

Alpha Resources, Inc.

Certificate Of Analysis

AR-2775

ULTIMATE COAL STANDARD

LOT # 775612

LID # 775612

DRIED BASIS VALUES

Proximate Analysis		ASTM	Ultimate Analysis		ASTM
% Ash.....	6.60 +/- 0.51	D3174/D7582	% Carbon.....	68.67+/-0.98	D5373
% Volatile Matter.....	42.77+/-0.70	D3175/D7582	% Hydrogen.....	4.55 +/-0.34	D5373
% Fixed Carbon (calculated)	50.63	D3172	% Nitrogen.....	1.02 +/-0.12	D5373
% Sulfur.....	0.32+/-0.04	D4239	% Oxygen (calculated)...	18.84	D3176
Btu.....	11644	D5865	MAF/DAF BTU	12466	D5865
Mineral Analysis		ASTM	Sulfur Forms		ASTM
Silica.....	32.41 +/-0.63	D4326/D6721	% Pyritic.....	0.01	D2492
Alumina.....	15.41 +/-1.01	D4326/D6721	% Organic (calculated)...	0.30	D2492
Titania.....	1.24 +/-0.12	D4326/D6721	% Sulfate.....	0.01	D2492
Ferric Oxide.....	4.47 +/-0.74	D4326/D6721			
Calcium Oxide.....	24.18 +/-1.83	D4326/D6721	Ash Fusion Temperature	Degrees F	Degrees F
Magnesium Oxide.....	6.62 +/-0.77	D4326/D6721	ASTM D1857	Reducing	Oxidizing
Potassium Oxide.....	0.36 +/-0.10	D4326/D6721	Initial deformation...	2147	2181
Sodium Oxide.....	1.85 +/-0.08	D4326/D6721	Softening.....	2164	2212
Sulfur Trioxide.....	10.58 +/-2.49	D4326/D6721	Hemispherical.....	2179	2229
Phosphorus Pentoxide.....	0.74 +/-0.07	D4326/D6721	Fluid/Final.....	2219	2275
Strontium Oxide.....	0.41+/-0.04	D4326/D6721			
Barium Oxide.....	0.68+/-0.04	D4326/D6721	% Chlorine.....	<0.01	
Manganese Oxide...	0.03	D4326/D6721			
Undetermined (calculated)	(1.02)				

NMI REFERENCES USED: SRM 2692b, SRM 1633b, SRM 2718, SARM-20

Notes:

The material used in production of this standard was prepared and sampled in accordance with ARI 031 and ISO Guide 34-2009. The uncertainty values represent the expanded uncertainty (k=2, two sigma, 95% confidence) obtained through analytical testing by the mentioned ASTM methods, and may not reflect your testing capabilities. Normal test procedures should be employed when using this standard; this includes using the *reproducibility* and *repeatability* factors of the method for establishing analytical uncertainty if needed. When necessary, professional judgment is applied toward consideration of data and statistical information. The statistical analysis and the overall direction and coordination of the analytical measurements leading to certification were performed by K.E. Dyer, Technical Manager at Alpha Resources.

The samples for round robin testing were selected in accordance with ARI 014. The above values relate only to the material used to produce this standard. The analytical samples should be dried or corrected for moisture as per the test method you are using.

Remedies for any claimed defect in this product will be limited to product replacement or refund of the purchase price. In no event shall Alpha Resources be liable for incidental or consequential damages. This is a Certified Reference Material (Working Standard) and is traceable to the above mentioned NMI references. For good laboratory practice it is recommended that all standards be verified prior to use.

EXPIRATION DATE

THIS CRM IS VALID FOR TWO YEARS FROM THE DATE OF OPENING

CERTIFIED December 11, 2012



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