

2 Results

2.1 EPA 1 Fulton Boiler (TVP)

Date	14/03/2023	Client	Ben Furney Flour Mills Pty Ltd
Report	R014627	Stack ID	Boiler (Fulton TVP)
Licence No.	4979	Location	Dubbo
Ektimo Staff	Rick Peralta/ Breandan Scholand	State	NSW
Process Conditions	Boiler modulate during testing. Please refer to client records.		221124

Sampling Plane Details	
Sampling plane dimensions	250 mm
Sampling plane area	0.0491 m ²
Sampling port size, number	1" BSP (x1)
Duct orientation & shape	Vertical Circular
Downstream disturbance	Exit 1.5 D
Upstream disturbance	Bend 4.5 D
No. traverses & points sampled	1 4
Sample plane conformance to AS 4323.1	Non-conforming
Comments	
The number of traverses sampled is less than the requirement	
The number of points sampled is less than the requirement	
The velocity difference for isokinetic testing is outside the criteria (±10%)	
The sampling plane is deemed to be non-conforming due to the following reasons:	
The differential pressure at one or more sampling points is less than 5 Pa	
The stack or duct does not have the required number of access holes (ports)	
The sampling plane is too near to the downstream disturbance but is greater than or equal to 1D	
The sampling plane is too near to the upstream disturbance but is greater than or equal to 2D	

Stack Parameters		
Moisture content, %v/v	9.3	
Gas molecular weight, g/g mole	28.3 (wet)	29.3 (dry)
Gas density at STP, kg/m ³	1.26 (wet)	1.31 (dry)
Gas density at discharge conditions, kg/m ³	0.70	
Gas Flow Parameters		
Flow measurement time(s) (hhmm)	0802 & 0928	
Temperature, °C	206	
Temperature, K	479	
Velocity at sampling plane, m/s	3.7	
Volumetric flow rate, actual, m ³ /s	0.18	
Volumetric flow rate (wet STP), m ³ /s	0.1	
Volumetric flow rate (dry STP), m ³ /s	0.092	
Mass flow rate (wet basis), kg/hour	460	

Gas Analyser Results	Sampling time	Average		Minimum		Maximum	
		0815 - 0915		0815 - 0915		0815 - 0915	
Combustion Gases		Concentration	Mass Rate	Concentration	Mass Rate	Concentration	Mass Rate
		mg/m ³	g/min	mg/m ³	g/min	mg/m ³	g/min
Nitrogen oxides (as NO ₂)		64	0.35	<4	<0.02	120	0.67
		Concentration		Concentration		Concentration	
		% v/v (Dry)		% v/v (Dry)		% v/v (Dry)	
Carbon dioxide		4.3		<0.4		7.7	
Oxygen		13		6.5		20.9	

Date	14/03/2023	Client	Ben Furney Flour Mills Pty Ltd
Report	R014627	Stack ID	Boiler (Fulton TVP)
Licence No.	4979	Location	Dubbo
Ektimo Staff	Rick Peralta/ Breandan Scholand	State	NSW
Process Conditions	Boiler modulate during testing. Please refer to client records.		221124

Isokinetic Results		Results	
	Sampling time	0815-0925	
		Concentration mg/m ³	Mass Rate g/min
Solid particles		3.8	0.021
Isokinetic Sampling Parameters			
Sampling time, min		60	
Isokinetic rate, %		101	
Velocity difference, %		22	
Gravimetric analysis date (total particulate)		17-03-2023	

2.2 EPA 2 Alfarel Boiler (B Mill)

Date	14/03/2023	Client	Ben Furney Flour Mills Pty Ltd
Report	R014627	Stack ID	Boiler (B Mill)
Licence No.	4979	Location	Dubbo
Ektimo Staff	Rick Peralta/ Breandan Scholand	State	NSW
Process Conditions	Boiler modulate during testing: High Fire (15 minutes only)		221124

Sampling Plane Details	
Sampling plane dimensions	250 mm
Sampling plane area	0.0491 m ²
Sampling port size, number	1" BSP (x1)
Duct orientation & shape	Vertical Circular
Downstream disturbance	Bend 1.5 D
Upstream disturbance	Bend >6 D
No. traverses & points sampled	1 4
Sample plane conformance to AS 4323.1	Non-conforming
Comments	
The number of traverses sampled is less than the requirement	
The number of points sampled is less than the requirement	
The sampling plane is deemed to be non-conforming due to the following reasons:	
The stack or duct does not have the required number of access holes (ports)	
The sampling plane is too near to the downstream disturbance but is greater than or equal to 1D	

Stack Parameters		
Moisture content, %v/v	3	
Gas molecular weight, g/g mole	28.7 (wet)	29.0 (dry)
Gas density at STP, kg/m ³	1.28 (wet)	1.30 (dry)
Gas density at discharge conditions, kg/m ³	0.72	
Gas Flow Parameters		
Flow measurement time(s) (hhmm)	1026 & 1135	
Temperature, °C	201	
Temperature, K	475	
Velocity at sampling plane, m/s	8.9	
Volumetric flow rate, actual, m ³ /s	0.44	
Volumetric flow rate (wet STP), m ³ /s	0.25	
Volumetric flow rate (dry STP), m ³ /s	0.24	
Mass flow rate (wet basis), kg/hour	1100	

Gas Analyser Results	Sampling time	Average		Minimum		Maximum	
		1031 - 1131		1031 - 1131		1031 - 1131	
Combustion Gases		Concentration mg/m ³	Mass Rate g/min	Concentration mg/m ³	Mass Rate g/min	Concentration mg/m ³	Mass Rate g/min
Nitrogen oxides (as NO ₂)		8.5	0.12	<4	<0.06	58	0.83
		Concentration % v/v		Concentration % v/v		Concentration % v/v	
Carbon dioxide		0.9		<0.4		5.6	
Oxygen		19.3		10.4		20.9	

Date	14/03/2023	Client	Ben Furney Flour Mills Pty Ltd
Report	R014627	Stack ID	Boiler (B Mill)
Licence No.	4979	Location	Dubbo
Ektimo Staff	Rick Peralta/ Breandan Scholand	State	NSW
Process Conditions	Boiler modulate during testing: High Fire (15 minutes only)		221124

Isokinetic Results		Results	
	Sampling time	1031-1131	
		Concentration mg/m ³	Mass Rate g/min
Solid particles		<2	<0.03
Isokinetic Sampling Parameters			
Sampling time, min		60	
Isokinetic rate, %		95	
Gravimetric analysis date (total particulate)		17-03-2023	