CUF fly 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.: 257743
SAMPLE TYPE: DRY FLY ASH
REMARKS: FLY

**Date Received** March 5, 2002
**Analysis report no.** 72-470140

**PROXIMATE ANALYSIS**

| | As Received | Dry Basis |
|---|---|---|
| % Moisture | 0.39 | xxxxxx |
| % Ash | 98.25 | 98.63 |
| % Volatile | < 0.01 | < 0.01 |
| % Fixed Carbon | 1.35 | 1.36 |
| | 100.00 | 100.00 |
| Btu/lb | 220 | 221 |
| % Sulfur | 0.52 | 0.52 |
| MAF Btu/lb | 16131 | |

**ULTIMATE ANALYSIS**

| | As Received | Dry Basis |
|---|---|---|
| % Moisture | 0.39 | xxxxxx |
| % Carbon | 0.55 | 0.55 |
| % Hydrogen | 0.02 | 0.02 |
| % Nitrogen | 0.28 | 0.28 |
| % Sulfur | 0.52 | 0.52 |
| % Ash | 98.25 | 98.63 |
| % Oxygen | xxxxxx | 0.00 |
| | 100.00 | 100.00 |

**ANALYSIS OF ASH** % Weight Ignited Basis

| | |
|---|---|
| Silica, $SiO_2$ | 50.12 |
| Alumina, $Al_2O_3$ | 20.23 |
| Titania, $TiO_2$ | 0.94 |
| Ferric Oxide, $Fe_2O_3$ | 19.14 |
| Lime, CaO | 4.11 |
| Magnesia, MgO | 1.09 |
| Potassium Oxide, $K_2O$ | 2.27 |
| Sodium Oxide, $Na_2O$ | 0.41 |
| Sulfur Trioxide, $SO_3$ | 1.17 |
| Phosphorous Pentoxide, $P_2O_5$ | 0.27 |
| Strontium Oxide, SrO | 0.06 |
| Barium Oxide, BaO | 0.13 |
| Manganese Oxide, $Mn_3O_4$ | 0.06 |
| Undetermined | 0.00 |
| Alks. as $Na_2O$, Dry Coal Basis | 1.88 |
| Base:Acid Ratio | 0.38 |
| T250 Temperature | 2437 |

| | |
|---|---|
| Silica Value | 67.31 |
| Type of Ash | BITUMINOUS |
| Fouling Index | 0.16 |
| Slagging Index | 0.20 |
| % MAF Fixed Carbon | 99.27 |
| % MAF Volatile | 0.73 |
| lb $SO_2$/mm Btu | 47.27 |
| lb Sulfur/mm Btu | 23.64 |

NQA ISO9002 REGISTERED COMPANY
Certificate No. 7061/1

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Denver Laboratory

MEMBER ACIL

F-465

Original Watermarked For Your Protection

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