

## Princes, Cardiff - H1 Assessment of Emissions from H<sub>2</sub>O<sub>2</sub> Extraction



### Calculation of Effective Stack Height

H (m): 10.32  
 Uact (m): 12.32  
 \*Ueff (m): 0.00      \*Refer to note <sup>(c)</sup> under the Notes to H1 Calculation

<u>Pollutant</u>	<u>Stack Height</u>	<u>Stack Gas</u>		<u>H<sub>2</sub>O<sub>2</sub></u>	<u>Effective</u>	<u>Dispersion Factor</u>				<u>Environmental</u>		<u>Process Contribution</u>					
		<u>ELV</u>	<u>Flow Rate</u>			<u>Discharge</u>	<u>Stack</u>	<u>(<math>\mu\text{g}/\text{m}^3/\text{g/s}</math>)</u>		<u>Process Contribution (PCair)</u>		<u>Assessment Level (EAL)</u>		<u>Process Contribution</u>		<u>Significant?</u>	
								<u>at Stack</u>	<u>Rate</u>	<u>Height</u>	<u>Long-term</u>	<u>Short-term</u>	<u>Long-term</u>	<u>Short-term</u>	<u>Long-term</u>	<u>Short-term</u>	<u>Long-term</u>
H <sub>2</sub> O <sub>2</sub>	12.32	( $\text{mg}/\text{m}^3$ ) <sup>(a)</sup>	( $\text{m}^3/\text{s}$ ) <sup>(b)</sup>	( $\text{g/s}$ )	( $\text{m}$ ) <sup>(c)</sup>	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term
		0.280	0.972	0.000237	0.00	148.00	3900.00	0.211	5.55	280	280	0.0753	1.98	No	No		

### Notes to H1 Calculation:

- <sup>(a)</sup> In the absence of any test data - the Environmental Assessment Level (EAL) suggested by NRW, for H<sub>2</sub>O<sub>2</sub> has been used as the ELV (Emission Limit Value).
- <sup>(b)</sup> As calculated from the actual volumetric flow rate provided by Princes for the exhaust fan (fan capacity 3500 m<sup>3</sup>/h).
- <sup>(c)</sup> The Environment Agency *Air emissions risk assessment for your environmental permit* guidance states to treat the effective height of release as 0 metres when the emission is actually released at a point that is less than 3 metres above the ground or building on which the stack is located.
- <sup>(d)</sup> The Environment Agency *Air emissions risk assessment for your environmental permit* guidance states when a substance is released from more than one point, you must add up the substance's PC from each source to get the total PC for the substance. There are currently three existing and three proposed H<sub>2</sub>O<sub>2</sub> extract points - all situated on the same building. As a result, both the long-term and short-term PCs are the sum of the six emission points.
- <sup>(e)</sup> EAL as suggested by NRW. Please note that, whilst a long-term EAL was not given for H<sub>2</sub>O<sub>2</sub>, the short-term EAL has also been utilised for the long-term EAL in the interest of being conservative and to demonstrate the significance criteria will not be exceeded for either long-term or short-term process contributions.