



phenova™  
Certified Reference Materials

A Phenomenex®  
Company

Your Best Partner  
for Proficiency Testing

2014 - 2015 Catalog



# The Phenova™ Promise

## Your Accreditation Is Our Priority

### The Phenova PT Guarantee

If your lab receives a Not Acceptable result in a Phenova PT Study and cannot pinpoint the issue, contact our technical support group. We will guide you through the most effective corrective action process and, if necessary, we will provide a FREE Phenova QC Standard to help get you back on track!

## Making Your Job Easy Is Our Passion

We take great pride in serving our thousands of customers and seeing them succeed. Decades of PT experience result in dependable products, unmatched service, and innovative programs to remove the frustrations and roadblocks of proficiency testing.

## Saving You Money Is Our Goal

Cost is a concern, especially today. Compared to other PT providers, our services and products give you more for less – more quality, more efficiency, more time, and more economical pricing.

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Phenomenex HPLC, GC, and SPE products pair perfectly with Phenova PT Standards.

Get a glimpse into what makes Phenova special!



Check out pages 19, 47, and 56



## Quick Guide of Standards Included in Catalog:

### QC

#### Quality Control Standards

Investigate the root cause of a "Not Acceptable" result, execute internal quality objectives, and even train your staff. Certified values and acceptance limits are included with purchase.

*Routine Quality Evaluation*

### PT

#### Proficiency Testing Standards

Demonstrate compliance with EPA, TNI, and state specific accreditation requirements by enrolling in a Phenova PT study.

*Accreditation Maintenance*

### RR

#### Rapid Return™ Standards

Essentially PT Studies without a fixed schedule, RR studies allow you to quickly demonstrate compliance with a PT requirement, complete corrective action, or add analytes to your scope.

*Rapid Study*

# Complete Phenova 2014 PT Schedule

## January

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 6-Jan  | 20-Feb | WP0114   |
| Water Supply (WS)           | 13-Jan | 27-Feb | WS0114   |
| Water Pollution Micro (WPM) | 21-Jan | 14-Feb | WPM0114  |
| Water Supply Micro (WSM)    | 21-Jan | 14-Feb | WSM0114  |
| Soil/Hazardous Waste (HW)   | 27-Jan | 13-Mar | HW0114   |
| Biosolids/Sludge (SLD)      | 20-Jan | 6-Mar  | SLD0114  |
| Air & Emissions (AE)        | 20-Jan | 6-Mar  | AE0114   |

## March

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 3-Mar  | 17-Apr | WP0314   |
| Water Pollution Micro (WPM) | 18-Mar | 11-Apr | WPM0314  |
| Water Supply Micro (WSM)    | 18-Mar | 11-Apr | WSM0314  |

## May

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 5-May  | 19-Jun | WP0514   |
| Water Pollution Micro (WPM) | 20-May | 13-Jun | WPM0514  |
| Water Supply Micro (WSM)    | 20-May | 13-Jun | WSM0514  |

## July

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 7-Jul  | 21-Aug | WP0714   |
| Water Supply (WS)           | 14-Jul | 28-Aug | WS0714   |
| Water Pollution Micro (WPM) | 22-Jul | 15-Aug | WPM0714  |
| Water Supply Micro (WSM)    | 22-Jul | 15-Aug | WSM0714  |
| Soil/Hazardous Waste (HW)   | 28-Jul | 11-Sep | HW0714   |
| Biosolids/Sludge (SLD)      | 21-Jul | 4-Sep  | SLD0714  |
| Air & Emissions (AE)        | 21-Jul | 4-Sep  | AE0714   |

## September

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 8-Sep  | 23-Oct | WP0914   |
| Water Pollution Micro (WPM) | 16-Sep | 10-Oct | WPM0914  |
| Water Supply Micro (WSM)    | 16-Sep | 10-Oct | WSM0914  |

## November

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 3-Nov  | 18-Dec | WP1114   |
| Water Pollution Micro (WPM) | 18-Nov | 18-Dec | WPM1114  |
| Water Supply Micro (WSM)    | 18-Nov | 18-Dec | WSM1114  |

## February

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 3-Feb  | 20-Mar | WP0214   |
| Water Pollution Micro (WPM) | 18-Feb | 14-Mar | WPM0214  |
| Water Supply Micro (WSM)    | 18-Feb | 14-Mar | WSM0214  |

## April

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 7-Apr  | 22-May | WP0414   |
| Water Supply (WS)           | 14-Apr | 29-May | WS0414   |
| Water Pollution Micro (WPM) | 22-Apr | 16-May | WPM0414  |
| Water Supply Micro (WSM)    | 22-Apr | 16-May | WSM0414  |
| Soil/Hazardous Waste (HW)   | 28-Apr | 12-Jun | HW0414   |
| Biosolids/Sludge (SLD)      | 21-Apr | 5-Jun  | SLD0414  |
| Air & Emissions (AE)        | 21-Apr | 5-Jun  | AE0414   |

## June

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 2-Jun  | 17-Jul | WP0614   |
| Water Pollution Micro (WPM) | 17-Jun | 11-Jul | WPM0614  |
| Water Supply Micro (WSM)    | 17-Jun | 11-Jul | WSM0614  |

## August

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 4-Aug  | 18-Sep | WP0814   |
| Water Pollution Micro (WPM) | 19-Aug | 12-Sep | WPM0814  |
| Water Supply Micro (WSM)    | 19-Aug | 12-Sep | WSM0814  |

## October

|                             | Open   | Close  | Study ID |
|-----------------------------|--------|--------|----------|
| Water Pollution (WP)        | 6-Oct  | 20-Nov | WP1014   |
| Water Supply (WS)           | 17-Oct | 1-Dec  | WS1014   |
| Water Pollution Micro (WPM) | 21-Oct | 14-Nov | WPM1014  |
| Water Supply Micro (WSM)    | 21-Oct | 14-Nov | WSM1014  |
| Soil/Hazardous Waste (HW)   | 27-Oct | 11-Dec | HW1014   |
| Biosolids/Sludge (SLD)      | 20-Oct | 4-Dec  | SLD1014  |
| Air & Emissions (AE)        | 20-Oct | 4-Dec  | AE1014   |

## December

|                             | Open   | Close      | Study ID |
|-----------------------------|--------|------------|----------|
| Water Pollution Micro (WPM) | 16-Dec | 15-Jan -15 | WPM1214  |
| Water Supply Micro (WSM)    | 16-Dec | 15-Jan -15 | WSM1214  |

# Phenova Services



PT Manage™

Upload Data. Download Insight.

## Upload Data. Download Insight.

Much more than a data entry website, the custom-built PT Manage portal simplifies the reporting, uploading, and management of your proficiency testing data. Quickly generate reports that deliver valuable insight about your laboratory's strengths and weaknesses, allowing you to take a proactive approach to improving overall lab performance.

## Empowering QA Managers

### Simple Upload and Organization

- Instant Enrollment and Email Reminders
- Automatic Data Upload from LIMS Generated EDD
- Manually Enter or Revise Data While the Study is Open

### Custom Data Analysis

- Full Network Visibility
- Downloadable CSV Files
- Automatic DOC and Exception Reports

## Gain Insight by Finding Answers to Performance Questions

- **Spot Analytical Trends Before they Become Problematic**  
"Which tests are most challenging for our lab?"
- **Identify Leadership Opportunities**  
"Does a certain analyst consistently succeed with a particular test?"
- **Increase Network Collaboration**  
"Which labs are outstanding performers? I would like to spread best practices and technical expertise across the network."



Take a Virtual Tour at:

[www.phenova.com/PTmanage](http://www.phenova.com/PTmanage)

# Phenova Services

## Corrective Action

We understand your accreditation is your license to do business. If you happen to be evaluated with a Not Acceptable, it may stop your ability to do business. *Relax* - we have all of the services you need to get back on track towards keeping your accreditation.

### Phenova™ Corrective Action Guarantee

If your lab receives a Not Acceptable result in a Phenova PT Study and cannot pinpoint the issue, contact our technical support group. We will guide you through the most effective corrective action process and, if necessary, we will provide a FREE Phenova QC Standard to help get you back on track!

## Fundamental Corrective Action Steps:

1. **Investigate** the cause of the Not Acceptable evaluation through a step-wise process.
2. **Identify** the root cause of the issue.
3. **Develop** and implement corrective AND preventative actions using a QC standard.
4. **Verify** the effectiveness of your corrective actions.
5. **Enroll** in a Rapid Return™ or PT study to re-establish your history of successful performance.
6. **Track** your preventative actions' successes by periodically analyzing a regularly scheduled QC standard to help identify an issue before it affects your accreditation.

Learn more at

[www.phenova.com/correctiveaction](http://www.phenova.com/correctiveaction)

# Phenova Services

## Quality Accreditations

You depend on the products we provide to accurately and efficiently perform your analyses. As a testament to our commitment to your satisfaction, we hold our products to the most stringent quality requirements.

**Phenova products are covered by one or all of the following quality certifications:**

### ISO Guide 34:2009

General requirements for the competence of reference material producers.

- A2LA Cert No. 2427.02

### ISO/IEC 17025:2005

General requirements for the competence of testing and calibration laboratories.

- A2LA Cert No. 2427.03

### TNI EL-V3-2009

General requirement for environmental proficiency testing providers.

- A2LA Cert No. 2427.01

### ISO/IEC 17043:2010

Conformity assessment – General requirements for proficiency testing.

- A2LA Cert No. 2427.01



Proficiency Testing Provider Certificate No. 2427.01  
Reference Material Producer Certificate No. 2427.02  
Chemical Testing Laboratory Certificate No. 2427.03

Learn more at

[www.phenova.com/quality](http://www.phenova.com/quality)

# Water Pollution

## WP Inorganic Standards

### PT Availability

M = Monthly

Q = Quarterly - Jan, Apr, Jul, Oct

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information                        |                | Proficiency Testing |                | Quality Control |                | Rapid Return™ |              |
|---------------------------------------------|----------------|---------------------|----------------|-----------------|----------------|---------------|--------------|
| Description                                 | Catalog Number | Price               | Catalog Number | Price           | Catalog Number | Price         | Availability |
| <b>TNI Standards</b>                        |                |                     |                |                 |                |               |              |
| WP Acidity                                  | PT-ACD-WP      | \$ 58               | QC-ACD-WP      | \$ 52           | RR-ACD-WP      | \$ 67         | 6M           |
| WP Color                                    | PT-COL-WP      | 81                  | QC-COL-WP      | 73              | RR-COL-WP      | 93            | 6M           |
| WP Cyanide                                  | PT-CN-WP       | 55                  | QC-CN-WP       | 50              | RR-CN-WP       | 63            | M            |
| WP Demand                                   | PT-DEM-WP      | 65                  | QC-DEM-WP      | 59              | RR-DEM-WP      | 75            | M            |
| WP Hexavalent Chromium                      | PT-CR6-WP      | 55                  | QC-CR6-WP      | 50              | RR-CR6-WP      | 63            | M            |
| WP Mercury - Low Level                      | PT-HGLL-WP     | 55                  | QC-HGLL-WP     | 50              | RR-HGLL-WP     | 63            | 6M           |
| WP Minerals Set                             | PT-MINSET-WP   | 85                  | QC-MINSET-WP   | 77              | RR-MINSET-WP   | 98            | M            |
| WP Minerals 1                               | PT-MIN1-WP     | 73                  | QC-MIN1-WP     | 66              | RR-MIN1-WP     | 84            | M            |
| WP Minerals 2 - Hardness                    | PT-MIN2-WP     | 73                  | QC-MIN2-WP     | 66              | RR-MIN2-WP     | 84            | M            |
| WP Conductivity                             | PT-COND-WP     | 53                  | QC-COND-WP     | 48              | RR-COND-WP     | 61            | M            |
| WP Nutrients Set                            | PT-NUTSET-WP   | 68                  | QC-NUTSET-WP   | 61              | RR-NUTSET-WP   | 78            | M            |
| WP NUT1 - Simple Nutrients                  | PT-NUT1-WP     | 53                  | QC-NUT1-WP     | 48              | RR-NUT1-WP     | 61            | M            |
| WP NUT2 - Complex Nutrients                 | PT-NUT2-WP     | 53                  | QC-NUT2-WP     | 48              | RR-NUT2-WP     | 61            | M            |
| WP NUT3 - Nitrite                           | PT-NUT3-WP     | 48                  | QC-NUT3-WP     | 43              | RR-NUT3-WP     | 55            | M            |
| WP Oil and Grease                           | PT-OGR-WP      | 63                  | QC-OGR-WP      | 57              | RR-OGR-WP      | 73            | M            |
| WP Oil and Grease 1L Whole Volume           | PT-OGR1L-WP    | 82                  | QC-OGR1L-WP    | 74              | RR-OGR1L-WP    | 94            | M            |
| WP pH                                       | PT-PH-WP       | 53                  | QC-PH-WP       | 48              | RR-PH-WP       | 61            | M            |
| WP Phenolics                                | PT-PHEN-WP     | 53                  | QC-PHEN-WP     | 48              | RR-PHEN-WP     | 61            | M            |
| WP Residual Chlorine                        | PT-CL-WP       | 58                  | QC-CL-WP       | 52              | RR-CL-WP       | 67            | M            |
| WP Residual Chlorine - Low Level            | PT-CLLL-WP     | 58                  | QC-CLLL-WP     | 52              | RR-CLLL-WP     | 67            | 6M           |
| WP Settleable Solids                        | PT-SSOL-WP     | 63                  | QC-SSOL-WP     | 57              | RR-SSOL-WP     | 73            | M            |
| WP Silica                                   | PT-SIO2-WP     | 53                  | QC-SIO2-WP     | 48              | RR-SIO2-WP     | 61            | Q            |
| WP Solids                                   | PT-SOL-WP      | 65                  | QC-SOL-WP      | 59              | RR-SOL-WP      | 75            | M            |
| WP Sulfide                                  | PT-S2-WP       | 75                  | QC-S2-WP       | 68              | RR-S2-WP       | 86            | M            |
| WP Surfactants as MBAS                      | PT-MBAS-WP     | 65                  | QC-MBAS-WP     | 59              | RR-MBAS-WP     | 75            | 6M           |
| WP TPH                                      | PT-TPH-WP      | 63                  | QC-TPH-WP      | 57              | RR-TPH-WP      | 73            | Q            |
| WP TPH 1L Whole Volume                      | PT-TPH1L-WP    | 81                  | QC-TPH1L-WP    | 73              | RR-TPH1L-WP    | 93            | Q            |
| WP Trace Metals Set                         | PT-TMSET-WP    | 100                 | QC-TMSET-WP    | 90              | RR-TMSET-WP    | 115           | M            |
| WP Trace Metals 1                           | PT-TM1-WP      | 73                  | QC-TM1-WP      | 66              | RR-TM1-WP      | 84            | M            |
| WP Mercury                                  | PT-HG-WP       | 53                  | QC-HG-WP       | 48              | RR-HG-WP       | 61            | M            |
| WP Tin & Titanium                           | PT-SNTI-WP     | 58                  | QC-SNTI-WP     | 52              | RR-SNTI-WP     | 67            | M            |
| WP Turbidity                                | PT-TURB-WP     | 63                  | QC-TURB-WP     | 57              | RR-TURB-WP     | 73            | M            |
| WP Volatile Solids                          | PT-VSOL-WP     | 65                  | QC-VSOL-WP     | 59              | RR-VSOL-WP     | 75            | M            |
| <b>Non-TNI and State Specific Standards</b> |                |                     |                |                 |                |               |              |
| WP Amenable Cyanide                         |                |                     | QC-CNA-WP      | \$ 47           | RR-CNA-WP      | \$ 54         | RR           |
| WP Chlorate                                 |                |                     | QC-CHL-WP      | 57              | RR-CHL-WP      | 66            | RR           |
| WP Dissolved Oxygen                         | PT-O2-WP       | \$ 65               | QC-O2-WP       | 59              | RR-O2-WP       | 75            | Q            |
| WP Lithium                                  | PT-LI-WP       | 63                  | QC-LI-WP       | 57              | RR-LI-WP       | 73            | Q            |
| WP Perchlorate                              |                |                     | QC-PERC-WP     | 47              | RR-PERC-WP     | 54            | RR           |
| WP IDB Set                                  |                |                     |                |                 | RR-IDBSET-WP   | 125           | RR           |
| WP IDB 1 - Bromide & Bromate                |                |                     |                |                 | RR-IDB1-WP     | 90            | RR           |
| WP IDB 2 - Chlorate & Chlorite              |                |                     |                |                 | RR-IDB2-WP     | 90            | RR           |
| WP Total Organic Halides (TOX)              | PT-TOX-WP      | 73                  | QC-TOX-WP      | 66              | RR-TOX-WP      | 84            | Q            |
| WP Uranium                                  | PT-U-WP        | 63                  | QC-U-WP        | 57              | RR-U-WP        | 73            | Q            |
| WP Volatile Suspended Solids                | PT-VSS-WP      | 78                  | QC-VSS-WP      | 70              | RR-VSS-WP      | 90            | 6M           |

### WP 2014 Schedule

|           | Study ID | Open  | Close  |
|-----------|----------|-------|--------|
| January   | WP0114   | 6-Jan | 20-Feb |
| February  | WP0214   | 3-Feb | 20-Mar |
| March     | WP0314   | 3-Mar | 17-Apr |
| April     | WP0414   | 7-Apr | 22-May |
| May       | WP0514   | 5-May | 19-Jun |
| June      | WP0614   | 2-Jun | 17-Jul |
| July      | WP0714   | 7-Jul | 21-Aug |
| August    | WP0814   | 4-Aug | 18-Sep |
| September | WP0914   | 8-Sep | 23-Oct |
| October   | WP1014   | 6-Oct | 20-Nov |
| November  | WP1114   | 3-Nov | 18-Dec |



# Water Pollution

## WP Inorganic Standards

Phenova WP Inorganic Standards are provided as concentrates ready to dilute to produce your final samples in sufficient amounts for at least two methods, unless otherwise noted. The WP program is designed to be compliant with the Discharge Monitoring Report - Quality Assurance Program (DMR-QA). All standards are compliant with EPA, TNI and/or state specific criteria.

### WP Acidity

Store at 20 - 25 °C

Provided as a 250 mL ready to use standard in water contained in a 250 mL poly bottle.

| Analyte Concentration         | Low | High | Units |
|-------------------------------|-----|------|-------|
| Acidity, as CaCO <sub>3</sub> | 650 | 1800 | mg/L  |

### WP Chlorate (Non-TNI/State Specific)

Store at 4 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Chlorate              | 60  | 180  | µg/L  |

### WP Color

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Color                 | 10  | 75   | CU    |

### WP Cyanide

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with NaOH to pH >10 contained in a 24 mL amber glass vial.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Total Cyanide         | 0.10 | 1.0  | mg/L  |

### WP Amenable Cyanide (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 20 mL concentrate in water contained in a 24 mL amber glass vial.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Amenable Cyanide      | 0.10 | 0.50 | mg/L  |

### WP Demand

Store at 4 °C

Provided as a >20 mL concentrate in water preserved with 0.5% (v/v) H<sub>2</sub>SO<sub>4</sub> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| BOD                   | 18  | 230  | mg/L  |
| CBOD                  | 18  | 230  | mg/L  |
| COD                   | 30  | 250  | mg/L  |
| TOC                   | 6.0 | 100  | mg/L  |

### WP Dissolved Oxygen (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 500 mL ready to use standard in water contained in a 500 mL amber glass bottle.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Dissolved Oxygen      | 1.0 | 50   | mg/L  |

### WP Hexavalent Chromium

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Chromium VI           | 90  | 900  | µg/L  |

### WP Lithium (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Lithium               | 50  | 500  | µg/L  |

### WP Mercury - Low Level

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 1-2% HNO<sub>3</sub> + 10 ppm Cr<sup>6+</sup> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Mercury               | 20  | 100  | ng/L  |

### WP Minerals Set

This complete set includes WP Minerals 1, WP Minerals 2 - Hardness, and Conductivity containers.

#### WP Minerals 1

Store at 20 - 25 °C

Provided as a 500 mL ready to use standard in water contained in a 500 mL poly bottle.

| Analyte Concentration                 | Low  | High | Units |
|---------------------------------------|------|------|-------|
| Total Alkalinity (CaCO <sub>3</sub> ) | 25   | 400  | mg/L  |
| Bromide                               | 1.0  | 10   | mg/L  |
| Chloride                              | 35   | 275  | mg/L  |
| Fluoride                              | 0.40 | 4.0  | mg/L  |
| Total Inorganic Carbon                | 2.5  | 30   | mg/L  |
| Sulfate                               | 5.0  | 125  | mg/L  |

#### WP Minerals 2 - Hardness

Store at 20 - 25 °C

Provided as a 500 mL ready to use standard in water contained in a 500 mL poly bottle.

| Analyte Concentration                    | Low | High | Units |
|------------------------------------------|-----|------|-------|
| Calcium                                  | 10  | 110  | mg/L  |
| Calcium Hardness (as CaCO <sub>3</sub> ) | 25  | 250  | mg/L  |
| Total Hardness (as CaCO <sub>3</sub> )   | 40  | 415  | mg/L  |
| Magnesium                                | 4.0 | 40   | mg/L  |
| Potassium                                | 4.0 | 40   | mg/L  |
| Sodium                                   | 10  | 100  | mg/L  |

### WP Conductivity

Store at 20 - 25 °C

Provided as a 125 mL ready to use standard in water contained in a 125 mL poly bottle.

| Analyte Concentration         | Low | High | Units    |
|-------------------------------|-----|------|----------|
| Specific Conductance at 25 °C | 200 | 1200 | µmhos/cm |

### WP Nutrients Set

This complete set includes WP Nutrients 1 (Simple), 2 (Complex), and 3 (Nitrite).

#### WP Nutrients 1 - Simple Nutrients

Store at 4 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration      | Low  | High | Units |
|----------------------------|------|------|-------|
| Ammonia as N               | 1.0  | 20   | mg/L  |
| Nitrate as N               | 2.0  | 25   | mg/L  |
| Nitrate and Nitrite as N   | 2.5  | 25   | mg/L  |
| Orthophosphate as P        | 0.50 | 5.5  | mg/L  |
| Total Dissolved Phosphorus | 0.50 | 5.5  | mg/L  |
| Dissolved Nitrogen         | 0.25 | 60   | mg/L  |
| Total Nitrogen             | 0.25 | 60   | mg/L  |

#### WP Nutrients 2 - Complex Nutrients

Store at 4 °C

Provided as a >20 mL concentrate in water preserved with H<sub>2</sub>SO<sub>4</sub> to pH <2 contained in a 24 mL clear glass vial.

| Analyte Concentration         | Low  | High | Units |
|-------------------------------|------|------|-------|
| Total Kjeldahl Nitrogen (TKN) | 3.0  | 35   | mg/L  |
| Total Phosphorous             | 0.50 | 10   | mg/L  |

# Water Pollution (Inorganics continued)

## WP Nutrients 3 - Nitrite

Store at 4 °C

Provided as a 5 mL concentrate in water flame sealed in a 5 mL amber ampoule.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Nitrite as N          | 0.40 | 4.0  | mg/L  |

## WP Oil and Grease

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 0.1% HCl contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Oil & Grease          | 20  | 200  | mg/L  |

## WP Oil and Grease 1L

Store at 20 - 25 °C

Provided as a 1 L ready to use standard in water preserved with 0.1% HCl contained in a 32 oz clear glass bottle, automated extractor compatible.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Oil & Grease          | 20  | 200  | mg/L  |

## WP Perchlorate (Non-TNI/State Specific)

Store at 4 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Perchlorate           | 10  | 25   | µg/L  |

## WP pH

Store at 20 - 25 °C

Provided as a 100 mL ready to use standard in water contained in a 125 mL poly bottle.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| pH                    | 5.0 | 10   | S.U.  |

## WP Phenolics

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration  | Low | High | Units |
|------------------------|-----|------|-------|
| Total Phenolics (4AAP) | 0.5 | 5.0  | mg/L  |

## WP Residual Chlorine

Store at 4 °C

Provided as a 5 mL concentrate in water flame sealed in a 5 mL amber ampoule.

| Analyte Concentration   | Low | High | Units |
|-------------------------|-----|------|-------|
| Total Residual Chlorine | 0.5 | 3.0  | mg/L  |

## WP Residual Chlorine - Low Level

Store at 4 °C

Provided as a 5 mL concentrate in water flame sealed in a 5 mL amber ampoule.

| Analyte Concentration   | Low | High | Units |
|-------------------------|-----|------|-------|
| Total Residual Chlorine | 50  | 250  | µg/L  |

## WP Settleable Solids

Store at 20 - 25 °C

Provided as a solid material in a 40 mL vial.

| Analyte Concentration | Low | High | Units   |
|-----------------------|-----|------|---------|
| Settleable Solids     | 5.0 | 50   | mL/L/hr |

## WP Silica

Store at 20 - 25 °C

Provided as a 250 mL ready to use standard in water contained in a 250 mL poly bottle.

| Analyte Concentration      | Low | High | Units |
|----------------------------|-----|------|-------|
| Silica as SiO <sub>2</sub> | 50  | 250  | mg/L  |

## WP Solids

Store at 20 - 25 °C

Provided as a 500 mL ready to use standard in water contained in a 500 mL poly bottle.

| Analyte Concentration                  | Low | High | Units |
|----------------------------------------|-----|------|-------|
| Total Dissolved Solids at 180 °C (TFR) | 140 | 800  | mg/L  |
| Non-Filterable Residue (TSS)           | 20  | 100  | mg/L  |
| Total Solids                           | 140 | 800  | mg/L  |

## WP Sulfide

Store at 4 °C

Provided as a >20 mL concentrate in water preserved with NaOH to pH > 12 and ZnOAc, contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Sulfide               | 2.0 | 10.0 | mg/L  |

## WP Surfactants as MBAS

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Surfactants - MBAS    | 0.2 | 1.0  | mg/L  |

## WP Total Organic Halides (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration       | Low | High | Units |
|-----------------------------|-----|------|-------|
| Total Organic Halides (TOX) | 300 | 1500 | µg/L  |

## WP Total Petroleum Hydrocarbons

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 0.1% HCl contained in a 24 mL clear glass vial.

| Analyte Concentration              | Low | High | Units |
|------------------------------------|-----|------|-------|
| Total Petroleum Hydrocarbons (TPH) | 20  | 200  | mg/L  |

## WP Total Petroleum Hydrocarbons 1L

Store at 20 - 25 °C

Provided as a 1 L ready to use standard in water preserved with 0.1% HCl contained in a 32 oz clear glass bottle, automated extractor compatible.

| Analyte Concentration              | Low | High | Units |
|------------------------------------|-----|------|-------|
| Total Petroleum Hydrocarbons (TPH) | 20  | 200  | mg/L  |

# Water Pollution (Inorganics continued)

## WP Trace Metals Set

This complete set includes WP Trace Metals 1, WP Mercury, and WP Tin in Titanium vials.

### WP Trace Metals 1

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 2% HNO<sub>3</sub> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Aluminum              | 200 | 4000 | µg/L  |
| Antimony              | 90  | 900  | µg/L  |
| Arsenic               | 90  | 900  | µg/L  |
| Barium                | 100 | 2500 | µg/L  |
| Beryllium             | 50  | 500  | µg/L  |
| Boron                 | 800 | 2000 | µg/L  |
| Cadmium               | 100 | 1000 | µg/L  |
| Chromium              | 100 | 1000 | µg/L  |
| Cobalt                | 100 | 1000 | µg/L  |
| Copper                | 100 | 1000 | µg/L  |
| Iron                  | 200 | 4000 | µg/L  |
| Lead                  | 100 | 1500 | µg/L  |
| Manganese             | 200 | 2000 | µg/L  |
| Molybdenum            | 60  | 600  | µg/L  |
| Nickel                | 200 | 2000 | µg/L  |
| Selenium              | 100 | 1000 | µg/L  |
| Silver                | 100 | 1000 | µg/L  |
| Strontium             | 50  | 500  | µg/L  |
| Thallium              | 80  | 800  | µg/L  |
| Vanadium              | 50  | 2000 | µg/L  |
| Zinc                  | 300 | 2000 | µg/L  |

### WP Mercury

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 1% HNO<sub>3</sub> + 10 ppm hexavalent chromium contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Mercury               | 3.0 | 30   | µg/L  |

## WP Tin and Titanium

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 5% HCl contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Tin                   | 200 | 2000 | µg/L  |
| Titanium              | 60  | 300  | µg/L  |

## WP Turbidity

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with trace NaOCl contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Turbidity             | 2.0 | 30   | NTU   |

## WP Uranium (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 2% HNO<sub>3</sub> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Uranium               | 30  | 100  | µg/L  |

## WP Volatile Solids

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Volatile Solids       | 100 | 500  | mg/L  |

## WP Volatile Suspended Solids (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 500 mL ready to use standard in water contained in a 500 mL poly bottle.

| Analyte Concentration     | Low | High | Units |
|---------------------------|-----|------|-------|
| Volatile Suspended Solids | 25  | 200  | mg/L  |



# Water Pollution

## WP Organic Standards

### PT Availability

M = Monthly

Q = Quarterly - Jan, Apr, Jul, Oct

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information                        | Proficiency Testing |       | Quality Control |       | Rapid Return™  |       |
|---------------------------------------------|---------------------|-------|-----------------|-------|----------------|-------|
| Description                                 | Catalog Number      | Price | Catalog Number  | Price | Catalog Number | Price |
| <b>TNI Standards</b>                        |                     |       |                 |       |                |       |
| WP Acids                                    | PT-ACIDS-WP         | \$ 78 | QC-ACIDS-WP     | \$ 70 | RR-ACIDS-WP    | \$ 90 |
| WP Base Neutrals                            | PT-BN-WP            | 106   | QC-BN-WP        | 95    | RR-BN-WP       | 122   |
| WP BTEX in Water                            | PT-BTEX-WP          | 81    | QC-BTEX-WP      | 73    | RR-BTEX-WP     | 93    |
| WP Chlordane                                | PT-CHLR-WP          | 68    | QC-CHLR-WP      | 61    | RR-CHLR-WP     | 78    |
| WP Diesel Range Organics                    | PT-DIES-WP          | 103   | QC-DIES-WP      | 93    | RR-DIES-WP     | 118   |
| WP Gasoline Range Organics                  | PT-GAS-WP           | 103   | QC-GAS-WP       | 93    | RR-GAS-WP      | 118   |
| WP Herbicides                               | PT-HERB-WP          | 82    | QC-HERB-WP      | 74    | RR-HERB-WP     | 94    |
| WP PAHs-Low Level                           | PT-PAH-WP           | 78    | QC-PAH-WP       | 70    | RR-PAH-WP      | 90    |
| WP PAHs-High Level                          | PT-PAHGC-WP         | 100   | QC-PAHGC-WP     | 90    | RR-PAHGC-WP    | 115   |
| WP PCBs in Oil                              | PT-PCBO-WP          | 109   | QC-PCBO-WP      | 98    | RR-PCBO-WP     | 125   |
| WP PCBs in Water                            | PT-PCBW-WP          | 73    | QC-PCBW-WP      | 66    | RR-PCBW-WP     | 84    |
| WP Pesticides                               | PT-PEST-WP          | 94    | QC-PEST-WP      | 85    | RR-PEST-WP     | 108   |
| WP Toxaphene                                | PT-TXP-WP           | 68    | QC-TXP-WP       | 61    | RR-TXP-WP      | 78    |
| WP Volatiles                                | PT-VOA-WP           | 103   | QC-VOA-WP       | 93    | RR-VOA-WP      | 118   |
| WP VOA-GC                                   | PT-VOAGC-WP         | 100   | QC-VOAGC-WP     | 90    | RR-VOAGC-WP    | 115   |
| <b>Non-TNI and State Specific Standards</b> |                     |       |                 |       |                |       |
| WP Carbamates                               |                     |       | QC-CARB-WP      | \$ 85 | RR-CARB-WP     | \$ 98 |
| WP Explosives - Low Level                   | PT-EXP-WP           | \$ 82 | QC-EXP-WP       | 74    | RR-EXP-WP      | 94    |
| WP Gasoline Additives in Water              | PT-ADD-WP           | 88    | QC-ADD-WP       | 79    | RR-ADD-WP      | 101   |
| WP Glycols                                  |                     |       | QC-GLYCOLS-WP   | 79    | RR-GLYCOLS-WP  | 101   |
| WP Nitrogen Pesticides                      | PT-NP-WP            | 115   | QC-NP-WP        | 104   | RR-NP-WP       | 132   |
| WP Organic Phosphorus Pesticides            | PT-OPP-WP           | 94    | QC-OPP-WP       | 85    | RR-OPP-WP      | 108   |
| WP Perfluorinated Compounds                 |                     |       | QC-PFC-WP       | 114   | RR-PFC-WP      | 131   |

| WP 2014 Schedule |          |       |        |
|------------------|----------|-------|--------|
|                  | Study ID | Open  | Close  |
| January          | WP0114   | 6-Jan | 20-Feb |
| February         | WP0214   | 3-Feb | 20-Mar |
| March            | WP0314   | 3-Mar | 17-Apr |
| April            | WP0414   | 7-Apr | 22-May |
| May              | WP0514   | 5-May | 19-Jun |
| June             | WP0614   | 2-Jun | 17-Jul |
| July             | WP0714   | 7-Jul | 21-Aug |
| August           | WP0814   | 4-Aug | 18-Sep |
| September        | WP0914   | 8-Sep | 23-Oct |
| October          | WP1014   | 6-Oct | 20-Nov |
| November         | WP1114   | 3-Nov | 18-Dec |



# Water Pollution

## WP Organic Standards

Phenova WP Organic Standards are provided as concentrates ready to dilute to produce your final samples in sufficient amounts for at least two methods, unless otherwise noted. All standards are compliant with EPA, TNI and/or state specific criteria (including Wisconsin-specific requirements).

### WP Acids

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.  
Contains at least 80% of the EPA and TNI analytes randomly selected. Use with EPA methods 604, 625, 8041 and 8270.

| Analyte Concentration                  | Low | High | Units |
|----------------------------------------|-----|------|-------|
| Benzoic acid                           | 10  | 200  | µg/L  |
| 4-Chloro-3-methylphenol                | 30  | 200  | µg/L  |
| 2-Chlorophenol                         | 30  | 200  | µg/L  |
| 2,4-Dichlorophenol                     | 30  | 200  | µg/L  |
| 2,6-Dichlorophenol                     | 30  | 200  | µg/L  |
| 2,4-Dimethylphenol                     | 40  | 200  | µg/L  |
| 2,4-Dinitrophenol                      | 100 | 200  | µg/L  |
| 2-Methyl-4,6-Dinitrophenol             | 40  | 200  | µg/L  |
| 2-Methylphenol                         | 40  | 200  | µg/L  |
| 4-Methylphenol (and/or 3-Methylphenol) | 50  | 200  | µg/L  |
| 2-Nitrophenol                          | 50  | 200  | µg/L  |
| 3-Nitrophenol                          | 10  | 200  | µg/L  |
| 4-Nitrophenol                          | 100 | 200  | µg/L  |
| Phenol                                 | 100 | 200  | µg/L  |
| Pentachlorophenol                      | 40  | 200  | µg/L  |
| 2,3,4,6-Tetrachlorophenol              | 50  | 200  | µg/L  |
| 2,4,5-Trichlorophenol                  | 30  | 200  | µg/L  |
| 2,4,6-Trichlorophenol                  | 30  | 200  | µg/L  |

### WP Base Neutrals

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.  
Contains at least 60% of the EPA and TNI analytes randomly selected. Use with EPA methods 625 and 8270.

| Analyte Concentration        | Low | High | Units |
|------------------------------|-----|------|-------|
| Acenaphthene                 | 10  | 200  | µg/L  |
| Acenaphthylene               | 10  | 200  | µg/L  |
| Aniline                      | 10  | 200  | µg/L  |
| Anthracene                   | 10  | 200  | µg/L  |
| Benzidine                    | 200 | 1000 | µg/L  |
| Benzo(a)anthracene           | 10  | 200  | µg/L  |
| Benzo(b)fluoranthene         | 20  | 200  | µg/L  |
| Benzo(k)fluoranthene         | 20  | 200  | µg/L  |
| Benzo(g,h,i)perylene         | 10  | 200  | µg/L  |
| Benzo(a)pyrene               | 10  | 200  | µg/L  |
| Benzyl alcohol               | 50  | 200  | µg/L  |
| 4-Bromophenyl-phenylether    | 20  | 200  | µg/L  |
| Butyl benzyl phthalate       | 50  | 200  | µg/L  |
| Carbazole                    | 10  | 200  | µg/L  |
| 4-Chloroaniline              | 50  | 200  | µg/L  |
| bis(2-Chloroethoxy)methane   | 20  | 200  | µg/L  |
| bis(2-Chloroethyl)ether      | 20  | 200  | µg/L  |
| bis(2-Chloroisopropyl) ether | 30  | 200  | µg/L  |
| 1-Chloronaphthalene          | 10  | 200  | µg/L  |
| 2-Chloronaphthalene          | 20  | 200  | µg/L  |
| 4-Chlorophenyl-phenylether   | 20  | 200  | µg/L  |
| Chrysene                     | 10  | 200  | µg/L  |

### WP Base Neutrals continued

|                             |    |     |      |
|-----------------------------|----|-----|------|
| Dibenzo(a,h)anthracene      | 20 | 200 | µg/L |
| Dibenzofuran                | 30 | 200 | µg/L |
| Di-n-butylphthalate         | 40 | 200 | µg/L |
| 1,2-Dichlorobenzene         | 20 | 200 | µg/L |
| 1,3-Dichlorobenzene         | 20 | 200 | µg/L |
| 1,4-Dichlorobenzene         | 20 | 200 | µg/L |
| 3,3'-Dichlorobenzidine      | 50 | 200 | µg/L |
| Diethyl phthalate           | 50 | 200 | µg/L |
| Dimethyl phthalate          | 50 | 200 | µg/L |
| 2,4-Dinitrotoluene          | 20 | 200 | µg/L |
| 2,6-Dinitrotoluene          | 20 | 200 | µg/L |
| Di-n-octylphthalate         | 30 | 200 | µg/L |
| p-Dioxane                   | 10 | 200 | µg/L |
| bis(2-ethylhexyl) phthalate | 20 | 200 | µg/L |
| Fluoranthene                | 30 | 200 | µg/L |
| Fluorene                    | 10 | 200 | µg/L |
| Hexachlorobenzene           | 20 | 200 | µg/L |
| Hexachlorobutadiene         | 50 | 200 | µg/L |
| Hexachlorocyclopentadiene   | 50 | 200 | µg/L |
| Hexachloroethane            | 50 | 200 | µg/L |
| Indeno(1,2,3-cd)pyrene      | 30 | 200 | µg/L |
| Isophorone                  | 20 | 200 | µg/L |
| 1-Methylnaphthalene         | 10 | 200 | µg/L |
| 2-Methylnaphthalene         | 20 | 200 | µg/L |
| Naphthalene                 | 20 | 200 | µg/L |
| 2-Nitroaniline              | 10 | 200 | µg/L |
| 3-Nitroaniline              | 10 | 200 | µg/L |
| 4-Nitroaniline              | 10 | 200 | µg/L |
| Nitrobenzene                | 20 | 200 | µg/L |
| N-Nitrosodiethylamine       | 10 | 200 | µg/L |
| N-Nitrosodimethylamine      | 75 | 200 | µg/L |
| N-Nitrosodiphenylamine      | 30 | 200 | µg/L |
| N-Nitroso-di-n-propylamine  | 30 | 200 | µg/L |
| Pentachlorobenzene          | 10 | 200 | µg/L |
| Phenanthrene                | 10 | 200 | µg/L |
| Pyrene                      | 10 | 200 | µg/L |
| Pyridine                    | 10 | 200 | µg/L |
| 1,2,4,5-Tetrachlorobenzene  | 10 | 200 | µg/L |
| o-Toluidine                 | 10 | 200 | µg/L |
| 1,2,4-Trichlorobenzene      | 20 | 200 | µg/L |

### WP BTEX in Water

Store at 4 °C

Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.  
Use with EPA methods 8260, 624, 602 and 8021.

| Analyte Concentration          | Low | High | Units |
|--------------------------------|-----|------|-------|
| Benzene                        | 10  | 120  | µg/L  |
| Ethylbenzene                   | 10  | 100  | µg/L  |
| Methyl tert-butyl ether (MTBE) | 15  | 150  | µg/L  |
| Toluene                        | 10  | 120  | µg/L  |
| Xylenes, total                 | 20  | 300  | µg/L  |

# Water Pollution (Organics continued)

## WP Carbamates (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Aldicarb              | 15  | 50   | µg/L  |
| Aldicarb sulfone      | 19  | 50   | µg/L  |
| Aldicarb sulfoxide    | 15  | 50   | µg/L  |
| Baygon                | 30  | 140  | µg/L  |
| Carbaryl              | 20  | 100  | µg/L  |
| Carbofuran            | 15  | 150  | µg/L  |
| Diuron                | 30  | 140  | µg/L  |
| 3-Hydroxycarbofuran   | 15  | 75   | µg/L  |
| Methiocarb            | 30  | 140  | µg/L  |
| Methomyl              | 15  | 90   | µg/L  |
| Oxamyl (Vydate)       | 30  | 80   | µg/L  |
| Propham               | 30  | 140  | µg/L  |

## WP Chlordane

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule. Use with EPA methods 608, 8080 and 8081.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Chlordane (total)     | 3.0 | 25   | µg/L  |

## WP Diesel Range Organics

Store at 4 °C

Provided as a 2 mL concentrate in acetone flame sealed in a 2 mL amber ampoule.

Use with modified EPA 8015 GC/FID methods.

| Analyte Concentration       | Low | High | Units |
|-----------------------------|-----|------|-------|
| Diesel Range Organics (DRO) | 800 | 6000 | µg/L  |

## WP Explosives - Low Level (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in acetonitrile flame sealed in a 2 mL amber ampoule.

May contain a subset of analytes randomly selected. Use with EPA methods 8330 and 8095.

| Analyte Concentration                                  | Low | High | Units |
|--------------------------------------------------------|-----|------|-------|
| 2-Amino-4,6-dinitrotoluene                             | 1.0 | 20   | µg/L  |
| 4-Amino-2,6-dinitrotoluene                             | 1.0 | 20   | µg/L  |
| 1-Chloro-2,4-dinitrobenzene                            | 1.0 | 20   | µg/L  |
| 1-Chloro-4-nitrobenzene                                | 1.0 | 20   | µg/L  |
| 4-Chloro-3-nitrotoluene                                | 1.0 | 20   | µg/L  |
| 3,5-Dichloronitrobenzene                               | 1.0 | 20   | µg/L  |
| Dinitramine                                            | 1.0 | 20   | µg/L  |
| 3,5-Dinitroaniline                                     | 1.0 | 20   | µg/L  |
| 1,3-Dinitrobenzene                                     | 1.0 | 20   | µg/L  |
| 1,4-Dinitrobenzene                                     | 1.0 | 20   | µg/L  |
| 2,4-Dinitrotoluene                                     | 1.0 | 20   | µg/L  |
| 2,6-Dinitrotoluene                                     | 1.0 | 20   | µg/L  |
| HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine) | 1.0 | 20   | µg/L  |
| 1,2-Naphthoquinone                                     | 1.0 | 20   | µg/L  |
| 1,4-Naphthoquinone                                     | 1.0 | 20   | µg/L  |
| Nitrobenzene                                           | 1.0 | 20   | µg/L  |
| Nitroglycerin                                          | 1.0 | 20   | µg/L  |
| 2-Nitrotoluene                                         | 1.0 | 20   | µg/L  |
| 3-Nitrotoluene                                         | 1.0 | 20   | µg/L  |
| 4-Nitrotoluene                                         | 1.0 | 20   | µg/L  |
| Pentachloronitrobenzene                                | 1.0 | 20   | µg/L  |
| Pentaerythritoltetranitrate                            | 1.0 | 20   | µg/L  |
| RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)          | 1.0 | 20   | µg/L  |
| 2,3,4,5-Tetrachloronitrobenzene                        | 1.0 | 20   | µg/L  |
| Tetryl (Methyl-2,4,6-trinitrophenylnitramine)          | 1.0 | 20   | µg/L  |
| 2,4,6-Trichloronitrobenzene                            | 1.0 | 20   | µg/L  |
| Trifluralin (Treflan)                                  | 1.0 | 20   | µg/L  |
| 1,3,5-Trinitrobenzene                                  | 1.0 | 20   | µg/L  |
| 2,4,6-Trinitrotoluene                                  | 1.0 | 20   | µg/L  |

## WP Gasoline Additives (Non-TNI/State Specific)

Store at 4 °C

Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Contains all analytes listed below. Use with EPA methods 624 and 8260.

| Analyte Concentration          | Low | High | Units |
|--------------------------------|-----|------|-------|
| Methyl tert-butyl ether (MTBE) | 15  | 150  | µg/L  |
| DIPE                           | 10  | 100  | µg/L  |
| ETBE                           | 10  | 100  | µg/L  |
| Freon 113                      | 10  | 100  | µg/L  |
| n-Propylbenzene                | 10  | 100  | µg/L  |
| TAME                           | 10  | 100  | µg/L  |
| tert-Butyl alcohol             | 100 | 500  | µg/L  |

## WP Gasoline Range Organics

Store at 4 °C

Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Use volatiles EPA 8015 GC/FID method. Contains TNI analyte (GRO) and other analytes listed below.

| Analyte Concentration          | Low | High | Units |
|--------------------------------|-----|------|-------|
| Gasoline range organics (GRO)  | 400 | 4000 | µg/L  |
| Benzene                        | 2.0 | 100  | µg/L  |
| Ethylbenzene                   | 2.0 | 100  | µg/L  |
| Methyl tert-butyl ether (MTBE) | 2.0 | 100  | µg/L  |
| Toluene                        | 5.0 | 250  | µg/L  |
| Xylenes, total                 | 5.0 | 250  | µg/L  |

## WP Glycols (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in water flame sealed in a 2 mL amber ampoule.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Propylene glycol      | 75  | 200  | mg/L  |
| Ethylene glycol       | 75  | 200  | mg/L  |
| Diethylene glycol     | 75  | 200  | mg/L  |
| Triethylene glycol    | 75  | 200  | mg/L  |
| Tetraethylene glycol  | 75  | 200  | mg/L  |

## WP Herbicides

Store at 4 °C

Provided as a 2 mL concentrate in acetonitrile flame sealed in a 2 mL amber ampoule.

Contains all TNI herbicides (2,4-D, Dicamba, 2,4,5-T and Silvex) and a random selection of the other analytes listed below. Use with EPA methods 615 and 8151.

*Note: Pentachlorophenol and 4-Nitrophenol are not within the TNI range.*

| Analyte Concentration                         | Low | High | Units |
|-----------------------------------------------|-----|------|-------|
| Acifluorfen                                   | 2.0 | 10   | µg/L  |
| Bentazon                                      | 2.0 | 10   | µg/L  |
| Brominal (Bromoxynil)                         | 2.0 | 10   | µg/L  |
| Chloramben                                    | 2.0 | 10   | µg/L  |
| 2,4-D                                         | 2.0 | 10   | µg/L  |
| 2,4-DB                                        | 2.0 | 10   | µg/L  |
| 2,4-DP (Dichlorprop)                          | 2.0 | 10   | µg/L  |
| Dacthal (DCPA diacid)                         | 2.0 | 10   | µg/L  |
| Dalapon                                       | 2.0 | 10   | µg/L  |
| Dicamba                                       | 2.0 | 10   | µg/L  |
| 3,5-Dichlorobenzoic acid                      | 2.0 | 10   | µg/L  |
| Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP) | 2.0 | 10   | µg/L  |
| MCPA                                          | 25  | 100  | µg/L  |
| MCPP                                          | 25  | 100  | µg/L  |
| 4-Nitrophenol                                 | 2.0 | 10   | µg/L  |
| Pentachlorophenol                             | 2.0 | 10   | µg/L  |
| Picloram                                      | 2.0 | 10   | µg/L  |
| 2,4,5-T                                       | 2.0 | 10   | µg/L  |
| 2,4,5-TP (Silvex)                             | 2.0 | 10   | µg/L  |

# Water Pollution (Organics continued)

## WP Nitrogen Pesticides (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule. Use with EPA methods 619, 633, 8141 and 8270.

| Analyte Concentration                         | Low  | High | Units |
|-----------------------------------------------|------|------|-------|
| Alachlor                                      | 2.0  | 30   | µg/L  |
| Ametryn                                       | 0.50 | 40   | µg/L  |
| Atraton                                       | 0.50 | 40   | µg/L  |
| Atrazine                                      | 3.0  | 30   | µg/L  |
| Bromacil                                      | 0.50 | 30   | µg/L  |
| Butachlor                                     | 0.50 | 30   | µg/L  |
| Butylate                                      | 0.50 | 40   | µg/L  |
| Cyanazine                                     | 0.50 | 40   | µg/L  |
| Deethyl atrazine                              | 2.0  | 20   | µg/L  |
| Deisopropyl atrazine                          | 2.0  | 20   | µg/L  |
| Diamino atrazine                              | 2.0  | 20   | µg/L  |
| EPTC (Eptam, s-ethyl-dipropyl thio carbamate) | 0.50 | 40   | µg/L  |
| Hexazinone                                    | 0.50 | 40   | µg/L  |
| Metolachlor                                   | 0.50 | 30   | µg/L  |
| Metribuzin                                    | 0.50 | 30   | µg/L  |
| Napropamide                                   | 0.50 | 40   | µg/L  |
| Prometon                                      | 0.50 | 30   | µg/L  |
| Prometryn                                     | 0.50 | 40   | µg/L  |
| Pronamide (Kerb)                              | 0.50 | 40   | µg/L  |
| Propachlor (Ramrod)                           | 0.50 | 40   | µg/L  |
| Propazine                                     | 0.50 | 40   | µg/L  |
| Simazine                                      | 4.0  | 40   | µg/L  |
| Terbacil                                      | 0.50 | 40   | µg/L  |
| Trifluralin (Treflan)                         | 0.50 | 40   | µg/L  |

## WP Organic Phosphorus Pesticides (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule. Use with EPA methods 614, 622, 8141 and 8270.

| Analyte Concentration                  | Low | High | Units |
|----------------------------------------|-----|------|-------|
| Azinphos-methyl (Guthion)              | 3.6 | 13.8 | µg/L  |
| Carbophenothion                        | 1.0 | 100  | µg/L  |
| Chlorpyrifos                           | 1.0 | 100  | µg/L  |
| Demeton-o                              | 1.0 | 100  | µg/L  |
| Demeton-s                              | 1.0 | 100  | µg/L  |
| Demeton O & S                          | 1.0 | 100  | µg/L  |
| Diazinon                               | 2.0 | 15   | µg/L  |
| Dichlorovos (DDVP, Dichlorvos)         | 2.0 | 20   | µg/L  |
| Dimethoate                             | 1.0 | 100  | µg/L  |
| Dioxathion                             | 1.0 | 100  | µg/L  |
| Disulfoton                             | 2.0 | 15   | µg/L  |
| Ethion                                 | 1.0 | 100  | µg/L  |
| Ethoprop                               | 1.0 | 100  | µg/L  |
| Famphur                                | 1.0 | 100  | µg/L  |
| Fonophos                               | 1.0 | 100  | µg/L  |
| Malathion                              | 2.0 | 20   | µg/L  |
| Parathion, ethyl                       | 3.0 | 20   | µg/L  |
| Methyl parathion (Parathion, methyl)   | 1.0 | 100  | µg/L  |
| Phorate                                | 1.0 | 100  | µg/L  |
| Phosmet (Imidan)                       | 1.0 | 100  | µg/L  |
| Ronnel                                 | 2.0 | 20   | µg/L  |
| Terbufos                               | 1.0 | 100  | µg/L  |
| Tetrachlorvinphos (Stirophos, Gardona) | 2.0 | 20   | µg/L  |

## WP PAHs-Low Level

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule. Contains at least 80% of the EPA and TNI analytes randomly selected. Use with EPA HPLC methods 610 and 8310 and GC/MS method 8270 (SIM mode).

| Analyte Concentration  | Low  | High | Units |
|------------------------|------|------|-------|
| Acenaphthene           | 2.0  | 20   | µg/L  |
| Acenaphthylene         | 2.0  | 20   | µg/L  |
| Anthracene             | 0.50 | 5.0  | µg/L  |
| Benzo(a)anthracene     | 0.50 | 5.0  | µg/L  |
| Benzo(b)fluoranthene   | 0.50 | 5.0  | µg/L  |
| Benzo(k)fluoranthene   | 0.50 | 5.0  | µg/L  |
| Benzo(g,h,i)perylene   | 0.50 | 5.0  | µg/L  |
| Benzo(a)pyrene         | 0.50 | 5.0  | µg/L  |
| Chrysene               | 0.50 | 5.0  | µg/L  |
| Dibenz(a,h)anthracene  | 0.50 | 5.0  | µg/L  |
| Fluoranthene           | 0.50 | 5.0  | µg/L  |
| Fluorene               | 2.0  | 10   | µg/L  |
| Indeno(1,2,3-cd)pyrene | 0.50 | 5.0  | µg/L  |
| Naphthalene            | 2.0  | 10   | µg/L  |
| Phenanthrene           | 0.50 | 5.0  | µg/L  |
| Pyrene                 | 0.50 | 5.0  | µg/L  |

## WP PAHs-High Level

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule. Contains at least 80% of the EPA and TNI analytes randomly selected. Use with EPA GC methods 610, 8100, and GC/MS method 8270.

| Analyte Concentration  | Low | High | Units |
|------------------------|-----|------|-------|
| Acenaphthene           | 10  | 200  | µg/L  |
| Acenaphthylene         | 10  | 200  | µg/L  |
| Anthracene             | 10  | 200  | µg/L  |
| Benzo(a)anthracene     | 10  | 200  | µg/L  |
| Benzo(b)fluoranthene   | 20  | 200  | µg/L  |
| Benzo(k)fluoranthene   | 20  | 200  | µg/L  |
| Benzo(g,h,i)perylene   | 10  | 200  | µg/L  |
| Benzo(a)pyrene         | 10  | 200  | µg/L  |
| Chrysene               | 10  | 200  | µg/L  |
| Dibenz(a,h)anthracene  | 20  | 200  | µg/L  |
| Fluoranthene           | 30  | 200  | µg/L  |
| Fluorene               | 10  | 200  | µg/L  |
| Indeno(1,2,3-cd)pyrene | 30  | 125  | µg/L  |
| Naphthalene            | 20  | 200  | µg/L  |
| Phenanthrene           | 10  | 200  | µg/L  |
| Pyrene                 | 10  | 200  | µg/L  |

## WP PCBs in Oil

Store at 20 - 25 °C

Provided as a 3 g ready to use standard in transformer oil flame sealed in a 5 mL amber ampoule. Contains one Aroclor randomly selected. Use with EPA method 8082.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Aroclor 1016          | 17  | 50   | mg/kg |
| Aroclor 1242          | 17  | 50   | mg/kg |
| Aroclor 1254          | 16  | 50   | mg/kg |
| Aroclor 1260          | 12  | 50   | mg/kg |

## WP PCBs in Water

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule. Contains one Aroclor randomly selected. Use with EPA methods 608, 8080, 8082.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Aroclor 1016          | 2.0 | 10   | µg/L  |
| Aroclor 1221          | 2.0 | 10   | µg/L  |
| Aroclor 1232          | 2.0 | 10   | µg/L  |
| Aroclor 1242          | 2.0 | 10   | µg/L  |
| Aroclor 1248          | 2.0 | 10   | µg/L  |
| Aroclor 1254          | 2.0 | 10   | µg/L  |
| Aroclor 1260          | 2.0 | 10   | µg/L  |

# Water Pollution (Organics continued)

## WP Perfluorinated Compounds (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration              | Low  | High | Units |
|------------------------------------|------|------|-------|
| Perfluoro-n-butyric acid (PFBA)    | 0.50 | 3.0  | µg/L  |
| Perfluoro-n-octanoic acid (PFOA)   | 0.50 | 3.0  | µg/L  |
| Perfluoro-n-octanesulfonate (PFOS) | 0.50 | 3.0  | µg/L  |

## WP Pesticides

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Contains at least 80% of the EPA and TNI analytes randomly selected.

Use with EPA methods 608 and 8081.

| Analyte Concentration     | Low | High | Units |
|---------------------------|-----|------|-------|
| Aldrin                    | 1.0 | 15   | µg/L  |
| alpha-BHC                 | 2.0 | 20   | µg/L  |
| beta-BHC                  | 2.0 | 20   | µg/L  |
| delta-BHC                 | 2.0 | 20   | µg/L  |
| gamma-BHC (Lindane)       | 2.0 | 20   | µg/L  |
| alpha-Chlordane           | 1.0 | 10   | µg/L  |
| gamma-Chlordane           | 1.0 | 10   | µg/L  |
| 4,4'-DDD                  | 2.0 | 10   | µg/L  |
| 4,4'-DDE                  | 1.0 | 10   | µg/L  |
| 4,4'-DDT                  | 1.0 | 10   | µg/L  |
| Dieldrin                  | 1.0 | 15   | µg/L  |
| Endosulfan I              | 4.0 | 20   | µg/L  |
| Endosulfan II             | 4.0 | 20   | µg/L  |
| Endosulfan sulfate        | 4.0 | 20   | µg/L  |
| Endrin                    | 2.0 | 20   | µg/L  |
| Endrin aldehyde           | 4.0 | 20   | µg/L  |
| Endrin ketone             | 4.0 | 20   | µg/L  |
| Heptachlor                | 1.0 | 10   | µg/L  |
| Heptachlor Epoxide (beta) | 1.0 | 10   | µg/L  |
| Methoxychlor              | 2.0 | 20   | µg/L  |

## WP Toxaphene

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule. Use

with EPA methods 608, 8080 and 8081.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Toxaphene (total)     | 20  | 100  | µg/L  |

## WP VOA-GC

Store at 4 °C

Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule. This standard will contain 100% of all analytes. Use with EPA methods 602 and 8021.

| Analyte Concentration          | Low | High | Units |
|--------------------------------|-----|------|-------|
| Benzene                        | 10  | 120  | µg/L  |
| Chlorobenzene                  | 10  | 120  | µg/L  |
| 1,2 Dichlorobenzene            | 10  | 120  | µg/L  |
| 1,3 Dichlorobenzene            | 10  | 120  | µg/L  |
| 1,4 Dichlorobenzene            | 10  | 120  | µg/L  |
| Ethylbenzene                   | 10  | 120  | µg/L  |
| Isopropylbenzene               | 10  | 300  | µg/L  |
| Methyl tert-butyl ether (MTBE) | 15  | 150  | µg/L  |
| Naphthalene                    | 15  | 150  | µg/L  |
| Toluene                        | 10  | 120  | µg/L  |
| 1,2,4-Trimethylbenzene         | 10  | 120  | µg/L  |
| 1,3,5-Trimethylbenzene         | 10  | 120  | µg/L  |
| Xylenes, total                 | 20  | 300  | µg/L  |

## WP Volatiles

Store at 4 °C

Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Contains at least 60% of the EPA and TNI analytes randomly selected. Use with EPA methods 601/602, 8010/8020/8021, 624 and 8260.

| Analyte Concentration              | Low | High | Units |
|------------------------------------|-----|------|-------|
| Acetone                            | 20  | 200  | µg/L  |
| Acetonitrile                       | 5.0 | 200  | µg/L  |
| Acrolein                           | 5.0 | 200  | µg/L  |
| Acrylonitrile                      | 5.0 | 200  | µg/L  |
| Benzene                            | 10  | 120  | µg/L  |
| Bromobenzene                       | 10  | 300  | µg/L  |
| Bromochloromethane                 | 5.0 | 200  | µg/L  |
| Bromodichloromethane               | 10  | 100  | µg/L  |
| Bromoform                          | 10  | 100  | µg/L  |
| Bromomethane                       | 20  | 120  | µg/L  |
| 2-Butanone (MEK)                   | 5.0 | 200  | µg/L  |
| n-Butylbenzene                     | 10  | 300  | µg/L  |
| sec-Butylbenzene                   | 10  | 300  | µg/L  |
| tert-Butylbenzene                  | 10  | 300  | µg/L  |
| Carbon disulfide                   | 5.0 | 200  | µg/L  |
| Carbon tetrachloride               | 15  | 150  | µg/L  |
| Chlorobenzene                      | 10  | 120  | µg/L  |
| Chloroethane                       | 20  | 120  | µg/L  |
| 2-Chloroethylvinylether            | 5.0 | 200  | µg/L  |
| Chloroform                         | 10  | 100  | µg/L  |
| Chloromethane                      | 20  | 120  | µg/L  |
| 2-Chlorotoluene                    | 5.0 | 200  | µg/L  |
| 4-Chlorotoluene                    | 10  | 300  | µg/L  |
| Dibromochloromethane               | 10  | 100  | µg/L  |
| 1,2-Dibromo-3-chloropropane (DBCP) | 15  | 150  | µg/L  |
| 1,2-Dibromoethane (EDB)            | 10  | 120  | µg/L  |
| Dibromomethane                     | 10  | 120  | µg/L  |
| 1,2 Dichlorobenzene                | 10  | 120  | µg/L  |
| 1,3 Dichlorobenzene                | 10  | 120  | µg/L  |
| 1,4 Dichlorobenzene                | 10  | 120  | µg/L  |
| Dichlorodifluoromethane            | 5.0 | 200  | µg/L  |
| 1,1-Dichloroethane                 | 10  | 150  | µg/L  |
| 1,2 Dichloroethane                 | 15  | 150  | µg/L  |
| 1,1-Dichloroethene                 | 10  | 150  | µg/L  |
| cis-1,2-Dichloroethene             | 10  | 150  | µg/L  |
| trans-1,2-Dichloroethene           | 10  | 120  | µg/L  |
| Dichlorofluoromethane              | 5.0 | 200  | µg/L  |
| 1,2-Dichloropropane                | 10  | 150  | µg/L  |
| 1,3-Dichloropropane                | 10  | 300  | µg/L  |
| 2,2-Dichloropropane                | 10  | 300  | µg/L  |
| 1,1-Dichloropropene                | 5.0 | 200  | µg/L  |
| cis-1,3-Dichloropropene            | 10  | 120  | µg/L  |
| trans-1,3-Dichloropropene          | 10  | 120  | µg/L  |
| Ethylbenzene                       | 10  | 120  | µg/L  |
| Hexachlorobutadiene                | 50  | 200  | µg/L  |
| Hexachloroethane                   | 50  | 200  | µg/L  |
| 2-Hexanone                         | 20  | 200  | µg/L  |
| Isopropylbenzene                   | 10  | 300  | µg/L  |
| p-Isopropyltoluene                 | 10  | 300  | µg/L  |
| Methylene Chloride                 | 10  | 120  | µg/L  |
| 4-Methyl-2-pentanone (MIBK)        | 20  | 200  | µg/L  |
| Methyl tert-butyl ether (MTBE)     | 15  | 150  | µg/L  |
| Naphthalene                        | 15  | 150  | µg/L  |
| Nitrobenzene                       | 20  | 200  | µg/L  |
| n-Propylbenzene                    | 10  | 300  | µg/L  |
| Styrene                            | 20  | 120  | µg/L  |
| 1,1,1,2-Tetrachloroethane          | 15  | 150  | µg/L  |

# Water Pollution (Organics continued)

## WP Volatiles continued

|                           |     |     |      |
|---------------------------|-----|-----|------|
| 1,1,2,2-Tetrachloroethane | 15  | 150 | µg/L |
| Tetrachloroethene         | 10  | 150 | µg/L |
| Toluene                   | 10  | 120 | µg/L |
| 1,2,3-Trichlorobenzene    | 15  | 150 | µg/L |
| 1,2,4-Trichlorobenzene    | 10  | 150 | µg/L |
| 1,1,1-Trichloroethane     | 10  | 100 | µg/L |
| 1,1,2-Trichloroethane     | 15  | 150 | µg/L |
| Trichloroethene           | 10  | 100 | µg/L |
| Trichlorofluoromethane    | 20  | 120 | µg/L |
| 1,2,3-Trichloropropane    | 15  | 150 | µg/L |
| 1,2,4-Trimethylbenzene    | 10  | 120 | µg/L |
| 1,3,5-Trimethylbenzene    | 10  | 120 | µg/L |
| Vinyl acetate             | 5.0 | 200 | µg/L |
| Vinyl chloride            | 20  | 120 | µg/L |
| m+p-Xylene                | 10  | 150 | µg/L |
| o-Xylene                  | 10  | 150 | µg/L |
| Xylenes, total            | 20  | 300 | µg/L |



# Water Supply

## WS Inorganic Standards

### PT Availability

M = Monthly

Q = Quarterly - Jan, Apr, Jul, Oct

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information                 | Proficiency Testing |       | Quality Control |       | Rapid Return™     |              |
|--------------------------------------|---------------------|-------|-----------------|-------|-------------------|--------------|
| Description                          | Catalog Number      | Price | Catalog Number  | Price | Catalog Number    | Price        |
| TNI Standards                        |                     |       |                 |       |                   |              |
|                                      |                     |       |                 |       |                   | Availability |
| WS Anions Set                        | PT-ANSET-WS         | \$ 65 | QC-ANSET-WS     | \$ 59 | RR-ANSET-WS       | \$ 75        |
| WS Anions 1                          | PT-AN1-WS           | 53    | QC-AN1-WS       | 48    | RR-AN1-WS         | 61           |
| WS Anions 2 - Nitrite as N           | PT-AN2-WS           | 43    | QC-AN2-WS       | 39    | RR-AN2-WS         | 50           |
| WS Corrosivity (Langelier Index)     | PT-CORR-WS          | 43    | QC-CORR-WS      | 39    | RR-CORR-WS        | 50           |
| WS Cyanide                           | PT-CN-WS            | 58    | QC-CN-WS        | 52    | RR-CN-WS          | 67           |
| WS Hexavalent Chromium               | PT-CR6-WS           | 73    | QC-CR6-WS       | 66    | RR-CR6-WS         | 84           |
| WS IDB Set                           | PT-IDBSET-WS        | 109   | QC-IDBSET-WS    | 98    | RR-IDBSET-WS      | 125          |
| WS IDB 1 - Bromide & Bromate         | PT-IDB1-WS          | 78    | QC-IDB1-WS      | 70    | RR-IDB1-WS        | 90           |
| WS IDB 2 - Chlorate & Chlorite       | PT-IDB2-WS          | 78    | QC-IDB2-WS      | 70    | RR-IDB2-WS        | 90           |
| WS Minerals Set                      | PT-MINSET-WS        | 85    | QC-MINSET-WS    | 77    | RR-MINSET-WS      | 98           |
| WS Minerals - 1                      | PT-MIN-WS           | 75    | QC-MIN-WS       | 68    | RR-MIN-WS         | 86           |
| WS Conductivity                      | PT-COND-WS          | 48    | QC-COND-WS      | 43    | RR-COND-WS        | 55           |
| WS Perchlorate                       | PT-PERC-WS          | 58    | QC-PERC-WS      | 52    | RR-PERC-WS        | 67           |
| WS pH                                | PT-PH-WS            | 53    | QC-PH-WS        | 48    | RR-PH-WS          | 61           |
| WS Residual Chlorine                 | PT-CL-WS            | 58    | QC-CL-WS        | 52    | RR-CL-WS          | 67           |
| WS Silica                            | PT-SIO2-WS          | 53    | QC-SIO2-WS      | 48    | RR-SIO2-WS        | 61           |
| WS Solids                            | PT-SOL-WS           | 63    | QC-SOL-WS       | 57    | RR-SOL-WS         | 73           |
| WS Surfactants as MBAS               | PT-MBAS-WS          | 73    | QC-MBAS-WS      | 66    | RR-MBAS-WS        | 84           |
| WS TOC and DOC                       | PT-TOC-WS           | 53    | QC-TOC-WS       | 48    | RR-TOC-WS         | 61           |
| WS Trace Metals Set                  | PT-TMSET-WS         | 103   | QC-TMSET-WS     | 93    | RR-TMSET-WS       | 119          |
| WS Trace Metals 1                    | PT-TM-WS            | 82    | QC-TM-WS        | 74    | RR-TM-WS          | 94           |
| WS Mercury                           | PT-HG-WS            | 48    | QC-HG-WS        | 43    | RR-HG-WS          | 55           |
| WS Turbidity                         | PT-TURB-WS          | 63    | QC-TURB-WS      | 57    | RR-TURB-WS        | 73           |
| WS Uranium                           | PT-U-WS             | 100   | QC-U-WS         | 90    | RR-U-WS           | 115          |
| WS UV 254                            | PT-UV-WS            | 63    | QC-UV-WS        | 57    | RR-UV-WS          | 73           |
| Non-TNI and State Specific Standards |                     |       |                 |       |                   |              |
| WS Color                             | PT-COL-WS           | \$ 81 | QC-COL-WS       | \$ 73 | RR-COL-WS         | \$ 93        |
| WS Perchlorate-Massachusetts (MA)    | PT-MAPERC-WS        | 119   | QC-MAPERC-WS    | 107   | Not Allowed by MA | Jan Only     |

### WS 2014 Schedule

|         | Study ID | Open   | Close  |
|---------|----------|--------|--------|
| January | WS0114   | 13-Jan | 27-Feb |
| April   | WS0414   | 14-Apr | 29-May |
| July    | WS0714   | 14-Jul | 28-Aug |
| October | WS1014   | 17-Oct | 1-Dec  |



# Water Supply

## WS Inorganic Standards

Phenova WS Inorganic Standards are provided as concentrates ready to dilute to produce your final samples in sufficient amounts for at least two methods, unless otherwise noted. All standards are compliant with EPA, TNI and/or state specific criteria.

### WS Anions Set

This complete set includes WS Anions 1 vial and WS Anions 2 ampoule.

#### WS Anions 1

Store at 4 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration    | Low  | High | Units |
|--------------------------|------|------|-------|
| Chloride                 | 20   | 160  | mg/L  |
| Fluoride                 | 1.0  | 8.0  | mg/L  |
| Nitrate as N             | 3.0  | 10   | mg/L  |
| Nitrate and Nitrite as N | 3.0  | 10   | mg/L  |
| Orthophosphate as P      | 0.50 | 5.5  | mg/L  |
| Sulfate                  | 25   | 250  | mg/L  |

#### WS Anions 2 - Nitrite as N

Store at 4 °C

Provided as a 5 mL concentrate in water flame sealed in a 5 mL amber ampoule.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Nitrite as N          | 0.40 | 2.0  | mg/L  |

#### WS Color (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Color                 | 10  | 75   | CU    |

#### WS Corrosivity (Langelier Index)

Store at 20 - 25 °C

Provided as a 500 mL ready to use standard in water contained in a 500 mL poly bottle.

| Analyte Concentration         | Low  | High | Units    |
|-------------------------------|------|------|----------|
| Corrosivity (Langelier Index) | -4.0 | 4.0  | SI units |

#### WS Cyanide

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with NaOH to pH > 10 contained in a 24 mL amber glass vial.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Cyanide (simple)      | 0.10 | 0.50 | mg/L  |

#### WS Hexavalent Chromium

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Chromium VI           | 5.0 | 50   | µg/L  |

#### WS Inorganic Disinfections By-Products Set

This complete set includes WS IDB 1 and 2 vials.

#### WS IDB 1 - Bromide and Bromate

Store at 4 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Bromate               | 7.0 | 50   | µg/L  |
| Bromide               | 50  | 300  | µg/L  |

#### WS IDB 2 - Chlorite and Chlorate

Store at 4 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Chlorite              | 100 | 1000 | µg/L  |
| Chlorate              | 60  | 180  | µg/L  |

#### WS Minerals/Conductivity Set

This complete set includes both WS Minerals 1 and Conductivity bottles.

#### WS Minerals 1

Store at 20 - 25 °C

Provided as a 500 mL ready to use standard in water contained in a 500 mL poly bottle.

| Analyte Concentration                 | Low | High | Units |
|---------------------------------------|-----|------|-------|
| Alkalinity as CaCO <sub>3</sub>       | 25  | 200  | mg/L  |
| Calcium                               | 30  | 90   | mg/L  |
| Calcium Hardness as CaCO <sub>3</sub> | 75  | 225  | mg/L  |
| Total Hardness as CaCO <sub>3</sub>   | 83  | 307  | mg/L  |
| Magnesium                             | 2   | 20   | mg/L  |
| Potassium                             | 10  | 40   | mg/L  |
| Sodium                                | 12  | 50   | mg/L  |
| Total Filterable Residue              | 100 | 1000 | mg/L  |

#### WS Conductivity

Store at 20 - 25 °C

Provided as a 100 mL ready to use standard in water contained in a 125 mL poly bottle.

| Analyte Concentration | Low | High | Units    |
|-----------------------|-----|------|----------|
| Specific Conductance  | 130 | 1300 | µmhos/cm |

#### WS Perchlorate

Store at 4 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Perchlorate           | 4.0 | 20   | µg/L  |

#### WS Perchlorate-Massachusetts (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as 2 x 100 mL ready to use standards in water each contained in a 125 mL poly bottle.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Perchlorate           | 0.80 | 1.5  | µg/L  |

#### WS pH

Store at 20 - 25 °C

Provided as a 100 mL ready to use standard in water contained in a 125 mL poly bottle.

| Analyte Concentration | Low | High | Units    |
|-----------------------|-----|------|----------|
| pH                    | 5.0 | 10   | SI Units |

#### WS Residual Chlorine

Store at 4 °C

Provided as a 5 mL concentrate in water flame sealed in a 5 mL amber ampoule.

| Analyte Concentration   | Low  | High | Units |
|-------------------------|------|------|-------|
| Residual Free Chlorine  | 0.50 | 3.0  | mg/L  |
| Total Residual Chlorine | 0.50 | 3.0  | mg/L  |

# Water Supply (Inorganics continued)

## WS Silica

Store at 20 - 25 °C

Provided as a 250 mL ready to use standard in water contained in a 250 mL poly bottle.

| Analyte Concentration      | Low | High | Units |
|----------------------------|-----|------|-------|
| Silica as SiO <sub>2</sub> | 5.0 | 75   | mg/L  |

## WS Solids

Store at 20 - 25 °C

Provided as a 500 mL ready to use standard in water contained in a 500 mL poly bottle.

| Analyte Concentration        | Low | High | Units |
|------------------------------|-----|------|-------|
| Total Filterable Residue     | 100 | 1000 | mg/L  |
| Non-Filterable Residue (TSS) | 23  | 100  | mg/L  |
| Total Solids                 | 223 | 550  | mg/L  |

## WS Surfactants as MBAS

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Surfactants - MBAS    | 0.10 | 1.0  | mg/L  |

## WS Total & Dissolved Organic Carbon

Store at 4 °C

Provided as a >20 mL concentrate in water preserved with 0.5% (v/v) H<sub>2</sub>SO<sub>4</sub> contained in a 24 mL clear glass vial.

| Analyte Concentration          | Low | High | Units |
|--------------------------------|-----|------|-------|
| Total Organic Carbon           | 1.3 | 13   | mg/L  |
| Dissolved Organic Carbon (DOC) | 1.3 | 13   | mg/L  |

## WS Trace Metals Set

This complete set includes WS Trace Metals 1 and Mercury vials.

### WS Trace Metals 1

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 4% HNO<sub>3</sub> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Aluminum              | 130 | 1000 | µg/L  |
| Antimony              | 6.0 | 50   | µg/L  |
| Arsenic               | 5.0 | 50   | µg/L  |
| Barium                | 500 | 3000 | µg/L  |
| Beryllium             | 2.0 | 20   | µg/L  |
| Boron                 | 800 | 2000 | µg/L  |
| Cadmium               | 2.0 | 50   | µg/L  |
| Chromium              | 10  | 200  | µg/L  |
| Copper                | 50  | 2000 | µg/L  |
| Iron                  | 100 | 1800 | µg/L  |
| Lead                  | 5.0 | 100  | µg/L  |
| Manganese             | 40  | 900  | µg/L  |
| Molybdenum            | 15  | 130  | µg/L  |
| Nickel                | 10  | 500  | µg/L  |
| Selenium              | 10  | 100  | µg/L  |
| Silver                | 20  | 300  | µg/L  |
| Thallium              | 2.0 | 10   | µg/L  |
| Vanadium              | 50  | 1000 | µg/L  |
| Zinc                  | 200 | 2000 | µg/L  |

## WS Mercury

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 1-2% HNO<sub>3</sub> + 10 ppm Cr<sup>6+</sup> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Mercury               | 0.50 | 10   | µg/L  |

## WS Turbidity

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with Trace NaOCl contained in a 24 mL clear glass vial.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Turbidity             | 0.50 | 8.0  | NTU   |

## WS Uranium

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 2% HNO<sub>3</sub> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Uranium               | 3.0 | 104  | µg/L  |

## WS UV 254

Store at 4 °C

Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low   | High | Units |
|-----------------------|-------|------|-------|
| UV 254 Absorbance     | 0.050 | 0.70 | cm-1  |



# At Your Service

The Phenova Customer Support Team is available at any stage in your proficiency testing process. With decades of experience not only in the PT field, but also years of experience working in environmental laboratories, your Phenova team can guide you through your PT and lab quality challenges.

We'd love to hear from you!

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# Water Supply

## WS Organic Standards

### PT Availability

M = Monthly

Q = Quarterly - Jan, Apr, Jul, Oct

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information                        |                | Proficiency Testing |                | Quality Control |                | Rapid Return™ |              |
|---------------------------------------------|----------------|---------------------|----------------|-----------------|----------------|---------------|--------------|
| Description                                 | Catalog Number | Price               | Catalog Number | Price           | Catalog Number | Price         | Availability |
| <b>TNI Standards</b>                        |                |                     |                |                 |                |               |              |
| WS Carbamates                               | PT-CARB-WS     | \$ 78               | QC-CARB-WS     | \$ 70           | RR-CARB-WS     | \$ 90         | Q            |
| WS Chlordane                                | PT-CHLR-WS     | 68                  | QC-CHLR-WS     | 61              | RR-CHLR-WS     | 78            | Q            |
| WS EDB/DBCP/TCP                             | PT-EDBCP-WS    | 73                  | QC-EDBCP-WS    | 66              | RR-EDBCP-WS    | 84            | Q            |
| WS Herbicides                               | PT-HERB-WS     | 78                  | QC-HERB-WS     | 70              | RR-HERB-WS     | 90            | Q            |
| WS Organic Disinfection By-Products         | PT-ODB-WS      | 85                  | QC-ODB-WS      | 77              | RR-ODB-WS      | 98            | Q            |
| WS PCBs as Decachlorobiphenyl               | PT-DECA-WS     | 73                  | QC-DECA-WS     | 66              | RR-DECA-WS     | 84            | Q            |
| WS Pesticides                               | PT-PEST-WS     | 88                  | QC-PEST-WS     | 79              | RR-PEST-WS     | 101           | Q            |
| WS Regulated Volatiles                      | PT-RVOA-WS     | 96                  | QC-RVOA-WS     | 86              | RR-RVOA-WS     | 110           | Q            |
| WS Semivolatiles 1                          | PT-SV1-WS      | 94                  | QC-SV1-WS      | 85              | RR-SV1-WS      | 108           | Q            |
| WS Semivolatiles 2 - Herbicides             | PT-SV2HERB-WS  | 88                  | QC-SV2HERB-WS  | 79              | RR-SV2HERB-WS  | 101           | Q            |
| WS Toxaphene                                | PT-TXP-WS      | 68                  | QC-TXP-WS      | 61              | RR-TXP-WS      | 78            | Q            |
| WS Trihalomethanes                          | PT-THM-WS      | 85                  | QC-THM-WS      | 77              | RR-THM-WS      | 98            | Q            |
| WS Unregulated Volatiles                    | PT-UNRVOA-WS   | 96                  | QC-UNRVOA-WS   | 86              | RR-UNRVOA-WS   | 110           | Q            |
| <b>Non-TNI and State Specific Standards</b> |                |                     |                |                 |                |               |              |
| WS Chloral Hydrate                          | PT-CH-WS       | \$ 73               | QC-CH-WS       | \$ 66           | RR-CH-WS       | \$ 84         | Q            |
| WS Gasoline Additives                       | PT-ADD-WS      | 82                  | QC-ADD-WS      | 74              | RR-ADD-WS      | 94            | Q            |

### WS 2014 Schedule

|         | Study ID | Open   | Close  |
|---------|----------|--------|--------|
| January | WS0114   | 13-Jan | 27-Feb |
| April   | WS0414   | 14-Apr | 29-May |
| July    | WS0714   | 14-Jul | 28-Aug |
| October | WS1014   | 17-Oct | 1-Dec  |

# Water Supply

## WS Organic Standards

Phenova WS Organic Standards are provided as concentrates ready to dilute to produce your final samples in sufficient amounts for at least two methods, unless otherwise noted. All standards are compliant with EPA, TNI and/or state specific criteria (including Wisconsin-specific requirements).

### WS Carbamates

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.  
Contains all of the EPA and TNI analytes listed below. Use with EPA methods 531.1, 531.2 and 632.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Aldicarb              | 15  | 100  | µg/L  |
| Aldicarb Sulfone      | 15  | 100  | µg/L  |
| Aldicarb Sulfoxide    | 15  | 80   | µg/L  |
| Baygon                | 30  | 140  | µg/L  |
| Carbaryl              | 15  | 100  | µg/L  |
| Carbofuran            | 15  | 150  | µg/L  |
| 3-Hydroxycarbofuran   | 15  | 80   | µg/L  |
| Methiocarb            | 30  | 140  | µg/L  |
| Methomyl              | 15  | 100  | µg/L  |
| Oxamyl (Vydate)       | 15  | 100  | µg/L  |

### WS Chloral Hydrate (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in acetonitrile flame sealed in a 2 mL amber ampoule. Use with EPA method 551.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Chloral Hydrate       | 4.0 | 30   | µg/L  |

### WS Chlordane

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.  
Use with EPA methods 505, 508 and 525.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Chlordane (total)     | 2.0 | 20   | µg/L  |

### WS EDB/DBCP/TCP

Store at 4 °C

Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.  
Use with EPA methods 504 and 551.

| Analyte Concentration              | Low   | High | Units |
|------------------------------------|-------|------|-------|
| 1,2-Dibromo-3-chloropropane (DBCP) | 0.10  | 2.0  | µg/L  |
| Ethylene Dibromide (EDB)           | 0.050 | 2.0  | µg/L  |
| 1,2,3-Trichloropropane             | 0.20  | 2.0  | µg/L  |

### WS Gasoline Additives (Non-TNI/State Specific)

Store at 4 °C

Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.  
Contains all analytes listed below. Use with EPA methods 524.2.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| DIPE                  | 5.0 | 50   | µg/L  |
| ETBE                  | 5.0 | 50   | µg/L  |
| Freon 113             | 5.0 | 50   | µg/L  |
| MTBE                  | 5.0 | 50   | µg/L  |
| n-Propylbenzene       | 5.0 | 50   | µg/L  |
| TAME                  | 5.0 | 50   | µg/L  |
| tert-Butyl alcohol    | 5.0 | 50   | µg/L  |

### WS Herbicides

Store at 4 °C

Provided as a 2 mL concentrate in acetonitrile flame sealed in a 2 mL amber ampoule.  
Contains at least 80% of the EPA and TNI analytes randomly selected. Use with EPA methods 515 and 555.

| Analyte Concentration    | Low | High | Units |
|--------------------------|-----|------|-------|
| Acifluorfen              | 10  | 100  | µg/L  |
| Bentazon                 | 10  | 140  | µg/L  |
| Chloramben               | 20  | 100  | µg/L  |
| 2,4-D                    | 10  | 100  | µg/L  |
| 2,4-DB                   | 20  | 120  | µg/L  |
| Dacthal (DCPA diacid)    | 20  | 100  | µg/L  |
| Dalapon                  | 10  | 100  | µg/L  |
| Dicamba                  | 20  | 100  | µg/L  |
| 3,5-Dichlorobenzoic acid | 10  | 100  | µg/L  |
| Dichlorprop              | 10  | 100  | µg/L  |
| Dinoseb                  | 7.0 | 70   | µg/L  |
| 5-Hydroxydicamba         | 1.0 | 100  | µg/L  |
| 4-Nitrophenol            | 1.0 | 100  | µg/L  |
| Pentachlorophenol        | 1.0 | 25   | µg/L  |
| Picloram                 | 10  | 100  | µg/L  |
| 2,4,5-T                  | 10  | 100  | µg/L  |
| 2,4,5-TP (Silvex)        | 10  | 100  | µg/L  |



# Water Supply (Organics continued)

## WS Organic Disinfection By-Products

Store at 4 °C

Provided as a > 1 mL concentrate in MTBE flame sealed in a 2 mL amber ampoule.

Contains all of the EPA and TNI analytes. Use with EPA methods 551 and 552.

| Analyte Concentration  | Low | High | Units |
|------------------------|-----|------|-------|
| Bromochloroacetic Acid | 5.0 | 50   | µg/L  |
| Dibromoacetic Acid     | 5.0 | 50   | µg/L  |
| Dichloroacetic Acid    | 5.0 | 50   | µg/L  |
| Monobromoacetic Acid   | 5.0 | 50   | µg/L  |
| Monochloroacetic Acid  | 10  | 50   | µg/L  |
| Trichloroacetic Acid   | 5.0 | 50   | µg/L  |

## WS PCBs as Decachlorobiphenyl

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Contains one Aroclor randomly selected. Use with EPA quantitative method 508A or methods 505, 508 and 508.1.

| Analyte Concentration      | Low   | High | Units |
|----------------------------|-------|------|-------|
| PCBs as decachlorobiphenyl | 0.50  | 5.0  | µg/L  |
| PCB Aroclor Identification |       |      |       |
| Aroclor 1016               | 0.26  | 2.6  | µg/L  |
| Aroclor 1221               | 0.19  | 1.9  | µg/L  |
| Aroclor 1232               | 0.23  | 2.3  | µg/L  |
| Aroclor 1242               | 0.26  | 2.60 | µg/L  |
| Aroclor 1248               | 0.299 | 2.99 | µg/L  |
| Aroclor 1254               | 0.329 | 3.29 | µg/L  |
| Aroclor 1260               | 0.36  | 3.6  | µg/L  |

## WS Pesticides

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Contains at least 80% of the EPA and TNI analytes randomly selected. Use with EPA methods 505, 507, 508 and 525.

| Analyte Concentration     | Low  | High | Units |
|---------------------------|------|------|-------|
| Alachlor                  | 2.0  | 20   | µg/L  |
| Aldrin                    | 0.2  | 2.5  | µg/L  |
| Atrazine                  | 2.0  | 20   | µg/L  |
| Bromacil                  | 2.0  | 20   | µg/L  |
| Butachlor                 | 2.0  | 20   | µg/L  |
| Chlorothalonil            | 0.50 | 30   | µg/L  |
| Diazinon                  | 0.50 | 30   | µg/L  |
| Dieldrin                  | 0.50 | 2.5  | µg/L  |
| Dimethoate                | 0.50 | 30   | µg/L  |
| Endrin                    | 0.20 | 2.5  | µg/L  |
| Heptachlor                | 0.20 | 2.5  | µg/L  |
| Heptachlor Epoxide (beta) | 0.20 | 2.5  | µg/L  |
| Hexachlorobenzene         | 0.50 | 5.0  | µg/L  |
| Hexachlorocyclopentadiene | 2.0  | 20   | µg/L  |
| Lindane                   | 0.20 | 2.5  | µg/L  |
| Methoxychlor              | 2.0  | 20   | µg/L  |
| Metolachlor               | 2.0  | 20   | µg/L  |
| Metribuzin                | 2.0  | 20   | µg/L  |
| Molinate                  | 5.0  | 50   | µg/L  |
| Prometon                  | 0.50 | 30   | µg/L  |
| Prometryn                 | 0.50 | 30   | µg/L  |
| Propachlor                | 1.0  | 10   | µg/L  |
| Simazine                  | 2.0  | 20   | µg/L  |
| Thiobencarb               | 0.50 | 30   | µg/L  |
| Trifluralin               | 1.0  | 10   | µg/L  |

## WS Regulated Volatiles

Store at 4 °C

Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Use with EPA methods 502.1, 502.2, 524.1 and 524.2.

| Analyte Concentration                | Low | High | Units |
|--------------------------------------|-----|------|-------|
| Benzene                              | 2.0 | 20   | µg/L  |
| Carbon Tetrachloride                 | 2.0 | 20   | µg/L  |
| Chlorobenzene                        | 2.0 | 20   | µg/L  |
| 1,2-Dichlorobenzene                  | 2.0 | 20   | µg/L  |
| 1,4-Dichlorobenzene                  | 2.0 | 20   | µg/L  |
| 1,2-Dichloroethane                   | 2.0 | 20   | µg/L  |
| 1,1-Dichloroethylene                 | 2.0 | 20   | µg/L  |
| cis-1,2-Dichloroethylene             | 2.0 | 20   | µg/L  |
| trans-1,2-Dichloroethylene           | 2.0 | 20   | µg/L  |
| Dichloromethane (Methylene Chloride) | 2.0 | 20   | µg/L  |
| 1,2-Dichloropropane                  | 2.0 | 20   | µg/L  |
| Ethylbenzene                         | 2.0 | 20   | µg/L  |
| Styrene                              | 2.0 | 20   | µg/L  |
| Tetrachloroethylene                  | 2.0 | 20   | µg/L  |
| Toluene                              | 2.0 | 20   | µg/L  |
| 1,2,4-Trichlorobenzene               | 2.0 | 20   | µg/L  |
| 1,1,1-Trichloroethane                | 2.0 | 20   | µg/L  |
| 1,1,2-Trichloroethane                | 2.0 | 20   | µg/L  |
| Trichloroethylene                    | 2.0 | 20   | µg/L  |
| Vinyl Chloride                       | 2.0 | 50   | µg/L  |
| Total Xylenes                        | 2.0 | 50   | µg/L  |

## WS Semivolatiles 1

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Contains Benzo(a)pyrene, Di(2-Ethylhexyl) Adipate and Di(2-Ethylhexyl) Phthalate and other analytes randomly selected. Use with EPA methods 506, 525 and 550.

| Analyte Concentration     | Low  | High | Units |
|---------------------------|------|------|-------|
| Acenaphthene              | 1.0  | 10   | µg/L  |
| Acenaphthylene            | 1.0  | 10   | µg/L  |
| Anthracene                | 1.0  | 10   | µg/L  |
| Benzo(a)anthracene        | 1.0  | 10   | µg/L  |
| Benzo(b)fluoranthene      | 1.0  | 10   | µg/L  |
| Benzo(k)fluoranthene      | 1.0  | 10   | µg/L  |
| Benzo(g,h,i)perylene      | 1.0  | 10   | µg/L  |
| Benzo(a)pyrene            | 0.20 | 2.5  | µg/L  |
| Butyl benzyl phthalate    | 10   | 50   | µg/L  |
| Chrysene                  | 1.0  | 10   | µg/L  |
| Di-n-butylphthalate       | 10   | 50   | µg/L  |
| Dibenz(a,h)anthracene     | 1.0  | 10   | µg/L  |
| Di(2-ethylhexyl)adipate   | 8.0  | 50   | µg/L  |
| Di(2-ethylhexyl)phthalate | 5.0  | 50   | µg/L  |
| Diethylphthalate          | 10   | 50   | µg/L  |
| Dimethylphthalate         | 10   | 50   | µg/L  |
| Fluoranthene              | 1.0  | 10   | µg/L  |
| Fluorene                  | 1.0  | 10   | µg/L  |
| Indeno(1,2,3-cd)pyrene    | 1.0  | 10   | µg/L  |
| 1-Methylnaphthalene       | 10   | 50   | µg/L  |
| 2-Methylnaphthalene       | 10   | 50   | µg/L  |
| Naphthalene               | 2.0  | 50   | µg/L  |
| Di-n-octylphthalate       | 10   | 50   | µg/L  |
| Phenanthrene              | 1.0  | 10   | µg/L  |
| Pyrene                    | 1.0  | 10   | µg/L  |

# Water Supply (Organics continued)

## WS Semivolatiles 2 - Herbicides

Store at 4 °C  
 Provided as a 2 mL concentrate in water flame sealed in a 2 mL amber ampoule.  
 Use with EPA methods 547, 548 and 549.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Endothall             | 80  | 500  | µg/L  |
| Glyphosate            | 375 | 800  | µg/L  |
| Diquat                | 8.0 | 40   | µg/L  |
| Paraquat              | 8.0 | 100  | µg/L  |

## WS Toxaphene

Store at 4 °C  
 Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.  
 Use with EPA methods 505, 508 and 525.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Toxaphene (total)     | 2.0 | 20   | µg/L  |

## WS Trihalomethanes

Store at 4 °C  
 Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule. Use with EPA methods 502.2, 524.2 and 551.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Bromodichloromethane  | 5.0 | 50   | µg/L  |
| Bromoform             | 5.0 | 50   | µg/L  |
| Chlorodibromomethane  | 5.0 | 50   | µg/L  |
| Chloroform            | 20  | 200  | µg/L  |
| Total Trihalomethanes | 20  | 200  | µg/L  |

## WS Unregulated Volatiles

Store at 4 °C  
 Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.  
 Contains at least 60% of the EPA and TNI analytes randomly selected. Use with EPA methods 502.1, 502.2, 524.1 and 524.2.

| Analyte Concentration          | Low | High | Units |
|--------------------------------|-----|------|-------|
| Bromobenzene                   | 2.0 | 20   | µg/L  |
| Bromochloromethane             | 2.0 | 20   | µg/L  |
| Bromomethane                   | 5.0 | 50   | µg/L  |
| n-Butylbenzene                 | 2.0 | 20   | µg/L  |
| sec-Butylbenzene               | 2.0 | 20   | µg/L  |
| tert-Butylbenzene              | 2.0 | 20   | µg/L  |
| Chloroethane                   | 5.0 | 50   | µg/L  |
| Chloromethane                  | 5.0 | 50   | µg/L  |
| 2-Chlorotoluene                | 2.0 | 20   | µg/L  |
| 4-Chlorotoluene                | 2.0 | 20   | µg/L  |
| Dibromomethane                 | 2.0 | 20   | µg/L  |
| 1,3-Dichlorobenzene            | 2.0 | 20   | µg/L  |
| Dichlorodifluoromethane        | 5.0 | 50   | µg/L  |
| 1,1-Dichloroethane             | 2.0 | 20   | µg/L  |
| 1,3-Dichloropropane            | 2.0 | 20   | µg/L  |
| 2,2-Dichloropropane            | 2.0 | 20   | µg/L  |
| 1,1-Dichloropropene            | 2.0 | 20   | µg/L  |
| cis-1,3-Dichloropropene        | 2.0 | 20   | µg/L  |
| trans-1,3-Dichloropropene      | 2.0 | 20   | µg/L  |
| Fluorotrichloromethane         | 5.0 | 50   | µg/L  |
| Hexachlorobutadiene            | 5.0 | 50   | µg/L  |
| Isopropylbenzene               | 2.0 | 20   | µg/L  |
| 4-Isopropyltoluene             | 2.0 | 20   | µg/L  |
| Methyl-tert-butyl ether (MTBE) | 5.0 | 50   | µg/L  |
| Naphthalene                    | 5.0 | 50   | µg/L  |
| n-Propylbenzene                | 2.0 | 20   | µg/L  |
| 1,1,1,2-Tetrachloroethane      | 2.0 | 20   | µg/L  |
| 1,1,2,2-Tetrachloroethane      | 2.0 | 20   | µg/L  |
| 1,2,3-Trichlorobenzene         | 5.0 | 50   | µg/L  |
| 1,2,3-Trichloropropane         | 2.0 | 20   | µg/L  |
| 1,2,4-Trimethylbenzene         | 2.0 | 20   | µg/L  |
| 1,3,5-Trimethylbenzene         | 2.0 | 20   | µg/L  |



# Microbiological

## WP Micro Standards

### PT Availability

M = Monthly

Q = Quarterly - Jan, Apr, Jul, Oct

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information                        | Proficiency Testing |       | Quality Control |       | Rapid Return™  |        |
|---------------------------------------------|---------------------|-------|-----------------|-------|----------------|--------|
| Description                                 | Catalog Number      | Price | Catalog Number  | Price | Catalog Number | Price  |
| <b>TNI Standards</b>                        |                     |       |                 |       |                |        |
| WP Micro Quantitative                       | PT-MIC-WP           | \$ 94 | QC-MIC-WP       | \$ 85 | RR-MIC-WP      | \$ 108 |
| WP Enterococci                              | PT-ENT-WP           | 94    | QC-ENT-WP       | 85    | RR-ENT-WP      | 108    |
| <b>Non-TNI and State Specific Standards</b> |                     |       |                 |       |                |        |
| WP Heterotrophic Plate Count                | PT-HPC-WP           | \$ 94 | QC-HPC-WP       | \$ 85 | RR-HPC-WP      | \$ 108 |
| Biosolids Micro - Class A                   | PT-MICA-WP          | 166   | QC-MICA-WP      | 149   | RR-MICA-WP     | 191    |
| Biosolids Micro - Class B                   | PT-MICB-WP          | 166   | QC-MICB-WP      | 149   | RR-MICB-WP     | 191    |

| WPM Microbiological 2014 Schedule |          |        |           |
|-----------------------------------|----------|--------|-----------|
|                                   | Study ID | Open   | Close     |
| January                           | WPM0114  | 21-Jan | 14-Feb    |
| February                          | WPM0214  | 18-Feb | 14-Mar    |
| March                             | WPM0314  | 18-Mar | 11-Apr    |
| April                             | WPM0414  | 22-Apr | 16-May    |
| May                               | WPM0514  | 20-May | 13-Jun    |
| June                              | WPM0614  | 17-Jun | 11-Jul    |
| July                              | WPM0714  | 22-Jul | 15-Aug    |
| August                            | WPM0814  | 19-Aug | 12-Sep    |
| September                         | WPM0914  | 16-Sep | 10-Oct    |
| October                           | WPM1014  | 21-Oct | 14-Nov    |
| November                          | WPM1114  | 18-Nov | 18-Dec    |
| December                          | WPM1214  | 16-Dec | 15-Jan-15 |



## WS Micro Standards

| Ordering Information                        | Proficiency Testing |        | Quality Control |        | Rapid Return      |        |
|---------------------------------------------|---------------------|--------|-----------------|--------|-------------------|--------|
| Description                                 | Catalog Number      | Price  | Catalog Number  | Price  | Catalog Number    | Price  |
| <b>TNI Standards</b>                        |                     |        |                 |        |                   |        |
| WS Heterotrophic Plate Count                | PT-HPC-WS           | \$ 94  | QC-HPC-WS       | \$ 85  | RR-HPC-WS         | \$ 108 |
| WS Micro Presence/Absence                   | PT-MIC-WS           | 192    | QC-MIC4-WS      | 161    | RR-MIC-WS         | 221    |
| WS Source Water                             | PT-SW-WS            | 94     | QC-SW-WS        | 85     | RR-SW-WS          | 108    |
| <b>Non-TNI and State Specific Standards</b> |                     |        |                 |        |                   |        |
| WS Enterococci-MA Compliant                 | PT-ENTMA-WS         | \$ 203 | QC-ENTMA-WS     | \$ 183 | Not Allowed by MA | M      |

| WSM Microbiological 2014 Schedule |          |        |           |
|-----------------------------------|----------|--------|-----------|
|                                   | Study ID | Open   | Close     |
| January                           | WSM0114  | 21-Jan | 14-Feb    |
| February                          | WSM0214  | 18-Feb | 14-Mar    |
| March                             | WSM0314  | 18-Mar | 11-Apr    |
| April                             | WSM0414  | 22-Apr | 16-May    |
| May                               | WSM0514  | 20-May | 13-Jun    |
| June                              | WSM0614  | 17-Jun | 11-Jul    |
| July                              | WSM0714  | 22-Jul | 15-Aug    |
| August                            | WSM0814  | 19-Aug | 12-Sep    |
| September                         | WSM0914  | 16-Sep | 10-Oct    |
| October                           | WSM1014  | 21-Oct | 14-Nov    |
| November                          | WSM1114  | 18-Nov | 18-Dec    |
| December                          | WSM1214  | 16-Dec | 15-Jan-15 |



# Microbiological

## Micro Standards

Phenova Microbiological Standards are offered as 100 mL realistic whole-volume standards to save you time and allow your laboratory to run PT standards as they are intended - as normal, everyday samples.

## Water Pollution Micro (WPM)

### WP Micro Quantitative

Store at 4 °C

Provided as a 100 mL whole volume, ready to use standard in a 100 mL sterile clear plastic bottle. Used with all promulgated methods including MF, MPN, multiple tube, Quantitray, Colilert, Colisure and chromogenic methods.

| Analyte Concentration | Low | High | Units     |
|-----------------------|-----|------|-----------|
| Fecal Coliform, MF    | 20  | 2400 | CFU/100mL |
| Total Coliform, MF    | 20  | 2400 | CFU/100mL |
| E. Coli, MF           | 20  | 2400 | CFU/100mL |
| Fecal Coliform, MPN   | 20  | 2400 | MPN/100mL |
| Total Coliform, MPN   | 20  | 2400 | MPN/100mL |
| E. Coli, MPN          | 20  | 2400 | MPN/100mL |

### WP Enterococci

Store at 4 °C

Provided as a 100 mL whole volume, ready to use standard in a 100 mL sterile clear plastic bottle. May be analyzed for enterococci and/or fecal streptococci.

| Analyte Concentration   | Low | High | Units     |
|-------------------------|-----|------|-----------|
| Enterococci, MF         | 20  | 1000 | CFU/100mL |
| Enterococci, MPN        | 20  | 1000 | MPN/100mL |
| Fecal streptococci, MF  | 20  | 1000 | CFU/100mL |
| Fecal streptococci, MPN | 20  | 1000 | MPN/100mL |

### WP Heterotrophic Plate Count (Non-TNI/State Specific)

Store at 4 °C

Provided as a 100 mL whole volume, ready to use standard in a 100 mL sterile clear plastic bottle. Quantitative sample for standard plate count methods. Can be used with both pour plate and Simplate methods.

| Analyte Concentration              | Low | High | Units  |
|------------------------------------|-----|------|--------|
| Heterotrophic Plate Count (MF, PP) | 5.0 | 500  | CFU/mL |
| Heterotrophic Plate Count (MPN)    | 5.0 | 500  | MPN/mL |

### Biosolids Micro - Class A (Non-TNI/State Specific)

Store at 4 °C

Provided as 100 mL micro spiking media in a 100 mL sterile clear plastic bottle along with 10 g biosolid blank matrix also in a 100 mL sterile clear plastic bottle. Standard can be used with all promulgated methods..

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Fecal Coliform, MF    | 50  | 1000 | CFU/g |
| Total Coliform, MF    | 50  | 1000 | CFU/g |
| E. Coli, MF           | 50  | 1000 | CFU/g |
| Fecal Coliform, MPN   | 50  | 1000 | MPN/g |
| Total Coliform, MPN   | 50  | 1000 | MPN/g |
| E. Coli, MPN          | 50  | 1000 | MPN/g |

### Biosolids Micro - Class B (Non-TNI/State Specific)

Store at 4 °C

Provided as 100 mL micro spiking media in a 100 mL sterile clear plastic bottle along with 10 g biosolid blank matrix also in a 100 mL sterile clear plastic bottle. Standard can be used with all promulgated methods.

| Analyte Concentration | Low   | High   | Units |
|-----------------------|-------|--------|-------|
| Fecal Coliform, MF    | 50000 | 500000 | CFU/g |
| Total Coliform, MF    | 50000 | 500000 | CFU/g |
| E. Coli, MF           | 50000 | 500000 | CFU/g |
| Fecal Coliform, MPN   | 50000 | 500000 | MPN/g |
| Total Coliform, MPN   | 50000 | 500000 | MPN/g |
| E. Coli, MPN          | 50000 | 500000 | MPN/g |

## Water Supply Micro (WSM)

### WS Heterotrophic Plate Count

Store at 4 °C

Provided as a 100 mL whole volume, ready to use standard in a 100 mL sterile clear plastic bottle. Quantitative sample for standard plate count methods. Can be used with both pour plate and Simplate methods.

| Analyte Concentration              | Low | High | Units  |
|------------------------------------|-----|------|--------|
| Heterotrophic Plate Count (MF, PP) | 5.0 | 500  | CFU/mL |
| Heterotrophic Plate Count (MPN)    | 5.0 | 500  | MPN/mL |

### WS Micro Presence/Absence

Store at 4 °C

Provided as a 10 set of 100 mL whole volume, ready to use standards in 100 mL sterile clear plastic bottles. Used with all promulgated methods including MF, MPN, Quantitray, Colilert, Colisure and chromogenic methods. QC version is a 4 sample set.

### WS Source Water

Store at 4 °C

Provided as a 100 mL whole volume, ready to use standard in a 100 mL sterile clear plastic bottle. Used with all promulgated methods including MF, MPN, Quantitray, Colilert, Colisure and chromogenic methods.

| Analyte Concentration | Low | High | Units     |
|-----------------------|-----|------|-----------|
| Fecal Coliform, MF    | 20  | 200  | CFU/100mL |
| E. Coli, MF           | 20  | 200  | CFU/100mL |
| Total Coliform, MF    | 20  | 200  | CFU/100mL |
| Fecal Coliform, MPN   | 20  | 200  | MPN/100mL |
| E. Coli, MPN          | 20  | 200  | MPN/100mL |
| Total Coliform, MPN   | 20  | 200  | MPN/100mL |

### WS Enterococci-Massachusetts Compliant (Non-TNI/State Specific)

Provided as a 10 set of 100 mL whole volume, ready to use standards. Compliant with Massachusetts requirement for ground water monitoring as specified in the Federal Ground Water Rule. QC version supplied as a three sample set.

Reported as Absence/Presence for 10 standards.

# DMR-QA 34 Standards

## Experience the Phenova DMR-QA Advantages

**Save:** Understanding cost is always a concern, we give you more for less.

**Simplify:** Easily enter data, identify final report recipients, and mail reports directly to permittees with PT Manage™.

**Relax:** We are in contact with EPA to ensure we are aware of any changes to the program, so you can focus on your daily workload.

**Rely:** You can rely on our team's experience to personally guide your process.

### PT Availability

M = Monthly

Q = Quarterly

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information                    |                 | Proficiency Testing |                 | Quality Control |                | Rapid Return™ |              |
|-----------------------------------------|-----------------|---------------------|-----------------|-----------------|----------------|---------------|--------------|
| Description                             | Catalog Number  | Price               | Catalog Number  | Price           | Catalog Number | Price         | Availability |
| <b>DMR-QA Chemistry Standards</b>       |                 |                     |                 |                 |                |               |              |
| DMR-QA Demand                           | PT-DEM-DMRQA    | \$ 65               | QC-DEM-DMRQA    | \$ 59           |                |               | DMR-QA       |
| DMR-QA Hexavalent Chromium              | PT-CR6-DMRQA    | 55                  | QC-CR6-DMRQA    | 50              |                |               | DMR-QA       |
| DMR-QA Minerals Set                     | PT-MINSET-DMRQA | 85                  | QC-MINSET-DMRQA | 77              |                |               | DMR-QA       |
| DMR-QA Minerals 1                       | PT-MIN1-DMRQA   | 73                  | QC-MIN1-DMRQA   | 66              |                |               | DMR-QA       |
| DMR-QA Minerals 2 - Hardness            | PT-MIN2-DMRQA   | 73                  | QC-MIN2-DMRQA   | 66              |                |               | DMR-QA       |
| DMR-QA Conductivity                     | PT-COND-DMRQA   | 53                  | QC-COND-DMRQA   | 48              |                |               | DMR-QA       |
| DMR-QA Nutrients Set                    | PT-NUTSET-DMRQA | 68                  | QC-NUTSET-DMRQA | 61              |                |               | DMR-QA       |
| DMR-QA NUT1 - Simple Nutrients          | PT-NUT1-DMRQA   | 53                  | QC-NUT1-DMRQA   | 48              |                |               | DMR-QA       |
| DMR-QA NUT2 - Complex Nutrients         | PT-NUT2-DMRQA   | 53                  | QC-NUT2-DMRQA   | 48              |                |               | DMR-QA       |
| DMR-QA NUT3 - Nitrite                   | PT-NUT3-DMRQA   | 48                  | QC-NUT3-DMRQA   | 43              |                |               | DMR-QA       |
| DMR-QA Oil and Grease                   | PT-OGR-DMRQA    | 62                  | QC-OGR-DMRQA    | 56              |                |               | DMR-QA       |
| DMR-QA Oil and Grease 1L Whole Volume   | PT-OGR1L-DMRQA  | 83                  | QC-OGR1L-DMRQA  | 75              |                |               | DMR-QA       |
| DMR-QA pH                               | PT-PH-DMRQA     | 53                  | QC-PH-DMRQA     | 48              |                |               | DMR-QA       |
| DMR-QA Phenolics                        | PT-PHEN-DMRQA   | 53                  | QC-PHEN-DMRQA   | 48              |                |               | DMR-QA       |
| DMR-QA Residual Chlorine                | PT-CL-DMRQA     | 58                  | QC-CL-DMRQA     | 52              |                |               | DMR-QA       |
| DMR-QA Residual Chlorine Low Level      | PT-CLLL-DMRQA   | 58                  | QC-CLLL-DMRQA   | 52              |                |               | DMR-QA       |
| DMR-QA Settleable Solids                | PT-SSOL-DMRQA   | 63                  | QC-SSOL-DMRQA   | 57              |                |               | DMR-QA       |
| DMR-QA Solids                           | PT-SOL-DMRQA    | 65                  | QC-SOL-DMRQA    | 59              |                |               | DMR-QA       |
| DMR-QA Total Cyanide                    | PT-CN-DMRQA     | 55                  | QC-CN-DMRQA     | 50              |                |               | DMR-QA       |
| DMR-QA Trace Metals Set                 | PT-TMSET-DMRQA  | 100                 | QC-TMSET-DMRQA  | 90              |                |               | DMR-QA       |
| DMR-QA Trace Metals 1                   | PT-TM1-DMRQA    | 73                  | QC-TM1-DMRQA    | 66              |                |               | DMR-QA       |
| DMR-QA Mercury                          | PT-HG-DMRQA     | 53                  | QC-HG-DMRQA     | 48              |                |               | DMR-QA       |
| DMR-QA Mercury - Low Level              | PT-HGLL-DMRQA   | 55                  | QC-HGLL-DMRQA   | 50              |                |               | DMR-QA       |
| DMR-QA Turbidity                        | PT-TURB-DMRQA   | 63                  | QC-TURB-DMRQA   | 57              |                |               | DMR-QA       |
| <b>DMR-QA Microbiological Standards</b> |                 |                     |                 |                 |                |               |              |
| DMR-QA Micro Quantitative               | PT-MIC-DMRQA    | 94                  | QC-MIC-DMRQA    | 85              |                |               | DMR-QA       |
| <b>DMR-QA WET Standards</b>             |                 |                     |                 |                 |                |               |              |
| WET Fathead Minnow Method 13            | PT-13-WET       | 83                  | QC-13-WET       | 75              |                |               | DMR-QA       |
| WET Fathead Minnow Method 15            | PT-15-WET       | 151                 | QC-15-WET       | 136             |                |               | DMR-QA       |
| WET Fathead Minnow Method 16            | PT-16-WET       | 151                 | QC-16-WET       | 136             |                |               | DMR-QA       |
| WET Ceriodaphnia Method 19              | PT-19-WET       | 83                  | QC-19-WET       | 75              |                |               | DMR-QA       |
| WET Ceriodaphnia Method 20              | PT-20-WET       | 83                  | QC-20-WET       | 75              |                |               | DMR-QA       |
| WET Ceriodaphnia Method 21              | PT-21-WET       | 151                 | QC-21-WET       | 136             |                |               | DMR-QA       |
| WET Ceriodaphnia Method 22              | PT-22-WET       | 151                 | QC-22-WET       | 136             |                |               | DMR-QA       |
| WET Daphnia Method 32                   | PT-32-WET       | 83                  | QC-32-WET       | 75              |                |               | DMR-QA       |
| WET Daphnia Method 38                   | PT-38-WET       | 83                  | QC-38-WET       | 75              |                |               | DMR-QA       |
| WET Mysid Method 42                     | PT-42-WET       | 83                  | QC-42-WET       | 75              |                |               | DMR-QA       |
| WET Mysid Method 43                     | PT-43-WET       | 151                 | QC-43-WET       | 136             |                |               | DMR-QA       |
| WET Menidia Method 44                   | PT-44-WET       | 83                  | QC-44-WET       | 75              |                |               | DMR-QA       |
| WET Menidia Method 45                   | PT-45-WET       | 151                 | QC-45-WET       | 136             |                |               | DMR-QA       |
| WET Sheepshead Minnow Method 46         | PT-46-WET       | 83                  | QC-46-WET       | 75              |                |               | DMR-QA       |
| WET Sheepshead Minnow Method 47         | PT-47-WET       | 151                 | QC-47-WET       | 136             |                |               | DMR-QA       |

| Estimated DMR-QA 34 Schedule |           |        |       |
|------------------------------|-----------|--------|-------|
|                              | Study ID  | Open   | Close |
| CHEM                         | DMR-QA 34 | 24-Mar | 7-Jul |
| WET                          | DMR-QA 34 | 24-Mar | 7-Jul |
| MICRO                        | DMR-QA 34 | 24-Mar | 7-Jul |



The study dates listed above for DMR-QA 34 are estimated, as the exact dates will be set by the EPA. Please review the DMR-QA 34 letter and verify study dates on [www.phenova.com](http://www.phenova.com) as this study approaches.

Learn more at

[www.phenova.com/dmrqa](http://www.phenova.com/dmrqa)

# DMR-QA 34 Standards

## Chemistry, Micro and WET standards from one source!

Phenova is one of the few approved providers that offers every Discharge Monitoring Requirement- Quality Assurance (DMR-QA) standard that you need. We manufacture and analytically verify every DMR-QA standard we sell and manage every aspect of the program from our headquarters in Colorado. Our control over the entire DMR-QA process from start to finish is your assurance of unsurpassed quality and customer service. Unless otherwise noted, all DMR-QA Chemistry Standards are provided as concentrates ready to dilute. Sufficient standard is provided to produce two liters of sample per concentrate. All standards are compliant with the DMR-QA program criteria.

## DMR-QA Chemistry

### DMR-QA Demand

Store at 4 °C  
 Provided as a >20 mL concentrate in water preserved with 0.5% (v/v) H<sub>2</sub>SO<sub>4</sub> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| BOD                   | 18  | 230  | mg/L  |
| CBOD                  | 18  | 230  | mg/L  |
| COD                   | 30  | 250  | mg/L  |
| TOC                   | 6.0 | 100  | mg/L  |

### DMR-QA Hexavalent Chromium

Store at 20 - 25 °C  
 Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Chromium VI           | 90  | 900  | µg/L  |

### DMR-QA Minerals Set

This complete set includes DMR-QA Minerals, Hardness, and Conductivity containers.

#### DMR-QA Minerals 1

Store at 20 - 25 °C  
 Provided as a 500 mL ready to use standard in water contained in a 500 mL poly bottle.

| Analyte Concentration                 | Low  | High | Units |
|---------------------------------------|------|------|-------|
| Total Alkalinity (CaCO <sub>3</sub> ) | 25   | 400  | mg/L  |
| Chloride                              | 35   | 275  | mg/L  |
| Fluoride                              | 0.40 | 4.0  | mg/L  |
| Sulfate                               | 5.0  | 125  | mg/L  |

#### DMR-QA Minerals 2 - Hardness

Store at 20 - 25 °C  
 Provided as a 500 mL ready to use standard in water contained in a 500 mL poly bottle.

| Analyte Concentration                  | Low | High | Units |
|----------------------------------------|-----|------|-------|
| Total Hardness (as CaCO <sub>3</sub> ) | 40  | 415  | mg/L  |

#### DMR-QA Conductivity

Store at 20 - 25 °C  
 Provided as a 125 mL ready to use standard in water contained in a 125 mL poly bottle.

| Analyte Concentration        | Low | High | Units    |
|------------------------------|-----|------|----------|
| Specific Conductance (25° C) | 200 | 1200 | µmhos/cm |

### DMR-QA Nutrients Set

This complete set includes DMR-QA Nutrients 1 (Simple), 2 (Complex), and 3 (Nitrite).

#### DMR-QA Nutrients 1 - Simple Nutrients

Store at 4 °C  
 Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Ammonia as N          | 1.0  | 20   | mg/L  |
| Nitrate as N          | 2.0  | 25   | mg/L  |
| Orthophosphate as P   | 0.50 | 5.5  | mg/L  |

### DMR-QA Nutrients 2 - Complex Nutrients

Store at 4 °C  
 Provided as a >20 mL concentrate in water preserved with H<sub>2</sub>SO<sub>4</sub> to pH <2 contained in a 24 mL clear glass vial.

| Analyte Concentration         | Low  | High | Units |
|-------------------------------|------|------|-------|
| Total Kjeldahl Nitrogen (TKN) | 3.0  | 35   | mg/L  |
| Total Phosphorous             | 0.50 | 10   | mg/L  |

### DMR-QA Nutrients 3 - Nitrite

Store at 4 °C  
 Provided as a 5 mL concentrate in water flame sealed in a 5 mL amber ampoule.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Nitrite as N          | 0.40 | 4.0  | mg/L  |

### DMR-QA Oil and Grease

Store at 20 - 25 °C  
 Provided as a >20 mL concentrate in water preserved with 0.1% HCl contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Oil & Grease          | 20  | 200  | mg/L  |

### DMR-QA Oil and Grease 1L

Store at 20 - 25 °C  
 Provided as a 1 L ready to use standard in water preserved with 0.1% HCl contained in a 32 oz clear glass bottle.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Oil & Grease          | 20  | 200  | mg/L  |

### DMR-QA pH

Store at 20 - 25 °C  
 Provided as a 100 mL ready to use standard in water contained in a 125 mL poly bottle.

| Analyte Concentration | Low | High | Units    |
|-----------------------|-----|------|----------|
| pH                    | 5.0 | 10   | SI Units |

### DMR-QA Phenolics

Store at 4 °C  
 Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration  | Low  | High | Units |
|------------------------|------|------|-------|
| Total Phenolics (4AAP) | 0.50 | 5    | mg/L  |

### DMR-QA Residual Chlorine

Store at 4 °C  
 Provided as a 5 mL concentrate in water flame sealed in a 5 mL amber ampoule.

| Analyte Concentration   | Low  | High | Units |
|-------------------------|------|------|-------|
| Total Residual Chlorine | 0.50 | 3.0  | mg/L  |

### DMR-QA Residual Chlorine - Low Level

Store at 4 °C  
 Provided as a 5 mL concentrate in water flame sealed in a 5 mL amber ampoule.

| Analyte Concentration   | Low | High | Units |
|-------------------------|-----|------|-------|
| Total Residual Chlorine | 50  | 250  | µg/L  |

# DMR-QA 34 Standards

## DMR-QA Chemistry

### DMR-QA Settleable Solids

Store at 20 - 25 °C

Provided as a solid material in a 40 mL vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Settleable Solids     | 5.0 | 50   | mL/L  |

### DMR-QA Solids

Store at 20 - 25 °C

Provided as a 500 mL ready to use standard in water 500 mL poly bottle.

| Analyte Concentration                | Low | High | Units |
|--------------------------------------|-----|------|-------|
| Total Dissolved Solids at 180° (TFR) | 140 | 800  | mg/L  |
| Non-Filterable Residue (TSS)         | 20  | 100  | mg/L  |

### DMR-QA Total Cyanide

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with NaOH to pH > 10 contained in a 24 mL amber glass vial.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Total Cyanide         | 0.10 | 1.0  | mg/L  |

### DMR-QA Trace Metals Set

This complete set includes DMR-QA Trace Metals 1 and Mercury vials.

### DMR-QA Trace Metals 1

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 2% HNO<sub>3</sub> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Aluminum              | 200 | 4000 | µg/L  |
| Antimony              | 90  | 900  | µg/L  |
| Arsenic               | 90  | 900  | µg/L  |
| Barium                | 100 | 2500 | µg/L  |
| Beryllium             | 50  | 900  | µg/L  |
| Cadmium               | 100 | 1000 | µg/L  |
| Chromium              | 100 | 1000 | µg/L  |
| Cobalt                | 100 | 1000 | µg/L  |
| Copper                | 100 | 1000 | µg/L  |
| Iron                  | 200 | 4000 | µg/L  |
| Lead                  | 100 | 1500 | µg/L  |
| Manganese             | 200 | 2000 | µg/L  |
| Molybdenum            | 60  | 600  | µg/L  |
| Nickel                | 200 | 2000 | µg/L  |
| Selenium              | 100 | 1000 | µg/L  |
| Silver                | 100 | 1000 | µg/L  |
| Thallium              | 80  | 800  | µg/L  |
| Vanadium              | 50  | 2000 | µg/L  |
| Zinc                  | 300 | 2000 | µg/L  |

### DMR-QA Mercury

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 1-2% HNO<sub>3</sub> + 10 ppm Cr<sup>6+</sup> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Mercury               | 3.0 | 30   | µg/L  |

### DMR-QA Mercury - Low Level

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with 1-2% HNO<sub>3</sub> + 10 ppm Cr<sup>6+</sup> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Mercury               | 20  | 100  | ng/L  |

### DMR-QA Turbidity

Store at 20 - 25 °C

Provided as a >20 mL concentrate in water preserved with trace NaOCl contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Turbidity             | 2.0 | 30   | NTU   |

## DMR-QA Micro

### DMR-QA Microbiology Total & Fecal

Store at 4 °C

Provided as a 100 mL whole volume, ready to use standard in a 100 mL sterile clear plastic bottle.

| Analyte Concentration | Low | High | Units     |
|-----------------------|-----|------|-----------|
| Fecal Coliform, MF    | 20  | 2400 | CFU/100mL |
| Total Coliform, MF    | 20  | 2400 | CFU/100mL |
| E. Coli, MF           | 20  | 2400 | CFU/100mL |
| Fecal Coliform, MPN   | 20  | 2400 | MPN/100mL |
| Total Coliform, MPN   | 20  | 2400 | MPN/100mL |
| E. Coli, MPN          | 20  | 2400 | MPN/100mL |

## DMR-QA WET

### WET Fathead Minnow Method 13

Store at 20 - 25 °C

48-hr acute, non-renewal, 25 °C, mod-hard synthetic freshwater.

Provided as a 125 mL concentrate contained in a 125 mL poly bottle.

| Analyte Concentration                | Low  | High | Units |
|--------------------------------------|------|------|-------|
| Fathead Minnow Acute MHSF 25° - LC50 | 6.25 | 100  | S.U.  |

### WET Fathead Minnow Method 15

Store at 20 - 25 °C

7-day short-term chronic, daily renewal, mod-hard syn freshwater.

Provided as a 500 mL concentrate in water contained in a 500 mL poly bottle.

| Analyte Concentration                          | Low  | High | Units |
|------------------------------------------------|------|------|-------|
| Fathead Minnow Chronic MHSF - Survival NOEC    | 6.25 | 100  | S.U.  |
| Fathead Minnow Chronic MHSF - Growth IC25 (ON) | 6.25 | 100  | S.U.  |
| Fathead Minnow Chronic MHSF - Growth NOEC (ON) | 6.25 | 100  | S.U.  |

### WET Fathead Minnow Method 16

Store at 20 - 25 °C

7-day short-term chronic, daily renewal, 20% diluted mineral water.

Provided as a 500 mL concentrate in water contained in a 500 mL poly bottle.

| Analyte Concentration                             | Low  | High | Units |
|---------------------------------------------------|------|------|-------|
| Fathead Minnow Chronic 20% DMW - Survival NOEC    | 6.25 | 100  | S.U.  |
| Fathead Minnow Chronic 20% DMW - Growth IC25 (ON) | 6.25 | 100  | S.U.  |
| Fathead Minnow Chronic 20% DMW - Growth NOEC (ON) | 6.25 | 100  | S.U.  |

### WET Ceriodaphnia Method 19

Store at 20 - 25 °C

48-hr acute, renewal, 25 °C, mod-hard synthetic freshwater.

Provided as a 125 mL concentrate contained in a 125 mL poly bottle.

| Analyte Concentration              | Low  | High | Units |
|------------------------------------|------|------|-------|
| Ceriodaphnia Acute MHSF 25° - LC50 | 6.25 | 100  | S.U.  |

### WET Ceriodaphnia Method 20

Store at 20 - 25 °C

48-hr acute, renewal, 25 °C, 20% diluted mineral water.

Provided as a 125 mL concentrate contained in a 125 mL poly bottle.

| Analyte Concentration                 | Low  | High | Units |
|---------------------------------------|------|------|-------|
| Ceriodaphnia Acute 20% DMW 25° - LC50 | 6.25 | 100  | S.U.  |

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## WET Ceriodaphnia Method 21

Store at 20 - 25 °C  
7-day short-term chronic daily renewal, mod-hard syn freshwater. Provided as a 500 mL concentrate contained in a 500 mL poly bottle.

| Analyte Concentration                         | Low  | High | Units |
|-----------------------------------------------|------|------|-------|
| Ceriodaphnia Chronic MHSF - Survival NOEC     | 6.25 | 100  | S.U.  |
| Ceriodaphnia Chronic MHSF - Reproduction IC25 | 6.25 | 100  | S.U.  |
| Ceriodaphnia Chronic MHSF - Reproduction NOEC | 6.25 | 100  | S.U.  |

## WET Ceriodaphnia Method 22

Store at 20 - 25 °C  
7-day short-term chronic renewal, 20% diluted mineral water. Provided as a 500 mL concentrate contained in a 500 mL poly bottle.

| Analyte Concentration                            | Low  | High | Units |
|--------------------------------------------------|------|------|-------|
| Ceriodaphnia Chronic 20% DMW - Survival NOEC     | 6.25 | 100  | S.U.  |
| Ceriodaphnia Chronic 20% DMW - Reproduction IC25 | 6.25 | 100  | S.U.  |
| Ceriodaphnia Chronic 20% DMW - Reproduction NOEC | 6.25 | 100  | S.U.  |

## WET Daphnia Method 32

Store at 20 - 25 °C  
48-hr acute, non-renewal, 20 °C, mod-hard synthetic freshwater. Provided as a 125 mL concentrate contained in a 125 mL poly bottle.

| Analyte Concentration               | Low  | High | Units |
|-------------------------------------|------|------|-------|
| Daphnia Magna Acute MHSF 25° - LC50 | 6.25 | 100  | S.U.  |

## WET Daphnia Method 38

Store at 20 - 25 °C  
48-hr acute, non-renewal, 25 °C, mod-hard synthetic freshwater. Provided as a 125 mL concentrate contained in a 125 mL poly bottle.

| Analyte Concentration               | Low  | High | Units |
|-------------------------------------|------|------|-------|
| Daphnia Pulex Acute MHSF 25° - LC50 | 6.25 | 100  | S.U.  |

## WET Mysid Method 42

Store at 20 - 25 °C  
48-hr acute, non-renewal, 20 °C, 40 fathoms artificial seawater. Provided as a 125 mL concentrate in water contained in a 125 mL poly bottle.

| Analyte Concentration       | Low  | High | Units |
|-----------------------------|------|------|-------|
| Mysid Acute 40 F 25° - LC50 | 6.25 | 100  | S.U.  |

## WET Mysid Method 43

Store at 20 - 25 °C  
7-day short-term chronic, daily renewal, 40 fathoms artificial seawater. Provided as a 500 mL concentrate in water contained in a 500 mL poly bottle.

| Analyte Concentration                 | Low  | High | Units |
|---------------------------------------|------|------|-------|
| Mysid Chronic 40 F - Survival NOEC    | 6.25 | 100  | S.U.  |
| Mysid Chronic 40 F - Growth IC25 (ON) | 6.25 | 100  | S.U.  |
| Mysid Chronic 40 F - Growth NOEC (ON) | 6.25 | 100  | S.U.  |

## WET Menidia Method 44

Store at 20 - 25 °C  
48-hr acute, non-renewal, 20 °C, 40 fathoms artificial seawater. Provided as a 125 mL concentrate in water contained in a 125 mL poly bottle.

| Analyte Concentration         | Low  | High | Units |
|-------------------------------|------|------|-------|
| Menidia Acute 40 F 25° - LC50 | 6.25 | 100  | S.U.  |

## WET Menidia Method 45

Store at 20 - 25 °C  
7-day short-term chronic, daily renewal, 40 fathoms artificial seawater. Provided as a 1 L concentrate in water contained in a 1 L poly bottle.

| Analyte Concentration                   | Low  | High | Units |
|-----------------------------------------|------|------|-------|
| Menidia Chronic 40 F - Survival NOEC    | 6.25 | 100  | S.U.  |
| Menidia Chronic 40 F - Growth IC25 (ON) | 6.25 | 100  | S.U.  |
| Menidia Chronic 40 F - Growth NOEC (ON) | 6.25 | 100  | S.U.  |

## WET Sheepshead Minnow Method 46

Store at 20 - 25 °C  
48-hr acute, non-renewal, 20 °C, 40 fathoms artificial seawater. Provided as a 250 mL concentrate in water contained in a 250 mL poly bottle.

| Analyte Concentration                   | Low  | High | Units |
|-----------------------------------------|------|------|-------|
| Sheepshead Minnow Acute 40 F 25° - LC50 | 6.25 | 100  | S.U.  |

## WET Sheepshead Minnow Method 47

Store at 20 - 25 °C  
7-day short-term chronic, daily renewal, 40 fathoms artificial seawater. Provided as a 1 L concentrate in water contained in a 1 L poly bottle.

| Analyte Concentration                           | Low  | High | Units |
|-------------------------------------------------|------|------|-------|
| Sheepshead Minnow Chronic 40 F (Survival NOEC)  | 6.25 | 100  | S.U.  |
| Sheepshead Minnow Chronic 40 F (Growth IC25 ON) | 6.25 | 100  | S.U.  |
| Sheepshead Minnow Chronic 40 F (Growth NOEC ON) | 6.25 | 100  | S.U.  |



# Biosolids / Sludge

## SLD Standards

### PT Availability

M = Monthly

Q = Quarterly

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information                  | Proficiency Testing |        | Quality Control |        | Rapid Return™  |        |              |
|---------------------------------------|---------------------|--------|-----------------|--------|----------------|--------|--------------|
| Description                           | Catalog Number      | Price  | Catalog Number  | Price  | Catalog Number | Price  | Availability |
| <b>Biosolids and Sludge Standards</b> |                     |        |                 |        |                |        |              |
| Biosolids Anions                      | PT-AN-SLD           | \$ 146 | QC-AN-SLD       | \$ 131 | RR-AN-SLD      | \$ 168 | Q            |
| Biosolids Corrosivity/pH              | PT-CORR-SLD         | 109    | QC-CORR-SLD     | 98     | RR-CORR-SLD    | 125    | Q            |
| Biosolids Nutrients                   | PT-NUT-SLD          | 178    | QC-NUT-SLD      | 160    | RR-NUT-SLD     | 205    | Q            |
| Biosolids Solids                      | PT-SOL-SLD          | 178    | QC-SOL-SLD      | 160    | RR-SOL-SLD     | 205    | Q            |
| Biosolids Trace Metals                | PT-MET-SLD          | 200    | QC-MET-SLD      | 180    | RR-MET-SLD     | 230    | Q            |

| <b>Biosolids/Sludge 2014 Schedule</b> |          |        |       |
|---------------------------------------|----------|--------|-------|
|                                       | Study ID | Open   | Close |
| January                               | SLD0114  | 20-Jan | 6-Mar |
| April                                 | SLD0414  | 21-Apr | 5-Jun |
| July                                  | SLD0714  | 21-Jul | 4-Sep |
| October                               | SLD1014  | 20-Oct | 4-Dec |



NOTE: For Biosolids Microbiological Standards see p. 24.



# Biosolids / Sludge

## SLD Standards

Biosolids are falling under more environmental regulation both internationally and domestically. The Phenova Whole-Volume Biosolids Studies allow your laboratory to work with the same sample type that you see daily. The analyte lists include anions, trace metals, and quantitative microbiological components. Our matrix preparation ensures that each standard is homogenous, both in terms of the matrix and the fortified analytes, so you aren't left to wonder if it is a true biosolids sample.

### Biosolids Anions (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 40 g pre-spiked biosolids matrix in a 2 oz glass jar.

| Analyte Concentration | Low | High  | Units |
|-----------------------|-----|-------|-------|
| Bromide               | 10  | 50000 | mg/kg |
| Chloride              | 10  | 50000 | mg/kg |
| Fluoride              | 100 | 50000 | mg/kg |
| Nitrate as N          | 10  | 50000 | mg/kg |
| Orthophosphate as P   | 10  | 50000 | mg/kg |
| Sulfate               | 10  | 50000 | mg/kg |

### Biosolids Corrosivity/pH (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 40 g pre-spiked biosolids matrix in a 2 oz glass jar.

| Analyte Concentration | Low | High | Units    |
|-----------------------|-----|------|----------|
| Corrosivity (pH)      | 2.0 | 12   | SI Units |

### Biosolids Nutrients (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 40 g pre-spiked biosolids matrix in a 2 oz glass jar.

| Analyte Concentration         | Low    | High   | Units |
|-------------------------------|--------|--------|-------|
| Ammonia as N                  | 1000   | 30000  | mg/kg |
| Total Kjeldahl Nitrogen (TKN) | 20000  | 100000 | mg/kg |
| Total Organic Carbon (TOC)    | 100000 | 500000 | mg/kg |
| Total Phosphorous             | 20000  | 100000 | mg/kg |

### Biosolids Solids (Non-TNI/State Specific)

Store at 4 °C

Provided as a 40 g pre-spiked biosolids matrix in a 4 oz glass jar.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Total Solids          | 50.0 | 95.0 | %     |
| Percent Moisture      | 5.0  | 90.0 | %     |
| Volatile Solids       | 2.5  | 70.0 | %     |
| Fixed Solids          | 5.0  | 90.0 | %     |

### Biosolids Trace Metals (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 40 g pre-spiked biosolids matrix in a 2 oz glass jar.

| Analyte Concentration | Low  | High  | Units |
|-----------------------|------|-------|-------|
| Aluminum              | 1000 | 25000 | mg/kg |
| Antimony              | 80   | 300   | mg/kg |
| Arsenic               | 40   | 400   | mg/kg |
| Barium                | 100  | 1000  | mg/kg |
| Beryllium             | 40   | 400   | mg/kg |
| Boron                 | 80   | 800   | mg/kg |
| Cadmium               | 40   | 400   | mg/kg |
| Calcium               | 1500 | 30000 | mg/kg |
| Chromium              | 40   | 400   | mg/kg |
| Cobalt                | 40   | 400   | mg/kg |
| Copper                | 40   | 2500  | mg/kg |
| Iron                  | 1000 | 50000 | mg/kg |
| Lead                  | 40   | 400   | mg/kg |
| Magnesium             | 1200 | 25000 | mg/kg |
| Manganese             | 100  | 2000  | mg/kg |
| Mercury               | 1.0  | 35    | mg/kg |
| Molybdenum            | 30   | 300   | mg/kg |
| Nickel                | 40   | 500   | mg/kg |
| Potassium             | 1400 | 25000 | mg/kg |
| Selenium              | 40   | 400   | mg/kg |
| Silver                | 20   | 100   | mg/kg |
| Sodium                | 150  | 15000 | mg/kg |
| Thallium              | 40   | 400   | mg/kg |
| Tin                   | 75   | 250   | mg/kg |
| Vanadium              | 40   | 400   | mg/kg |
| Zinc                  | 100  | 1500  | mg/kg |

# Soil/Hazardous Waste

## HW Inorganic Standards

### PT Availability

M = Monthly

Q = Quarterly - Jan, Apr, Jul, Oct

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information                        | Proficiency Testing |        | Quality Control  |        | Rapid Return™    |        |
|---------------------------------------------|---------------------|--------|------------------|--------|------------------|--------|
| Description                                 | Catalog Number      | Price  | Catalog Number   | Price  | Catalog Number   | Price  |
| <b>TNI Standards</b>                        |                     |        |                  |        |                  |        |
| SOIL/HW Anions                              | PT-AN-SOIL          | \$ 126 | QC-AN-SOIL       | \$ 113 | RR-AN-SOIL       | \$ 145 |
| SOIL/HW Corrosivity/pH                      | PT-CORR-SOIL        | 100    | QC-CORR-SOIL     | 90     | RR-CORR-SOIL     | 112    |
| SOIL/HW Cyanide                             | PT-CN-SOIL          | 121    | QC-CN-SOIL       | 109    | RR-CN-SOIL       | 139    |
| SOIL/HW Flash Point                         | PT-FP-SOIL          | 100    | QC-FP-SOIL       | 90     | RR-FP-SOIL       | 115    |
| SOIL/HW Hexavalent Chromium                 | PT-CR6-SOIL         | 100    | QC-CR6-SOIL      | 90     | RR-CR6-SOIL      | 115    |
| SOIL/HW Metals                              | PT-MET-SOIL         | 178    | QC-MET-SOIL      | 160    | RR-MET-SOIL      | 205    |
| SOIL/HW Nutrients                           | PT-NUT-SOIL         | 158    | QC-NUT-SOIL      | 142    | RR-NUT-SOIL      | 182    |
| SOIL/HW Oil and Grease                      | PT-OGR-SOIL         | 132    | QC-OGR-SOIL      | 119    | RR-OGR-SOIL      | 152    |
| SOIL/HW TPH                                 | PT-TPH-SOIL         | 132    | QC-TPH-SOIL      | 119    | RR-TPH-SOIL      | 152    |
| <b>Non-TNI and State Specific Standards</b> |                     |        |                  |        |                  |        |
| SOIL/HW Amenable Cyanide                    | PT-CNA-SOIL         | \$ 148 | QC-CNA-SOIL      | \$ 133 | RR-CNA-SOIL      | \$ 170 |
| SOIL/HW California WET Metals               |                     |        | QC-CAWETMET-SOIL | 206    | RR-CAWETMET-SOIL | 237    |
| SOIL/HW Nitrite as N                        | PT-NO2-SOIL         | 153    | QC-NO2-SOIL      | 138    | RR-NO2-SOIL      | 176    |
| SOIL/HW Particle Size                       | PT-PSA-SOIL         | 270    | QC-PSA-SOIL      | 243    | RR-PSA-SOIL      | 311    |
| SOIL/HW Perchlorate                         | PT-PERC-SOIL        | 109    | QC-PERC-SOIL     | 98     | RR-PERC-SOIL     | 126    |
| SOIL/HW Reactive Cyanide                    | PT-CNR-SOIL         | 156    | QC-CNR-SOIL      | 140    | RR-CNR-SOIL      | 179    |
| SOIL/HW Reactive Sulfide                    | PT-S2R-SOIL         | 156    | QC-S2R-SOIL      | 140    | RR-S2R-SOIL      | 179    |
| SOIL/HW Sand, Silt, and Clay                | PT-SSC-SOIL         | 270    | QC-SSC-SOIL      | 243    | RR-SSC-SOIL      | 311    |
| SOIL/HW Solids                              | PT-SOL-SOIL         | 156    | QC-SOL-SOIL      | 140    | RR-SOL-SOIL      | 179    |
| SOIL/HW Total Organic Halides (TOX)         | PT-TOX-SOIL         | 137    | QC-TOX-SOIL      | 123    | RR-TOX-SOIL      | 158    |
| SOIL/HW Total Sulfide                       | PT-S2T-SOIL         | 148    | QC-S2T-SOIL      | 133    | RR-S2T-SOIL      | 170    |
| SOIL/HW TCLP Metals                         |                     |        | QC-TCLPMET-SOIL  | 178    | RR-TCLPMET-SOIL  | 228    |

| Soil/HW 2014 Schedule |          |        |        |
|-----------------------|----------|--------|--------|
|                       | Study ID | Open   | Close  |
| January               | HW0114   | 27-Jan | 13-Mar |
| April                 | HW0414   | 28-Apr | 12-Jun |
| July                  | HW0714   | 28-Jul | 11-Sep |
| October               | HW1014   | 27-Oct | 11-Dec |



# Soil/Hazardous Waste

## HW Inorganic Standards

Phenova Soil/HW PT standards are 100 % dry weight, so percent moisture analysis is not required. In addition to saving time with these convenient standards, your lab can also decrease costs by switching to Phenova Soil/HW PT standards. These standards are provided as ready to use 40 g standards in sufficient amounts for at least two methods unless otherwise noted. All standards are compliant with EPA, TNI and/or state specific criteria.

### SOIL/HW Anions

Store at 20 - 25 °C

Provided as a 40 g pre-spiked soil matrix in a 2 oz glass jar.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Bromide               | 10  | 100  | mg/kg |
| Chloride              | 200 | 1000 | mg/kg |
| Fluoride              | 25  | 500  | mg/kg |
| Nitrate as N          | 25  | 500  | mg/kg |
| Orthophosphate as P   | 25  | 500  | mg/kg |
| Sulfate               | 25  | 2000 | mg/kg |

### SOIL/HW California WET Metals (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a >20 g Ottawa sand matrix in a 40 mL vial with a 20 mL spiking solution in water preserved with 2% HNO<sub>3</sub> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low   | High | Units |
|-----------------------|-------|------|-------|
| Aluminum              | 2.0   | 40   | mg/L  |
| Antimony              | 0.90  | 10   | mg/L  |
| Arsenic               | 0.70  | 10   | mg/L  |
| Barium                | 1.0   | 25   | mg/L  |
| Beryllium             | 0.050 | 10   | mg/L  |
| Boron                 | 8.0   | 20   | mg/L  |
| Cadmium               | 0.050 | 10   | mg/L  |
| Chromium              | 0.10  | 10   | mg/L  |
| Cobalt                | 0.20  | 10   | mg/L  |
| Copper                | 0.40  | 10   | mg/L  |
| Iron                  | 2.0   | 40   | mg/L  |
| Lead                  | 0.50  | 30   | mg/L  |
| Manganese             | 0.50  | 40   | mg/L  |
| Molybdenum            | 0.50  | 6.0  | mg/L  |
| Nickel                | 0.50  | 30   | mg/L  |
| Selenium              | 0.50  | 20   | mg/L  |
| Silver                | 0.20  | 6.0  | mg/L  |
| Strontium             | 0.30  | 3.0  | mg/L  |
| Thallium              | 0.50  | 10   | mg/L  |
| Vanadium              | 0.50  | 20   | mg/L  |
| Zinc                  | 1.0   | 20   | mg/L  |

### SOIL/HW Corrosivity/pH

Store at 20 - 25 °C

Provided as a 40 g pre-spiked soil matrix in a 2 oz glass jar.

| Analyte Concentration | Low | High | Units    |
|-----------------------|-----|------|----------|
| Corrosivity (pH)      | 2.0 | 12   | SI Units |

### SOIL/HW Cyanide

Store at 20 - 25 °C

Provided as a 40 g pre-spiked soil matrix in a 2 oz glass jar.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Cyanide, total        | 20  | 200  | mg/kg |

### SOIL/HW Amenable Cyanide (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 20 g Ottawa sand matrix in a 40 mL vial with a >20 mL spiking solution in water contained in a 24 mL amber glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Amenable Cyanide      | 5.0 | 100  | mg/kg |

### SOIL/HW Flash Point

Store at 20 - 25 °C

Provided as a 2 x 40 mL ready to use standard contained in screw cap vials.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Flashpoint            | 100 | 200  | °F    |

### SOIL/HW Hexavalent Chromium

Store at 20 - 25 °C

Provided as a 40 g pre-spiked soil matrix in a 2 oz glass jar.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Chromium VI           | 40  | 300  | mg/kg |

### SOIL/HW Nitrite as N (Non-TNI/State Specific)

Store at 4 °C

Provided as a 20 g Ottawa sand matrix in a 40 mL vial with a 5 mL spiking solution in water flame sealed in a 5 mL amber ampoule.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Nitrite as N          | 10  | 500  | mg/kg |

### SOIL/HW Nutrients

Store at 20 - 25 °C

Provided as a 40 g pre-spiked soil matrix in a 2 oz glass jar.

| Analyte Concentration         | Low  | High  | Units |
|-------------------------------|------|-------|-------|
| Ammonia as N                  | 300  | 3000  | mg/kg |
| Total Kjeldahl Nitrogen (TKN) | 400  | 4000  | mg/kg |
| Total Organic Carbon (TOC)    | 1000 | 15000 | mg/kg |
| Total Phosphorous             | 300  | 3000  | mg/kg |

### SOIL/HW Oil and Grease

Store at 20 - 25 °C

Provided as a 40 g pre-spiked soil matrix in a 2 oz glass jar.

| Analyte Concentration                        | Low | High | Units |
|----------------------------------------------|-----|------|-------|
| Oil & Grease (n-Hexane Extractable material) | 300 | 3000 | mg/kg |

### SOIL/HW Particle Size (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 100 g ready to use standard in a 125 mL poly bottle.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Sand (>75 µm)         | 1.0 | 50   | %     |

### SOIL/HW Perchlorate (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 40 g pre-spiked soil matrix in a 2 oz glass jar.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Perchlorate           | 100 | 500  | µg/kg |

### SOIL/HW Reactive Cyanide (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 20 g Ottawa sand matrix in a 40 mL vial with a >20 mL spiking solution in water contained in a 24 mL amber glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Reactive Cyanide      | 50  | 1500 | mg/kg |

### SOIL/HW Reactive Sulfide (Non-TNI/State Specific)

Store at 4 °C

Provided as a 20 g Ottawa sand matrix in a 40 mL VOA vial with a >20 mL spiking solution in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Reactive Sulfide      | 50  | 1500 | mg/kg |

### SOIL/HW Sand, Silt, and Clay (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 100 g ready to use standard in a 125 mL poly bottle.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Sand                  | 1.0 | 99   | %     |
| Silt                  | 1.0 | 99   | %     |
| Clay                  | 1.0 | 99   | %     |

# Soil/Hazardous Waste (Inorganics continued)

## SOIL/HW Solids (Non-TNI/State Specific)

Store at 4 °C

Provided as a 40 g pre-spiked soil matrix in a 4 oz glass jar.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Total Solids          | 70  | 90   | %     |
| Fixed Solids          | 50  | 100  | %     |
| Volatile Solids       | 5.0 | 20   | %     |
| Percent Moisture      | 10  | 30   | %     |

## SOIL/HW Total Organic Halides (Non-TNI/State Specific)

Store at 4 °C

Provided as a 20 g pre-spiked soil matrix flame sealed in a >20 mL amber ampoule.

| Analyte Concentration       | Low | High | Units |
|-----------------------------|-----|------|-------|
| Total Organic Halides (TOX) | 50  | 500  | mg/kg |

## SOIL/HW Total Petroleum Hydrocarbons

Store at 20 - 25 °C

Provided as a 40 g pre-spiked soil matrix in a 2 oz glass jar.

| Analyte Concentration        | Low | High | Units |
|------------------------------|-----|------|-------|
| Total Petroleum Hydrocarbons | 300 | 3000 | mg/kg |

## SOIL/HW Total Sulfide (Non-TNI/State Specific)

Store at 4 °C

Provided as a 20 g Ottawa sand matrix in a 40 mL vial with a >20 mL spiking solution in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Total Sulfide         | 10  | 500  | mg/kg |

## SOIL/HW Trace Metals

Store at 20 - 25 °C

Provided as a 10 g pre-spiked soil matrix in a 2 oz. glass jar.

| Analyte Concentration | Low  | High  | Units |
|-----------------------|------|-------|-------|
| Aluminum              | 1000 | 25000 | mg/kg |
| Antimony              | 80   | 300   | mg/kg |
| Arsenic               | 40   | 400   | mg/kg |
| Barium                | 100  | 1000  | mg/kg |
| Beryllium             | 40   | 400   | mg/kg |
| Boron                 | 80   | 800   | mg/kg |
| Cadmium               | 40   | 400   | mg/kg |
| Calcium               | 1500 | 25000 | mg/kg |
| Chromium              | 40   | 400   | mg/kg |
| Cobalt                | 40   | 400   | mg/kg |
| Copper                | 40   | 400   | mg/kg |
| Iron                  | 1000 | 50000 | mg/kg |
| Lead                  | 40   | 400   | mg/kg |
| Lithium               | 150  | 1500  | mg/kg |
| Magnesium             | 1200 | 25000 | mg/kg |
| Manganese             | 100  | 2000  | mg/kg |
| Mercury               | 1.0  | 35    | mg/kg |
| Molybdenum            | 30   | 300   | mg/kg |
| Nickel                | 40   | 500   | mg/kg |
| Potassium             | 1400 | 25000 | mg/kg |
| Selenium              | 40   | 400   | mg/kg |
| Silver                | 20   | 100   | mg/kg |
| Sodium                | 150  | 15000 | mg/kg |
| Strontium             | 40   | 400   | mg/kg |
| Thallium              | 40   | 400   | mg/kg |
| Tin                   | 75   | 250   | mg/kg |
| Titanium              | 40   | 400   | mg/kg |
| Uranium               | 20   | 100   | mg/kg |
| Vanadium              | 40   | 400   | mg/kg |
| Zinc                  | 100  | 1000  | mg/kg |

## SOIL/TCLP Metals (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a > 100 mL concentrate in water preserved with 2% HNO<sub>3</sub> contained in a 125 mL poly bottle.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Antimony              | 1.0  | 25   | mg/L  |
| Arsenic               | 1.0  | 40   | mg/L  |
| Barium                | 1.0  | 50   | mg/L  |
| Beryllium             | 1.0  | 10   | mg/L  |
| Boron                 | 8.0  | 20   | mg/L  |
| Cadmium               | 1.0  | 30   | mg/L  |
| Chromium              | 1.0  | 30   | mg/L  |
| Cobalt                | 1.0  | 50   | mg/L  |
| Copper                | 1.0  | 50   | mg/L  |
| Lead                  | 1.0  | 30   | mg/L  |
| Mercury               | 0.10 | 3.0  | mg/L  |
| Nickel                | 1.0  | 40   | mg/L  |
| Selenium              | 1.0  | 50   | mg/L  |
| Silver                | 1.0  | 25   | mg/L  |
| Thallium              | 1.0  | 10   | mg/L  |
| Zinc                  | 1.0  | 50   | mg/L  |



# Soil/Hazardous Waste

## HW Organic Standards

### PT Availability

M = Monthly

Q = Quarterly - Jan, Apr, Jul, Oct

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information                        |                | Proficiency Testing |                  | Quality Control |                  | Rapid Return™ |              |
|---------------------------------------------|----------------|---------------------|------------------|-----------------|------------------|---------------|--------------|
| Description                                 | Catalog Number | Price               | Catalog Number   | Price           | Catalog Number   | Price         | Availability |
| <b>TNI Standards</b>                        |                |                     |                  |                 |                  |               |              |
| SOIL/HW BNAs                                | PT-BNA-SOIL    | \$ 215              | QC-BNA-SOIL      | \$ 194          | RR-BNA-SOIL      | \$ 248        | Q            |
| SOIL/HW BTEX                                | PT-BTEX-SOIL   | 115                 | QC-BTEX-SOIL     | 104             | RR-BTEX-SOIL     | 132           | Q            |
| SOIL/HW Chlordane                           | PT-CHLR-SOIL   | 142                 | QC-CHLR-SOIL     | 128             | RR-CHLR-SOIL     | 163           | Q            |
| SOIL/HW Diesel in Soil                      | PT-DIES-SOIL   | 156                 | QC-DIES-SOIL     | 140             | RR-DIES-SOIL     | 179           | Q            |
| SOIL/HW Gasoline                            | PT-GAS-SOIL    | 156                 | QC-GAS-SOIL      | 140             | RR-GAS-SOIL      | 179           | Q            |
| SOIL/HW Herbicides                          | PT-HERB-SOIL   | 215                 | QC-HERB-SOIL     | 194             | RR-HERB-SOIL     | 247           | Q            |
| SOIL/HW PAHs                                | PT-PAH-SOIL    | 236                 | QC-PAH-SOIL      | 212             | RR-PAH-SOIL      | 271           | Q            |
| SOIL/HW PAH-GC                              |                |                     | QC-PAHGC-SOIL    | 234             | RR-PAHGC-SOIL    | 269           | RR           |
| SOIL/HW PCBs                                | PT-PCB-SOIL    | 206                 | QC-PCB-SOIL      | 185             | RR-PCB-SOIL      | 237           | Q            |
| SOIL/HW PCBs in Oil                         | PT-PCBO-SOIL   | 109                 | QC-PCBO-SOIL     | 98              | RR-PCBO-SOIL     | 125           | Q            |
| SOIL/HW Pesticides                          | PT-PEST-SOIL   | 168                 | QC-PEST-SOIL     | 151             | RR-PEST-SOIL     | 193           | Q            |
| SOIL/HW Toxaphene                           | PT-TXP-SOIL    | 142                 | QC-TXP-SOIL      | 128             | RR-TXP-SOIL      | 163           | Q            |
| SOIL/HW Volatiles                           | PT-VOA-SOIL    | 215                 | QC-VOA-SOIL      | 194             | RR-VOA-SOIL      | 247           | Q            |
| SOIL/HW VOA-GC Medium Level                 | PT-VOAMGC-SOIL | 224                 | QC-VOAMGC-SOIL   | 202             | RR-VOAMGC-SOIL   | 258           | Q            |
| <b>Non-TNI and State Specific Standards</b> |                |                     |                  |                 |                  |               |              |
| SOIL/HW Carbamates                          |                |                     | QC-CARB-SOIL     | \$ 194          | RR-CARB-SOIL     | \$ 247        | Q            |
| SOIL/HW Explosives                          | PT-EXP-SOIL    | \$ 236              | QC-EXP-SOIL      | 212             | RR-EXP-SOIL      | 271           | Q            |
| SOIL/HW Explosives by 8330B                 | PT-8330B-SOIL  | 432                 | QC-8330B-SOIL    | 389             | RR-8330B-SOIL    | 497           | Q            |
| SOIL/HW Gasoline Additives                  | PT-ADD-SOIL    | 115                 | QC-ADD-SOIL      | 104             | RR-ADD-SOIL      | 132           | Q            |
| SOIL/HW Glycols                             |                |                     | QC-GLYCOL-SOIL   | 141             | RR-GLYCOL-SOIL   | 163           | RR           |
| SOIL/HW Nitrogen Pesticides                 | PT-NP-SOIL     | 229                 | QC-NP-SOIL       | 206             | RR-NP-SOIL       | 264           | Q            |
| SOIL/HW Organic Phosphorous Pesticides      | PT-OPP-SOIL    | 215                 | QC-OPP-SOIL      | 194             | RR-OPP-SOIL      | 247           | Q            |
| SOIL/HW TCLP Herbicides                     |                |                     | QC-TCLPHERB-SOIL | 196             | RR-TCLPHERB-SOIL | 251           | Q            |
| SOIL/HW TCLP Pesticides                     |                |                     | QC-TCLPPEST-SOIL | 160             | RR-TCLPPEST-SOIL | 205           | Q            |
| SOIL/HW TCLP Semivolatiles                  |                |                     | QC-TCLPBNA-SOIL  | 206             | RR-TCLPBNA-SOIL  | 263           | Q            |
| SOIL/HW TCLP Volatiles                      |                |                     | QC-TCLPVOA-SOIL  | 178             | RR-TCLPVOA-SOIL  | 228           | Q            |

| Soil/HW 2014 Schedule |          |        |        |
|-----------------------|----------|--------|--------|
|                       | Study ID | Open   | Close  |
| January               | HW0114   | 27-Jan | 13-Mar |
| April                 | HW0414   | 28-Apr | 12-Jun |
| July                  | HW0714   | 28-Jul | 11-Sep |
| October               | HW1014   | 27-Oct | 11-Dec |

# Soil/Hazardous Waste

## HW Organic Standards

Phenova Soil/HW PT standards are 100% dry weight, so percent moisture analysis is not required. In addition to saving time with these convenient standards, your lab can also decrease costs by switching to Phenova Soil/HW PT standards. These standards are provided as 30 g standards in sufficient amounts for at least two methods, unless otherwise noted. All standards are compliant with EPA, TNI and/or state specific criteria. TCLP standards include RCRA specified analytes.

### SOIL/HW BNAs

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

Contains at least 60% of the EPA and TNI analytes randomly selected. Use with EPA method 8270.

| Analyte Concentration                          | Low  | High  | Units |
|------------------------------------------------|------|-------|-------|
| Acenaphthene                                   | 1000 | 12000 | µg/kg |
| Acenaphthylene                                 | 1000 | 12000 | µg/kg |
| 2-Amino-1-methylbenzene                        | 500  | 10000 | µg/kg |
| Aniline                                        | 500  | 10000 | µg/kg |
| Anthracene                                     | 1000 | 12000 | µg/kg |
| Benzo(a)anthracene                             | 1000 | 12000 | µg/kg |
| Benzo(b)fluoranthene                           | 1000 | 12000 | µg/kg |
| Benzo(k)fluoranthene                           | 1000 | 12000 | µg/kg |
| Benzo(g,h,i)perylene                           | 1000 | 12000 | µg/kg |
| Benzo(a)pyrene                                 | 1000 | 12000 | µg/kg |
| Benzidine                                      | 500  | 10000 | µg/kg |
| Benzoic acid                                   | 500  | 10000 | µg/kg |
| Benzotrifluoride                               | 500  | 10000 | µg/kg |
| Benzyl alcohol                                 | 500  | 10000 | µg/kg |
| Benzyl chloride                                | 500  | 10000 | µg/kg |
| 4-Bromophenyl-phenylether                      | 1500 | 15000 | µg/kg |
| Butyl benzyl phthalate                         | 1500 | 15000 | µg/kg |
| Carbazole                                      | 500  | 10000 | µg/kg |
| 4-Chloroaniline                                | 500  | 10000 | µg/kg |
| 4-Chloro-3-methylphenol                        | 1500 | 15000 | µg/kg |
| Bis(2-chloroethoxy)methane                     | 1500 | 15000 | µg/kg |
| Bis(2-chloroethyl)ether                        | 1500 | 15000 | µg/kg |
| Bis(2-chloroisopropyl) ether                   | 1500 | 15000 | µg/kg |
| 1-Chloronaphthalene                            | 500  | 10000 | µg/kg |
| 2-Chloronaphthalene                            | 1000 | 10000 | µg/kg |
| 2-Chlorophenol                                 | 1500 | 15000 | µg/kg |
| 2-Chlorophenyl-4-nitrophenylether              | 500  | 10000 | µg/kg |
| 3-Chlorophenyl-4-nitrophenylether              | 500  | 10000 | µg/kg |
| 4-Chlorophenyl-4-nitrophenylether              | 500  | 10000 | µg/kg |
| 4-Chlorophenyl-phenylether                     | 1500 | 15000 | µg/kg |
| Chrysene                                       | 1000 | 12000 | µg/kg |
| Diamylphthalate                                | 500  | 10000 | µg/kg |
| Dibenzo(a,h)anthracene                         | 1000 | 12000 | µg/kg |
| Dibenzofuran                                   | 1500 | 15000 | µg/kg |
| 2,4-Dibromophenyl-4-nitrophenylether           | 500  | 10000 | µg/kg |
| Di-n-butylphthalate                            | 1500 | 15000 | µg/kg |
| 1,2-Dichlorobenzene                            | 1500 | 15000 | µg/kg |
| 1,3-Dichlorobenzene                            | 1500 | 15000 | µg/kg |
| 1,4-Dichlorobenzene                            | 1500 | 15000 | µg/kg |
| 3,3'-Dichlorobenzidine                         | 500  | 10000 | µg/kg |
| 2,4-Dichlorophenol                             | 1500 | 15000 | µg/kg |
| 2,6-Dichlorophenol                             | 1500 | 15000 | µg/kg |
| 2,4-Dichlorophenyl-3-methyl-4-nitrophenylether | 500  | 10000 | µg/kg |
| 2,3-Dichlorophenyl-4-nitrophenylether          | 500  | 10000 | µg/kg |
| 2,4-Dichlorophenyl-4-nitrophenylether          | 500  | 10000 | µg/kg |
| 2,5-Dichlorophenyl-4-nitrophenylether          | 500  | 10000 | µg/kg |
| 2,6-Dichlorophenyl-4-nitrophenylether          | 500  | 10000 | µg/kg |
| 3,4-Dichlorophenyl-4-nitrophenylether          | 500  | 10000 | µg/kg |
| 3,5-Dichlorophenyl-4-nitrophenylether          | 500  | 10000 | µg/kg |
| Dicyclohexylphthalate                          | 500  | 10000 | µg/kg |
| Diethylphthalate                               | 1500 | 15000 | µg/kg |
| 2,4-Dimethylphenol                             | 3000 | 15000 | µg/kg |
| Dimethylphthalate                              | 1500 | 15000 | µg/kg |
| 2,4-Dinitrophenol                              | 3000 | 15000 | µg/kg |
| 2,4-Dinitrotoluene                             | 1500 | 15000 | µg/kg |
| 2,6-Dinitrotoluene                             | 1500 | 15000 | µg/kg |

|                                          |      |       |       |
|------------------------------------------|------|-------|-------|
| Dinonylphthalate                         | 500  | 10000 | µg/kg |
| Di-n-octylphthalate                      | 1500 | 15000 | µg/kg |
| Bis(2-ethylhexyl)phthalate               | 1500 | 15000 | µg/kg |
| Fluoranthene                             | 1000 | 12000 | µg/kg |
| Fluorene                                 | 1000 | 12000 | µg/kg |
| Hexachlorobenzene                        | 1500 | 15000 | µg/kg |
| Hexachlorobutadiene                      | 1500 | 15000 | µg/kg |
| Hexachlorocyclohexane                    | 500  | 10000 | µg/kg |
| Hexachlorocyclopentadiene                | 1500 | 15000 | µg/kg |
| Hexachloroethane                         | 1500 | 15000 | µg/kg |
| Hexyl-2-ethylhexylphthalate              | 500  | 10000 | µg/kg |
| Indeno(1,2,3-cd)pyrene                   | 1000 | 12000 | µg/kg |
| Isophorone                               | 1500 | 15000 | µg/kg |
| Maleic anhydride                         | 500  | 10000 | µg/kg |
| bis(2-methoxyethyl)phthalate             | 500  | 10000 | µg/kg |
| 2-Methyl-4,6-Dinitrophenol               | 3000 | 15000 | µg/kg |
| 2-Methylnaphthalene                      | 1000 | 12000 | µg/kg |
| 2-Methylphenol                           | 3000 | 15000 | µg/kg |
| 4-Methylphenol (and/or 3-Methylphenol)   | 3000 | 15000 | µg/kg |
| Naphthalene                              | 1000 | 12000 | µg/kg |
| 2-Nitroaniline                           | 500  | 10000 | µg/kg |
| 3-Nitroaniline                           | 500  | 10000 | µg/kg |
| 4-Nitroaniline                           | 500  | 10000 | µg/kg |
| Nitrobenzene                             | 1500 | 15000 | µg/kg |
| 2-Nitrophenol                            | 3000 | 15000 | µg/kg |
| 3-Nitrophenol                            | 500  | 10000 | µg/kg |
| 4-Nitrophenol                            | 3000 | 15000 | µg/kg |
| 4-Nitrophenylphenylether                 | 500  | 10000 | µg/kg |
| N-Nitrosodiethylamine                    | 1500 | 15000 | µg/kg |
| N-Nitrosodimethylamine                   | 1500 | 15000 | µg/kg |
| N-Nitrosodiphenylamine                   | 1500 | 15000 | µg/kg |
| N-Nitroso-di-n-propylamine               | 1500 | 15000 | µg/kg |
| Pentachlorobenzene                       | 500  | 10000 | µg/kg |
| Pentachlorohexane                        | 500  | 10000 | µg/kg |
| Pentachlorophenol                        | 3000 | 15000 | µg/kg |
| Phenanthrene                             | 1000 | 12000 | µg/kg |
| Phenol                                   | 1500 | 15000 | µg/kg |
| Pyrene                                   | 1000 | 12000 | µg/kg |
| Pyridine                                 | 500  | 10000 | µg/kg |
| 1,2,3,4-Tetrachlorobenzene               | 500  | 10000 | µg/kg |
| 1,2,3,5-Tetrachlorobenzene               | 500  | 10000 | µg/kg |
| 1,2,4,5-Tetrachlorobenzene               | 500  | 10000 | µg/kg |
| 2,3,4,5-Tetrachlorophenol                | 500  | 10000 | µg/kg |
| 2,3,4,6-Tetrachlorophenol                | 500  | 10000 | µg/kg |
| 2,3,5,6-Tetrachlorophenol                | 500  | 10000 | µg/kg |
| 1,2,3-Trichlorobenzene                   | 500  | 10000 | µg/kg |
| 1,2,4-Trichlorobenzene                   | 1500 | 15000 | µg/kg |
| 1,3,5-Trichlorobenzene                   | 500  | 10000 | µg/kg |
| 2,4,5-Trichlorophenol                    | 1500 | 15000 | µg/kg |
| 2,4,6-Trichlorophenol                    | 1500 | 15000 | µg/kg |
| 2,3,4-Trichlorophenyl-4-nitrophenylether | 500  | 10000 | µg/kg |
| 2,3,5-Trichlorophenyl-4-nitrophenylether | 500  | 10000 | µg/kg |
| 2,3,6-Trichlorophenyl-4-nitrophenylether | 500  | 10000 | µg/kg |
| 2,4,5-Trichlorophenyl-4-nitrophenylether | 500  | 10000 | µg/kg |
| 2,4,6-Trichlorophenyl-4-nitrophenylether | 500  | 10000 | µg/kg |
| 3,4,5-Trichlorophenyl-4-nitrophenylether | 500  | 10000 | µg/kg |

# Soil/Hazardous Waste (Organics continued)

## SOIL/HW BTEX

Store at 4 °C

Provided as a 15 g soil matrix in a 40 mL VOA vial with a > 1 mL spiking solution in methanol flame sealed in a 2 mL amber ampoule. Use with EPA method 8021.

| Analyte Concentration          | Low | High | Units |
|--------------------------------|-----|------|-------|
| Benzene                        | 20  | 200  | µg/kg |
| Ethylbenzene                   | 20  | 200  | µg/kg |
| Methyl-tert-butyl ether (MTBE) | 20  | 200  | µg/kg |
| Toluene                        | 20  | 200  | µg/kg |
| Xylenes, total                 | 40  | 400  | µg/kg |

## SOIL/HW Carbamates (Non-TNI/State Specific)

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

Contains a random selection of analytes listed below. Use with EPA methods 8318 and 8321.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Aldicarb              | 25  | 5000 | µg/kg |
| Aldicarb sulfone      | 25  | 5000 | µg/kg |
| Aldicarb sulfoxide    | 25  | 5000 | µg/kg |
| Carbaryl              | 25  | 5000 | µg/kg |
| Carbofuran            | 25  | 5000 | µg/kg |
| Dioxacarb             | 25  | 5000 | µg/kg |
| Diuron                | 25  | 5000 | µg/kg |
| 3-Hydroxycarbofuran   | 25  | 5000 | µg/kg |
| Methiocarb            | 25  | 5000 | µg/kg |
| Methomyl              | 25  | 5000 | µg/kg |
| Oxamyl                | 25  | 5000 | µg/kg |
| Propham               | 25  | 5000 | µg/kg |
| Promecarb             | 25  | 5000 | µg/kg |
| Propoxur              | 25  | 5000 | µg/kg |

## SOIL/HW Chlordane

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

Use with EPA method 8081.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Chlordane             | 200 | 1000 | µg/kg |

## SOIL/HW Diesel in Soil

Store at 4 °C

Provided as 2 x 20 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

Use with EPA modified EPA 8015 GC/FID method.

| Analyte Concentration       | Low | High | Units |
|-----------------------------|-----|------|-------|
| Diesel Range Organics (DRO) | 300 | 3000 | mg/kg |

## SOIL/HW Explosives (Non-TNI/State Specific)

Store at 4 °C

Provided as 2 x 10 g pre-spiked soil matrix flame sealed in 10 mL amber ampoules.

Contains a random selection of analytes listed below. Use with EPA methods 8330, 8095, and 8091.

| Analyte Concentration       | Low  | High  | Units |
|-----------------------------|------|-------|-------|
| 4-amino-2,6-dinitrotoluene  | 500  | 5000  | µg/kg |
| 2-amino-4,6-dinitrotoluene  | 500  | 5000  | µg/kg |
| 1-Chloro-2,4-dinitrobenzene | 500  | 5000  | µg/kg |
| 1-Chloro-4-nitrobenzene     | 500  | 5000  | µg/kg |
| 4-Chloro-3-nitrotoluene     | 500  | 5000  | µg/kg |
| 3,5-Dichloronitrobenzene    | 500  | 5000  | µg/kg |
| 3,5-Dinitroaniline          | 500  | 5000  | µg/kg |
| 1,3-Dinitrobenzene          | 500  | 5000  | µg/kg |
| 1,4-Dinitrobenzene          | 500  | 5000  | µg/kg |
| 2,4-Dinitrotoluene          | 1500 | 15000 | µg/kg |
| 2,6-Dinitrotoluene          | 1500 | 15000 | µg/kg |
| Dinitramine                 | 500  | 5000  | µg/kg |
| HMX                         | 500  | 5000  | µg/kg |
| 1,2-Naphthoquinone          | 500  | 5000  | µg/kg |
| 1,4-Naphthoquinone          | 500  | 5000  | µg/kg |
| Nitrobenzene                | 1500 | 15000 | µg/kg |
| Nitroglycerin               | 500  | 5000  | µg/kg |

## SOIL/HW Explosives (Non-TNI/State Specific) continued

|                                 |     |      |       |
|---------------------------------|-----|------|-------|
| 2-Nitrotoluene                  | 500 | 5000 | µg/kg |
| 3-Nitrotoluene                  | 500 | 5000 | µg/kg |
| 4-Nitrotoluene                  | 500 | 5000 | µg/kg |
| Pentachloronitrobenzene         | 500 | 5000 | µg/kg |
| Pentaerythritoltetranitrate     | 500 | 5000 | µg/kg |
| RDX                             | 500 | 5000 | µg/kg |
| 2,3,4,5-Tetrachloronitrobenzene | 500 | 5000 | µg/kg |
| Tetryl                          | 500 | 5000 | µg/kg |
| 2,4,6-Trichloronitrobenzene     | 500 | 5000 | µg/kg |
| Trifluralin                     | 500 | 5000 | µg/kg |
| 1,3,5-Trinitrobenzene           | 500 | 5000 | µg/kg |
| 2,4,6-Trinitrotoluene           | 500 | 5000 | µg/kg |

## SOIL/HW Explosives by 8330B (Non-TNI/State Specific)

Store at 4 °C

Provided as a 500 g pre-spiked soil matrix in a 1 L amber glass bottle.

Contains a random selection of analytes listed below. Use with EPA method 8330B.

| Analyte Concentration           | Low  | High  | Units |
|---------------------------------|------|-------|-------|
| 4-amino-2,6-dinitrotoluene      | 500  | 5000  | µg/kg |
| 2-amino-4,6-dinitrotoluene      | 500  | 5000  | µg/kg |
| 1-Chloro-2,4-dinitrobenzene     | 500  | 5000  | µg/kg |
| 1-Chloro-4-nitrobenzene         | 500  | 5000  | µg/kg |
| 4-Chloro-3-nitrotoluene         | 500  | 5000  | µg/kg |
| 3,5-Dichloronitrobenzene        | 500  | 5000  | µg/kg |
| 3,5-Dinitroaniline              | 500  | 5000  | µg/kg |
| 1,3-Dinitrobenzene              | 500  | 5000  | µg/kg |
| 1,4-Dinitrobenzene              | 500  | 5000  | µg/kg |
| 2,4-Dinitrotoluene              | 1500 | 15000 | µg/kg |
| 2,6-Dinitrotoluene              | 1500 | 15000 | µg/kg |
| Dinitramine                     | 500  | 5000  | µg/kg |
| HMX                             | 500  | 5000  | µg/kg |
| 1,2-Naphthoquinone              | 500  | 5000  | µg/kg |
| 1,4-Naphthoquinone              | 500  | 5000  | µg/kg |
| Nitrobenzene                    | 1500 | 15000 | µg/kg |
| Nitroglycerin                   | 500  | 5000  | µg/kg |
| 2-Nitrotoluene                  | 500  | 5000  | µg/kg |
| 3-Nitrotoluene                  | 500  | 5000  | µg/kg |
| 4-Nitrotoluene                  | 500  | 5000  | µg/kg |
| Pentachloronitrobenzene         | 500  | 5000  | µg/kg |
| Pentaerythritoltetranitrate     | 500  | 5000  | µg/kg |
| RDX                             | 500  | 5000  | µg/kg |
| 2,3,4,5-Tetrachloronitrobenzene | 500  | 5000  | µg/kg |
| Tetryl                          | 500  | 5000  | µg/kg |
| 2,4,6-Trichloronitrobenzene     | 500  | 5000  | µg/kg |
| Trifluralin                     | 500  | 5000  | µg/kg |
| 1,3,5-Trinitrobenzene           | 500  | 5000  | µg/kg |
| 2,4,6-Trinitrotoluene           | 500  | 5000  | µg/kg |

# Soil/Hazardous Waste (Organics continued)

## SOIL/HW Gasoline Additives (Non-TNI/State Specific)

Store at 4 °C

Provided as a 15 g soil matrix in a 40 mL VOA vial with a > 1 mL spiking solution in methanol flame sealed in a 2 mL amber ampoule. Contains all the analytes listed below. Use with EPA method 8260.

| Analyte Concentration          | Low | High | Units |
|--------------------------------|-----|------|-------|
| Methyl-tert-butyl ether (MTBE) | 20  | 200  | µg/kg |
| DIPE                           | 20  | 200  | µg/kg |
| ETBE                           | 20  | 200  | µg/kg |
| Freon 113                      | 20  | 200  | µg/kg |
| 1-Phenylpropane                | 20  | 200  | µg/kg |
| TAME                           | 20  | 200  | µg/kg |
| tert-Butyl alcohol             | 100 | 500  | µg/kg |

## SOIL/HW Gasoline

Store at 4 °C

Provided as a 15 g soil matrix in a 40 mL VOA vial with a > 1 mL spiking solution in methanol flame sealed in a 2 mL amber ampoule. Use with modified EPA method 8015 GC/FID with purge and trap.

| Analyte Concentration          | Low | High | Units |
|--------------------------------|-----|------|-------|
| Gasoline Range Organics (GRO)  | 100 | 2000 | mg/kg |
| Benzene                        | 1   | 300  | mg/kg |
| Toluene                        | 1   | 300  | mg/kg |
| Ethylbenzene                   | 1   | 300  | mg/kg |
| Methyl-tert-butyl ether (MTBE) | 1   | 300  | mg/kg |
| Xylenes, Total                 | 1   | 300  | mg/kg |

## SOIL/HW Glycols (Non-TNI/State Specific)

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix sealed in 20 mL amber ampoules.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Propylene glycol      | 75  | 200  | mg/kg |
| Ethylene glycol       | 75  | 200  | mg/kg |
| Diethylene glycol     | 75  | 200  | mg/kg |
| Triethylene glycol    | 75  | 200  | mg/kg |
| Tetraethylene glycol  | 75  | 200  | mg/kg |

## SOIL/HW Herbicides

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules. Contains all of the EPA and TNI analytes and other randomly selected analytes. Use with EPA method 8151.

| Analyte Concentration       | Low  | High  | Units |
|-----------------------------|------|-------|-------|
| Acifluorfen                 | 100  | 1000  | µg/kg |
| Bentazon                    | 100  | 1000  | µg/kg |
| Chloramben                  | 100  | 1000  | µg/kg |
| 2,4-D                       | 100  | 1000  | µg/kg |
| Dacthal (DCPA diacid)       | 100  | 1000  | µg/kg |
| Dalapon                     | 100  | 1000  | µg/kg |
| 2,4-DB                      | 100  | 1000  | µg/kg |
| Dicamba                     | 100  | 1000  | µg/kg |
| 3,5-Dichlorobenzoic acid    | 100  | 1000  | µg/kg |
| Dichloroprop (Dichloroprop) | 100  | 1000  | µg/kg |
| Dinoseb                     | 100  | 1000  | µg/kg |
| MCPA                        | 1000 | 50000 | µg/kg |
| MCPP                        | 1000 | 50000 | µg/kg |
| 4-Nitrophenol               | 100  | 1000  | µg/kg |
| Pentachlorophenol           | 100  | 1000  | µg/kg |
| Picloram                    | 100  | 1000  | µg/kg |
| 2,4,5-T                     | 100  | 1000  | µg/kg |
| 2,4,5-TP (Silvex)           | 100  | 1000  | µg/kg |

## SOIL/HW Nitrogen Pesticides (Non-TNI/State Specific)

Store at 4 °C

Provided as 2 x 10 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules. Contains a random selection of analytes listed below. Use with EPA method 8141.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Alachlor              | 25  | 500  | µg/kg |
| Ametryn               | 25  | 500  | µg/kg |
| Anilazine             | 25  | 500  | µg/kg |
| Atraton               | 25  | 500  | µg/kg |
| Atrazine              | 25  | 500  | µg/kg |
| Bromacil              | 25  | 500  | µg/kg |
| Butachlor             | 25  | 500  | µg/kg |
| Butylate              | 25  | 500  | µg/kg |
| Cyanazine             | 25  | 500  | µg/kg |
| Deethyl atrazine      | 25  | 500  | µg/kg |
| Deisopropyl atrazine  | 25  | 500  | µg/kg |
| Diamino atrazine      | 25  | 500  | µg/kg |
| EPTC                  | 25  | 500  | µg/kg |
| Hexazinone            | 25  | 500  | µg/kg |
| Metolachlor           | 25  | 500  | µg/kg |
| Metribuzin            | 25  | 500  | µg/kg |
| Napropamide           | 25  | 500  | µg/kg |
| Prometon              | 25  | 500  | µg/kg |
| Prometryn             | 25  | 500  | µg/kg |
| Pronamide (Kerb)      | 25  | 500  | µg/kg |
| Propachlor (Ramrod)   | 25  | 500  | µg/kg |
| Propazine             | 25  | 500  | µg/kg |
| Simazine              | 25  | 500  | µg/kg |
| Terbacil              | 25  | 500  | µg/kg |
| Trifluralin           | 25  | 500  | µg/kg |

## SOIL/HW OPPs (Non-TNI/State Specific)

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules. Contains a random selection of analytes listed below. Use with EPA method 8141.

| Analyte Concentration     | Low | High | Units |
|---------------------------|-----|------|-------|
| Atrazine                  | 5.0 | 5000 | µg/kg |
| Azinphos-methyl (Guthion) | 100 | 1000 | µg/kg |
| Bromacil                  | 5.0 | 5000 | µg/kg |
| Chlorpyrifos              | 100 | 1000 | µg/kg |
| Demeton-o                 | 100 | 1000 | µg/kg |
| Demeton-s                 | 100 | 1000 | µg/kg |
| Demeton O & S             | 100 | 1000 | µg/kg |
| Diazinon                  | 100 | 1000 | µg/kg |
| Dichlorvos                | 5.0 | 5000 | µg/kg |
| Disulfoton                | 100 | 1000 | µg/kg |
| Diuron                    | 25  | 5000 | µg/kg |
| Linuron (Lorox)           | 500 | 5000 | µg/kg |
| Malathion                 | 100 | 1000 | µg/kg |
| Parathion, ethyl          | 100 | 1000 | µg/kg |
| Parathion, methyl         | 100 | 1000 | µg/kg |
| Phorate                   | 100 | 1000 | µg/kg |
| Ronnel                    | 100 | 1000 | µg/kg |
| Simazine                  | 5.0 | 5000 | µg/kg |
| Stirophos                 | 100 | 1000 | µg/kg |
| Sulfotepp                 | 100 | 1000 | µg/kg |
| Tebuthiuron               | 5.0 | 5000 | µg/kg |
| Terbufos                  | 100 | 1000 | µg/kg |

# Soil/Hazardous Waste (Organics continued)

## SOIL/HW PAHs

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

Contains at least 80% of the EPA and TNI analytes randomly selected. Use with EPA HPLC method 8310 and GC/MS method 8270 (SIM mode).

| Analyte Concentration  | Low | High | Units |
|------------------------|-----|------|-------|
| Acenaphthene           | 150 | 1000 | µg/kg |
| Acenaphthylene         | 150 | 1000 | µg/kg |
| Anthracene             | 100 | 1000 | µg/kg |
| Benzo(a)anthracene     | 50  | 500  | µg/kg |
| Benzo(b)fluoranthene   | 50  | 500  | µg/kg |
| Benzo(k)fluoranthene   | 50  | 500  | µg/kg |
| Benzo(g,h,i)perylene   | 100 | 1000 | µg/kg |
| Benzo(a)pyrene         | 50  | 500  | µg/kg |
| Chrysene               | 50  | 500  | µg/kg |
| Dibenz(a,h)anthracene  | 50  | 500  | µg/kg |
| Fluoranthene           | 100 | 1000 | µg/kg |
| Fluorene               | 50  | 500  | µg/kg |
| Indeno(1,2,3-cd)pyrene | 50  | 500  | µg/kg |
| 2-Methylnaphthalene    | 50  | 500  | µg/kg |
| Naphthalene            | 150 | 1000 | µg/kg |
| Phenanthrene           | 100 | 1000 | µg/kg |
| Pyrene                 | 50  | 500  | µg/kg |

## SOIL/HW PAHs

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

Contains at least 80% of the EPA and NELAC analytes randomly selected. Use with EPA HPLC method 8310 and GC/MS method 8270 (SIM mode).

| Analyte Concentration  | Low | High | Units |
|------------------------|-----|------|-------|
| Acenaphthene           | 150 | 1000 | µg/kg |
| Acenaphthylene         | 150 | 1000 | µg/kg |
| Anthracene             | 100 | 1000 | µg/kg |
| Benzo(a)anthracene     | 50  | 500  | µg/kg |
| Benzo(b)fluoranthene   | 50  | 500  | µg/kg |
| Benzo(k)fluoranthene   | 50  | 500  | µg/kg |
| Benzo(g,h,i)perylene   | 100 | 1000 | µg/kg |
| Benzo(a)pyrene         | 50  | 500  | µg/kg |
| Chrysene               | 50  | 500  | µg/kg |
| Dibenz(a,h)anthracene  | 50  | 500  | µg/kg |
| Fluoranthene           | 100 | 1000 | µg/kg |
| Fluorene               | 50  | 500  | µg/kg |
| Indeno(1,2,3-cd)pyrene | 50  | 500  | µg/kg |
| 2-Methylnaphthalene    | 50  | 500  | µg/kg |
| Naphthalene            | 150 | 1000 | µg/kg |
| Phenanthrene           | 100 | 1000 | µg/kg |
| Pyrene                 | 50  | 500  | µg/kg |

## SOIL/HW PAH-GC

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

Contains at least 80% of the EPA and TNI analytes randomly selected.

| Analyte Concentration  | Low  | High  | Units |
|------------------------|------|-------|-------|
| Acenaphthene           | 1000 | 12000 | µg/kg |
| Acenaphthylene         | 1000 | 12000 | µg/kg |
| Anthracene             | 1000 | 12000 | µg/kg |
| Benzo(a)anthracene     | 1000 | 12000 | µg/kg |
| Benzo(b)fluoranthene   | 1000 | 12000 | µg/kg |
| Benzo(k)fluoranthene   | 1000 | 12000 | µg/kg |
| Benzo(g,h,i)perylene   | 1000 | 12000 | µg/kg |
| Benzo(a)pyrene         | 1000 | 12000 | µg/kg |
| Chrysene               | 1000 | 12000 | µg/kg |
| Dibenzo(a,h)anthracene | 1000 | 12000 | µg/kg |
| Fluoranthene           | 1000 | 12000 | µg/kg |
| Fluorene               | 1000 | 12000 | µg/kg |
| Indeno(1,2,3-cd)pyrene | 1000 | 12000 | µg/kg |
| 2-Methylnaphthalene    | 1000 | 12000 | µg/kg |
| Naphthalene            | 1000 | 12000 | µg/kg |
| Phenanthrene           | 1000 | 12000 | µg/kg |
| Pyrene                 | 1000 | 12000 | µg/kg |

## SOIL/HW PCBs in Oil

Store at 20 - 25 °C

Provided as a 5 g ready to use standard flame sealed in a 5 mL amber ampoule.

Contains one Aroclor randomly selected from list below. Use with EPA method 8082.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Aroclor 1016          | 17  | 50   | mg/kg |
| Aroclor 1242          | 17  | 50   | mg/kg |
| Aroclor 1254          | 16  | 50   | mg/kg |
| Aroclor 1260          | 12  | 50   | mg/kg |

## SOIL/HW Pesticides

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

Contains at least 80% of the EPA and TNI analytes randomly selected. Use with EPA method 8081.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Aldrin                | 50  | 500  | µg/kg |
| alpha-BHC             | 50  | 500  | µg/kg |
| beta-BHC              | 50  | 500  | µg/kg |
| delta-BHC             | 50  | 500  | µg/kg |
| gamma-BHC (Lindane)   | 50  | 500  | µg/kg |
| alpha-Chlordane       | 50  | 500  | µg/kg |
| gamma-Chlordane       | 50  | 500  | µg/kg |
| 4,4'-DDD              | 50  | 500  | µg/kg |
| 4,4'-DDE              | 50  | 500  | µg/kg |
| 4,4'-DDT              | 50  | 500  | µg/kg |
| Dieldrin              | 50  | 500  | µg/kg |
| Endosulfan I          | 50  | 500  | µg/kg |
| Endosulfan II         | 50  | 500  | µg/kg |
| Endosulfan sulfate    | 50  | 500  | µg/kg |
| Endrin                | 50  | 500  | µg/kg |
| Endrin aldehyde       | 50  | 500  | µg/kg |
| Endrin ketone         | 50  | 500  | µg/kg |
| Heptachlor            | 50  | 500  | µg/kg |
| Heptachlor epoxide    | 50  | 500  | µg/kg |
| Methoxychlor          | 50  | 500  | µg/kg |

## SOIL/HW Toxaphene

Store at 4 °C

Provided as 2 x 30 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

Use with EPA method 8081.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Toxaphene             | 200 | 2000 | µg/kg |

## SOIL/HW Volatiles

Store at 4 °C

Provided as a 15 g soil matrix in a 40 mL VOA vial with a > 1 mL spiking solution in

methanol flame sealed in a 2 mL amber ampoule. Contains at least 60% of the

EPA and TNI analytes randomly selected. Use with EPA methods 8021 and 8260.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Acetone               | 200 | 1000 | µg/kg |
| Acetonitrile          | 50  | 200  | µg/kg |
| Acrolein              | 20  | 200  | µg/kg |
| Acrylonitrile         | 20  | 200  | µg/kg |
| Benzene               | 20  | 200  | µg/kg |
| Bromobenzene          | 40  | 200  | µg/kg |
| Bromochloromethane    | 20  | 200  | µg/kg |
| Bromodichloromethane  | 20  | 200  | µg/kg |
| Bromoform             | 20  | 200  | µg/kg |
| Bromomethane          | 80  | 200  | µg/kg |
| 2-Butanone (MEK)      | 100 | 500  | µg/kg |
| n-Butylbenzene        | 20  | 200  | µg/kg |
| sec-Butylbenzene      | 20  | 200  | µg/kg |
| tert-Butylbenzene     | 20  | 200  | µg/kg |
| Carbon disulfide      | 20  | 200  | µg/kg |
| Carbon tetrachloride  | 20  | 200  | µg/kg |
| Chloroacetaldehyde    | 20  | 200  | µg/kg |
| Chlorobenzene         | 20  | 200  | µg/kg |
| Chlorodibromomethane  | 20  | 200  | µg/kg |

# Soil/Hazardous Waste (Organics continued)

## SOIL/HW Volatiles continued

|                                      |    |     |       |
|--------------------------------------|----|-----|-------|
| Chloroethane                         | 80 | 200 | µg/kg |
| bis(2-Chloroethyl)ether              | 20 | 200 | µg/kg |
| bis(2-Chloroethoxy)methane           | 20 | 200 | µg/kg |
| bis(2-Chloroisopropyl)ether          | 20 | 200 | µg/kg |
| 2-Chloroethylvinylether              | 20 | 200 | µg/kg |
| Chloroform                           | 20 | 200 | µg/kg |
| Chloromethane                        | 80 | 200 | µg/kg |
| 2-Chlorotoluene                      | 20 | 200 | µg/kg |
| 4-Chlorotoluene                      | 20 | 200 | µg/kg |
| 1,2-Dibromo-3-chloropropane (DBCP)   | 40 | 200 | µg/kg |
| 1,2-Dibromoethane (EDB)              | 40 | 200 | µg/kg |
| Dibromomethane                       | 20 | 200 | µg/kg |
| 1,2-Dichlorobenzene                  | 20 | 200 | µg/kg |
| 1,3-Dichlorobenzene                  | 20 | 200 | µg/kg |
| 1,4-Dichlorobenzene                  | 20 | 200 | µg/kg |
| Dichlorodifluoromethane              | 80 | 200 | µg/kg |
| 1,1-Dichloroethane                   | 20 | 200 | µg/kg |
| 1,2-Dichloroethane                   | 20 | 200 | µg/kg |
| 1,1-Dichloroethene                   | 40 | 200 | µg/kg |
| cis-1,2-Dichloroethene               | 40 | 200 | µg/kg |
| trans-1,2-Dichloroethene             | 40 | 200 | µg/kg |
| 1,2-Dichloropropane                  | 20 | 200 | µg/kg |
| 1,3-Dichloropropane                  | 20 | 200 | µg/kg |
| 2,2-Dichloropropane                  | 20 | 200 | µg/kg |
| 1,1-Dichloropropene                  | 20 | 200 | µg/kg |
| cis-1,3-Dichloropropene              | 40 | 200 | µg/kg |
| trans-1,3-Dichloropropene            | 40 | 200 | µg/kg |
| DIPE                                 | 20 | 200 | µg/kg |
| Ethylbenzene                         | 20 | 200 | µg/kg |
| Hexachloroethane                     | 20 | 200 | µg/kg |
| Hexachlorobutadiene                  | 20 | 200 | µg/kg |
| 2-Hexanone                           | 80 | 400 | µg/kg |
| Isopropylbenzene                     | 40 | 200 | µg/kg |
| p-Isopropyltoluene                   | 20 | 200 | µg/kg |
| Methylene chloride (Dichloromethane) | 20 | 200 | µg/kg |
| Methyl-tert-butyl ether (MTBE)       | 20 | 200 | µg/kg |
| 4-Methyl-2-pentanone (MIBK)          | 80 | 400 | µg/kg |
| Naphthalene                          | 40 | 200 | µg/kg |
| n-Propylbenzene                      | 20 | 200 | µg/kg |
| Styrene                              | 40 | 200 | µg/kg |
| TAME                                 | 20 | 200 | µg/kg |
| 1,1,1,2-Tetrachloroethane            | 20 | 200 | µg/kg |
| 1,1,2,2-Tetrachloroethane            | 20 | 200 | µg/kg |
| Tetrachloroethene                    | 20 | 200 | µg/kg |
| Toluene                              | 20 | 200 | µg/kg |
| 1,2,3-Trichlorobenzene               | 20 | 200 | µg/kg |
| 1,2,4-Trichlorobenzene               | 40 | 200 | µg/kg |
| 1,1,1-Trichloroethane                | 20 | 200 | µg/kg |
| 1,1,2-Trichloroethane                | 20 | 200 | µg/kg |
| Trichloroethene                      | 20 | 200 | µg/kg |
| Trichlorofluoromethane               | 80 | 200 | µg/kg |
| 1,2,3-Trichloropropane               | 40 | 200 | µg/kg |
| 1,2,4-Trimethylbenzene               | 20 | 200 | µg/kg |
| 1,3,5-Trimethylbenzene               | 20 | 200 | µg/kg |
| Vinyl acetate                        | 20 | 200 | µg/kg |
| Vinyl chloride                       | 80 | 200 | µg/kg |
| o-Xylene                             | 20 | 400 | µg/kg |
| m+p-Xylene                           | 20 | 400 | µg/kg |
| Xylenes, total                       | 40 | 400 | µg/kg |

## SOIL/HW Medium Level Volatiles

Store at 4 °C  
Provided as a 5 g pre-spiked soil matrix and 5 mL methanol flame sealed in a 10 mL amber ampoule. Contains at least 60% of the EPA and TNI analytes randomly selected. Use with EPA methods 8021 and 8260.

| Analyte Concentration                | Low  | High  | Units |
|--------------------------------------|------|-------|-------|
| Acetone                              | 4000 | 20000 | µg/kg |
| Acetonitrile                         | 5000 | 15000 | µg/kg |
| Acrolein                             | 1000 | 15000 | µg/kg |
| Acrylonitrile                        | 1000 | 10000 | µg/kg |
| Benzene                              | 1000 | 10000 | µg/kg |
| Bromobenzene                         | 2000 | 10000 | µg/kg |
| Bromochloromethane                   | 1000 | 10000 | µg/kg |
| Bromodichloromethane                 | 1000 | 10000 | µg/kg |
| Bromoform                            | 1000 | 10000 | µg/kg |
| Bromomethane                         | 2000 | 10000 | µg/kg |
| 2-Butanone (MEK)                     | 4000 | 20000 | µg/kg |
| n-Butylbenzene                       | 1000 | 10000 | µg/kg |
| sec-Butylbenzene                     | 1000 | 10000 | µg/kg |
| tert-Butylbenzene                    | 1000 | 10000 | µg/kg |
| Carbon disulfide                     | 1000 | 15000 | µg/kg |
| Carbon tetrachloride                 | 1000 | 10000 | µg/kg |
| Chloroacetaldehyde                   | 1000 | 15000 | µg/kg |
| Chlorobenzene                        | 1000 | 10000 | µg/kg |
| Chlorodibromomethane                 | 1000 | 10000 | µg/kg |
| Chloroethane                         | 2000 | 10000 | µg/kg |
| bis(2-Chloroethyl)ether              | 1000 | 15000 | µg/kg |
| bis(2-Chloroethoxy)methane           | 1000 | 15000 | µg/kg |
| bis(2-Chloroisopropyl)ether          | 1000 | 15000 | µg/kg |
| 2-Chloroethylvinylether              | 1000 | 15000 | µg/kg |
| Chloroform                           | 1000 | 10000 | µg/kg |
| Chloromethane                        | 2000 | 10000 | µg/kg |
| 2-Chlorotoluene                      | 1000 | 10000 | µg/kg |
| 4-Chlorotoluene                      | 1000 | 10000 | µg/kg |
| 1,2-Dibromo-3-chloropropane (DBCP)   | 2000 | 10000 | µg/kg |
| 1,2-Dibromoethane(EDB)               | 2000 | 10000 | µg/kg |
| Dibromomethane                       | 2000 | 10000 | µg/kg |
| 1,2-Dichlorobenzene                  | 1000 | 10000 | µg/kg |
| 1,3-Dichlorobenzene                  | 1000 | 10000 | µg/kg |
| 1,4-Dichlorobenzene                  | 1000 | 10000 | µg/kg |
| Dichlorodifluoromethane              | 2000 | 10000 | µg/kg |
| 1,1-Dichloroethane                   | 1000 | 10000 | µg/kg |
| 1,2-Dichloroethane                   | 1500 | 10000 | µg/kg |
| 1,1-Dichloroethene                   | 2000 | 10000 | µg/kg |
| cis-1,2-Dichloroethene               | 2000 | 10000 | µg/kg |
| trans-1,2-Dichloroethene             | 2000 | 10000 | µg/kg |
| 1,2-Dichloropropane                  | 2000 | 10000 | µg/kg |
| 1,3-Dichloropropane                  | 1000 | 10000 | µg/kg |
| 2,2-Dichloropropane                  | 1000 | 10000 | µg/kg |
| 1,1-Dichloropropene                  | 1000 | 10000 | µg/kg |
| cis-1,3-Dichloropropene              | 2000 | 10000 | µg/kg |
| trans-1,3-Dichloropropene            | 2000 | 10000 | µg/kg |
| DIPE                                 | 1000 | 10000 | µg/kg |
| Ethylbenzene                         | 1000 | 10000 | µg/kg |
| Freon 113                            | 1000 | 15000 | µg/kg |
| Hexachlorobutadiene                  | 1500 | 15000 | µg/kg |
| Hexachloroethane                     | 1500 | 15000 | µg/kg |
| 2-Hexanone                           | 4000 | 20000 | µg/kg |
| Isopropylbenzene                     | 2000 | 10000 | µg/kg |
| p-Isopropyltoluene                   | 1000 | 10000 | µg/kg |
| Methylene chloride (Dichloromethane) | 1000 | 10000 | µg/kg |
| 2-Methylnaphthalene                  | 1000 | 2000  | µg/kg |
| Methyl-tert-butyl ether (MTBE)       | 2000 | 10000 | µg/kg |
| 4-Methyl-2-pentanone (MIBK)          | 4000 | 20000 | µg/kg |
| Naphthalene                          | 2000 | 10000 | µg/kg |
| Nitrobenzene                         | 1500 | 15000 | µg/kg |
| n-Propylbenzene                      | 1000 | 15000 | µg/kg |
| Styrene                              | 2000 | 10000 | µg/kg |

# Soil/Hazardous Waste (Organics continued)

## SOIL/HW TCLP Herbicides (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Contains a random selection of analytes listed below. listed below.

Use with EPA method 8151.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| 2,4-D                 | 10  | 1000 | µg/L  |
| Dalapon               | 10  | 1000 | µg/L  |
| 2,4-DB                | 10  | 1000 | µg/L  |
| Dicamba               | 10  | 1000 | µg/L  |
| Dinoseb               | 10  | 1000 | µg/L  |
| MCP                   | 10  | 1000 | µg/L  |
| Pentachlorophenol     | 100 | 500  | µg/L  |
| 2,4,5-T               | 10  | 1000 | µg/L  |
| 2,4,5-TP (Silvex)     | 10  | 1000 | µg/L  |

## SOIL/HW TCLP Pesticides (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Contains a random selection of analytes listed below. Use with EPA method 8081.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| gamma-BHC (Lindane)   | 10  | 200  | µg/L  |
| alpha-Chlordane       | 10  | 200  | µg/L  |
| gamma-Chlordane       | 10  | 200  | µg/L  |
| Endrin                | 10  | 200  | µg/L  |
| Heptachlor            | 10  | 200  | µg/L  |
| Methoxychlor          | 10  | 200  | µg/L  |

## SOIL/HW TCLP Volatiles (Non-TNI/State Specific)

Store at 4 °C

Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Contains a random selection of analytes listed below. Use with EPA methods 8021 and 8260.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Benzene               | 50  | 2000 | µg/L  |
| 2-Butanone (MEK)      | 50  | 2000 | µg/L  |
| Carbon tetrachloride  | 50  | 2000 | µg/L  |
| Chlorobenzene         | 50  | 2000 | µg/L  |
| Chloroform            | 50  | 2000 | µg/L  |
| 1,4-Dichlorobenzene   | 50  | 2000 | µg/L  |
| 1,2-Dichloroethane    | 50  | 2000 | µg/L  |
| 1,1-Dichloroethene    | 50  | 2000 | µg/L  |
| Tetrachloroethene     | 50  | 2000 | µg/L  |
| Trichloroethene       | 50  | 2000 | µg/L  |
| Vinyl chloride        | 50  | 2000 | µg/L  |

## SOIL/HW TCLP Semivolatiles (Non-TNI/State Specific)

Store at 4 °C

Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

Contains a random selection of analytes listed below. Use with EPA method 8270.

| Analyte Concentration                  | Low  | High | Units |
|----------------------------------------|------|------|-------|
| 1,4-Dichlorobenzene                    | 1000 | 2000 | µg/L  |
| 2,4-Dinitrotoluene                     | 1000 | 2000 | µg/L  |
| Hexachlorobenzene                      | 1000 | 2000 | µg/L  |
| Hexachlorobutadiene                    | 1000 | 2000 | µg/L  |
| Hexachloroethane                       | 1000 | 2000 | µg/L  |
| 2-Methylphenol                         | 1000 | 2000 | µg/L  |
| 4-Methylphenol (and/or 3-Methylphenol) | 1000 | 2000 | µg/L  |
| Nitrobenzene                           | 1000 | 2000 | µg/L  |
| Pentachlorophenol                      | 1000 | 2000 | µg/L  |
| Pyridine                               | 1000 | 2000 | µg/L  |
| 2,4,5-Trichlorophenol                  | 1000 | 2000 | µg/L  |
| 2,4,6-Trichlorophenol                  | 1000 | 2000 | µg/L  |





# Underground Storage Tank

## UST - Water Standards

### PT Availability

M = Monthly

Q = Quarterly - Jan, Apr, Jul, Oct

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information           | Proficiency Testing |       | Quality Control |       | Rapid Return™  |                     |
|--------------------------------|---------------------|-------|-----------------|-------|----------------|---------------------|
| Description                    | Catalog Number      | Price | Catalog Number  | Price | Catalog Number | Price               |
| <b>UST Water Standards</b>     |                     |       |                 |       |                |                     |
| UST Alaska BTEX in Water       |                     |       | QC-AKBTEX-USTW  | \$ 70 | RR-AKBTEX-USTW | \$ 78               |
| UST Alaska DRO in Water        |                     |       | QC-AKDRO-USTW   | 94    | RR-AKDRO-USTW  | 104                 |
| UST Alaska GRO in Water        |                     |       | QC-AGRO-USTW    | 94    | RR-AGRO-USTW   | 104                 |
| UST Iowa BTEX in Water         |                     |       | QC-IABTEX-USTW  | 75    | RR-IABTEX-USTW | 83                  |
| UST Iowa Diesel in Water       |                     |       | QC-IADIES-USTW  | 94    | RR-IADIES-USTW | 104                 |
| UST Iowa Gasoline in Water     |                     |       | QC-IAGAS-USTW   | 94    | RR-IAGAS-USTW  | 104                 |
| UST MA/NC EPH in Water         |                     |       | QC-EPH-USTW     | 131   | RR-EPH-USTW    | 146                 |
| UST MA/NC VPH in Water         |                     |       | QC-VPH-USTW     | 131   | RR-VPH-USTW    | 146                 |
| UST Texas Method 1005 in Water |                     |       | QC-TX1005-USTW  | 155   | RR-TX1005-USTW | 172                 |
| UST Wisconsin DRO in Water     |                     |       | QC-WIDRO-USTW   | 94    | RR-WIDRO-USTW  | 104                 |
| UST Wisconsin GRO in Water     |                     |       | QC-WIGRO-USTW   | 94    | RR-WIGRO-USTW  | 104                 |
|                                |                     |       |                 |       |                | <b>Availability</b> |
|                                |                     |       |                 |       |                | RR                  |
|                                |                     |       |                 |       |                | RR                  |
|                                |                     |       |                 |       |                | RR                  |
|                                |                     |       |                 |       |                | RR                  |
|                                |                     |       |                 |       |                | RR                  |
|                                |                     |       |                 |       |                | RR                  |
|                                |                     |       |                 |       |                | RR                  |
|                                |                     |       |                 |       |                | RR                  |
|                                |                     |       |                 |       |                | RR                  |
|                                |                     |       |                 |       |                | RR                  |

## UST - Soil Standards

| Ordering Information          | Proficiency Testing |       | Quality Control |        | Rapid Return™  |                     |
|-------------------------------|---------------------|-------|-----------------|--------|----------------|---------------------|
| Description                   | Catalog Number      | Price | Catalog Number  | Price  | Catalog Number | Price               |
| <b>UST Soil Standards</b>     |                     |       |                 |        |                |                     |
| UST Alaska BTEX in Soil       |                     |       | QC-AKBTEX-USTS  | \$ 108 | RR-AKBTEX-USTS | \$ 120              |
| UST Alaska DRO in Soil        |                     |       | QC-AKDRO-USTS   | 140    | RR-AKDRO-USTS  | 156                 |
| UST Alaska GRO in Soil        |                     |       | QC-AGRO-USTS    | 140    | RR-AGRO-USTS   | 156                 |
| UST Alaska RRO in Soil        |                     |       | QC-AKRRO-USTS   | 140    | RR-AKRRO-USTS  | 156                 |
| UST Arizona TPH in Soil       |                     |       | QC-AZHC-USTS    | 155    | RR-AZHC-USTS   | 172                 |
| UST Iowa BTEX in Soil         |                     |       | QC-IABTEX-USTS  | 108    | RR-IABTEX-USTS | 120                 |
| UST Iowa Diesel in Soil       |                     |       | QC-IADIES-USTS  | 151    | RR-IADIES-USTS | 167                 |
| UST Iowa Gasoline in Soil     |                     |       | QC-IAGAS-USTS   | 151    | RR-IAGAS-USTS  | 167                 |
| UST MA/NC EPH in Soil         |                     |       | QC-EPH-USTS     | 178    | RR-EPH-USTS    | 198                 |
| UST MA/NC VPH in Soil         |                     |       | QC-VPH-USTS     | 178    | RR-VPH-USTS    | 198                 |
| UST Texas Method 1005 in Soil |                     |       | QC-TX1005-USTS  | 183    | RR-TX1005-USTS | 203                 |
|                               |                     |       |                 |        |                | <b>Availability</b> |
|                               |                     |       |                 |        |                | RR                  |
|                               |                     |       |                 |        |                | RR                  |
|                               |                     |       |                 |        |                | RR                  |
|                               |                     |       |                 |        |                | RR                  |
|                               |                     |       |                 |        |                | RR                  |
|                               |                     |       |                 |        |                | RR                  |
|                               |                     |       |                 |        |                | RR                  |
|                               |                     |       |                 |        |                | RR                  |
|                               |                     |       |                 |        |                | RR                  |
|                               |                     |       |                 |        |                | RR                  |



# Underground Storage Tank

## UST Water Standards

The Phenova UST Program encompasses virtually all of the various state-specific UST programs. From Massachusetts to Alaska and Iowa to Arizona – not to mention TX 1005 – Phenova UST standards can meet your needs. For labs analyzing gasoline and diesel ranges organics, Phenova offers standards compliant with the relevant TNI programs. All Phenova UST Standards are offered as Rapid Return™ and Quality Control standards to provide you with the quickest delivery possible.

### UST Alaska BTEX in Water (Non-TNI/State Specific)

Store at 4 °C  
Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Benzene               | 5.0 | 30   | µg/L  |
| Ethylbenzene          | 5.0 | 30   | µg/L  |
| Toluene               | 5.0 | 30   | µg/L  |
| Xylenes, total        | 5.0 | 30   | µg/L  |

### UST Alaska DRO in Water (Non-TNI/State Specific)

Store at 4 °C  
Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Diesel Range Organics | 800 | 2300 | µg/L  |

### UST Alaska GRO in Water (Non-TNI/State Specific)

Store at 4 °C  
Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration   | Low | High | Units |
|-------------------------|-----|------|-------|
| Gasoline Range Organics | 100 | 500  | µg/L  |

### UST Iowa BTEX in Water (Non-TNI/State Specific)

Store at 4 °C  
Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Benzene               | 5.0 | 1000 | µg/L  |
| Ethylbenzene          | 5.0 | 1000 | µg/L  |
| Toluene               | 5.0 | 1000 | µg/L  |
| Xylenes, total        | 5.0 | 1000 | µg/L  |

### UST Iowa Diesel in Water (Non-TNI/State Specific)

Store at 4 °C  
Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration | Low | High   | Units |
|-----------------------|-----|--------|-------|
| Diesel                | 500 | 100000 | µg/L  |

### UST Iowa Gasoline in Water (Non-TNI/State Specific)

Store at 4 °C  
Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration | Low | High   | Units |
|-----------------------|-----|--------|-------|
| Gasoline              | 500 | 100000 | µg/L  |

### UST MA/NC EPH in Water (Non-TNI/State Specific)

Store at 4 °C  
Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration            | Low | High | Units |
|----------------------------------|-----|------|-------|
| C9 - C18 Aliphatic Hydrocarbons  | 300 | 3000 | µg/L  |
| C19 - C36 Aliphatic Hydrocarbons | 300 | 3000 | µg/L  |
| C11-C22 Aromatic Hydrocarbons    | 300 | 3000 | µg/L  |
| Acenaphthene                     | 50  | 1000 | µg/L  |
| Acenaphthylene                   | 50  | 1000 | µg/L  |
| Anthracene                       | 50  | 1000 | µg/L  |
| Benzo(a)anthracene               | 50  | 1000 | µg/L  |
| Benzo(b)fluoranthene             | 50  | 1000 | µg/L  |
| Benzo(k)fluoranthene             | 50  | 1000 | µg/L  |
| Benzo(g,h,i)perylene             | 50  | 1000 | µg/L  |
| Benzo(a)pyrene                   | 50  | 1000 | µg/L  |
| Chrysene                         | 50  | 1000 | µg/L  |
| Dibenz(a,h)anthracene            | 50  | 1000 | µg/L  |
| Fluoranthene                     | 50  | 1000 | µg/L  |

### UST MA/NC EPH in Water (Non-TNI/State Specific) continued

|                        |    |      |      |
|------------------------|----|------|------|
| Fluorene               | 50 | 1000 | µg/L |
| Indeno(1,2,3-cd)pyrene | 50 | 1000 | µg/L |
| Naphthalene            | 50 | 1000 | µg/L |
| Phenanthrene           | 50 | 1000 | µg/L |
| Pyrene                 | 50 | 1000 | µg/L |

### UST MA/NC VPH in Water (Non-TNI/State Specific)

Store at 4 °C  
Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration           | Low | High | Units |
|---------------------------------|-----|------|-------|
| C5 - C8 Aliphatic Hydrocarbons  | 300 | 3000 | µg/L  |
| C9 - C12 Aliphatic Hydrocarbons | 300 | 3000 | µg/L  |
| C9 - C10 Aromatic Hydrocarbons  | 300 | 3000 | µg/L  |
| Benzene                         | 50  | 1000 | µg/L  |
| Ethylbenzene                    | 50  | 1000 | µg/L  |
| Methyl-tert-butyl ether (MTBE)  | 50  | 1000 | µg/L  |
| Toluene                         | 50  | 1000 | µg/L  |
| Xylenes, total                  | 50  | 1000 | µg/L  |

### UST Texas Method 1005 in Water Set (Non-TNI/State Specific)

This complete set includes low level and high level standards for TX Method 1005.

### UST Texas Method 1005 in Water Low Level

Store at 4 °C  
Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration       | Low | High | Units |
|-----------------------------|-----|------|-------|
| Total Petroleum Hydrocarbon | 5.0 | 10   | mg/L  |
| nC6 – nC12 (Optional)       | 5.0 | 10   | mg/L  |
| >nC12 – nC28 (Optional)     | 5.0 | 10   | mg/L  |
| >nC28 – nC35 (Optional)     | 5.0 | 10   | mg/L  |

### UST Texas Method 1005 in Water High Level

Store at 4 °C  
Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration       | Low | High | Units |
|-----------------------------|-----|------|-------|
| Total Petroleum Hydrocarbon | 20  | 100  | mg/L  |
| nC6 – nC12 (Optional)       | 20  | 100  | mg/L  |
| >nC12 – nC28 (Optional)     | 20  | 100  | mg/L  |
| >nC28 – nC35 (Optional)     | 20  | 100  | mg/L  |

### UST Wisconsin DRO in Water (Non-TNI/State Specific)

Store at 4 °C  
Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration       | Low | High | Units |
|-----------------------------|-----|------|-------|
| Diesel Range Organics (DRO) | 200 | 800  | µg/L  |

### UST Wisconsin GRO in Water (Non-TNI/State Specific)

Store at 4 °C  
Provided as a > 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration          | Low | High | Units |
|--------------------------------|-----|------|-------|
| Gasoline Range Organics (GRO)  | 200 | 600  | µg/L  |
| Benzene                        | 20  | 75   | µg/L  |
| Ethylbenzene                   | 20  | 75   | µg/L  |
| Methyl tert-butyl ether (MTBE) | 20  | 75   | µg/L  |
| Toluene                        | 20  | 75   | µg/L  |
| 1,2,4-Trimethylbenzene         | 20  | 75   | µg/L  |
| 1,3,5-Trimethylbenzene         | 20  | 75   | µg/L  |
| Xylenes, total                 | 20  | 150  | µg/L  |

# Underground Storage Tank

## UST Soil Standards

### UST Alaska BTEX in Soil (Non-TNI/State Specific)

Store at < 0 °C

Provided as 25 g pre-spiked soil matrix and 25 mL methanol in a 40 mL VOA vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Benzene               | 5.0 | 100  | mg/kg |
| Ethylbenzene          | 5.0 | 100  | mg/kg |
| Toluene               | 5.0 | 100  | mg/kg |
| Xylenes, total        | 5.0 | 100  | mg/kg |

### UST Alaska DRO in Soil (Non-TNI/State Specific)

Store at 4 °C

Provided as 2 x 15 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Diesel Range Organics | 30  | 1500 | mg/kg |

### UST Alaska GRO in Soil (Non-TNI/State Specific)

Store at < 0 °C

Provided as 25 g pre-spiked soil matrix and 25 mL methanol in a 40 mL VOA vial.

| Analyte Concentration   | Low | High | Units |
|-------------------------|-----|------|-------|
| Gasoline Range Organics | 30  | 1500 | mg/kg |

### UST Alaska RRO in Soil (Non-TNI/State Specific)

Store at 4 °C

Provided as 2 x 15 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

| Analyte Concentration   | Low | High | Units |
|-------------------------|-----|------|-------|
| Residual Range Organics | 150 | 2000 | mg/kg |
| C28 - C38               | 150 | 2000 | mg/kg |

### UST Arizona TPH in Soil (Non-TNI/State Specific)

Store at 4 °C

Provided as 2 x 10 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

| Analyte Concentration                    | Low | High  | Units |
|------------------------------------------|-----|-------|-------|
| Diesel Fraction (C10 - C22)              | 30  | 3000  | mg/kg |
| Oil Range Organics (C22 - C32)           | 100 | 10000 | mg/kg |
| Total Petroleum Hydrocarbons (C10 - C32) | 130 | 13000 | mg/kg |

### UST Iowa BTEX in Soil (Non-TNI/State Specific)

Store at 4 °C

Provided as a 15 g soil matrix in a 40 mL VOA vial with a > 1 mL spiking solution in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration | Low  | High | Units |
|-----------------------|------|------|-------|
| Benzene               | 0.25 | 10   | mg/kg |
| Ethylbenzene          | 0.25 | 10   | mg/kg |
| Toluene               | 0.25 | 10   | mg/kg |
| Xylenes, total        | 0.25 | 10   | mg/kg |

### UST Iowa Diesel in Soil (Non-TNI/State Specific)

Store at 4 °C

Provided as 2 x 20 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Diesel                | 10  | 2000 | mg/kg |

### UST Iowa Gasoline in Soil (Non-TNI/State Specific)

Store at 4 °C

Provided as a 15 g soil matrix in a 40 mL VOA vial with a > 1 mL spiking solution in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Gasoline              | 1.0 | 2000 | mg/kg |

### UST MA/NC EPH in Soil (Non-TNI/State Specific)

Store at 4 °C

Provided as 2 x 20 g pre-spiked soil matrix flame sealed in 20 mL amber ampoules.

| Analyte Concentration            | Low | High | Units |
|----------------------------------|-----|------|-------|
| C9 - C18 Aliphatic Hydrocarbons  | 100 | 1500 | mg/kg |
| C19 - C36 Aliphatic Hydrocarbons | 100 | 1500 | mg/kg |
| C11-C22 Aromatic Hydrocarbons    | 100 | 1500 | mg/kg |
| Acenaphthene                     | 1.0 | 50   | mg/kg |
| Acenaphthylene                   | 1.0 | 50   | mg/kg |
| Anthracene                       | 1.0 | 50   | mg/kg |
| Benzo(a)anthracene               | 1.0 | 50   | mg/kg |
| Benzo(b)fluoranthene             | 1.0 | 50   | mg/kg |
| Benzo(k)fluoranthene             | 1.0 | 50   | mg/kg |
| Benzo(g,h,i)perylene             | 1.0 | 50   | mg/kg |
| Benzo(a)pyrene                   | 1.0 | 50   | mg/kg |
| Chrysene                         | 1.0 | 50   | mg/kg |
| Dibenz(a,h)anthracene            | 1.0 | 50   | mg/kg |
| Fluoranthene                     | 1.0 | 50   | mg/kg |
| Fluorene                         | 1.0 | 50   | mg/kg |
| Indeno(1,2,3-cd)pyrene           | 1.0 | 50   | mg/kg |
| Naphthalene                      | 1.0 | 50   | mg/kg |
| Phenanthrene                     | 1.0 | 50   | mg/kg |
| Pyrene                           | 1.0 | 50   | mg/kg |

### UST MA/NC/WA VPH in Soil (Non-TNI/State Specific)

Store at 4 °C

Provided as a 15 g soil matrix in a 40 mL VOA vial with a > 1 mL spiking solution in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration           | Low | High | Units |
|---------------------------------|-----|------|-------|
| C5 - C8 Aliphatic Hydrocarbons  | 100 | 1500 | mg/kg |
| C9 - C12 Aliphatic Hydrocarbons | 100 | 1500 | mg/kg |
| C9 - C10 Aromatic Hydrocarbons  | 100 | 1500 | mg/kg |
| Benzene                         | 1.0 | 50   | mg/kg |
| Ethylbenzene                    | 1.0 | 50   | mg/kg |
| Methyl-tert-butyl ether (MTBE)  | 1.0 | 50   | mg/kg |
| Toluene                         | 1.0 | 50   | mg/kg |
| Xylenes, total                  | 1.0 | 50   | mg/kg |

### UST Texas Method 1005 in Soil Set (Non-TNI/State Specific)

This complete set includes low level and high level standards for TX Method 1005.

#### UST Texas Method 1005 in Soil Low Level

Store at 4 °C

Provided as a 40 g Ottawa sand matrix in a 40 mL VOA vial with a > 1 mL spiking solution in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration       | Low | High | Units |
|-----------------------------|-----|------|-------|
| Total Petroleum Hydrocarbon | 50  | 100  | mg/kg |
| nC6 - nC12 (Optional)       | 50  | 100  | mg/kg |
| >nC12 - nC28 (Optional)     | 50  | 100  | mg/kg |
| >nC28 - nC35 (Optional)     | 50  | 100  | mg/kg |

#### UST Texas Method 1005 in Soil High Level

Store at 4 °C

Provided as a 40 g Ottawa sand matrix in a 40 mL VOA vial with a > 1 mL spiking solution in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration       | Low  | High  | Units |
|-----------------------------|------|-------|-------|
| Total Petroleum Hydrocarbon | 1000 | 20000 | mg/kg |
| nC6 - nC12 (Optional)       | 1000 | 20000 | mg/kg |
| >nC12 - nC28 (Optional)     | 1000 | 20000 | mg/kg |
| >nC28 - nC35 (Optional)     | 1000 | 20000 | mg/kg |

# Beyond Science

At Phenova, we are committed to serving - our customers, our employees, and humanity. Giving back to the community is at the heart of our company, and our staff live out this passion through company sponsored and employee supported events. Here are just a few recent highlights:



## Arvada Community Food Bank

Phenova has committed to supporting the Arvada Community Food Bank and their "Feeding the Future" program, through which children in need are provided groceries in their backpacks at the end of the school week, so they have food to eat through weekend.



## Horse Protection League

Phenova and our employees are long-time sponsors and regular volunteers of HPL, an organization funded 100% by volunteers and donations. Funds are used to feed and care for abused, neglected, or owner-surrendered horses and ponies.



## Jeffco Action Center

Phenova employees volunteer by sorting donations and by holding company-wide drives to collect high-demand items. These efforts support Jeffco Action Center's mission to provide immediate response to basic human needs and to promote pathways to self-sufficiency for local residents and the homeless.

## Adopt a Trail

To support the environment, Phenova employees donate hours to make our adopted trail (near Arvada, CO) passable and enjoyable for users.

## Family Tree Hope for the Holidays

During the holidays, Phenova employees came together in support of this Colorado-based organization that provides services and shelter to families in the community who have been impacted by child abuse, domestic violence, and homelessness.

## New Jersey Red Cross - Kids' Comfort Kits

In a Phenova-sponsored event, New Jersey PT Program participants joined Phenova employees by volunteering their time to package Kids' Comfort Kits for the New Jersey Central Chapter of the Red Cross. These packages, delivered following disasters, provide emergency supplies as well as kids' toys to help bring smiles and comfort during a stressful time.

# Air & Emissions

## AE Standards

### PT Availability

M = Monthly

Q = Quarterly - Jan, Apr, Jul, Oct

6M = Jan, Feb, Apr, Jul, Aug, Oct

RR = Rapid Return or QC Standard Only

DMR-QA = Timeframe for DMR-QA

| Ordering Information                                  |                | Proficiency Testing |                | Quality Control |                | Rapid Return™ |              |
|-------------------------------------------------------|----------------|---------------------|----------------|-----------------|----------------|---------------|--------------|
| Description                                           | Catalog Number | Price               | Catalog Number | Price           | Catalog Number | Price         | Availability |
| <b>Air &amp; Emissions Standards</b>                  |                |                     |                |                 |                |               |              |
| Air Anions/Filter Paper                               | PT-AN-AIR      | \$ 156              | QC-AN-AIR      | \$ 140          | RR-AN-AIR      | \$ 179        | Q            |
| Air Formaldehyde/Sorbent Tube                         | PT-FORM-AIR    | 208                 | QC-FORM-AIR    | 187             | RR-FORM-AIR    | 239           | Q            |
| Air Hexavalent Cr/Filter Paper                        | PT-CR6-AIR     | 120                 | QC-CR6-AIR     | 108             | RR-CR6-AIR     | 138           | Q            |
| Air Lead/Filter Paper                                 | PT-PB-AIR      | 120                 | QC-PB-AIR      | 108             | RR-PB-AIR      | 138           | Q            |
| Air Mercury/Filter Paper                              | PT-HG-AIR      | 99                  | QC-HG-AIR      | 89              | RR-HG-AIR      | 114           | Q            |
| Air Metals/Filter Paper                               | PT-MET-AIR     | 286                 | QC-MET-AIR     | 257             | RR-MET-AIR     | 329           | Q            |
| Air PAHs/PUF Cartridge                                | PT-PAH-AIR     | 255                 | QC-PAH-AIR     | 230             | RR-PAH-AIR     | 293           | Q            |
| Air Particulates/Filter Paper                         | PT-PTC-AIR     | 125                 | QC-PTC-AIR     | 113             | RR-PTC-AIR     | 144           | Q            |
| Air Volatiles/Charcoal Tube                           | PT-VOAC-AIR    | 286                 | QC-VOAC-AIR    | 257             | RR-VOAC-AIR    | 329           | Q            |
| Air Volatiles/TD Tube                                 | PT-VOATD-AIR   | 286                 | QC-VOATD-AIR   | 257             | RR-VOATD-AIR   | 329           | Q            |
| Air Fluoride/Impinger Solution                        | PT-F-AIR       | 120                 | QC-F-AIR       | 108             | RR-F-AIR       | 138           | Q            |
| Air H <sub>2</sub> SO <sub>4</sub> /Impinger Solution | PT-SO4-AIR     | 120                 | QC-SO4-AIR     | 108             | RR-SO4-AIR     | 138           | Q            |
| Air Mercury/Impinger Solution                         | PT-HGS-AIR     | 99                  | QC-HGS-AIR     | 89              | RR-HGS-AIR     | 114           | Q            |
| Air NOX/Impinger Solution                             | PT-NOX-AIR     | 120                 | QC-NOX-AIR     | 108             | RR-NOX-AIR     | 138           | Q            |
| Air Particulates/Impinger Solution                    | PT-PTS-AIR     | 156                 | QC-PTS-AIR     | 140             | RR-PTS-AIR     | 179           | Q            |
| Air SO <sub>2</sub> /Impinger Solution                | PT-SO2-AIR     | 120                 | QC-SO2-AIR     | 108             | RR-SO2-AIR     | 138           | Q            |
| Air Trace Metals/Impinger Solution                    | PT-TMS-AIR     | 140                 | QC-TMS-AIR     | 126             | RR-TMS-AIR     | 161           | Q            |
| Air Volatiles/Summa Canister                          | PT-VOAS-AIR    | 676                 | QC-VOAS-AIR    | 608             | RR-VOAS-AIR    | 777           | Q            |

### Air & Emissions 2014 Schedule

|         | Study ID | Open   | Close |
|---------|----------|--------|-------|
| January | AE0114   | 20-Jan | 6-Mar |
| April   | AE0414   | 21-Apr | 5-Jun |
| July    | AE0714   | 21-Jul | 4-Sep |
| October | AE1014   | 20-Oct | 4-Dec |

## Easily Find the Best AE Standard for Your Method

| Product                                               | Catalog Number | Method Reference        |
|-------------------------------------------------------|----------------|-------------------------|
| Air Anions/Filter Paper                               | PT-AN-AIR      | EPA 13A, 13B, 14        |
| Air Formaldehyde/Sorbent Tube                         | PT-FORM-AIR    | CARB 430, TO-11A        |
| Air Hexavalent Cr                                     | PT-CR6-AIR     | CARB 039, CARB 425      |
| Air Lead/Filter Paper                                 | PT-PB-AIR      | EPA 12                  |
| Air Mercury/Filter Paper                              | PT-HG-AIR      | EPA 29                  |
| Air Metals/Filter Paper                               | PT-MET-AIR     | EPA 29                  |
| Air PAHs/PUF Cartridge                                | PT-PAH-AIR     | TO-13A                  |
| Air Particulates/Filter Paper                         | PT-PTC-AIR     | EPA 5                   |
| Air Volatiles/Charcoal Tube                           | PT-VOAC-AIR    | NIOSH 1501              |
| Air Volatiles/ TD Tube                                | PT-VOATD-AIR   | TO-17, Method 0030-0031 |
| Air H <sub>2</sub> SO <sub>4</sub> /Impinger Solution | PT-SO4-AIR     | EPA 8                   |
| Air Mercury/Impinger Solution                         | PT-HGS-AIR     | EPA 29/101/101A         |
| Air NOX/Impinger Solution                             | PT-NOX-AIR     | EPA 7                   |
| Air Particulates/Impinger Solution                    | PT-PTS-AIR     | EPA 5                   |
| Air SO <sub>2</sub> /Impinger Solution                | PT-SO2-AIR     | EPA 6                   |
| Air Trace Metals/Impinger Solution                    | PT-TMS-AIR     | EPA 29                  |
| Air Volatiles/Summa Canister                          | PT-VOAS-AIR    | TO-14, TO-15            |



# Air & Emissions

## AE Standards

Phenova™ AE Studies encompass both ambient and stack testing methods. The studies are offered quarterly in a variety of different formats – impinger solutions, filters, and SUMMA canisters – for both organic and inorganic analytes. The AE studies provide ISO 17043 accredited PT standards for you to verify your laboratory's quality program or to seek STAC accreditation. The AE program allows any laboratory performing these analyses to challenge, monitor, and control their quality program.

### Air Anions on Filter (Non-TNI/State Specific)

Store at 20 -25 °C  
Provided as a pre-spiked, ready to use filter.

| Analyte Concentration | Low | High | Units  |
|-----------------------|-----|------|--------|
| Chloride              | 20  | 1600 | µg/HVF |
| Fluoride              | 10  | 80   | µg/HVF |
| Nitrate as N          | 30  | 100  | µg/HVF |
| Sulfate               | 200 | 2500 | µg/HVF |

### Air Formaldehyde on Sorbent Tube (Non-TNI/State Specific)

Store at 4 °C  
Provided as a 2 mL concentrate in water flame sealed in a 2 mL amber ampoule.

| Analyte Concentration | Low  | High | Units   |
|-----------------------|------|------|---------|
| Formaldehyde          | 0.50 | 10   | µg/tube |

### Air Hexavalent Chromium on Filter Paper (Non-TNI/State Specific)

Store at 20 -25 °C  
Provided as a pre-spiked, ready to use filter.

| Analyte Concentration | Low | High | Units     |
|-----------------------|-----|------|-----------|
| Chromium VI           | 1.0 | 50   | µg/filter |

### Air Lead on Filter Paper (Non-TNI/State Specific)

Store at 20 -25 °C  
Provided as a pre-spiked, ready to use filter.

| Analyte Concentration | Low | High | Units     |
|-----------------------|-----|------|-----------|
| Lead                  | 20  | 350  | µg/filter |

### Air Mercury on Filter Paper (Non-TNI/State Specific)

Store at 20 -25 °C  
Provided as a >20 mL concentrate in water preserved with 1% HCl + 10 ppm Cr<sup>6+</sup> contained in a 24 mL clear glass vial + blank filter for spiking .

| Analyte Concentration | Low | High | Units     |
|-----------------------|-----|------|-----------|
| Mercury               | 1.0 | 75   | µg/filter |

### Air Metals on Filter Paper (Non-TNI/State Specific)

Store at 20 -25 °C  
Provided as a pre-spiked, ready to use filter.

| Analyte Concentration | Low | High | Units     |
|-----------------------|-----|------|-----------|
| Aluminum              | 20  | 400  | µg/filter |
| Antimony              | 9.5 | 90   | µg/filter |
| Arsenic               | 7.0 | 90   | µg/filter |
| Barium                | 10  | 250  | µg/filter |
| Beryllium             | 0.8 | 90   | µg/filter |
| Boron                 | 80  | 200  | µg/filter |
| Cadmium               | 0.8 | 75   | µg/filter |
| Chromium              | 1.7 | 100  | µg/filter |
| Cobalt                | 2.8 | 100  | µg/filter |
| Copper                | 4.0 | 90   | µg/filter |
| Iron                  | 20  | 400  | µg/filter |
| Lead                  | 7.0 | 300  | µg/filter |
| Manganese             | 7.0 | 400  | µg/filter |
| Molybdenum            | 60  | 600  | µg/filter |
| Nickel                | 8.0 | 300  | µg/filter |
| Phosphorus            | 5.0 | 500  | µg/filter |
| Selenium              | 9.0 | 200  | µg/filter |
| Silver                | 2.4 | 60   | µg/filter |
| Strontium             | 3.0 | 30   | µg/filter |
| Thallium              | 6.0 | 900  | µg/filter |
| Vanadium              | 5.5 | 200  | µg/filter |
| Zinc                  | 10  | 200  | µg/filter |



### Air PAHs, PUF Cartridge (Non-TNI/State Specific)

Store at 4 °C  
Provided as a 2 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration  | Low | High | Units  |
|------------------------|-----|------|--------|
| Acenaphthene           | 10  | 500  | µg/PUF |
| Acenaphthylene         | 10  | 500  | µg/PUF |
| Anthracene             | 10  | 500  | µg/PUF |
| Benzo(a)anthracene     | 10  | 500  | µg/PUF |
| Benzo(b)fluoranthene   | 10  | 500  | µg/PUF |
| Benzo(k)fluoranthene   | 10  | 500  | µg/PUF |
| Benzo(g,h,i)perylene   | 10  | 500  | µg/PUF |
| Benzo(a)pyrene         | 10  | 500  | µg/PUF |
| Chrysene               | 10  | 500  | µg/PUF |
| Dibenz(a,h)anthracene  | 10  | 500  | µg/PUF |
| Fluoranthene           | 10  | 500  | µg/PUF |
| Fluorene               | 10  | 500  | µg/PUF |
| Indeno(1,2,3-cd)pyrene | 10  | 500  | µg/PUF |
| Naphthalene            | 10  | 500  | µg/PUF |
| Phenanthrene           | 10  | 500  | µg/PUF |
| Pyrene                 | 10  | 500  | µg/PUF |

### Air Particulates on Filter Paper (Non-TNI/State Specific)

Store at 20 -25 °C  
Provided as a pre-spiked, ready to use filter.

| Analyte Concentration | Low | High | Units     |
|-----------------------|-----|------|-----------|
| Particulates          | 50  | 600  | mg/filter |

# Air & Emissions

## Air Volatiles, Charcoal Tube (Non-TNI/State Specific)

Store at 4 °C

Provided as a &gt; 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration              | Low | High | Units   |
|------------------------------------|-----|------|---------|
| Acetone                            | 5.0 | 100  | ng/tube |
| Acetonitrile                       | 5.0 | 100  | ng/tube |
| Acrolein                           | 5.0 | 100  | ng/tube |
| Acrylonitrile                      | 5.0 | 100  | ng/tube |
| Benzene                            | 5.0 | 100  | ng/tube |
| Bromobenzene                       | 5.0 | 100  | ng/tube |
| Bromodichloromethane               | 5.0 | 100  | ng/tube |
| Bromoform                          | 5.0 | 100  | ng/tube |
| Bromomethane                       | 5.0 | 100  | ng/tube |
| 2-Butanone (MEK)                   | 5.0 | 100  | ng/tube |
| Carbon disulfide                   | 5.0 | 100  | ng/tube |
| Carbon tetrachloride               | 5.0 | 100  | ng/tube |
| Chlorobenzene                      | 5.0 | 100  | ng/tube |
| Chloroethane                       | 5.0 | 100  | ng/tube |
| 2-Chloroethylvinylether            | 5.0 | 100  | ng/tube |
| Chloroform                         | 5.0 | 100  | ng/tube |
| Chloromethane                      | 5.0 | 100  | ng/tube |
| Dibromochloromethane               | 5.0 | 100  | ng/tube |
| 1,2-Dibromo-3-chloropropane (DBCP) | 5.0 | 100  | ng/tube |
| 1,2-Dibromoethane (EDB)            | 5.0 | 100  | ng/tube |
| Dibromomethane                     | 5.0 | 100  | ng/tube |
| 1,2 Dichlorobenzene                | 5.0 | 100  | ng/tube |
| 1,3 Dichlorobenzene                | 5.0 | 100  | ng/tube |
| 1,4 Dichlorobenzene                | 5.0 | 100  | ng/tube |
| Dichlorodifluoromethane            | 5.0 | 100  | ng/tube |
| 1,1-Dichloroethane                 | 5.0 | 100  | ng/tube |
| 1,2 Dichloroethane                 | 5.0 | 100  | ng/tube |
| cis-1,2-Dichloroethene             | 5.0 | 100  | ng/tube |
| 1,1-Dichloroethene                 | 5.0 | 100  | ng/tube |
| trans-1,2-Dichloroethene           | 5.0 | 100  | ng/tube |
| 1,2-Dichloropropane                | 5.0 | 100  | ng/tube |
| cis-1,3-Dichloropropylene          | 5.0 | 100  | ng/tube |
| trans-1,3-Dichloropropene          | 5.0 | 100  | ng/tube |
| Ethylbenzene                       | 5.0 | 100  | ng/tube |
| 2-Hexanone                         | 5.0 | 100  | ng/tube |
| Isopropylbenzene                   | 5.0 | 100  | ng/tube |
| Naphthalene                        | 5.0 | 100  | ng/tube |
| Methylene Chloride                 | 5.0 | 100  | ng/tube |
| Methyl tert-butyl ether (MTBE)     | 5.0 | 100  | ng/tube |
| 4-Methyl-2-pentanone (MIBK)        | 5.0 | 100  | ng/tube |
| Styrene                            | 5.0 | 100  | ng/tube |
| 1,1,1,2-Tetrachloroethane          | 5.0 | 100  | ng/tube |
| 1,1,2,2-Tetrachloroethane          | 5.0 | 100  | ng/tube |
| Tetrachloroethene                  | 5.0 | 100  | ng/tube |
| Toluene                            | 5.0 | 100  | ng/tube |
| 1,2,3-Trichlorobenzene             | 5.0 | 100  | ng/tube |
| 1,2,4-Trichlorobenzene             | 5.0 | 100  | ng/tube |
| 1,1,1-Trichloroethane              | 5.0 | 100  | ng/tube |
| 1,1,2-Trichloroethane              | 5.0 | 100  | ng/tube |
| Trichloroethene                    | 5.0 | 100  | ng/tube |
| 1,2,3-Trichloropropane             | 5.0 | 100  | ng/tube |
| 1,2,4-Trimethylbenzene             | 5.0 | 100  | ng/tube |
| 1,3,5-Trimethylbenzene             | 5.0 | 100  | ng/tube |
| Trichlorofluoromethane             | 5.0 | 100  | ng/tube |
| Vinyl acetate                      | 5.0 | 100  | ng/tube |
| Vinyl chloride                     | 5.0 | 100  | ng/tube |
| m/p-Xylene                         | 5.0 | 100  | ng/tube |
| o-Xylene                           | 5.0 | 100  | ng/tube |
| Xylenes, total                     | 5.0 | 100  | ng/tube |

## Air Volatiles, Thermal Desorption Tube (Non-TNI/State Specific)

Store at 4 °C

Provided as a &gt; 1 mL concentrate in methanol flame sealed in a 2 mL amber ampoule.

| Analyte Concentration              | Low | High | Units   |
|------------------------------------|-----|------|---------|
| Acetonitrile                       | 5.0 | 100  | ng/tube |
| Acrolein                           | 5.0 | 100  | ng/tube |
| Acrylonitrile                      | 5.0 | 100  | ng/tube |
| Benzene                            | 5.0 | 100  | ng/tube |
| Bromobenzene                       | 5.0 | 100  | ng/tube |
| Bromodichloromethane               | 5.0 | 100  | ng/tube |
| Bromoform                          | 5.0 | 100  | ng/tube |
| Bromomethane                       | 5.0 | 100  | ng/tube |
| 2-Butanone (MEK)                   | 5.0 | 100  | ng/tube |
| Carbon disulfide                   | 5.0 | 100  | ng/tube |
| Carbon tetrachloride               | 5.0 | 100  | ng/tube |
| Chlorobenzene                      | 5.0 | 100  | ng/tube |
| Chloroethane                       | 5.0 | 100  | ng/tube |
| 2-Chloroethylvinylether            | 5.0 | 100  | ng/tube |
| Chloroform                         | 5.0 | 100  | ng/tube |
| Chloromethane                      | 5.0 | 100  | ng/tube |
| Dibromochloromethane               | 5.0 | 100  | ng/tube |
| 1,2-Dibromo-3-chloropropane (DBCP) | 5.0 | 100  | ng/tube |
| 1,2-Dibromoethane (EDB)            | 5.0 | 100  | ng/tube |
| Dibromomethane                     | 5.0 | 100  | ng/tube |
| 1,2 Dichlorobenzene                | 5.0 | 100  | ng/tube |
| 1,3 Dichlorobenzene                | 5.0 | 100  | ng/tube |
| 1,4 Dichlorobenzene                | 5.0 | 100  | ng/tube |
| Dichlorodifluoromethane            | 5.0 | 100  | ng/tube |
| 1,1-Dichloroethane                 | 5.0 | 100  | ng/tube |
| 1,2 Dichloroethane                 | 5.0 | 100  | ng/tube |
| 1,1-Dichloroethene                 | 5.0 | 100  | ng/tube |
| cis-1,2-Dichloroethene             | 5.0 | 100  | ng/tube |
| trans-1,2-Dichloroethene           | 5.0 | 100  | ng/tube |
| 1,2-Dichloropropane                | 5.0 | 100  | ng/tube |
| cis-1,3-Dichloropropylene          | 5.0 | 100  | ng/tube |
| trans-1,3-Dichloropropene          | 5.0 | 100  | ng/tube |
| Ethylbenzene                       | 5.0 | 100  | ng/tube |
| Hexachlorobutadiene                | 5.0 | 100  | ng/tube |
| 2-Hexanone                         | 5.0 | 100  | ng/tube |
| Isopropylbenzene                   | 5.0 | 100  | ng/tube |
| Methylene Chloride                 | 5.0 | 100  | ng/tube |
| Methyl tert-butyl ether (MTBE)     | 5.0 | 100  | ng/tube |
| 4-Methyl-2-pentanone (MIBK)        | 5.0 | 100  | ng/tube |
| Naphthalene                        | 5.0 | 100  | ng/tube |
| Styrene                            | 5.0 | 100  | ng/tube |
| 1,1,1,2-Tetrachloroethane          | 5.0 | 100  | ng/tube |
| 1,1,2,2-Tetrachloroethane          | 5.0 | 100  | ng/tube |
| Tetrachloroethene                  | 5.0 | 100  | ng/tube |
| Toluene                            | 5.0 | 100  | ng/tube |
| 1,1,1-Trichloroethane              | 5.0 | 100  | ng/tube |
| 1,1,2-Trichloroethane              | 5.0 | 100  | ng/tube |
| Trichloroethene                    | 5.0 | 100  | ng/tube |
| 1,2,3-Trichlorobenzene             | 5.0 | 100  | ng/tube |
| 1,2,4-Trichlorobenzene             | 5.0 | 100  | ng/tube |
| 1,2,3-Trichloropropane             | 5.0 | 100  | ng/tube |
| 1,2,4-Trimethylbenzene             | 5.0 | 100  | ng/tube |
| 1,3,5-Trimethylbenzene             | 5.0 | 100  | ng/tube |
| Trichlorofluoromethane             | 5.0 | 100  | ng/tube |
| Vinyl acetate                      | 5.0 | 100  | ng/tube |
| Vinyl chloride                     | 5.0 | 100  | ng/tube |
| m/p-Xylene                         | 5.0 | 100  | ng/tube |
| o-Xylene                           | 5.0 | 100  | ng/tube |
| Xylenes, total                     | 5.0 | 100  | ng/tube |

## Air Fluoride, Impinger Solution (Non-TNI/State Specific)

Store at 20 - 25 °C

Provided as a 20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units   |
|-----------------------|-----|------|---------|
| Fluoride              | 1.0 | 50   | mg/dscm |

# Air & Emissions

## Air H<sub>2</sub>SO<sub>4</sub>, Impinger Solution (Non-TNI/State Specific)

Store at 20-25 °C  
Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units   |
|-----------------------|-----|------|---------|
| Sulfuric Acid         | 5.0 | 150  | mg/dscm |

## Air Mercury, Impinger Solution (Non-TNI/State Specific)

Store at 20-25 °C  
Provided as a >20 mL concentrate in water preserved with 1% HCl + 10 ppm Cr<sup>6+</sup> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Mercury               | 0.9 | 200  | ng/mL |

## Air NO<sub>x</sub>, Impinger Solution (Non-TNI/State Specific)

Store at 20-25 °C  
Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration                 | Low | High | Units   |
|---------------------------------------|-----|------|---------|
| NO <sub>x</sub> (as NO <sub>2</sub> ) | 100 | 2000 | mg/dscm |

## Air Particulates, Impinger Solution (Non-TNI/State Specific)

Store at 20-25 °C  
Provided as a 500 mL ready to use standard in water contained in a 500 mL poly bottle.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Particulates          | 140 | 675  | mg/L  |

## Air SO<sub>2</sub>, Impinger Solution (Non-TNI/State Specific)

Store at 20-25 °C  
Provided as a >20 mL concentrate in water contained in a 24 mL clear glass vial.

| Analyte Concentration             | Low | High | Units   |
|-----------------------------------|-----|------|---------|
| Sulfur dioxide (SO <sub>2</sub> ) | 5.0 | 2000 | mg/dscm |

## Air Trace Metals, Impinger Solution (Non-TNI/State Specific)

Store at 20-25 °C  
Provided as a >20 mL concentrate in water preserved with 2% HNO<sub>3</sub> contained in a 24 mL clear glass vial.

| Analyte Concentration | Low   | High | Units |
|-----------------------|-------|------|-------|
| Aluminum              | 20    | 400  | µg/mL |
| Antimony              | 9.5   | 90   | µg/mL |
| Arsenic               | 7.0   | 90   | µg/mL |
| Barium                | 10    | 250  | µg/mL |
| Beryllium             | 0.8   | 90   | µg/mL |
| Boron                 | 80    | 200  | µg/mL |
| Cadmium               | 0.8   | 75   | µg/mL |
| Chromium              | 1.7   | 100  | µg/mL |
| Cobalt                | 2.8   | 100  | µg/mL |
| Copper                | 4.0   | 90   | µg/mL |
| Iron                  | 20    | 400  | µg/mL |
| Lead                  | 7.0   | 300  | µg/mL |
| Manganese             | 7.0   | 400  | µg/mL |
| Molybdenum            | 6.0   | 600  | µg/mL |
| Nickel                | 8.0   | 300  | µg/mL |
| Phosphorus            | 0.010 | 25   | µg/mL |
| Selenium              | 9.0   | 200  | µg/mL |
| Silver                | 2.6   | 60   | µg/mL |
| Strontium             | 3.0   | 30   | µg/mL |
| Thallium              | 6.0   | 900  | µg/mL |
| Vanadium              | 5.5   | 200  | µg/mL |
| Zinc                  | 10    | 200  | µg/mL |

## Air Volatiles, Summa Canister (Non-TNI/State Specific)

Store at 20-25 °C  
Provided in your pre-cleaned and evacuated Summa canister as a ready to use standard.

| Analyte Concentration | Low | High | Units |
|-----------------------|-----|------|-------|
| Acetone               | 5.0 | 50   | ppbv  |
| Acetonitrile          | 5.0 | 50   | ppbv  |
| Acetylene             | 5.0 | 50   | ppbv  |
| Acrolein (Propenal)   | 5.0 | 50   | ppbv  |

## Air Volatiles, Summa Canister (Non-TNI/State Specific) continued

|                                             |     |    |      |
|---------------------------------------------|-----|----|------|
| Acrylonitrile                               | 5.0 | 50 | ppbv |
| Benzene                                     | 5.0 | 50 | ppbv |
| Bromochloromethane                          | 5.0 | 50 | ppbv |
| Bromodichloromethane                        | 5.0 | 50 | ppbv |
| Bromoform                                   | 5.0 | 50 | ppbv |
| Bromomethane                                | 5.0 | 50 | ppbv |
| 1,3-Butadiene                               | 5.0 | 50 | ppbv |
| 2-Butanone (Methyl ethyl ketone, MEK)       | 5.0 | 50 | ppbv |
| Carbon disulfide                            | 5.0 | 50 | ppbv |
| Carbon tetrachloride                        | 5.0 | 50 | ppbv |
| Chlorobenzene                               | 5.0 | 50 | ppbv |
| Chloroethane                                | 5.0 | 50 | ppbv |
| Chloroform                                  | 5.0 | 50 | ppbv |
| Chloromethane                               | 5.0 | 50 | ppbv |
| Chloromethylbenzene                         | 5.0 | 50 | ppbv |
| Chloroprene                                 | 5.0 | 50 | ppbv |
| Cyclohexane                                 | 5.0 | 50 | ppbv |
| 1,2-Dibromoethane (EDB, Ethylene dibromide) | 5.0 | 50 | ppbv |
| Dibromochloromethane                        | 5.0 | 50 | ppbv |
| Dichlorodifluoromethane                     | 5.0 | 50 | ppbv |
| 1,2 Dichlorobenzene                         | 5.0 | 50 | ppbv |
| 1,3 Dichlorobenzene                         | 5.0 | 50 | ppbv |
| 1,4 Dichlorobenzene                         | 5.0 | 50 | ppbv |
| 1,1-Dichloroethane                          | 5.0 | 50 | ppbv |
| 1,2 Dichloroethane                          | 5.0 | 50 | ppbv |
| 1,1-Dichloroethene                          | 5.0 | 50 | ppbv |
| cis-1,2-Dichloroethene                      | 5.0 | 50 | ppbv |
| trans-1,2-Dichloroethene                    | 5.0 | 50 | ppbv |
| 1,2-Dichloropropane                         | 5.0 | 50 | ppbv |
| cis-1,3-Dichloropropene                     | 5.0 | 50 | ppbv |
| trans-1,3-Dichloropropene                   | 5.0 | 50 | ppbv |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane      | 5.0 | 50 | ppbv |
| Ethyl acetate                               | 5.0 | 50 | ppbv |
| Ethyl acrylate                              | 5.0 | 50 | ppbv |
| Ethylbenzene                                | 5.0 | 50 | ppbv |
| Ethyl-t-butylether (ETBE)                   | 5.0 | 50 | ppbv |
| n-Heptane                                   | 5.0 | 50 | ppbv |
| Hexachlorobutadiene                         | 5.0 | 50 | ppbv |
| Hexane                                      | 5.0 | 50 | ppbv |
| Isopropanol                                 | 5.0 | 50 | ppbv |
| Methyl tert-butyl ether (MTBE)              | 5.0 | 50 | ppbv |
| Methylene chloride                          | 5.0 | 50 | ppbv |
| Methyl isobutyl ketone (Hexone)             | 5.0 | 50 | ppbv |
| Methyl methacrylate                         | 5.0 | 50 | ppbv |
| n-Octane                                    | 5.0 | 50 | ppbv |
| Propylene                                   | 5.0 | 50 | ppbv |
| Styrene                                     | 5.0 | 50 | ppbv |
| T-amylmethylether (TAME)                    | 5.0 | 50 | ppbv |
| Tetrachloroethene                           | 5.0 | 50 | ppbv |
| 1,2,4-Trichlorobenzene                      | 5.0 | 50 | ppbv |
| 1,1,1-Trichloroethane                       | 5.0 | 50 | ppbv |
| 1,1,2-Trichloroethane                       | 5.0 | 50 | ppbv |
| 1,1,2,2-Tetrachloroethane                   | 5.0 | 50 | ppbv |
| Trichloroethene                             | 5.0 | 50 | ppbv |
| Trichlorofluoromethane                      | 5.0 | 50 | ppbv |
| 1,1,2-Trichloro-1,2,2-trifluoroethane       | 5.0 | 50 | ppbv |
| 1,2,4-Trimethylbenzene                      | 5.0 | 50 | ppbv |
| 1,3,5-Trimethylbenzene                      | 5.0 | 50 | ppbv |
| Toluene                                     | 5.0 | 50 | ppbv |
| Vinyl chloride                              | 5.0 | 50 | ppbv |
| m+p-Xylene                                  | 5.0 | 50 | ppbv |
| o-Xylene                                    | 5.0 | 50 | ppbv |
| Xylenes, total                              | 5.0 | 50 | ppbv |

# Double Blind Standards

## Real QC in Real Time

Double Blind Performance Evaluation (PE) standards enable a laboratory or contractor for laboratory services to cost effectively evaluate the quality of actual sample data. Recently, a US Federal Interagency Task Force on Environmental Data Quality called Double Blind PEs the “most cost effective tool available for evaluating laboratory data quality.”

### Double Blind PEs are as simple as:

1. Call Phenova to request a quote. All we need to know is the sample matrix, the analytes of interest and the concentrations.
2. Send us your sample bottles. We will manufacture and certify the Double Blind Standards ordered and package them in your bottles.
3. The Standards are shipped to your sample team by FedEx® Overnight Service. We use chain of custody, sample coolers, and all other required sample packaging and shipment procedures.
4. Your crew removes our sample tags, relabels the Double Blinds as “real” samples and integrates the standards into a sample delivery group for shipment to the laboratory.
5. Once the analyses are complete, you evaluate the results against the Certified Values and Acceptance Limits we provide. Unlike your actual samples, you know what the laboratory should have reported for the Double Blind Standards. You can then extrapolate the quality of these results to those for the other samples sent to the laboratory.

Call 866-942-2978 to speak with a Phenova chemist. We can set up a double blind project as part of your ongoing quality assurance plan today!



# Phenomenex® Recommended Products

## Water Pollution WP Organics

### Ordering Information and Cross - Reference Chart

| Standard                      |                 | Phenomenex Recommends                                                            |                    |                                                                           |
|-------------------------------|-----------------|----------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------|
| Description                   | Part No.        | SPE                                                                              | HPLC               | GC                                                                        |
| Acids                         | PT - ACIDS - WP | EPA 8270: Strata® C18 - E, Alumina - N, Si - 1 (silica gel), Florisil® (FL - PR) |                    | Zebron™ ZB - SemiVolatiles                                                |
| Base/Neutrals                 | PT - BN - WP    | EPA 8270: Strata C18 - E, Alumina - N, Si - 1 (silica gel), Florisil (FL - PR)   |                    | Zebron ZB - SemiVolatiles                                                 |
| Carbamates                    | QC - CARB - WP  | Strata™ - X                                                                      | Kinetex® C18       |                                                                           |
| Chlordane                     | PT - CHLR - WP  | EPA 8081: Strata C18 - E, Si - 1 (silica gel), Florisil (FL - PR)                |                    | Zebron ZB - MR - 1 & 2<br>OR ZB - XLB & ZB - 35<br>Zebron ZB-5HT Inferno™ |
| Diesel Range Organics         | PT - DIES - WP  |                                                                                  |                    |                                                                           |
| Explosives - Low Level        | PT - EXP - WP   | Strata - XL                                                                      | Kinetex C18        |                                                                           |
| Gasoline Range Organics       | PT - GAS - WP   |                                                                                  |                    | Zebron ZB-WAX                                                             |
| Nitrogen Pesticides           | PT - NP - WP    |                                                                                  |                    | Zebron ZB-MR-1 & 2                                                        |
| Organic Phosphorus Pesticides | PT - OPP - WP   |                                                                                  |                    | Zebron ZB-MR-1 & 2                                                        |
| PAH - GC                      | PT - PAHGC - WP | Strata PAH                                                                       |                    | Zebron ZB-SemiVolatiles                                                   |
| PAH - Low Level               | PT - PAH - WP   | Strata PAH                                                                       | Kinetex C18        |                                                                           |
| PCBs in Oil                   | PT - PCBO - WP  | EPA 8082: Strata Si - 1 (silica gel), Florisil (FL - PR)                         |                    | Zebron ZB - MR - 1 & 2                                                    |
| PCBs in Water                 | PT - PCBW - WP  | EPA 8082: Strata Si - 1 (silica gel), Florisil (FL - PR)                         |                    | Zebron ZB - MR - 1 & 2                                                    |
| Perfluorinated Compounds      | QC - PFC - WP   |                                                                                  | Synergi™ Fusion RP |                                                                           |
| Pesticides                    | PT - PEST - WP  | EPA 8081: Strata C18 - E, Si - 1 (silica gel), Florisil (FL - PR)                |                    | Zebron ZB - MR - 1 & 2                                                    |
| Toxaphene                     | PT - TXP - WP   | EPA 8081: Strata C18 - E, Si - 1 (silica gel), Florisil (FL - PR)                |                    | Zebron ZB - MR - 1 & 2                                                    |
| VOA - GC                      | PT - VOAGC - WP |                                                                                  |                    | Zebron ZB - 624                                                           |
| Volatiles                     | PT - VOA - WP   |                                                                                  |                    | Zebron ZB - 624                                                           |



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# Phenomenex® Recommended Products

## Water Supply Organics

### Ordering Information and Cross - Reference Chart

| Standard                               |                   | Phenomenex Recommends                    |              |                                                 |
|----------------------------------------|-------------------|------------------------------------------|--------------|-------------------------------------------------|
| Description                            | Part No.          | SPE                                      | HPLC         | GC                                              |
| Carbamates                             | PT - CARB - WS    | Strata™ - X                              | Kinetex® C18 |                                                 |
| Chloral Hydrate                        | PT - CH - WS      |                                          |              |                                                 |
| Chlordane                              | PT - CHLR - WS    | EPA 508: Strata® C18 - E, Sodium Sulfate |              |                                                 |
| EDB/DBCP/TCP                           | PT - EDBCP - WS   |                                          |              | Zebron ZB-MR-1 & 2                              |
| Gasoline Additives                     | PT - ADD - WS     |                                          |              | Zebron ZB - 1 & ZB - 624                        |
| Herbicides                             | PT - HERB - WS    |                                          |              | ZB - XLB & ZB - 35                              |
| Organic Disinfection Byproducts        | PT - ODB - WS     |                                          |              | Zebron ZB - MR - 1 & 2<br>OR ZB - XLB & ZB - 35 |
| PCBs as Decachlorobiphenyl             | PT - DECA - WS    |                                          |              | Zebron ZB - XLB & ZB - 35                       |
| Pesticides                             | PT - PEST - WS    |                                          |              | Zebron ZB-MR-1 & 2                              |
| Regulated Volatiles                    | PT - RVOA - WS    | EPA 508: Strata C18 - E, Sodium Sulfate  |              | Zebron ZB-624                                   |
| Semivolatiles I - PAHs                 | PT - SV1 - WS     | EPA 525: Strata C18 - E                  |              | Zebron ZB-SemiVolatiles                         |
| Semivolatiles II - Phthalates/Adipates | PT - SV2HERB - WS | Paraquat/Diquat: Strata-X-CW             |              | Zebron ZB - SemiVolatiles                       |
| Toxaphene                              | PT - TXP - WS     |                                          |              | Zebron ZB-MR-1 & 2                              |
| Unregulated Volatiles                  | PT - UNRVOA - WS  |                                          |              | Zebron ZB-624                                   |
| Pesticides                             | PT - PEST - WS    | EPA 508: Strata C18 - E, Sodium Sulfate  |              | Zebron ZB - MR - 1 & 2<br>OR ZB - XLB & ZB - 35 |
| Toxaphene                              | PT - TXP - WS     | EPA 525: Strata C18 - E                  |              | Zebron ZB - MR - 1 & 2                          |



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# Phenomenex® Recommended Products

## Soil/Hazardous Waste Organics

### Ordering Information and Cross - Reference Chart

| Standard                             |                    | Phenomenex Recommends                                                  |                        |                                                                |
|--------------------------------------|--------------------|------------------------------------------------------------------------|------------------------|----------------------------------------------------------------|
| Description                          | Part No.           | SPE                                                                    | HPLC                   | GC                                                             |
| Base/Neutrals/Acids                  | PT - BNA - SOIL    | Strata® C18 - E, Alumina - N, Si - 1 (silica gel), Florisil® (FL - PR) |                        | Zebron™ ZB - SemiVolatiles                                     |
| Carbamates                           | QC - CARB - SOIL   | Strata™ - X                                                            | Luna® C18(2)           |                                                                |
| Chlordane                            | PT - CHLR - SOIL   | EPA 8081: Strata C18 - E, Si - 1 (silica gel), Florisil (FL - PR)      |                        | Zebron ZB - MR - 1 & 2<br>OR ZB - XLB & ZB - 35                |
| Explosives                           | PT - EXP - SOIL    | EPA 8091: Strata Florisil (FL - PR) EPA 8330: Strata - XL              | EPA 8330: Kinetex® C18 | EPA 8091: Zebron ZB - 50 OR ZB - XLB                           |
| Explosives by 8330B                  | PT - 8330B - SOIL  | Strata - XL                                                            | Kinetex C18            | EPA 8041: Zebron                                               |
| Herbicides                           | PT - HERB - SOIL   |                                                                        |                        | EPA 8150/8151: Zebron ZB - MR - 1 & 2<br>or ZB - XLB & ZB - 35 |
| Nitrogen Pesticides                  | PT - NP - SOIL     |                                                                        |                        | EPA 552: Zebron ZB - XLB & ZB - 35                             |
| Organic Phosphorus Pesticides (OPPs) | PT - OPP - SOIL    | Strata C18 - E, Alumina - N, Si - 1 (silica gel), Florisil (FL - PR)   |                        | Zebron ZB - MR - 1 & 2<br>OR ZB - XLB & ZB - 35                |
| PAH - GC                             | QC - PAHGC - SOIL  |                                                                        |                        | Zebron ZB - SemiVolatiles                                      |
| PAHs                                 | PT - PAH - SOIL    |                                                                        |                        | Zebron ZB - SemiVolatiles                                      |
| PCBs                                 | PT - PCB - SOIL    | EPA 8082: Strata Si - 1 (silica gel), Florisil (FL - PR)               |                        | EPA 8080: Zebron ZB - MR - 1 & 2<br>ZB - XLB & ZB - 35         |
| Pesticides                           | PT - PEST - SOIL   | EPA 8081: Strata C18 - E, Si - 1 (silica gel), Florisil (FL - PR)      |                        | Zebron ZB - MR - 1 & 2                                         |
| Toxaphene                            | PT - TXP - SOIL    | EPA 8081: Strata C18 - E, Si - 1 (silica gel), Florisil (FL - PR)      |                        | Zebron ZB - MR - 1 & 2                                         |
| VOA - GC                             | PT - VOAMGC - SOIL |                                                                        |                        | Zebron ZB - 624                                                |
| Volatiles                            | PT - VOA - SOIL    |                                                                        |                        | Zebron ZB - 624                                                |



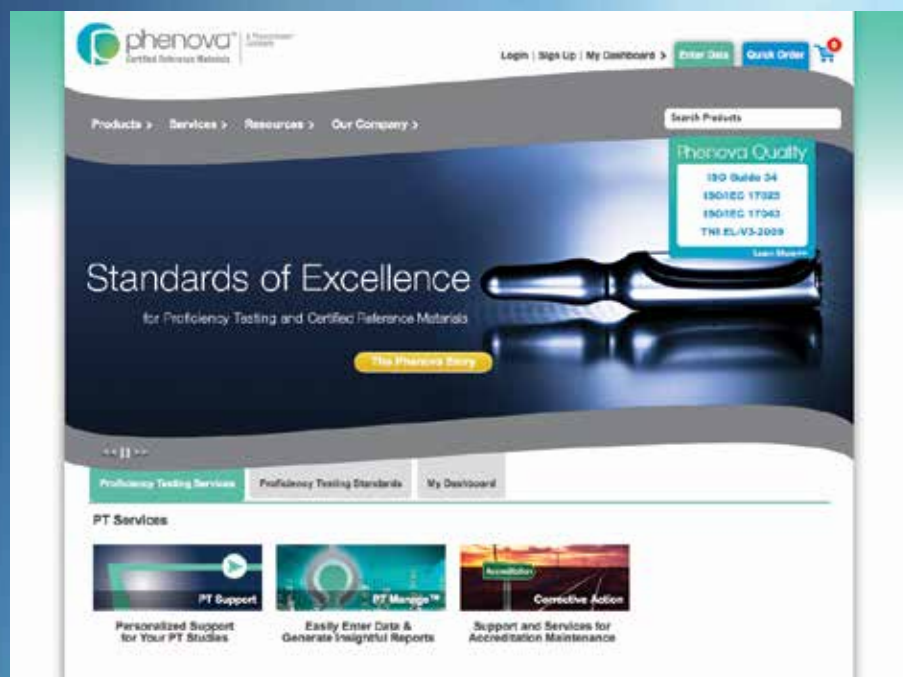
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