


**ASTM C618-05 / AASHTO M 295 Testing of
Navajo Fly Ash**

Sample Type:	3200-ton	Report Date:	6/22/2010
Sample Date:	5/12 - 5/14/10	MTRF ID	1182NV
		Sample ID:	NV-032-10

Chemical Analysis	ASTM / AASHTO Limits		ASTM Test
	Class F	Class C	Method
Silicon Dioxide (SiO ₂)	58.56 %		
Aluminum Oxide (Al ₂ O ₃)	22.99 %		
Iron Oxide (Fe ₂ O ₃)	4.88 %		
Sum of Constituents	86.43 %	70.0% min	50.0% min
Sulfur Trioxide (SO ₃)	0.44 %	5.0% max	5.0% max
Calcium Oxide (CaO)	5.67 %		D4326
Moisture	0.04 %	3.0% max	3.0% max
Loss on Ignition (AASHTO M 295 req.)	0.39 %	6.0% max 5.0% max	C311
Available Alkalies, as Na ₂ O (AASHTO M 295 req.)	1.27 %	1.5% max	1.5% max
Physical Analysis			
Fineness, % retained on #325	21.35 %	34% max	34% max
Strength Activity Index - 7 or 28 day requirement			C311, C430
7 day, % of control	81 %	75% min	75% min
28 day, % of control	97 %	75% min	75% min
Water Requirement, % control	92 %	105% max	105% max
Autoclave Soundness	0.03 %	0.8% max	0.8% max
True Particle Density	2.32		C311, C151

Headwaters Resources certifies that pursuant to ASTM C618-05 protocol for testing, the test data listed herein was generated by applicable ASTM methods and meets the requirements of ASTM C618-05 for Class F fly ash.


Bobby Bergman
MTRF Manager

