

HOPE CEMENT WORKS Q1 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 Q1 reporting period (1st January 2020 – 31st March 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 2 underwent its annual major repair between 06th January and 6th February.

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
January	13	42%	27	87%
February	13	45%	29	100%
March	14	45%	29	94%

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
January	3	10%	4	13%
February	7	24%	21	72%
March	0	0%	20	65%

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 the shale replacement project.

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.

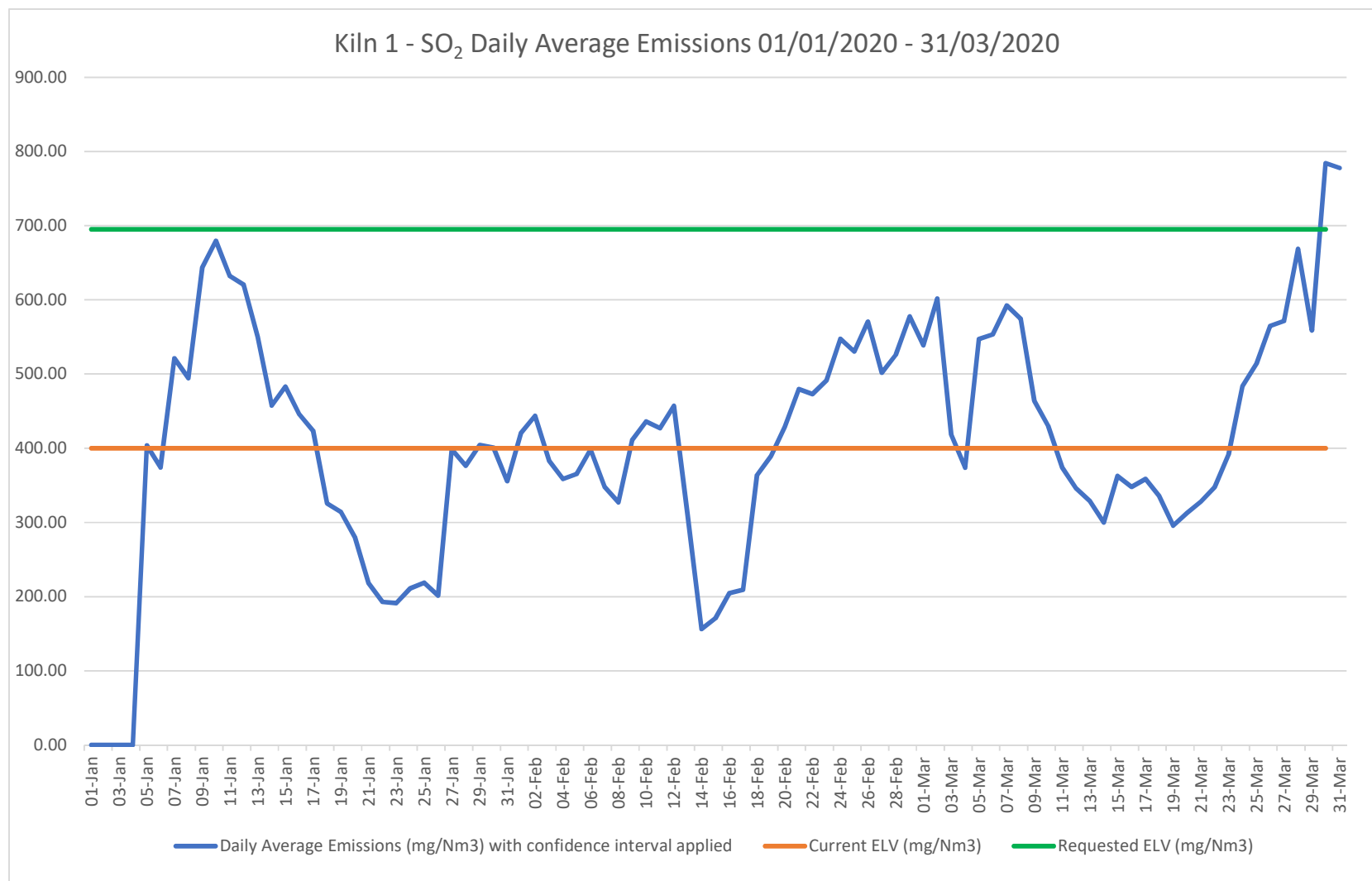
The F10 notification to the HSE has been submitted for the project with Principal Designers (WSP CEL Ltd) instructed and the basic engineering design of the plant is progressing well, flowsheets are in draft and the constructability review has now taken place. The front-end engineering design is now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

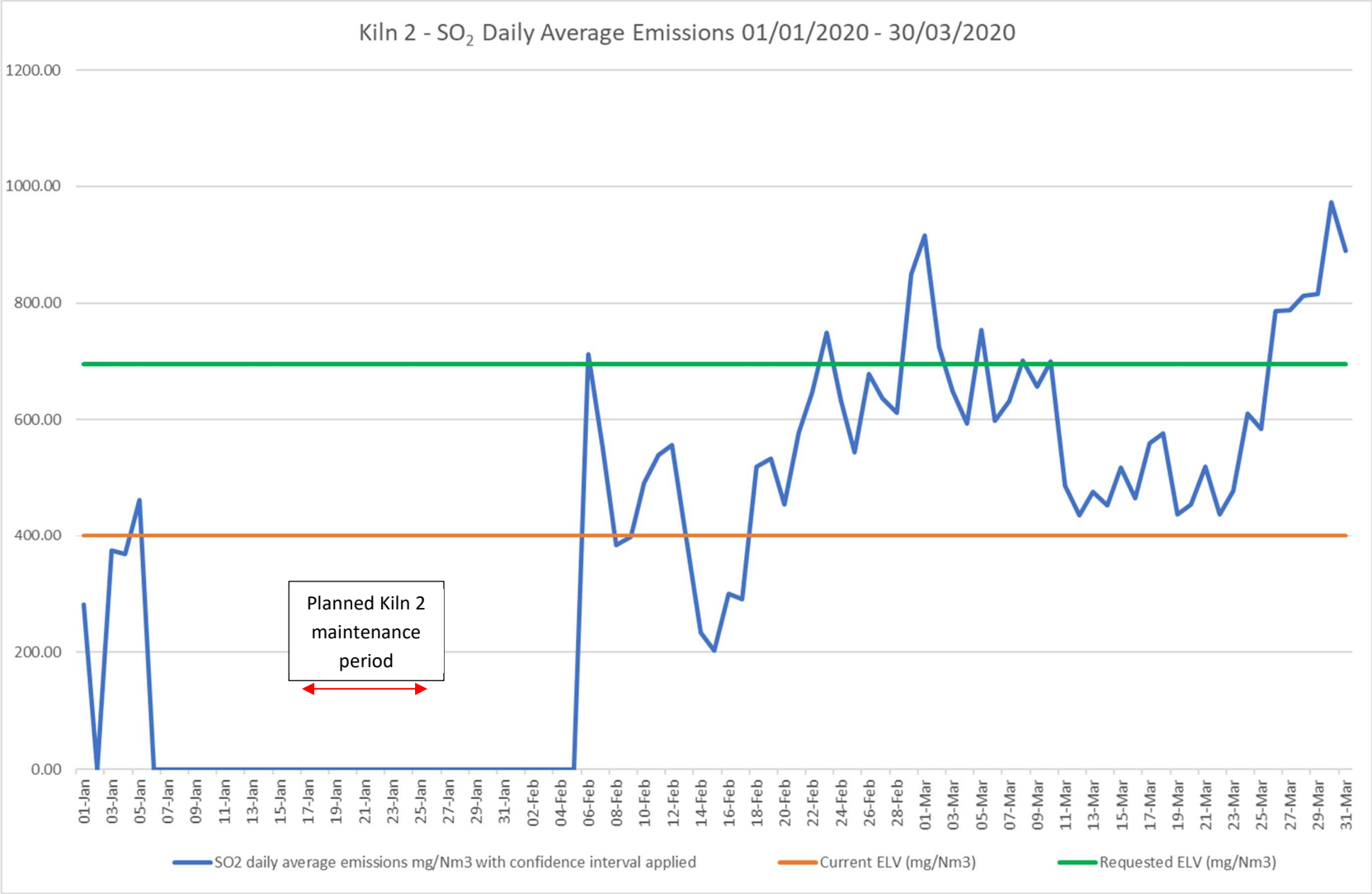
% Raw mix substitution	
Jan-20	7.18
Feb-20	6.98
Mar-20	4.27
Apr-20	
May-20	
June-20	
July-20	
Aug-20	
Sept-20	
Oct-20	
Nov-20	
Dec-20	
YTD Average	5.8

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-Jan	0	0		351.93	281.55
02-Jan	0	0		0	0
03-Jan	0	0		467.92	374.33
04-Jan	0	0		460.63	368.50
05-Jan	504.86	403.89		577.71	462.17
06-Jan	467.35	373.88		0	0
07-Jan	651.75	521.40		0	0
08-Jan	618.21	494.57		0	0
09-Jan	804.62	643.69		0	0
10-Jan	849.55	679.64		0	0
11-Jan	789.77	631.81		0	0
12-Jan	775.22	620.17		0	0
13-Jan	687.63	550.11		0	0
14-Jan	571.87	457.49		0	0
15-Jan	603.73	482.99		0	0
16-Jan	557.29	445.83		0	0
17-Jan	529.01	423.21		0	0
18-Jan	407.17	325.73		0	0
19-Jan	392.76	314.21		0	0
20-Jan	350.60	280.48		0	0
21-Jan	272.28	217.82		0	0
22-Jan	241.30	193.04		0	0
23-Jan	238.91	191.13		0	0
24-Jan	263.98	211.18		0	0
25-Jan	273.30	218.64		0	0
26-Jan	251.69	201.35		0	0
27-Jan	497.95	398.36		0	0
28-Jan	470.28	376.23		0	0
29-Jan	505.12	404.09		0	0
30-Jan	501.21	400.97		0	0
31-Jan	444.42	355.54		0	0
01-Feb	526.03	420.83		0	0
02-Feb	554.75	443.80		0	0
03-Feb	479.08	383.27		0	0
04-Feb	448.21	358.57		0	0
05-Feb	456.67	365.33		0	0
06-Feb	498.01	398.41		891.08	712.87

07-Feb	435.32	348.25		689.70	551.76
08-Feb	408.76	327.01		479.24	383.39
09-Feb	513.62	410.90		497.49	397.99
10-Feb	545.17	436.14		614.10	491.28
11-Feb	533.87	427.09		674.15	539.32
12-Feb	571.62	457.30		695.00	556.00
13-Feb	386.86	309.49		493.58	394.87
14-Feb	195.30	156.24		293.00	234.40
15-Feb	213.39	170.71		253.72	202.97
16-Feb	255.76	204.61		375.91	300.72
17-Feb	261.89	209.51		363.55	290.84
18-Feb	454.37	363.49		649.76	519.81
19-Feb	486.88	389.50		665.69	532.56
20-Feb	535.74	428.59		569.05	455.24
21-Feb	599.76	479.81		723.24	578.59
22-Feb	591.03	472.83		809.84	647.87
23-Feb	613.90	491.12		935.80	748.64
24-Feb	684.35	547.48		790.21	632.17
25-Feb	663.10	530.48		679.24	543.39
26-Feb	713.07	570.46		847.59	678.07
27-Feb	627.47	501.98		795.30	636.24
28-Feb	657.64	526.11		764.30	611.44
29-Feb	721.94	577.55		1062.73	850.18
01-Mar	673.23	538.58		1143.97	915.18
02-Mar	752.00	601.60		906.11	724.89
03-Mar	523.05	418.44		811.55	649.24
04-Mar	467.20	373.76		741.62	593.30
05-Mar	683.93	547.14		942.79	754.23
06-Mar	691.70	553.36		747.67	598.14
07-Mar	740.30	592.24		790.77	632.61
08-Mar	718.43	574.75		876.81	701.45
09-Mar	579.70	463.76		820.51	656.41
10-Mar	537.66	430.13		874.95	699.96
11-Mar	467.53	374.03		608.78	487.02
12-Mar	432.15	345.72		544.20	435.36
13-Mar	410.68	328.54		594.41	475.52
14-Mar	375.07	300.06		565.53	452.42
15-Mar	453.43	362.74		646.58	517.26
16-Mar	434.82	347.85		581.24	464.99
17-Mar	448.10	358.48		699.61	559.69
18-Mar	419.47	335.58		720.71	576.57
19-Mar	369.61	295.69		546.94	437.55
20-Mar	390.91	312.73		568.24	454.60
21-Mar	410.23	328.19		648.31	518.64

22-Mar	434.25	347.40		546.58	437.26
23-Mar	489.33	391.47		597.69	478.15
24-Mar	604.55	483.64		762.59	610.07
25-Mar	642.41	513.93		730.69	584.55
26-Mar	706.17	564.93		982.01	785.61
27-Mar	714.63	571.70		984.34	787.47
28-Mar	835.91	668.72		1014.90	811.92
29-Mar	698.48	558.79		1019.73	815.78
30-Mar	980.37	784.30		1215.57	972.46
31-Mar	972.14	777.71		1111.25	889.00