



Monckton Coke & Chemical Company Limited

Reinstatement of Railway Siding Monckton Coke Works, Royston

Noise Assessment October 2013

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1.0 Introduction

1.1 Purpose of this Report

This report presents the details of a noise assessment undertaken for the reinstatement of a rail siding and associated operations at Monckton Coke Works in Royston, Barnsley. The proposals will reduce the volume of HGV deliveries and exports by circa 53 one way trips per day. This assessment addresses noise associated with the following operations:

- Site preparation.
- Incoming coal train which is scheduled to arrive in the morning from 06:00 hours up to five times per week.
- The unloading process is expected to last up to 8 hours and will be completed by 18:00. The process will be undertaken using a grab MHL350 and a conveyor. The coal will then transported to the end of the conveyor where the operations, including the movement of the coal within the site, will be comparable with the existing scenario.
- Outgoing train exporting coke which will occur up to three times a week. The coke will be loaded via loading shovels in two designated areas along the siding. This could occur up to 22:00 and would be scheduled to occur following the coal delivery.

A description of the existing environment in and around site is provided and an assessment of the impacts on nearby sensitive residential properties has been undertaken. The results of a baseline noise survey have been used to characterise the existing noise environment at residential dwellings surrounding the site. Noise levels from the proposed scheme have been predicted at local representative receptors using CADNA noise modelling software which incorporates ISO 9613 methodologies and calculations.

A list of acoustic terminology and abbreviations used in this report is provided in Appendix A and a set of location plans relevant to the assessment are presented in Appendix B.



1.2 Legislative Context (England)

MPS2 was replaced by NPPF on 27th of March 2012 and makes reference to facilitating the sustainable use of minerals. Within this section of the NPPF, Paragraph 144 states:

- *'When determining planning applications, local planning authorities should: Ensure that any unavoidable noise, dust and particle emissions and any blasting vibrations are controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in proximity to noise sensitive properties'*

Within the context of the above statement, the NPPF refers to Technical Guidance published alongside this Framework which sets out how these policies should be implemented. The Technical Guidance to the National Planning Policy Framework (March 2012), therefore, forms the basis of this assessment. This document will be referred to as TG NPPF within this assessment.



2.0 Assessment Criteria

2.1 Technical Guidance to the National Planning Policy Framework

The guidance provided in Chapters 30 and 31 of the TG NPPF will form the basis for assessment of the potential effects of operational noise upon the nearby identified receptors. The guidance states:

'Subject to a maximum of 55 dB(A) $L_{Aeq,1h}$ (free field), MPAs should aim to establish a noise limit at the noise-sensitive properties that does not exceed the background noise level by more than 10 dB(A). It is recognised, however, that this will in many circumstances, be difficult to achieve without imposing unreasonable burdens on the mineral operator. In such cases, the limit set should be as near that level as practicable during normal working hours (0700-1900) and should not exceed 55 dB(A) $L_{Aeq,1h}$ (free field).'

With regards to periods outside 0700 – 1900, the TG NPPF states:

'Evening (1900 – 2200) limits should not exceed the background noise level by more than 10dB(A) and the night-time noise limits should not exceed 42dB(A) $L_{Aeq,1h}$ (freefield) at noise sensitive dwellings'

Additionally, for peak or impulsive noise consideration should be given to whether separate noise limits are required. This has been taken into account within the assessment with, as referenced in Section 2.2, an external noise level of 60 dBL_{Amax} used for the purpose of this assessment.

Further to the above the TG NPPF states that *'all mineral operations will have some particularly noise short term activities that cannot meet the limits set for normal operations. Examples include soil stripping, the construction and removal of baffle mounds, soil storage mounds and soil heaps, construction of new permanent landforms and aspects of site road construction and maintenance. However, these can bring long term environmental benefits. Increased temporary daytime noise limits of up to 70 dB(A) $L_{Aeq,1h}$ (free field) for periods of up to 8 weeks in a year at specified noise-sensitive properties should be considered to facilitate essential site preparation and restoration work and construction of baffle mounds where it is clear that this will bring longer-term environmental benefits to the site or its environs. Where work is likely to take longer than 8 weeks, a lower limit over a longer period should be considered. In some wholly exceptional cases, where there is no viable alternative, a higher limit for a very limited period may be appropriate in order to attain the environmental benefits. Within this framework, the 70 dB(A) $L_{Aeq,1h}$ (free field) limit referred to above should be regarded as the normal maximum.'*



2.2 Noise Intrusion Assessment Criteria

The criteria in BS 8233:1999 'Sound insulation and noise reduction for buildings – code of practice' provides guidance for determining an adequate level of noise control to ensure that noise levels within proposed properties meet the following noise guideline values specified in the standard:

		Good	Reasonable	
Living rooms	$L_{Aeq} =$	30	- 40 dB	
Bedrooms	$L_{Aeq} =$	30	- 35 dB,	L_{Amax} , night-time = 45 dB
Gardens	$L_{Aeq} =$	50	- 55 dB	

BS 8233:1999 suggests that a typical façade, regardless of construction, will offer a maximum of 15 dB sound insulation when windows are open.

These levels are also comparable to the World Health Organisation Recommendations in their 'Guidelines for Community Noise' (1999) publication which states that outdoor levels of 45 dB $L_{Aeq,T}$ for open windows at night or internal levels of 30 dB $L_{Aeq,T}$ are guideline values to prevent sleep disturbance. Similarly outdoor levels of 60 dB L_{Amax} for open windows at night or internal levels of 45 dB L_{Amax} are also maximum guideline values to prevent sleep disturbance.

The L_{Aeq} criteria outlined in the TG NPPF is comparable to or, during the night-time period, more onerous than the BS 8233 criteria.



3.0 Assessment Methodology

3.1 Noise Modelling Methodology

Whilst noise monitoring data is taken as paramount, three dimensional noise modelling has been undertaken to predict source noise levels at a large number of locations both horizontally and vertically. CADNA noise modelling software has been used. This model is based on BS 5228 and ISO 9613 noise propagation methodology and allows for detailed prediction of noise levels to be undertaken for large numbers of receptor points and different noise emission scenarios.

The modelling software calculates noise levels based on the emission parameters and spatial settings that are entered. Input data, assumptions and model settings as given in the table below have been used.

Table 3.1 Modelling Parameters Sources and Assumptions

Parameter	Source	Details
Horizontal distances – around site	AJS / Ordnance Survey	Ordnance Survey 1:10:000 and 1:1250 Mastermap within and in proximity (approx 300m) to the site
Ground levels – around site	Silkstone	Topographical survey (Ref: 13049/100)
Ground levels – other areas	Site Observations and Ordnance Survey	OS NTF 50m height points and benchmarks.
Building heights – around site	WYGE Observations	8 m height for two storey residential properties, and 4 m for Bungalows
Barrier heights	WYGE	None
Receptor positions	WYGE	3.5 m from façade, height of 1.5 m for daytime and 4m for night-time. 1.5 m height for model grid.
Absorbent Ground	CADNA	Frequency dependant ground absorption has been applied based on values specified in VDI 2714/16 clause 6.3.
Proposed site plan	AJS	Planning Layout (Ref: -- WO3817-PLAN-001: Rev 1)

It is acknowledged that a number of these assumptions will affect the overall noise levels presented in this report. However, it should be noted that certain assumptions made, as identified above, are worst case.

3.2 Model Input Data

3.2.1 Site Preparation at Rail Sidings Loading / Unloading Area

Information regarding noise emissions from equipment used on construction and open sites has been obtained from Annex C of BS 5228–1:2009 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise. This annex presents a range of current sound level data on typical site equipment and common site activities.



This data was obtained by field measurements for items of plant in use on construction and open sites in the UK. Levels quoted in the database are based on an average (logarithmic) of measured sound levels. The results are presented as un-weighted octave band activity L_{eq} levels, and overall A-weighted activity L_{eq} levels in dB. All sound pressure levels are standardized to 10 metres from the plant.

The items of plant and associated noise levels shown in Table 3.2 have been used for the purposes of this assessment and consider the range of activities to be employed during the 'site preparation phase' of the development. The following scenario has been assessed to consider a worst case scenario:

- Soil stripping and construction of the rail siding / platform: 1 excavator, 1 dozer and 1 dump truck have been assessed.

Table 3.2 Noise Levels from Proposed Activity

Equipment	Octave Band Sound Pressure Levels at 10 m (Hz)								Noise Level L_{Aeq} at 10 m	Model Input L_w
	63	125	250	500	1K	2K	4K	8K		
CAT 345c Hydraulic Excavator	85	78	77	77	73	71	68	63	79 dB	107 dB
Volvo A25 Articulated Dumpers	85	80	77	72	74	70	65	58	78 dB	106 dB
Bogmaster Dozer D6R	75	79	77	77	74	71	65	57	79 dB	107 dB

The worst case scenario has been assumed that the items of plant will be working for 100% of the time throughout an operational day. Point sources have been used to represent noise generation from proposed activities at the area of the proposed rail siding and platform. The calculation methodology is in accordance with the guidance provided within BS 5228.

3.2.2 Operational Phase

Information regarding noise emissions has been obtained from a specific noise survey (see table 4.3) of existing sources which are representative of the proposed operations at the rail siding, namely noise from plant and associated processes. The items of plant and associated noise levels shown in Table 3.3 – 3.5 have been used for the purposes of this assessment and consider the range of activities to be employed during the operational phase of the development. The items of plant have been confirmed by Hargreaves / MC&CCL as those that are to be used during all the stated activities.

The proposed method of working has been presented within Section 1. The following scenarios have been assessed to consider a worst case scenario ($L_{Aeq,1hr}$):

- Night-time coal delivery including train arrival, continuous use of the grab unloading the coal onto the conveyor and transfer of the coal to the end of the conveyor.
- Evening coke exportation including train departure and continuous use of two loading shovels loading the coke.



- Peak noise levels: Train arrival / departure.

Table 3.3 Noise Levels from Proposed Unloading

Equipment	Octave Band Sound Power Levels (Hz)									Model Input $L_{W(A)}$
	31.5	63	125	250	500	1K	2K	4K	8K	
Grab Engine noise / Manoeuvring (Based on Loading Shovel Measurements)	101	104.8	105.4	97.7	94.8	92.8	92.1	84.7	81.3	98.9
Unloading coal / drop to conveyor	89.0	87.1	83.0	84.2	84.7	85.9	87.2	87.1	86.0	93.5
Conveyor	82.6	89.1	79.9	76.0	73.3	70.6	68.5	63.2	58.7	76.4

Table 3.4 Noise Levels from Proposed Loading

Equipment	Octave Band Sound Power Levels (Hz)									Model Input $L_{W(A)}$
	31.5	63	125	250	500	1K	2K	4K	8K	
Loading Shovel	101	104.8	105.4	97.7	94.8	92.8	92.1	84.7	81.3	98.9

It has been assumed that the items of plant will be working for 100% of the time throughout an operational day. Point sources have been used to represent noise generation from activities at the proposed working positions. A line source has been used to represent noise from the conveyor.

With regard to train movement, source noise levels for freight train movement have been obtained from the WYG database. The following measurements and calculations have been used:

Table 3.5 Train Noise Levels

Description	Measurement	Calculation to derive $L_{Aeq,1hr}$ / L_{Amax}	Model Input
Freight train $L_{Aeq,1hr}$	SEL 90 dB(A) @ 16m	$90 + 10 \times \log(1) - 10 \times \log(1 \times 60 \times 60)^* - 10 \times \log(25/16)$	52.5 dB(A) @ 25m
Freight train L_{Amax}	86 dBL _{Amax} @ 16m	$86 + 20 \times \log(16) + 8$	$L_{W(A)}$ 118 dB

* $L_{Aeq} = SEL + 10 \log(N) - 10 \log(t)$, where N = number of train movements and t = time period (seconds)



3.3 Sensitive Receptors

Table 3.5 below summarises receptor locations that have been selected to represent worst-case residential receptors with respect to direct noise from proposed operations at the rail sidings and train arrival / departure. Ground floor facades (day / evening) and 1st floor facades (night-time) facing the proposed development, of nearest properties have been represented. The locations of the receptors are shown on SK02 in Appendix A.

Table 3.5 Proposed Facade Receptor Locations

Ref.	Description	Closest Source	Approximate Distance To Source (m)	Height (m)
R1	Monckton Grange	Rail siding	135	1.5 / 4.0
R2	Dwellings off the B6428 to the rear of the Ship Inn	Conveyor	390	1.5 / 4.0
R3	4 Robin Lane	Rail siding	470	1.5 / 4.0
R4	26 Warren Walk	Rail siding	515	1.5 / 4.0
R5	Common Lane Farm	Rail siding	390	1.5 / 4.0



4.0 Noise Survey

4.1 Noise Survey Methodology

A monitoring survey was undertaken to characterise baseline ambient noise levels currently experienced on the site and to establish the relative local baseline noise levels.

Equipment used during the survey included:

B&K 2260	Environmental Noise Analyser (WYG5)	s/n	2180560
B&K 4231	Calibrator	s/n	2176211
Rion NL-32	Environmental Noise Analyser (WYG11)	s/n	123729

The measurement equipment was checked against the appropriate calibrator at the beginning and end of the measurements, in accordance with recommended practice and no drift was observed. The accuracy of the calibrators can be traced to National Physical Laboratory Standards, calibration certificates for which are available on request.

A baseline monitoring survey was undertaken at six locations (as specified in the following table and shown in SK01 of Appendix B) with noise data obtained from Monday 7th October 2013 to Wednesday 09th October 2013. Attended short term measurements were undertaken at five locations during the day, evening, peak and night-time periods with 1 additional location being measured unattended over a 61 hour period. The raw data collected from the long term monitoring is available upon request. Specific noise measurements were also obtained in relation to plant operating on site.

Measurements were taken in general accordance with BS 7445-1:2003 *The Description and Measurement of Environmental Noise: Guide to quantities and procedures*. Weather conditions at the start of the survey period were blustery and with periods of heavy rain present. Weather conditions were observed as being dry with scattered showers. Anemometer readings confirmed that wind speeds were less than 5 ms⁻¹ at all times during the survey.

Table 4.1 Noise Monitoring Locations

Ref	Description	Grid Reference	
		X	Y
LT1	North of the side, west of the coal yard, adjacent to the garden boundary at Monckton Grange	437457.3	412441.2
ST1	Lund Hill Lane opposite Monckton Grange	437615.8	412445.4
ST2	To the rear of Coronation Avenue	437067.9	411766.1
ST3	End of Ash Lane	437015.8	411984.5
ST4	On the corner of Common Lane to the north west of the site	436718.9	412249.2



4.2 Noise Survey Results

Existing ambient noise levels around the site are dominated by traffic from the B6428. Operational activities including vehicle movements were audible from the coke works, primarily at LT1.

We have found that the noise survey results are comparable to those undertaken in Oct 2008 for the Wakefield Council and Yorkshire Forward Rabbit Ings project.

Ambient and background noise levels are usually described using the L_{Aeq} index (a form of energy average) and the L_{A90} index (i.e. the level exceeded for 90% of the measurement period) respectively. Road traffic noise is generally described using the L_{A10} index (i.e. the level exceeded for 10% of the measurement period).

The results of the statistical measurements and frequency measurements conducted during the survey are summarised in the following tables. All values are sound pressure levels in dB (re: 2×10^{-5} Pa).

Table 4.2 Results of Baseline Noise Monitoring Survey

Period	Duration (T)	Monitoring Date and Times	Location	$L_{Aeq,T}$ (dB)	$L_{Amax,T}$ (dB)	$L_{Amin,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
Weekday Day 07:00 – 19:00	36 hours	07/10/2013 - 09/10/2013 07:00 - 19:00	LT1	56.7	80.7	41.8	57.7	52.8
Weekday Evening 19:00-23:00	8 hours	07/10/2013 - 09/10/2013 19:00 - 23:00		49.1	65.2	40.1	50.6	46.6
Weekday Night 23:00 – 07:00	17 hours	07/10/2013 - 09/10/2013 06:00 – 07:00 (7 th) 23:00 - 07:00		49.1	71.4	40.1	50.9	47.0
Day 07:00 - 19:00	30 Mins	08/10/2013 14:04	ST1	59.2	89.3	44.4	61.2	49.3
	15 Mins	09/10/2013 10:17	ST2	47.7	57.9	38.4	51.1	41.9
	15 Mins	09/10/2013 09:57	ST3	54.4	80.5	42.4	57.6	46.8
	15 Mins	09/10/2013 09:32	ST4	52.1	71.3	40.8	54.3	46.2
Evening 19:00 - 23:00	30 Mins	08/10/2013 20:24	ST1	55.0	75.9	37.0	58.2	40.2
	15 Mins	08/10/2013 19:44	ST2	42.2	66.1	33.5	43.9	36.1
	15 Mins	08/10/2013 21:22	ST3	39.1	62.3	33.2	39.8	35.3
	15 Mins	08/10/2013 20:52	ST4	40.0	59.4	29.6	37.1	32.0
Night 23:00 - 07:00	15 Mins	09/10/2013 06:18	ST1	56.8	72.6	39.7	61.5	42.5
	15 Mins	09/10/2013 05:13	ST2	36.6	59.6	31.3	38.0	33.7
	15 Mins	09/10/2013 05:33	ST3	37.2	60.5	33.2	38.2	34.5
	15 Mins	09/10/2013 06:45	ST4	42.1	63.1	33.8	40.7	35.3

All values are sound pressure levels in dB re: 2×10^{-5} Pa

During the proposed operating hours, background noise levels ranged from 46 to 55 dBL_{A90,1h}.

**Table 4.3 Specific Noise Measurements**

Equipment	Octave Band Sound Power Levels (Hz)									dB L _{Aeq}
	31.5	63	125	250	500	1K	2K	4K	8K	
Conveyor @3m	69.8	76.3	67.1	63.2	60.5	57.8	55.7	50.4	45.9	63.4
Coal drop out of 'train' onto hard surface @3m	71.5	69.6	65.4	66.6	67.2	68.3	69.6	69.6	68.5	75.9
Loading shovel @5m	79.1	82.8	83.4	75.7	72.8	70.8	70.1	62.7	59.4	76.6
Loading shovel (dropping coal into stockpile) @5m	86.5	89.5	81.8	74.4	70.8	67.4	68.0	68.2	66.3	75.8

The above measurements have been used to derive the source noise levels presented in Section 3.2. For the loading shovel, the highest of the measurements presented in Table 4.3 has been used.



5.0 Assessment of Key Effects

5.1 Site Preparation

The assessment shown in the following table compares the worst case average noise levels from main site area during the soil stripping and siding construction phase. The relevant criteria adopted during this phase is 70 dBL_{Aeq,1h}. A noise contour plot is shown in SK03.

Table 5.1 Predicted Night-time Noise Levels – Train Arrival and Unloading Coal

Receptor Location	Noise Level from Activity L _{Aeq,1h}	NPPF Noise Assessment Criteria L _{Aeq,1h}	Within NPPF Criteria? (Yes/No)
R1	46.6	70.0	Yes
R2	38.8	70.0	Yes
R3	44.5	70.0	Yes
R4	42.5	70.0	Yes
R5	36.5	70.0	Yes

All values are sound pressure levels in dB re: 2x 10⁻⁵ Pa

The assessment shows that noise levels at nearby residential receptors during the preliminary phase of the development are predicted to be within TG NPPF criteria at all times.

5.2 Train Arrival and Unloading Coal

The assessments shown in the following tables compare the worst case average noise levels from the train arrival and the unloading process during both the daytime and night-time periods. Night-time noise contour plots are shown in SK04 and SK05.

Table 5.2 Predicted Night-time Noise Levels – Train Arrival and Unloading Coal

Receptor Location	Noise Level from Activity L _{Aeq,1h}	Assessment Criteria (L _{Aeq,1h})	Within NPPF Criteria? (Yes/No)
R1	38.2	42.0	Yes
R2	30.3	42.0	Yes
R3	36.8	42.0	Yes
R4	35.5	42.0	Yes
R5	35.3	42.0	Yes

All values are sound pressure levels in dB re: 2x 10⁻⁵ Pa

**Table 5.3 Predicted Night-time Maximum Noise Levels – Train Arrival**

Receptor Location	Noise Level from Activity $L_{Aeq,1h}$	Assessment Criteria (L_{Amax})	Within NPPF Criteria? (Yes/No)
R1	57.6	60.0	Yes
R2	49.8	60.0	Yes
R3	54.8	60.0	Yes
R4	52.1	60.0	Yes
R5	56.6	60.0	Yes

Table 5.4 Predicted Daytime Noise Levels – Train Arrival and Unloading Coal

Receptor Location	Noise Level from Activity $L_{Aeq,1h}$	Assessment Criteria ($L_{Aeq,1h}$)	Within NPPF Criteria? (Yes/No)
R1	37.3	55.0	Yes
R2	29.7	55.0	Yes
R3	35.4	55.0	Yes
R4	33.9	55.0	Yes
R5	34.1	55.0	Yes

All values are sound pressure levels in dB re: 2×10^{-5} Pa

The assessment shows that noise levels at nearby residential receptors during the delivery and unloading process during both daytime and night-time periods are predicted to be within TG NPPF criteria at all times.

5.3 Loading Coke and Train Departure

The assessment shown in the following tables compares the worst case average noise levels from the loading of coke and train departure during the evening period. A daytime / evening noise contour plot is shown in SK06.

Table 5.5 Predicted Daytime Noise Levels – Loading Coke and Train Departure

Receptor Location	Noise Level from Activity $L_{Aeq,1h}$	Assessment Criteria ($L_{Aeq,1h}$)	Within NPPF Criteria? (Yes/No)
R1	37.2	55.0	Yes
R2	29.7	55.0	Yes
R3	35.7	55.0	Yes
R4	33.5	55.0	Yes
R5	34.8	55.0	Yes

All values are sound pressure levels in dB re: 2×10^{-5} Pa

**Table 5.6 Predicted Evening Noise Levels – Loading Coke and Train Departure**

Receptor Location	Noise Level from Activity $L_{Aeq,1h}$	Reference Background Noise Level L_{A90}	Assessment Criteria (Within 10dB of L_{A90})	Difference between Activity Noise & Criteria	Within NPPF Criteria? (Yes/No)
R1	37.2	40.2 (ST1)	50.2	-13.0	Yes
R2	29.7	36.1 (ST2)	46.1	-16.4	Yes
R3	35.7	35.3 (ST3)	45.3	-9.6	Yes
R4	33.5	35.3 (ST3)	45.3	-11.8	Yes
R5	34.8	32.0 (ST4)	42.0	-7.2	Yes

All values are sound pressure levels in dB re: 2×10^{-5} Pa

The assessment shows that noise levels at nearby residential receptors are predicted to be within TG NPPF criteria at all times during the loading and export process during both the day and evening periods.



6.0 Conclusions of Noise Assessment

This report presents the details of a noise assessment for the proposed reinstatement of a rail siding at the Monckton Coke and Chemical Works in Royston. The proposals also include a conveyor to transport the coal to the main processing area where no additional or different operations will occur to the existing scenario. Existing background noise levels have been measured.

A worst case assessment has been undertaken with regard to train arrival and departure as well as associated loading and unloading activities in accordance with the NPPF.

Noise levels from the proposed activities are predicted to be within TG NPPF criteria at all times during the proposed operating hours including night-time period (06:00 -07:00) and evening periods (19:00 – 22:00).



Appendices



Appendix A – Acoustic Terminology and Abbreviations

An explanation of the specific acoustic terminology referred to within this report is provided below.

- dB** Sound levels from any source can be measured in frequency bands in order to provide detailed information about the spectral content of the noise, i.e. whether it is high-pitched, low-pitched, or with no distinct tonal character. These measurements are usually undertaken in octave or third octave frequency bands. If these values are summed logarithmically, a single dB figure is obtained. This is usually not very helpful as it simply describes the total amount of acoustic energy measured and does not take any account of the ear's ability to hear certain frequencies more readily than others.
- dB(A)** Instead, the dBA figure is used, as this is found to relate better to the loudness of the sound heard. The dBA figure is obtained by subtracting an appropriate correction, which represents the variation in the ear's ability to hear different frequencies, from the individual octave or third octave band values, before summing them logarithmically. As a result the single dBA value provides a good representation of how loud a sound is.
- L_{Aeq}** Since almost all sounds vary or fluctuate with time it is helpful, instead of having an instantaneous value to describe the noise event, to have an average of the total acoustic energy experienced over its duration. The $L_{Aeq, 07:00 - 23:00}$ for example, describes the equivalent continuous noise level over the 12 hour period between 7 am and 11 pm. During this time period the L_{pA} at any particular time is likely to have been either greater or lower than the $L_{Aeq, 07:00 - 23:00}$.
- L_{Amin}** The L_{Amin} is the quietest instantaneous noise level. This is usually the quietest 125 milliseconds measured during any given period of time.
- L_{Amax}** The L_{Amax} is the loudest instantaneous noise level. This is usually the loudest 125 milliseconds measured during any given period of time.
- L_n** Another method of describing, with a single value, a noise level which varies over a given time period is, instead of considering the average amount of acoustic energy, to consider the length of time for which a particular noise level is exceeded. If a level of x dBA is exceeded for say. 6 minutes within one hour, then that level can be described as being exceeded for 10% of the total measurement period. This is denoted as the $L_{A10, 1 \text{ hr}} = x \text{ dB}$.
- The L_{A10} index is often used in the description of road traffic noise, whilst the L_{A90} , the noise level exceeded for 90% of the measurement period, is the usual descriptor for underlying background noise. L_{A1} and L_{Amax} are common descriptors of construction noise.
- R_w** The *weighted sound reduction index* determined using the above *measurement* procedure, but weighted in accordance with the procedures set down in BS EN ISO 717-1. Partitioning and building board manufacturers commonly use this index to describe the inherent sound insulation performance of their products.



An explanation of abbreviations used within this report is provided below.

CADNA – Computer Aided Noise Abatement

HGV – Heavy Goods Vehicle

NPPF – National Planning Policy Framework

TG NPPF – Technical Guidance to the National Planning Policy Framework

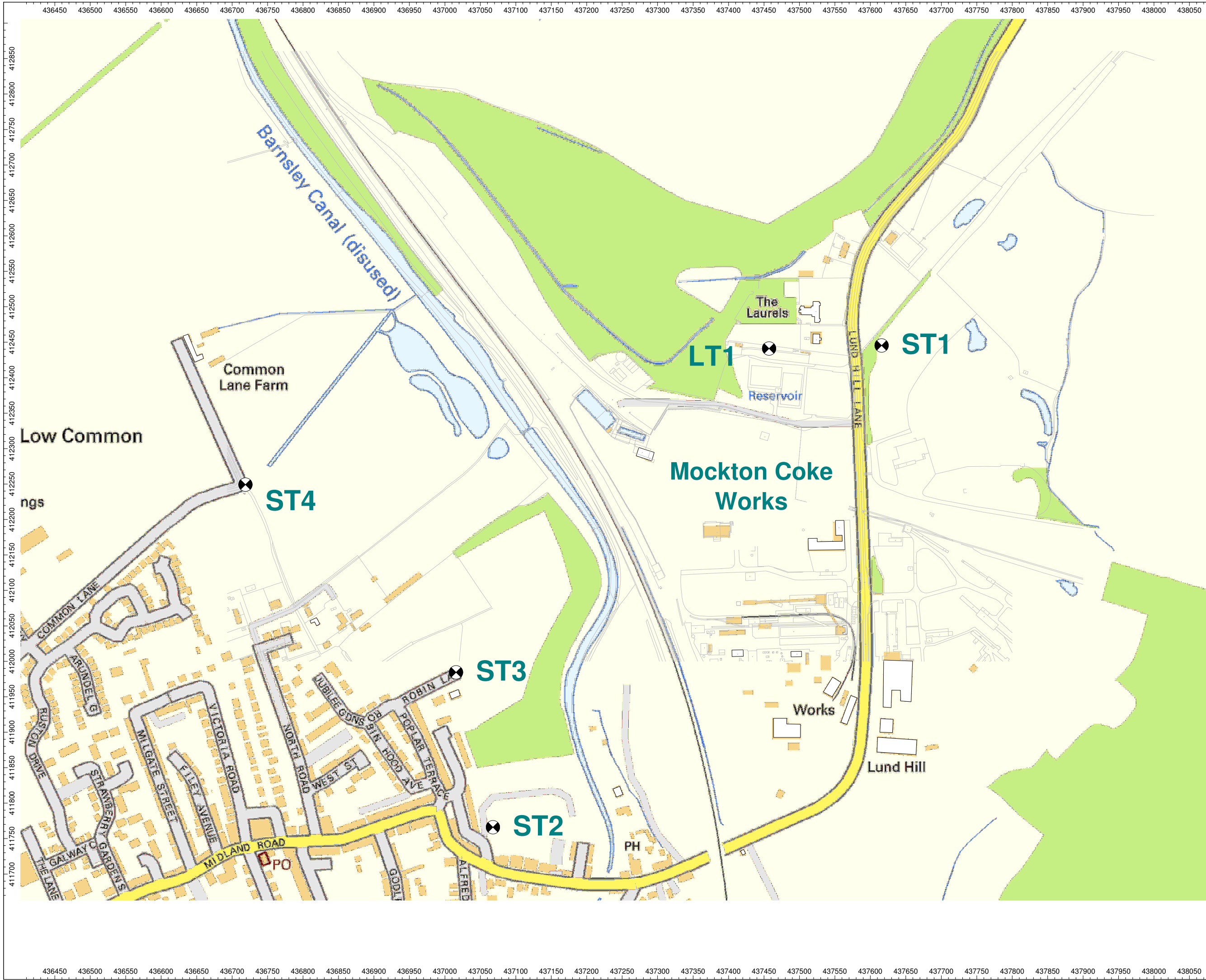
WYGE – WYG Environment

MC&CCL – Monckton Coke & Chemical Company



Appendix B – Sketches

- SK01 Noise Monitoring Locations
- SK02 Existing Receptor Locations
- SK03 Noise Contour Plot – Site Preparation $L_{Aeq,1h}$
- SK04 Noise Contour Plot – Coal Delivery and Unloading $L_{Aeq,1h}$
- SK05 Noise Contour Plot – Peak Noise Level L_{Amax}
- SK06 Noise Contour Plot – Coke Loading and Export $L_{Aeq,1h}$



Client:
Monckton Coke &
Chemical Company Limited

Project:
Reinstatement of Railway
Siding

Project Number:
A083512

Site Address:
Monckton Coke Works

Drawing Title / Scenario:
Noise Monitoring
Location Plan

Drawing Number:
SK01

Key:
Monitoring locations: ●

Scale : Not to scale

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Client:
Monckton Coke &
Chemical Company Limited

Project:
Reinstatement of Railway
Siding

Project Number:
A083512

Site Address:
Monckton Coke Works

Drawing Title / Scenario:
Receptor
Location Plan

Drawing Number:
SK02

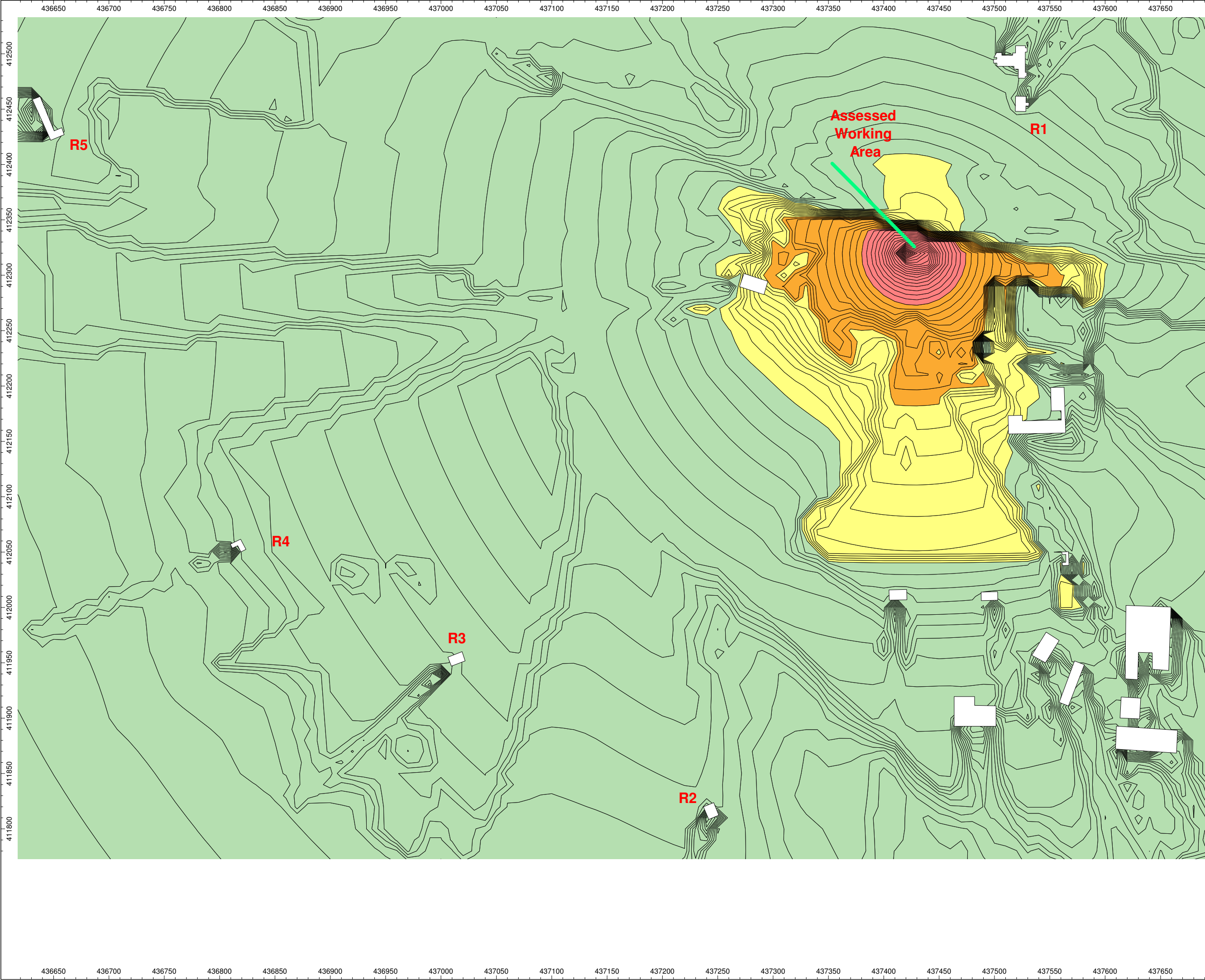
Key:
Receptor locations: 

Scale : Not to scale

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Client:
**Monckton Coke &
Chemical Company Limited**

Project:
**Reinstatement of Railway
Siding**

Project Number:
A083512

Site Address:
Monckton Coke Works

Drawing Title / Scenario:
**Noise Contour Plot
Site Preparation LAeq,1h**

Drawing Number:
SK03

Key:

0.0 - 50.0 dB
50.0 - 60.0 dB
60.0 - 70.0 dB
>70.0 dB

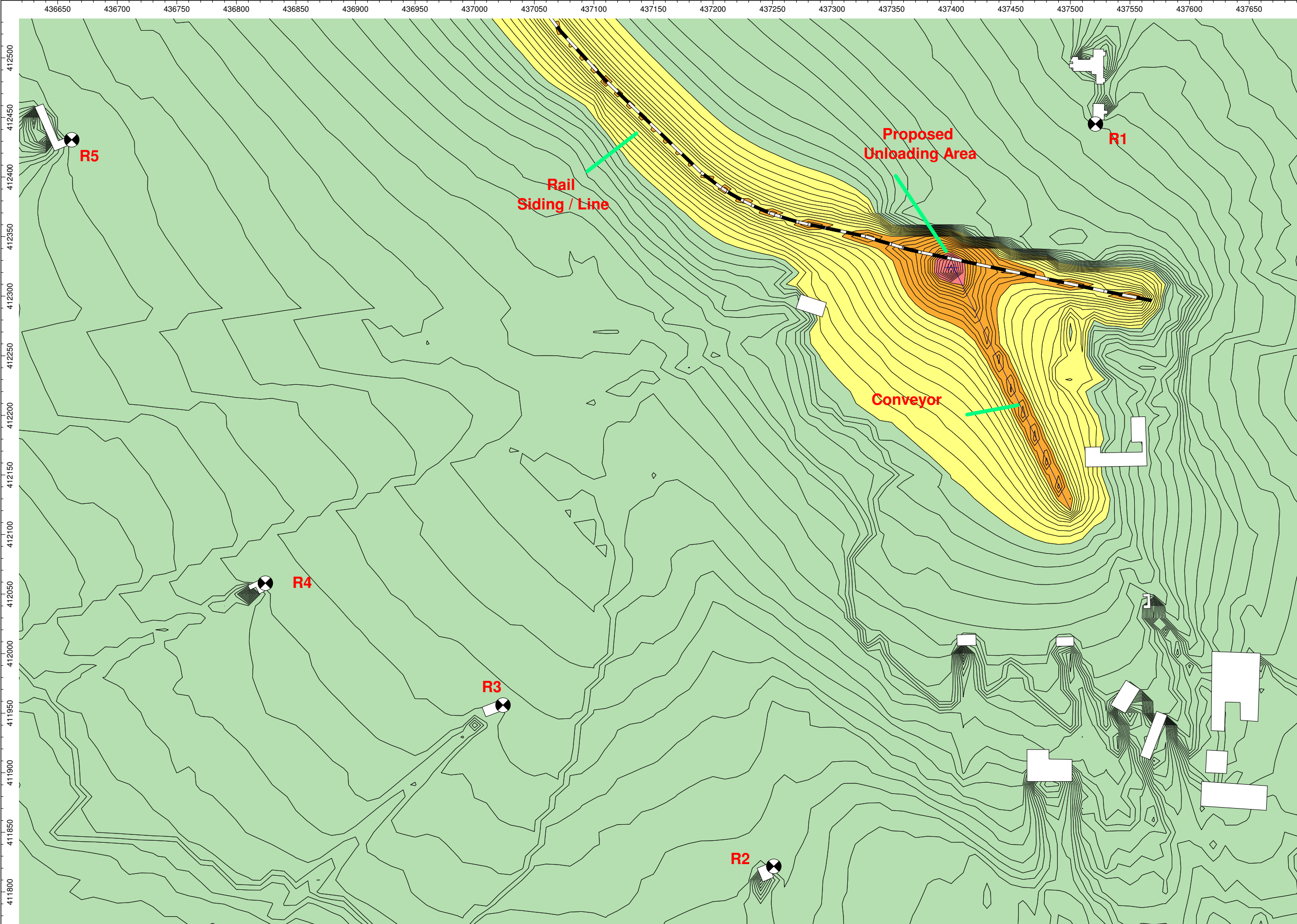
Contour Plot Presented For
Indicative Purposes Only

Scale : Not to scale

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Client:
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Chemical Company Limited**

Project:
**Reinstatement of Railway
Siding**

Project Number:
A083512

Site Address:
Monckton Coke Works

Drawing Title / Scenario:
**Noise Contour Plot
Coal Delivery and Unloading
LAeq,1h**

Drawing Number:
SK04

Key:

0.0 - 50.0 dB
50.0 - 60.0 dB
60.0 - 70.0 dB
>70.0 dB

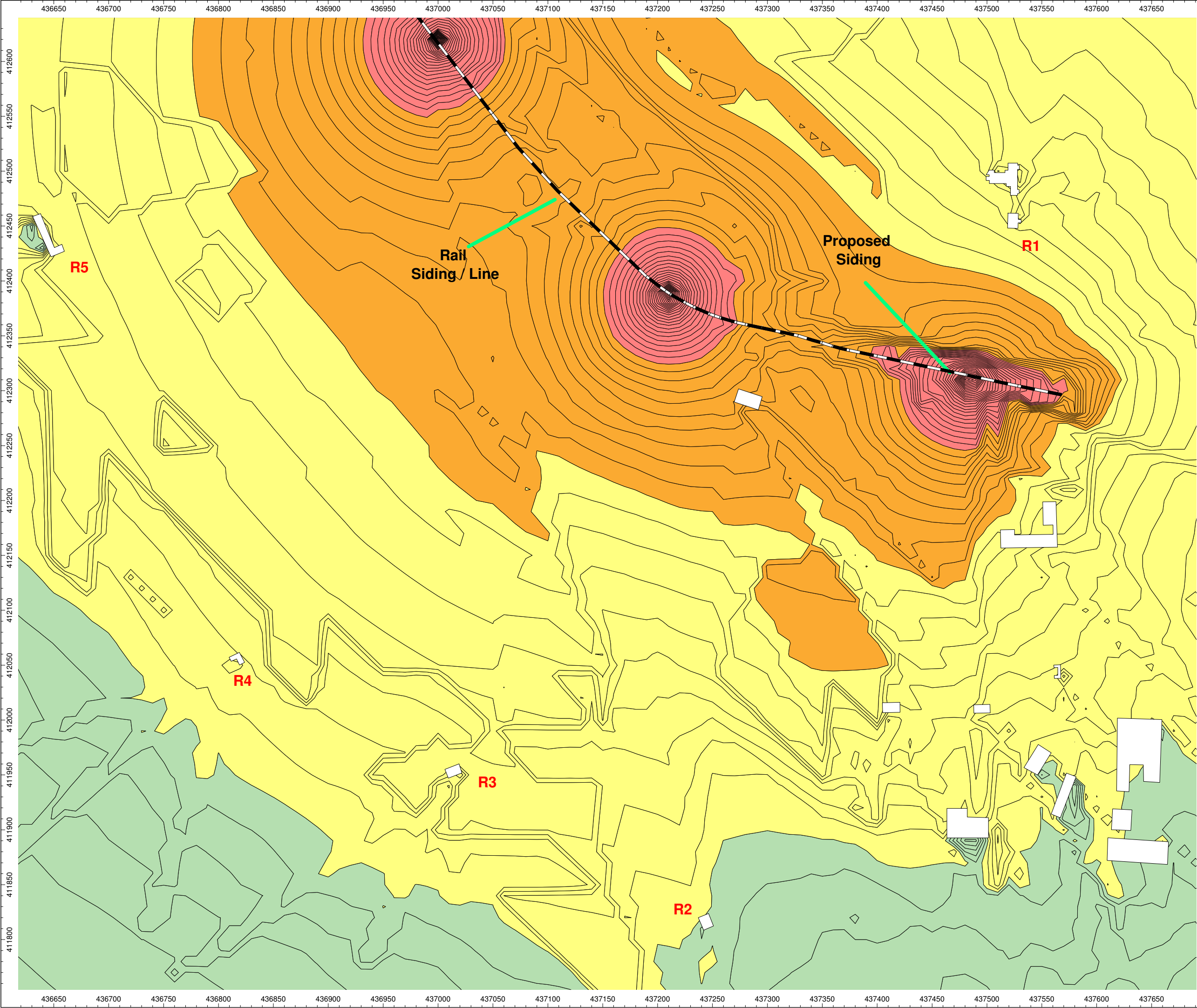
Contour Plot Presented For
Indicative Purposes Only

Scale : Not to scale

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Client:
**Monckton Coke &
Chemical Company Limited**

Project:
**Reinstatement of Railway
Siding**

Project Number:
A083512

Site Address:
Monckton Coke Works

Drawing Title / Scenario:
**Noise Contour Plot
Peak Noise Level L_{max}**

Drawing Number:
SK05

Key:

0.0 - 50.0 dB
50.0 - 60.0 dB
60.0 - 70.0 dB
>70.0 dB

Contour Plot Presented For
Indicative Purposes Only

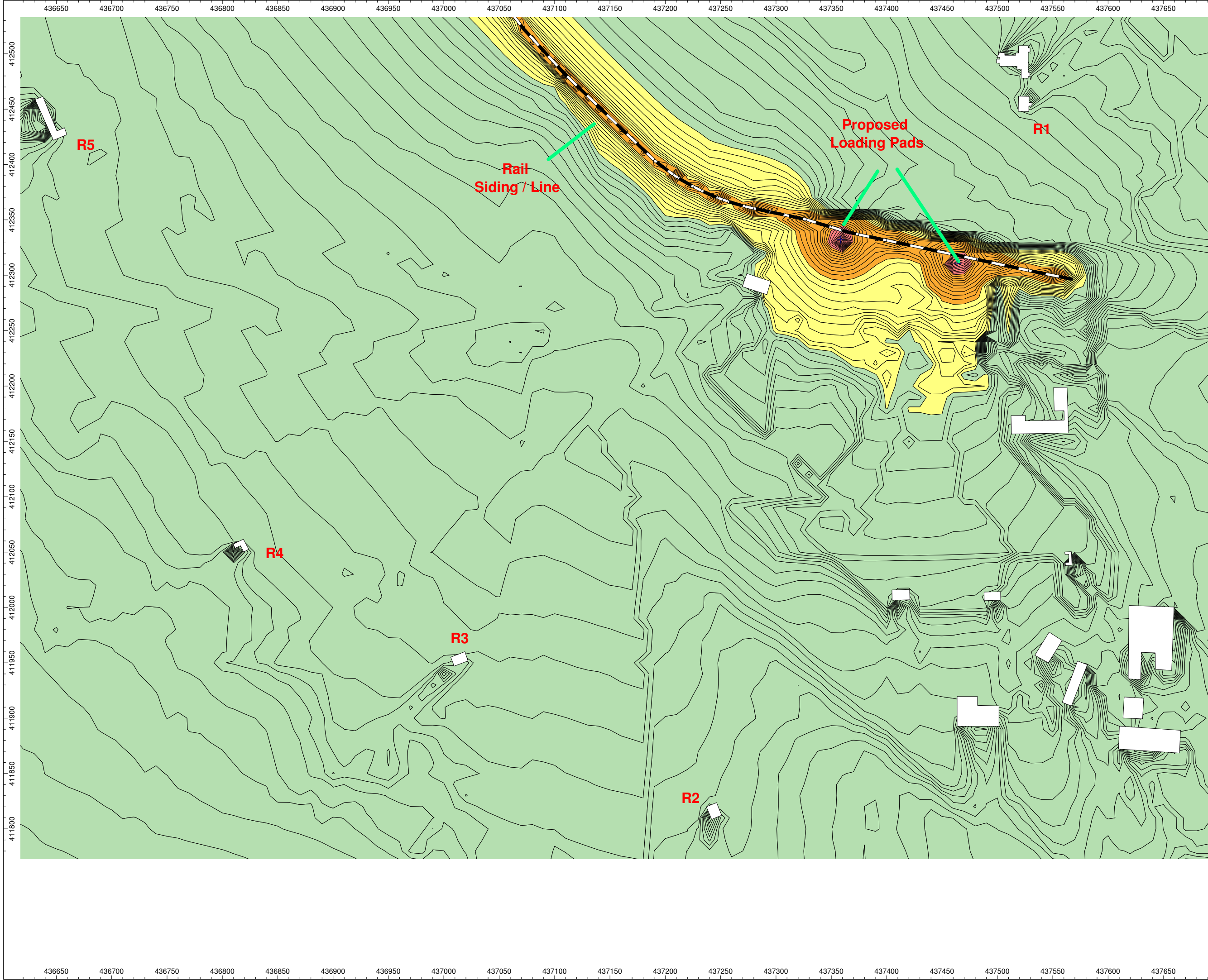
Maximum source noise level assessed
to occur at 3 locations
closest to all receptors
(in practice will only occur at
1 location at the same time)

Scale : Not to scale

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Client:
**Monckton Coke &
Chemical Company Limited**

Project:
**Reinstatement of Railway
Siding**

Project Number:
A083512

Site Address:
Monckton Coke Works

Drawing Title / Scenario:
**Noise Contour Plot
Coke Loading and Export
LAeq,1h**

Drawing Number:
SK06

Key:

0.0 - 50.0 dB
50.0 - 60.0 dB
60.0 - 70.0 dB
>70.0 dB

Contour Plot Presented For
Indicative Purposes Only

Scale : Not to scale

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