

HOPE CEMENT WORKS Q2 2020

SO₂ ELV COMPLIANCE AND SHALE REPLACEMENT PROJECT UPDATE

Introduction

As agreed with the Environment Agency, this document will provide a progress report for the shale replacement project at Hope Cement Works as well as a summary of compliance with the current reduced sulphur dioxide (SO₂) 400 mg/Nm³ emission limit value (ELV) for the Q2 reporting period (1st April 2020 – 30st June 2020).

SO₂ ELV Compliance Summary

Please see the below tabular summary of compliance with the current SO₂ 400 mg/Nm³ ELV for Kiln 1 and Kiln 2, and against the 695 mg/Nm³ ELV proposed in the outstanding derogation. This information will also be submitted as part of the end of quarter permit reporting requirements. Please also refer to appendices 1, 2 & 3. Please note Kiln 1 was offline for 55 days due to covid-19 destock, and Kiln 2 was offline for 34 days due to covid-19 destock.

Kiln 1				
	Days Less than 400 mg/Nm ³ ELV	% compliance with 400 mg/Nm ³ ELV	Days Less than 695 mg/Nm ³ ELV	% compliance with requested 695 mg/Nm ³ ELV
April	29	97	30	100
May	30	97	31	100
June	2	7	27	90

Kiln 2				
	Days Less than 400 mg/Nm ³ ELV	% compliance with 400 mg/Nm ³ ELV	Days Less than 695 mg/Nm ³ ELV	% compliance with requested 695 mg/Nm ³ ELV
April	22	73	23	77
May	15	48	29	94
June	0	0	19	63

Shale Replacement Project Update

The projected timeline for the final planning application submission is Q3 2020. Breedon Cement LTD are still awaiting a final decision from the derogation panel, on the substantial permit variation application that was submitted 27th November 2018 and duly made 17th January 2019. Given the long delay in the decision-making process there is now likely to be a deviation from the original timelines agreed within the original submission. Breedon

Cement LTD are waiting on the outcome of this process to make certain financial commitments towards securing mineral reserves to supply the manufacturing process. Furthermore, considering the impacts of the covid-19 pandemic at Hope Cement Works and within organisations across the UK, the planning application and approval process may be further delayed from the projected timeline.

Given it is approaching 18 months since the derogation was duly made and no definitive decision has been communicated, it would certainly be beneficial for the EA to provide Breedon Cement LTD with regular updates on the status of the derogation application.

As part of the derogation submission Breedon Cement LTD requested the time-limited derogation (which could be revised if there were **extenuating circumstances**) to be granted until the end of March 2022. Given the significant developments that have impacted the timeframes of the project and the derogation approval process, it may be prudent to discuss further whether the timeframes of the original application may need to be revised.

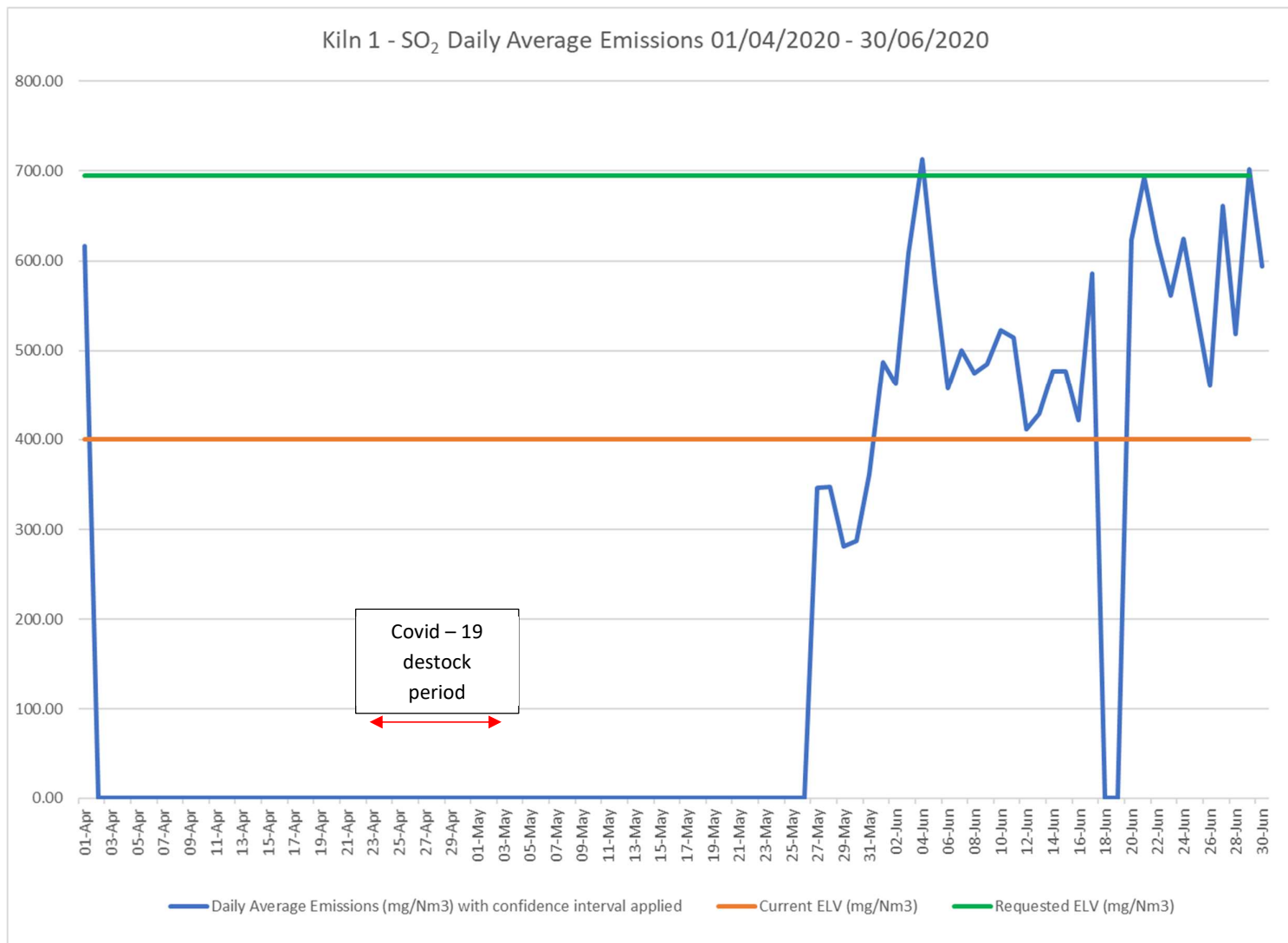
The F10 notification to the HSE has been submitted for the project with Principal Designers (WSP CEL Ltd) instructed and the basic engineering design of the plant is progressing well, flowsheets are in draft and the constructability review has now taken place. The front-end engineering design is now complete with final reports due at the end of April.

Hope Cement Works continues to seek out a wide spectrum of substitute raw materials from locations with suitable quality material, site access and capacity for bulk transport and many site visits have been completed. This assessment is nearing completion, all options have been evaluated both technically and economically to select the most preferable source or sources of such materials. Commercial negotiations regarding the preferred material sources are being conducted and are on-going as appropriate. They are commercially sensitive and some subject to non-disclosure agreements.

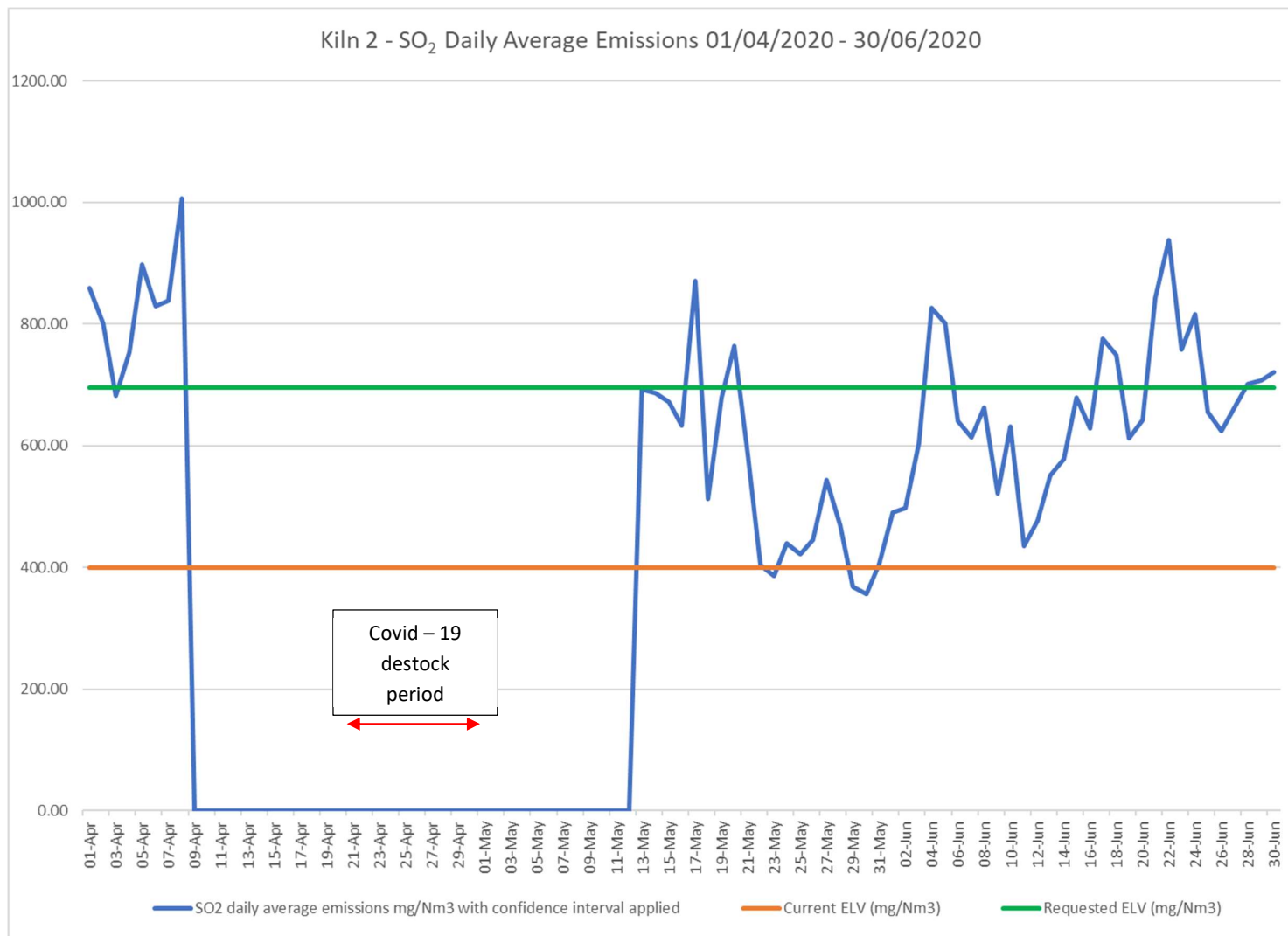
In addition to the above, Hope Cement Works continues to receive up to 12 loads of conditioned quality PFA per day by road as part of a trial agreement with the Peak District National Park. Contractually Hope Cement Works retains the right to utilise all run of station PFA generated at one particular power station as and when it becomes available and, more recently, has signed a second contract for further supplies of ash from a second power station. This has helped enable some higher raw mix substitution rates towards the end of the year. The table below reflects the monthly rates of shale substitution in the raw mix by weight for the of 2020 YTD.

% Raw mix substitution	
Jan-20	7.18
Feb-20	6.98
Mar-20	4.27
Apr-20	0.36
May-20	5.18
June-20	4.02
July-20	
Aug-20	
Sept-20	
Oct-20	
Nov-20	
Dec-20	
YTD Average	4.67

Appendix 1



Appendix 2



Appendix 3 – Daily average values

	Kiln 1			Kiln 2	
	Daily Average (mg/Nm ³)	Factored Daily Average (mg/Nm ³)		Daily Average (mg/Nm ³)	Factored Daily Average (mg/Nm ³)
01-Apr	770.38	616.30		1074.09	859.27
02-Apr	0.00	0.00		1001.80	801.44
03-Apr	0.00	0.00		852.77	682.22
04-Apr	0.00	0.00		941.87	753.49
05-Apr	0.00	0.00		1122.44	897.95
06-Apr	0.00	0.00		1037.32	829.85
07-Apr	0.00	0.00		1048.02	838.41
08-Apr	0.00	0.00		1257.86	1006.29
09-Apr	0.00	0.00		0.00	0.00
10-Apr	0.00	0.00		0.00	0.00
11-Apr	0.00	0.00		0.00	0.00
12-Apr	0.00	0.00		0.00	0.00
13-Apr	0.00	0.00		0.00	0.00
14-Apr	0.00	0.00		0.00	0.00
15-Apr	0.00	0.00		0.00	0.00
16-Apr	0.00	0.00		0.00	0.00
17-Apr	0.00	0.00		0.00	0.00
18-Apr	0.00	0.00		0.00	0.00
19-Apr	0.00	0.00		0.00	0.00
20-Apr	0.00	0.00		0.00	0.00
21-Apr	0.00	0.00		0.00	0.00
22-Apr	0.00	0.00		0.00	0.00
23-Apr	0.00	0.00		0.00	0.00
24-Apr	0.00	0.00		0.00	0.00
25-Apr	0.00	0.00		0.00	0.00
26-Apr	0.00	0.00		0.00	0.00
27-Apr	0.00	0.00		0.00	0.00
28-Apr	0.00	0.00		0.00	0.00
29-Apr	0.00	0.00		0.00	0.00
30-Apr	0.00	0.00		0.00	0.00
01-May	0.00	0.00		0.00	0.00
02-May	0.00	0.00		0.00	0.00
03-May	0.00	0.00		0.00	0.00
04-May	0.00	0.00		0.00	0.00
05-May	0.00	0.00		0.00	0.00
06-May	0.00	0.00		0.00	0.00
07-May	0.00	0.00		0.00	0.00

08-May	0.00	0.00		0.00	0.00
09-May	0.00	0.00		0.00	0.00
10-May	0.00	0.00		0.00	0.00
11-May	0.00	0.00		0.00	0.00
12-May	0.00	0.00		0.00	0.00
13-May	0.00	0.00		864.80	691.84
14-May	0.00	0.00		858.45	686.76
15-May	0.00	0.00		839.72	671.78
16-May	0.00	0.00		790.85	632.68
17-May	0.00	0.00		1089.55	871.64
18-May	0.00	0.00		641.02	512.82
19-May	0.00	0.00		848.15	678.52
20-May	0.00	0.00		955.78	764.63
21-May	0.00	0.00		730.94	584.76
22-May	0.00	0.00		504.28	403.43
23-May	0.00	0.00		483.53	386.83
24-May	0.00	0.00		550.48	440.38
25-May	0.00	0.00		528.29	422.63
26-May	0.00	0.00		557.02	445.61
27-May	433.07	346.45		679.14	543.31
28-May	433.99	347.19		586.08	468.87
29-May	351.27	281.02		460.54	368.43
30-May	359.06	287.25		445.50	356.40
31-May	451.63	361.31		506.79	405.43
01-Jun	608.59	486.87		612.10	489.68
02-Jun	578.27	462.62		622.84	498.28
03-Jun	761.45	609.16		755.88	604.70
04-Jun	891.83	713.46		1033.41	826.73
05-Jun	720.18	576.14		1001.91	801.53
06-Jun	571.71	457.37		801.04	640.83
07-Jun	624.69	499.75		766.79	613.43
08-Jun	593.64	474.91		829.13	663.30
09-Jun	605.91	484.73		652.33	521.86
10-Jun	653.29	522.64		789.66	631.73
11-Jun	643.17	514.54		543.31	434.65
12-Jun	514.21	411.37		596.11	476.89
13-Jun	536.23	428.98		689.14	551.31
14-Jun	595.93	476.74		723.44	578.75
15-Jun	595.90	476.72		849.77	679.82
16-Jun	527.03	421.63		784.99	628.00
17-Jun	732.25	585.80		970.58	776.47
18-Jun	0.00	0.00		936.02	748.82
19-Jun	0.00	0.00		764.82	611.85

20-Jun	778.96	623.17		802.16	641.73
21-Jun	865.79	692.63		1052.78	842.23
22-Jun	777.06	621.64		1173.14	938.51
23-Jun	702.28	561.82		946.51	757.21
24-Jun	780.63	624.50		1019.10	815.28
25-Jun	680.81	544.65		819.76	655.81
26-Jun	575.78	460.62		779.89	623.91
27-Jun	826.96	661.57		830.16	664.12
28-Jun	648.60	518.88		876.96	701.57
29-Jun	877.13	701.71		883.77	707.01
30-Jun	742.34	593.87		901.61	721.29