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## QUARTERLY STACK PARTICULATE REPORT FOR BIRKENHEAD WORKS

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**COMPLIANCE DATE: 31/10/19 – Quarter 3, 2019**  
**EPA Licence 1126: Stack Particulate Management Plan (U-749)**

**Licensed site: Adelaide Brighton Cement, Birkenhead Works**

**62 Elder Road, Birkenhead, SA 5015**

**Date of Submission: 31 October 2019**

**Version Number: 1**



Report Submitted by: Environmental Engineer

*I certify that to the best of my knowledge and ability all the information in this report is a true and accurate reflection of the regulatory monitoring performed.*

## Glossary

<b>Term</b>	<b>Definition</b>
$\mu\text{g}/\text{m}^3$	micrograms per cubic metre
$\text{mg}/\text{m}^3$	milligrams per cubic metre
m	metre
$\text{m}^3$	cubic metres
$\text{m}^3/\text{s}$	cubic metres per second
$\text{Nm}^3$	Gas volume in dry cubic metres at STP dry basis
<b>Abbreviations</b>	<b>Definition</b>
Air EPP	Environment Protection (Air Quality) Policy 2016
SA EPA	South Australian Environment Protection Authority
STP dry basis	Standard Temperature and Pressure (zero degrees Celsius and 101.3 kilo Pascals absolute)
TSP	Total Suspended Particulates
SPMP	Stack Particulate Management Plan

<p><b>Monitoring Objective</b></p>	<p>All stack particulate emissions events for the reporting quarter, where levels have exceeded the reporting thresholds:</p> <ul style="list-style-type: none"> <li>• 100 mg/Nm<sup>3</sup> (1 hour averaging period) on Kiln Stack 4A</li> <li>• 60 mg/Nm<sup>3</sup> (1 hour averaging period) on Precalciner Stack 4B</li> </ul> <p>Particulate Emissions will be reported in a table format providing the following details:</p> <ul style="list-style-type: none"> <li>• date, time and duration</li> <li>• the measured particulate concentration mg/Nm<sup>3</sup> (STP-dry)</li> <li>• immediate actions taken to reduce particulate emissions</li> <li>• cause and corrective actions taken to prevent future reoccurrence</li> </ul>
<p><b>Monitoring Plan</b></p>	<p>This monitoring report has been prepared in compliance with Stack Particulate Management Plan, approved 18 June 2018, by SA EPA.</p> <p>The Plan is available on the ABC Birkenhead Community Website:  <a href="http://www.birkenheadcommunity.com.au">http://www.birkenheadcommunity.com.au</a></p>

## One Hour Stack Particulate Reporting Events

**4A Stack**  
**1 hr >**  
**100mg/Nm**  
**3**  
**Rolling 1hr**  
**average**

Date	Time start	Time finish	Duration (min)	Magnitude mg/Nm <sup>3</sup>	Cause	Immediate Actions Taken	Actions Taken to Prevent a Reoccurrence
13/08/2019	14:34	16:24	109	242	Erratic 4A and Bypass ESP performance	<p>The source/cause of this change in ESP performance was not obvious and plant operation was maintained to assist trouble shooting the process.</p> <p>The usual plant-operating conditions likely to cause a change in ESP performance were immediately checked including:</p> <ul style="list-style-type: none"> <li>• ESP fields and controls</li> <li>• Conditioning towers and water sprays</li> <li>• Flow rates and Temperatures</li> <li>• Temperatures and combustion process were <b>not</b> affected</li> </ul> <ul style="list-style-type: none"> <li>• raw materials checked including limestone (change in limestone heap occurred at the same time as the change in ESP performance)</li> <li>• Reduced RDF rate then stopped using RDF altogether and ESP and emissions returned to normal performance.</li> <li>• RDF supplier contacted and stockpiles inspected – nothing visibly different</li> <li>• Changed RDF stockpile and reintroduced with typical ESP and emission performance.</li> </ul>	<p>The plant has not previously experienced a deterioration in all ESP performances at the same time</p> <p>Samples of RDF and material from different parts of the process taken for independent laboratory analysis</p> <ul style="list-style-type: none"> <li>• Analysis of samples taken confirm that there were no unusual levels of organic materials/chemicals in the RDF</li> <li>• Currently waiting for test results of inorganic materials/chemicals</li> </ul> <p>RDF to be turned off if a similar situation arises in the future</p>
29/08/2019	20:03	20:25	22	104.7	Excess build-up within the Bypass process	Checked and cleaned the Bypass system	Regular inspection and cleaning to minimise build-up
4/09/2019	0:03	0:30	27	110.4	Excess build-up within the Bypass process	Checked and cleaned the Bypass system	Regular inspection and cleaning to minimise build-up

**4B Stack**

1 hr >  
60mg/Nm3  
Rolling 1hr  
average

Date	Time start	Time finish	Duration (min)	Magnitude mg/Nm3	Cause	Immediate Actions Taken	Actions Taken to Prevent a Reoccurrence
13/08/2019	13:23	17:02	218	176.2	Erratic 4B ESP performance	<p>The source/cause of this change in ESP performance was not obvious and plant operation was maintained to assist trouble shooting the process.</p> <p>The usual plant-operating conditions likely to cause a change in ESP performance were immediately checked including:</p> <ul style="list-style-type: none"> <li>• ESP fields and controls</li> <li>• Conditioning towers and water sprays</li> <li>• Flow rates and Temperatures</li> <li>• Temperatures and combustion process were <b>not</b> affected</li> <li>• raw materials checked including limestone (change in limestone heap occurred at the same time as the change in ESP performance)</li> <li>• Reduced RDF rate then stopped using RDF altogether and ESP and emissions returned to normal performance.</li> <li>• RDF supplier contacted and stockpiles inspected – nothing visibly different</li> <li>• Changed RDF stockpile and reintroduced with typical ESP and emission performance.</li> </ul>	<p>The plant has not previously experienced a deterioration in all ESP Performances at the same time</p> <p>Samples of RDF and material from different parts of the process taken for independent laboratory analysis</p> <ul style="list-style-type: none"> <li>• Analysis of samples taken confirm that there were no unusual levels of organic materials/chemicals in the RDF</li> <li>• Currently waiting for test results of inorganic materials/chemicals</li> </ul> <p>RDF to be turned off if similar situation arises in the future</p>