

ENX Inc.
Acheson Terminal
10798 HWY 60
Acheson, AB T7X 6N5

Report Date: January 6, 2021
Project Number: 19-01608-002
Test No.: 21ENX-01
Revision: 0

Attention: Mr. Paul Johnson

Test Report Number:	ENX G12-01-21_F_ASTM
Year:	2021
Month of Analysis:	January

FLY ASH SOURCE: Genesee Generating Station (G12) SAMPLED BY: Client
SAMPLE DATE: December 14, 2020 SAMPLES RECEIVED: December 18, 2020

CHEMICAL ANALYSIS				
TEST DESCRIPTION	TEST RESULTS	UNITS	SPECIFICATION LIMITS	
			CLASS F	CLASS C
Silicon Dioxide (SiO ₂)	60.7	%	-	-
Aluminum Oxide (Al ₂ O ₃)	21.3	%	-	-
Iron Oxide (Fe ₂ O ₃)	4.7	%	-	-
Total (SiO ₂) + (Al ₂ O ₃) + (Fe ₂ O ₃)	86.7	%	50% (min)	50% (min)
Sulphur Trioxide (SO ₃)	0.10	%	5.0% (max)	5.0% (max)
Calcium Oxide (CaO)	4.70	%	18.0% (max)	> 18.0%
Magnesium Oxide (MgO)	1.50	%	-	-
Moisture Content	0.06	%	3% (max)	3% (max)
Loss on Ignition (LOI)	0.59	%	6% (max)	6% (max)
Total Equivalent Alkali Content (Na ₂ O _{eq})	3.56	%	-	-
Total Available Equivalent Alkali Content (Na ₂ O _{eq})	0.52	%	-	-

PHYSICAL ANALYSIS				
TEST DESCRIPTION	TEST RESULTS	UNITS	SPECIFICATION LIMITS	
			CLASS F	CLASS C
Fineness Retained on 45µm (No. 325 Sieve)	21.2	%	34% (max)	34% (max)
Quantity of Air Entrainment	1.00	%	-	-
Drying Shrinkage (Increase at 28-days)	0.01	%	0.03% (max)	0.03% (max)
Strength Activity Index with Portland Cement				
% of Control at 7-Days	80	%	75% (min)	75% (min)
% of Control at 28-Days (<i>previous month's result</i>)	91	%	75% (min)	75% (min)
Water Requirement, Percent of Control	95	%	105% (max)	105% (max)
Soundness, Autoclave Expansion	-0.03	%	0.8% (max)	0.8% (max)
Density	2.09	g/cm ³	-	-
Density, Variation from Average	1.20	%	5% (max)	5% (max)
Fineness Retained 45µm, Variation from Average	3.60	%	5% (max)	5% (max)

COMMENTS
We hereby certify that the fly ash represented by the above chemical and physical analyses meets the requirements of ASTM C618-19 and AASHTO M295-11 (2015) for Class F. Testing performed by accredited laboratory in accordance with ASTM C1077-17, AASHTO R18 and Concrete Reference Laboratory (CCRL) certification requirements. Accredited laboratory - Lafarge Seattle, 5400 W Marginal Way SW, Seattle, WA 98106, USA

Report prepared by:

EXL Engineering Inc.



Gene Lecuyer, P. Eng.
Senior Materials Engineer



Results pertain only to the sample(s) provided and constitutes a testing service only. Engineering interpretation or evaluation of the test results will be provided upon written request only.