

## **ANALYTICAL RESULTS SUMMARY**

METALS  
GC SEMI-VOLATILES  
SEMI-VOLATILE ORGANICS  
VOLATILE ORGANICS

**PROJECT NAME : SOUTH RIVER WM REPLACEMENT**

**CDM SMITH**

**110 Fieldcrest Ave**

**Raritan Center**

**Edison, NJ - 08837**

**Phone No: 732-225-7000**

**ORDER ID : Q2100**

**ATTENTION : Marcie Ann Encinas**



**Laboratory Certification ID # 20012**

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**Hit Summary Sheet**  
**SW-846**

**SDG No.:** Q2100  
**Client:** CDM Smith

| Sample ID         | Client ID    | Matrix | Parameter                   | Concentration | C | MDL  | RDL  | Units |
|-------------------|--------------|--------|-----------------------------|---------------|---|------|------|-------|
| <b>Client ID:</b> | <b>TP-22</b> |        |                             |               |   |      |      |       |
| Q2100-02          | TP-22        | SOIL   | Acetone                     | 31.7          |   | 3.90 | 20.8 | ug/Kg |
| Q2100-02          | TP-22        | SOIL   | 2-Butanone                  | 6.00          | J | 5.40 | 20.8 | ug/Kg |
| Q2100-02          | TP-22        | SOIL   | Benzene                     | 21.5          |   | 0.66 | 4.20 | ug/Kg |
| Q2100-02          | TP-22        | SOIL   | m/p-Xylenes                 | 1.30          | J | 1.00 | 8.30 | ug/Kg |
|                   |              |        | <b>Total Voc :</b>          |               |   | 60.5 |      |       |
| Q2100-02          | TP-22        | SOIL   | Butane                      | * 6.00        | J | 0    | 0    | ug/Kg |
|                   |              |        | <b>Total Tics :</b>         |               |   | 6.00 |      |       |
|                   |              |        | <b>Total Concentration:</b> |               |   | 66.5 |      |       |
| <b>Client ID:</b> | <b>TP-45</b> |        |                             |               |   |      |      |       |
| Q2100-04          | TP-45        | SOIL   | Acetone                     | 7.90          | J | 4.50 | 23.5 | ug/Kg |
|                   |              |        | <b>Total Voc :</b>          |               |   | 7.90 |      |       |
|                   |              |        | <b>Total Concentration:</b> |               |   | 7.90 |      |       |

### Hit Summary Sheet SW-846

**SDG No.:** Q2100  
**Client:** CDM Smith

| Sample ID            | Client ID | Matrix | Parameter                        | Concentration | C       | MDL    | RDL | Units |
|----------------------|-----------|--------|----------------------------------|---------------|---------|--------|-----|-------|
| Client ID : TP-16    |           |        |                                  |               |         |        |     |       |
| Q2100-01             | TP-16     | SOIL   | 1-Tricosene                      | *             | 150.000 | J 0    | 0   | ug/Kg |
| Q2100-01             | TP-16     | SOIL   | 2-Pentanone, 4-hydroxy-4-methyl  | *             | 250.000 | AB 0   | 0   | ug/Kg |
| Q2100-01             | TP-16     | SOIL   | Benzophenone                     | *             | 340.000 | J 0    | 0   | ug/Kg |
| Q2100-01             | TP-16     | SOIL   | n-Hexadecanoic acid              | *             | 430.000 | J 0    | 0   | ug/Kg |
| Q2100-01             | TP-16     | SOIL   | Squalene                         | *             | 230.000 | J 0    | 0   | ug/Kg |
| Total Tics :         |           |        |                                  | 1,400.00      |         |        |     |       |
| Total Concentration: |           |        |                                  | 1,400.00      |         |        |     |       |
| Client ID : TP-22    |           |        |                                  |               |         |        |     |       |
| Q2100-02             | TP-22     | SOIL   | .alpha.-Amyrone                  | *             | 460.000 | J 0    | 0   | ug/Kg |
| Q2100-02             | TP-22     | SOIL   | 24-Norursa-3,12-diene            | *             | 430.000 | J 0    | 0   | ug/Kg |
| Q2100-02             | TP-22     | SOIL   | 2H-Cyclopropa[a]naphthalen-2-or  | *             | 170.000 | J 0    | 0   | ug/Kg |
| Q2100-02             | TP-22     | SOIL   | 2-Pentanone, 4-hydroxy-4-methyl  | *             | 230.000 | AB 0   | 0   | ug/Kg |
| Q2100-02             | TP-22     | SOIL   | Anthracene, 9-(2-propenyl)-      | *             | 130.000 | J 0    | 0   | ug/Kg |
| Q2100-02             | TP-22     | SOIL   | Benzophenone                     | *             | 200.000 | J 0    | 0   | ug/Kg |
| Q2100-02             | TP-22     | SOIL   | Heptacosyl pentafluoropropionate | *             | 150.000 | J 0    | 0   | ug/Kg |
| Q2100-02             | TP-22     | SOIL   | Hexathiane                       | *             | 140.000 | J 0    | 0   | ug/Kg |
| Q2100-02             | TP-22     | SOIL   | n-Hexadecanoic acid              | *             | 200.000 | J 0    | 0   | ug/Kg |
| Total Tics :         |           |        |                                  | 2,110.00      |         |        |     |       |
| Total Concentration: |           |        |                                  | 2,110.00      |         |        |     |       |
| Client ID : TP-21    |           |        |                                  |               |         |        |     |       |
| Q2100-03             | TP-21     | SOIL   | Fluoranthene                     |               | 120.000 | J 38.3 | 220 | ug/Kg |
| Total Svoc :         |           |        |                                  | 120.00        |         |        |     |       |
| Q2100-03             | TP-21     | SOIL   | 2-Pentanone, 4-hydroxy-4-methyl  | *             | 210.000 | AB 0   | 0   | ug/Kg |
| Q2100-03             | TP-21     | SOIL   | 3-Eicosene, (E)-                 | *             | 170.000 | J 0    | 0   | ug/Kg |
| Q2100-03             | TP-21     | SOIL   | Benzophenone                     | *             | 170.000 | J 0    | 0   | ug/Kg |
| Q2100-03             | TP-21     | SOIL   | n-Hexadecanoic acid              | *             | 200.000 | J 0    | 0   | ug/Kg |
| Q2100-03             | TP-21     | SOIL   | unknown12.869                    | *             | 99.700  | J 0    | 0   | ug/Kg |
| Total Tics :         |           |        |                                  | 849.70        |         |        |     |       |
| Total Concentration: |           |        |                                  | 969.70        |         |        |     |       |
| Client ID : TP-45    |           |        |                                  |               |         |        |     |       |
| Q2100-04             | TP-45     | SOIL   | 2-Pentanone, 4-hydroxy-4-methyl  | *             | 400.000 | AB 0   | 0   | ug/Kg |
| Q2100-04             | TP-45     | SOIL   | Benzophenone                     | *             | 330.000 | J 0    | 0   | ug/Kg |
| Q2100-04             | TP-45     | SOIL   | Heptacosane                      | *             | 130.000 | J 0    | 0   | ug/Kg |
| Q2100-04             | TP-45     | SOIL   | Heptadecyl trifluoroacetate      | *             | 320.000 | J 0    | 0   | ug/Kg |
| Q2100-04             | TP-45     | SOIL   | Hexacosane                       | *             | 130.000 | J 0    | 0   | ug/Kg |
| Q2100-04             | TP-45     | SOIL   | n-Hexadecanoic acid              | *             | 590.000 | J 0    | 0   | ug/Kg |

**Hit Summary Sheet**  
**SW-846**

**SDG No.:** Q2100  
**Client:** CDM Smith

| Sample ID                   | Client ID | Matrix | Parameter         | Concentration   | C       | MDL | RDL | Units |
|-----------------------------|-----------|--------|-------------------|-----------------|---------|-----|-----|-------|
| Q2100-04                    | TP-45     | SOIL   | Octadecanoic acid | *               | 180.000 | J 0 | 0   | ug/Kg |
| Q2100-04                    | TP-45     | SOIL   | Tetratetracontane | *               | 94.800  | J 0 | 0   | ug/Kg |
| Q2100-04                    | TP-45     | SOIL   | unknown16.827     | *               | 150.000 | J 0 | 0   | ug/Kg |
| <b>Total Tics :</b>         |           |        |                   | <b>2,324.80</b> |         |     |     |       |
| <b>Total Concentration:</b> |           |        |                   | <b>2,324.80</b> |         |     |     |       |



284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,  
Fax : 908 789 8922

**Hit Summary Sheet**  
**SW-846**

**SDG No.:** Q2100

**Order ID:** Q2100

**Client:** CDM Smith

**Project ID:** South River WM Replacement

| Sample ID               | Client ID      | Matrix | Parameter       | Concentration | C  | MDL  | RDL  | Units |
|-------------------------|----------------|--------|-----------------|---------------|----|------|------|-------|
| Client ID :<br>Q2100-03 | TP-21<br>TP-21 | SOIL   | alpha-Chlordane | 0.34          | JP | 0.15 | 2.20 | ug/kg |
| Total Concentration:    |                |        |                 | 0.340         |    |      |      |       |



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**Hit Summary Sheet**  
**SW-846**

**SDG No.:** Q2100

**Order ID:** Q2100

**Client:** CDM Smith

**Project ID:** South River WM Replacement

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| Sample ID | Client ID | Matrix | Parameter | Concentration | C | MDL | RDL | Units |
|-----------|-----------|--------|-----------|---------------|---|-----|-----|-------|
|-----------|-----------|--------|-----------|---------------|---|-----|-----|-------|

Client ID :

**Total Concentration:** 0.000



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**Hit Summary Sheet**  
**SW-846**

**SDG No.:** Q2100

**Order ID:** Q2100

**Client:** CDM Smith

**Project ID:** South River WM Replacement

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| Sample ID | Client ID | Matrix | Parameter | Concentration | C | MDL | RDL | Units |
|-----------|-----------|--------|-----------|---------------|---|-----|-----|-------|
|-----------|-----------|--------|-----------|---------------|---|-----|-----|-------|

Client ID :

**Total Concentration: 0.000**

### Hit Summary Sheet SW-846

**SDG No.:** Q2100

**Order ID:** Q2100

**Client:** CDM Smith

**Project ID:** South River WM Replacement

| Sample ID                | Client ID | Matrix | Parameter | Concentration | C | MDL    | RDL   | Units |
|--------------------------|-----------|--------|-----------|---------------|---|--------|-------|-------|
| <b>Client ID : TP-16</b> |           |        |           |               |   |        |       |       |
| Q2100-01                 | TP-16     | SOIL   | Aluminum  | 2640          |   | 0.82   | 4.90  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Arsenic   | 5.94          |   | 0.19   | 0.98  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Barium    | 5.69          |   | 0.72   | 4.90  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Beryllium | 0.82          |   | 0.024  | 0.29  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Cadmium   | 1.03          |   | 0.024  | 0.29  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Calcium   | 698           |   | 10.9   | 97.9  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Chromium  | 14.4          |   | 0.046  | 0.49  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Cobalt    | 3.09          |   | 0.098  | 1.47  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Copper    | 24.8          |   | 0.22   | 0.98  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Iron      | 46600         |   | 3.91   | 4.90  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Lead      | 5.44          |   | 0.13   | 0.59  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Magnesium | 97.4          | J | 11.8   | 97.9  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Manganese | 130           |   | 0.14   | 0.98  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Nickel    | 4.36          |   | 0.13   | 1.96  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Potassium | 165           |   | 27.1   | 97.9  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Sodium    | 246           |   | 17.4   | 97.9  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Vanadium  | 31.3          |   | 0.25   | 1.96  | mg/Kg |
| Q2100-01                 | TP-16     | SOIL   | Zinc      | 22.6          |   | 0.23   | 1.96  | mg/Kg |
| <b>Client ID : TP-22</b> |           |        |           |               |   |        |       |       |
| Q2100-02                 | TP-22     | SOIL   | Aluminum  | 3840          |   | 0.90   | 5.34  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Arsenic   | 6.80          |   | 0.20   | 1.07  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Barium    | 16.1          |   | 0.78   | 5.34  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Beryllium | 0.73          |   | 0.027  | 0.32  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Cadmium   | 0.84          |   | 0.026  | 0.32  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Calcium   | 1640          |   | 11.9   | 107   | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Chromium  | 8.92          |   | 0.050  | 0.53  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Cobalt    | 3.34          |   | 0.11   | 1.60  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Copper    | 18.4          |   | 0.24   | 1.07  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Iron      | 39000         |   | 4.26   | 5.34  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Lead      | 17.7          |   | 0.14   | 0.64  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Magnesium | 553           |   | 12.8   | 107   | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Manganese | 154           |   | 0.15   | 1.07  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Mercury   | 0.091         |   | 0.0080 | 0.015 | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Nickel    | 3.19          |   | 0.14   | 2.14  | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Potassium | 369           |   | 29.6   | 107   | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Sodium    | 675           |   | 19.0   | 107   | mg/Kg |
| Q2100-02                 | TP-22     | SOIL   | Vanadium  | 22.3          |   | 0.27   | 2.14  | mg/Kg |



**Hit Summary Sheet**  
**SW-846**

**SDG No.:** Q2100

**Order ID:** Q2100

**Client:** CDM Smith

**Project ID:** South River WM Replacement

| Sample ID                | Client ID | Matrix | Parameter | Concentration | C | MDL   | RDL   | Units |
|--------------------------|-----------|--------|-----------|---------------|---|-------|-------|-------|
| Q2100-02                 | TP-22     | SOIL   | Zinc      | 14.8          |   | 0.25  | 2.14  | mg/Kg |
| <b>Client ID : TP-21</b> |           |        |           |               |   |       |       |       |
| Q2100-03                 | TP-21     | SOIL   | Aluminum  | 3330          |   | 0.99  | 5.87  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Arsenic   | 10.3          |   | 0.22  | 1.17  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Barium    | 18.4          |   | 0.86  | 5.87  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Beryllium | 0.55          |   | 0.029 | 0.35  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Cadmium   | 0.78          |   | 0.028 | 0.35  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Calcium   | 1960          |   | 13.0  | 117   | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Chromium  | 12.2          |   | 0.055 | 0.59  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Cobalt    | 2.72          |   | 0.12  | 1.76  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Copper    | 19.7          |   | 0.26  | 1.17  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Iron      | 27800         |   | 4.68  | 5.87  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Lead      | 23.7          |   | 0.15  | 0.70  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Magnesium | 332           |   | 14.1  | 117   | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Manganese | 44.1          |   | 0.16  | 1.17  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Mercury   | 0.020         |   | 0.010 | 0.017 | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Nickel    | 2.61          |   | 0.15  | 2.35  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Potassium | 383           |   | 32.5  | 117   | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Sodium    | 794           |   | 20.9  | 117   | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Vanadium  | 27.7          |   | 0.29  | 2.35  | mg/Kg |
| Q2100-03                 | TP-21     | SOIL   | Zinc      | 11.5          |   | 0.27  | 2.35  | mg/Kg |
| <b>Client ID : TP-45</b> |           |        |           |               |   |       |       |       |
| Q2100-04                 | TP-45     | SOIL   | Aluminum  | 3260          |   | 1.01  | 6.02  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Arsenic   | 8.43          |   | 0.23  | 1.20  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Barium    | 14.4          |   | 0.88  | 6.02  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Beryllium | 0.53          |   | 0.030 | 0.36  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Cadmium   | 0.71          |   | 0.029 | 0.36  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Calcium   | 700           |   | 13.4  | 120   | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Chromium  | 10.9          |   | 0.057 | 0.60  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Cobalt    | 1.78          | J | 0.12  | 1.81  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Copper    | 16.1          |   | 0.27  | 1.20  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Iron      | 32800         |   | 4.80  | 6.02  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Lead      | 11.0          |   | 0.16  | 0.72  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Magnesium | 332           |   | 14.4  | 120   | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Manganese | 49.1          |   | 0.17  | 1.20  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Mercury   | 0.023         |   | 0.010 | 0.018 | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Nickel    | 1.84          | J | 0.16  | 2.41  | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Potassium | 389           |   | 33.4  | 120   | mg/Kg |
| Q2100-04                 | TP-45     | SOIL   | Sodium    | 297           |   | 21.4  | 120   | mg/Kg |

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**SW-846**

**SDG No.:** Q2100

**Order ID:** Q2100

**Client:** CDM Smith

**Project ID:** South River WM Replacement

| Sample ID | Client ID | Matrix | Parameter | Concentration | C | MDL  | RDL  | Units |
|-----------|-----------|--------|-----------|---------------|---|------|------|-------|
| Q2100-04  | TP-45     | SOIL   | Vanadium  | 20.3          |   | 0.30 | 2.41 | mg/Kg |
| Q2100-04  | TP-45     | SOIL   | Zinc      | 9.77          |   | 0.28 | 2.41 | mg/Kg |