Build something great™

Boral Australia

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10 February 2021

Sally Munk
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&
William Dove
Unit Head Regulation – Illawarra
NSW Environment Protection Authority
(By email to William.Dove@epa.nsw.gov.au)

Dear Sally & William,

Boral Berrima Cement – RFI Six Monthly Pollutant Tracking Report

I refer to your letter dated 1 February 2021 seeking further information relating to the Six Monthly Pollutant Tracking report submitted on 17 December 2020.

In particular, the Department requests for Boral to provide the following information:

- Quantities of non-standard fuels processed each month in Kiln 6 between June and December 2020
- Total quantities of non-standard fuels used in Kiln 6 over the same period
- Further commentary to explain why non-standard fuels were not being used at the time of the stack testing
- Details of Boral's intention for further use of non-standard fuels in Kiln 6 during 2021.

Total Quantities of Non-Standard Fuels Used

The operations do not undertake any further processing of non-standard fuels. SWDFs such as wood waste and RDF are received on site to an agreed specification. The site generally runs on a Just In Time Principle with limited onsite storage for SWDF. When the kiln is operating without interruptions it is therefore reliant on continuous deliveries to meet supply.

Table 1 below summarises total Clinker production and Standard and Non-Standard Fuels used in the 2020 Calendar year.

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Clinker (t)	4,166	101,107	144,354	135,049	146,055	38,921	138,278	127,195	91,336	140,547	118,044	125,629	1,310,681
Standard Fuels													
Coal (t)	638	15,108	20,282	18,633	20,616	5,262	19,259	17,529	13,123	18,608	15,918	16477	181,453
Kiln fuel oil (t)	8	120	29	8	29	55	-	25	34	-	4	37.582	349
Non-Standard Fuels													
RDF (non-biomass)	-	22	82	88	39	-	60	88	41	165	104	109	798
RDF (biomass)	-	1,317	2,283	2,307	2,355	1,205	2,939	2,358	1,563	3,241	2,050	983	22,601
WW	-	195	735	796	350	-	539	796	367	1,489	940	1285	7,492
HiCal50	-	-	-	-	100	125	183	166	250	512	465	282	2,083
Total Fuels	645.97	16761.585	23410.87	21831.67	23489.21	6647.183	22,980	20,962	15,378	24,015	19,481	19,174	214,776
% SWDF by weight	0	9.1518791	13.24171	14.61638	11.68196	18.12798	15.396	15.4663	12.8166454	20.38309	15.8822329	12.397266	14.38289

Table 1: Boral Berrima – 2020 Clinker Production and Fuel Usage

Commentary of Stack Test

As per condition M2.2 of EPL 1698, the site is to undertake stack testing every 6 months (special frequency 1) and against approved sampling methodology. The licence does not stipulate fuel usage requirements for undertaking the test.

The site currently uses the services of Ektimo to undertake our stack testing as they are located within the Illawarra region in NSW, are inducted to our site and have knowledge of the process and sampling locations within the Kiln. It is difficult to use the services of other suppliers, which has been evident with COVID boarder restrictions as interstate alternatives have been restricted when we had difficulties with our April 2020 test (see email from EPA dated 24 March 2020).

Our six-monthly stack test was scheduled in June 2020 with the previously required quarterly test undertaken on 8-9 April 2020.

Due to COVID impacting demand and unknown financial impacts of COVID-19 the business made the decision to shut the kiln down from 1st June to the 20th June 2020, as there was a limited window to undertake the stack test Ektimo confirmed availability for the 23 June 2020 (see email dated 19 May 2020).

It is important that stack testing is undertaken at a point in time for a period of a few hours only. The test was actually undertaken on 22 June 2020 with all equipment set up to undertake testing on this date. Ektimo commenced on site at 8am, preparing filters and equipment etc to undertake testing. At this point in time the kiln was running on both coal and non-standard fuels. Between the hours of 9:05-11:05am Ektimo sampled for particulates and between the hours of 11:30-13:30pm sampling was undertaken for Metals. During the stack testing the operators of the kiln were required to cease feeding SWDFs at 9:45am as there was low kiln output as a result of issues with extracting raw materials from the raw mill blending silos. Due to this operational requirement coal was the only fuel in use at the time of metals testing. The operating conditions for sampling against the EPA approved methodology was still being met by the kiln.

We appreciate the EPAs area of concern relating to the use of SWDF at the time of testing may not be representative of emissions, however we do not believe this to be the case. Through all our PoPT and testing since and testing of materials there has been no material change in emissions and emissions have been compliant. We also undertake real time monitoring for CO2, CO, HCl, NOx, O2, Solid Particles, Sox and VOCs, all of which have been compliant throughout the entire

year. Our non-standard fuels received have all been compliant to agreed specifications, and as summarised in the Six monthly report are well below the metals of concern specification limits (see Table 1).

Parameter	SWDF Specification (mg/kg)	Coal	Veolia Source	Brandown Source
As		0.3	49	19
Be		0.3	1	1
Cd	<20	0.1	1	1
Cr		0.5	71	38
Co		0.2	3	3
Cu	<1000	5.8	49	22
Hg	<1.2	0.1	0.05	0.05
Mn		200	37	48
Ni		0.2	2	2
Pb	<1000	5.3	12	5
Sb		0.1	2	3
Se		1	1	1
Sn		0.2	21	2
V		2	1	2
Tl	<20	0.1	1	1
Cl		99.9	0.28	0.18
Group II (Cd + Tl)	<30		2	2
Group III (Sb +As +Co +Cu +Cr +Pb +Mn + Ni +V)	<3000		224	140

Table 1: Fuel input analysis of fuel during reporting period for Six month report compared to SWDF specification.

The purpose of the pollutant tracking reports is to calculate the emission factors from all inputs, outputs and measured air emissions. The stack test is used to assess the actual release of pollutants released. An assessment can then be made on the contribution of these emissions from either raw materials, standard fuels and non-standard fuels. As outlined in our fourth quarter report from the July 2019, November 2019, February 2020 and April 2020 stack tests, variations to emission factors between tests is mainly due to the actual emissions recorded in the stack. Variations to stack emissions from quarter to quarter was more likely the result of process conditions at the time of the stack test which can vary due to the nature of the cement manufacturing process. It is important to note that most of our metal emissions recorded are 5 to 25 times below our emission limits.

We will always endeavour to undertake a stack test utilising our average fuel mix, however it may not always be reasonability practical to do so due to kiln performance on the day, fuel availability on the day and sampling technician availability.

In regard to the future use of SWDFs during 2021, Boral has the intention to maximise use subject to availability (i.e. some suppliers have been impacted by COVID and kiln constraints). We are aiming to increase the rate to the equivalent of 50 000t pa in calendar year 2021.

If you require any further information, please do not hesitate to contact me on 0401 893 420.

Regards

Greg Johnson
Environmental Sustainability Manager
Boral Cement

Attached: Emails to EPA (March 2020) and from Ektimo (19 May 2020)