

**EPA Clean Air Act Performance Audit Samples**  
**Stationary Source Audit Sample (SSAS) Table <sup>13</sup>**  
**Revision 1, Effective December 15, 2010**

| Matrix          | NELAC Analyte Code | Analyte                                           | Conc Range | Acceptance Criteria <sup>12</sup> |  |  |
|-----------------|--------------------|---------------------------------------------------|------------|-----------------------------------|--|--|
|                 |                    | <b>Inorganics in Impinger Solution</b>            |            |                                   |  |  |
|                 |                    | <b>EPA Method 6 and 8 <sup>1,2</sup></b>          | mg/dscm    |                                   |  |  |
| Air & Emissions | 4010               | Sulfur Dioxide                                    | 50-2000    | ± 5% fixed acceptance limit       |  |  |
|                 |                    | <b>EPA Method 8 <sup>1,2</sup></b>                | mg/dscm    |                                   |  |  |
| Air & Emissions | 4020               | Sulfuric Acid mist                                | 10-150     | ± 5% fixed acceptance limit       |  |  |
|                 |                    | <b>EPA Method 7 <sup>1,3</sup></b>                | mg/dscm    |                                   |  |  |
| Air & Emissions | 3885               | Oxides of Nitrogen                                | 50-2000    | ± 10% fixed acceptance limit      |  |  |
|                 |                    | <b>EPA Method 13A and 13B <sup>1,4</sup></b>      | mg/dscm    |                                   |  |  |
| Air & Emissions | 1730               | Fluoride                                          | 1.0-50     | ± 15% fixed acceptance limit      |  |  |
|                 |                    | <b>EPA Method 26 and 26A <sup>5</sup></b>         | mg/L       |                                   |  |  |
| Air & Emissions | 1770               | Hydrogen Chloride                                 | 5.0-100    | ± 10% fixed acceptance limit      |  |  |
| Air & Emissions | 1775               | Hydrogen Fluoride                                 | 5.0-100    | ± 10% fixed acceptance limit      |  |  |
|                 |                    |                                                   |            |                                   |  |  |
|                 |                    | <b>Metals on Glass Fiber Filters <sup>6</sup></b> |            |                                   |  |  |
|                 |                    | <b>EPA Method 29</b>                              | µg/filter  |                                   |  |  |
| Air & Emissions | 1005               | Antimony                                          | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1010               | Arsenic                                           | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1015               | Barium                                            | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1020               | Beryllium                                         | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1030               | Cadmium                                           | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1040               | Chromium                                          | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1050               | Cobalt                                            | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1055               | Copper                                            | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1075               | Lead                                              | 10-500     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1090               | Manganese                                         | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1105               | Nickel                                            | 10-500     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1140               | Selenium                                          | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1150               | Silver                                            | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1165               | Thallium                                          | 10-250     | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1190               | Zinc                                              | 10-250     | ± 25% fixed acceptance limit      |  |  |
|                 |                    | <b>EPA Method 29</b>                              | µg/filter  |                                   |  |  |
| Air & Emissions | 1095               | Mercury                                           | 0.20-10    | ± 25% fixed acceptance limit      |  |  |
|                 |                    | <b>EPA Method 12</b>                              | µg/filter  |                                   |  |  |
| Air & Emissions | 1075               | Lead                                              | 10-250     | ± 25% fixed acceptance limit      |  |  |

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|-----------------|--------------------|--------------------------------------------------------------------|------------|-----------------------------------|--|--|
|                 |                    | <b>Metals in Impinger Solution <sup>7</sup></b>                    |            |                                   |  |  |
|                 |                    | <b>EPA Method 29</b>                                               | µg/ml      |                                   |  |  |
| Air & Emissions | 1005               | Antimony                                                           | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1010               | Arsenic                                                            | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1015               | Barium                                                             | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1020               | Beryllium                                                          | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1030               | Cadmium                                                            | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1040               | Chromium                                                           | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1050               | Cobalt                                                             | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1055               | Copper                                                             | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1075               | Lead                                                               | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1090               | Manganese                                                          | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1105               | Nickel                                                             | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1140               | Selenium                                                           | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1150               | Silver                                                             | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1165               | Thallium                                                           | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
| Air & Emissions | 1190               | Zinc                                                               | 0.15-25    | ± 25% fixed acceptance limit      |  |  |
|                 |                    | <b>EPA Method 29 and 101A</b>                                      | ng/mL      |                                   |  |  |
| Air & Emissions | 1095               | Mercury                                                            | 0.50-200   | ± 25% fixed acceptance limit      |  |  |
|                 |                    | <b>EPA Method 12</b>                                               | µg/ml      |                                   |  |  |
| Air & Emissions | 1075               | Lead                                                               | 0.10-120   | ± 25% fixed acceptance limit      |  |  |
|                 |                    | <b>Volatiles in Gas Cylinder</b>                                   |            |                                   |  |  |
|                 |                    | <b>EPA Method 25 <sup>8</sup></b>                                  | ppm        |                                   |  |  |
| Air & Emissions | 3860               | Non-Methane Organic Compounds                                      | 50-3000    | ± 20% fixed acceptance limit      |  |  |
|                 |                    | <b>Volatile Organic Compounds in Surface Coatings <sup>9</sup></b> |            |                                   |  |  |
|                 |                    | <b>EPA Method 24 - Surface Paints and Inks</b>                     | g/L        |                                   |  |  |
| Air & Emissions | 4075               | Volatile Organic Compounds of Paint                                | 300-500    | ± 5% fixed acceptance limit       |  |  |
| Air & Emissions | 4070               | Volatile Organic Compounds in Ink                                  | 300-500    | ± 5% fixed acceptance limit       |  |  |
|                 |                    | <b>EPA Method 24A - Publication Rotogravure Inks and Coatings</b>  | g/L        |                                   |  |  |
| Air & Emissions | 4070               | Volatile Organic Compounds in Ink                                  | 550-800    | ± 5% fixed acceptance limit       |  |  |
|                 |                    | <b>Organic Extractables on Glass Fiber Filters <sup>10</sup></b>   |            |                                   |  |  |
|                 |                    | <b>EPA Method 315</b>                                              | mg/sample  |                                   |  |  |
| Air & Emissions | 5123               | Methylene Chloride Extractable Material (MCEM)                     | 1.5-50     | ± 50% fixed acceptance limit      |  |  |

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|-----------------|--------------------|------------------------------------------------------------|--------------|-----------------------------------|--|--|
|                 |                    | <b>Dioxins and Furans on XAD-2 Cartridge <sup>11</sup></b> | ng/cartridge |                                   |  |  |
|                 |                    | <b>EPA Method 23</b>                                       |              |                                   |  |  |
| Air & Emissions | 9618               | 2,3,7,8-Tetrachlorodibenzo-p-dioxin                        | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9612               | 2,3,7,8-Tetrachlorodibenzofuran                            | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9451               | 1,3,6,8-Tetrachlorodibenzo-p-dioxin                        | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9449               | 1,3,6,8-Tetrachlorodibenzofuran                            | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9448               | 1,2,8,9-Tetrachlorodibenzo-p-dioxin                        | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9446               | 1,2,8,9-Tetrachlorodibenzofuran                            | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9540               | 1,2,3,7,8-Pentachlorodibenzo-p-dioxin                      | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9543               | 1,2,3,7,8-Pentachlorodibenzofuran                          | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9549               | 2,3,4,7,8-Pentachlorodibenzofuran                          | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9445               | 1,2,4,6,8-Pentachlorodibenzo-p-dioxin                      | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9443               | 1,2,4,6,8-Pentachlorodibenzofuran                          | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9440               | 1,2,3,8,9-Pentachlorodibenzo-p-dioxin                      | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9439               | 1,2,3,8,9-Pentachlorodibenzofuran                          | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9453               | 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin                     | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9471               | 1,2,3,4,7,8-Hexachlorodibenzofuran                         | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9456               | 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin                     | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9474               | 1,2,3,6,7,8-Hexachlorodibenzofuran                         | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9459               | 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin                     | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9477               | 1,2,3,7,8,9-Hexachlorodibenzofuran                         | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9480               | 2,3,4,6,7,8-Hexachlorodibenzofuran                         | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9424               | 1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin                     | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9425               | 1,2,3,4,6,8-Hexachlorodibenzofuran                         | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9442               | 1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin                     | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9430               | 1,2,3,4,8,9-Hexachlorodibenzofuran                         | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9426               | 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin                  | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9420               | 1,2,3,4,6,7,8-Heptachlorodibenzofuran                      | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9423               | 1,2,3,4,7,8,9-Heptachlorodibenzofuran                      | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9422               | 1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin                  | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9421               | 1,2,3,4,6,7,9-Heptachlorodibenzofuran                      | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9519               | 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin                 | 1.0-20       | ± 20% fixed acceptance limit      |  |  |
| Air & Emissions | 9516               | 1,2,3,4,6,7,8,9-Octachlorodibenzofuran                     | 1.0-20       | ± 20% fixed acceptance limit      |  |  |

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- 1) mg/dscm = milligrams per dry standard cubic meter. Dry gas sample volume for audit sample is equal to 1 dscm.
- 2) Prepared from Sulfuric Acid in HPLC-grade water.
- 3) Prepared from Potassium Nitrate in HPLC-grade water.
- 4) Prepared from Sodium Fluoride in HPLC-grade water.
- 5) Prepared from Potassium Chloride and Sodium Fluoride in HPLC-grade water.
- 6) Prepared on Glass Fiber Filter spiked with analytes diluted in 2% Nitric Acid.
- 7) Prepared using 2% Nitric Acid.
- 8) Prepared with volatile organic compounds that condense at dry-ice temperatures (e.g., ketones, Acrolein) and volatile organic compounds that remain gaseous at dry-ice temperatures (e.g., Propane). Diluent gas is ultra-high purity Nitrogen that should contain 2-8% Carbon Dioxide.
- 9) Prepare the Volatile Organic Compounds audit standards by mixing paint or ink with mineral spirits. Example of historical mixes: Prepare 13-17 kg paint or ink and 0.7-3.0 kg mineral spirits. Audit standards should be delivered and stored in sealed container with no head space. Assigned Values for the VOCs analytes are determined from the verification testing mean.  
Volatile Organic Compounds (g/L) = (Volatile Matter % / 100%) (Density, g/mL) (1000 mL/L)
- 10) Prepared on Glass Fiber Filter spiked with Phenanthrene in Methylene Chloride.
- 11) Prepared on XAD-2 cartridge spiked with analytes in nonane. At a minimum each Dioxins and Furans on XAD-2 Cartridge audit standard must contain the following three analytes: 2,3,7,8-Tetrachlorodibenzo-p-dioxin, 1,2,3,7,8-Pentachlorodibenzo-p-dioxin and 2,3,4,7,8-Pentachlorodibenzofuran plus at least five additional dioxin or furans randomly selected from the analyte list, one each from the five levels of chlorination (Tetra, Penta, Hexa, Hepta and Octa).
- 12) Acceptance Criteria represent the EPA Audit Sample historical limits.
- 13) The audit samples presented exist in a liquid and/or solid form at ambient temperature after sample collection. The audit sample design is presented in the collection sample matrix (e.g. impinger solution, filter and/or adsorbent), in accordance with 40 CFR parts 51, 60, 61, and 63. As referenced in the CFR, gaseous matrix samples will be included as they are developed and approved by the TNI SSAS Program.