

EXECUTIVE SUMMARY

HGC Engineering was retained by Union Gas Limited to undertake an Acoustic Assessment of the Lobo Compressor Station in Ilderton, Ontario. Previously, HGC Engineering prepared several Acoustic Assessment Reports (“AARs”), the most recent in 2016 [1]. This updated AAR considers a new compression facility (“Plant D”) with associated aftercooler, emergency generator and two firewater pumps. This report serves to satisfy condition 5.1(2) of Environmental Compliance Approval 3468-9DUJMT, dated March 7, 2014 which requires that a current AAR be maintained.

Sound emission levels of existing sources were measured during numerous visits to the facility since 2002, including most recently on February 28, 2017. Sound emission levels of the proposed Plant D and associated aftercooler were based on measurements of Plant C (identical), whereas sound emission levels of the proposed emergency generator and firewater pumps were based on measurements conducted by HGC Engineering at other similar Union Gas installations. The source sound levels were used as input to a predictive acoustical model to quantify the environmental sound emissions associated with the facility. Acoustic assessment criteria were established in accordance with the sound level limits in Ontario Ministry of the Environment and Climate Change (“MOECC”) guideline NPC-232.

The measurements and analysis indicate that the predicted sound levels of the Lobo Compressor Station, including consideration of the new equipment outlined above, comply with the sound level criteria of MOECC publication NPC-232 during a predictable worst case hour of operation at the station. Given the absence of any sources of ground-borne vibration at the site, the facility also complies with the applicable vibration limits of the MOECC.

Table A3: Acoustic Assessment Summary Table

Point of Reception	Point of Reception Description	Sound Level at Point of Reception, L_{EQ} [dBA]		Verified by Acoustic Audit	Performance Limit, L_{EQ} [dBA]		Compliance with Performance Limit
		Day	Eve/Night		Day	Eve/Night	
R1	Two storey dwelling approx. 715 m northwest of station	45	40	No	45	40	Yes/Yes
R2	Two storey dwelling approx. 1010 m west of station	36	32	No	45	40	Yes/Yes
R3	Two storey dwelling approx. 990 m southwest of station	35	33	No	45	40	Yes/Yes
R4	Two storey dwelling approx. 760 m southeast of station	39	38	No	45	40	Yes/Yes
R5	Two storey dwelling approx. 920 m east of station	40	39	No	45	40	Yes/Yes

Notes:

1. Point of Reception sound levels include a + 5 dBA penalty for tonality.
2. As outlined in Section 3.4 of the report, a typical predictable worst case hour of facility operation includes up to three compressor plants, along with daytime testing of one emergency generator (EG1). The three compressor plants operating in the above tabulated scenario are Plants B, C and D, which result in the highest offsite sound levels.



ACOUSTICS



NOISE



VIBRATION