

## Great South Land Minerals oil/gas drilling project 2007-2008

### Field report for noise monitoring of Tasmanian drillsite locations

#### General

Great South Land Minerals Limited has proposed a drilling program in search of oil/gas resources at 4 initial sites as outlined in a series of 4 documents "Exploration Drilling Program" sequentially subtitled "Gezer #1", "Lachish #1", "Hebron #1", and "Eglon #1", dated Sept-Oct 2006. Further A3 map reproductions supplied are based on 1:100000 Tasmans show the proposed oil/gas exploratory drilling locations.

Field noise monitoring locations were visited 1-2/2/2007, 13-15/3/2007, 15/4/2007 and 17/3/2008 for background and ambient noise measurements, and included site, weather and noisescapes observations.

#### Instruments used

- Brüel & Kjær Statistical Noise Analyser Type 4426 s/n 722799, Laboratory Certified December 2006;
- Brüel & Kjær Statistical Noise Analyser Type 4426 s/n 957489, Laboratory Certified October 2007;
- Brüel & Kjær Level Recorder Type 2306;
- Brüel & Kjær Precision Integrating Sound Level Meter Type 2218 s/n 784345, with Brüel & Kjær Octave Filter Set Type 1613 s/n 643248, both Laboratory Certified December 2006;
- Rion Precision Integrating Sound Level Meter Model NL-11, s/n 150321, with Rion Octave Band Filter Model NX-01A, s/n 10851228;
- Brüel & Kjær Sound Level Calibrator Type 4230 s/n 1207368, Laboratory Certified December 2006;
- Brüel & Kjær Sound Level Calibrator Type 4230 s/n 1655635, Laboratory Certified June 2006;
- Brüel & Kjær Precision Sound Level Meter Type 2232 s/n 1129761, Lab. Certified December 2006;
- Weather Instruments (Aneroid barometer, Zeal Wet/Dry bulb Psychrometer, Suunto KB-14/360R compass, Kaindl Windmaster 2 wind speed meter);
- Hengstler Geotech M10 measuring wheel;
- Fibreglass measuring tape;
- Clicker counter;

## Notes on individual noise monitoring locations

### Hebron#1 (Tunbridge area)

This is the approximate location of the drillsite, by a hillside hut ruin at GR 3763 3488 (Tunbridge 1:25000 map). General background noise is dominated by Midland Highway traffic occupying a large arc to the west, just behind Tunbridge township.

The volume of the 24-hour highway traffic lessens during the night, but becomes dominated by trucks at these times. Significant additional noise is generated by train traffic running approximately parallel to the highway. While train noise is only an intermittent occurrence, it is noteworthy that some trains pass during sensitive night-time hours. Further noise contributors around Tunbridge include farm activity, barking dogs, livestock, town traffic, and wind in this exposed landscape.

### Ballochmyle (Tunbridge township)

The bulk of Tunbridge town dwellings are in direct line of sight from the Hebron#1 drillsite location, at distances from 2.1-3.2km. The Ballochmyle homestead is closer (1.3km) to the drillsite, but is out of direct line of sight, shielded by local topography. The Ballochmyle Rd monitoring location is by the nearest of those township houses, at GR 3555 3522 (Tunbridge 1:25000 map), at 2.1 km (in line of sight) from the Hebron #1 drill site. The location is 260 m from the railway, and 300 m from the highway at their nearest points. The highway exposure is approximately 3.5 km in length, with typical vehicle speeds estimated at 90-110 km/h over this almost level section.

The traffic, train, dog and wind noises are all more immediate at this site. Also noted during visits are noises from crows, clangs from empty trucks, crickets, small birds and training (trotting) horses.

### Lowes (Tunbridge township)

The Lowes monitoring location is at the junction of Lowes St and Maclanachan St, at GR 3513 3505 (Tunbridge 1:25000 map), 6 m east of HEC pole 3 - 346793. Lowes is 2.6km from the drillsite, in direct line of sight. The highway lies at a minimum distance of 650 m from the location, covering a visual arc of 143°, for a length of about 4 km. The train line approaches 500 m of the location.

The more diffuse noise of traffic, train, dog and wind are all encountered at this site. Other features noted includes northbound overhead jets measuring 40 and 45 dB(A), propeller aircraft measuring 38 dB(A) and crows.

### Lachish#1 (Stockwell, Valleyfield Rd)

This monitoring site is located at GR 275 683 (South Esk 1:100000 map), nearby the actual drillsite location. The site is an open, level location 200m northeast of gate opposite Stockwell entrance, exposed to wind. The nearest dwellings are Stockwell, 1.5km, in line of sight, and Quarry Hill, 1.8km. A dairy facility is located a shorter distance to the north. The Midland Highway and rail line lie 7 km to the east, but are obscured by a line of hills, thus providing a diffuse background noise source.

This is a generally quiet location, with observed additional noise contributions from wind, infrequent Valleyfield Road traffic, livestock, irrigation equipment, dogs, possums, and high level jet airline flightpath.

### Eglon#1 (Bracknell area)

The monitoring site is in the corner of a narrow paddock, GR 9845 8884 (Liffey 1:25000 map). The drillsite lies 300m to the NW, in a paddock holding numerous sheep at the time of visits. There are a

number of farm buildings and dwellings within 600m-2km of the drillsite (Unknown to E 600m, unknown to W 700m, unknown to NW 1.0km, unknown to W 1.1km, Fairview to S 1.2km, unknown to S 1.3km) all just out of sightline due to undulations. Bracknell township lies 3 km to the west, topographically shielded by a low ridge.

Significant daytime noise is generated by traffic along both Green Rises Rd and Elphinstone Rd, with less noticeable contributions from Liffey Rd. Further noise contributions were observed from wind, a variety of birds, flies, farm machinery, livestock, crop-dusting aircraft. Night-time noise is dominated by irrigation pumps (63Hz drone) and crickets (4000Hz).

### Gezer#1 (Bronte area)

The monitoring site is at Roscarborough gate #2, GR 6035 4440 (Montpeelyata 1:25000 map). The wooded site is within 250 m of the Gezer#1 drillsite. As the Roscarborough homestead is a ruin and there is only a temporary hunters' shelter; it can be considered that there are no neighbours in the vicinity of the drillsite. The nearest neighbours are anglers' shacks at Little Pine Lagoon 9 km to the northeast, and Bronte Park village 10 km to the south, both areas topographically well isolated from Gezer#1. While the site is 750m up the Roscarborough Rd, a bend in the gravelled Marlborough Highway approaches within 300m of the site.

Traffic is a significant contributor to the noise to the site, and was better monitored at the Marlborough Hwy site. Other noise contributors observed include wind in the trees, birds (including crows, currawongs, kookaburras), flies, possums, wallabies, thunder and frogs.

### Marlborough Hwy (Bronte area)

The monitoring site is at Roscarborough gate #4, GR 6348 4647 (Montpeelyata 1:25000 map). There are no neighbours in the vicinity of the site. While the wooded site is 65m up the logging road, the gravelled Marlborough Highway approaches within 40m of the site.

Highway traffic is a significant contributor to the noise to the site, with an observed mix of log trucks, cars including heavier 4WDs and trailers, and other goods trucks. Log trucks were measured at 66dB(A), and cars measured at 50-55dB(A). Other noise contributors observed include wind in the trees, birds (including crows, currawongs, kookaburras), flies, light aircraft and crickets.





Hebron #1  
2/2/2007





Lachish #1

2/2/2007







Eglon #1 monitoring location  
2/2/2007



Gezer #1 monitoring location

1/2/2007

### Weather records for site visits

[illegible]

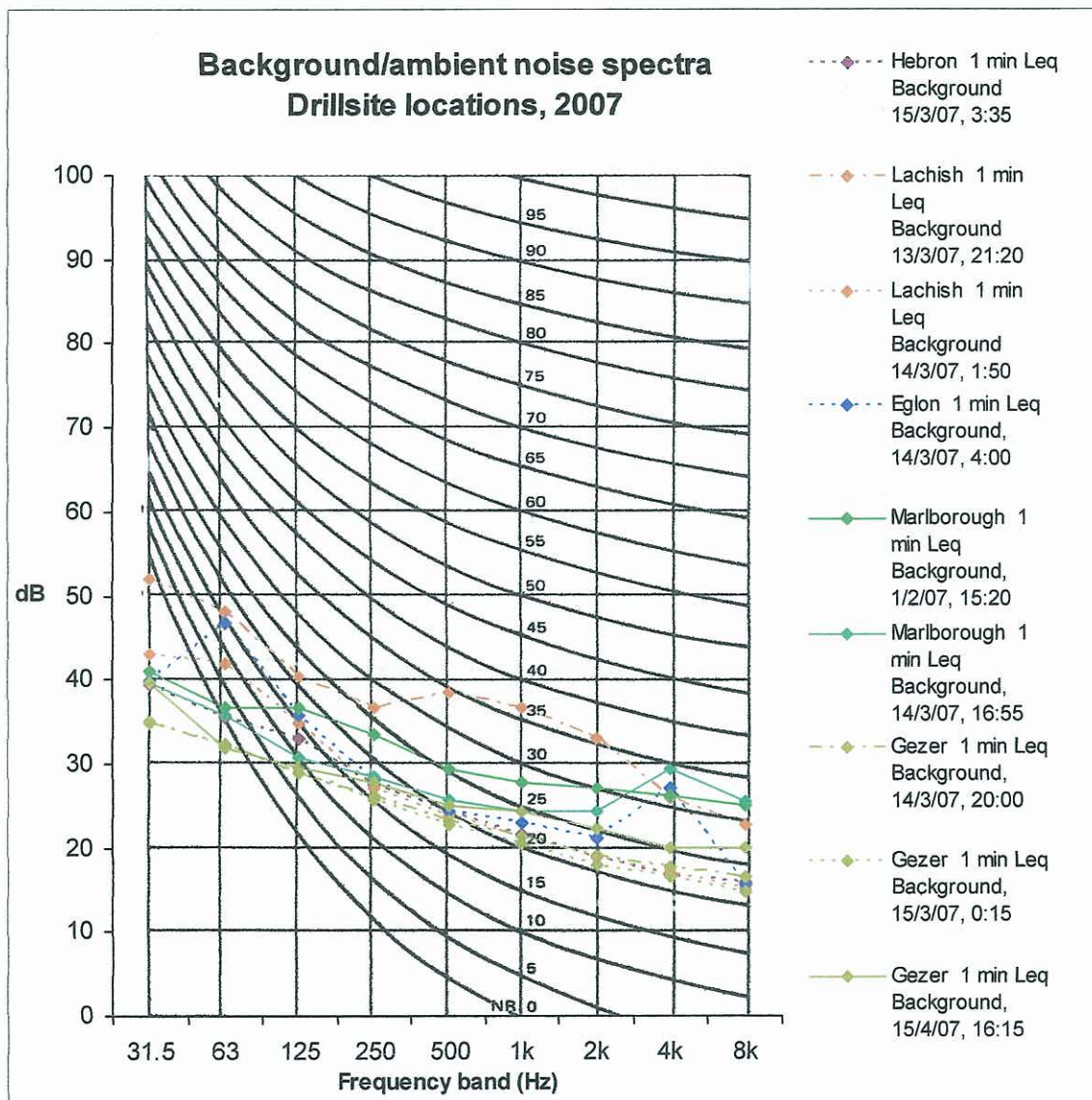
### Statistical distribution of noise - summary table

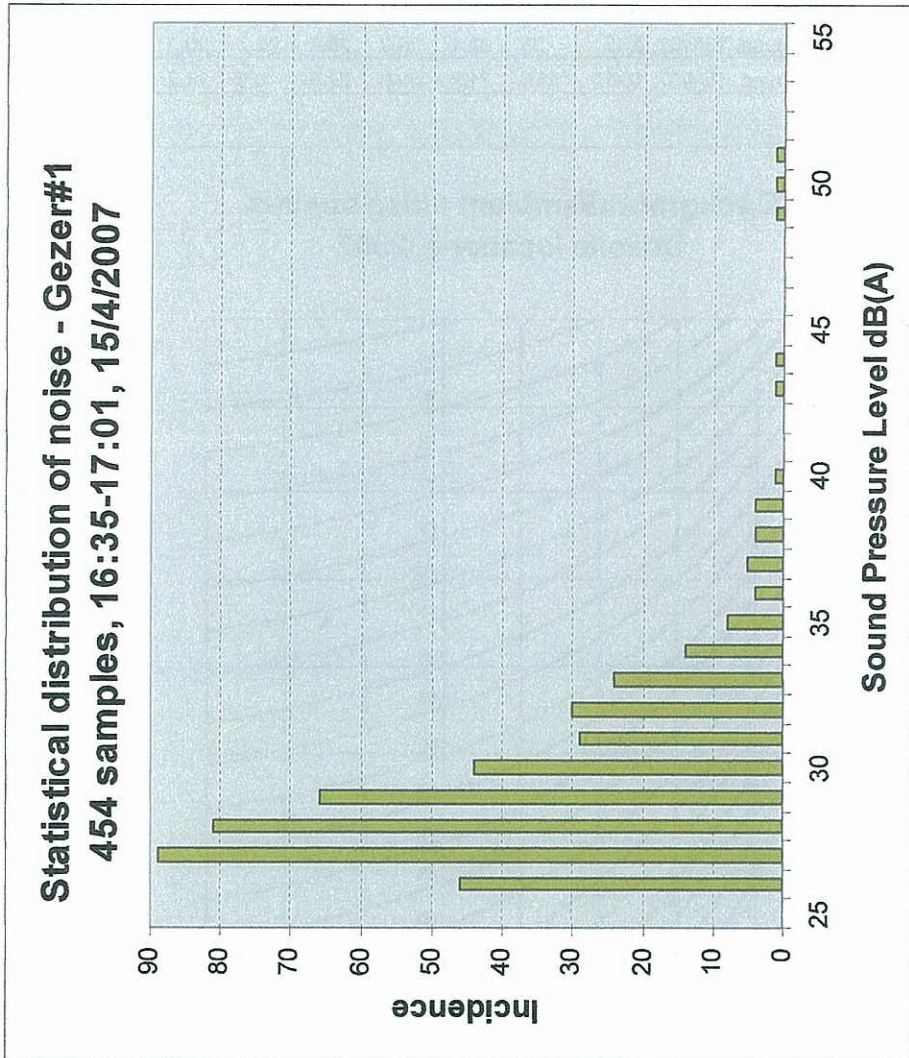
[illegible]



### Spectral distribution of noise

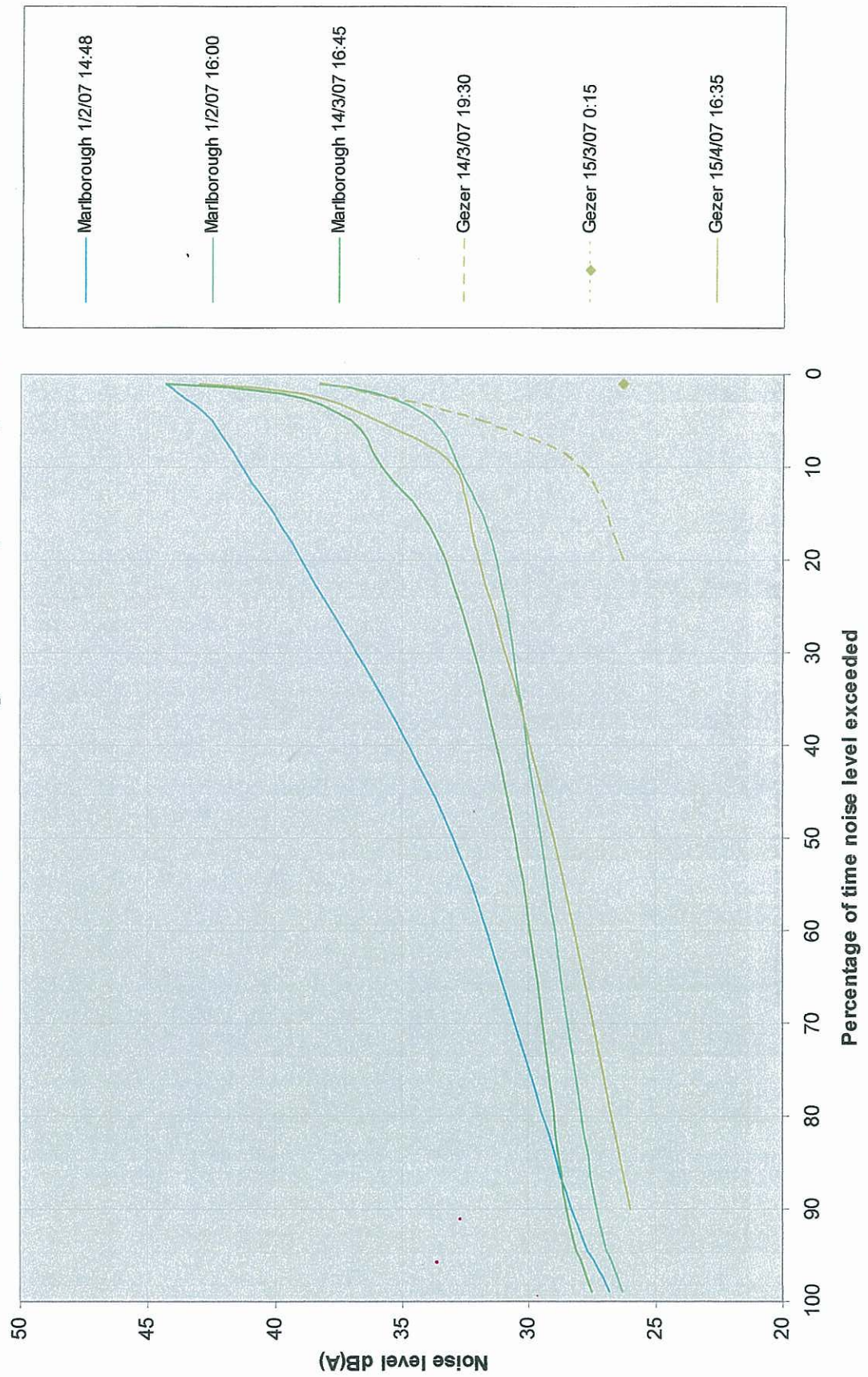
Location	Situation	frequency band (Hz)	31.5	63	125	250	500	1k	2k	4k	8k	dB(A)	dB(C)	dB(Lin)
Hebron	1 min Leq	Background 15/3/07, 3:35	39.3	35.5	32.9	27.4	24.3	21.5	18.7	16.8	15.9	27.2	40.2	49.1
Lachish	1 min Leq	Background 13/3/07, 21:20	52	48.1	40.2	36.7	38.4	36.6	33	25.8	22.7	39.2	59.3	76.5
Lachish	1 min Leq	Background 14/3/07, 1:50	43	41.9	34.8	27.1	23.7	21.2	18.8	16.9	15.2	27.7	44.9	56.3
Eglon	1 min Leq	Background, 14/3/07, 4:00	39.9	46.6	35.7	27.9	24.3	22.8	21	27	15.5	31.9	48.3	53.2
Marlborough	1 min Leq	Background, 1/2/07, 15:20	41	36.5	36.6	33.4	29.2	27.8	26.9	26.2	25	30.2	45.8	55.2
Marlborough	1 min Leq	Background, 14/3/07, 16:55	39.5	35.8	30.6	28.3	25.6	24.2	24.2	29.4	25.4	32.3	41.8	52.8
Gezer	1 min Leq	Background, 14/3/07, 20:00	34.8	32.3	28.9	26.2	23.1	21.2	18.9	17.6	16.4	26.7	37.5	44.4
Gezer	1 min Leq	Background, 15/3/07, 0:15	35	32.1	28.9	25.7	22.7	20.3	17.8	16.5	14.6	26.2	37.3	44
Gezer	1 min Leq	Background, 15/4/07, 16:15	39.6	31.9	29.6	27.8	25	24.2	22.3	20	19.8	31.4	41.4	64.8



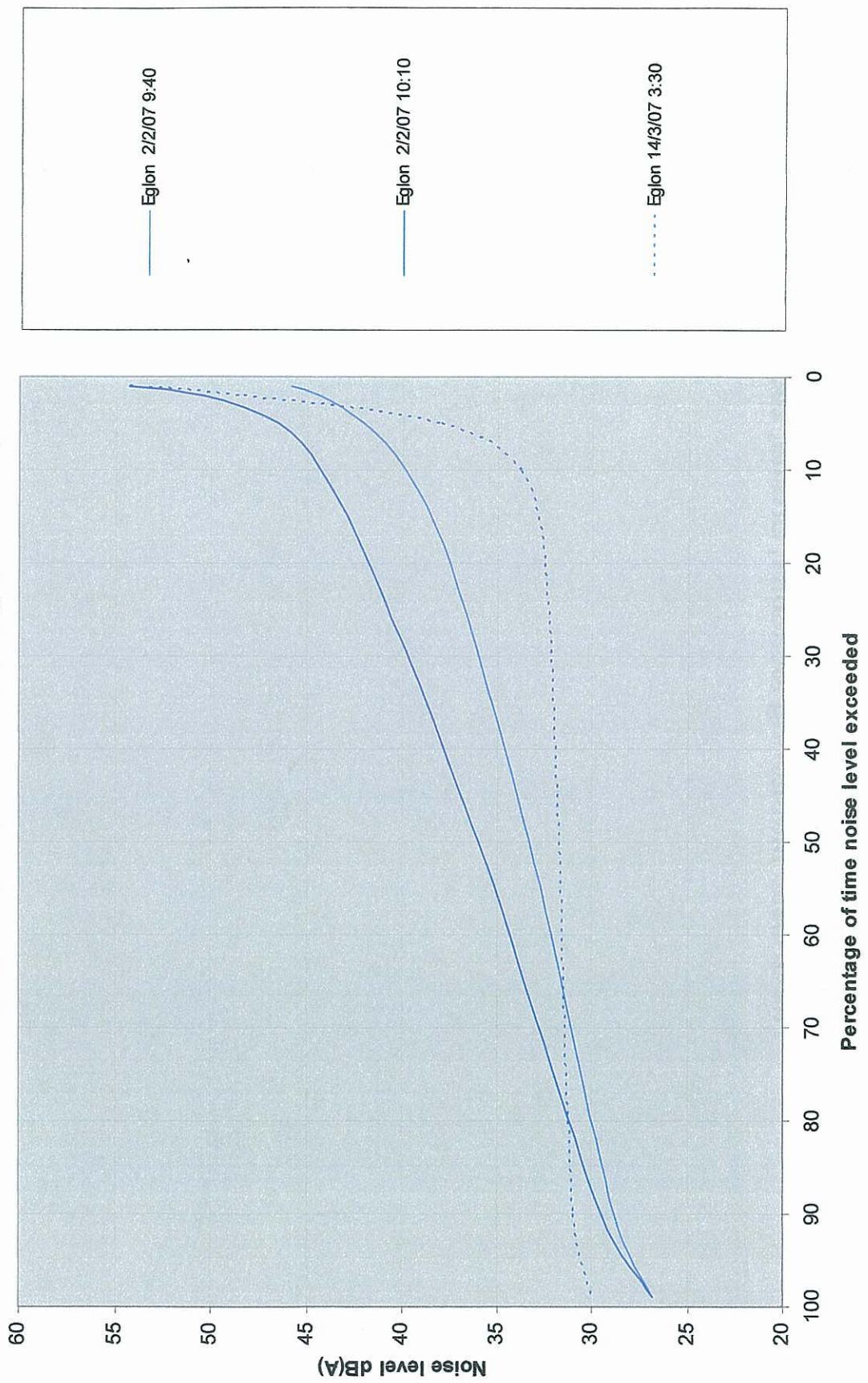




**Statistical Analysis, 15 minute sampling periods  
Tas drillsite monitoring locations, Bronte, 2007**

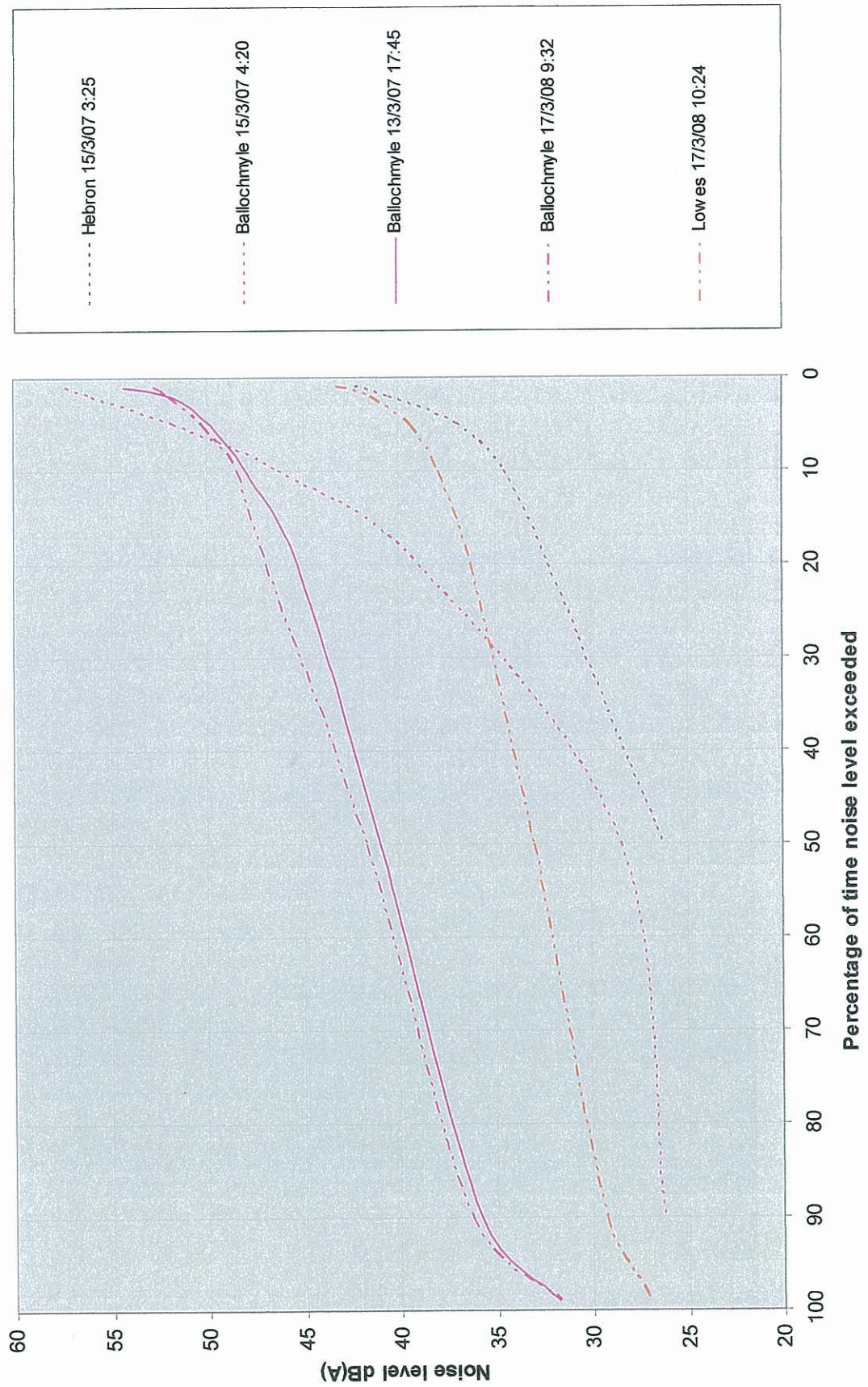


**Statistical Analysis, 15 minute sampling periods  
Bracknell drillsite monitoring locations, 2007**

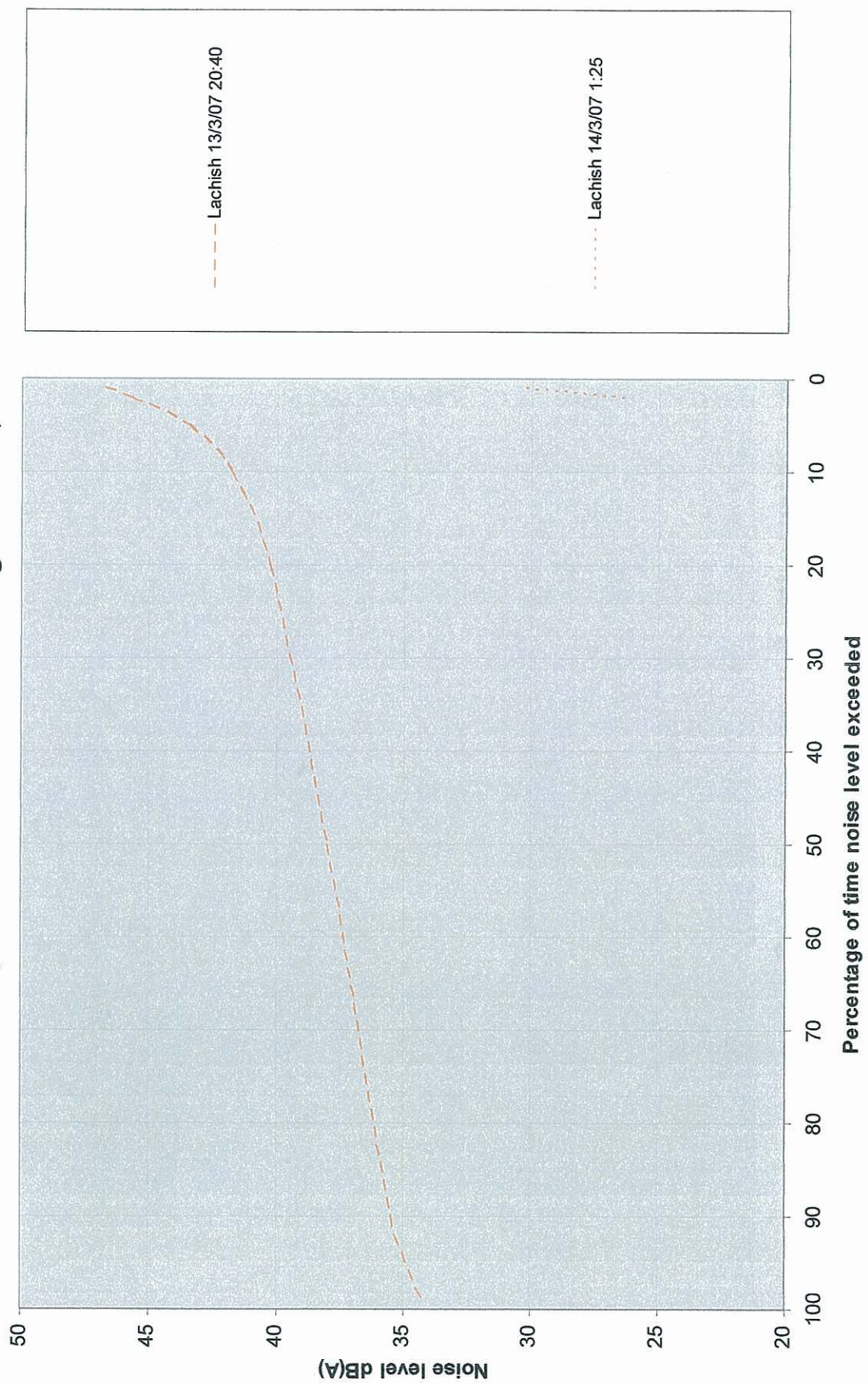




**Statistical Analysis, 15 minute sampling periods  
Tunbridge drillsite monitoring locations, 2007-2008**



**Statistical Analysis, 15 minute sampling periods  
Valleyfield Rd drillsite monitoring location, 2007**



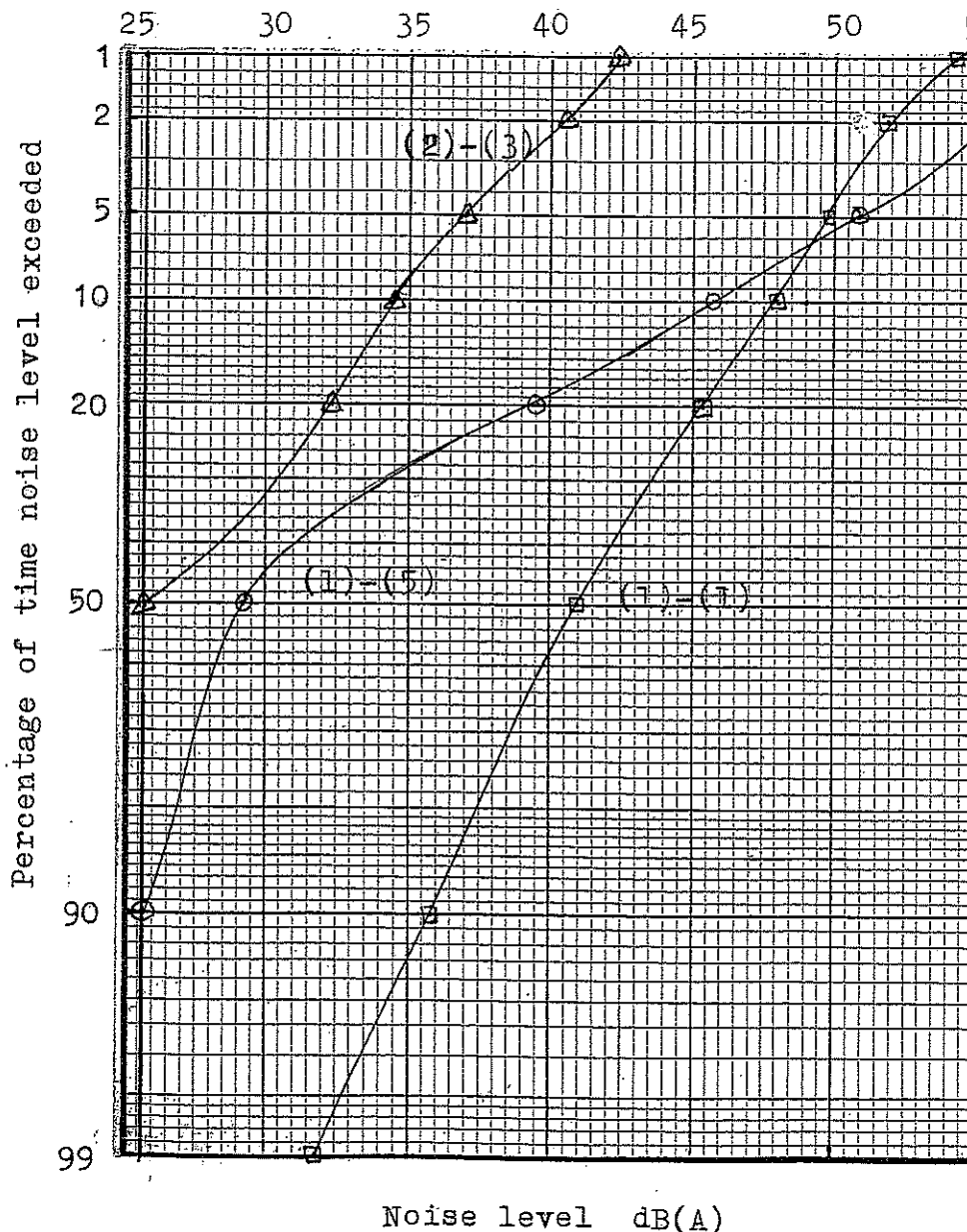


## STATISTICAL NOISE ANALYSIS

Location: Tunbridge (Hebron) (1) GR355352 Ballochmyle Rd  
 Survey Date: 13, 15/3/2007 (2) GR377348 Hut ruins, drill site  
 Eng/Tech: M. Lichon

dB(A)

Comments	Time	L <sub>1</sub>	L <sub>2</sub>	L <sub>5</sub>	L <sub>10</sub>	L <sub>20</sub>	L <sub>50</sub>	L <sub>90</sub>	L <sub>99</sub>	L <sub>eq</sub>
(1)-(1) 13/3/07	1745-1800	54.3	51.8	49.8	48.0	45.3	41.0	35.8	31.8	45.9
(2)-(3) 15/3/07	0325-0340	42.3	40.5	37.0	34.5	32.3	26.3	26.3	26.3	31.6
(1)-(5) 15/3/07	0420-0435	57.3	56.0	51.8	46.3	39.0	28.5	26.3	26.3	44.3



## NOTES

(1)-(1)  
49 cars 8 trucks hwy  
2 cars Ball.Rd

(2)-(3)  
1 car 2 trucks hwy  
1/2 train

## WEATHER:

13/3 15/3  
 Temp. C 21 11.5  
 Press. hPa 993 989  
 Rel.Hum % 42 94  
 Wind speed m/s 2.5 1.8  
 Wind. Dir. SSW WNW  
 Cloud 0/8 0/8

## INSTRUMENTS:

B&K Statistical Noise  
 Analyser Type 4426  
 s/n 722799  
 B&K Calibrator Type  
 4230 s/n 1207368  
 Both laboratory  
 calibrated Dec 2006

## NOTES

(1)-(5)  
1 car 4 trucks hwy

Pearu Terts,  
 Consulting Engineer

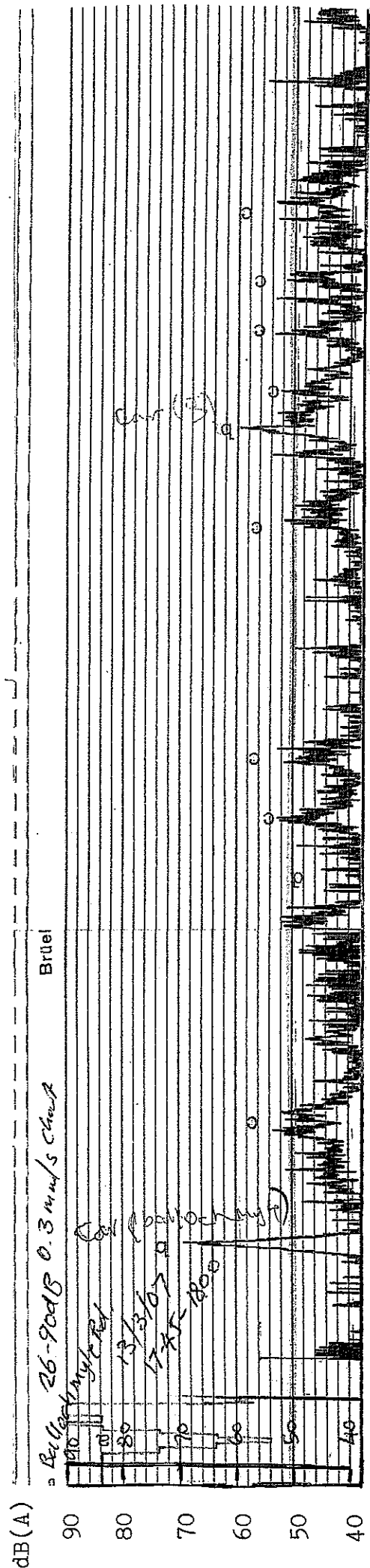
## CHART RECORDING

Location: Tunbridge at  
 Ballochmyle Rd.,  
 GR355 352  
 Tunbridge 1: 25000 map

13/3/2007

Trace started 1745 h  
 paper speed = 0.3 mm/s

- a - calibration trace
- b - passing car, Ballochmyle Rd
- c - Highway traffic example
- d - dog barking





Time recording of noise at Ballochmyle Rd, Tunbridge, 9:32-9:47, 17/3/2008.

Chart speed 0.3 mm/s. Approx. scale, A4 original: 1 minute = 18 mm.

B 18

dB(A)

0932 Ballochmyle Rd Tunbridge 17/3/08 26-90/100/0-3

Brüel & Kjær

30  
30  
70  
50  
50  
40

Calibration signal

75-60/0-3

Truck clangs

Dog bark

75-60/0-3

Traffic noise

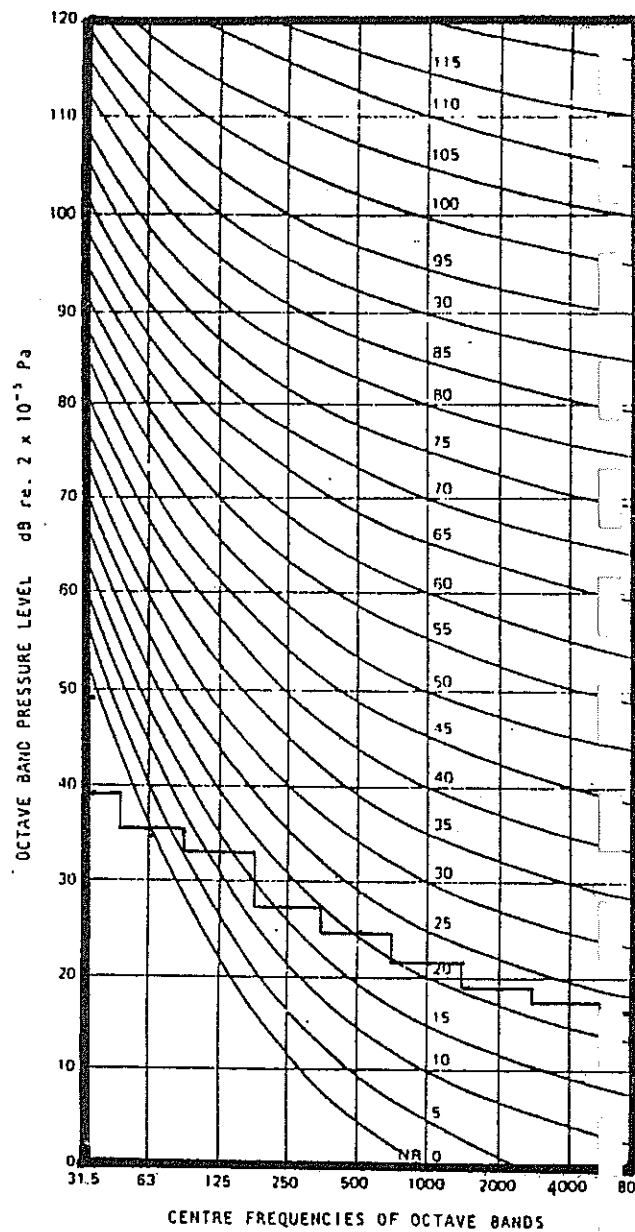
QP0102

## SPECTRAL NOISE DISTRIBUTION

Tunbridge (Hebron~~1~~)  
 Hut ruin, drillsite  
 GR377348 Tunbridge 1:25000

15/3/2007  
 1 minute Leq's starting 03:35am

27.2 dB(A)  
 40.2 dB(C)  
 49.1 dB(Lin)



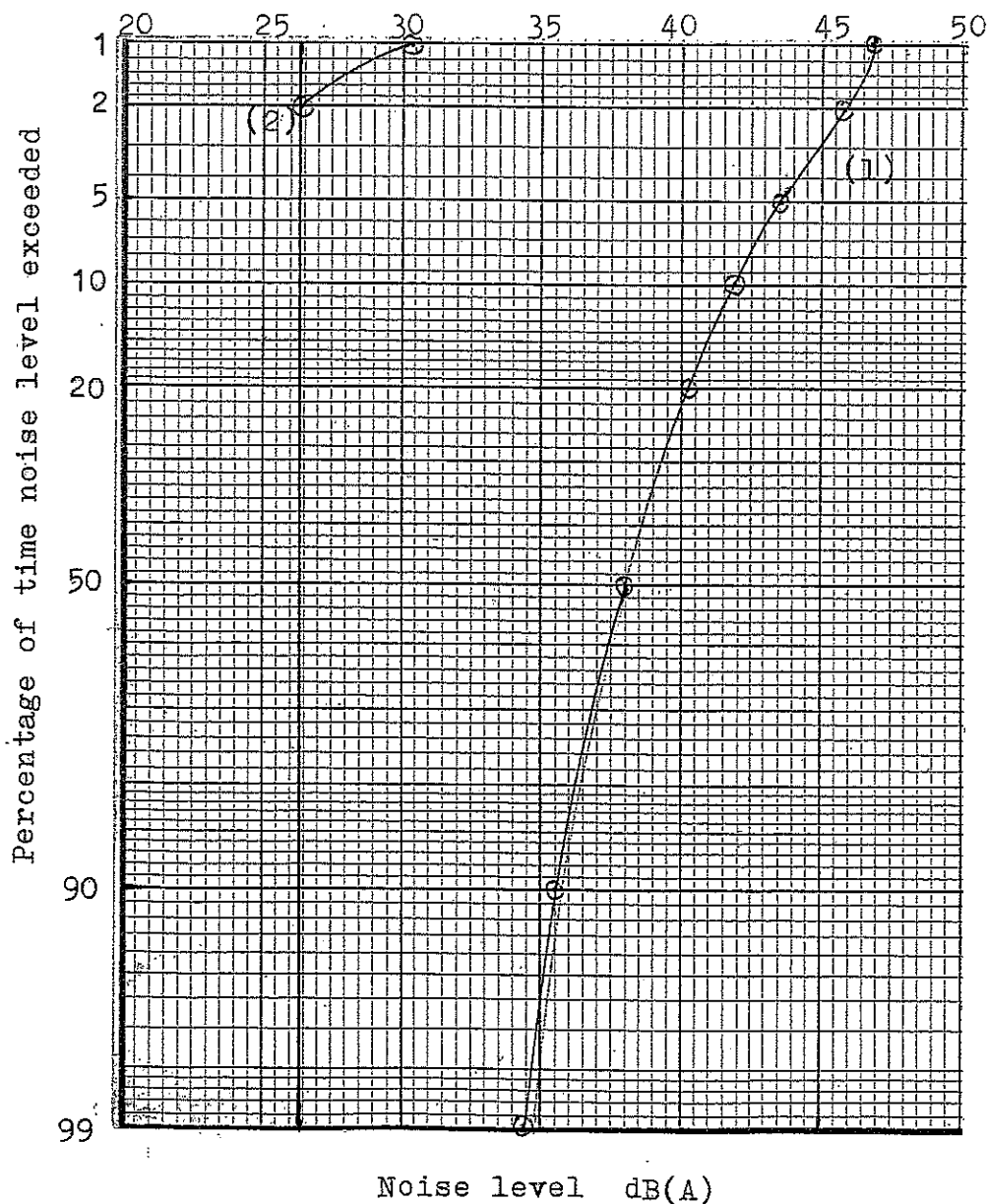


## STATISTICAL NOISE ANALYSIS

Location: Lachish#1 - "Stockwell" (1:100000 South Esk 275683)  
 Survey Date: 13-14/3/2007 Eng/Tech: M.Lichon

dB(A)

Comments	Time	L <sub>1</sub>	L <sub>2</sub>	L <sub>5</sub>	L <sub>10</sub>	L <sub>20</sub>	L <sub>50</sub>	L <sub>90</sub>	L <sub>99</sub>	L <sub>eq</sub>
13/3/07 (1)	20:40- 20:55	46.8	45.8	43.5	41.8	40.3	38.0	35.5	34.3	39.6
14/3/07 (2)	01:25- 01:40	30.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.8
(Lower limit of instrument measurement)										



WEATHER:

	(1)	(2)
Temp. C	16	7.5
Press. hPa	1063	1064
Rel.Hum %	63	93
Wind speed m/s	0.1	0.0
Wind. Dir.	W	W
Cloud	o/8	o/8

INSTRUMENTS:

B&K Statistical Noise  
 Analyser Type 4426  
 s/n 722799  
 B&K Calibrator Type  
 4230 s/n 1207368

Both laboratory  
 calibrated Dec 2006.

Pearu Terts,  
 Consulting Engineer

## SPECTRAL NOISE DISTRIBUTION

Lachish#1 - "Stockwell"

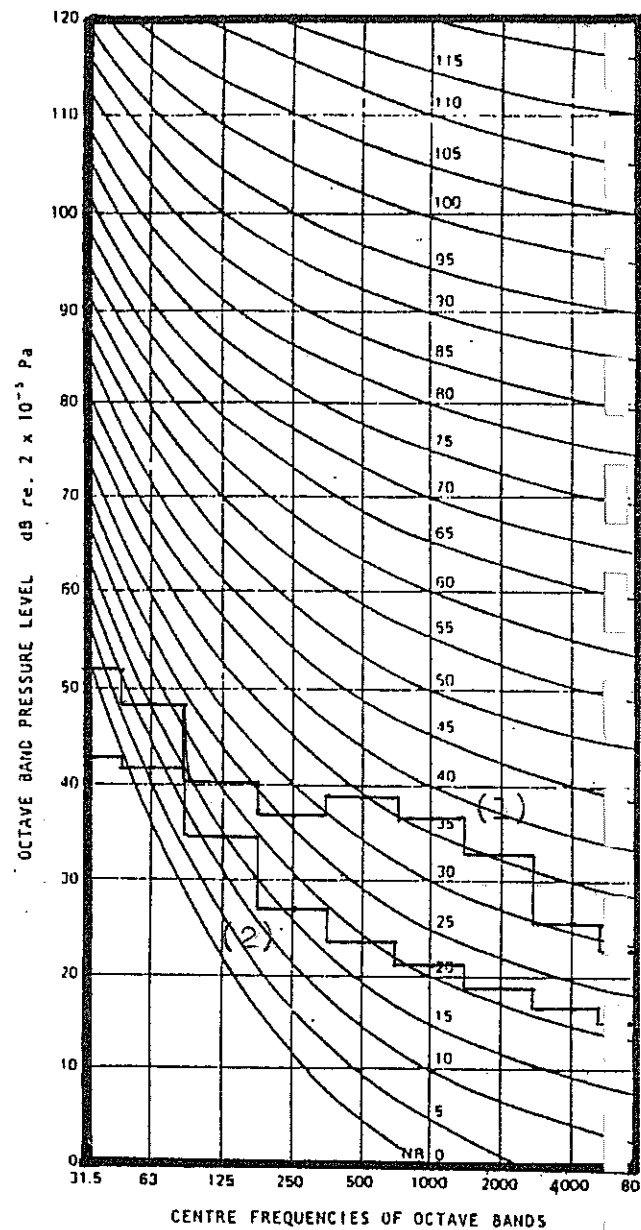
GR275683 South Esk 1:100000

13/3/2007 21:20 (1)

14/3/2007 01:50 (2)

1 minute Leq's

- (1) 39.2 dB(A)  
 59.3 dB(C)  
 76.5 dB(Lin)
- (2) 27.7 dB(A)  
 44.9 dB(C)  
 56.3 dB(Lin)





## STATISTICAL NOISE ANALYSIS

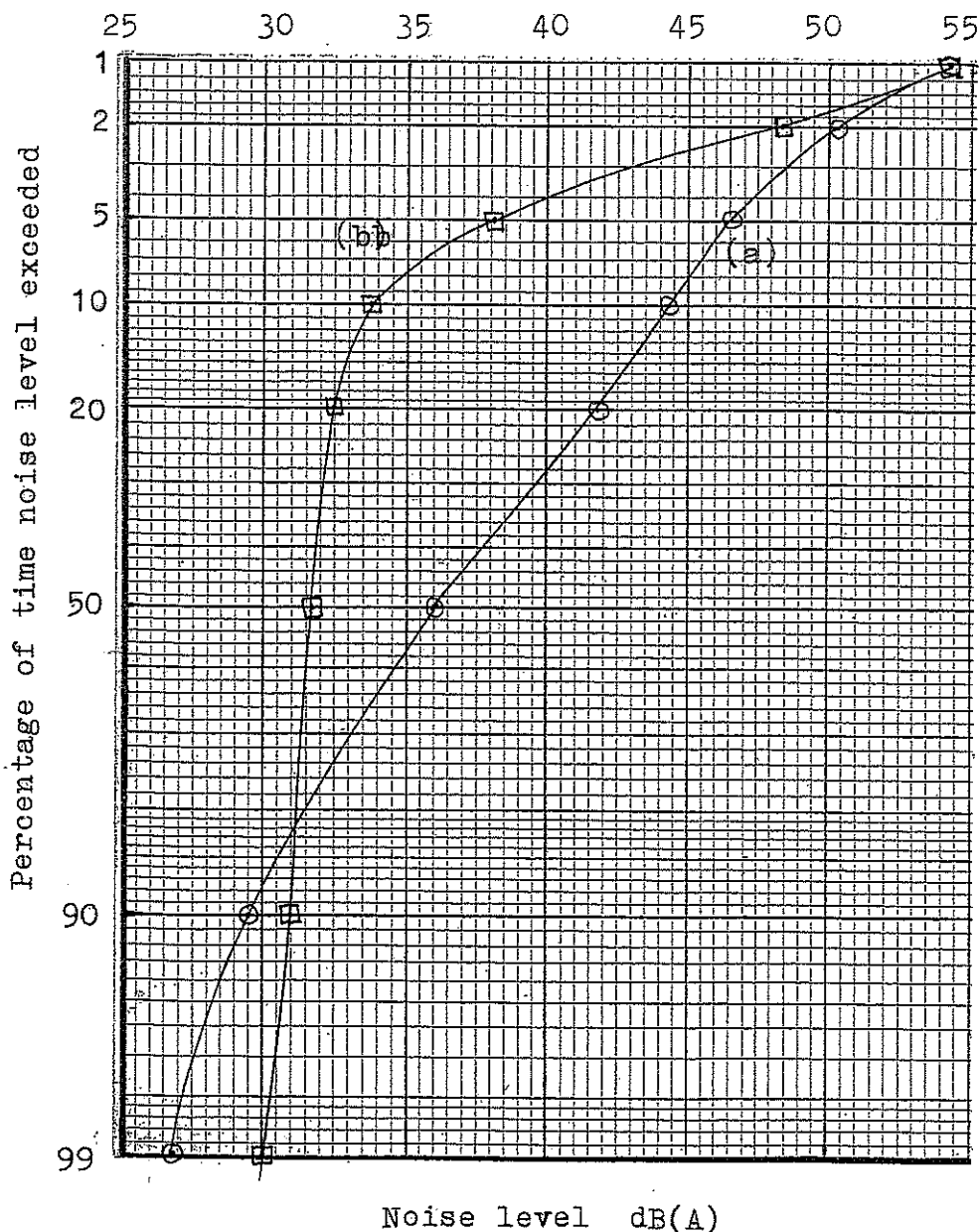
Location: Eglon/1 Bracknell (Green Rises Rd / Elphinstone Rd)

Survey Date: GR984887 Liffey 1:25000

1/2/2007 & 14/3/2007  
dB(A)

Eng/Tech: M.Lichon

Comments	Time	L <sub>1</sub>	L <sub>2</sub>	L <sub>5</sub>	L <sub>10</sub>	L <sub>20</sub>	L <sub>50</sub>	L <sub>90</sub>	L <sub>99</sub>	L <sub>eq</sub>
(a) 2/2/07 3 vehicles passing	1010-1025	54.3	50.3	46.5	44.3	41.8	36.0	29.5	26.8	43.9
(b) 14/3/07 1 vehicle; Irrigation pumps in operation	0330-0345	54.3	48.3	38.0	33.8	32.5	31.8	31.0	30.0	40.6



## WEATHER:

	(a)	(b)
Temp.	C 19.5	8.5
Press.	hPa 1000	999
Rel.Hum	% 62	81
Wind speed m/s	3.3	0.1
Wind. Dir.	WNW	ESE
Cloud	3/8	0/8

## INSTRUMENTS:

B&K Statistical Noise  
Analyser Type 4426  
s/n 722799  
B&K Calibrator Type  
4230 s/n 1207368  
Both laboratory  
calibrated Dec 2006

Pearu Terts,  
Consulting Engineer

## CHART RECORDING

Location: Eglon #1 Bracknell  
 Green Rise Rd.-Elphinstone Rd.  
 GR984 887 Liffey 1:25000 map

2/2/2007

Trace started 0940 h  
 paper speed = 0.3 mm/s

a - passing car  
 b - passing van  
 c - wind  
 also birds.

