CUF bottom ash

# COMMERCIAL TESTING & ENGINEERING CO.

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May 30, 2002

TENNESSEE VALLEY AUTHORITY
1101 Market Street PSC 1A
Chattanooga TN 37402
RENEE B. MERRELL

SAMPLE No.: 257744
SAMPLE TYPE: BOTTOM ASH
REMARKS: BOT

**Date Received** March 5, 2002
**Analysis report no.** 72-470141

**PROXIMATE ANALYSIS**

| | As Received | Dry Basis |
|---|---|---|
| % Moisture | 1.45 | xxxxxx |
| % Ash | 84.98 | 86.23 |
| % Volatile | 2.43 | 2.47 |
| % Fixed Carbon | 11.14 | 11.30 |
| | 100.00 | 100.00 |
| Btu/lb | 1233 | 1251 |
| % Sulfur | 8.09 | 8.21 |
| MAF Btu/lb | 9085 | |

**ULTIMATE ANALYSIS**

| | As Received | Dry Basis |
|---|---|---|
| % Moisture | 1.45 | xxxxxx |
| % Carbon | 5.20 | 5.28 |
| % Hydrogen | 0.23 | 0.23 |
| % Nitrogen | 0.05 | 0.05 |
| % Sulfur | 8.09 | 8.21 |
| % Ash | 84.98 | 86.23 |
| % Oxygen | 0.00 | 0.00 |
| | 100.00 | 100.00 |

**ANALYSIS OF ASH** — % Weight Ignited Basis

| | |
|---|---|
| Silica, $SiO_2$ | 42.87 |
| Alumina, $Al_2O_3$ | 16.91 |
| Titania, $TiO_2$ | 0.77 |
| Ferric Oxide, $Fe_2O_3$ | 30.93 |
| Lime, CaO | 3.90 |
| Magnesia, MgO | 1.02 |
| Potassium Oxide, $K_2O$ | 1.70 |
| Sodium Oxide, $Na_2O$ | 0.31 |
| Sulfur Trioxide, $SO_3$ | 0.98 |
| Phosphorous Pentoxide, $P_2O_5$ | 0.39 |
| Strontium Oxide, SrO | 0.05 |
| Barium Oxide, BaO | 0.11 |
| Manganese Oxide, $Mn_3O_4$ | 0.06 |
| Undetermined | 0.00 |
| Alks. as $Na_2O$, Dry Coal Basis | 1.23 |
| Base:Acid Ratio | 0.63 |
| T250 Temperature | 2235 |

| | |
|---|---|
| Silica Value | 54.46 |
| Type of Ash | BITUMINOUS |
| Fouling Index | 0.20 |
| Slagging Index | 5.17 |
| % MAF Fixed Carbon | 82.06 |
| % MAF Volatile | 17.94 |
| lb $SO_2$/mm Btu | 131.22 |
| lb Sulfur/mm Btu | 65.61 |
| % Air Dry Loss | 1.15 |
| As Received Net Sample Wt. | 226.80 g |

NQA ISO9002 REGISTERED COMPANY
Certificate No. 7061/1

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Denver Laboratory

MEMBER ACIL

F-465

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