

Chemical and Physical Analysis of Natural Pozzolan

Developed For: *Shamrock Mining & Metal*
 3301 N.University Ave.
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 Provo, UT 84604

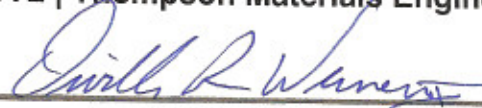
Ticket: 5119 Job: 12645 Report Date: 05/17/2005	Source: <i>Natural Pozzolan</i> Sample ID: Docket: -	Sample Date Range: 04/06/2005 to: Date Received: 04/06/2005
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<u>Chemical Composition (%)</u>		ASTM C 618-03 Specifications Class N
Total Silica, Aluminum, Iron:	80.0	70.0 Min
Silicon Dioxide:	66.2	
Aluminum Oxide:	12.4	
Iron Oxide:	1.4	
Sulfur Trioxide:	0.0	4.0 Max
Calcium Oxide:	2.6	
Moisture Content:	4.3	3.0 Max
Loss on Ignition:	6.6	10.0 Max
		AASHTO M 295-00 Specifications
Available Alkalies (as Na ₂ O):	1.7	1.5 Max
Sodium Oxide:	1.45	
Potassium Oxide:	0.39	

<u>Physical Test Results</u>		ASTM C 618-03 Specifications Class N
Fineness, Retained on #325 Sieve (%):	21.6	34 Max
Strength Activity Index (%)		
Ratio to Control @ 7 Days:	81.5	
Ratio to Control @ 28 Days:	89.6	75 Min
Water Requirement, % of Control:	99.2	115 Max
Soundness, Autoclave Expansion (%):	-0.04	0.8 Max
Drying Shrinkage, Increase @ 28 Days (%):	0.04	0.03 Max
Density:	2.28	

Comments:

CTL | Thompson Materials Engineers, Inc.


 Orville R. Werner II, P.E.

