Suppressor:
ASRS-ULTRA II 4mm
Suppressor Current: 100mA
Eluent: 9 mM Na₂CO₃
Eluent Flow Rate: 1.00 mL/min
Cell Temp.: 35 °C
Scale: Y-axis = 30 µS scale
X-axis = minutes
Concentration: 20 µg/g

ANALYZED DENSITY OF SOLUTION (measured at 22°C): **0.998 g/mL**

QA:KL Rev 02/2006/NT/LL

Paul R. Haines

Quality Assurance Manager

65

Expires:

EXPIRES
1#2007