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# Level IV Data Package

MWH Group 192802

**Method: 314**

Sample No.:

2701090303

2701090304

# Perchlorate QC Checklist

rev: 27 Mar 03

Analysis Date: 1-12-07 Analyst: Raja

QC'd by [Signature] Date 1-16-7

Instrument: IC 3000

Calculated MCT Level: 3155 umhos/cm

Original IPC conductance: 3085 umhos/cm

Daily IPC conductance: 3109 umhos/cm

## Calibration including QCS

- QCS (20ppb) recovery is within 90% - 110% (18-22ppb) to verify that the calibration curve (minimum 5 points) still holds.
- Calibration curve is reanalyzed if QCS fails. Correlation Coefficient is 0.995 or better.

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

MBLANK is analyzed before samples. Perchlorate, if present, is  $<$  or  $=$  half of the MRL.

L-C104 only: ICCSCV at 2ppb is within 50%-150% (1-3ppb)

C104 only: MRL at 4ppb is within 75%-125% (3-5ppb)

IPC (25ppb) recovery is between 80%-120% (20-30ppb)

IPC retention time is within 5% of the retention time of the standards

IPC Conductance level is within 10% of the original

$$PDA/H = 3.2\%$$

## LCS/LCSD (25ppb)

Recoveries are between 90%-110% (22.5 - 27.5ppb)

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

## MS/MSD (25ppb) NOTE: For UCMR, MS/MSD concentrations alternate between 4ppb and 25ppb

Recoveries are within 80%-120% (20-30ppb) for 25ppb spike  (3.2-4.8ppb) for 4ppb spike

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

RPD between MS and MSD is within 15%.

## Continuing Calibration Verification (MCV, HCV) NOTE: For UCMR ECV and MCV are required

Verification Checks alternate between mid- and high-level during the analysis (low- and mid-level for UCMR)

MCV (25ppb) recovery is between 85%-115% (21.25 - 28.75ppb)

HCV (100ppb) recovery is between 85%-115% (85-115ppb)  ECV (4ppb) recovery is between 75%-125% (3.0-5.0)

Pretreat and include the following QC parameters for any batch or part thereof containing samples requiring pretreatment

One Laboratory Reagent Blank (LRB). Perchlorate is  $<$  or  $=$  half of MRL.

One pair of Laboratory Control Samples (LCS/LCSD). Recovery of perchlorate is between 85%-115%.

One Pair of Laboratory Fortified Matrices (MS/MSD). Recoveries are between 80%-120%

## Samples

All samples are analyzed within 28 days of collection.

All samples are analyzed within MCT Conductance limit.

## QIR

QIR needed for failed QC

QIR needed for samples analyzed outside of hold time

*Q. 1-18-7*

Sample No.	Sample Name	Dil.Fac.	Comment	Time	Amount	CLO4 CD_1
1	autocal1	1.0		12.01.07 15:06		n.a.
2	autocal2	1.0	RAJA060913-2	12.01.07 15:27	1.8227	
3	autocal3	1.0	RAJA060913-3	12.01.07 15:49	3.9835	
4	autocal4	1.0	RAJA060913-4	12.01.07 16:10	10.1402	
5	autocal5	1.0	RAJA060913-5	12.01.07 16:32	25.0611	
6	autocal6	1.0	RAJA060913-6	12.01.07 16:53	49.9231	
7	autocal7	1.0	RAJA060913-7	12.01.07 17:14	100.0135	
8	WASH	1.0		12.01.07 17:36		n.a.
9	WASH	1.0		12.01.07 17:57		n.a.
10	QCS	1.0		12.01.07 18:18	19.9899	99.9%
11	IPC	1.0		12.01.07 18:40	24.4157	97.7%
12	MBLK	1.0		12.01.07 19:01		n.a.
13	MRL-2	1.0		12.01.07 19:23	2.1997	110%
14	MRL-4	1.0		12.01.07 19:44	4.2571	106%
15	LCS1	1.0		12.01.07 20:05	24.9517	99.8%
16	LCS2	1.0		12.01.07 20:27	25.5211	102%
17	2701040264_1/2	2.0		12.01.07 20:48	3.6379	
18	2701040269_1/2	2.0		12.01.07 21:10		n.a.
19	2701050060_1/50000	50000.0		12.01.07 21:31	1101120.1292	
20	2701090142_1/50-DNR	50.0		12.01.07 21:52	1802.7818	
21	2701090059_1/5	5.0		12.01.07 22:14		n.a.
22	2701090060_1/5000	5000.0		12.01.07 22:35	232354.7391	
23	2701090303_1/5 ✓	5.0		12.01.07 22:57		n.a.
24	2701090304_1/5000 ✓	5000.0		12.01.07 23:18	229864.8770	
25	2701100393	1.0		12.01.07 23:39		n.a.
26	2701100393MS	1.0		13.01.07 00:01	25.0319	25.0 - 100%
27	270100393MSD	1.0		13.01.07 00:22	23.8697	23.9 - 95.6%
28	2701060008	1.0		13.01.07 00:44	75.7140	
29	CCV	1.0		13.01.07 01:05	26.2048	105%
30	2701060009	1.0		13.01.07 01:26	71.3307	
31	2701090600	1.0		13.01.07 01:48	2.3183	
32	2701090601	1.0		13.01.07 02:09		n.a.
33	2701090602	1.0		13.01.07 02:30		n.a.
34	2701090603	1.0		13.01.07 02:52	2.4058	
35	2701100335	1.0		13.01.07 03:13		n.a.
36	2701090130_1/500	500.0		13.01.07 03:35	9369.7311	
37	2701110421	1.0		13.01.07 03:56	6.9088	
38	2701110422	1.0		13.01.07 04:17	6.3792	
39	2701110423DNR	1.0	MISINJECTION	13.01.07 04:39	2.1937	
40	HCV	1.0		13.01.07 05:00	101.7425	102%
41	STOP	1.0		13.01.07 05:22		n.a.
<b>Average:</b>		n.a.	<b>39094.927</b>			n.a.
<b>Rel.Std.Dev:</b>		n.a.	<b>0.000 %</b>			n.a.

CONDUCTIVITY MW SOP REVISION 5  
SM2510B

Analysis Date: 01-12-07

Analyst: Raja

Reviewed By: [Signature] 1-18-7

LIMS Check By: \_\_\_\_\_

Was QC Criteria Met: Y N

Was QIR Needed: Y N

Time of Analysis Start: \_\_\_\_\_ End: \_\_\_\_\_

MRL  $\mu\text{mhos/cm}$ : R# \_\_\_\_\_ exp of solution: \_\_\_\_\_  
KCl Std 1412 R# 201420 exp of solution 03/07  
TV = 1412  $\mu\text{mhos/cm}$  @ 25°C for 0.0100M

Reading: 1414  
Instrument: YSI Model 3200 SN:01A0504 Year Acquired 2001 New

Run #	Sample Number	Sample ID	Client	Date Collected	Temp °C	pH	Scale ( $\mu\text{mho/mmho}$ )	Result		Comments
								Instrument	Reported ( $\mu\text{mho/cm}$ )	
	Blank									
	STD MRL $\mu\text{mhos/cm}$						$\mu\text{S}$	05148		
	STD KCl - 1000 $\text{mhos/cm}$							N/A		
1	2701090142	PC-55	Kennecott	1-8-07			$\mu\text{S}$	999		1-3 $\pm$ 50% of TV 950-1050 $\pm$ 5% of TV
2	059	EFF-COMP					$\text{mS}$	12.20		
3	060	INF-COMP					$\mu\text{S}$	9309		
4	303	EFF						9389		
5	304	INF						9394		
6	2701060008	outfall 1		1-5-07				9229		
7	09	outfall 2						999		
8	2701090600	1063799	TREWA	1-9-07				999		
9	601	1202919						451		
10	602	1003711						2308		
DUP								943		
11	603	1202339						944		RPD < 5%
12	2701100335	well #1	COMP	1-10-07				885		
13	393	A	FMWD	1-09-07				478		
14	420	064	calwater					642		
15	421	048						746		
16	422	049						783		
17	423	050						813		
18								815		
19										
20										
DUP	2701100323	050	calwater	1-09-07						
STD	KCl - 10 $\text{mhos/cm}$						$\mu\text{S}$	821		RPD < 5%

$$\% \text{ RPD} = \frac{|S1 - S2|}{(S1 + S2)/2} * 100$$

S1 = reading of 1st sample  
S2 = reading of 2nd sample

8-12---RPD < 20% of TV

Sequence: 011207-CLO4-IC11  
Operator: raja

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Printed: 1/18/2007 8:56:57 AM

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Location: IC11\2007\Jan  
Timebase: IC11  
#Samples: 41

Created: 1/12/2007 10:47:19 AM by raja  
Last Update: 1/13/2007 1:38:02 PM by raja

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2	autocal2	1.0000	Standard	RAJA060913-2	Perchlorate-IC11	IC#4-CLO4-LOW
3	autocal3	1.0000	Standard	RAJA060913-3	Perchlorate-IC11	IC#4-CLO4-LOW
4	autocal4	1.0000	Standard	RAJA060913-4	Perchlorate-IC11	IC#4-CLO4-LOW
5	autocal5	1.0000	Standard	RAJA060913-5	Perchlorate-IC11	IC#4-CLO4-LOW
6	autocal6	1.0000	Standard	RAJA060913-6	Perchlorate-IC11	IC#4-CLO4-LOW
7	autocal7	1.0000	Standard	RAJA060913-7	Perchlorate-IC11	IC#4-CLO4-LOW
8	WASH	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
9	WASH	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
10	QCS	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
11	IPC	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
12	MBLK	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
13	MRL-2	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
14	MRL-4	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
15	LCS1	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
16	LCS2	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
17	2701040264_1/2	2.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
18	2701040269_1/2	2.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
19	2701050060_1/50000	50000.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
20	2701090142_1/50-DNR	50.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
21	2701090059_1/5	5.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
22	2701090060_1/5000	5000.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
23	2701090303_1/5	5.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
24	2701090304_1/5000	5000.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
25	2701100393	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
26	2701100393MS	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
27	270100393MSD	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
28	2701060008	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
29	CCV	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
30	2701060009	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
31	2701090600	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
32	2701090601	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
33	2701090602	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
34	2701090603	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
35	2701100335	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
36	2701090130_1/500	500.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
37	2701110421	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
38	2701110422	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
39	2701110423DNR	1.0000	Unknown	MISINJECTION	Perchlorate-IC11	IC#4-CLO4-LOW
40	HCV	1.0000	Unknown		Perchlorate-IC11	IC#4-CLO4-LOW
41	STOP	1.0000	Unknown		IC11 Stop	IC#4-CLO4-LOW

Sequence: 011207-CLO4-IC11  
Operator: raja

Page 2 of 2  
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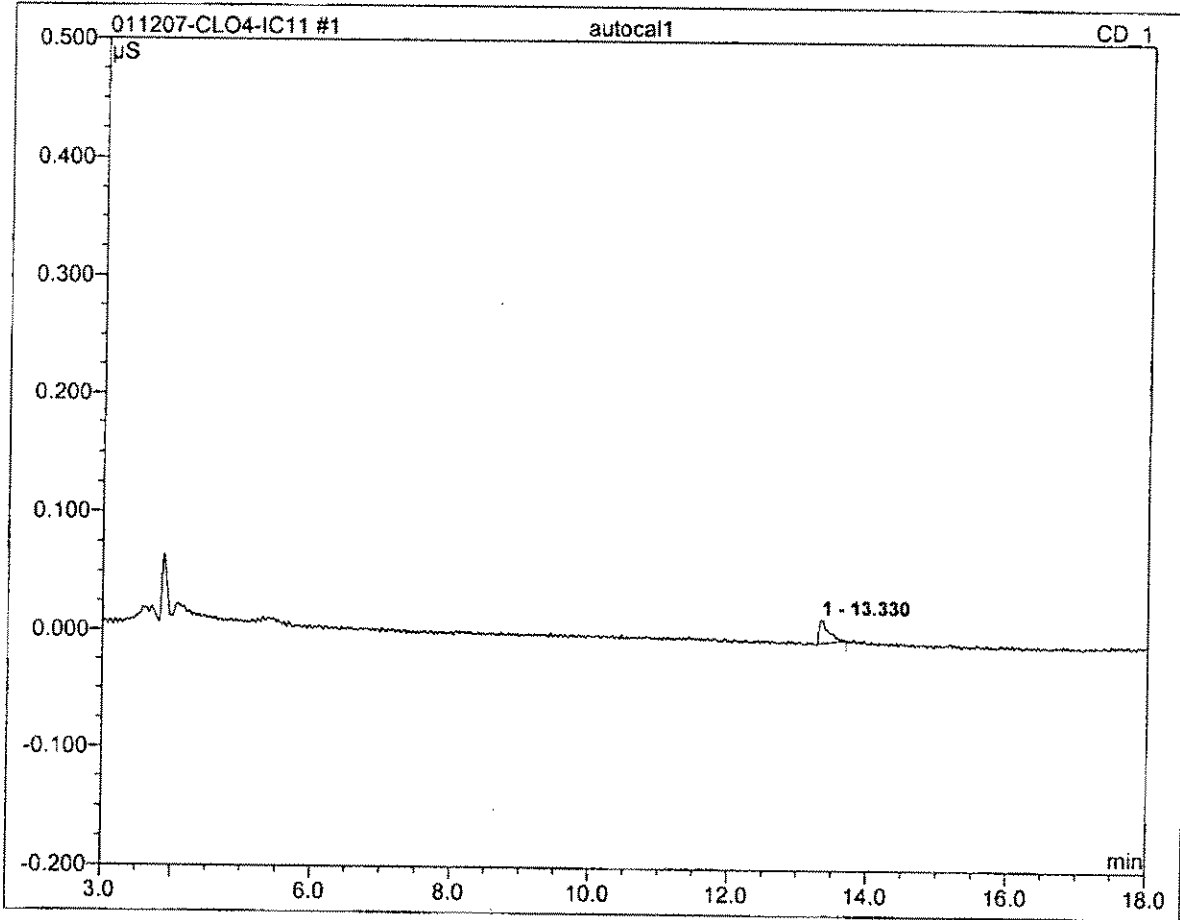
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Timebase: IC11  
#Samples: 41

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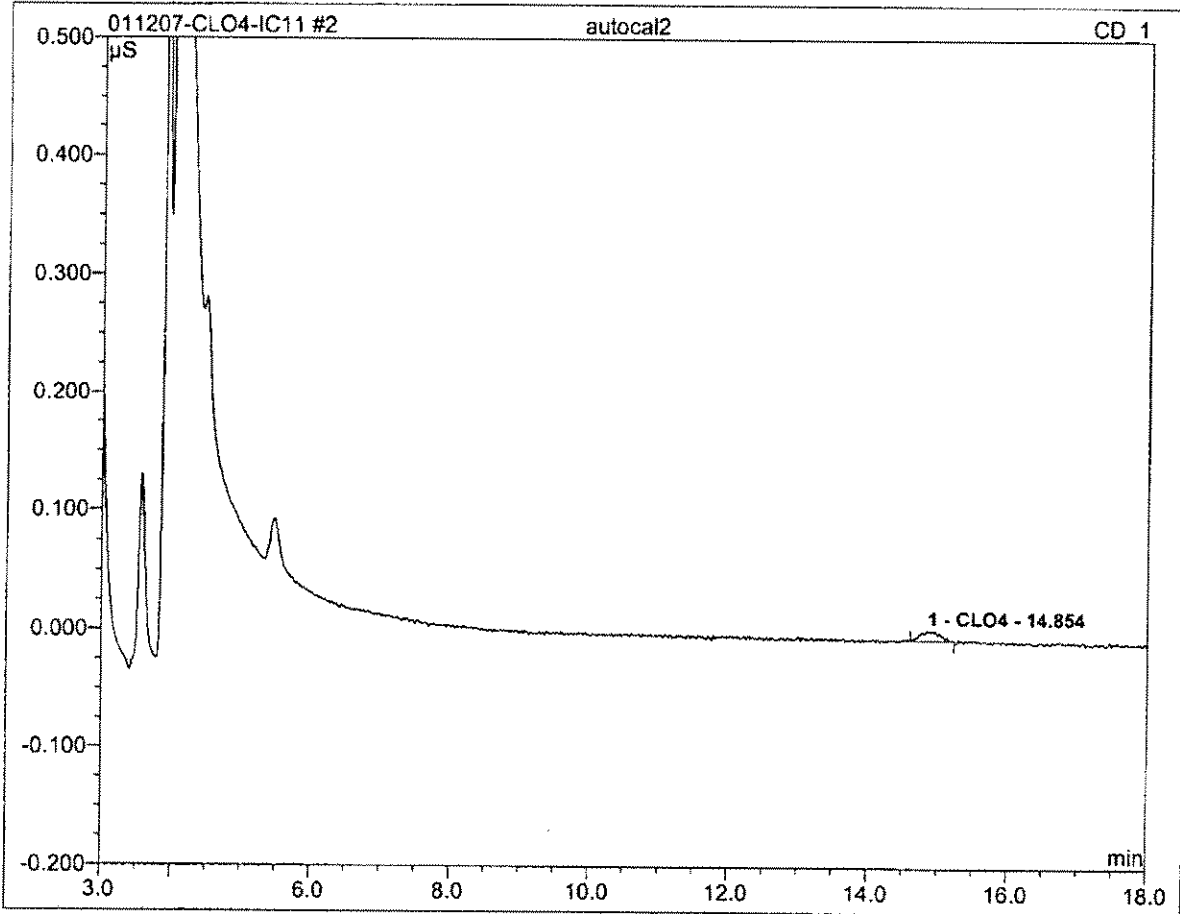
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2	autocal2	1/12/2007 3:27:52 PM	Finished	Raja
3	autocal3	1/12/2007 3:49:16 PM	Finished	Raja
4	autocal4	1/12/2007 4:10:41 PM	Finished	Raja
5	autocal5	1/12/2007 4:32:05 PM	Finished	Raja
6	autocal6	1/12/2007 4:53:30 PM	Finished	Raja
7	autocal7	1/12/2007 5:14:45 PM	Finished	Raja
8	WASH	1/12/2007 5:36:05 PM	Finished	Raja
9	WASH	1/12/2007 5:57:25 PM	Finished	Raja
10	QCS	1/12/2007 6:18:45 PM	Finished	Raja
11	IPC	1/12/2007 6:40:06 PM	Finished	Raja
12	MBLK	1/12/2007 7:01:42 PM	Finished	Raja
13	MRL-2	1/12/2007 7:23:06 PM	Finished	Raja
14	MRL-4	1/12/2007 7:44:29 PM	Finished	Raja
15	LCS1	1/12/2007 8:05:52 PM	Finished	Raja
16	LCS2	1/12/2007 8:27:15 PM	Finished	Raja
17	2701040264_1/2	1/12/2007 8:48:37 PM	Finished	Raja
18	2701040269_1/2	1/12/2007 9:10:00 PM	Finished	Raja
19	2701050060_1/5000	1/12/2007 9:31:23 PM	Finished	Raja
20	2701090142_1/50-DNR	1/12/2007 9:52:46 PM	Finished	Raja
21	2701090059_1/5	1/12/2007 10:14:09 PM	Finished	Raja
22	2701090060_1/5000	1/12/2007 10:35:35 PM	Finished	Raja
23	2701090303_1/5	1/12/2007 10:57:00 PM	Finished	Raja
24	2701090304_1/5000	1/12/2007 11:18:24 PM	Finished	Raja
25	2701100393	1/12/2007 11:39:50 PM	Finished	Raja
26	2701100393MS	1/13/2007 12:01:13 AM	Finished	Raja
27	270100393MSD	1/13/2007 12:22:37 AM	Finished	Raja
28	2701060008	1/13/2007 12:44:00 AM	Finished	Raja
29	CCV	1/13/2007 1:05:24 AM	Finished	Raja
30	2701060009	1/13/2007 1:26:48 AM	Finished	Raja
31	2701090600	1/13/2007 1:48:11 AM	Finished	Raja
32	2701090601	1/13/2007 2:09:35 AM	Finished	Raja
33	2701090602	1/13/2007 2:30:58 AM	Finished	Raja
34	2701090603	1/13/2007 2:52:22 AM	Finished	Raja
35	2701100335	1/13/2007 3:13:45 AM	Finished	Raja
36	2701090130_1/500	1/13/2007 3:35:09 AM	Finished	Raja
37	2701110421	1/13/2007 3:56:33 AM	Finished	Raja
38	2701110422	1/13/2007 4:17:56 AM	Finished	Raja
39	2701110423DNR	1/13/2007 4:39:20 AM	Finished	Raja
40	HCV	1/13/2007 5:00:44 AM	Finished	Raja
41	STOP	1/13/2007 5:22:07 AM	Interrupted	Raja

<b>1 autocal1</b>			
Sample Name:	autocal1	Channel:	CD_1
Sample Type:	standard	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 15:06	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



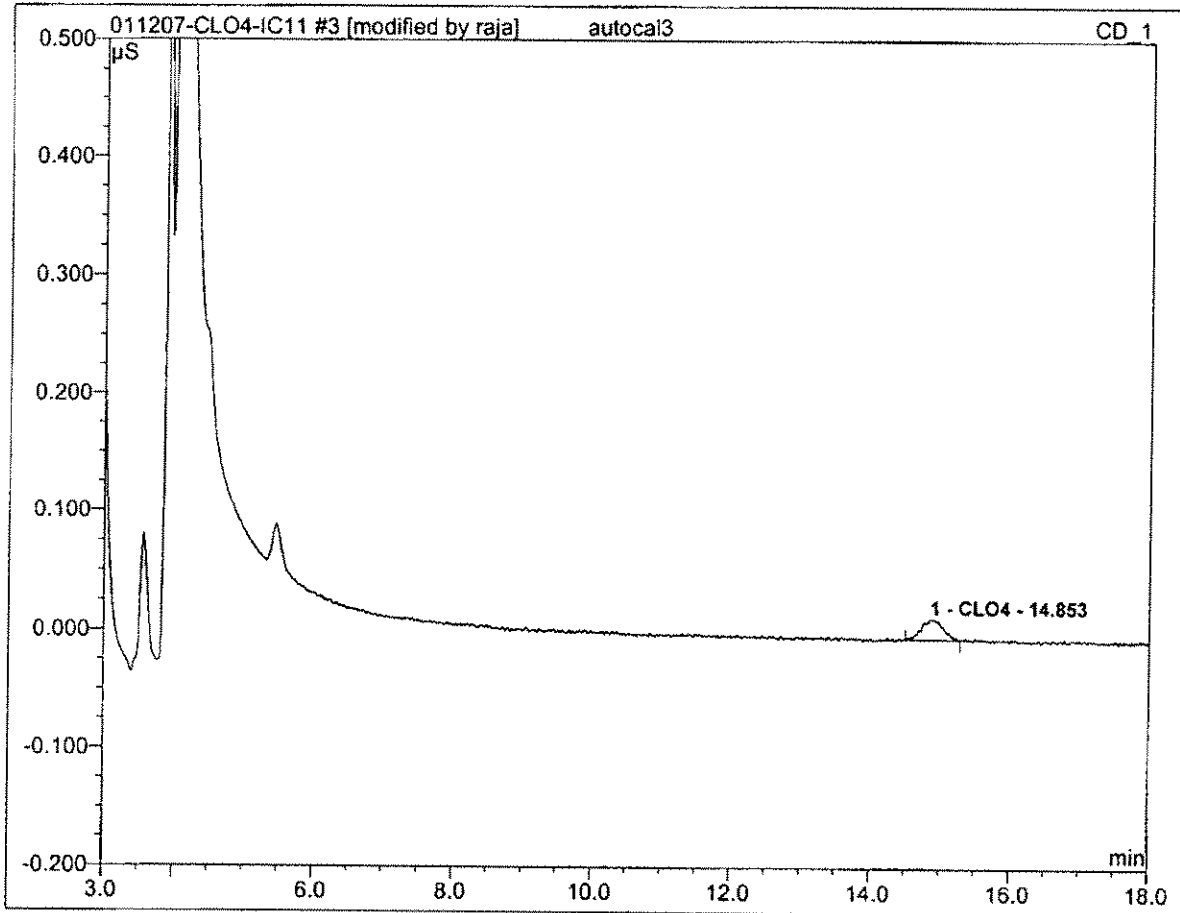
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

<b>2 autocal2</b>			
<b>RAJA060913-2</b>			
Sample Name:	autocal2	Channel:	CD_1
Sample Type:	standard	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 15:27	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



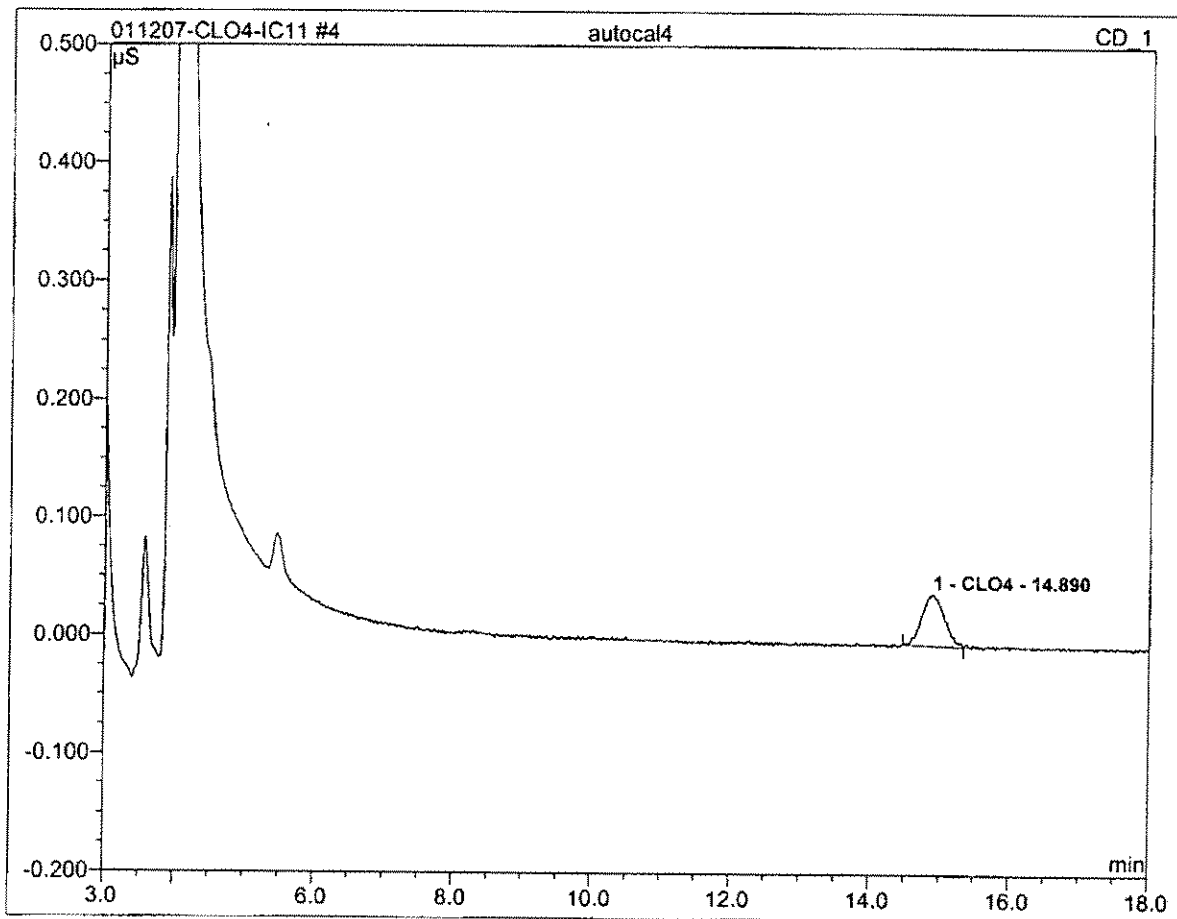
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.85	CLO4	0.009	0.003	100.00	1.823	BMB
<b>Total:</b>			0.009	0.003	100.00	1.823	

<b>3 autocal3</b>			
<b>RAJA060913-3</b>			
Sample Name:	autocal3	Channel:	CD_1
Sample Type:	standard	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 15:49	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



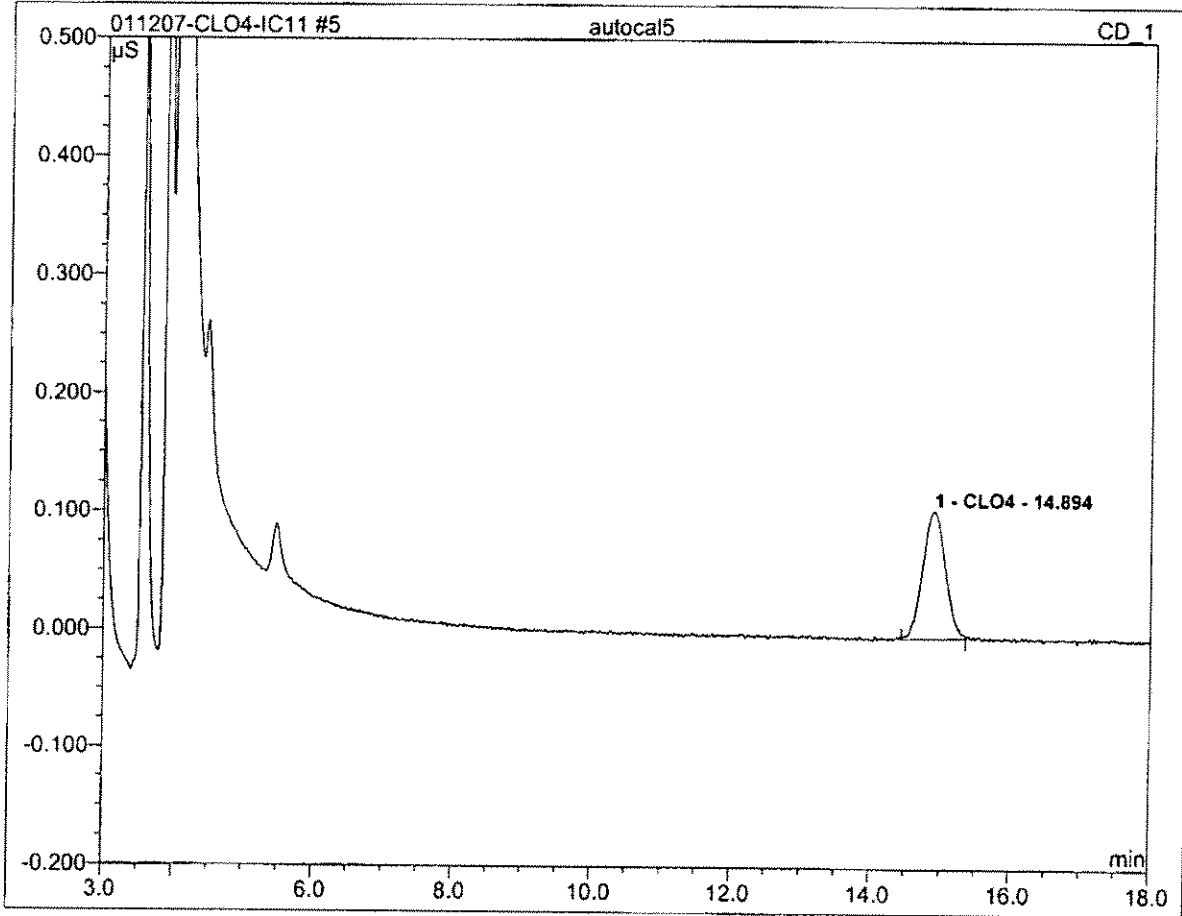
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount	Type
1	14.85	CLO4	0.017	0.006	100.00	3.983	BMB*
<b>Total:</b>			0.017	0.006	100.00	3.983	

<b>4 autocal4</b>			
<b>RAJA060913-4</b>			
Sample Name:	autocal4	Channel:	CD_1
Sample Type:	standard	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 16:10	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



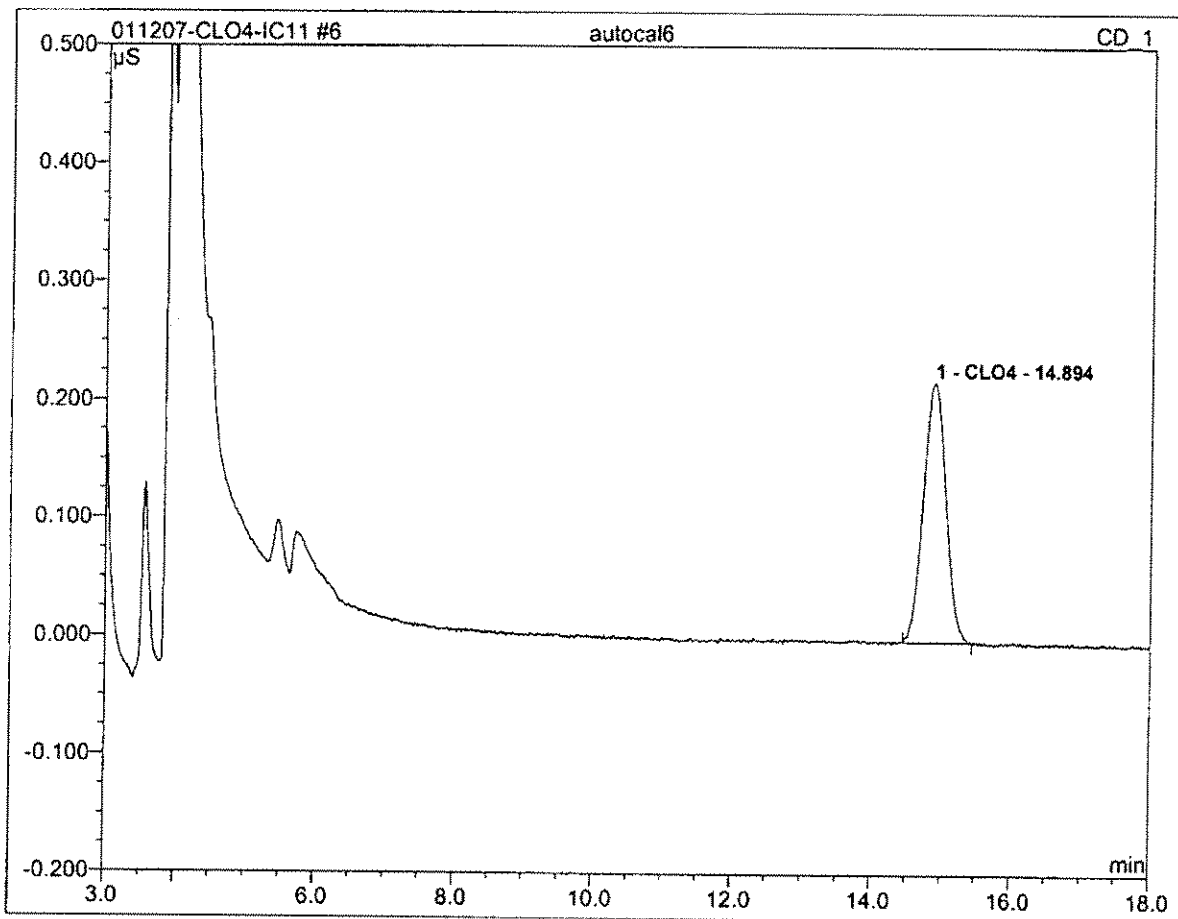
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount	Type
1	14.89	CLO4	0.044	0.016	100.00	10.140	BMB
<b>Total:</b>			0.044	0.016	100.00	10.140	

<b>5 autocal5</b>			
<b>RAJA060913-5</b>			
Sample Name:	autocal5	Channel:	CD_1
Sample Type:	standard	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 16:32	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



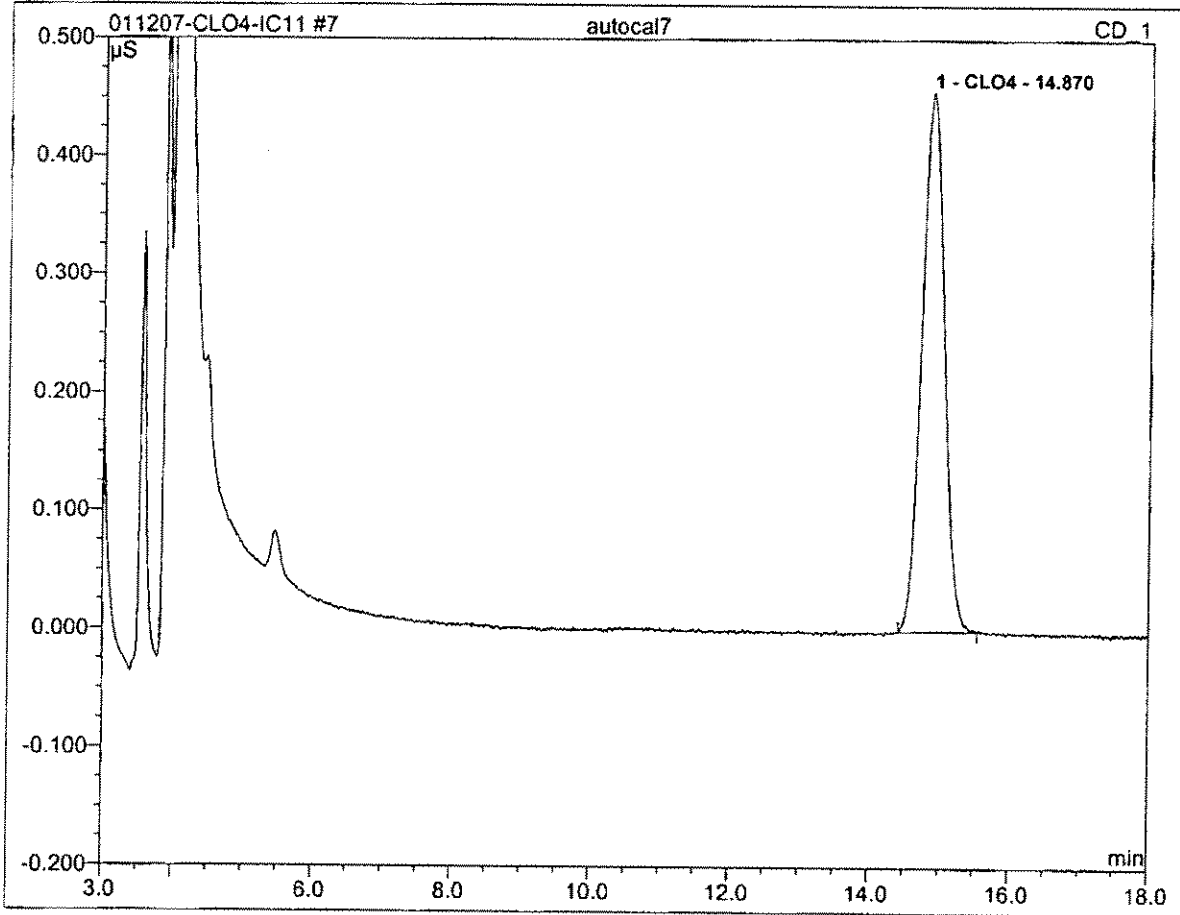
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount	Type
1	14.89	CLO4	0.108	0.041	100.00	25.061	BMB
<b>Total:</b>			0.108	0.041	100.00	25.061	

<b>6 autocal6</b>			
<b>RAJA060913-6</b>			
Sample Name:	autocal6	Channel:	CD_1
Sample Type:	standard	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 16:53	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



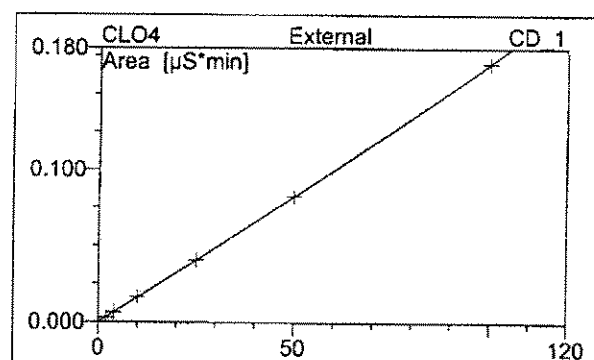
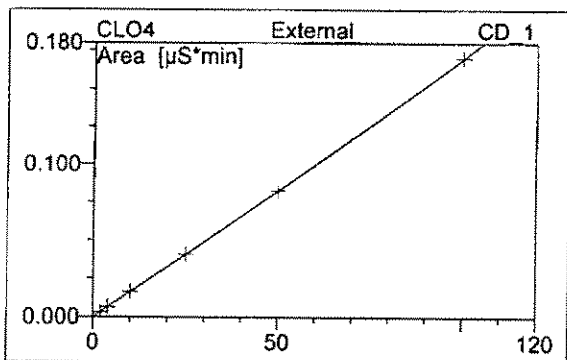
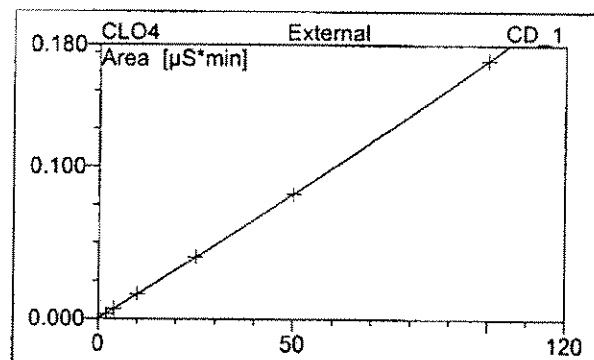
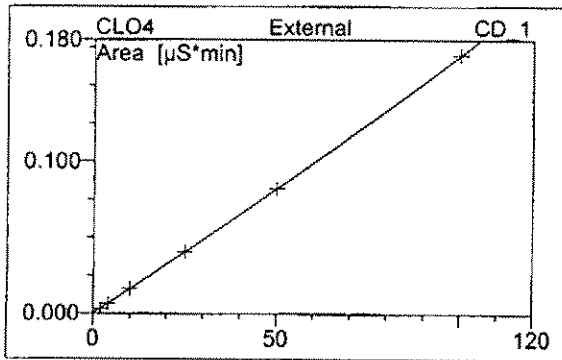
No.	Ret. Time min	Peak Name	Height μS	Area μS*min	Rel. Area %	Amount	Type
1	14.89	CLO4	0.220	0.082	100.00	49.923	BMB
<b>Total:</b>			0.220	0.082	100.00	49.923	

<b>7 autocal7</b>			
<b>RAJA060913-7</b>			
Sample Name:	autocal7	Channel:	CD_1
Sample Type:	standard	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 17:14	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



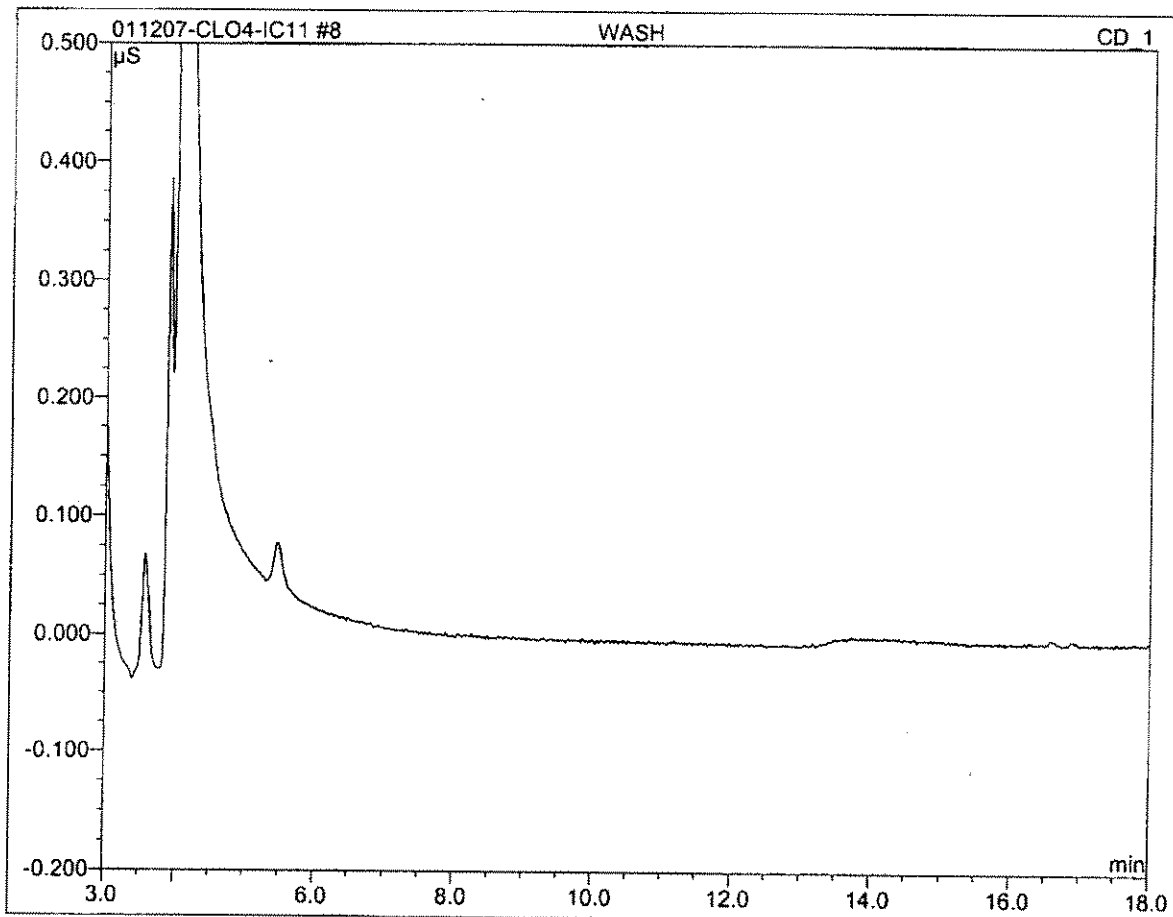
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.87	CLO4	0.457	0.170	100.00	100.013	BMB
<b>Total:</b>			0.457	0.170	100.00	100.013	

<b>7 autocal7</b>	
<b>RAJA060913-7</b>	
Sample Name: autocal7	Injection Volume: 20.0
Vial Number: 109	Channel: CD_1
Sample Type: standard	Wavelength: n.a.
Control Program: Perchlorate-IC11	Bandwidth: n.a.
Quantif. Method: IC#4-CLO4-LOW	Dilution Factor: 1.0000
Recording Time: 1/12/2007 17:14	Sample Weight: 1.0000
Run Time (min): 19.00	Sample Amount: 1.0000



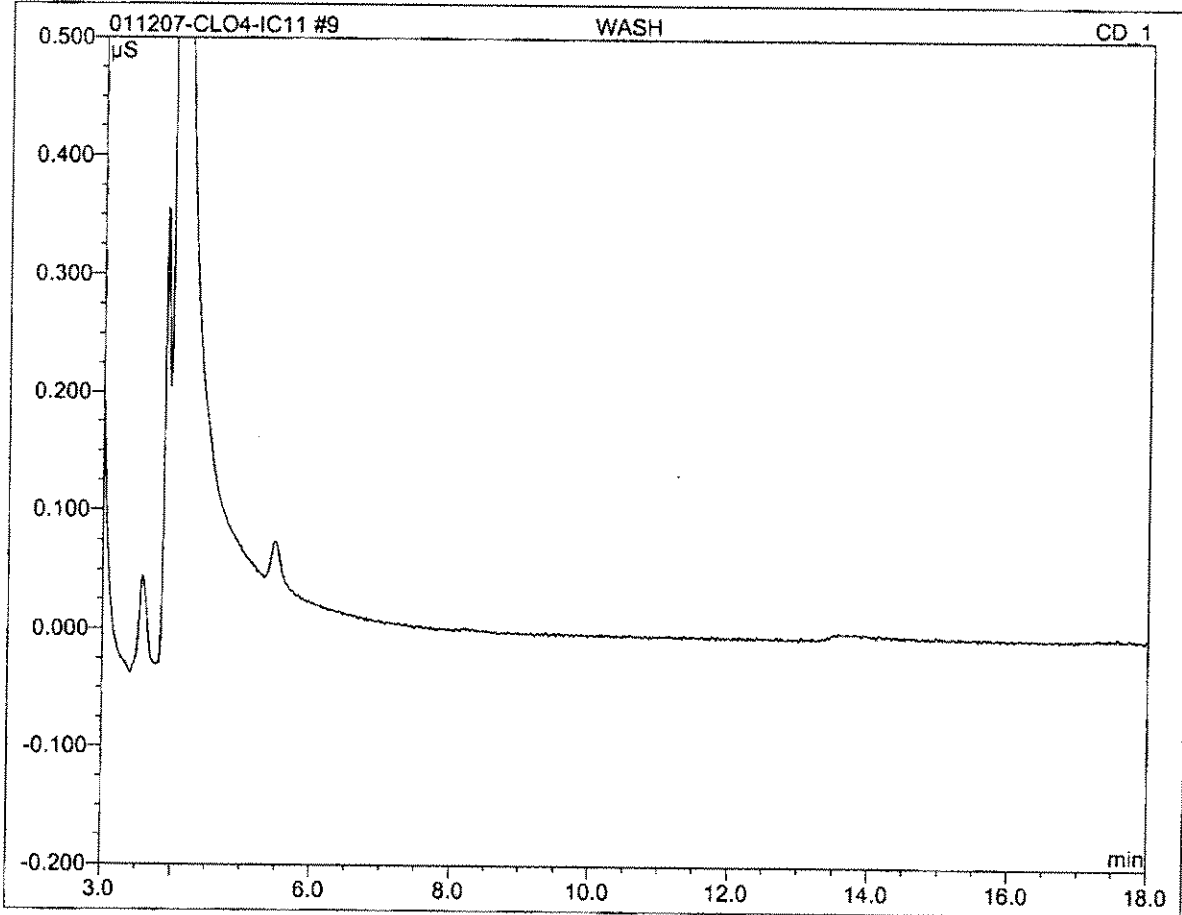
No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	14.87	CLO4	0QOff	6	99.9866	-0.0001	0.0016	0.0000
<b>Average:</b>					99.9866	-0.0001	0.0016	0.0000

<b>8 WASH</b>			
Sample Name:	WASH	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 17:36	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



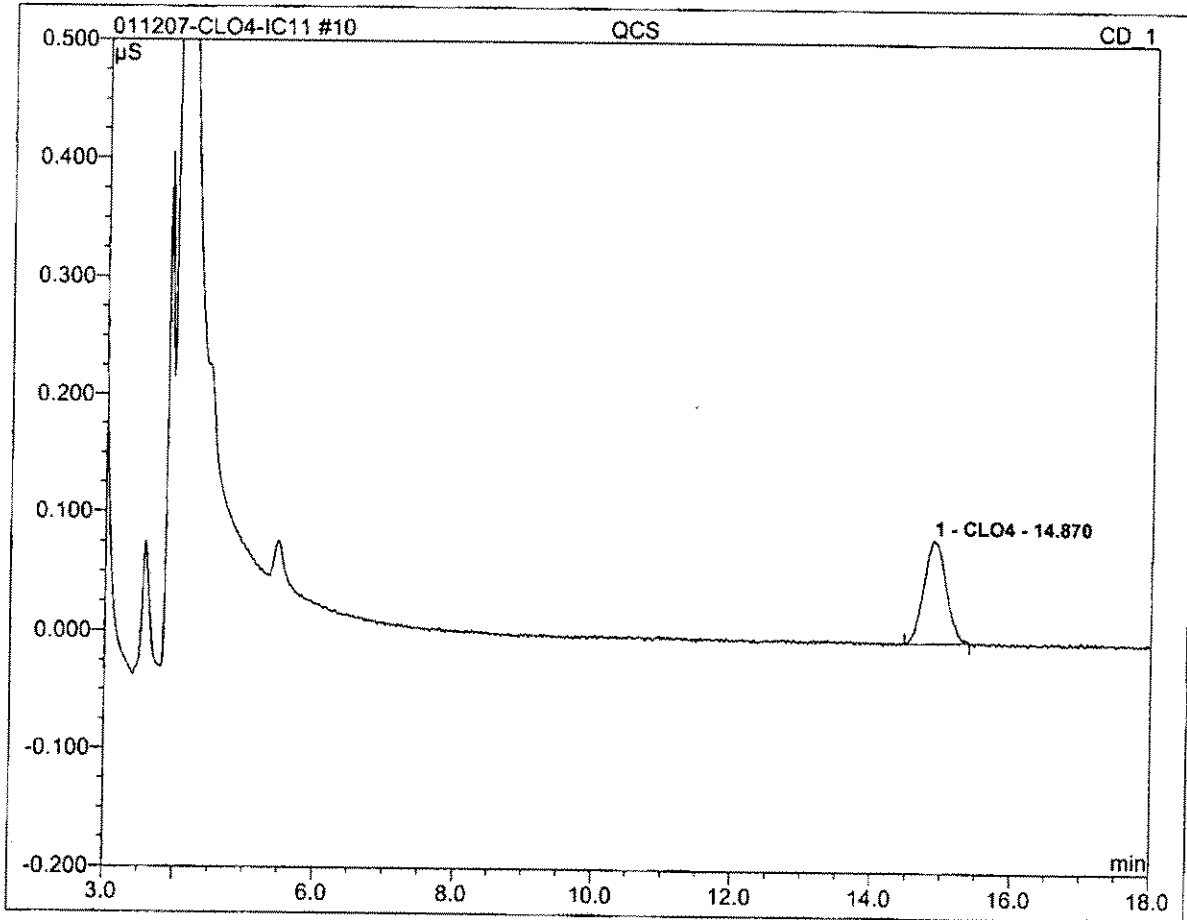
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

<b>9 WASH</b>			
Sample Name:	WASH	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 17:57	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



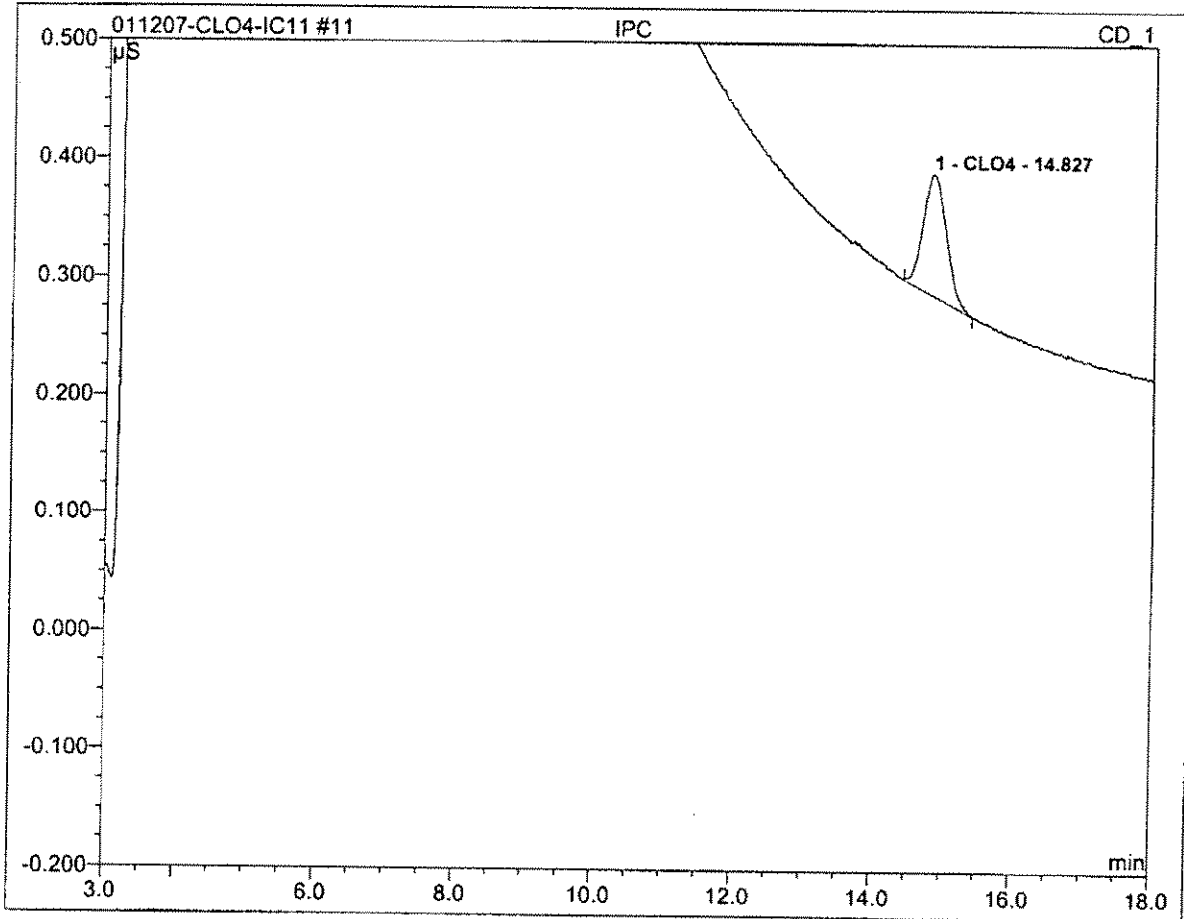
No.	Ret.Time min	Peak Name	Height $\mu\text{S}$	Area $\mu\text{S}\cdot\text{min}$	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

<b>10 QCS</b>			
Sample Name:	QCS	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 18:18	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



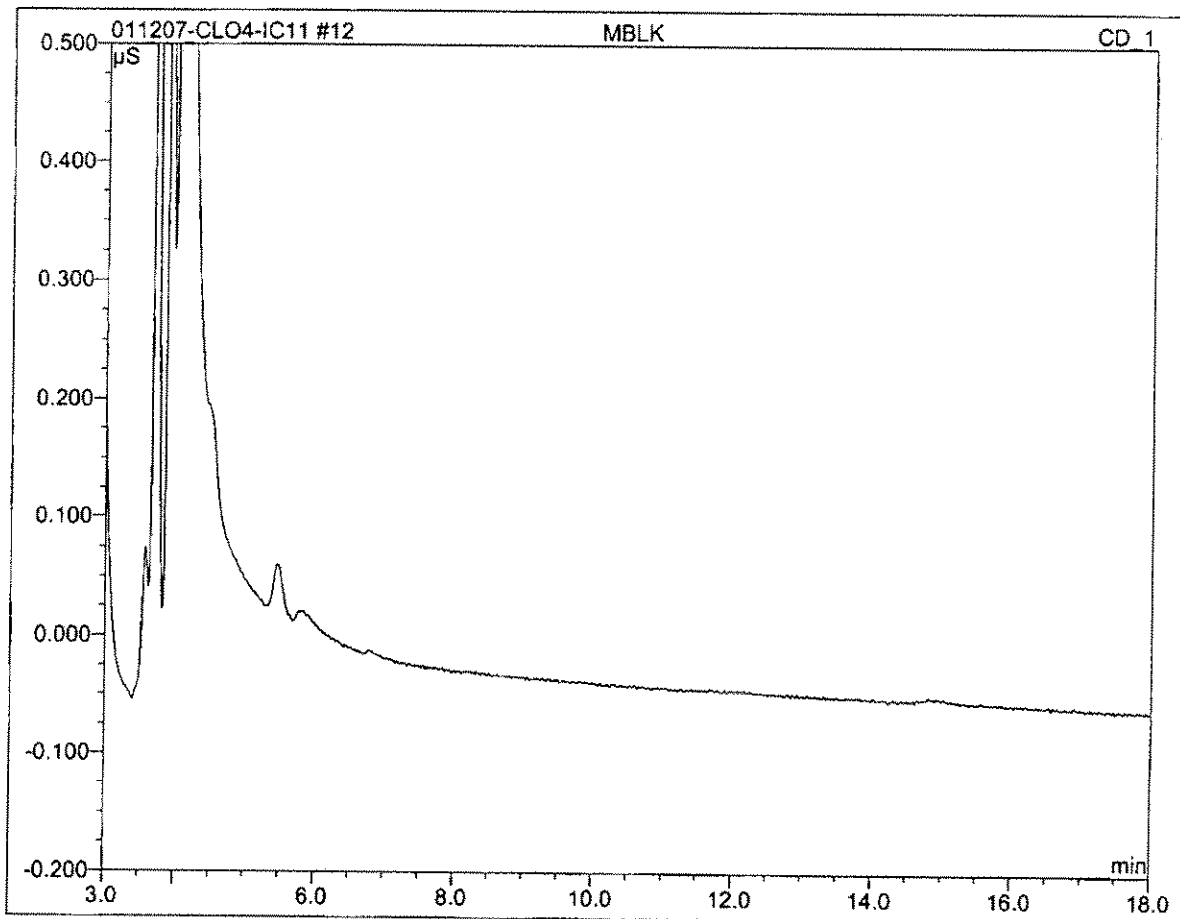
No.	Ret.Time min	Peak Name	Height $\mu$ S	Area $\mu$ S*min	Rel.Area %	Amount	Type
1	14.87	CLO4	0.087	0.032	100.00	19.990	BMB
<b>Total:</b>			0.087	0.032	100.00	19.990	

<b>11 IPC</b>			
Sample Name:	IPC	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 18:40	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



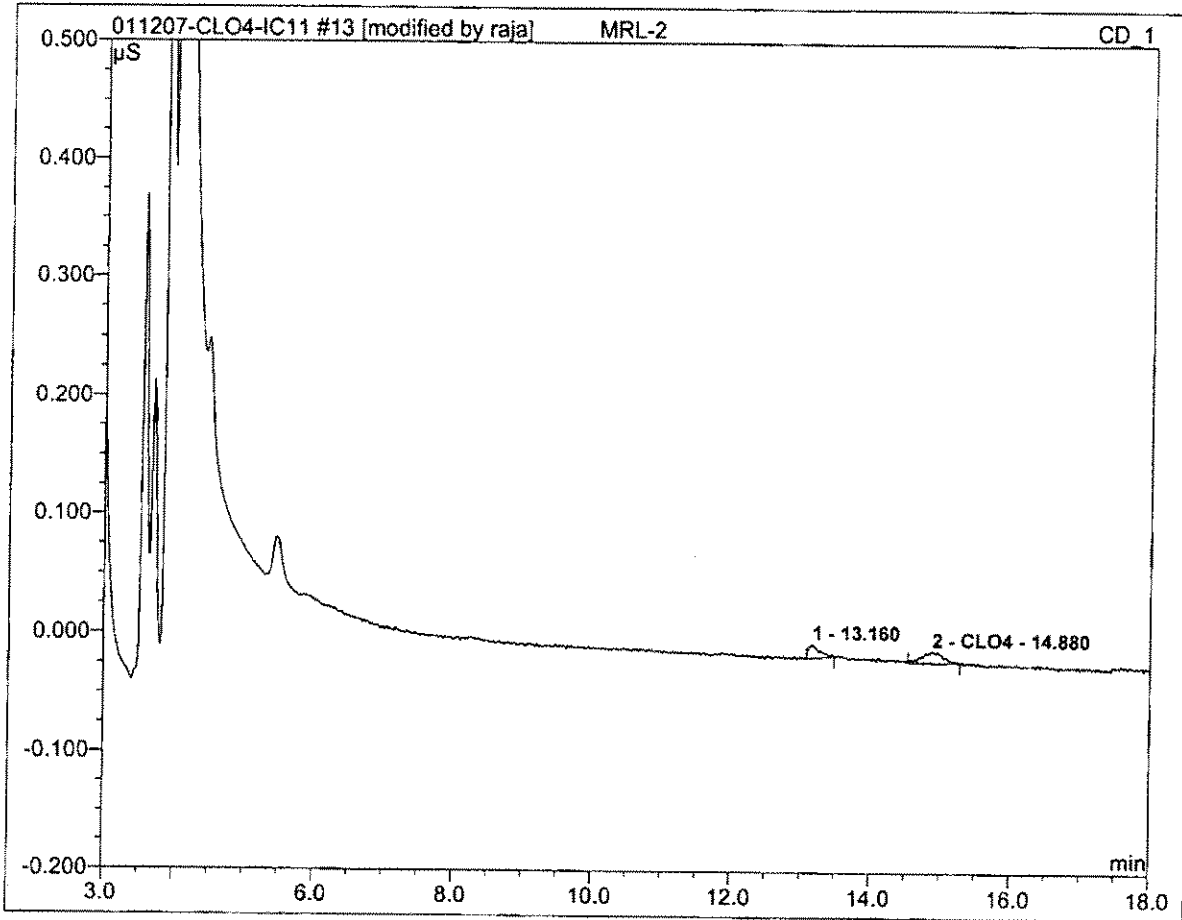
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.83	CLO4	0.102	0.039	100.00	24.416	BMB
<b>Total:</b>			0.102	0.039	100.00	24.416	

<b>12 MBLK</b>			
Sample Name:	MBLK	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 19:01	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



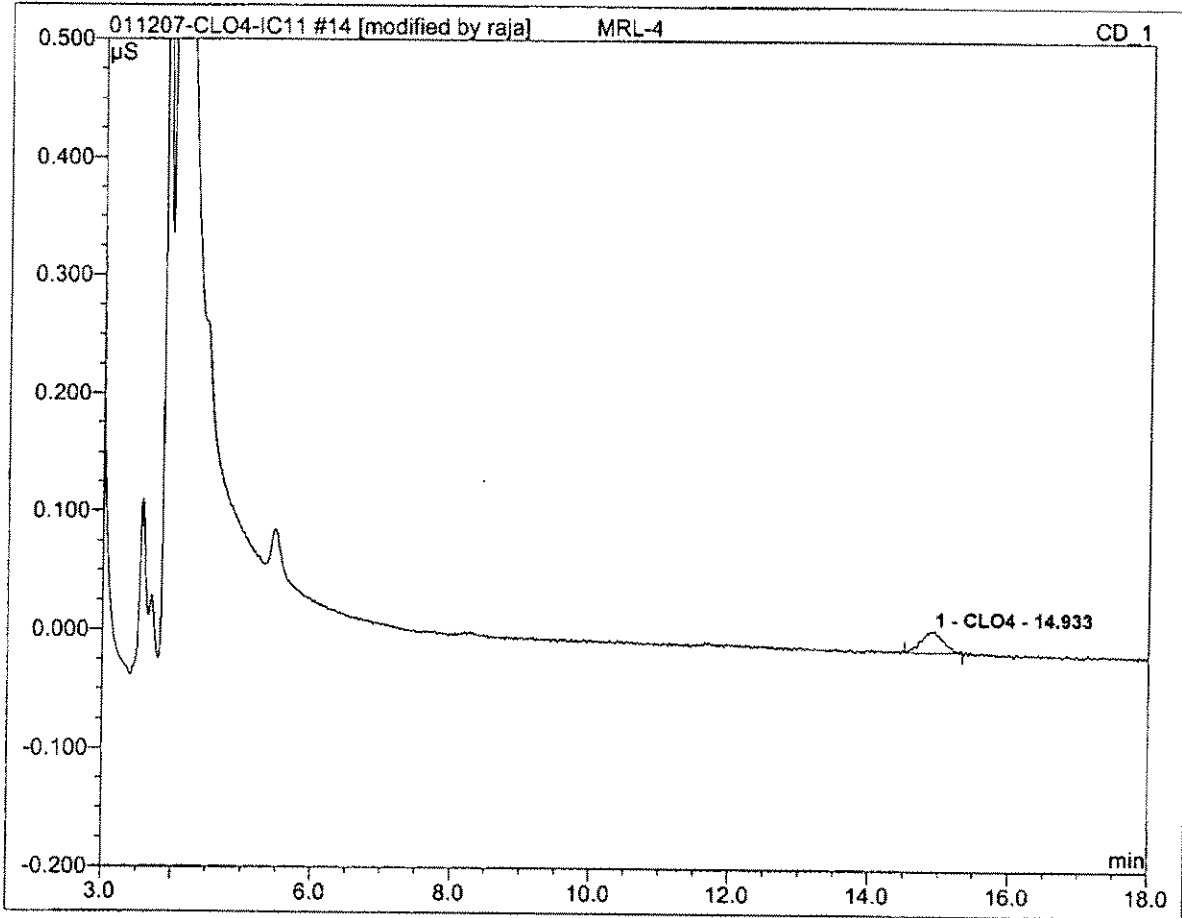
No.	Ret. Time min	Peak Name	Height µS	Area µS*min	Rel. Area %	Amount	Type
<b>Total:</b>			0.000	0.000	0.00	0.000	

<b>13 MRL-2</b>			
Sample Name:	MRL-2	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 19:23	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



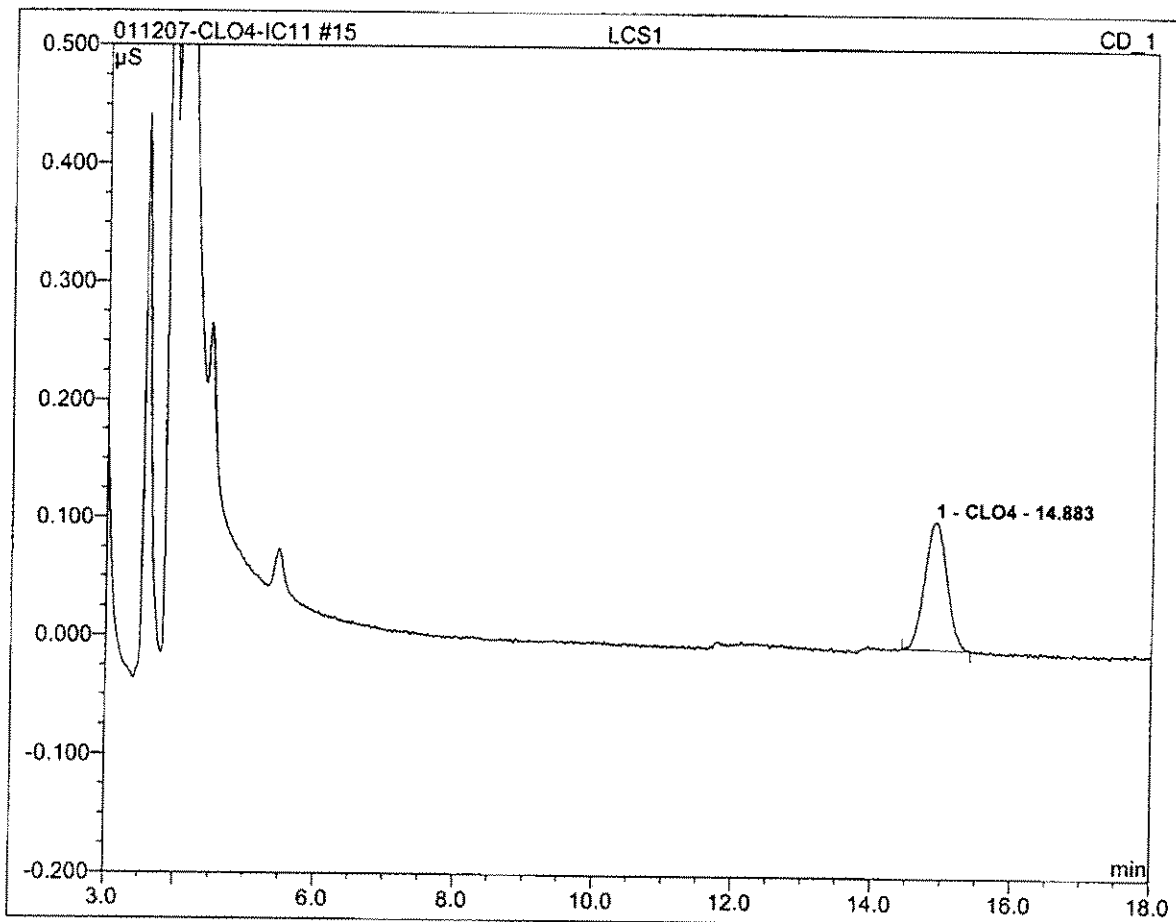
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount	Type
2	14.88	CLO4	0.010	0.003	61.62	2.200	BMB*
<b>Total:</b>			0.010	0.003	61.62	2.200	

<b>14 MRL-4</b>			
Sample Name:	MRL-4	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 19:44	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



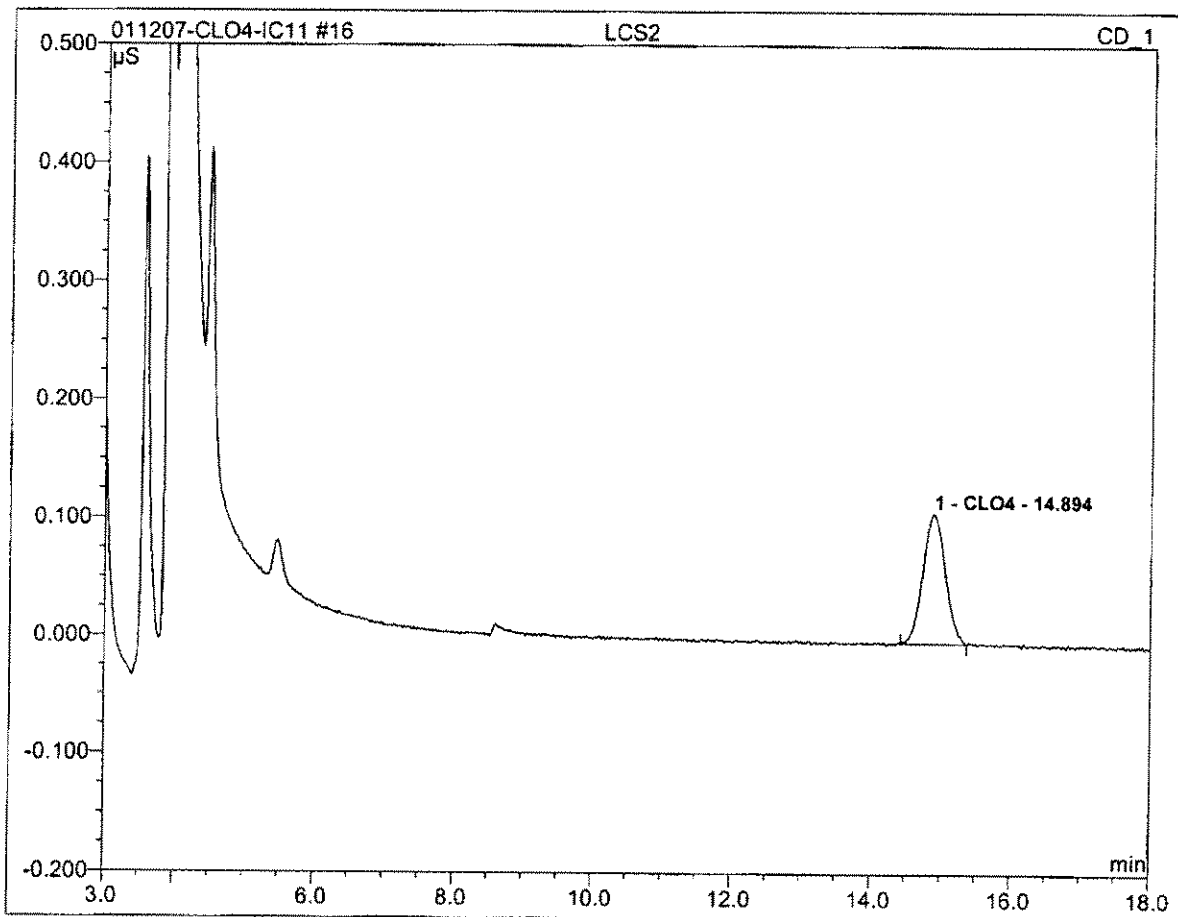
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount	Type
1	14.93	CLO4	0.018	0.007	100.00	4.257	BMB*
<b>Total:</b>			0.018	0.007	100.00	4.257	

<b>15 LCS1</b>			
Sample Name:	LCS1	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 20:05	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



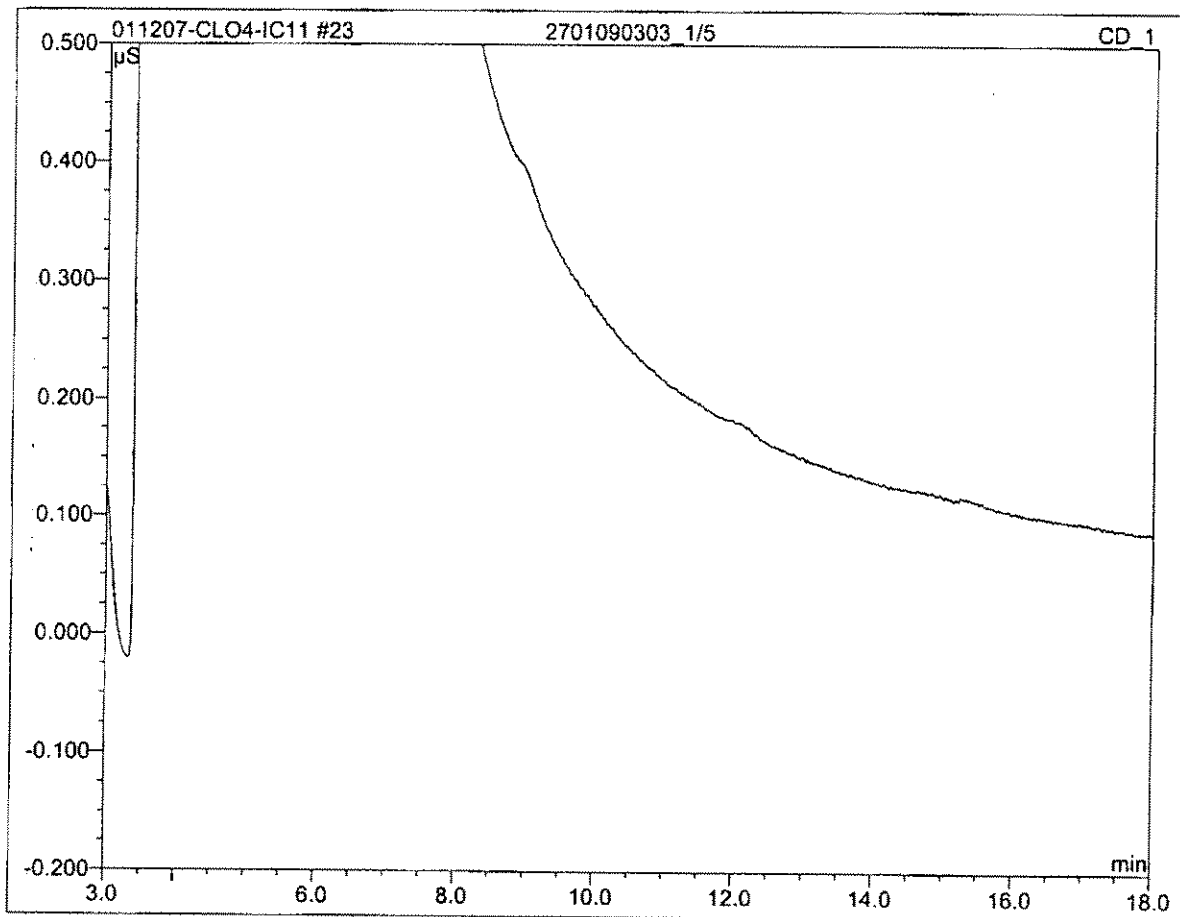
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.88	CLO4	0.108	0.040	100.00	24.952	BMB
<b>Total:</b>			0.108	0.040	100.00	24.952	

<b>16 LCS2</b>			
Sample Name:	LCS2	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 20:27	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.89	CLO4	0.111	0.041	100.00	25.521	BMB
<b>Total:</b>			0.111	0.041	100.00	25.521	

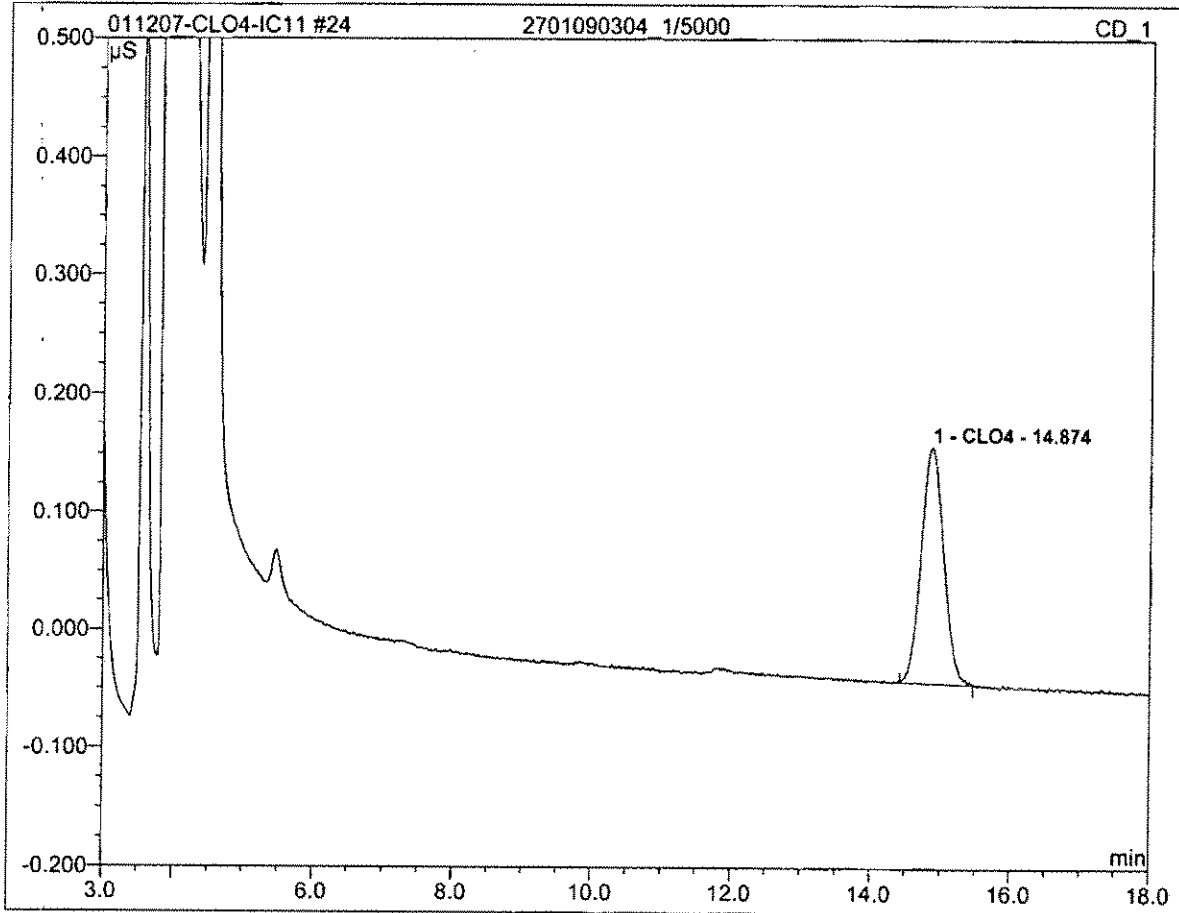
<b>23 2701090303_1/5</b>			
Sample Name:	2701090303_1/5	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 22:57	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	5.0000



No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount	Type
<b>Total:</b>			0.000	0.000	0.00	0.000	

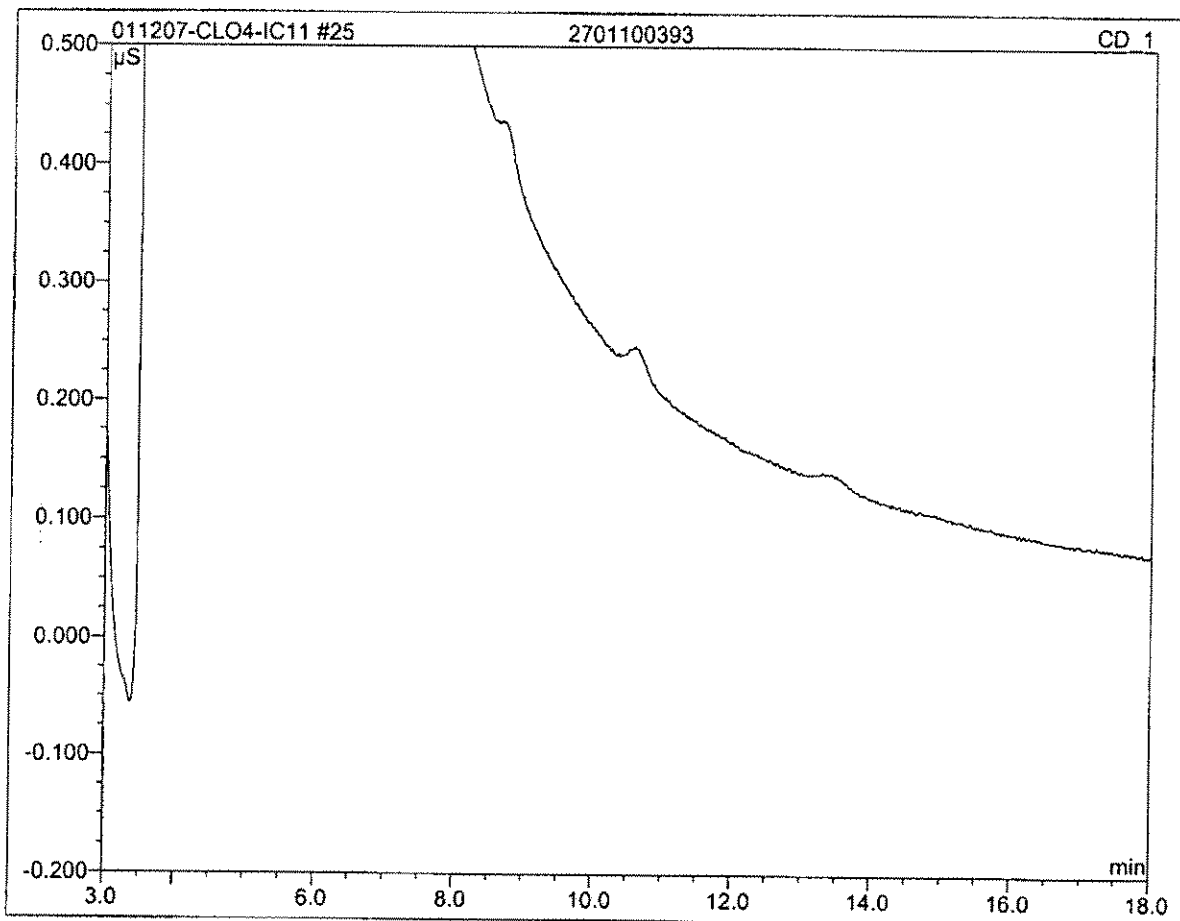
**24 2701090304\_1/5000**

Sample Name:	2701090304_1/5000	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 23:18	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	5000.0000



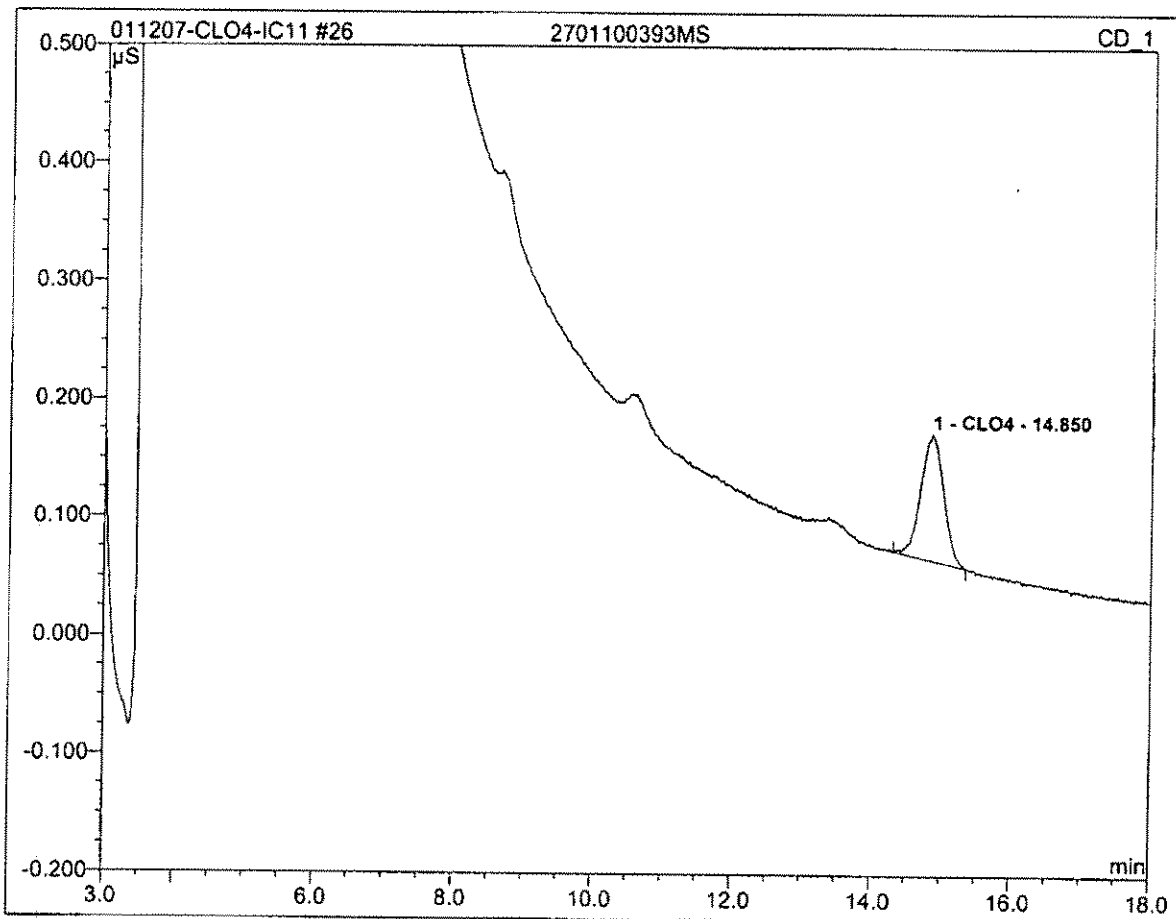
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.87	CLO4	0.201	0.075	100.00	229864.877	BMB
<b>Total:</b>			0.201	0.075	100.00	229864.877	

<b>25 2701100393</b>			
Sample Name:	2701100393	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/12/2007 23:39	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



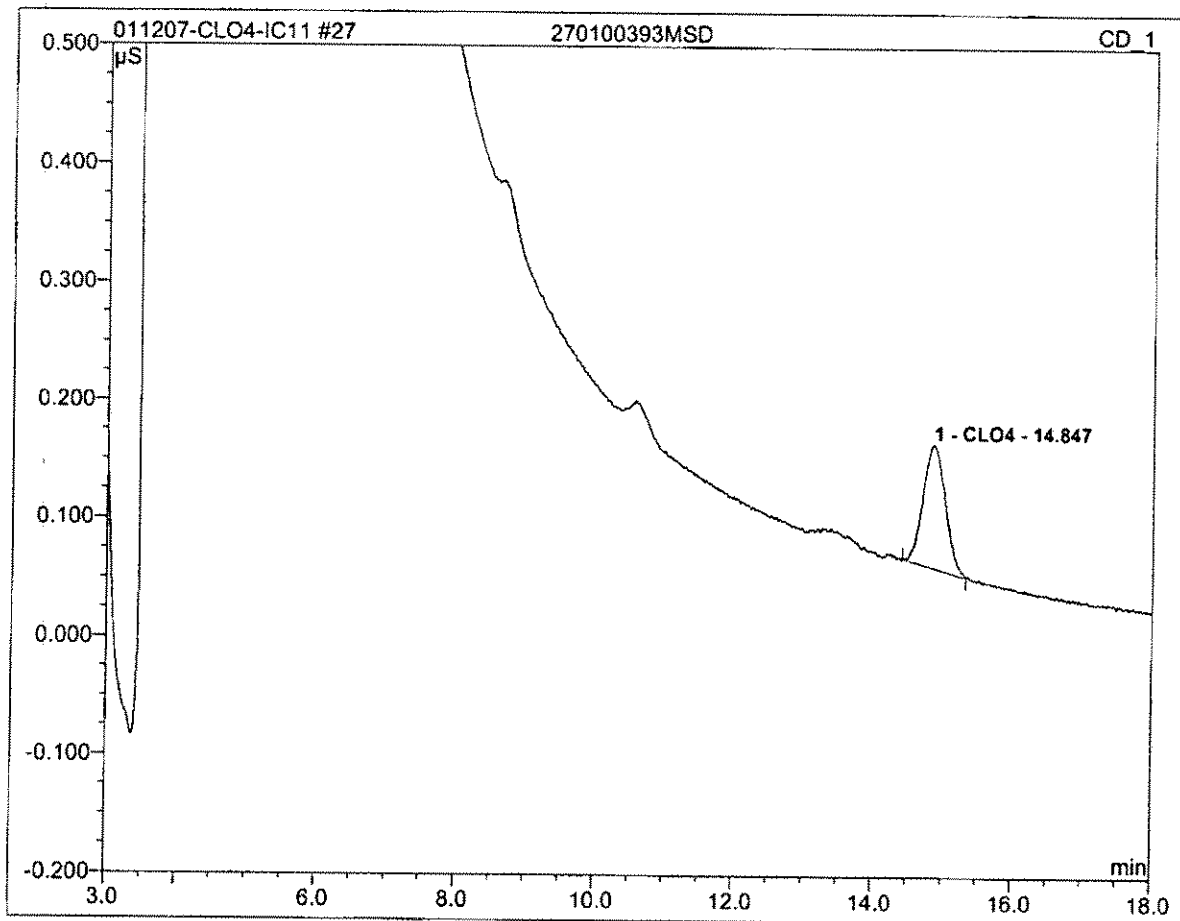
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
<b>Total:</b>			0.000	0.000	0.00	0.000	

<b>26 2701100393MS</b>			
Sample Name:	2701100393MS	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/13/2007 00:01	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



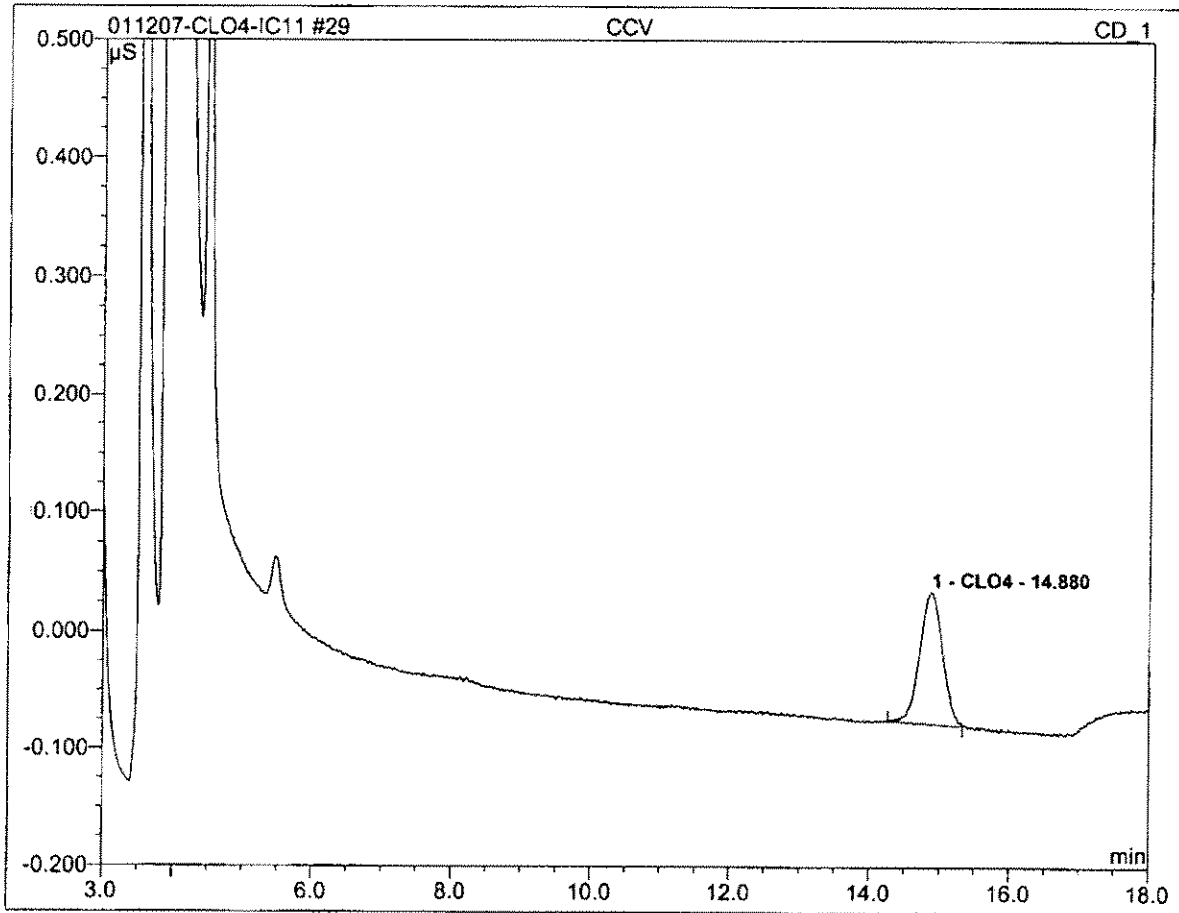
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.85	CLO4	0.107	0.041	100.00	25.032	BMB
<b>Total:</b>			0.107	0.041	100.00	25.032	

<b>27 270100393MSD</b>			
Sample Name:	270100393MSD	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/13/2007 00:22	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



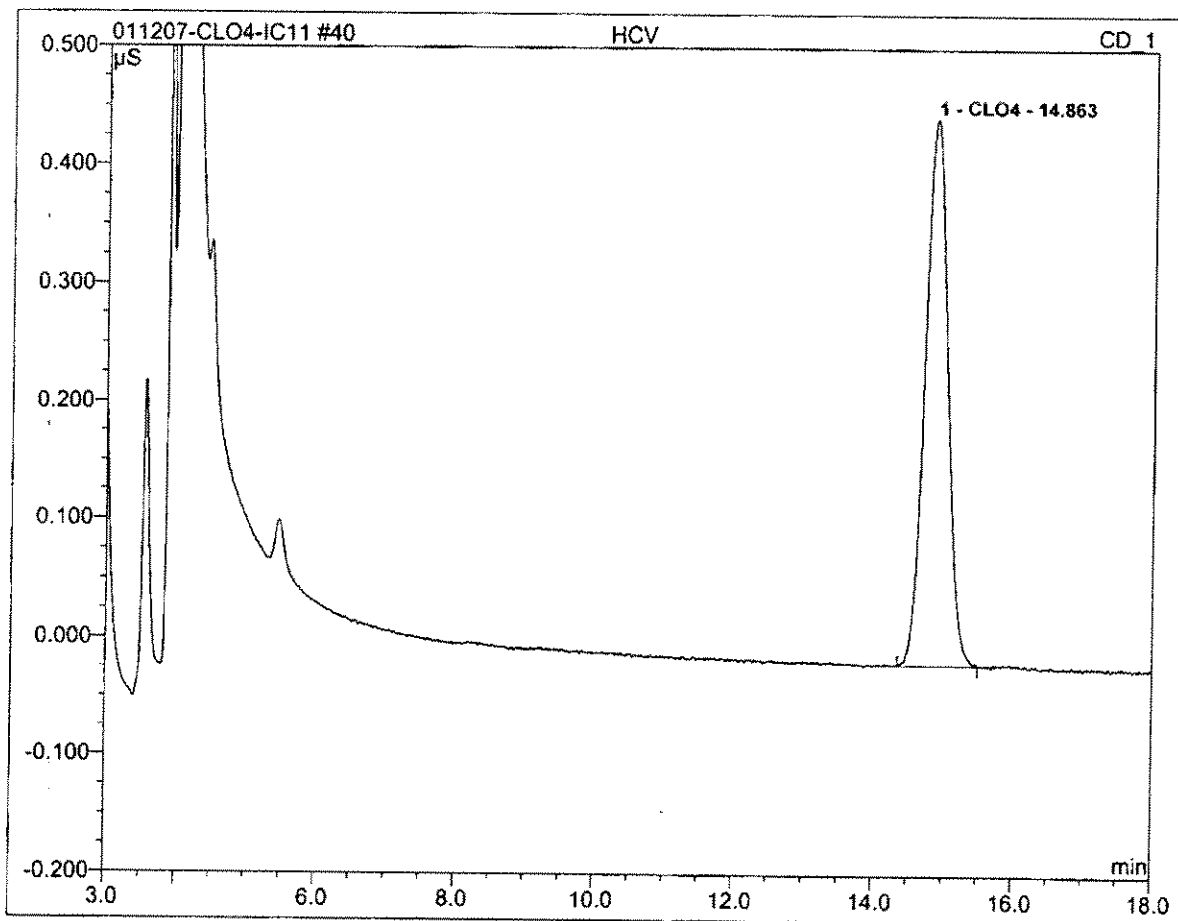
No.	Ret.Time min	Peak Name	Height μS	Area μS*min	Rel.Area %	Amount	Type
1	14.85	CLO4	0.104	0.039	100.00	23.870	BMB
<b>Total:</b>			0.104	0.039	100.00	23.870	

<b>29 CCV</b>			
Sample Name:	CCV	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/13/2007 01:05	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



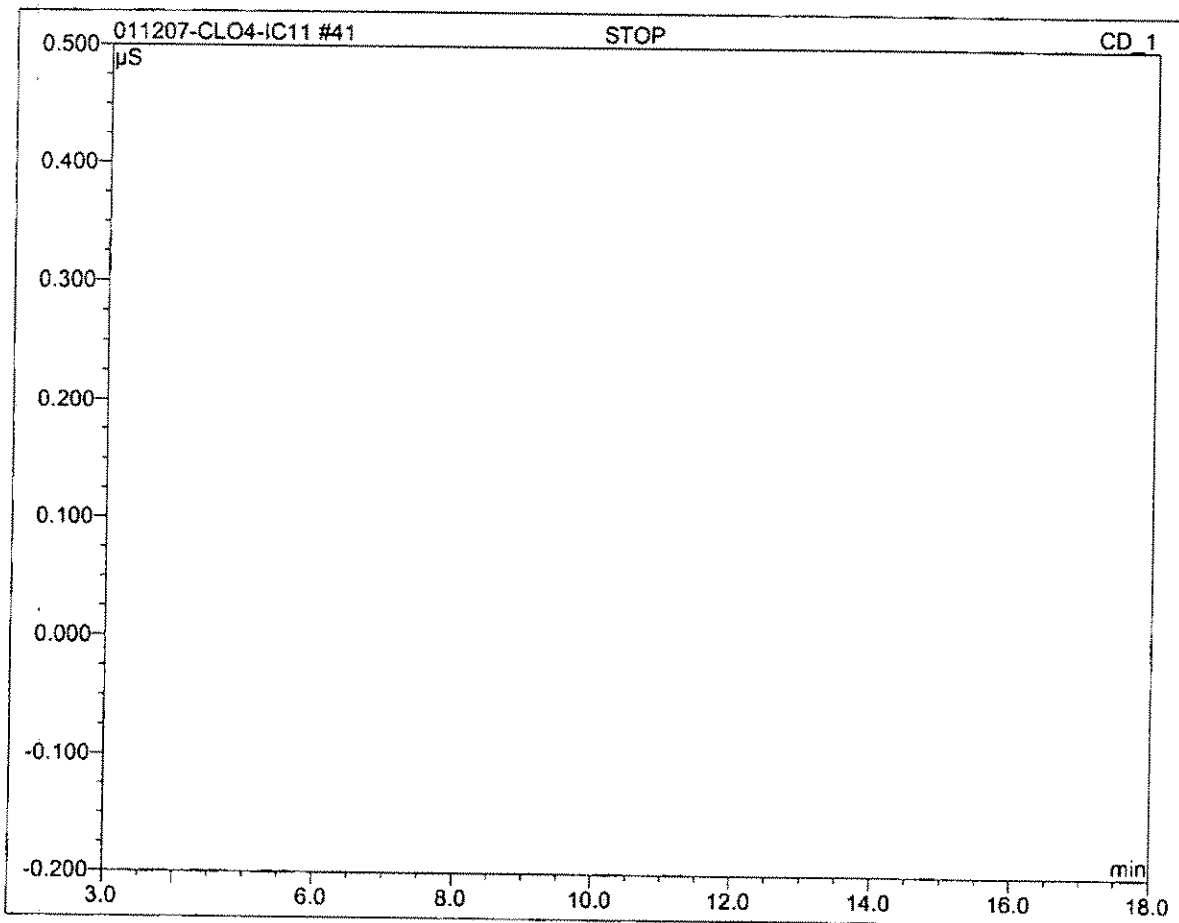
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.88	CLO4	0.112	0.042	100.00	26.205	BMB
<b>Total:</b>			0.112	0.042	100.00	26.205	

<b>40 HCV</b>			
Sample Name:	HCV	Channel:	CD_1
Sample Type:	unknown	Control Program:	Perchlorate-IC11
Recording Time:	01/13/2007 05:00	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.86	CLO4	0.463	0.173	100.00	101.743	BMB
<b>Total:</b>			0.463	0.173	100.00	101.743	

<b>41 STOP</b>			
Sample Name:	STOP	Channel:	CD_1
Sample Type:	unknown	Control Program:	IC11 Stop
Recording Time:	01/13/2007 05:22	Quantif. Method:	IC#4-CLO4-LOW
Analyst:	Raja	Dilution Factor:	1.0000



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

**Standard  
Preparation  
Worksheet  
&  
Certificate of  
Analysis**

# Reagent Preparation Documentation

**Reagent:** DBP LCS Stock Solution  
**Date Received/Prepped:** 082706/100106/110106/111606/122006/010807/020607  
**Date Expired:** 092706/110106/120106/121606/012007/020807/030607  
**Manufacturer:** \_\_\_\_\_  
**Storage Condition:** \_\_\_\_\_

**MW #:** Raja060827-1  
**By:** Raja  
**Matrix:** aq  
**Amount:** 100ml  
**Lot #:** \_\_\_\_\_

Component	Comment	Standard	Concentration
Chlorite 1000ppm Exp: -03-24-07	1000 ML → Add 50 ML of EDA (LMR060129-12) the	R 201401	10ppm
Chlorate 1000ppm Exp: -05-31-09	1000 ML dilute to 100 ml with D.I. water	R 201400	10ppm
Bromide Exp: -10-27-07	500 ML	R 201369	5ppm

Comment: \_\_\_\_\_

**Reagent:** DBP LCS Solution  
**Date Received/Prepped:** 082706/100106/110106/111606/122006/010807/020607  
**Date Expired:** 092706/110106/120106/121606/012007/020807/030607  
**Manufacturer:** \_\_\_\_\_  
**Storage Condition:** \_\_\_\_\_

**MW #:** Raja060827-2  
**By:** Raja  
**Matrix:** aq  
**Amount:** 100ml  
**Lot #:** \_\_\_\_\_

Component	Comment	Standard	Concentration
DBP LCS Stock soln	2ml → Dilute with D.I. water to 100 ml	Raja060827-1	ClO <sub>2</sub> : 200ppb
EDA Solution	50 ML	LMR060129-12	ClO <sub>3</sub> : 200ppb Br: 100ppb

Comment: Prep: \_\_\_\_\_  
 Expired: \_\_\_\_\_

**Reagent:** Perchlorate Calibration Stock Solution  
**Date Received/Prepped:** 091306/101106/113006/012107/022007/022807  
**Date Expired:** 121306/011107/023007/042107/052807  
**Manufacturer:** \_\_\_\_\_  
**Storage Condition:** \_\_\_\_\_

**MW #:** Raja060913-1  
**By:** Raja  
**Matrix:** aq  
**Amount:** 100ml  
**Lot #:** \_\_\_\_\_

Component	Comment	Standard	Concentration
Perchlorate 1000ppm Exp: -072809	100 ML → Dilute with D.I. water to 100ml	R201449	1000ppb
MS / MSD			

Comment: 030407/042707/051607/061207/060407/072707/081607/091207/

# Reagent Preparation Documentation

Page: 13

**Reagent:** ClO<sub>4</sub> Calibration Standard #1  
**Date Received/Prepped:** 091306/101106/113006/121207/122207/122807  
**Date Expired:** 121306/101107/1023007/1042107/1052807  
**Manufacturer:** \_\_\_\_\_  
**Storage Condition:** \_\_\_\_\_

**MW #:** Raja060913-2  
**By:** Raja  
**Matrix:** aq  
**Amount:** 100ml  
**Lot #:** \_\_\_\_\_

Component	Comment	Standard	Concentration
ClO <sub>4</sub> Cal. Stock sol'n	200 ML → Dilute to 100ml with D.I. water	Raja060913-1	2.0 ppb

**Comment:** 030407/042707/051607/061207/060407/072707/081607/091207/

**Reagent:** ClO<sub>4</sub> Calibration Standard #2  
**Date Received/Prepped:** 091306/101106/113006/121207/122207/122807  
**Date Expired:** 121306/101107/1023007/1042107/1052807  
**Manufacturer:** \_\_\_\_\_  
**Storage Condition:** \_\_\_\_\_

**MW #:** Raja060913-3  
**By:** Raja  
**Matrix:** aq  
**Amount:** 100ml  
**Lot #:** \_\_\_\_\_

Component	Comment	Standard	Concentration
ClO <sub>4</sub> Cal. Stock sol'n	400 ML → Dilute to 100ml with D.I. water	Raja060913-1	4.0 ppb

**Comment:** 030407/042707/051607/061207/060407/072707/081607/091207/

**Reagent:** ClO<sub>4</sub> Calibration Standard #3  
**Date Received/Prepped:** 091306/101106/113006/121207/122207/122807  
**Date Expired:** 121306/101107/1023007/1042107/1052807  
**Manufacturer:** \_\_\_\_\_  
**Storage Condition:** \_\_\_\_\_

**MW #:** Raja060913-4  
**By:** Raja  
**Matrix:** aq  
**Amount:** 100ml  
**Lot #:** \_\_\_\_\_

Component	Comment	Standard	Concentration
ClO <sub>4</sub> Cal. stock sol'n	1ml → Dilute to 100ml with D.I. water	Raja060913-1	10.0 ppb

**Comment:** 030407/042707/051607/061207/060407/072707/081607/091207/

# Reagent Preparation Documentation

**Reagent:** ClO<sub>4</sub> Calibration Standard #4  
**Date Received/Prepped:** 091306/101106 / 113006/1012107 / 022807/030407  
**Date Expired:** 121306/011107 / 022807/042107 / 052807/060407  
**Manufacturer:** 023007  
**Storage Condition:** \_\_\_\_\_

**MW #:** Raja060913-5  
**By:** Raja  
**Matrix:** aq  
**Amount:** 100ml  
**Lot #:** \_\_\_\_\_

Component	Comment	Standard	Concentration
ClO <sub>4</sub> cal. stock sol'n	2.5 ml → Dilute to 100ml with D.I. water	Raja060913-1	25.0 ppb

**Comment:** 042707/051607/061207/  
072707/081607/091207/

**Reagent:** ClO<sub>4</sub> Calibration Standard #5  
**Date Received/Prepped:** 091306/101106 / 113006/1012107 / 022807/030407  
**Date Expired:** 121306/011107 / 023007/042107 / 052807/060407  
**Manufacturer:** \_\_\_\_\_  
**Storage Condition:** \_\_\_\_\_

**MW #:** Raja060913-6  
**By:** Raja  
**Matrix:** aq  
**Amount:** 100ml  
**Lot #:** \_\_\_\_\_

Component	Comment	Standard	Concentration
ClO <sub>4</sub> cal. stock sol'n	5.0 ml → Dilute to 100ml with D.I. water	Raja060913-1	50.0 ppb

**Comment:** 042707/051607/  
072707/081607/

**Reagent:** ClO<sub>4</sub> Calibration Standard #6  
**Date Received/Prepped:** 091306/101106 / 113006/092107 / 022807/030407  
**Date Expired:** 121306/011107 / 023007/042107 / 052807/060407  
**Manufacturer:** \_\_\_\_\_  
**Storage Condition:** \_\_\_\_\_

**MW #:** Raja060913-7  
**By:** Raja  
**Matrix:** aq  
**Amount:** 100ml  
**Lot #:** \_\_\_\_\_

Component	Comment	Standard	Concentration
ClO <sub>4</sub> cal. stock sol'n	10.0 ml → Dilute to 100ml with D.I. water	Raja060913-1	100 ppb

**Comment:** 042707/051607/061207/  
072707/081607/091207/

CERTIFIED WEIGHT REPORT:

Part Number: **57001** Lot # **072806** Solvent(s): **ASTM Type 1 Water**  
 Lot Number: **072806**  
 Description: **Perchlorate**

**R201449**

Expiration Date: **072809**  
 Nominal Concentration (µg/mL): **1000**

Weight(s) shown below were combined and diluted to (mL): **1000.55** 5E-05 Balance Uncertainty  
**0.084** Flask Uncertainty

<i>Lawrence Barry</i>	
Formulated By:	Lawrence Barry
<i>Pedro L. Rentas</i>	
Reviewed By:	Pedro L. Rentas
072806	

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Assay (%)	Target Weight(g)	Actual Weight(g)	*Actual Conc (µg/mL)	Expanded Uncertainty (+/-)	MSDS Information	
										(Solvent Safety Info. On Attached pg.)	(SHA PEL (TWA))
1. Sodium Perchlorate (ClO4)	IN119 AR06730TQ	1000.0	99.0	0.10	81.2	1.2319	1.23216	1000.2	0.00203	07601-89-0	N/A
											N/A
											3152a

Method: E300P.M. Column: ASAHIPACK ODP50 (150mm X 4.0mm ID X 5.0µm df). Inj. Volume= 10µL. Flow Rate= 1.5mL/min. Column Temp.= 40°C. Isocratic Analysis using Anion Mobile Phase. Detector: PDA (DAD1, Sig=360,20 REF=266, 10). Analyst: Pedro Rentas.

Peak No.	Name	PDA RT (min.)
1	Sodium Perchlorate	21.78

