Test report

Reference: **23/06853**

Applicant	J. C. Bamford Excavators Ltd. (JCB) Rocester, Staffordshire England ST14 5JP
Subject	**Vehicle on test**: JCB 3CX Backhoe Loader **Power Unit**: JCB Hydrogen Internal Combustion Engine, 71kW fitted with Selective Catalytic Reduction aftertreatment. UTAC conducted machine emissions testing at the request of JCB. The testing was conducted to the provisions of EU regulation 2017/654 as relating to engine category NRE-v-5 and according to the requirements of EU regulation 2017/655.
Unit / Test site	Wardlow Quarry, Cauldon Low, Stoke-on-Trent, Staffordshire, England, ST10 3HA
Testing date	06/07/2023 — ***Internal reference*** — ARC SAS 2305452
Comments	The testing was conducted to the provisions of EU regulation 2017/655 as relating to engine category NRE-v-5, using the work-based windows approach. Note that this is a performance test report and does not constitute an approval under EU 2016/1628. • Fuel: Hydrogen to ISO 14687 Grade D • Testing: Cold start, site and standard roading, medium stone rehandling & hill climb. The work performed during the test was six times the reference work. UTAC test reference JCB_ESSAI FROID 1_20230706_1_3_MDT_Result_V2.

Results of Tailpipe NOx measurements:

	Stage V NOx Limit*	JCB H2ICE NOx Result	Stage V NOx Limit*	JCB H2ICE NOx Result
	g/kWh		mg/kWh	
0th Percentile Result	**0.4**	**0.013**	**400**	***13***
90th Percentile Result	**0.4**	**0.024**	**400**	***24***
100th Percentile Result	**0.4**	**0.026**	**400**	***26***

2016/1628 NRE-v-5

Hydrogen is carbon-free, so burning it does not create CO_2.

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Functions	*Test Project Manager*
Date (day/month/year)	28/08/2023
Signature	DIGITALLY SIGNED

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