| | B | C |
|---|---|---|
| 1 | **Source Description** | |
| 2 | | |
| 3 | Phase I ID No. | 503 |
| 4 | EPA ID No. | MO4213820489 |
| 5 | Facility Name | Lake City Army Ammunition Plant |
| 6 | Facility Location | |
| 7 | City | Independence |
| 8 | State | MO |
| 9 | Unit ID Name/No. | Explosive Waste Incinerator APE 1236 |
| 10 | Other Sister Facilities | |
| 11 | Combustor Class | Onsite Incinerator, DoD munitions |
| 12 | Combustor Type | Rotary kiln |
| 13 | Combustor Characteristics | Rotary kiln (30 ft long, 30 in ID), afterburner |
| 14 | Capacity (MMBtu/hr) | |
| 15 | Soot Blowing | |
| 16 | APCS | HTHE/LTHE/C/FF/AF |
| 17 | APCS Characteristics | High temperature heat exchanger (800F), low temperature heat exchanger (300F), cyclone, fabric filter (1,414 ft2, A/C 4.5:1, Nomex fabric, pulse jet cleaning), after burner. |
| 18 | Hazardous Wastes | Solids |
| 19 | Haz Waste Description | Off-specification or obsolete ammunitions and explosive wastes |
| 20 | Supplemental Fuel | Natural gas, fuel oil |
| 21 | | |
| 22 | Stack Characteristics | |
| 23 | Diameter (ft) | 2.50 |
| 24 | Height (ft) | 30.0 |
| 25 | Gas Velocity (ft/sec) | 46.2 |
| 26 | Gas Temperature (°F) | 230 |
| 27 | | |
| 28 | Permitting Status | Tier III for Sb, As, Ba, Be, Cd, Cr, Pb, Hg, Ag, Tl |
| 29 | HWC Burn Status (Date if Terminated) | |

| | B | C |
|---|---|---|
| 1 | **Condition Description** | |
| 2 | | |
| 3 | **503C10** | |
| 4 | | |
| 5 | Report Name/Date | 3rd Trial Burn Program, Lake City Army Ammunition Plant, Explosive Waste Incinerator, Olin Corporation, Independence, Missouri, TRC Projection No. 17791, January 1996 |
| 6 | Report Prepare | TRC Environmental Corporation |
| 7 | Testing Firm | TRC Environmental Corporation |
| 8 | Testing Dates | Nov 28-29, 1995 |
| 9 | Condition Descr | Trial burn, 5.56mm M855 SAWS feed, max metal feed |
| 10 | Content | PM, metals, CO, no feedrate info |
| 11 | | |
| 12 | **503C11** | |
| 13 | | |
| 14 | Report Name/Date | 3rd Trial Burn Program, Lake City Army Ammunition Plant, Explosive Waste Incinerator, Olin Corporation, Independence, Missouri, TRC Projection No. 17791, January 1996 |
| 15 | Report Prepare | TRC Environmental Corporation |
| 16 | Testing Firm | TRC Environmental Corporation |
| 17 | Testing Dates | Nov. 29-30, 1995 |
| 18 | Condition Descr | Trial burn, 20mm M56 HEI feed, max metal feed |
| 19 | Content | PM, metals, CO, no feedrate info |
| 20 | | |
| 21 | **503C12** | |
| 22 | | |
| 23 | Report Name/Date | APE 1236 Explosive Waste Incinerator Risk Burn Report |
| 24 | Report Prepare | TRC Environmental Corporation |
| 25 | Testing Firm | |
| 26 | Testing Dates | April 19-24, 1999 |
| 27 | Condition Descr | Risk burn, 0.50 cal M17 feed |
| 28 | Content | PM, HCl/Cl2, CO, PCDD/F |
| 29 | | |
| 30 | **503C1** | |
| 31 | | |
| 32 | Report Name/Date | Trial Burn Report for Explosive Waste Incinerator at Lake City Army Ammunition Plant, Independence, Missouri, March 1993 |
| 33 | Report Prepare | |
| 34 | Testing Firm | |
| 35 | Cond Descr | Trial burn, HIGH WASTE FEED |
| 36 | Test Dates | |
| 37 | Cond Date | 03/01/93 |
| 38 | | |
| 39 | **503C2** | |
| 40 | | |
| 41 | Report Name/Date | Trial Burn Report for Explosive Waste Incinerator at Lake City Army Ammunition Plant, Independence, Missouri, March 1993 |
| 42 | Report Prepare | |
| 43 | Testing Firm | |
| 44 | Cond Descr | Trial burn, LOW WASTE FEED |
| 45 | Test Dates | |
| 46 | Cond Date | 03/01/93 |
| 47 | | |
| 48 | **503C3** | |
| 49 | | |
| 50 | Report Name/Date | Air Pollution Emission Assessment # 42-21-0475-91, Trial Burn for Deactivation Furnace Building 97, Lake City Army Ammunition plant, Independence, Missouri, February 19- March 6, 1991 |
| 51 | Report Prepare | |
| 52 | Testing Firm | |
| 53 | Cond Descr | Trial burn, 20MM M96 PROJECTILE FEED |
| 54 | Test Dates | Feb 26-28, 1991 |
| 55 | Cond Date | 05/30/91 |
| 56 | | |
| 57 | **503C4** | |
| 58 | | |
| 59 | Report Name/Date | Air Pollution Emission Assessment # 42-21-0475-91, Trial Burn for Deactivation Furnace Building 97, Lake City Army Ammunition plant, Independence, Missouri, February 19- March 6, 1991 |
| 60 | Report Prepare | |
| 61 | Testing Firm | |

| | B | C |
|---|---|---|
| 62 | Cond Descr | Trial burn, FA-965 PRIMER FEED |
| 63 | Test Dates | Feb 27- March 4, 1991 |
| 64 | Cond Date | 05/30/91 |
| 65 | | |
| 66 | **503C5** | |
| 67 | | |
| 68 | Report Name/Date | Air Pollution Emission Assessment # 42-21-0475-91, Trial Burn for Deactivation Furnace Building 97, Lake City Army Ammunition plant, Independence, Missouri, February 19- March 6, 1991 |
| 69 | Report Prepare | |
| 70 | Testing Firm | |
| 71 | Cond Descr | Trial burn, HI-SKOR 700X PROPELLANT FEED |
| 72 | Test Dates | Feb 23-26, 1991 |
| 73 | Cond Date | 05/30/91 |
| 74 | | |
| 75 | **503C6** | |
| 76 | | |
| 77 | Report Name/Date | Air Pollution Emission Assessment # 42-21-0475-91, Trial Burn for Deactivation Furnace Building 97, Lake City Army Ammunition plant, Independence, Missouri, February 19- March 6, 1991 |
| 78 | Report Prepare | |
| 79 | Testing Firm | |
| 80 | Cond Descr | Trial burn, IMR 5010 PROPELLANT FEED |
| 81 | Test Dates | Feb 23 - March 4, 1991 |
| 82 | Cond Date | 05/30/91 |

| | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Stack Gas Emissions 1** | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | Cor | Units | 7% O2 | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | **503C10** | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 6 | | | | | | | | | | | | |
| 7 | PM | | gr/dscf | y | | 0.0008 | | 0.0009 | | 0.002 | | 0.0012 |
| 8 | CO (RA) | | ppmv | y | | 60.6 | | 73.8 | | 10.2 | | 48.20 |
| 9 | | | | | | | | | | | | |
| 10 | Sb | | g/dscm | n | | 2.27E-05 | | 1.64E-05 | | 1.81E-05 | | |
| 11 | As | | g/dscm | n | nd | 3.25E-05 | nd | 3.16E-05 | nd | 3.02E-05 | | |
| 12 | Ba | | g/dscm | n | | 3.27E-05 | | 1.49E-05 | | 2.12E-05 | | |
| 13 | Be | | g/dscm | n | nd | 3.25E-07 | nd | 3.16E-07 | nd | 3.02E-07 | | |
| 14 | Cd | | g/dscm | n | nd | 8.12E-07 | nd | 7.89E-07 | nd | 1.04E-06 | | |
| 15 | Cr | | g/dscm | n | | 3.12E-06 | | 2.90E-06 | | 3.26E-06 | | |
| 16 | Pb | | g/dscm | n | | 2.67E-04 | | 2.09E-04 | | 1.78E-04 | | |
| 17 | Hg | | g/dscm | n | | 2.06E-05 | | 1.37E-05 | | 1.69E-05 | | |
| 18 | Ag | | g/dscm | n | nd | 1.62E-06 | nd | 1.58E-06 | nd | 1.51E-06 | | |
| 19 | Tl | | g/dscm | n | nd | 6.49E-05 | nd | 6.31E-05 | nd | 6.04E-05 | | |
| 20 | Cr+6 | | g/dscm | n | | 4.41E-07 | | 1.10E-06 | | 7.76E-07 | | |
| 21 | | | | | | | | | | | | |
| 22 | Sampling Train | PM | | | | | | | | | | |
| 23 | Stack Gas Flowrate | | dscfm | | | 4359 | | 4503 | | 4594 | | 4485.3 |
| 24 | O2 | | % | | | 15.15 | | 15.56 | | 15.24 | | 15.3 |
| 25 | Moisture | | % | | | 5.3 | | 4.4 | | 6 | | 5.2 |
| 26 | Temperature | | °F | | | 214 | | 213 | | 220 | | 215.7 |
| 27 | | | | | | | | | | | | |
| 28 | Sampling Train | Cr+6 | | | | | | | | | | |
| 29 | Stack Gas Flowrate | | dscfm | | | 4805 | | 4878 | | 5004 | | 4896 |
| 30 | O2 | | % | | | | | | | | | #DIV/0! |
| 31 | Moisture | | % | | | 5.7 | | 6.8 | | 7.3 | | 7 |
| 32 | Temperature | | °F | | | 208 | | 209 | | 217 | | 211 |
| 33 | | | | | | | | | | | | |
| 34 | Sb | | ug/dscm | y | | 22.7 | | 16.4 | | 18.1 | | |
| 35 | As | | ug/dscm | y | nd | 32.5 | nd | 31.6 | nd | 30.2 | | |
| 36 | Ba | | ug/dscm | y | | 32.7 | | 14.9 | | 21.2 | | |
| 37 | Be | | ug/dscm | y | nd | 0.3 | nd | 0.3 | nd | 0.3 | | |
| 38 | Cd | | ug/dscm | y | nd | 0.8 | nd | 0.8 | nd | 1.0 | | |
| 39 | Cr | | ug/dscm | y | | 3.1 | | 2.9 | | 3.3 | | |
| 40 | Pb | | ug/dscm | y | | 267.0 | | 209.0 | | 178.0 | | |
| 41 | Hg | | ug/dscm | y | | 20.6 | | 13.7 | | 16.9 | | 17.1 |
| 42 | Ag | | ug/dscm | y | nd | 1.6 | nd | 1.6 | nd | 1.5 | | |
| 43 | Tl | | ug/dscm | y | nd | 64.9 | nd | 63.1 | nd | 60.4 | | |
| 44 | Cr+6 | | ug/dscm | y | | 0.4 | | 1.1 | | 0.8 | | |
| 45 | | | | | | | | | | | | |
| 46 | SVM | | ug/dscm | y | | 267.4 | | 209.4 | | 178.5 | | 218.4 |
| 47 | LVM | | ug/dscm | y | | 19.5 | | 18.9 | | 18.5 | | 19.0 |
| 48 | | | | | | | | | | | | |
| 49 | **503C11** | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 50 | | | | | | | | | | | | |
| 51 | PM | | gr/dscf | y | | 0.0022 | | 0.0045 | | 0.0024 | | 0.0030 |
| 52 | CO (RA) | | ppmv | y | | 6.9 | | 45.9 | | 59.4 | | 37.40 |
| 53 | | | | | | | | | | | | |
| 54 | Sb | | g/dscm | n | | 2.41E-05 | | 5.09E-05 | | 2.44E-05 | | |
| 55 | As | | g/dscm | n | nd | 3.02E-05 | nd | 2.92E-05 | nd | 2.85E-05 | | |
| 56 | Ba | | g/dscm | n | | 3.59E-05 | | 9.00E-05 | | 4.04E-05 | | |
| 57 | Be | | g/dscm | n | nd | 3.02E-07 | nd | 2.92E-07 | nd | 2.85E-07 | | |
| 58 | Cd | | g/dscm | n | | 2.54E-06 | | 2.17E-05 | | 1.43E-05 | | |
| 59 | Cr | | g/dscm | n | | 4.40E-06 | | 4.61E-06 | | 5.00E-06 | | |
| 60 | Pb | | g/dscm | n | | 2.65E-04 | | 6.43E-04 | | 2.59E-04 | | |
| 61 | Hg | | g/dscm | n | | 1.11E-04 | | 1.32E-04 | | 1.09E-04 | | |
| 62 | Ag | | g/dscm | n | nd | 1.51E-06 | nd | 1.46E-06 | nd | 1.43E-06 | | |
| 63 | Tl | | g/dscm | n | nd | 6.03E-05 | nd | 5.84E-05 | nd | 5.70E-05 | | |
| 64 | Cr+6 | | g/dscm | n | | 6.32E-07 | | 1.04E-07 | | 6.44E-07 | | |
| 65 | | | | | | | | | | | | |
| 66 | Sampling Train | PM | | | | | | | | | | |
| 67 | Stack Gas Flowrate | | dscfm | | | 4607 | | 4721 | | 4838 | | 4722.0 |
| 68 | O2 | | % | | | 14.17 | | 13.86 | | 14.14 | | 14.1 |
| 69 | Moisture | | % | | | 7.1 | | 6.7 | | 7.2 | | 7.0 |
| 70 | Temperature | | °F | | | 233 | | 235 | | 234 | | 234.0 |
| 71 | | | | | | | | | | | | |

| | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 72 | Sampling Train | Cr+6 | | | | | | | | | | |
| 73 | Stack Gas Flowrate | | dscfm | | | 4907 | | 5033 | | 5175 | | 5038 |
| 74 | O2 | | % | | | | | | | | | #DIV/0! |
| 75 | Moisture | | % | | | 8.6 | | 8.1 | | 8.1 | | 8 |
| 76 | Temperature | | °F | | | 230 | | 219 | | 229 | | 226 |
| 77 | | | | | | | | | | | | |
| 78 | Sb | | ug/dscm | y | | 24.1 | | 50.9 | | 24.4 | | |
| 79 | As | | ug/dscm | y | nd | 30.2 | nd | 29.2 | nd | 28.5 | | |
| 80 | Ba | | ug/dscm | y | | 35.9 | | 90.0 | | 40.4 | | |
| 81 | Be | | ug/dscm | y | nd | 0.3 | nd | 0.3 | nd | 0.3 | | |
| 82 | Cd | | ug/dscm | y | | 2.5 | | 21.7 | | 14.3 | | |
| 83 | Cr | | ug/dscm | y | | 4.4 | | 4.6 | | 5.0 | | |
| 84 | Pb | | ug/dscm | y | | 265.0 | | 643.0 | | 259.0 | | |
| 85 | Hg | | ug/dscm | y | | 111.0 | | 132.0 | | 109.0 | | 117.3 |
| 86 | Ag | | ug/dscm | y | nd | 1.5 | nd | 1.5 | nd | 1.4 | | |
| 87 | Tl | | ug/dscm | y | nd | 60.3 | nd | 58.4 | nd | 57.0 | | |
| 88 | Cr+6 | | ug/dscm | y | | 0.6 | | 0.1 | | 0.6 | | |
| 89 | | | | | | | | | | | | |
| 90 | SVM | | ug/dscm | y | | 267.5 | | 664.7 | | 273.3 | | 401.8 |
| 91 | LVM | | ug/dscm | y | | 19.7 | | 19.4 | | 19.4 | | 19.5 |
| 92 | | | | | | | | | | | | |
| 93 | **503C12** | **Trial Burn** | | | | R1 | | R2 | | R3 | | Cond Avg |
| 94 | | | | | | | | | | | | |
| 95 | PM | | gr/dscf | y | | 0.0032 | | 0.0044 | | 0.0021 | | 0.0030 |
| 96 | CO (RA) | | ppmv | y | | 16 | | 38 | | 14 | | 20.5 |
| 97 | CO (MHRA) | | ppmv | y | | 19.3 | | 54.4 | | 19.3 | | 28.1 |
| 98 | | | | | | | | | | | | |
| 99 | HCl | | g/hr | n | | 3.62 | | 3.99 | | 3.87 | | |
| 100 | Cl2 | | g/hr | n | | 12.91 | | 13.86 | | 14.08 | | |
| 101 | | | | | | | | | | | | |
| 102 | Sampling Train | PM, HCl/Cl2 | | | | | | | | | | |
| 103 | Stack Gas Flowrate | | dscfm | | | 3545 | | 3491.667 | | 3676.667 | | 3597.5 |
| 104 | O2 | | % | | | 15.4 | | 15.6 | | 16.3 | | 15.9 |
| 105 | Moisture | | % | | | 7.3 | | 7.2 | | 6.7 | | 7.0 |
| 106 | Temperature | | °F | | | 256 | | 268 | | 250 | | 256.0 |
| 107 | | | | | | | | | | | | |
| 108 | Sampling Train | PCDD/F | | | | | | | | | | |
| 109 | Stack Gas Flowrate | | dscfm | | | 3536.7 | | 3498.3 | | 3593.3 | | 3555.4 |
| 110 | O2 | | % | | | 15.4 | | 15.6 | | 16.3 | | 15.9 |
| 111 | Moisture | | % | | | 7.1 | | 7 | | 6.7 | | 6.9 |
| 112 | Temperature | | °F | | | 256 | | 268 | | 249 | | 255.5 |
| 113 | | | | | | | | | | | | |
| 114 | HCl | | ppmv | y | | 1.0045 | | 1.1638 | | 1.2342 | | |
| 115 | Cl2 | | ppmv | y | | 1.8412 | | 2.0818 | | 2.3069 | | |
| 116 | Total Chlorine | | ppmv | y | | 4.69 | | 5.33 | | 5.85 | | 5.4276 |

| | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Stack Gas Emissions 2** | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | **503C1** | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 4 | | | | | | | | | | | | |
| 5 | PM | | gr/dscf | y | | 0.0320 | | 0.0250 | | 0.0260 | | 0.0277 |
| 6 | Antimony | | ug/dscm | y | | 773.7 | | 491.3 | | 491.4 | | |
| 7 | Arsenic | | ug/dscm | y | nd | 0.5 | nd | 0.5 | nd | 0.5 | | |
| 8 | Barium | | ug/dscm | y | | 390.5 | | 385.3 | | 388.4 | | |
| 9 | Beryllium | | ug/dscm | y | nd | 0.2 | nd | 0.2 | nd | 0.2 | | |
| 10 | Cadmium | | ug/dscm | y | | 11.7 | | 10.8 | | 9.0 | | |
| 11 | Chromium | | ug/dscm | y | | 47.4 | | 176.1 | | 112.5 | | |
| 12 | Lead | | ug/dscm | y | | 776.2 | | 788.7 | | 784.6 | | |
| 13 | Mercury | | ug/dscm | y | | 1.7 | | 0.9 | | 1.2 | | 1.3 |
| 14 | Silver | | ug/dscm | y | | 0.1 | nd | 0.1 | nd | 0.1 | | |
| 15 | Thallium | | ug/dscm | y | nd | 0.5 | nd | 0.5 | nd | 0.5 | | |
| 16 | SVM | | ug/dscm | y | | 787.9 | | 799.5 | | 793.6 | | 793.7 |
| 17 | LVM | | ug/dscm | y | | 47.8 | | 176.5 | | 112.9 | | 112.4 |
| 18 | | | | | | | | | | | | |
| 19 | Sampling Train | Metals | | | | | | | | | | |
| 20 | Moisture | | | | | 5.1 | | 5.2 | | 5.0 | | |
| 21 | Oxygen | | | | | 16.3 | | 16.5 | | 16.5 | | |
| 22 | Stack gas flowrate | | | | | 3258.3 | | 3233.3 | | 3165.0 | | |
| 23 | Temperature | | | | | 229.0 | | 231.0 | | 239.0 | | |
| 24 | | | | | | | | | | | | |
| 25 | Sampling Train | Particulate | | | | | | | | | | |
| 26 | Moisture | | | | | 5.4 | | 5.2 | | 4.8 | | |
| 27 | Oxygen | | | | | 16.3 | | 16.5 | | 16.5 | | |
| 28 | Stack gas flowrate | | | | | 3315.0 | | 3355.0 | | 3265.0 | | |
| 29 | Temperature | | | | | 240.0 | | 235.0 | | 242.0 | | |
| 30 | | | | | | | | | | | | |
| 31 | **503C2** | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 32 | | | | | | | | | | | | |
| 33 | PM | | gr/dscf | y | | 0.0240 | | 0.0350 | | 0.0270 | | |
| 34 | Antimony | | ug/dscm | y | | 324.8 | | 114.6 | | 216.0 | | |
| 35 | Arsenic | | ug/dscm | y | nd | 0.5 | nd | 0.5 | nd | 0.5 | | |
| 36 | Barium | | ug/dscm | y | | 348.5 | | 124.8 | | 211.2 | | |
| 37 | Beryllium | | ug/dscm | y | nd | 0.2 | nd | 0.2 | nd | 0.2 | | |
| 38 | Cadmium | | ug/dscm | y | | 2.3 | nd | 0.2 | nd | 0.2 | | |
| 39 | Chromium | | ug/dscm | y | | 1.2 | | 72.9 | | 50.6 | | |
| 40 | Lead | | ug/dscm | y | | 732.5 | | 878.9 | | 1283.9 | | |
| 41 | Mercury | | ug/dscm | y | | 4.9 | | 32.1 | | 98.9 | | 45.3 |
| 42 | Silver | | ug/dscm | y | nd | 0.1 | nd | 0.1 | nd | 0.1 | | |
| 43 | Thallium | | ug/dscm | y | nd | 0.5 | nd | 0.5 | nd | 0.5 | | |
| 44 | SVM | | ug/dscm | y | | 734.8 | | 879.1 | | 1284.1 | | 966.0 |
| 45 | LVM | | ug/dscm | y | | 1.5 | | 73.2 | | 51.0 | | 41.9 |
| 46 | | | | | | | | | | | | |
| 47 | Sampling Train | Metals | | | | | | | | | | |
| 48 | Moisture | | | | | 5.3 | | 5.7 | | 5.4 | | |
| 49 | Oxygen | | | | | 16.0 | | 16.2 | | 16.0 | | |
| 50 | Stack gas flowrate | | | | | 3153.3 | | 3056.7 | | 3115.0 | | |
| 51 | Temperature | | | | | 228.0 | | 231.0 | | 235.0 | | |
| 52 | | | | | | | | | | | | |
| 53 | Sampling Train | Particulate | | | | | | | | | | |
| 54 | Moisture | | | | | 5.3 | | 5.3 | | 5.2 | | |
| 55 | Oxygen | | | | | 16.0 | | 16.2 | | 16.0 | | |
| 56 | Stack gas flowrate | | | | | 3151.7 | | 3111.7 | | 3113.3 | | |
| 57 | Temperature | | | | | 232.0 | | 235.0 | | 238.0 | | |
| 58 | | | | | | | | | | | | |
| 59 | **503C3** | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 60 | | | | | | | | | | | | |
| 61 | PM | | gr/dscf | y | | 0.0423 | | 0.0496 | | 0.0392 | | |
| 62 | CO | | ppmv | y | | 63.3 | | 68.6 | | 53.7 | | |
| 63 | HC | | ppmv | y | | 16.8 | | 16.5 | | 20.0 | | |
| 64 | Antimony | | lb/hr | | | 7.40E-04 | | 6.82E-04 | | 6.91E-04 | | |
| 65 | Arsenic | | lb/hr | | | 2.87E-05 | | 2.81E-05 | | 2.78E-05 | | |
| 66 | Barium | | lb/hr | | | 1.31E-03 | | 8.89E-04 | | 2.73E-03 | | |
| 67 | Beryllium | | lb/hr | | | 5.56E-06 | | 5.62E-06 | | 5.57E-06 | | |
| 68 | Cadmium | | lb/hr | | | 1.25E-04 | | 1.57E-04 | | 9.13E-05 | | |
| 69 | Chromium | | lb/hr | | | 4.17E-05 | | 8.87E-05 | | 6.04E-04 | | |
| 70 | Lead | | lb/hr | | | 6.07E-03 | | 1.07E-02 | | 3.99E-03 | | |
| 71 | Mercury | | lb/hr | | | 4.04E-05 | | 3.53E-05 | | 3.34E-04 | | |

| | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 72 | Silver | | lb/hr | | | 5.73E-05 | | 9.75E-05 | | 5.57E-05 | | |
| 73 | Thallium | | lb/hr | | | 5.56E-06 | | 5.62E-06 | | 5.57E-06 | | |
| 74 | | | | | | | | | | | | |
| 75 | Sampling Train | Metals | | | | | | | | | | |
| 76 | Moisture | | | | | 4.0 | | 4.0 | | 4.5 | | |
| 77 | Oxygen | | | | | 16.0 | | 16.0 | | 15.5 | | |
| 78 | Stack gas flowrate | | | | | 5176.0 | | 5280.0 | | 5056.0 | | |
| 79 | Temperature | | | | | | | | | | | |
| 80 | | | | | | | | | | | | |
| 81 | Sampling Train | Particulate | | | | | | | | | | |
| 82 | Moisture | | | | | 3.9 | | 3.9 | | 4.6 | | |
| 83 | Oxygen | | | | | 16.0 | | 16.0 | | 15.5 | | |
| 84 | Stack gas flowrate | | | | | 5140.0 | | 5152.0 | | 4940.0 | | |
| 85 | Temperature | | | | | | | | | | | |
| 86 | | | | | | | | | | | | |
| 87 | | | | | | | | | | | | |
| 88 | Antimony | | ug/dscm | y | | 107 | | 97 | | 94 | | |
| 89 | Arsenic | | ug/dscm | y | | 4.2 | | 4.0 | | 3.8 | | |
| 90 | Barium | | ug/dscm | y | | 189 | | 126 | | 370 | | |
| 91 | Beryllium | | ug/dscm | y | | 0.8 | | 0.8 | | 0.8 | | |
| 92 | Cadmium | | ug/dscm | y | | 18 | | 22 | | 12 | | |
| 93 | Chromium | | ug/dscm | y | | 6.0 | | 12.6 | | 81.8 | | |
| 94 | Lead | | ug/dscm | y | | 878 | | 1517 | | 540 | | |
| 95 | Mercury | | ug/dscm | y | | 5.8 | | 5.0 | | 45.2 | | 19 |
| 96 | Silver | | ug/dscm | y | | 8.3 | | 13.8 | | 7.5 | | |
| 97 | Thallium | | ug/dscm | y | | 0.8 | | 0.8 | | 0.8 | | |
| 98 | SVM | | ug/dscm | y | | 896 | | 1539 | | 552 | | 996 |
| 99 | LVM | | ug/dscm | y | | 11.0 | | 17.4 | | 86.3 | | 38 |
| 100 | | | | | | | | | | | | |
| 101 | | | | | | | | | | | | |
| 102 | **503C4** | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 103 | | | | | | | | | | | | |
| 104 | PM | | gr/dscf | y | | 0.0532 | | 0.0613 | | 0.0525 | | |
| 105 | CO | | ppmv | y | | 51.1 | | 35.6 | | 31.2 | | |
| 106 | HC | | ppmv | y | | 18.5 | | 18.1 | | 15.2 | | |
| 107 | Antimony | | lb/hr | y | | 6.9E-04 | | 8.8E-04 | | 6.7E-04 | | |
| 108 | Arsenic | | lb/hr | y | | 2.8E-05 | | 2.8E-05 | | 2.8E-05 | | |
| 109 | Barium | | lb/hr | y | | 7.6E-04 | | 1.0E-03 | | 1.3E-03 | | |
| 110 | Beryllium | | lb/hr | y | | 5.5E-06 | | 5.6E-06 | | 5.6E-06 | | |
| 111 | Cadmium | | lb/hr | y | | 1.1E-04 | | 1.0E-04 | | 1.6E-04 | | |
| 112 | Chromium | | lb/hr | y | | 4.0E-05 | | 5.8E-05 | | 9.4E-05 | | |
| 113 | Lead | | lb/hr | y | | 6.9E-03 | | 6.9E-03 | | 4.7E-03 | | |
| 114 | Mercury | | lb/hr | y | | 3.1E-05 | | 7.4E-05 | | 3.6E-05 | | |
| 115 | Silver | | lb/hr | y | | 6.1E-05 | | 4.9E-05 | | 6.0E-05 | | |
| 116 | Thallium | | lb/hr | y | | 5.5E-06 | | 5.6E-06 | | 5.7E-06 | | |
| 117 | | | | | | | | | | | | |
| 118 | Sampling Train | Metals | | | | | | | | | | |
| 119 | Moisture | | | | | 3.5 | | 3.8 | | 3.7 | | |
| 120 | Oxygen | | | | | 16.5 | | 16.2 | | 16.2 | | |
| 121 | Stack gas flowrate | | | | | 5115.0 | | 5127.0 | | 5128.0 | | |
| 122 | Temperature | | | | | | | | | | | |
| 123 | | | | | | | | | | | | |
| 124 | Sampling Train | Particulate | | | | | | | | | | |
| 125 | Moisture | | | | | 3.4 | | 3.6 | | 3.6 | | |
| 126 | Oxygen | | | | | 16.5 | | 16.2 | | 16.2 | | |
| 127 | Stack gas flowrate | | | | | 5091.0 | | 5163.0 | | 5138.0 | | |
| 128 | Temperature | | | | | | | | | | | |
| 129 | | | | | | | | | | | | |
| 130 | | | | | | | | | | | | |
| 131 | Antimony | | ug/dscm | 0 | | 113 | | 133 | | 101 | | |
| 132 | Arsenic | | ug/dscm | y | | 4.5 | | 4.2 | | 4.2 | | |
| 133 | Barium | | ug/dscm | y | | 124 | | 154 | | 202 | | |
| 134 | Beryllium | | ug/dscm | y | | 0.9 | | 0.8 | | 0.8 | | |
| 135 | Cadmium | | ug/dscm | y | | 17.4 | | 15.8 | | 24.3 | | |
| 136 | Chromium | | ug/dscm | y | | 6.5 | | 8.7 | | 14.3 | | |
| 137 | Lead | | ug/dscm | y | | 1125 | | 1043 | | 707 | | |
| 138 | Mercury | | ug/dscm | y | | 5.0 | | 11.2 | | 5.5 | | 7.2 |
| 139 | Silver | | ug/dscm | y | | 9.9 | | 7.4 | | 9.2 | | |
| 140 | Thallium | | ug/dscm | y | | 0.9 | | 0.8 | | 0.9 | | |
| 141 | SVM | | ug/dscm | y | | 1142 | | 1059 | | 731 | | 978 |
| 142 | LVM | | ug/dscm | y | | 12.0 | | 13.8 | | 19.4 | | 15 |

| | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 143 | | | | | | | | | | | | |
| 144 | | | | | | | | | | | | |
| 145 | **503C5** | | | | | R1 | | R2 | | R3 | | Cond Avg |
| 146 | | | | | | | | | | | | |
| 147 | PM | | gr/dscf | y | | 0.0194 | | 0.0700 | | 0.0846 | | |
| 148 | CO | | ppmv | y | | 5.4 | | 25.4 | | 61.3 | | |
| 149 | HC | | ppmv | y | | 33.6 | | 14.6 | | 9.0 | | |
| 150 | | | | | | | | | | | | |
| 151 | Sampling Train | Particulate | | | | | | | | | | |
| 152 | Moisture | | | | | 4.0 | | 3.8 | | 3.9 | | |
| 153 | Oxygen | | | | | 16.0 | | 16.0 | | 16.2 | | |
| 154 | Stack gas flowrate | | | | | 5168.0 | | 5092.0 | | 5139.0 | | |
| 155 | Temperature | | | | | | | | | | | |
| 156 | | | | | | | | | | | | |
| 157 | Sampling Train | SVOC | | | | | | | | | | |
| 158 | Moisture | | | | | 4.0 | | 3.7 | | 3.8 | | |
| 159 | Oxygen | | | | | 16.0 | | 16.0 | | 16.2 | | |
| 160 | Stack gas flowrate | | | | | 5355.0 | | 5187.0 | | 5260.0 | | |
| 161 | Temperature | | | | | | | | | | | |
| 162 | | | | | | | | | | | | |
| 163 | Nitroglycerine | DRE | % | | | 99.9987 | | 99.9979 | | 99.9975 | | |
| 164 | | | | | | | | | | | | |
| 165 | **503C6** | | | | | | | | | | | |
| 166 | | | | | | | | | | | | |
| 167 | PM | | gr/dscf | y | | 0.1120 | | 0.0552 | | 0.0729 | | |
| 168 | CO | | ppmv | y | | 112.0 | | 47.8 | | 181.7 | | |
| 169 | HC | | ppmv | y | | 23.0 | | 9.1 | | 23.6 | | |
| 170 | | | | | | | | | | | | |
| 171 | Sampling Train | Particulate | | | | | | | | | | |
| 172 | Moisture | | | | | 4.3 | | 4.0 | | 4.3 | | |
| 173 | Oxygen | | | | | 16.0 | | 15.9 | | 16.2 | | |
| 174 | Stack gas flowrate | | | | | 5316.0 | | 5203.0 | | 5082.0 | | |
| 175 | Temperature | | | | | | | | | | | |
| 176 | | | | | | | | | | | | |
| 177 | Sampling Train | SVOC | | | | | | | | | | |
| 178 | Moisture | | | | | 4.2 | | 3.9 | | 4.0 | | |
| 179 | Oxygen | | | | | 16.0 | | 15.9 | | 16.2 | | |
| 180 | Stack gas flowrate | | | | | 5294.0 | | 5147.0 | | 5107.0 | | |
| 181 | Temperature | | | | | | | | | | | |
| 182 | | | | | | | | | | | | |
| 183 | 2,4-Dinitrotoluene | DRE | % | | | 99.9982 | | 99.9986 | | 99.9986 | | |
| 184 | Diphenylamine | DRE | % | | | 99.9924 | | 99.9943 | | 99.9944 | | |

| | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Feedstream 1** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | **503C10** | | | | R1 | | R2 | | R3 | | Cond Avg | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Feedstream Description | | | | 5.56mm M855 SAWs | | n M855 SAWs | | m M855 SAWs | | n M855 SAWs | | | | | | | | | | | | | | | | | |
| 7 | Feed Rate | | lb/hr | | 338.4 | | 613.8 | | 325.8 | | 426 | | | | | | | | | | | | | | | | | |
| 8 | Heating Value | | Btu/lb | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Thermal Feedrate | | MM Btu/hr | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | **503C11** | | | | R1 | | R2 | | R3 | | Cond Avg | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | Feedstream Description | | | | 20mm M56 HEI | | 0mm M56 HEI | | 20mm M56 HEI | | 0mm M56 HEI | | | | | | | | | | | | | | | | | |
| 14 | Feed Rate | | lb/hr | | 12732 | | 12462 | | 13020 | | 12738 | | | | | | | | | | | | | | | | | |
| 15 | Heating Value | | Btu/lb | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Thermal Feedrate | | MM Btu/hr | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | **503C12** | | | | R1 | | R2 | | R3 | | Cond Avg | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | Feedstream Description | | | | 0.5 cal M17 | | 0.5 cal M17 | | 0.5 cal M17 | | 0.5 cal M17 | | | | | | | | | | | | | | | | | |
| 21 | Feed Rate | | lb/hr | | 335.6 | | 284.5 | | 331.5 | | 317.2 | | | | | | | | | | | | | | | | | |
| 22 | Heating Value | | Btu/lb | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | Thermal Feedrate | | MM Btu/hr | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Ash | | lb/hr | | 57.1 | | 48.4 | | 56.4 | | | | | | | | | | | | | | | | | | | |
| 25 | Chlorine | | lb/hr | | 1.00 | | 0.80 | | 1.00 | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | Stack Gas Flowrate | | dscfm | | 3545 | | 3492 | | 3677 | | 3598 | | | | | | | | | | | | | | | | | |
| 28 | Oxygen | | % | | 15 | | 16 | | 16 | | 16 | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Thermal Feedrate | | MMBtu/hr | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | Est Total Firing Rate | | MMBtu/hr | | 6.3 | | 6.0 | | 5.5 | | 5.8 | | | | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 33 | *Feedrate MTEC Calculations* | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | Ash | | mg/dscm | | 10766.6 | | 9608.7 | | 12217.2 | | 10864.179 | | | | | | | | | | | | | | | | | |
| 35 | Chlorine | | ug/dscm | | 188556.7 | | 158821.6 | | 216617.8 | | 187998.7 | | | | | | | | | | | | | | | | | |

| | B | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR | AS | AT | AU | AV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Feedstream 1** | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | **503C10** | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | |
| 6 | Feedstream Description | | | | | | | | | | | | | | | | | | | |
| 7 | Feed Rate | | | | | | | | | | | | | | | | | | | |
| 8 | Heating Value | | | | | | | | | | | | | | | | | | | |
| 9 | Thermal Feedrate | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | **503C11** | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | Feedstream Description | | | | | | | | | | | | | | | | | | | |
| 14 | Feed Rate | | | | | | | | | | | | | | | | | | | |
| 15 | Heating Value | | | | | | | | | | | | | | | | | | | |
| 16 | Thermal Feedrate | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | |
| 18 | **503C12** | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | | |
| 20 | Feedstream Description | | | | | | | | | | | | | | | | | | | |
| 21 | Feed Rate | | | | | | | | | | | | | | | | | | | |
| 22 | Heating Value | | | | | | | | | | | | | | | | | | | |
| 23 | Thermal Feedrate | | | | | | | | | | | | | | | | | | | |
| 24 | Ash | | | | | | | | | | | | | | | | | | | |
| 25 | Chlorine | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | |
| 27 | Stack Gas Flowrate | | | | | | | | | | | | | | | | | 48213.3 | | |
| 28 | Oxygen | | | | | | | | | | | | | | | | | 9.4 | | |
| 29 | | | | | | | | | | | | | | | | | | | | |
| 30 | Thermal Feedrate | | | | | | | | | | | | | | | | | | | |
| 31 | Est Total Firing Rate | | | | | | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | | | | | | | |
| 33 | *Feedrate MTEC Calculat* | | | | | | | | | | | | | | | | | | | |
| 34 | Ash | | | | | | | | | | | | | | | | | #DIV/0! | | #DIV/0! |
| 35 | Chlorine | | | | | | | | | | | | | | | | | #DIV/0! | | #DIV/0! |

| | B | AW | AX | AY | AZ |
|---|---|---|---|---|---|
| 1 | **Feedstream 1** | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | **503C10** | | | | |
| 5 | | | | | |
| 6 | Feedstream Description | | | | |
| 7 | Feed Rate | | | | |
| 8 | Heating Value | | | | |
| 9 | Thermal Feedrate | | | | |
| 10 | | | | | |
| 11 | **503C11** | | | | |
| 12 | | | | | |
| 13 | Feedstream Description | | | | |
| 14 | Feed Rate | | | | |
| 15 | Heating Value | | | | |
| 16 | Thermal Feedrate | | | | |
| 17 | | | | | |
| 18 | **503C12** | | | | |
| 19 | | | | | |
| 20 | Feedstream Description | | | | |
| 21 | Feed Rate | | | | |
| 22 | Heating Value | | | | |
| 23 | Thermal Feedrate | | | | |
| 24 | Ash | | | | |
| 25 | Chlorine | | | | |
| 26 | | | | | |
| 27 | Stack Gas Flowrate | | | | |
| 28 | Oxygen | | | | |
| 29 | | | | | |
| 30 | Thermal Feedrate | | | | |
| 31 | Est Total Firing Rate | | | | |
| 32 | | | | | |
| 33 | *Feedrate MTEC Calculat* | | | | |
| 34 | Ash | | #DIV/0! | | #DIV/0! |
| 35 | Chlorine | | #DIV/0! | | #DIV/0! |

| | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | AF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Feedstream 2** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | **503C1** | | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Feedstream | | | Liq waste | | | | | | PEP | | | | | | 20 MM M96 | | | | | | FA-956 | | | | | | Hi-Skor 700X | | | |
| 7 | Feedrate | lb/hr | | 2160.38 | | 2001.88 | | 2023 | | 8.24 | | 7.64 | | 7.72 | | | | | | | | | | | | | | | | | |
| 8 | Heating value | Btu/lb | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Ash | wt % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Antimony | ppmw | | 402.7 | | 404.6 | | 405.3 | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Barium | ppmw | | 629.5 | | 629.4 | | 632.7 | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Lead | ppmw | | 629.5 | | 629.4 | | 632.7 | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | Gas flowrate | | | 3258.3 | | 3233.3 | | 3165.0 | | 3258.3 | | 3233.3 | | 3165.0 | | 3258.3 | | 3233.3 | | 3165.0 | | 3258.3 | | 3233.3 | | 3165.0 | | 3258.3 | | 3233.3 | |
| 15 | Oxygen | | | 16.3 | | 16.5 | | 16.5 | | 16.3 | | 16.5 | | 16.5 | | 16.3 | | 16.5 | | 16.5 | | 16.3 | | 16.5 | | 16.5 | | 16.3 | | 16.5 | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | Feerate MTECs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | Antimony | | | 214019.4 | | 209784.4 | | 216959.6 | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Barium | | | 334559.0 | | 326331.3 | | 338668.6 | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | Lead | | | 334559.0 | | 326331.3 | | 338668.6 | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | **503C2** | | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Feedstream | | | Liq waste | | | | | | PEP | | | | | | 20 MM M96 | | | | | | FA-956 | | | | | | Hi-Skor 700X | | | |
| 25 | Feedrate | lb/hr | | 894.94 | | 996.69 | | 903.68 | | 136.57 | | 147.52 | | 137.9 | | | | | | | | | | | | | | | | | |
| 26 | Heating value | Btu/lb | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | Ash | wt % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | Antimony | ppmw | | 2536.5 | | 2458.1 | | 2534.1 | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | Barium | ppmw | | 324.0 | | 311.0 | | 320.9 | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Lead | ppmw | | 324.0 | | 311.0 | | 320.9 | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | Gas flowrate | | | 3153.3 | | 3056.7 | | 3115.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 33 | Oxygen | | | 16.0 | | 16.2 | | 16.0 | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | Feerate MTECs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | Antimony | | | 538930 | | 625062 | | 550369 | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | Barium | | | 68850 | | 79089 | | 69697 | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | Lead | | | 68850 | | 79089 | | 69697 | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | **503C3** | | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | |
| 42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | Feedstream | | | Liq waste | | | | | | PEP | | | | | | 20 MM M96 | | | | | | FA-956 | | | | | | Hi-Skor 700X | | | |
| 44 | Feedrate | lb/hr | | | | | | | | | | | | | | 579 | | 568 | | 483 | | | | | | | | | | | |
| 45 | Heating value | Btu/lb | | | | | | | | | | | | | | 137000 | | 137000 | | 137000 | | | | | | | | | | | |
| 46 | Ash | wt % | | | | | | | | | | | | | | 0 | | 0 | | 0 | | | | | | | | | | | |
| 47 | Antimony | ppmw | | | | | | | | | | | | | | 45.8 | | 45.8 | | 45.8 | | | | | | | | | | | |
| 48 | Lead | ppmw | | | | | | | | | | | | | | 81.9 | | 81.9 | | 82.0 | | | | | | | | | | | |
| 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | Gas flowrate | | | | | | | | | | | | | | | 5176 | | 5280 | | 5056 | | | | | | | | | | | |
| 51 | Oxygen | | | | | | | | | | | | | | | 16 | | 16 | | 15.53 | | | | | | | | | | | |
| 52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 53 | Feerate MTECs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 | Antimony | | | | | | | | | | | | | | | 3833 | | 3687 | | 2991 | | | | | | | | | | | |
| 55 | Lead | | | | | | | | | | | | | | | 6856 | | 6593 | | 5360 | | | | | | | | | | | |
| 56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 57 | **503C4** | | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | |
| 58 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 59 | Feedstream | | | Liq waste | | | | | | PEP | | | | | | 20 MM M96 | | | | | | FA-956 | | | | | | Hi-Skor 700X | | | |
| 60 | Feedrate | lb/hr | | | | | | | | | | | | | | | | | | | | | 90 | 133 | | 146 | | | | | |

| | B | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR | AS | AT | AU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Feedstream 2** | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | **503C1** | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | Cond Avg |
| 5 | | | | | | | | | | | | | | | | |
| 6 | Feedstream | | | IMR 5010 | | | | | | Total | | | | | | |
| 7 | Feedrate | | | | | | | | | | | | | | | |
| 8 | Heating value | | | | | | | | | | | | | | | |
| 9 | Ash | | | | | | | | | | | | | | | |
| 10 | Antimony | | | | | | | | | | | | | | | |
| 11 | Barium | | | | | | | | | | | | | | | |
| 12 | Lead | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | |
| 14 | Gas flowrate | 3165.0 | | 3258.3 | | 3233.3 | | 3165.0 | | | | | | | | |
| 15 | Oxygen | 16.5 | | 16.3 | | 16.5 | | 16.5 | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | |
| 17 | Feerate MTEC | | | | | | | | | | | | | | | |
| 18 | Antimony | | | | | | | | | 214019.4 | | 209784.4 | | 216959.6 | | 213587.8 |
| 19 | Barium | | | | | | | | | 334559.0 | | 326331.3 | | 338668.6 | | 333186.3 |
| 20 | Lead | | | | | | | | | 334559.0 | | 326331.3 | | 338668.6 | | 333186.3 |
| 21 | | | | | | | | | | | | | | | | |
| 22 | **503C2** | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | Cond Avg |
| 23 | | | | | | | | | | | | | | | | |
| 24 | Feedstream | | | IMR 5010 | | | | | | Total | | | | | | |
| 25 | Feedrate | | | | | | | | | | | | | | | |
| 26 | Heating value | | | | | | | | | | | | | | | |
| 27 | Ash | | | | | | | | | | | | | | | |
| 28 | Antimony | | | | | | | | | | | | | | | |
| 29 | Barium | | | | | | | | | | | | | | | |
| 30 | Lead | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | |
| 32 | Gas flowrate | | | | | | | | | | | | | | | |
| 33 | Oxygen | | | | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | | | |
| 35 | Feerate MTEC | | | | | | | | | | | | | | | |
| 36 | Antimony | | | | | | | | | 538930 | | 625062 | | 550369 | | 571453 |
| 37 | Barium | | | | | | | | | 68850 | | 79089 | | 69697 | | 72546 |
| 38 | Lead | | | | | | | | | 68850 | | 79089 | | 69697 | | 72546 |
| 39 | | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | | |
| 41 | **503C3** | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | Cond Avg |
| 42 | | | | | | | | | | | | | | | | |
| 43 | Feedstream | | | IMR 5010 | | | | | | Total | | | | | | |
| 44 | Feedrate | | | | | | | | | | | | | | | |
| 45 | Heating value | | | | | | | | | | | | | | | |
| 46 | Ash | | | | | | | | | | | | | | | |
| 47 | Antimony | | | | | | | | | | | | | | | |
| 48 | Lead | | | | | | | | | | | | | | | |
| 49 | | | | | | | | | | | | | | | | |
| 50 | Gas flowrate | | | | | | | | | | | | | | | |
| 51 | Oxygen | | | | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | | | | | |
| 53 | Feerate MTEC | | | | | | | | | | | | | | | |
| 54 | Antimony | | | | | | | | | 3833 | | 3687 | | 2991 | | 3504 |
| 55 | Lead | | | | | | | | | 6856 | | 6593 | | 5360 | | 6270 |
| 56 | | | | | | | | | | | | | | | | |
| 57 | **503C4** | R3 | | R1 | | R2 | | R3 | | R1 | | R2 | | R3 | | Cond Avg |
| 58 | | | | | | | | | | | | | | | | |
| 59 | Feedstream | | | IMR 5010 | | | | | | Total | | | | | | |
| 60 | Feedrate | | | | | | | | | | | | | | | |

| | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | AF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 61 | Heating value | Btu/lb | | | | | | | | | | | | | | | | | | | | 137000 | | 137000 | | 137000 | | | | | |
| 62 | Ash | wt % | | | | | | | | | | | | | | | | | | | | 0 | | 0 | | 0 | | | | | |
| 63 | Antimony | ppmw | | | | | | | | | | | | | | | | | | | | 13666.7 | | 13609.0 | | 13630.1 | | | | | |
| 64 | Barium | ppmw | | | | | | | | | | | | | | | | | | | | 21333.3 | | 21353.4 | | 21301.4 | | | | | |
| 65 | Lead | ppmw | | | | | | | | | | | | | | | | | | | | 21333.3 | | 21278.2 | | 21301.4 | | | | | |
| 66 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 67 | Gas flowrate | | | | | | | | | | | | | | | | | | | | | 5115.0 | | 5127.0 | | 5128.0 | | | | | |
| 68 | Oxygen | | | | | | | | | | | | | | | | | | | | | 16.5 | | 16.2 | | 16.2 | | | | | |
| 69 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 70 | Feerate MTECs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 71 | Antimony | | | | | | | | | | | | | | | | | | | | | 201371.6 | | 275308.9 | | 302628.6 | | | | | |
| 72 | Barium | | | | | | | | | | | | | | | | | | | | | 314336.1 | | 431976.4 | | 472952.3 | | | | | |
| 73 | Lead | | | | | | | | | | | | | | | | | | | | | 314336.1 | | 430455.3 | | 472952.3 | | | | | |
| 74 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | **503C5** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 76 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 77 | Feedrate | lb/hr | | | | | | | | | | | | | | | | | | | | | | | | | | 43 | | 40 | |
| 78 | Heating value | Btu/lb | | | | | | | | | | | | | | | | | | | | | | | | | | 137000 | | 137000 | |
| 79 | Ash | wt % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 81 | **503C6** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 82 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 83 | Feedrate | lb/hr | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 84 | Heating value | Btu/lb | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 85 | Ash | wt % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | B | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP | AQ | AR | AS | AT | AU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 61 | Heating value | | | | | | | | | | | | | | | |
| 62 | Ash | | | | | | | | | | | | | | | |
| 63 | Antimony | | | | | | | | | | | | | | | |
| 64 | Barium | | | | | | | | | | | | | | | |
| 65 | Lead | | | | | | | | | | | | | | | |
| 66 | | | | | | | | | | | | | | | | |
| 67 | Gas flowrate | | | | | | | | | | | | | | | |
| 68 | Oxygen | | | | | | | | | | | | | | | |
| 69 | | | | | | | | | | | | | | | | |
| 70 | Feerate MTEC | | | | | | | | | | | | | | | |
| 71 | Antimony | | | | | | | | | 201371.6 | | 275308.9 | | 302628.6 | | 259769.7 |
| 72 | Barium | | | | | | | | | 314336.1 | | 431976.4 | | 472952.3 | | 406421.6 |
| 73 | Lead | | | | | | | | | 314336.1 | | 430455.3 | | 472952.3 | | 405914.6 |
| 74 | | | | | | | | | | | | | | | | |
| 75 | **503C5** | | | | | | | | | | | | | | | |
| 76 | | | | | | | | | | | | | | | | |
| 77 | Feedrate | 37 | | | | | | | | | | | | | | |
| 78 | Heating value | 137000 | | | | | | | | | | | | | | |
| 79 | Ash | | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | | | |
| 81 | **503C6** | | | | | | | | | | | | | | | |
| 82 | | | | | | | | | | | | | | | | |
| 83 | Feedrate | | | 151 | | 199 | | 194 | | | | | | | | |
| 84 | Heating value | | | 137000 | | 137000 | | 137000 | | | | | | | | |
| 85 | Ash | | | | | | | | | | | | | | | |

| | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| 1 | **Process Information** | | | | | |
| 2 | | | | | | |
| 3 | **503C10** | | | R1 | R2 | R3 |
| 4 | | | | | | |
| 5 | Retort Inlet Temperature | $^{o}$F | | 456 | 452.4 | 433.1 |
| 6 | Retort Outlet Temperature | $^{o}$F | | 767 | 837.9 | 758.5 |
| 7 | AF Temperature | $^{o}$F | | 1369.2 | 1357.9 | 1369.3 |
| 8 | HTHE Temperature | $^{o}$F | | 776 | 747.9 | 73.4 |
| 9 | LTHE Temperature | $^{o}$F | | 282.6 | 281.4 | 281.8 |
| 10 | Baghouse Temperature | $^{o}$F | | 242.5 | 246.1 | 246.9 |
| 11 | | | | | | |
| 12 | **503C11** | | | | | |
| 13 | | | | | | |
| 14 | Retort Inlet Temperature | $^{o}$F | | 443.7 | 431.8 | 475.2 |
| 15 | Retort Outlet Temperature | $^{o}$F | | 1077.4 | 958.4 | 973.4 |
| 16 | AF Temperature | $^{o}$F | | 1355.7 | 1366.8 | 1370.2 |
| 17 | HTHE Temperature | $^{o}$F | | 769.8 | 800.9 | 805.9 |
| 18 | LTHE Temperature | $^{o}$F | | 316.7 | 297.8 | 299.1 |
| 19 | Baghouse Temperature | $^{o}$F | | 270 | 247.3 | 253.2 |
| 20 | | | | | | |
| 21 | **503C12** | | | | | |
| 22 | | | | | | |
| 23 | Kiln FE Temp | $^{o}$F | | 460 | 461 | 460 |
| 24 | Kiln PE Temp | $^{o}$F | | 848 | 758 | 767 |
| 25 | Kiln Rotation | rpm | | 2.2 | 2 | 1.9 |
| 26 | AB Outlet Temp | $^{o}$F | | 1366 | 1366 | 1366 |
| 27 | HTHE Outlet Temp | $^{o}$F | | 750 | 746 | 747 |
| 28 | LTHE Outlet Temp | $^{o}$F | | 337 | 339 | 338 |
| 29 | Baghouse Outlet Temp | $^{o}$F | | 295 | 303 | 294 |
| 30 | Baghouse Pressure Diff. | in. H2O | | 3 | 3 | 3 |
| 31 | FE Draft Pressure | in. H2O | | -0.24 | -0.24 | -0.25 |

| | C | D | E | F | G |
|---|---|---|---|---|---|
| 1 | **Process Information 2** | | | | |
| 2 | | | | | |
| 3 | **503C1** | | | | |
| 4 | | | | | |
| 5 | Kiln Temperature | F | 1005 | 1005 | 893 |
| 6 | Afterburner Temperature | F | 1350 | 1351 | 1350 |
| 7 | FF Temperature | F | 287 | 285 | 286 |
| 8 | LTHE Temperature | F | 321 | 321 | 320 |
| 9 | HTHE Temperature | F | 773 | 772 | 770 |
| 10 | | | | | |
| 11 | **503C2** | | | | |
| 12 | | | | | |
| 13 | Kiln Temperature | F | 926 | 924 | 985 |
| 14 | Afterburner Temperature | F | 1406 | 1415 | 1401 |
| 15 | FF Temperature | F | 282 | 285 | 282 |
| 16 | LTHE Temperature | F | 321 | 323 | 317 |
| 17 | HTHE Temperature | F | 784 | 788 | 770 |
| 18 | | | | | |
| 19 | **503C3** | | | | |
| 20 | | | | | |
| 21 | Kiln Temperature | F | 917 | 846 | 1053 |
| 22 | Afterburner Temperature | F | 1399 | 1400 | 1400 |
| 23 | FF Temperature | F | 264 | 264 | 264 |
| 24 | LTHE Temperature | F | 294 | 294 | 293 |
| 25 | HTHE Temperature | F | 805 | 846 | 801 |
| 26 | | | | | |
| 27 | **503C4** | | | | |
| 28 | | | | | |
| 29 | Kiln Temperature | F | 694 | 853 | 684 |
| 30 | Afterburner Temperature | F | 1350 | 1350 | 1350 |
| 31 | FF Temperature | F | 263 | 264 | 265 |
| 32 | LTHE Temperature | F | 294 | 295 | 295 |
| 33 | HTHE Temperature | F | 801 | 853 | 800 |
| 34 | | | | | |
| 35 | **503C5** | | | | |
| 36 | | | | | |
| 37 | Kiln Temperature | F | 712 | 652 | 724 |
| 38 | Afterburner Temperature | F | 1448 | 1449 | 1450 |
| 39 | FF Temperature | F | 267 | 264 | 262 |
| 40 | LTHE Temperature | F | 295 | 295 | 294 |
| 41 | HTHE Temperature | F | 832 | 828 | 806 |
| 42 | | | | | |
| 43 | **503C6** | | | | |
| 44 | | | | | |
| 45 | Kiln Temperature | F | 732 | 667 | 722 |
| 46 | Afterburner Temperature | F | 1400 | 1400 | 1401 |
| 47 | FF Temperature | F | 265 | 256 | 267 |
| 48 | LTHE Temperature | F | 293 | 294 | 295 |
| 49 | HTHE Temperature | F | 803 | 804 | 804 |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **PCDD/PCDF** | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| 3 | Facility Name and ID: | | Lake City Army Ammunition Plant | | | | | | | | | | | | |
| 4 | Condition ID: | | 503C12 | | | | | | | | | | | | |
| 5 | Condition/Test Date: | | Risk burn, 0.50 cal M17 feed | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | I-TEF | | | Run 1 | | | | Run 2 | | | | Run 3 | |
| 8 | | | Wght Fact | | Total | Total | TEQ | | Total | Total | TEQ | | Total | Total | TEQ |
| 9 | | | | | | 1/2 ND | 1/2 ND | | | 1/2 ND | 1/2 ND | | | 1/2 ND | 1/2 ND |
| 10 | Detected in sample volume (pg) | | | | | | | | | | | | | | |
| 11 | | 2,3,7,8-TCDD | 1 | | | | | | | | | | | | |
| 12 | | Total TCDD | 0 | | | | | | | | | | | | |
| 13 | | 1,2,3,7,8-PCDD | 0.5 | | | | | | | | | | | | |
| 14 | | Total PCDD | 0 | | | | | | | | | | | | |
| 15 | | 1,2,3,4,7,8-HxCDD | 0.1 | | | | | | | | | | | | |
| 16 | | 1,2,3,6,7,8-HxCDD | 0.1 | | | | | | | | | | | | |
| 17 | | 1,2,3,7,8,9-HxCDD | 0.1 | | | | | | | | | | | | |
| 18 | | Total HxCDD | 0 | | | | | | | | | | | | |
| 19 | | 1,2,3,4,6,7,8-HpCDD | 0.01 | | 12.589 | 12.59 | 0.13 | | | | | | | | |
| 20 | | Total HpCDD | 0 | | | | | | | | | | | | |
| 21 | | OCDD | 0.001 | | 85.246 | 85.25 | 0.09 | | 79.23 | 79 | 0.08 | | 69.721 | 70 | 0 |
| 22 | | 2,3,7,8-TCDF | 0.1 | | | | | | | | | | | | |
| 23 | | Total TCDF | 0 | | | | | | | | | | | | |
| 24 | | 1,2,3,7,8-PCDF | 0.05 | | | | | | | | | | | | |
| 25 | | 2,3,4,7,8-PCDF | 0.5 | | | | | | | | | | | | |
| 26 | | Total PCDF | 0 | | | | | | | | | | | | |
| 27 | | 1,2,3,4,7,8-HxCDF | 0.1 | | | | | | | | | | | | |
| 28 | | 1,2,3,6,7,8-HxCDF | 0.1 | | | | | | | | | | | | |
| 29 | | 2,3,4,6,7,8-HxCDF | 0.1 | | | | | | | | | | | | |
| 30 | | 1,2,3,7,8,9-HxCDF | 0.1 | | | | | | | | | | | | |
| 31 | | Total HxCDF | 0 | | | | | | | | | | | | |
| 32 | | 1,2,3,4,6,7,8-HpCDF | 0.01 | | | | | | | | | | | | |
| 33 | | 1,2,3,4,7,8,9-HpCDF | 0.01 | | | | | | | | | | | | |
| 34 | | Total HpCDF | 0 | | | | | | | | | | | | |
| 35 | | OCDF | 0.001 | | 11.54 | 12 | 0.012 | | | | | | | | |
| 36 | | | | | | | | | | | | | | | |
| 37 | | Gas sample volume (dscf) | | | | 107.595 | 107.595 | | | 111.863 | 111.863 | | | 105.134 | 105.134 |
| 38 | | O2 (%) | | | | 15.4 | 15.4 | | | 15.6 | 15.6 | | | 16.3 | 16.3 |
| 39 | | | | | | | | | | | | | | | |
| 40 | | PCDD/PCDF (ng in sample) | | | | | 0.0002 | | | | 0.00008 | | | | 0.00007 |
| 41 | | PCDD/PCDF (ng/dscm @ 7% O2) | | | | | 0.0002 | | | | 0.00006 | | | | 0.00007 |
| 42 | | | | | | | | | | | | | | | |
| 43 | | TEQ Cond Avg | 0.0001 | | | | | | | | | | | | |
| 44 | | Total Cond Avg | | | | | | | | | | | | | |