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# **Level IV Data Package**

**MWH Group 226843**

**Method: EPA 218.6 CRVI-LOW**

**2801080538**

**2801080540**

| No. | Sample Name          | Time            | Dil.Fac. | Amount   | Comment               | Analyst:             | tlh |
|-----|----------------------|-----------------|----------|----------|-----------------------|----------------------|-----|
|     |                      |                 |          | CRVI-LOW |                       |                      |     |
|     |                      |                 |          | UV VIS 1 |                       | Criteria             |     |
| 1,  | Standard 1 - 0.1 ppb | 12/31/07 07:17, | 1.0,     | 0.091    | Diluted from Std. 3   |                      |     |
| 2,  | Standard 2 - 0.2ppb  | 12/31/07 07:25, | 1.0,     | 0.208    | TLH071018-4           |                      |     |
| 3,  | Standard 3 - 2.0 ppb | 12/31/07 07:33, | 1.0,     | 1.972    | TLH071018-5           |                      |     |
| 4,  | Standard 4 - 10 ppb  | 12/31/07 07:41, | 1.0,     | 9.960    | TLH071018-6           |                      |     |
| 5,  | Standard 5 - 20 ppb  | 12/31/07 07:49, | 1.0,     | 20.128   | TLH071018-7           |                      |     |
| 6,  | Standard 6 - 50ppb   | 12/31/07 07:57, | 1.0,     | 49.958   | TLH071018-8           |                      |     |
| 7,  | IPC 20               | 01/08/08 09:11, | 1.0,     | 19.878   |                       |                      |     |
| 8,  | LRB                  | 01/08/08 09:19, | 1.0,     | n.a.     |                       |                      |     |
| 9,  | LRB BUFFER           | 01/08/08 09:27, | 1.0,     | n.a.     |                       |                      |     |
| 10, | MRL 0.1ppb           | 01/08/08 09:35, | 1.0,     | 0.096    |                       |                      |     |
| 11, | LCS 2.0ppb           | 01/08/08 09:43, | 1.0,     | 1.975    |                       |                      |     |
| 12, | LCS 2.0ppb Dup       | 01/08/08 09:51, | 1.0,     | n.a.     | misinjection          | MRL 50%-150%         |     |
| 13, | LCS 2.0ppb Dup       | 01/08/08 10:32, | 1.0,     | 1.998    |                       | 0.05 - 0.15ppb       |     |
| 14, | 2801080538           | 01/08/08 12:15, | 1.0,     | n.a.     |                       | LCS 90%-110%         |     |
| 15, | 2801080538_MS        | 01/08/08 12:23, | 1.0,     | 1.967    | 1.97 - 98.3% recovery | Range: 1.80 - 2.20   |     |
| 16, | 2801080538_MSD       | 01/08/08 12:31, | 1.0,     | 2.053    | 2.05 - 103% recovery  | MS/MSD 90%-110%      |     |
| 17, | 2801080540           | 01/08/08 12:39, | 1.0,     | 2.729    |                       | True Value = 2.0     |     |
| 18, | 2801080638 (1:5)     | 01/08/08 12:54, | 5.0,     | 49.216   |                       | IPC 95%-105%         |     |
| 19, | 2801080642           | 01/08/08 13:02, | 1.0,     | 7.369    |                       | 20ppb - 19-21ppb     |     |
| 20, | 2801080665           | 01/08/08 13:10, | 1.0,     | 0.524    |                       | 10ppb - 9.5-10.5 ppb |     |
| 21, | IPC 20               | 01/08/08 13:18, | 1.0,     | 20.025   |                       |                      |     |
| 22, | LRB                  | 01/08/08 13:26, | 1.0,     | 0.002    | misinjection          |                      |     |
| 23, | LRB                  | 01/08/08 14:01, | 1.0,     | n.a.     |                       |                      |     |

Review 11 Jan 08

Sequence: 010808-IC5-CRVI  
Operator: tth

Page 1 of 2  
Printed: 1/10/2008 9:54:48 AM

Title: CRVI-LOW

Datasource: Dionex\_USPAS2SDIO2  
Location: IC\IC5\_CRVI-LOW\2008\January  
Timebase: IC-#5  
#Samples: 23

Created: 1/8/2008 9:10:42 AM by tth  
(Modified, not saved)

| No. | Name                 | Dil. Factor | Type     | Comment               | Program       | Method      | Status   |
|-----|----------------------|-------------|----------|-----------------------|---------------|-------------|----------|
| 1   | Standard 1 - 0.1 ppb | 1.0000      | Standard | Diluted from Std. 3   | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 2   | Standard 2 - 0.2ppb  | 1.0000      | Standard | TLH071018-4           | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 3   | Standard 3 - 2.0 ppb | 1.0000      | Standard | TLH071018-5           | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 4   | Standard 4 - 10 ppb  | 1.0000      | Standard | TLH071018-6           | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 5   | Standard 5 - 20 ppb  | 1.0000      | Standard | TLH071018-7           | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 6   | Standard 6 - 50ppb   | 1.0000      | Standard | TLH071018-8           | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 7   | IPC 20               | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 8   | LRB                  | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 9   | LRB BUFFER           | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 10  | MRL 0.1ppb           | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 11  | LCS 2.0ppb           | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 12  | LCS 2.0ppb Dup       | 1.0000      | Unknown  | misinjection          | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 13  | LCS 2.0ppb Dup       | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 14  | 2801080538           | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 15  | 2801080538_MS        | 1.0000      | Unknown  | 1.97 - 98.3% recovery | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 16  | 2801080538_MSD       | 1.0000      | Unknown  | 2.05 - 103% recovery  | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 17  | 2801080540           | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 18  | 2801080638 (1:5)     | 5.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 19  | 2801080642           | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 20  | 2801080665           | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 21  | IPC 20               | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 22  | LRB                  | 1.0000      | Unknown  | misinjection          | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |
| 23  | LRB                  | 1.0000      | Unknown  |                       | CRVI-LOW-loop | 1-IC#5-CRVI | Finished |

Sequence: 010808-IC5-CRVI  
Operator: tlh

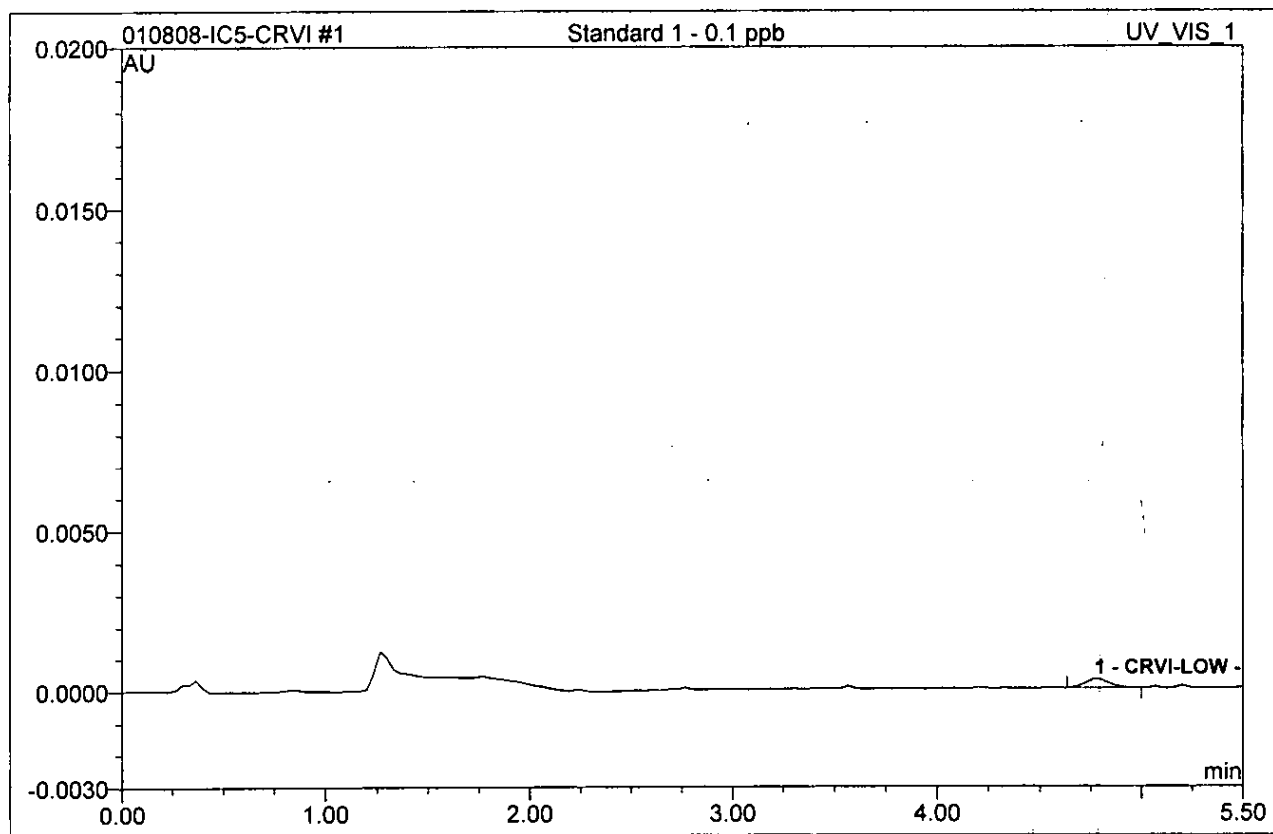
Title: CRVI-LOW

Datasource: Dionex\_USPAS2SDIO2  
Location: IC\IC5\_CRVI-LOW\2008\January  
Timebase: IC-#5  
#Samples: 23

Created: 1/8/2008 9:10:42 AM by tlh  
(Modified, not saved)

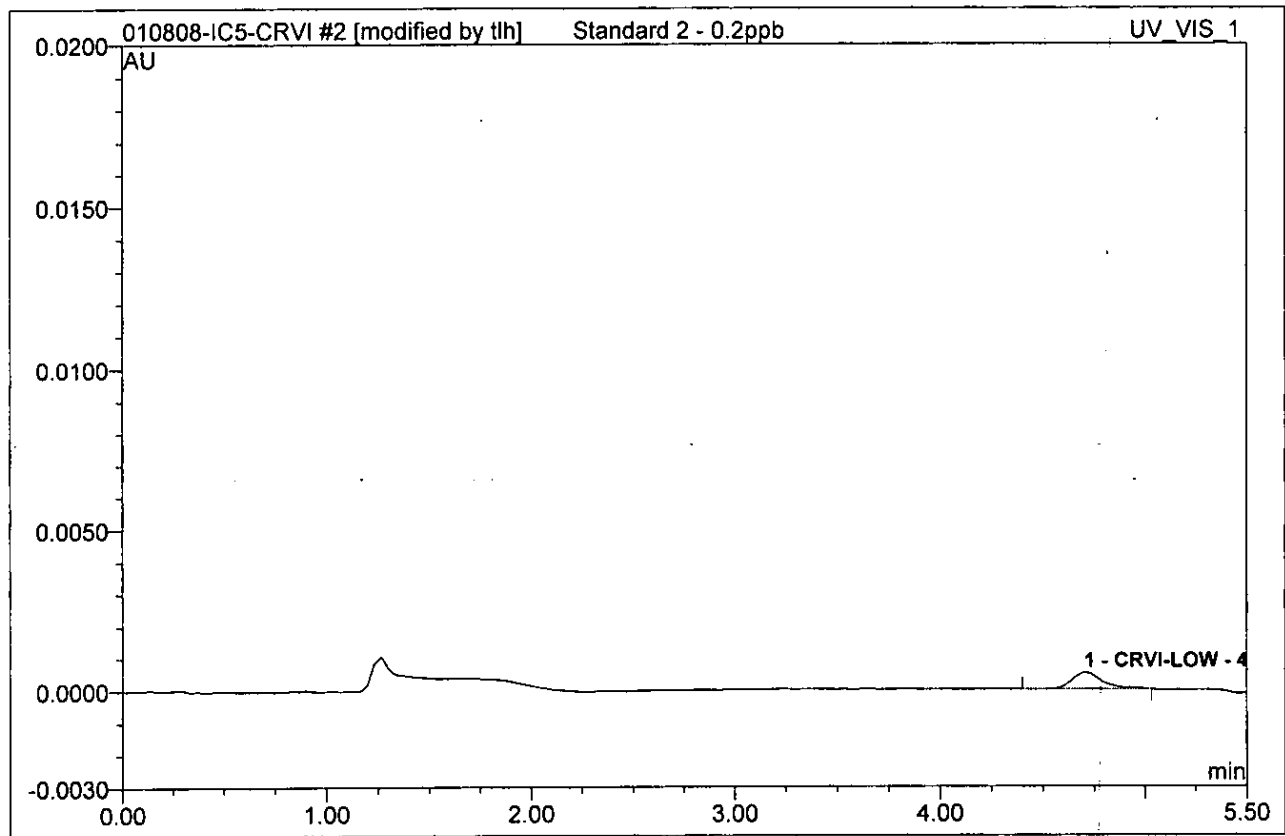
| No. | Inj. Date/Time        | *Analyst |
|-----|-----------------------|----------|
| 1   | 12/31/2007 7:17:16 AM | tlh      |
| 2   | 12/31/2007 7:25:21 AM | tlh      |
| 3   | 12/31/2007 7:33:27 AM | tlh      |
| 4   | 12/31/2007 7:41:33 AM | tlh      |
| 5   | 12/31/2007 7:49:39 AM | tlh      |
| 6   | 12/31/2007 7:57:45 AM | tlh      |
| 7   | 1/8/2008 9:11:09 AM   | tlh      |
| 8   | 1/8/2008 9:19:14 AM   | tlh      |
| 9   | 1/8/2008 9:27:20 AM   | tlh      |
| 10  | 1/8/2008 9:35:26 AM   | tlh      |
| 11  | 1/8/2008 9:43:32 AM   | tlh      |
| 12  | 1/8/2008 9:51:38 AM   | tlh      |
| 13  | 1/8/2008 10:32:44 AM  | tlh      |
| 14  | 1/8/2008 12:15:29 PM  | tlh      |
| 15  | 1/8/2008 12:23:34 PM  | tlh      |
| 16  | 1/8/2008 12:31:40 PM  | tlh      |
| 17  | 1/8/2008 12:39:46 PM  | tlh      |
| 18  | 1/8/2008 12:54:34 PM  | tlh      |
| 19  | 1/8/2008 1:02:40 PM   | tlh      |
| 20  | 1/8/2008 1:10:46 PM   | tlh      |
| 21  | 1/8/2008 1:18:52 PM   | tlh      |
| 22  | 1/8/2008 1:26:58 PM   | tlh      |
| 23  | 1/8/2008 2:01:48 PM   | tlh      |

|                               |                      |                  |                 |
|-------------------------------|----------------------|------------------|-----------------|
| <b>1 Standard 1 - 0.1 ppb</b> |                      |                  |                 |
| Sample Name:                  | Standard 1 - 0.1 ppb | Control Program: | CRVI-LOW-loop   |
| Dilution Factor:              | 1.0000               | Quantif. Method: | 1-IC#5-CRVI     |
| Sample Type:                  | standard             | Recording Time:  | 12/31/2007 7:17 |
| Analyst:                      | tlh                  | Channel:         | UV_VIS_1        |



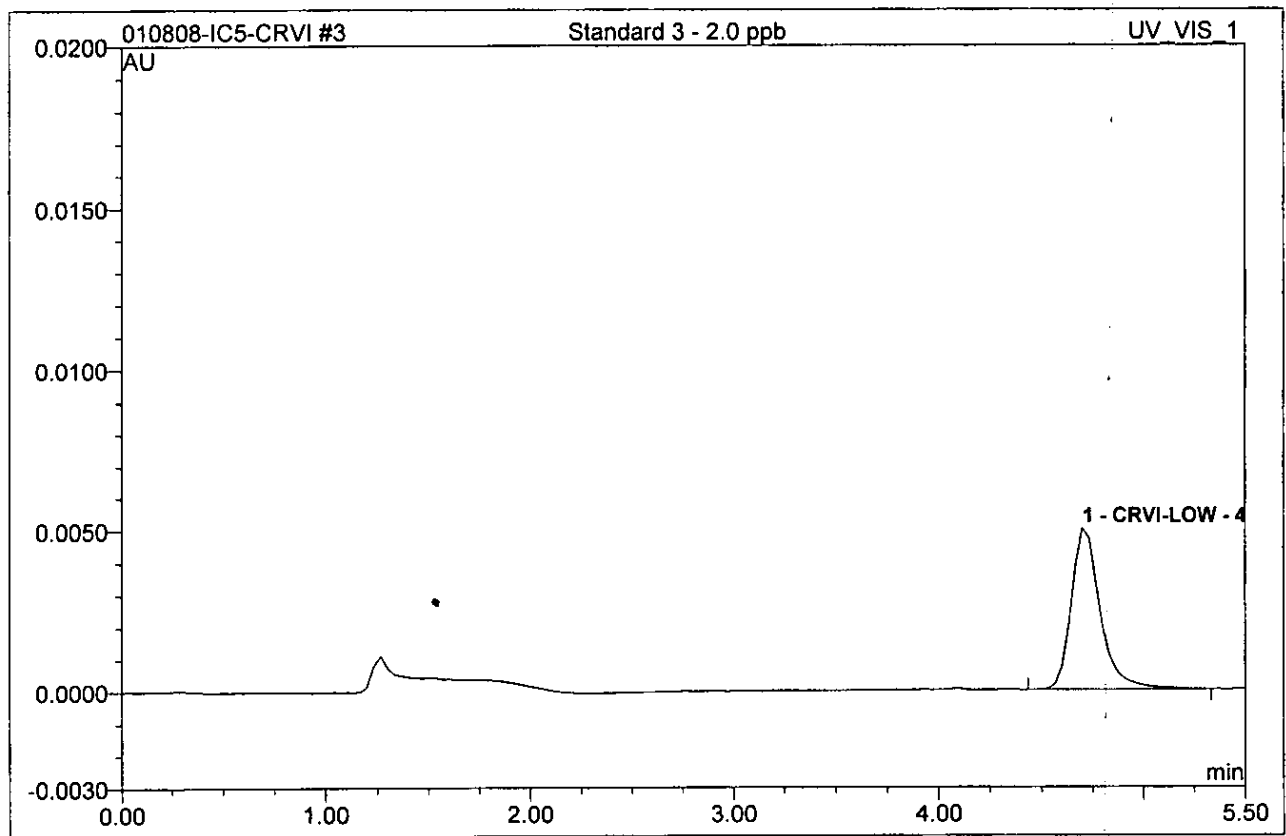
| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.77            | CRVI-LOW  | 0.000        | 0.0000380      | 100.00        | 0.091  | BMB  |
| <b>Total:</b> |                 |           | 0.000        | 0.000          | 100.00        | 0.091  |      |

|                              |                            |                  |                        |
|------------------------------|----------------------------|------------------|------------------------|
| <b>2 Standard 2 - 0.2ppb</b> |                            |                  |                        |
| Sample Name:                 | <b>Standard 2 - 0.2ppb</b> | Control Program: | <b>CRVI-LOW-loop</b>   |
| Dilution Factor:             | <b>1.0000</b>              | Quantif. Method: | <b>1-IC#5-CRVI</b>     |
| Sample Type:                 | <b>standard</b>            | Recording Time:  | <b>12/31/2007 7:25</b> |
| Analyst:                     | <b>tlh</b>                 | Channel:         | <b>UV_VIS_1</b>        |



| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.70            | CRVI-LOW  | 0.001        | 0.0000865      | 100.00        | 0.208  | BMB* |
| <b>Total:</b> |                 |           | 0.001        | 0.000          | 100.00        | 0.208  |      |

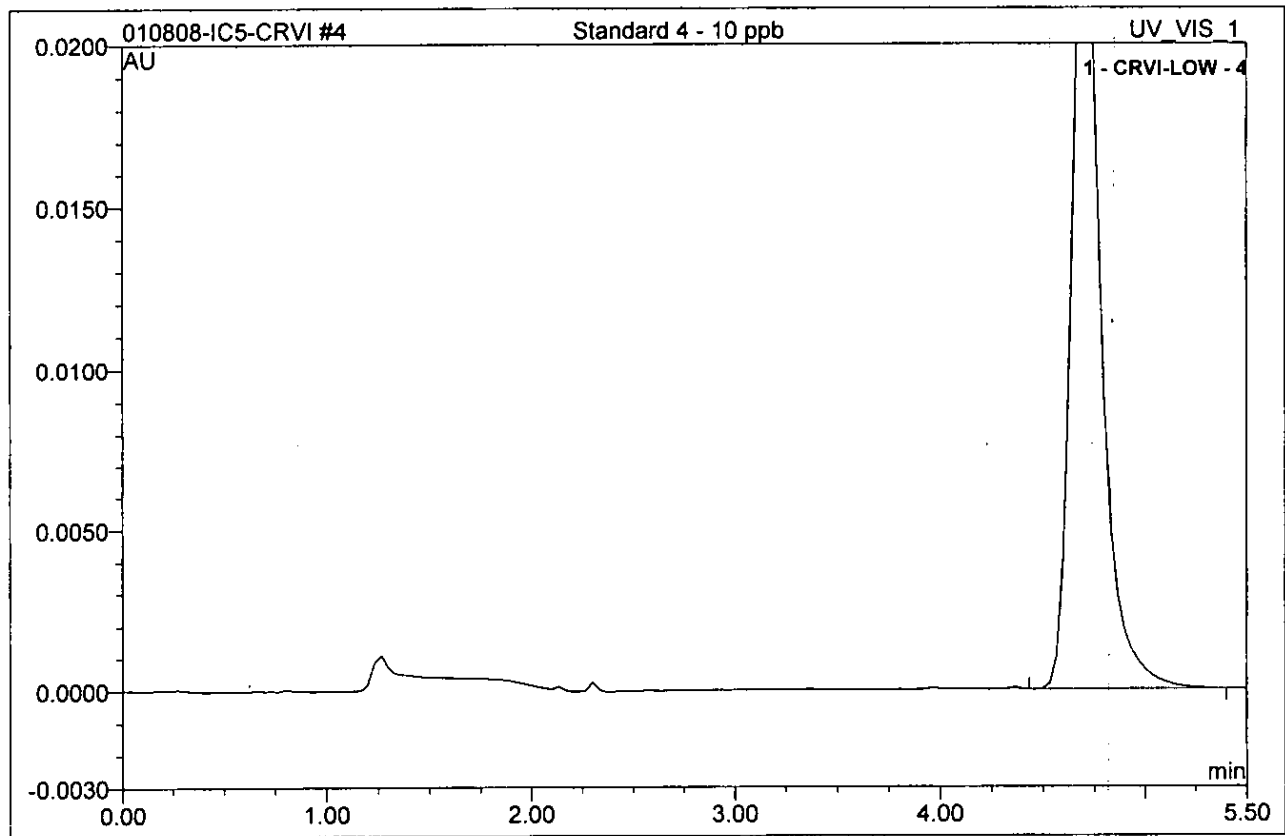
|                               |                      |                  |                 |
|-------------------------------|----------------------|------------------|-----------------|
| <b>3 Standard 3 - 2.0 ppb</b> |                      |                  |                 |
| Sample Name:                  | Standard 3 - 2.0 ppb | Control Program: | CRVI-LOW-loop   |
| Dilution Factor:              | 1.0000               | Quantif. Method: | 1-IC#5-CRVI     |
| Sample Type:                  | standard             | Recording Time:  | 12/31/2007 7:33 |
| Analyst:                      | tlh                  | Channel:         | UV_VIS_1        |



| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.70            | CRVI-LOW  | 0.005        | 0.0008211      | 100.00        | 1.972  | BMB  |
| <b>Total:</b> |                 |           | 0.005        | 0.001          | 100.00        | 1.972  |      |

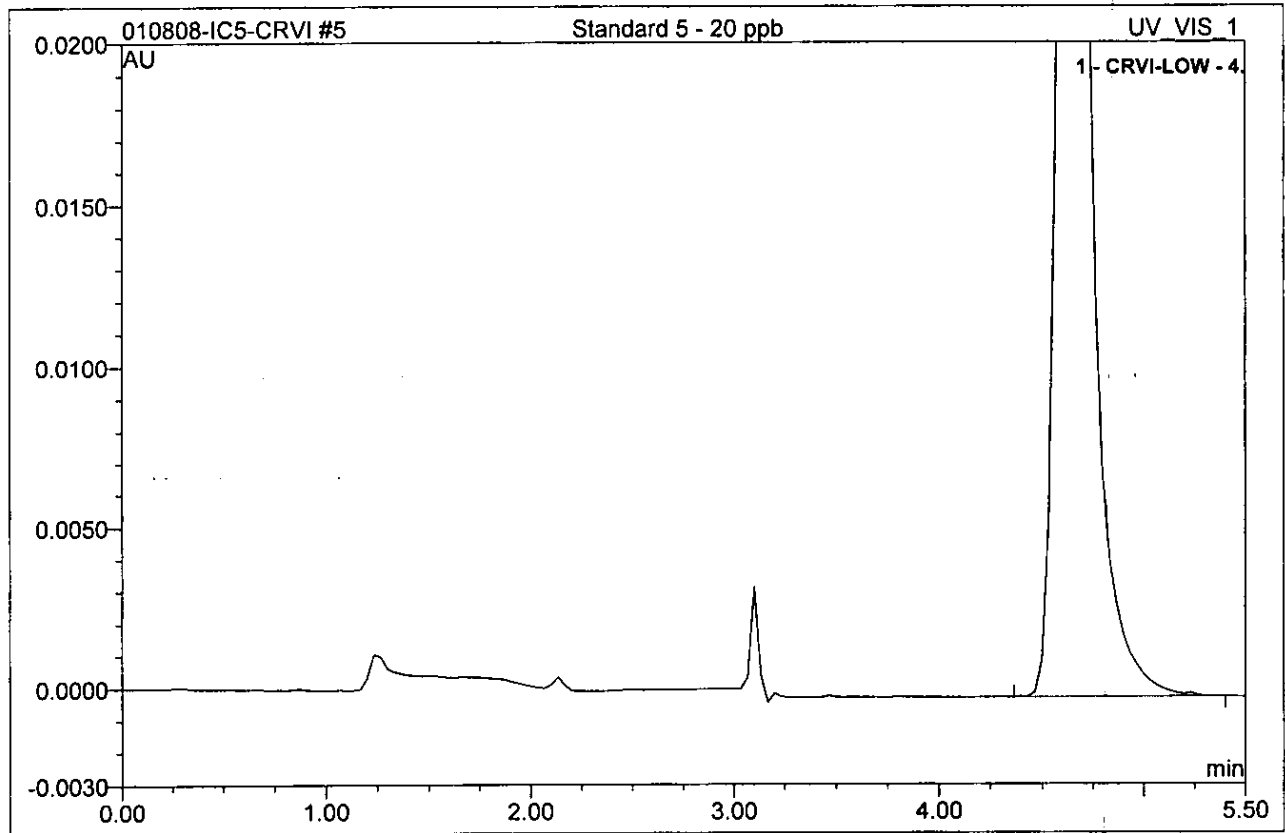


|                              |                     |                  |                 |
|------------------------------|---------------------|------------------|-----------------|
| <b>4 Standard 4 - 10 ppb</b> |                     |                  |                 |
| Sample Name:                 | Standard 4 - 10 ppb | Control Program: | CRVI-LOW-loop   |
| Dilution Factor:             | 1.0000              | Quantif. Method: | 1-IC#5-CRVI     |
| Sample Type:                 | standard            | Recording Time:  | 12/31/2007 7:41 |
| Analyst:                     | tlh                 | Channel:         | UV_VIS_1        |



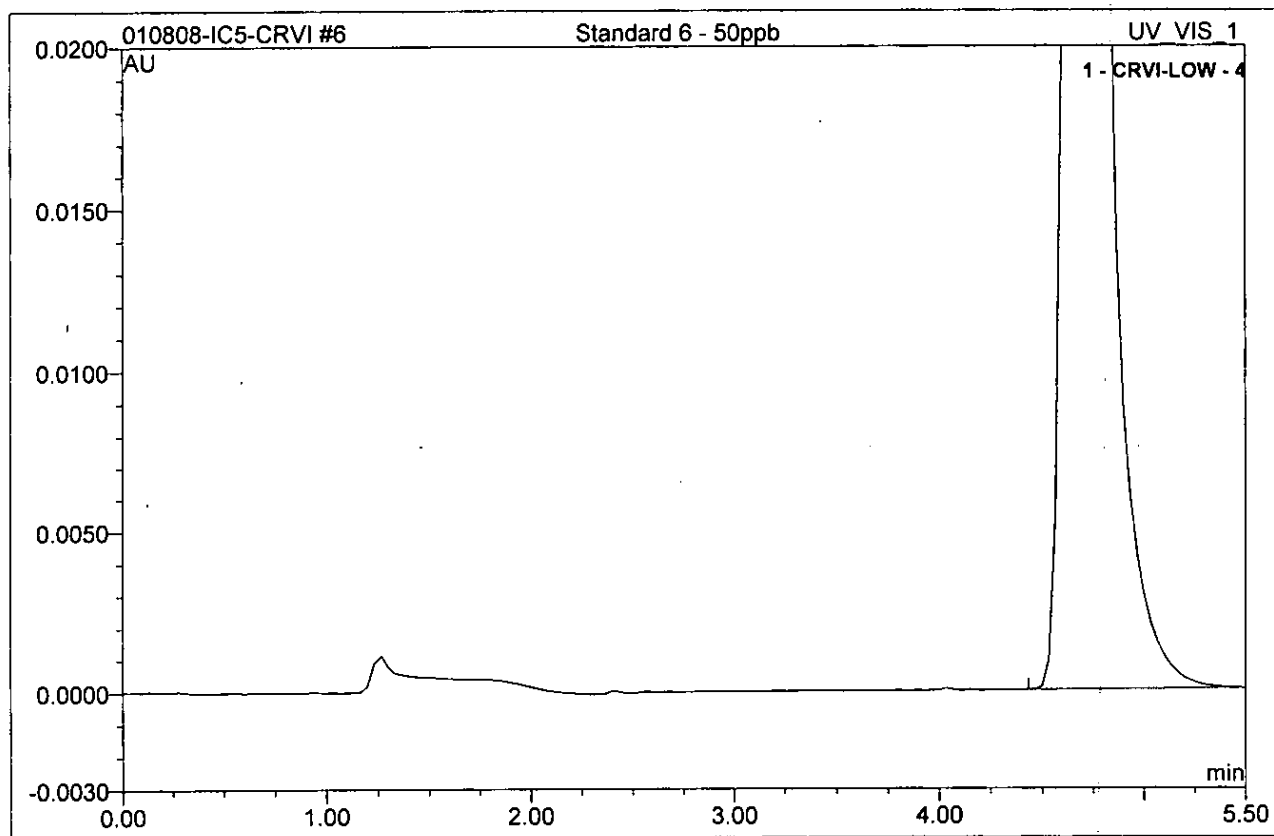
| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.70            | CRVI-LOW  | 0.026        | 0.0041471      | 100.00        | 9.960  | BMB  |
| <b>Total:</b> |                 |           | 0.026        | 0.004          | 100.00        | 9.960  |      |

| <b>5 Standard 5 - 20 ppb</b> |                     |                  |                 |
|------------------------------|---------------------|------------------|-----------------|
| Sample Name:                 | Standard 5 - 20 ppb | Control Program: | CRVI-LOW-loop   |
| Dilution Factor:             | 1.0000              | Quantif. Method: | 1-IC#5-CRVI     |
| Sample Type:                 | standard            | Recording Time:  | 12/31/2007 7:49 |
| Analyst:                     | tlh                 | Channel:         | UV_VIS_1        |



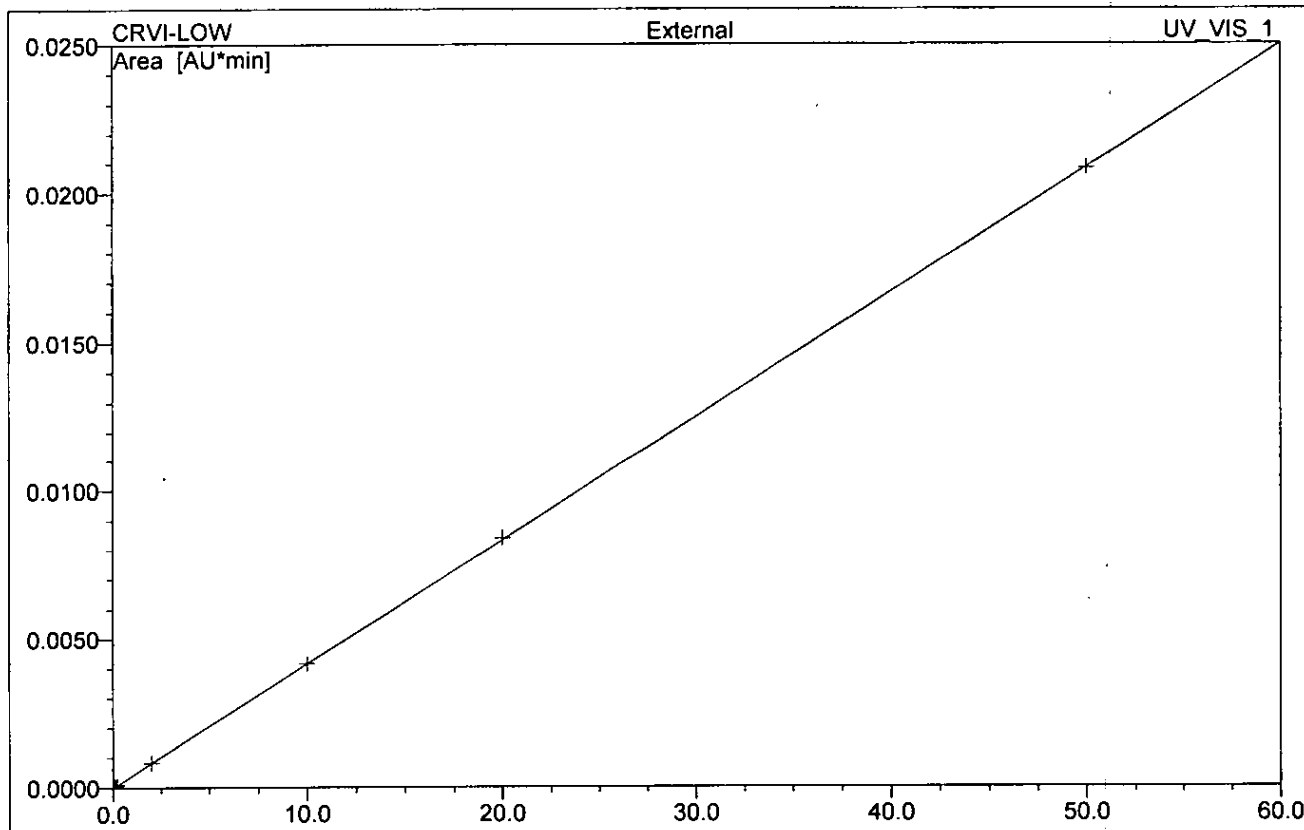
| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.67            | CRVI-LOW  | 0.050        | 0.0083805      | 100.00        | 20.128 | BMB  |
| <b>Total:</b> |                 |           | 0.050        | 0.008          | 100.00        | 20.128 |      |

|                             |                    |                  |                 |
|-----------------------------|--------------------|------------------|-----------------|
| <b>6 Standard 6 - 50ppb</b> |                    |                  |                 |
| Sample Name:                | Standard 6 - 50ppb | Control Program: | CRVI-LOW-loop   |
| Dilution Factor:            | 1.0000             | Quantif. Method: | 1-IC#5-CRVI     |
| Sample Type:                | standard           | Recording Time:  | 12/31/2007 7:57 |
| Analyst:                    | tlh                | Channel:         | UV_VIS_1        |



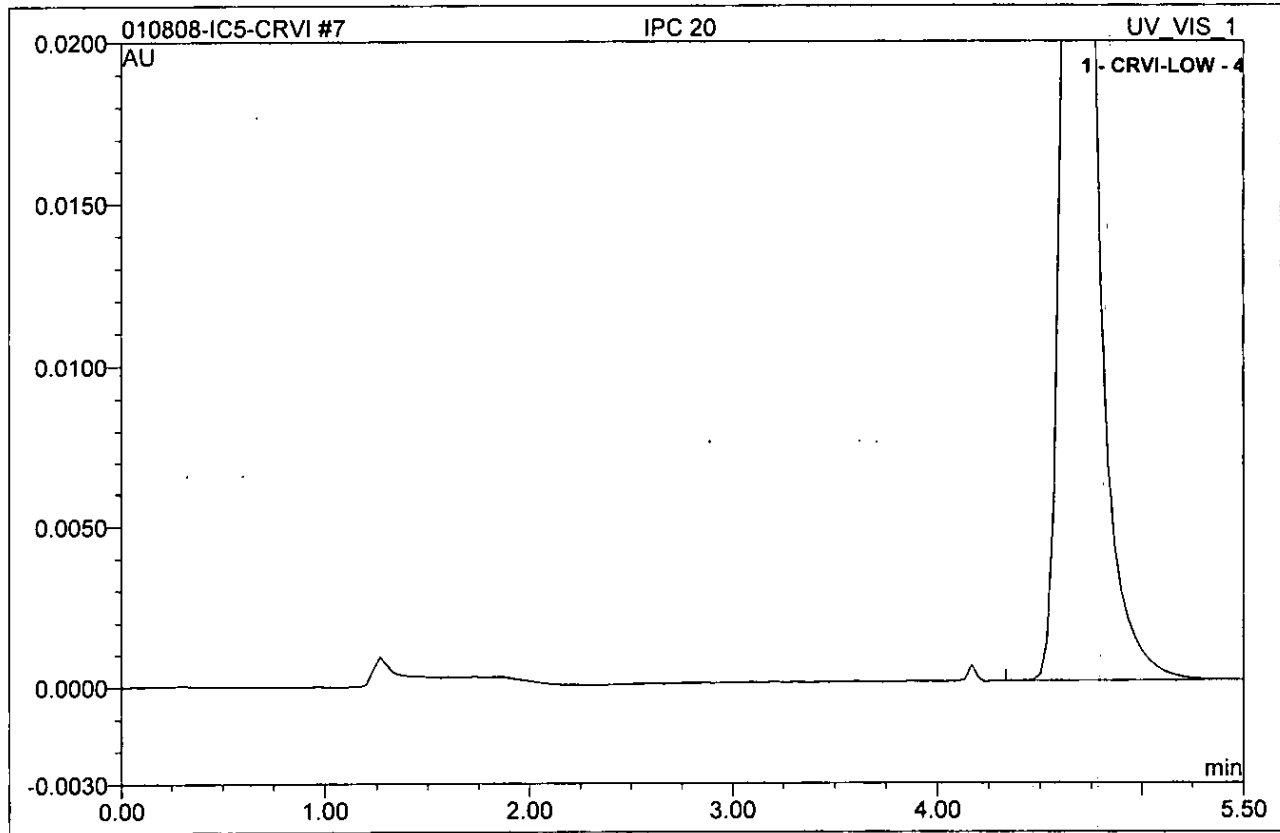
| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.70            | CRVI-LOW  | 0.129        | 0.0208007      | 100.00        | 49.958 | BMB  |
| <b>Total:</b> |                 |           | 0.129        | 0.021          | 100.00        | 49.958 |      |

|                             |                    |                  |               |
|-----------------------------|--------------------|------------------|---------------|
| <b>6 Standard 6 - 50ppb</b> |                    |                  |               |
| Sample Name:                | Standard 6 - 50ppb | Control Program: | CRVI-LOW-loop |
| Sample Type:                | standard           | Quantif. Method: | 1-IC#5-CRVI   |
| Recording Time:             | 12/31/2007 7:57    | Channel:         | UV_VIS_1      |



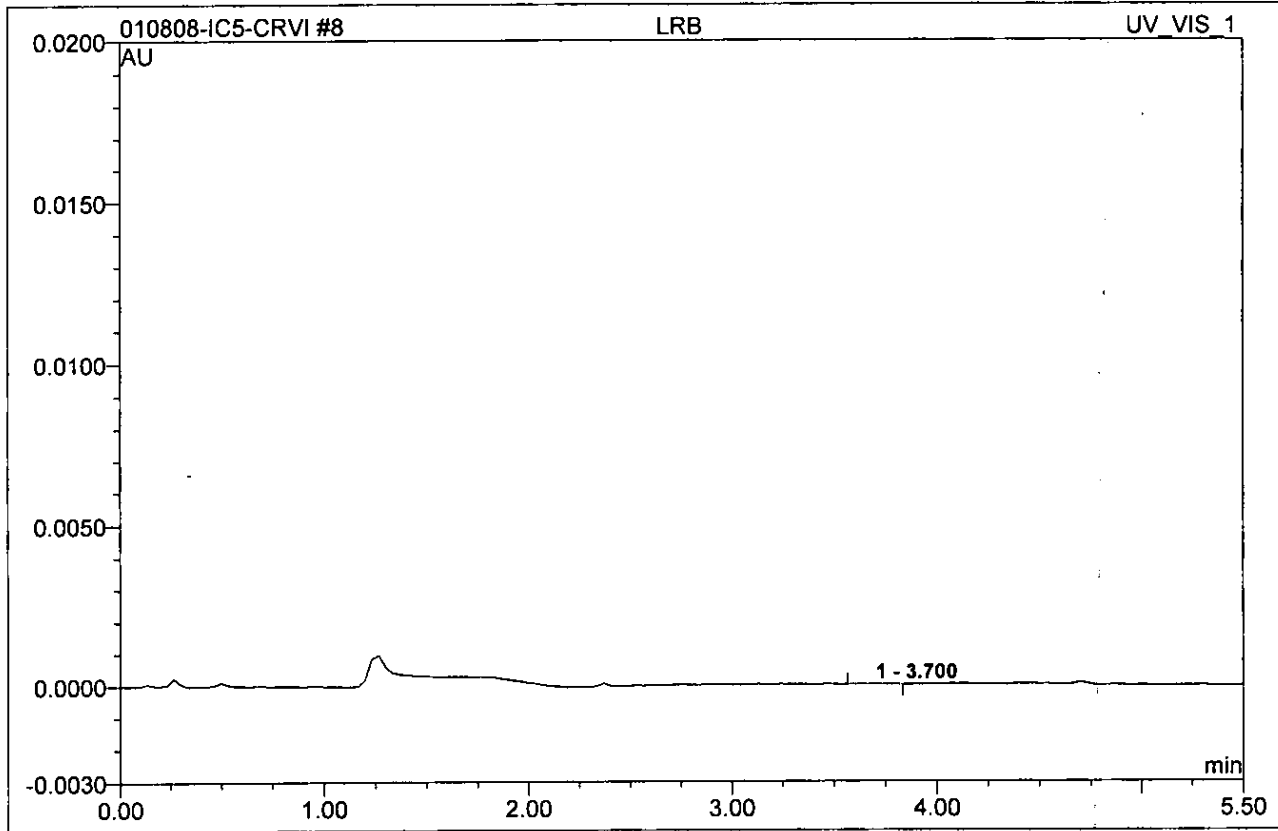
| No.             | Ret.Time<br>min | Peak Name | Cal.Type | Points | Corr.Coeff.<br>% | Offset | Slope     | Curve  |
|-----------------|-----------------|-----------|----------|--------|------------------|--------|-----------|--------|
| 1               | 4.70            | CRVI-LOW  | Lin      | 6      | 99.9995          | 0.0000 | 0.0004164 | 0.0000 |
| <b>Average:</b> |                 |           |          |        | 99.9995          | 0.0000 | 0.0004    | 0.0000 |

|                  |         |                  |               |
|------------------|---------|------------------|---------------|
| <b>7 IPC 20</b>  |         |                  |               |
| Sample Name:     | IPC 20  | Control Program: | CRVI-LOW-loop |
| Dilution Factor: | 1.0000  | Quantif. Method: | 1-IC#5-CRVI   |
| Sample Type:     | unknown | Recording Time:  | 1/8/2008 9:11 |
| Analyst:         | tlh     | Channel:         | UV_VIS_1      |



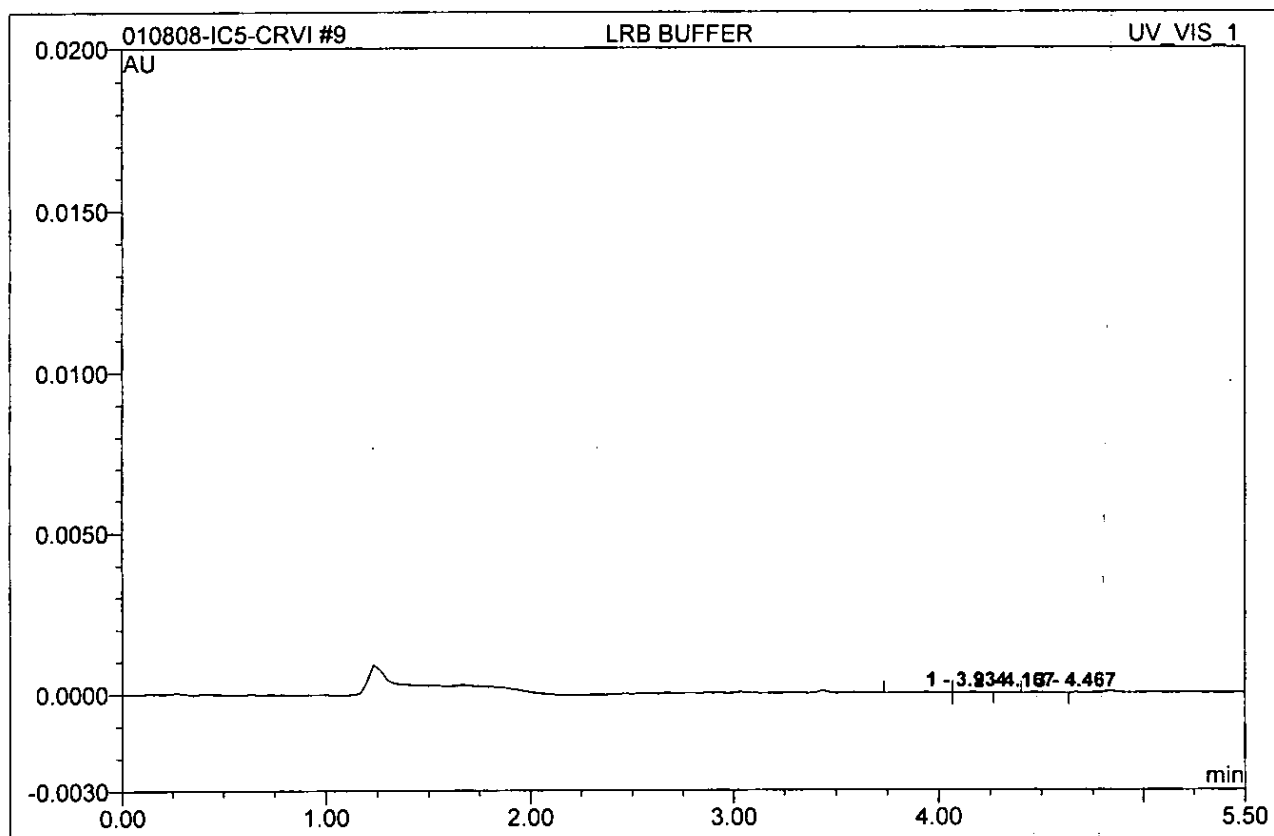
| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.70            | CRVI-LOW  | 0.049        | 0.0082763      | 100.00        | 19.878 | BMB  |
| <b>Total:</b> |                 |           | 0.049        | 0.008          | 100.00        | 19.878 |      |

|                  |         |                  |               |
|------------------|---------|------------------|---------------|
| <b>8 LRB</b>     |         |                  |               |
| Sample Name:     | LRB     | Control Program: | CRVI-LOW-loop |
| Dilution Factor: | 1.0000  | Quantif. Method: | 1-IC#5-CRVI   |
| Sample Type:     | unknown | Recording Time:  | 1/8/2008 9:19 |
| Analyst:         | tlh     | Channel:         | UV_VIS_1      |



| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 3.70            | n.a.      | 0.000        | 0.0000012      | 100.00        | n.a.   | BMB  |
| <b>Total:</b> |                 |           | 0.000        | 0.000          | 100.00        | 0.000  |      |

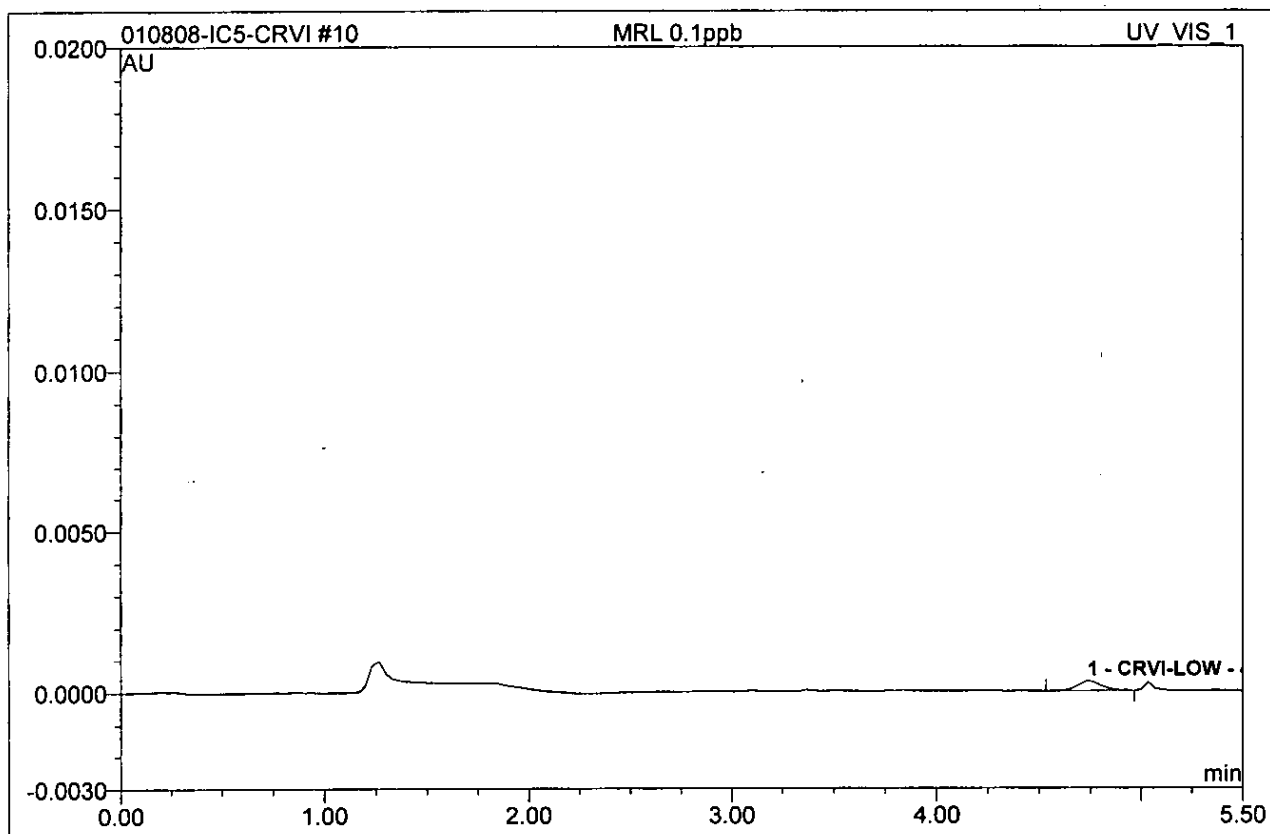
| 9 LRB BUFFER     |            |                  |               |
|------------------|------------|------------------|---------------|
| Sample Name:     | LRB BUFFER | Control Program: | CRVI-LOW-loop |
| Dilution Factor: | 1.0000     | Quantif. Method: | 1-IC#5-CRVI   |
| Sample Type:     | unknown    | Recording Time:  | 1/8/2008 9:27 |
| Analyst:         | tlh        | Channel:         | UV_VIS_1      |



| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 3.93            | n.a.      | 0.000        | 0.0000017      | 34.92         | n.a.   | BMB  |
| 2             | 4.17            | n.a.      | 0.000        | 0.0000009      | 17.63         | n.a.   | bMB  |
| 3             | 4.47            | n.a.      | 0.000        | 0.0000023      | 47.46         | n.a.   | BMB  |
| <b>Total:</b> |                 |           | 0.000        | 0.000          | 100.00        | 0.000  |      |

### 10 MRL 0.1ppb

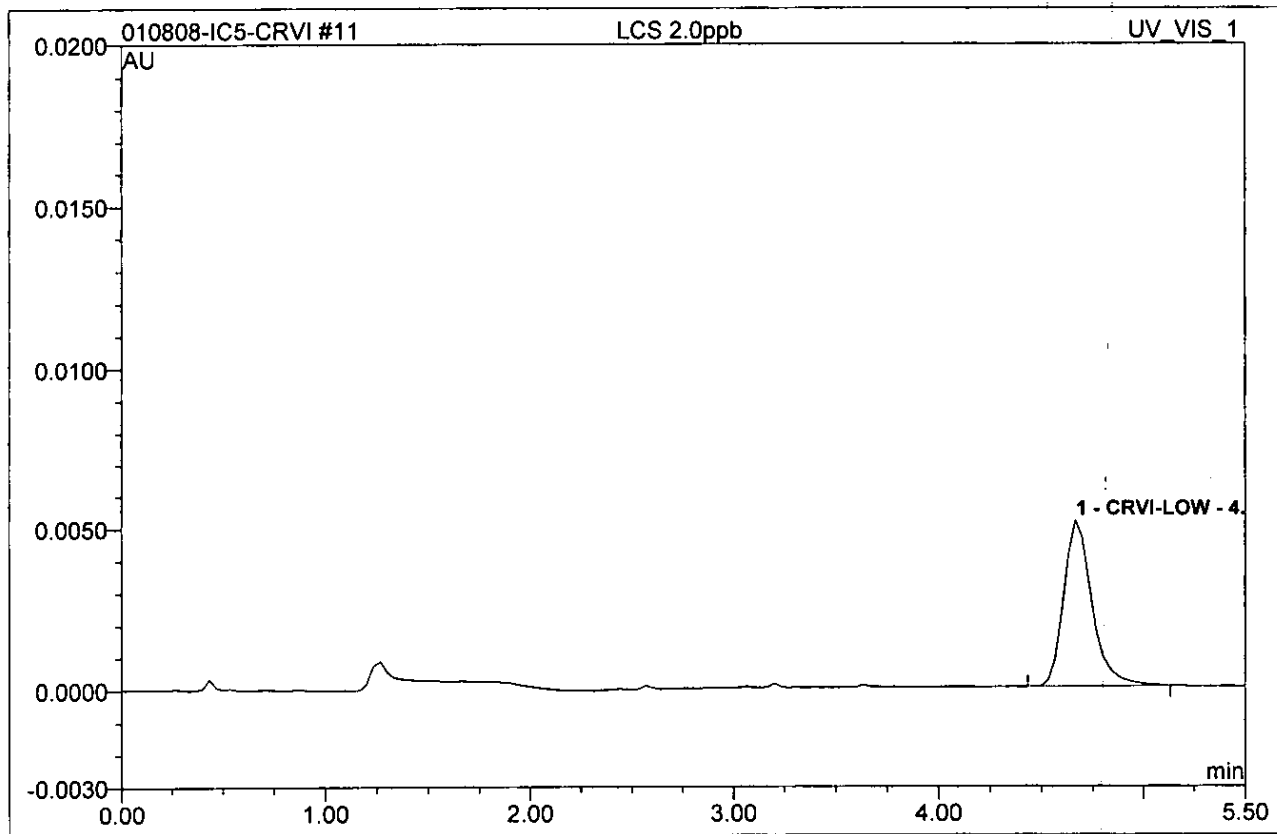
|                  |            |                  |               |
|------------------|------------|------------------|---------------|
| Sample Name:     | MRL 0.1ppb | Control Program: | CRVI-LOW-loop |
| Dilution Factor: | 1.0000     | Quantif. Method: | 1-IC#5-CRVI   |
| Sample Type:     | unknown    | Recording Time:  | 1/8/2008 9:35 |
| Analyst:         | tlh        | Channel:         | UV_VIS_1      |



| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.73            | CRVI-LOW  | 0.000        | 0.0000400      | 100.00        | 0.096  | BMB  |
| <b>Total:</b> |                 |           | 0.000        | 0.000          | 100.00        | 0.096  |      |

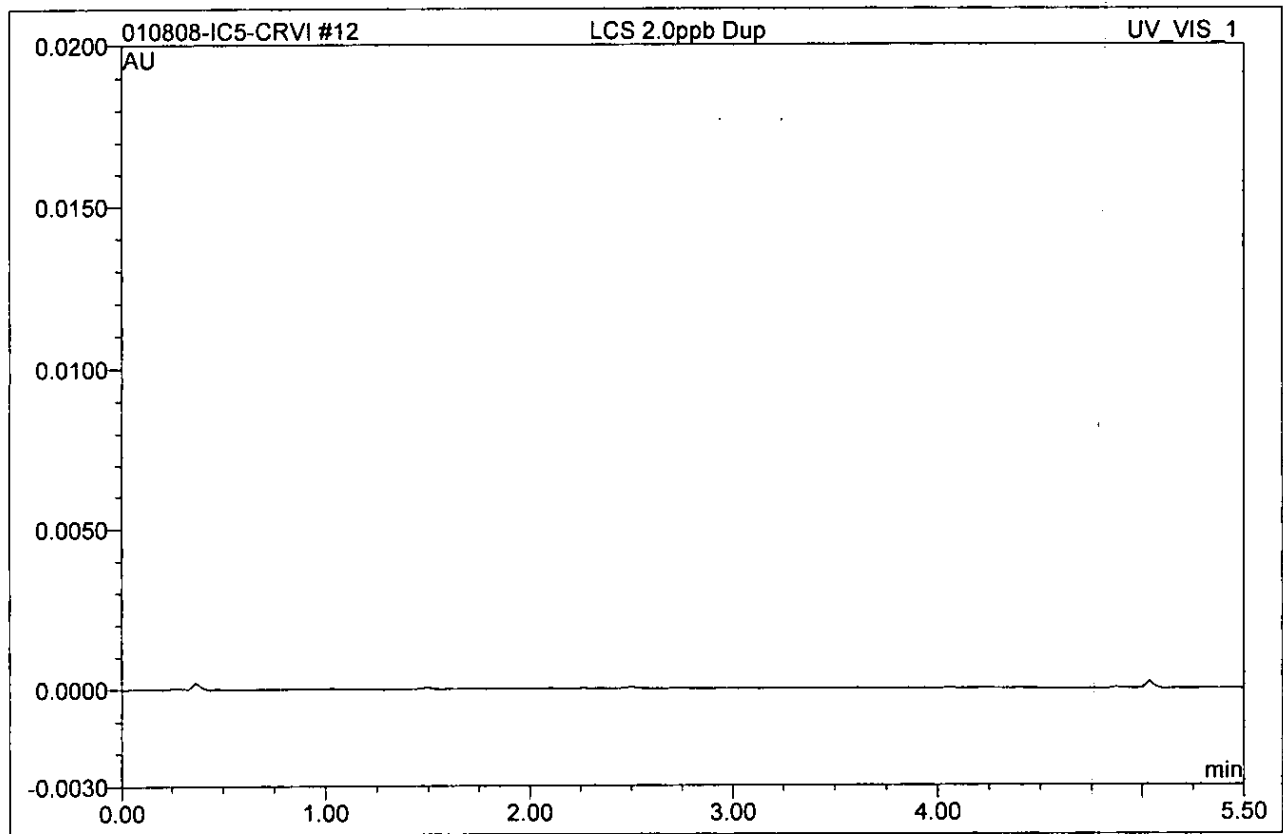


|                      |                   |                  |                      |
|----------------------|-------------------|------------------|----------------------|
| <b>11 LCS 2.0ppb</b> |                   |                  |                      |
| Sample Name:         | <b>LCS 2.0ppb</b> | Control Program: | <b>CRVI-LOW-loop</b> |
| Dilution Factor:     | <b>1.0000</b>     | Quantif. Method: | <b>1-IC#5-CRVI</b>   |
| Sample Type:         | <b>unknown</b>    | Recording Time:  | <b>1/8/2008 9:43</b> |
| Analyst:             | <b>tlh</b>        | Channel:         | <b>UV_VIS_1</b>      |



| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.67            | CRVI-LOW  | 0.005        | 0.0008224      | 100.00        | 1.975  | BMB  |
| <b>Total:</b> |                 |           | 0.005        | 0.001          | 100.00        | 1.975  |      |

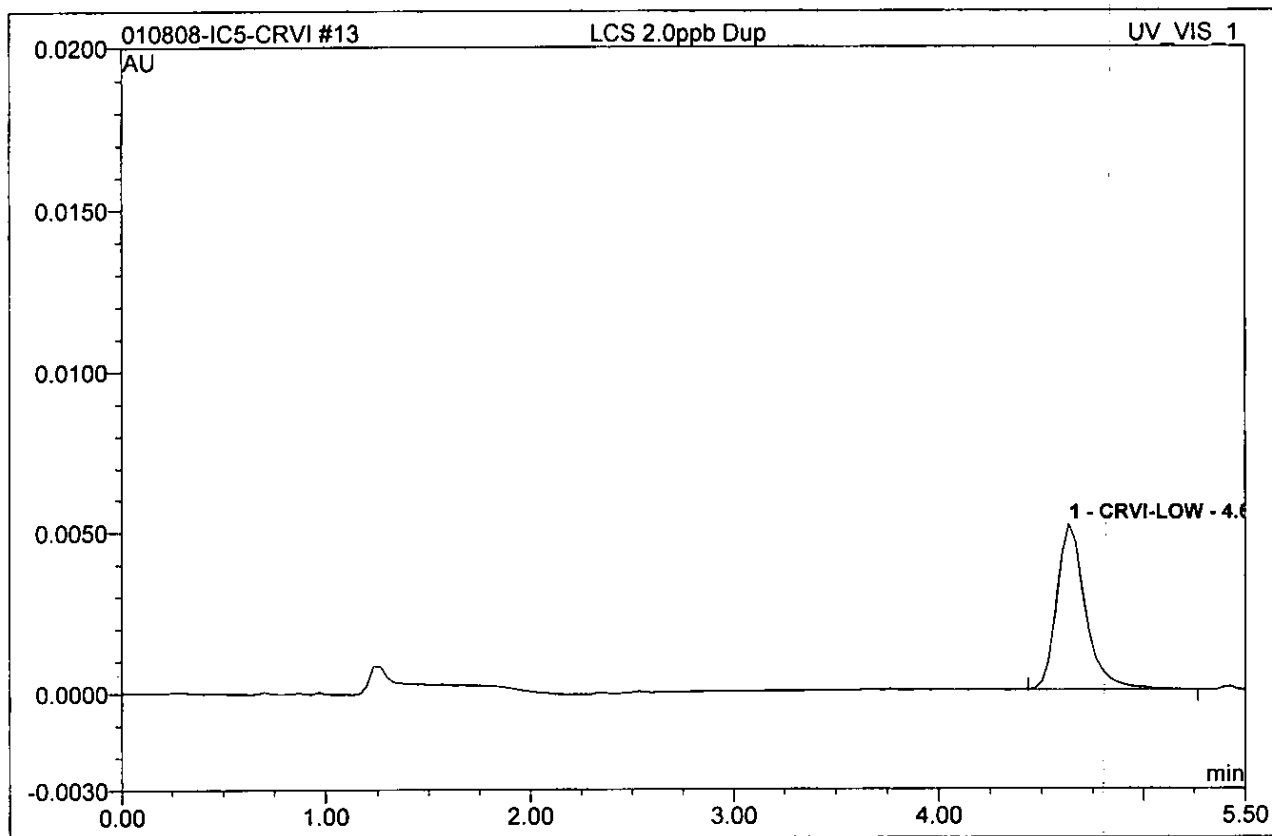
|                          |                |                  |               |
|--------------------------|----------------|------------------|---------------|
| <b>12 LCS 2.0ppb Dup</b> |                |                  |               |
| Sample Name:             | LCS 2.0ppb Dup | Control Program: | CRVI-LOW-loop |
| Dilution Factor:         | 1.0000         | Quantif. Method: | 1-IC#5-CRVI   |
| Sample Type:             | unknown        | Recording Time:  | 1/8/2008 9:51 |
| Analyst:                 | tlh            | Channel:         | UV_VIS_1      |



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

### 13 LCS 2.0ppb Dup

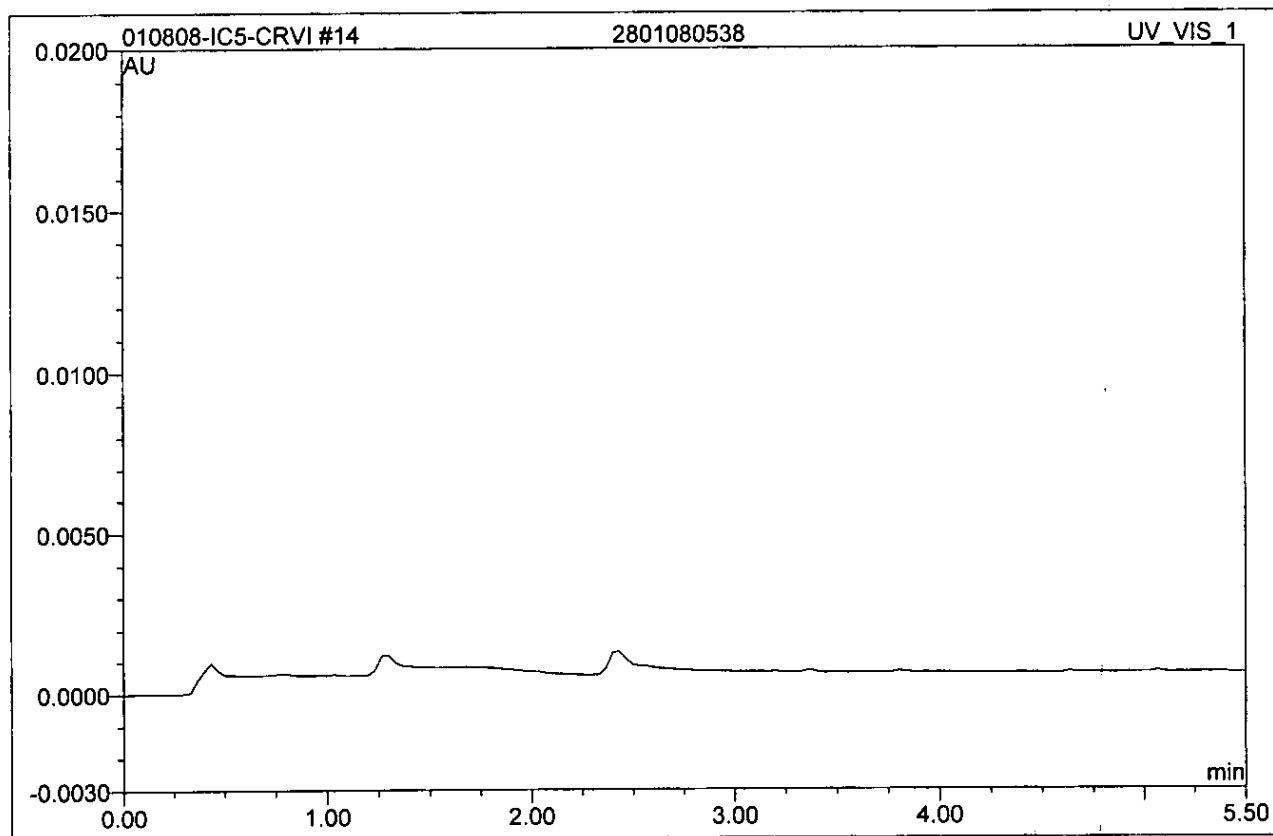
|                  |                |                  |                |
|------------------|----------------|------------------|----------------|
| Sample Name:     | LCS 2.0ppb Dup | Control Program: | CRVI-LOW-loop  |
| Dilution Factor: | 1.0000         | Quantif. Method: | 1-IC#5-CRVI    |
| Sample Type:     | unknown        | Recording Time:  | 1/8/2008 10:32 |
| Analyst:         | tlh            | Channel:         | UV_VIS_1       |



| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.63            | CRVI-LOW  | 0.005        | 0.0008318      | 100.00        | 1.998  | BMB  |
| <b>Total:</b> |                 |           | 0.005        | 0.001          | 100.00        | 1.998  |      |

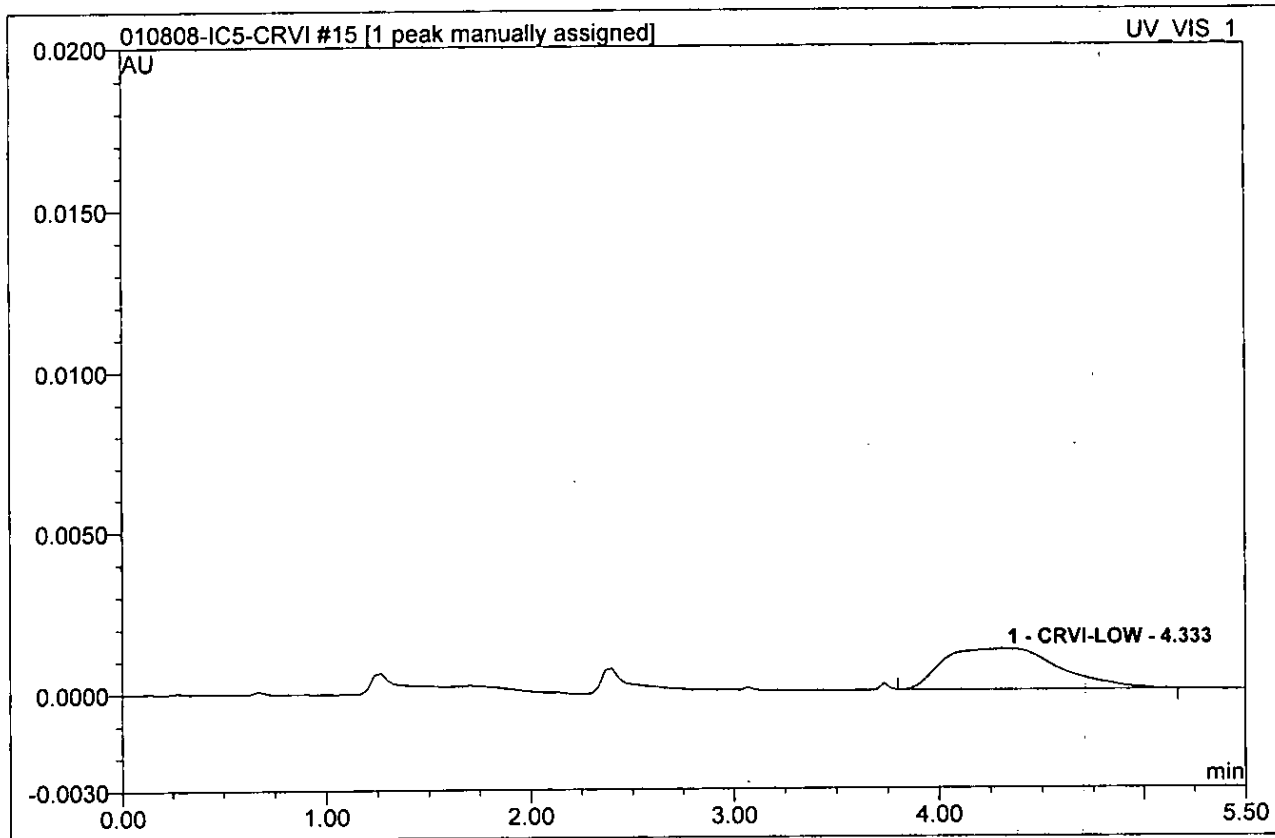
**14 2801080538**

|                  |            |                  |                |
|------------------|------------|------------------|----------------|
| Sample Name:     | 2801080538 | Control Program: | CRVI-LOW-loop  |
| Dilution Factor: | 1.0000     | Quantif. Method: | 1-IC#5-CRVI    |
| Sample Type:     | unknown    | Recording Time:  | 1/8/2008 12:15 |
| Analyst:         | tlh        | Channel:         | UV_VIS_1       |



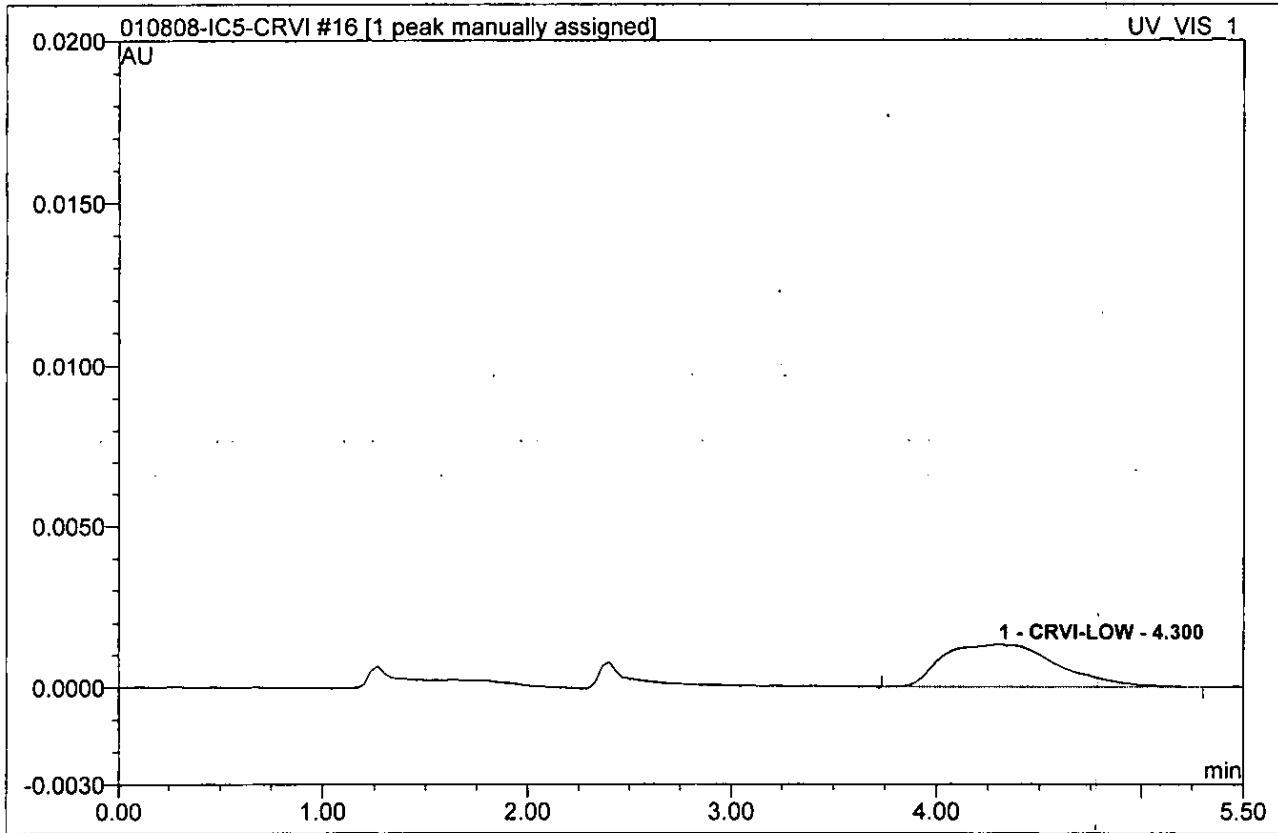
| No.    | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|--------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| Total: |                 |           | 0.000        | 0.000          | 0.00          | 0.000  |      |

|                         |               |                  |                |
|-------------------------|---------------|------------------|----------------|
| <b>15 2801080538_MS</b> |               |                  |                |
| Sample Name:            | 2801080538_MS | Control Program: | CRVI-LOW-loop  |
| Dilution Factor:        | 1.0000        | Quantif. Method: | 1-IC#5-CRVI    |
| Sample Type:            | unknown       | Recording Time:  | 1/8/2008 12:23 |
| Analyst:                | tlh           | Channel:         | UV_VIS_1       |



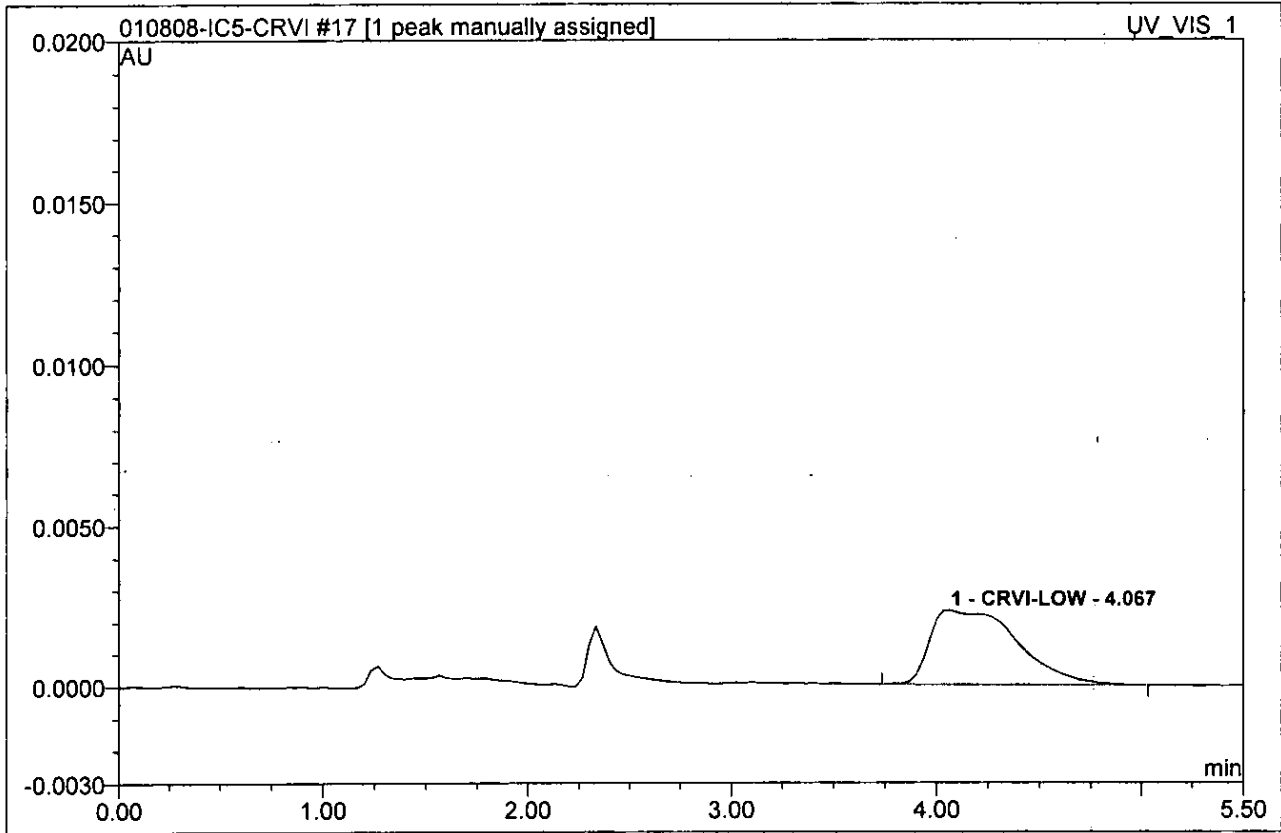
| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.33            | CRVI-LOW  | 0.001        | 0.0008189      | 100.00        | 1.967  | BMB^ |
| <b>Total:</b> |                 |           | 0.001        | 0.001          | 100.00        | 1.967  |      |

|                          |                |                  |                |
|--------------------------|----------------|------------------|----------------|
| <b>16 2801080538_MSD</b> |                |                  |                |
| Sample Name:             | 2801080538_MSD | Control Program: | CRVI-LOW-loop  |
| Dilution Factor:         | 1.0000         | Quantif. Method: | 1-IC#5-CRVI    |
| Sample Type:             | unknown        | Recording Time:  | 1/8/2008 12:31 |
| Analyst:                 | tlh            | Channel:         | UV_VIS_1       |



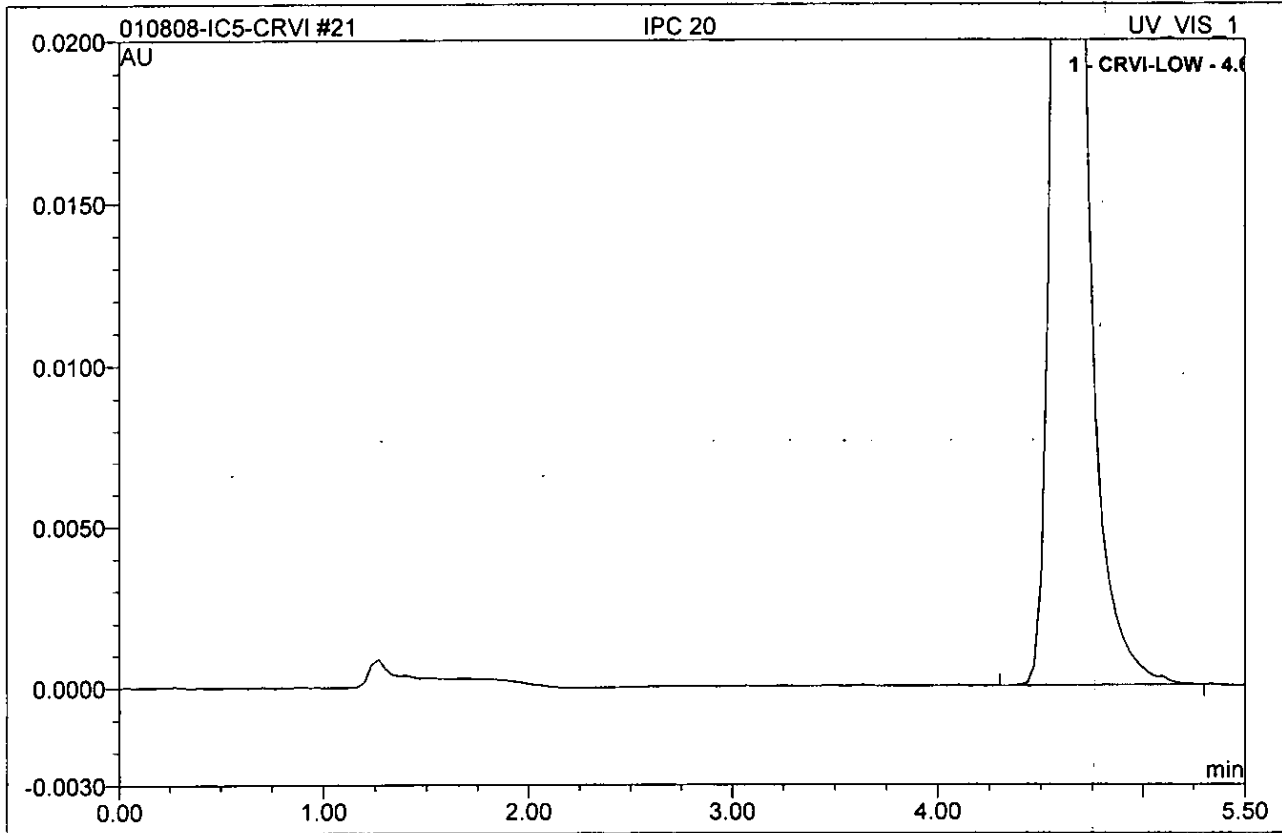
| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.30            | CRVI-LOW  | 0.001        | 0.0008547      | 100.00        | 2.053  | BMB^ |
| <b>Total:</b> |                 |           | 0.001        | 0.001          | 100.00        | 2.053  |      |

|                      |            |                  |                |
|----------------------|------------|------------------|----------------|
| <b>17 2801080540</b> |            |                  |                |
| Sample Name:         | 2801080540 | Control Program: | CRVI-LOW-loop  |
| Dilution Factor:     | 1.0000     | Quantif. Method: | 1-IC#5-CRVI    |
| Sample Type:         | unknown    | Recording Time:  | 1/8/2008 12:39 |
| Analyst:             | tlh        | Channel:         | UV_VIS_1       |



| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.07            | CRVI-LOW  | 0.002        | 0.0011361      | 100.00        | 2.729  | BMB^ |
| <b>Total:</b> |                 |           | 0.002        | 0.001          | 100.00        | 2.729  |      |

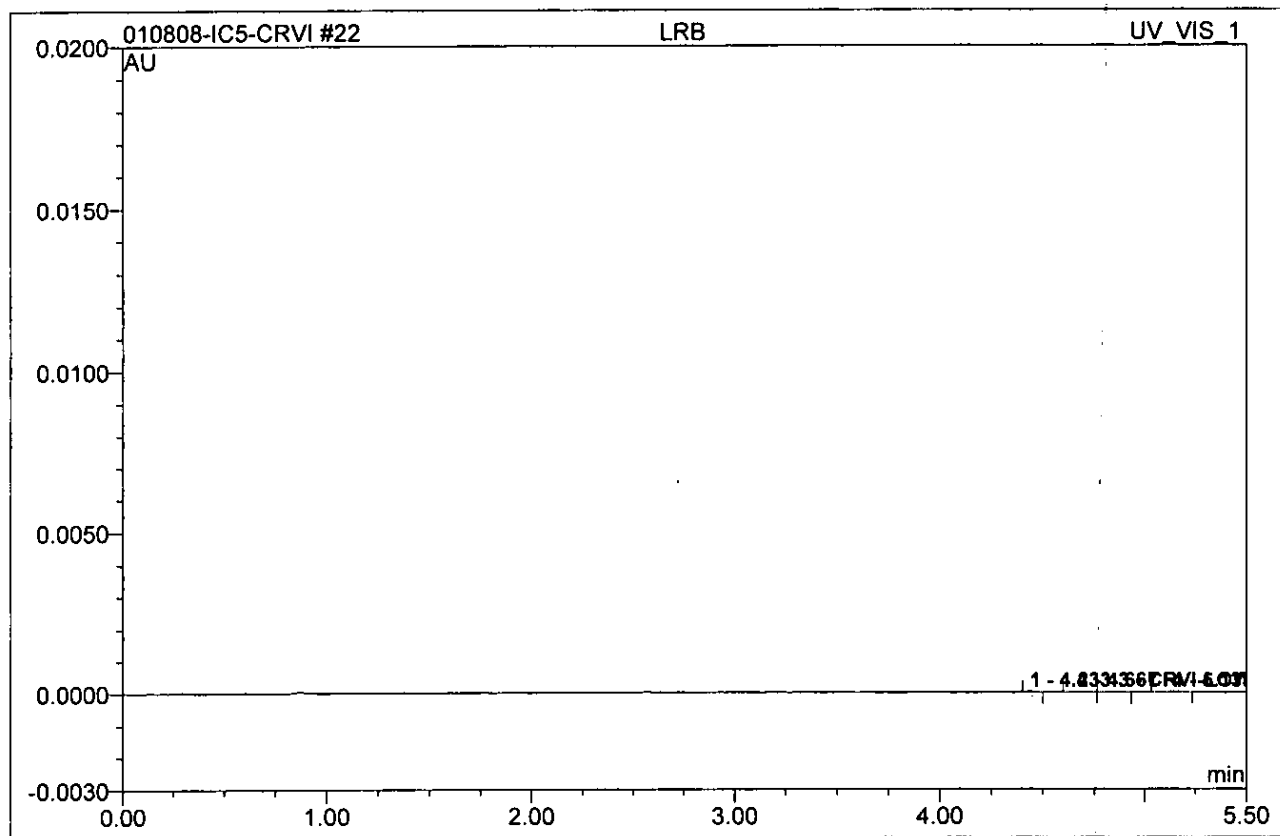
|                  |         |                  |                |
|------------------|---------|------------------|----------------|
| <b>21 IPC 20</b> |         |                  |                |
| Sample Name:     | IPC 20  | Control Program: | CRVI-LOW-loop  |
| Dilution Factor: | 1.0000  | Quantif. Method: | 1-IC#5-CRVI    |
| Sample Type:     | unknown | Recording Time:  | 1/8/2008 13:18 |
| Analyst:         | tlh     | Channel:         | UV_VIS_1       |



| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.63            | CRVI-LOW  | 0.051        | 0.0083377      | 100.00        | 20.025 | BMB  |
| <b>Total:</b> |                 |           | 0.051        | 0.008          | 100.00        | 20.025 |      |

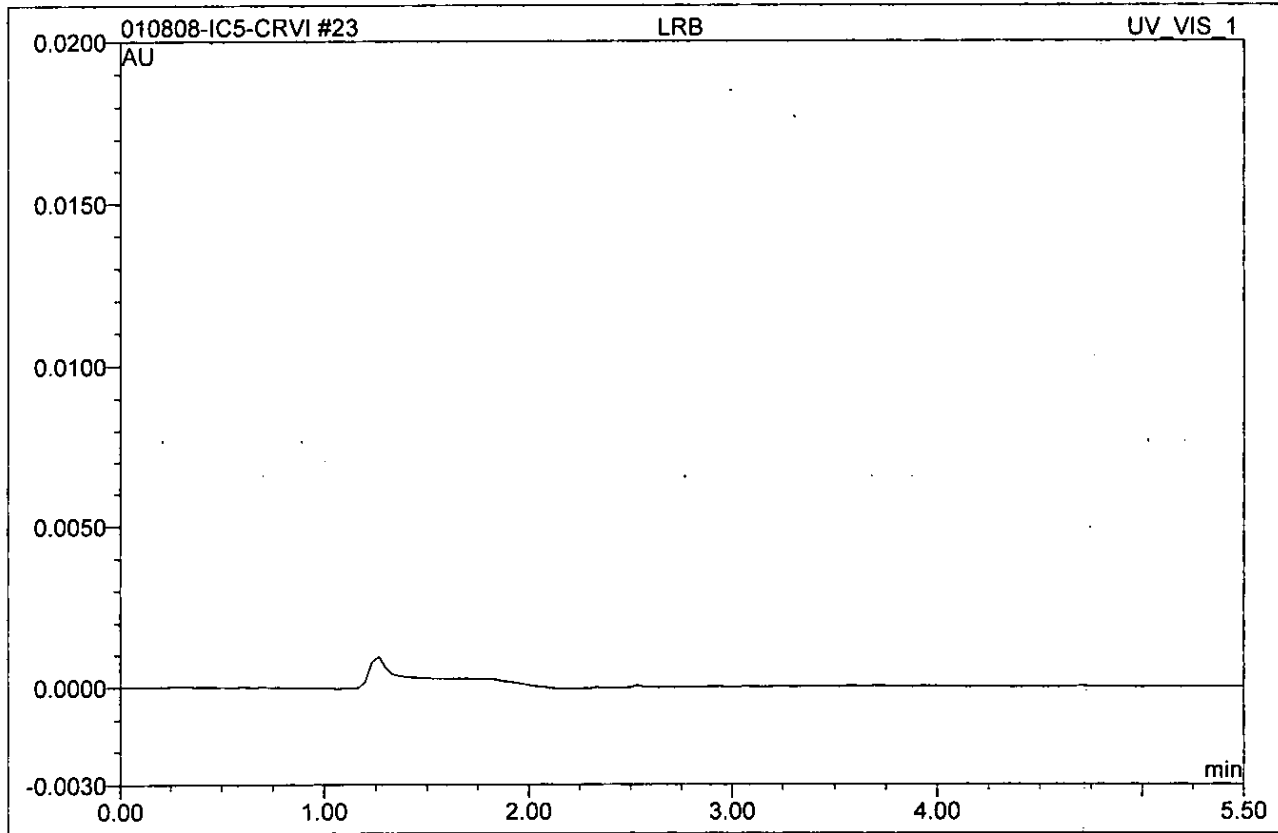


|                  |         |                  |                |
|------------------|---------|------------------|----------------|
| <b>22 LRB</b>    |         |                  |                |
| Sample Name:     | LRB     | Control Program: | CRVI-LOW-loop  |
| Dilution Factor: | 1.0000  | Quantif. Method: | 1-IC#5-CRVI    |
| Sample Type:     | unknown | Recording Time:  | 1/8/2008 13:26 |
| Analyst:         | tlh     | Channel:         | UV_VIS_1       |



| No.           | Ret.Time<br>min | Peak Name | Height<br>AU | Area<br>AU*min | Rel.Area<br>% | Amount | Type |
|---------------|-----------------|-----------|--------------|----------------|---------------|--------|------|
| 1             | 4.43            | n.a.      | 0.000        | 0.0000010      | 31.35         | n.a.   | BMB  |
| 2             | 4.67            | n.a.      | 0.000        | 0.0000006      | 18.38         | n.a.   | BMB  |
| 3             | 4.87            | CRVI-LOW  | 0.000        | 0.0000008      | 24.86         | 0.002  | bMB  |
| 4             | 5.13            | n.a.      | 0.000        | 0.0000008      | 25.41         | n.a.   | BMB  |
| <b>Total:</b> |                 |           | 0.000        | 0.000          | 100.00        | 0.002  |      |

|                  |                |                  |                       |
|------------------|----------------|------------------|-----------------------|
| <b>23 LRB</b>    |                |                  |                       |
| Sample Name:     | <b>LRB</b>     | Control Program: | <b>CRVI-LOW-loop</b>  |
| Dilution Factor: | <b>1.0000</b>  | Quantif. Method: | <b>1-IC#5-CRVI</b>    |
| Sample Type:     | <b>unknown</b> | Recording Time:  | <b>1/8/2008 14:01</b> |
| Analyst:         | <b>tlh</b>     | Channel:         | <b>UV_VIS_1</b>       |



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

# **Standard Preparation Worksheet & Certificate of Analysis**

# Reagent Preparation Documentation

Reagent:  $Cr^{+6}$  Low LCS Stock Solution - 1ppm  
 Date Received/Prepped: 10/18/07 3/17/08 7/10/08 10/20/08 |  
 Date Expired: \_\_\_\_\_ |  
 Manufacturer: \_\_\_\_\_  
 Storage Condition: room temperature

MW #: TUHO71018-1  
 By: 92H  
 Matrix: ag  
 Amount: 100mL  
 Lot #: \_\_\_\_\_

| Component                          | Comment  | Standard       | Concentration |
|------------------------------------|--|----------------|---------------|
| <u>Stock 1000ppm exp. 10-20-08</u> | <u>100ul diluted to 100mL w/ DI H<sub>2</sub>O</u> | <u>R201090</u> | <u>1ppm</u>   |
|                                    |  |                |               |
|                                    |  |                |               |
|                                    |  |                |               |
|                                    |  |                |               |

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

Reagent:  $Cr^{+6}$  Low LCS Working Std. - 2ppb  
 Date Received/Prepped: 10/18/07 11/12/07 11/24/07 12/10/07 12/18/07 1/15/08  
~~Date Expired:~~ 1/30/08 2/13/08 2/24/08 3/17/08 3/29/08 4/7/08  
 Manufacturer: \_\_\_\_\_  
 Storage Condition: room temperature

MW #: TUHO71018-2  
 By: 92H  
 Matrix: ag  
 Amount: 100mL  
 Lot #: \_\_\_\_\_

| Component   | Comment  | Standard           | Concentration |
|---|--|--------------------|---------------|
| <u><math>Cr^{+6}</math> Low LCS Stock (TUHO71018-1)</u> | <u>200ul diluted to 100mL w/ DI H<sub>2</sub>O</u> | <u>TUHO71018-1</u> | <u>2ppb</u>   |
| <u><math>Cr^{+6}</math> Buffer Soln</u>                 | <u>1.0ml added AFTER soln @ final volume</u>       | <u>TUHO608-15A</u> |               |
|   |  |                    |               |

Comment: 4/21/08 5/2/08 5/15/08 5/28/08 6/11/08 6/23/08 7/8/08 7/21/08 7/30/08  
8/12/08 8/25/08 9/8/08 9/23/08 10/7/08 10/20/08 10/31/08

Reagent:  $Cr^{+6}$  Low Calibration Stock Soln - 1ppm  
 Date Received/Prepped: 10/18/07 3/17/08 | | |  
 Date Expired: \_\_\_\_\_ | | |  
 Manufacturer: \_\_\_\_\_  
 Storage Condition: room temperature

MW #: TUHO71018-3  
 By: 92H  
 Matrix: ag  
 Amount: 100mL  
 Lot #: \_\_\_\_\_

| Component   | Comment  | Standard        | Concentration |
|---|--|-----------------|---------------|
| <u>Inorganic Ventures 1000ppm exp. 01-11-08 rec'd &amp; opened 5-11-07 Lot # Z-CRC215-2</u> | <u>100ul diluted to 100mL w/ DI H<sub>2</sub>O</u> | <u>R2011632</u> | <u>1ppm</u>   |
|   |  |                 |               |
|   |  |                 |               |

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



An ISO 9001 Certified Company

*Certificate of Analysis*

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

| <i>TEST</i>                       | <i>SPECIFICATIONS</i> | <i>RESULTS</i> |
|-----------------------------------|-----------------------|----------------|
| Hexavalent Chromium Concentration | 995 to 1005 ppm       | 1001.0 ppm     |
| pH of the solution                | 12 to 14              | 12.0           |

The expiration date is Jan 2010

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

R 201090

Certified by \_\_\_\_\_

Paul Kleinwolterink  
Analytical Services Chemist

# Reagent Documentation

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

**Reagent #:** 201090  
**By:** LMR  
**Matrix:** aq  
**Amount:** 100 ml  
**Lot #:** A5 005

| Component | Comment                    | Standard | Concentration |
|-----------|----------------------------|----------|---------------|
|           | <u>HACH cat # 14664-42</u> |          |               |
|           |                            |          |               |
|           |                            |          |               |
|           |                            |          |               |
|           |                            |          |               |
|           |                            |          |               |

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

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

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

| Component | Comment                | Standard | Concentration |
|-----------|------------------------|----------|---------------|
|           | <u>VWR # 66115-150</u> |          |               |
|           |                        |          |               |
|           |                        |          |               |
|           |                        |          |               |
|           |                        |          |               |
|           |                        |          |               |

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

**Reagent:** Potassium Phosphate Monobasic  
**Date Received:** 8 Feb 05  
**Date Expired:** Feb '10  
**Manufacturer:** JT Baker  
**Storage Condition:** room temp

**Reagent #:** 201092  
**By:** LMR  
**Matrix:** solid  
**Amount:** 2 x 500g  
**Lot #:** A38142

| Component | Comment               | Standard | Concentration |
|-----------|-----------------------|----------|---------------|
|           | <u>VWR # JT3246-1</u> |          |               |
|           |                       |          |               |
|           |                       |          |               |
|           |                       |          |               |
|           |                       |          |               |
|           |                       |          |               |

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

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Reagent Documentation

Reagent: *AntiFoam B Silicone Emulsion*  
 Date Received: *08 May 07*  
 Date Expired: *May 2010*  
 Manufacturer: *IT Baker*  
 Storage Condition: *room temp*

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

| Component | Comment                   | Standard | Concentration |
|-----------|---------------------------|----------|---------------|
|           | <i>IT Baker # B531-05</i> |          |               |
|           |                           |          |               |
|           |                           |          |               |
|           |                           |          |               |
|           |                           |          |               |

Comment:

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

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

| Component | Comment             | Standard | Concentration |
|-----------|---------------------|----------|---------------|
|           | <i>HP # 1C-CN-M</i> |          |               |
|           |                     |          |               |
|           |                     |          |               |
|           |                     |          |               |
|           |                     |          |               |

Comment:

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

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

| Component  | Comment                | Standard | Concentration |
|------------|------------------------|----------|---------------|
| <i>Cr6</i> | <i>PN = CGCR(6)1-1</i> |          |               |
|            |                        |          |               |
|            |                        |          |               |
|            |                        |          |               |
|            |                        |          |               |

Comment:

~~37~~ 30

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

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

RA 201632

Catalog Number: CGCR(6)1-1, CGCR(6)1-2, and CGCR(6)1-5  
 Lot Number: **Z-CR02152**  
 Starting Material: (NH<sub>4</sub>)<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>  
 Starting Material Purity (%): 99.989259  
 Starting Material Lot No: F04N14  
 Matrix: H<sub>2</sub>O

**3.0 CERTIFIED VALUES AND UNCERTAINTIES**

**Certified Concentration:** 1000 ± 3 µg/mL

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

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

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

( $\bar{x}$ ) = mean

$x_i$  = individual results

$n$  = number of measurements

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

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

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

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

**4.0 TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS**

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

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

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

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