Appendix K

Noise Impact Assessment

Noise Impact Assessment for Expansion Feasibility of the Ruby Road Waste Disposal Site

prepared for

THE CORPORATION OF THE TOWNSHIP OF BONNECHERE VALLEY

Reference No.: 07-1219-001

October 27, 2008

Cambium Environmental Inc.

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EXECUTIVE SUMMARY

The Township of Bonnechere Valley initiated the Environmental Screening Process in accordance with Ontario Regulation 101/07 under the *Environmental Assessment Act* to determine the feasibility of a capacity expansion at the Ruby Road Waste Disposal Site as a long-term (25-year) solution to best meet the needs of the municipality with respect to the management of municipal solid waste generated within its boundaries. The project proposes to expand the site up to 100,000 cubic meters to the south-west on Lot 27, Concession 9, in the geographic Township of South Algona, in the amalgamated Township of Bonnechere Valley, in the County of Renfrew. Figure 1 depicts the regional location of the Site.

The Ministry of the Environment *Landfill Standards Guideline* (1998) outlines the approval guidelines for landfilling sites noise considerations and has been followed to address the subsequent items:

- the landfilling operations;
- the ancillary facilities; and,
- the off-site movement of waste trucks and other vehicles.

The proposed expansion will result in noise levels that comply with the Ministry of the Environment's sound level limits. The compliance has been demonstrated through an acoustic audit of the Caterpillar Loader and the Waste Disposal Truck that is expected be used on the Site if the expansion proceeds. This Noise Impact Assessment has been prepared in accordance with the Ministry of the Environment protocols and demonstrates that the maximum predicted operational noise at the Site will satisfy the sound level limits.

CAMBIUM ENVIRONMENTAL INC.

Sadie Bachynski, B.A.Sc., EIT
Junior Project Specialist

John Desbiens, P.Eng.
President

TABLE OF CONTENTS

LIST OF APPENDED FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Cambium Environmental Inc. (Cambium) has been retained by the Township of Bonnechere Valley to conduct a Noise Impact Assessment of the expected sound level emissions associated with the probable operation of an expanded Ruby Road Waste Disposal Site (Site). The Noise Impact Assessment contributes to the technical studies in support of the Environmental Screening to expand the existing Site in conformance with Ontario Regulation 101/07 under the Ontario Environmental Assessment Act.

The existing Site is surrounded by pasture lands with dense forested underbrush and is not located near any urbanized community. The area is rural in nature and has an acoustical environment that is dominated by natural sounds. According to the definitions described in the MOE document "*Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)*", the area can be designated as Class 3 for the purposes of applying minimum noise limits.

The primary source of sound emissions that was considered in the assessment is the landfill operations machinery. The equipment includes a crawler loader and the waste disposal truck that transports waste on and off-site. The objective of the assessment was to confirm the sound emissions from the Site will be in compliance with the applicable Ontario Ministry of the Environment (MOE) sound level limits, and to recommend effective noise control measures, as necessary, to reduce the sound emissions to within acceptable levels.

The assessment was conducted having regard for MOE guidelines including:

- Noise Guidelines for Landfill Sites contained in the *Landfill Standards Guideline on the Regulatory and Approval Requirements for New or Expanding Landfilling Sites*, May 1998 (Landfill Noise Guidelines);
- Procedures for measurement contained in publication NPC 103;
- Adjustments of sound levels from publication NPC-104, *Sound Level Adjustments*; and
- NPC 232, *Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)*.

The predominant land use in the vicinity is defined as "Extractive Industrial Reserve" surrounded by "Rural" according to the Township of Bonnechere Valley Comprehensive Zoning By-law Schedule A-1 (South Algona). The Official Plan designates the area surrounding the existing Site as "Mineral Aggregate". The referenced Zoning By-Law and Official Plan documents are included in Appendix A.

Figure 1 provides a Regional Location Map displaying the general location of the waste disposal site and Figure 2 and Figure 3 present the structures of the surroundings including residences, within a 500 metres radius. The locations of the proposed expansion and the points of reception are provided in Figure 4.

The existing topography of the 32.8 ha property varies between 10 to 15 metres throughout the property. The southern and eastern portions of the property are occupied by dense tree cover and the land slopes in a south-eastern direction (Figure 2). The proposed location of the expansion will be in the north-western portion of the property, within a localized low point that will gradually build up over time to a height that blends in with the surroundings topography.

The ambient sound level in the area is quiet and has no dominant noise from any other sources.

2.0 NOISE SOURCES AND CURRENT MITIGATION

The main sources of noise that are expected at the proposed Site are those which are currently in use at another waste disposal facility in the Township and include:

- Caterpillar loader (IT18F) to transfer the waste and fill material to the active face; and,
- International (0818-5HFPUR) waste disposal truck with a Leach rear load compactor to transport the waste to and from the Site.

The truck traffic would be expected to remain as it is presently or decrease in frequency for some time if the proposed expansion takes place. This anticipated reduction would be due to the operations of the Site primarily accepting waste from only residential vehicles in the area (as the transfer station does at this time) and initially no waste from other areas in the Township will be transferred to the Site. Once waste emplacement at other waste disposal sites in the Township operations cease, the proposed Site will then be expected to accept the additional waste at regular intervals. The delivery of waste from other locations in the Township will correspond to an increase in truck traffic at the Site to a maximum of approximately three (3) trucks per week. The need for trucks to remove recyclable content offsite once the bins are full (monthly) will continue as the transfer station does now.

Therefore, the only inconsistent activity that is associated with the proposed expansion in regards to traffic is that which may occur once active disposal operations are closed at the other landfilling sites within the Township. The transfer of wastes to the Ruby Road waste disposal site Closure should not significant source of noise due to traffic entering the Site at infrequent times during daytime hours. The only noise production that is considered from the waste disposal trucks is for the times at which they are on Site. The waste is expected to be transferred and covered on a weekly basis with the loader also being active during these brief times.

For the purpose of this assessment, all the machines which are proposed to be used on the Site are assumed to work at full capacity at the same time in a localized area in order to calculate the reasonable worst case scenario for the expected noise emissions from the Site.

There are currently no noise mitigating measures in place at the Site since minimal noise is currently produced at the transfer station. The physical topography and vegetation serve as a natural buffer for the outlying areas. The entire facility is located in an area surrounded by trees, with a soft ground cover throughout the Site.

Nonetheless, it is recommended that additional trees be planted on the north, immediate south and west sides of the proposed landfilling area. The active fill area will not be visible from the road and the progression of the height will be gradual and expected to occur over a period of 25 or more years. The trees that have been proposed to be planted surrounding the active waste disposal area will have attained a mature age and will provide additional management of any possible noise originating from the Site. The access route from the road to the possible expansion is proposed to be placed in an area on the west side of the lot, away from residences.

3.0 SOUND LEVEL MONITORING

Noise measurements were conducted using a Quest Technologies Model 2900 Integrating/Logging Sound Level Meter (SLM) which meets ANSI S1.4-1983 Type 2, IEC 651-1979 Type 2 and IEC 804-1985 Type 2 criteria. The instrument was calibrated before and after measurements using a Quest Technologies QC-10 Calibrator. The One Hour Equivalent Sound Level (L_{eq}) measurements were made with the SLM detector in slow response using A-weighting, such that the sound levels are reported in units of dBA. The SLM was fitted with a Quest Module OB-300 1/3 -1/2 Octave Filter plug-in module containing a selectable set of filters. The OB-300 meets the most stringent requirements of the ANSI S1.11-1986 and IEC R225-1966 for octave and third octave band filters in order to determine the entire frequency spectrum associated with the noise producing equipment.

Short-term sound level measurements were collected on October 20, 2008 with the SLM at the proposed expansion area with no equipment onsite since the facility is not active. Measurements were also collected at a surrounding point of reference near the Site. These assessments developed a background sound level at the Site with no activities present onsite. Short-term sound level measurements were also collected on the same day from the potential noise sources currently utilized at another waste disposal site (Sand Road Waste Disposal Site) within the Township. The equipment at the Sand Road site would be expected to be used at the Ruby Road waste disposal site and was engaged in normal landfill activities while the measurements were collected. The data provides a basis for the noise levels that will be expected to emanate from the proposed Ruby Road waste disposal site expansion.

During the collection of noise measurements, the microphone was located 1.5 metres above the ground and not less than 5 metres from any reflective surfaces. Meteorological weather conditions were observed to be cloudy during the monitoring period with a low wind speed detected. Environment Canada confirmed the wind speed in Renfrew, Ontario at that time as being 8 km/h with no precipitation (see Appendix B).

4.0 APPLICABLE SOUND LEVEL LIMITS

Sound level limits must be determined for the residential receptors near the Site based on a comparison of the MOE minimum sound levels to the background sound level in the area. The background sound level is defined as the sound level present in the environment that is produced by noise sources other than those from the Site, including traffic noise. The greater value between the background sound level and the MOE's minimum level represents the applicable sound level limit at each residential receptor.

Five (5) residences were selected for the impact assessment based on their close proximity to the proposed landfill expansion. The locations of the five (5) residences labelled R1 to R5 are indicated on Figure 4.

4.1 BACKGROUND SOUND LEVEL DETERMINATION

Noise measurements were collected at the Site on October 20, 2008. The majority of the noise observed during the measurement period was influenced by natural sources (bird calls, rustling leaves, etc.). The measurement was collected at the Site during the day with no identified activities occurring nearby. During the data collection, there were no industrial or mechanical noise sources observed including no traffic on the nearby road. The results of the collected measurements were calculated (Appendix D) to be 45 dBA and are indicative of the background sound level at the Site.

The session summary data from the Quest 2900 Sound Level Meter is included in Appendix C.

4.2 SOUND LEVEL LIMITS FOR STATIONARY NOISE SOURCES

The sound level limits applicable to stationary noise sources at the residential points of reception are presented in the MOE Publication NPC-232[1]; *Sound Level Limits for Stationary Source in Class 3 Areas (Rural),* October 1995. The Ruby Road waste disposal site is categorized as a Class 3 area which means a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic. Class 3 areas have the following generic minimum sound level limits (expressed as a L_{eq}) that are applicable to the activities of the Ruby Road expansion noise emissions:

- 45 dBA in any one hour of the day, 0700 to 1900; and
- 40 dBA in any one hour of the night, 1900 to 0700.

The MOE sound level limits represent the lowest criteria that can be applied at a point of reception. However, if the background sound level at the point of reception is greater than the MOE sound level limits, then the background sound level becomes the applicable limit for compliance purposes. The sound level measured at the Site was 45 dBA which corresponds to the background noise that would be heard by residents in the vicinity of the Site. This background sound level is equal to the MOE minimum sound criteria, and therefore, does not alter the target sound level for the stationary sources.

4.3 SOUND LEVEL LIMITS FOR LANDFILL EQUIPMENT NOISE SOURCES

The noise level limits applicable to landfill operations at the residential points of reception are presented in section 4.13.2 of the Landfill Standards Guideline[2]. The applicable limits for landfill operations are expressed in terms of L_{eq} as 45 dBA in any one hour of the night (1900-0700) and 55 dBA for any hour of the day (0700 to 1900). This level is also higher than the measured background value and will be used to compare the expected noise levels generated at each individual resident in the area.

5.0 IMPACT ASSESSMENT

The potential for noise impact at the nearby residential properties resulting from the operation of the proposed landfill at Ruby Road was assessed by comparing sound levels estimated at identified residential receptors to applicable sound level limits. The measured sound levels of the landfill equipment were used to estimate sound levels at the residences under a worst-case setting.

5.1 LANDFILL EQUIPMENT

The proposed Site operations will be located in an area of low lying terrain with tree covered, higher elevated regions separating the residences from the facility. These natural terrain features block the lines of sight to the residential area and effectively attenuate sound emissions from the Site equipment. See Figure 5 for the Profile Views of the Proposed Site and the Nearby Residents. For this assessment, the noise impact calculations have conservatively assumed that a direct line of sight exists from the closest proposed landfill area to all the receptors. For the worst-case evaluation, it is also presumed that the landfill equipment will operate at the outermost perimeter that is closest to each residence assessed. This assumption corresponds to distances of 640 metres, 620 metres, 590 metres, 810 metres, 715 metres and 620 metres between the proposed landfill perimeter and residences R1, R2, R3, R4 and R5 respectively.

In this conservative assessment of the possible future Site operations, it is assumed that the primary pieces of equipment will operate simultaneously in the same area at the greatest measured sound level under a worst-case exposure setting. In reality, the Caterpillar Loader will only be used during active landfill operations approximately one time per week for a few hours at a time and trucks will infrequently, up to three (3) per week, bring waste to the Site. The reference sound levels of the pieces of equipment subject of this assessment were measured and are as follows:

- An IT18F Cat Loader
    - Idle – 66 dBA at 15 metres away;
    - Active – 72 dBA at 15 metres away; and,

- An International Waste Disposal Truck with the Leach rear load compactor in operation
    - Active – 66 dBA at 15 metres away.

5.2 SOUND LEVEL CALCULATIONS

5.2.1 PREDICTED SOUND LEVELS AT RECEPTORS

Appendix D presents the Sound Level Calculations for the estimation of worst-case equipment sound levels at each of the residences. The worst-case equipment sound levels from the Site were estimated at the receptors using the field measured sound levels, the reference distance at which the measurements were collected and the source-to-receptor distance. The following is the distance attenuation calculation used for each of the point sources:

$$L_{P2} = L_{P1} + 20\log\left(\frac{r_1}{r_2}\right)$$

where:

L_{P2} = the estimated L_{eq} at the receptor location (dBA);
L_{P1} = the L_{eq} at the measured reference location (dBA);
r_1 = the reference distance (m); and
r_2 = the source-to-receptor distance (m).

The noise generated at each of the eight (8) bandwidths was measured at four (4) positions surrounding each of the units. The measured values corresponding to the front, back, left side and right side were all considered and the L_{eq} value at each position were then estimated as a total noise source using the following equation:

$$L_{eq_{total}} = 10 \cdot \log(10^{\frac{Leq1}{10}} + 10^{\frac{Leq2}{10}} + \cdots + 10^{\frac{Leqn}{10}})$$

The subsequent equation was then used in order to calculate an average that takes into account each point surrounding the unit and provides a value based on the total L_{eq} calculated at each position.

$$L_{eq_{average}} = 10 \cdot log\left[\frac{1}{N} \times (10^{\frac{Leq1}{10}} + 10^{\frac{Leq2}{10}} + \cdots + 10^{\frac{Leqn}{10}})\right]$$

The worst-case exposure conditions are estimated in Appendix D and the projected total L_{eq} values were calculated to be 41 dBA, 40 dBA. 41 dBA, 38 dBA and 39 dBA for residences located at R1, R2, R3, R4, and R5 respectively. These values are below the applicable daytime sound level limit of 55 dBA for landfill sites and even below the 45 dBA limit for rural locations.

The worst-case exposure scenarios for each residence assumed that the landfill is nearing full capacity and that the equipment will be operated at elevations with a direct line of sight to the residences. Also, the primary pieces of equipment are assumed to be operating adjacent to each other at the landfill perimeter closest to each

receptor. Furthermore, the calculations were made with no consideration of tree cover to the east and south that is currently at the Site or mitigation measures (berms, trees, etc.) that may be placed at some point in the future between the other receptors to the north and west and the landfill areas.

5.2.2 MINIMUM SETBACK REQUIREMENTS

The Ministry of the Environment (MOE) also suggests that noise prediction calculations should be completed to determine the distance from the source at which the maximum allowable sound levels would occur. The Sound Level Calculations are summarized in Appendix D and indicate the minimum distance from the sources at which the noise levels remain under the corresponding limit. The ISO Standard 9613-2, *Acoustics – Attenuation of Sound During Propagation Outdoors, Part 2: General Method of Calculation* (ISO Standard) accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures (or by topography and foliage where applicable). Based on our sound level measurements and the calculations performed by Cambium using the ISO Standard, the minimum setback requirements have been determined to be up to 92 m during the day (0700-1900) and 255 m during the night (1900-0700). Beyond these distances the noise generated from equipment used for landfilling purposes is presumed to be under the applicable limits and unlikely to affect a point of reception. The above values noted are based on the required sound level limits that are set by the MOE for residential locations around a landfill for the corresponding time of day. The calculations by Cambium used precautionary estimates and the loudest region of the unit (worst case) has been considered to determine the minimum distance from the source in which the unit can be heard at the allowable limits. The values indicate that the unit was assumed to be operated in an area in which the ground cover is hard at the source, receptor, and mid-regions; the least amount of attenuation due to the atmosphere was utilized; and no tree cover or topographical differences were taken into account in order to ensure the worst case noise levels were assumed to be achieved. The ISO Standard is the recommended standard from the MOE to calculate the minimum setback requirements for mobile units operating in community environments.

6.0 ABATEMENT MEASURES

There is no need for abatement measures to be put in place at the proposed Site since the estimated conservative worst-case noise levels were calculated to be less than the corresponding limits and considered to be insignificant at the nearby receptors.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The Noise Impact Assessment for the Expansion Feasibility of the Ruby Road Waste Disposal Site was conducted for the expected sound level emissions associated with the probable operation activities at the Site.

Sound emissions from the landfilling construction and movement of waste on and around the Site were taken into account and estimated accordingly.

The objective of the assessment was to determine if the sound emissions from the Site are adversely impacting residential properties in the vicinity of the Site. The results of the assessment were as follows:

- The main noise sources that would potentially be used at the Site were identified as the loader and the waste disposal truck; and
- Noise from the onsite landfill equipment will not impact any nearby residential receptors.

Please note that this work program and report are governed by the attached Qualifications and Limitations. If you have questions or comments regarding this document, please do not hesitate to contact Sadie Bachynski or John Desbiens at (705) 742-7900.

REFERENCES

[1] Ministry of the Environment, October 1995. *Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)*

[2] Ministry of the Environment, May 1998. *Landfill Standards, A Guideline on the regulatory and approval requirements for New or Expanding Landfilling Sites.*

QUALIFICATIONS AND LIMITATIONS

Limited Warranty

In performing work on behalf of a client, Cambium Environmental relies on its client to provide instructions on the scope of its retainer and, on that basis, Cambium Environmental determines the precise nature of the work to be performed. Cambium Environmental undertakes all work in accordance with applicable accepted industry practices and standards. Unless required under local laws, other than as expressly stated herein, no other warranties or conditions, either expressed or implied, are made regarding the services, work or reports provided.

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The findings and results presented in reports prepared by Cambium Environmental are based on the materials and information provided by the client to Cambium Environmental and on the facts, conditions and circumstances encountered by Cambium Environmental during the performance of the work requested by the client. In formulating its findings and results into a report, Cambium Environmental assumes that the information and materials provided by the client or obtained by Cambium Environmental from the client or otherwise are factual, accurate and represent a true depiction of the circumstances that exist. Cambium Environmental relies on its client to inform Cambium Environmental if there are changes to any such information and materials. Cambium Environmental does not review, analyze or attempt to verify the accuracy or completeness of the information or materials provided, or circumstances encountered, other than in accordance with applicable accepted industry practice. Cambium Environmental will not be responsible for matters arising from incomplete, incorrect or misleading information or from facts or circumstances that are not fully disclosed to or that are concealed from Cambium Environmental during the provision of services, work or reports.

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A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Cambium Environmental's work or report considers any locations or times other than those from which information, sample results and data was specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those extrapolations.

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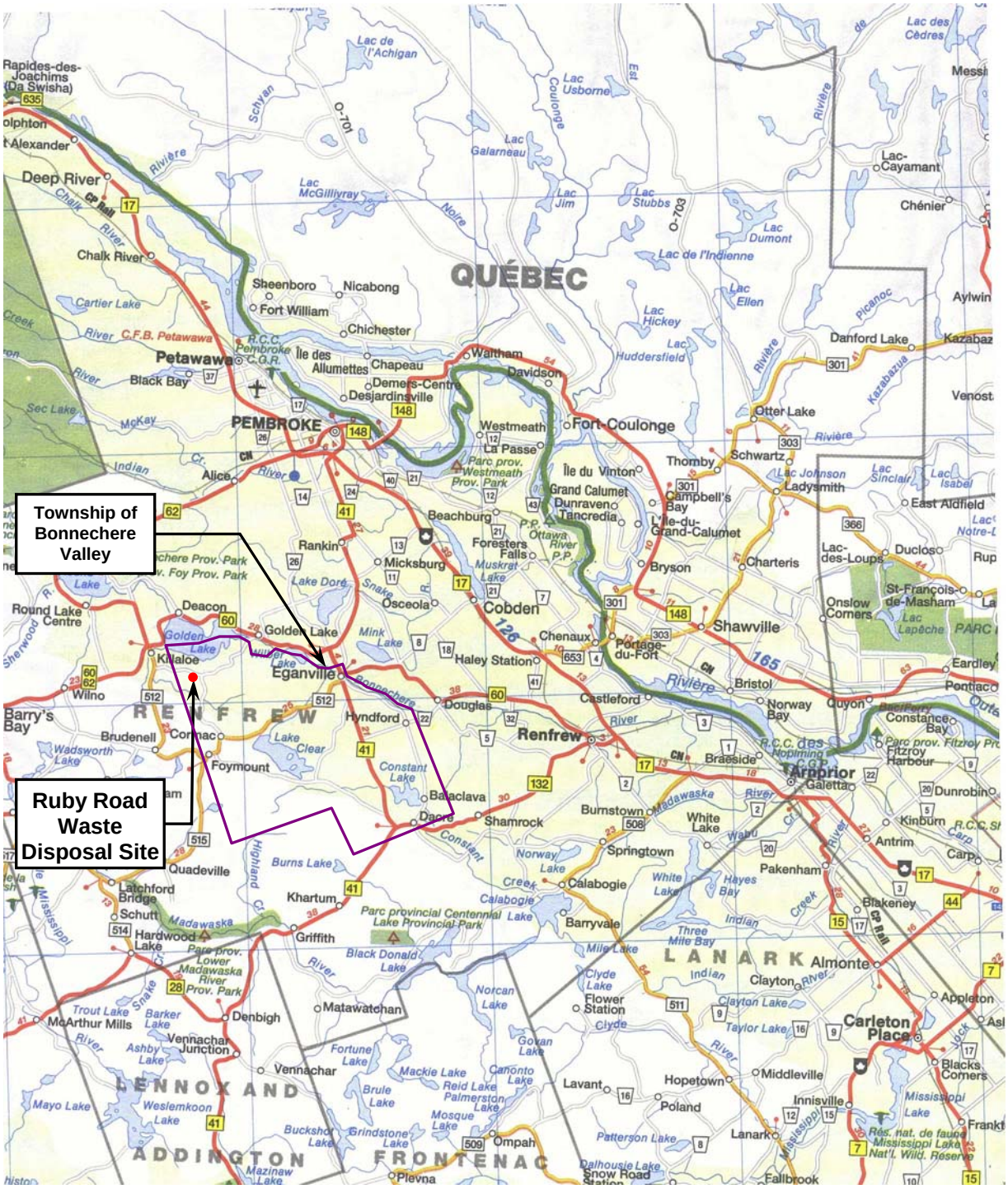
Appended Figures



Source: MapArt –Road Atlas of Canada and U.S.A.

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Created by: SNR	Project No.: 07-1219-001
Checked by: JPD	Scale: As shown
Date: November 2007	

REGIONAL LOCATION PLAN

RUBY ROAD WASTE DISPOSAL SITE

Township of Bonnechere Valley

Figure No: **1**

Source: Land Information Ontario, 2007 and Google Maps, 2008

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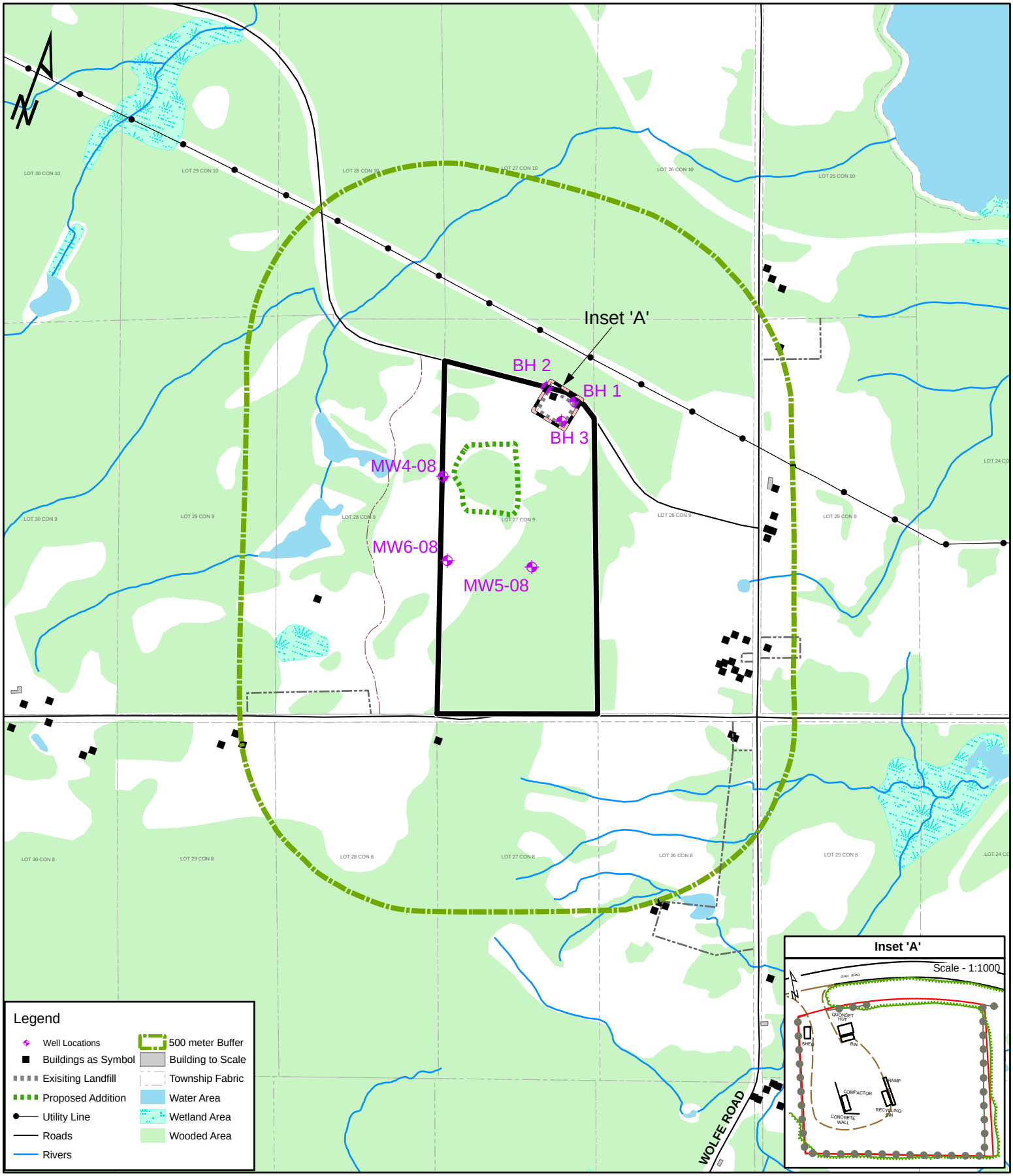
Checked by:	Scale: 1:5,000
Date: October 2008	

AERIAL PHOTOGRAPH

Ruby Road WDS
Township of Bonnechere Valley, ON

Figure: **2**



Source: Land Information Ontario, 2007 and Google Maps, 2008

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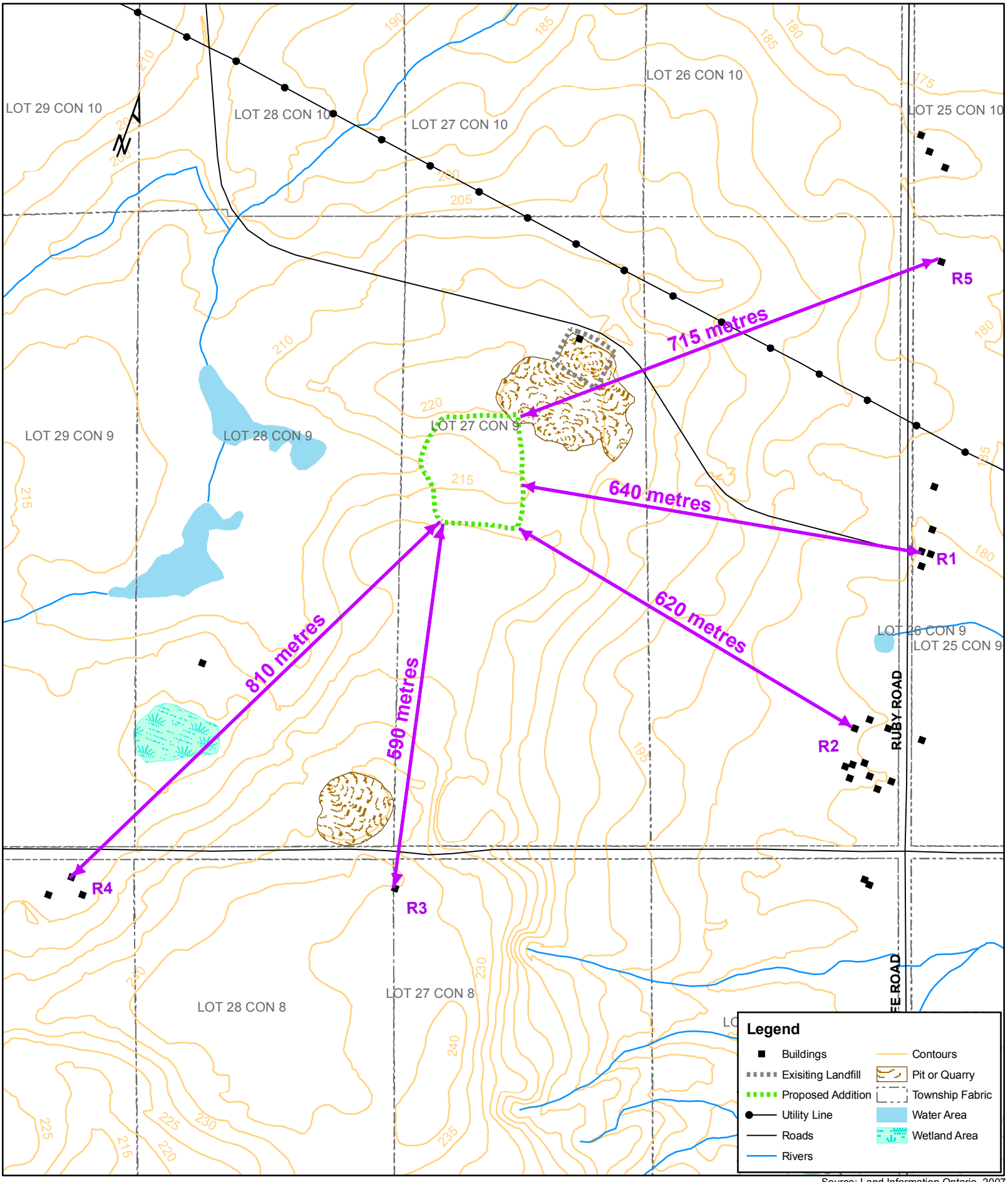
Created by: YYB	Project No.: 07-1219-001
Checked by:	Scale: 1:12,500
Date: October 2008	

SITE PLAN AND SURROUNDINGS

Ruby Road WDS
Township of Bonnechere Valley, ON

Figure: 3



Source: Land Information Ontario, 2007

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Checked by:	Scale: 1:7,500
Date: October 2008	

NOISE RECEPTOR LOCATIONS

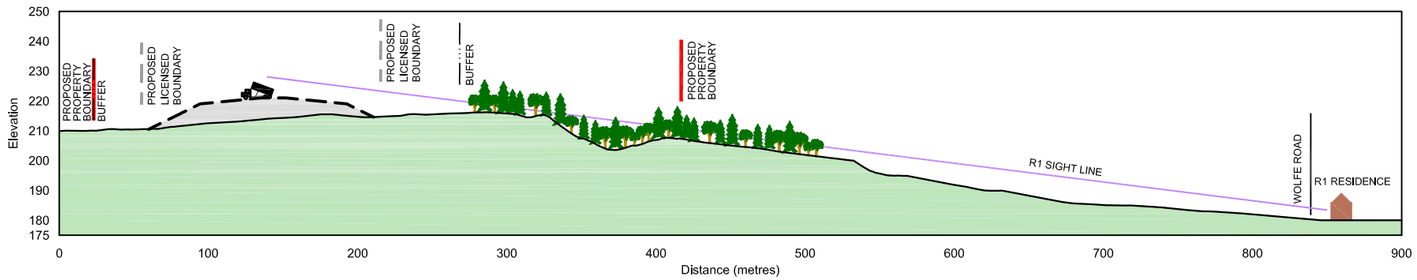
Ruby Road WDS
Township of Bonnechere Valley, ON

Figure: **4**

RUBY ROAD
WASTE DISPOSAL SITE

Township of Bonnechere Valley
County of Renfrew

R1 PROFILE



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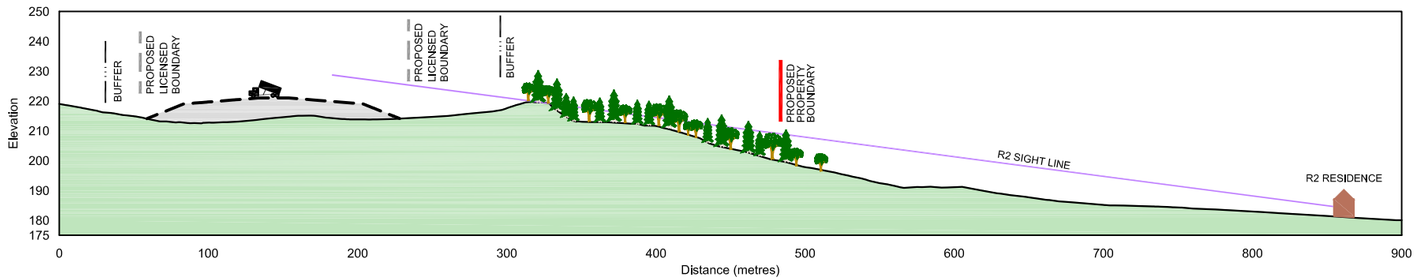

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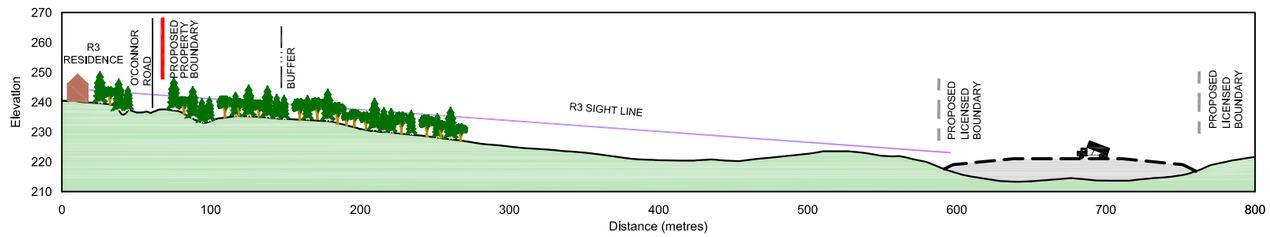

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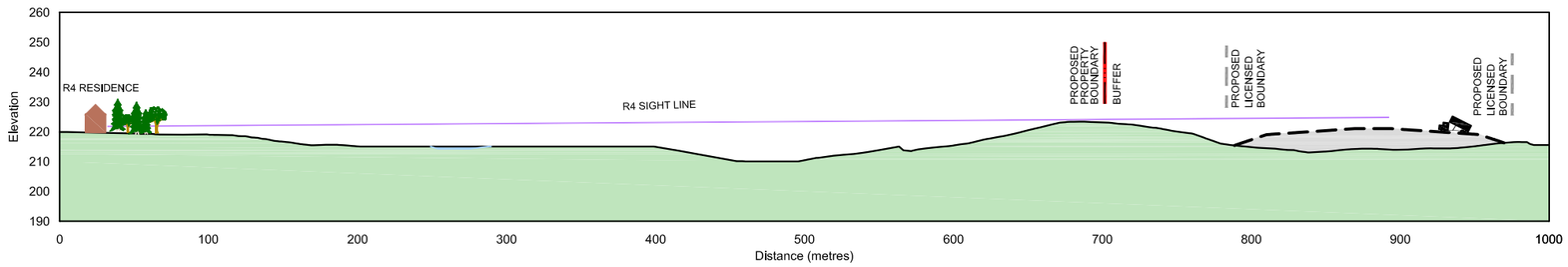
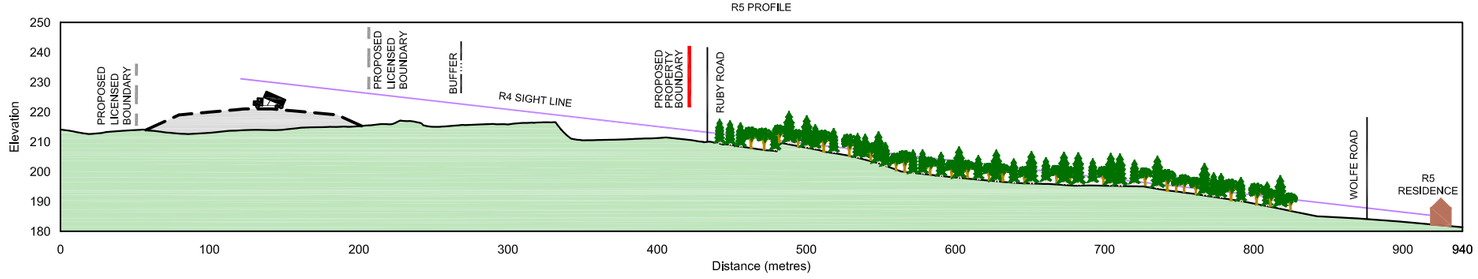


R5 PROFILE



LEGEND

Notes:
1. Survey completed by Cambium Environmental Inc. September 14, 2004.
2. Distances on this plan are in metres and can be converted to feet by dividing by 3.048.

Benchmarks:
1. Nail and washer in southeast corner of pressure treated wood base of Quonset hut.
Elevation 100.477 m.

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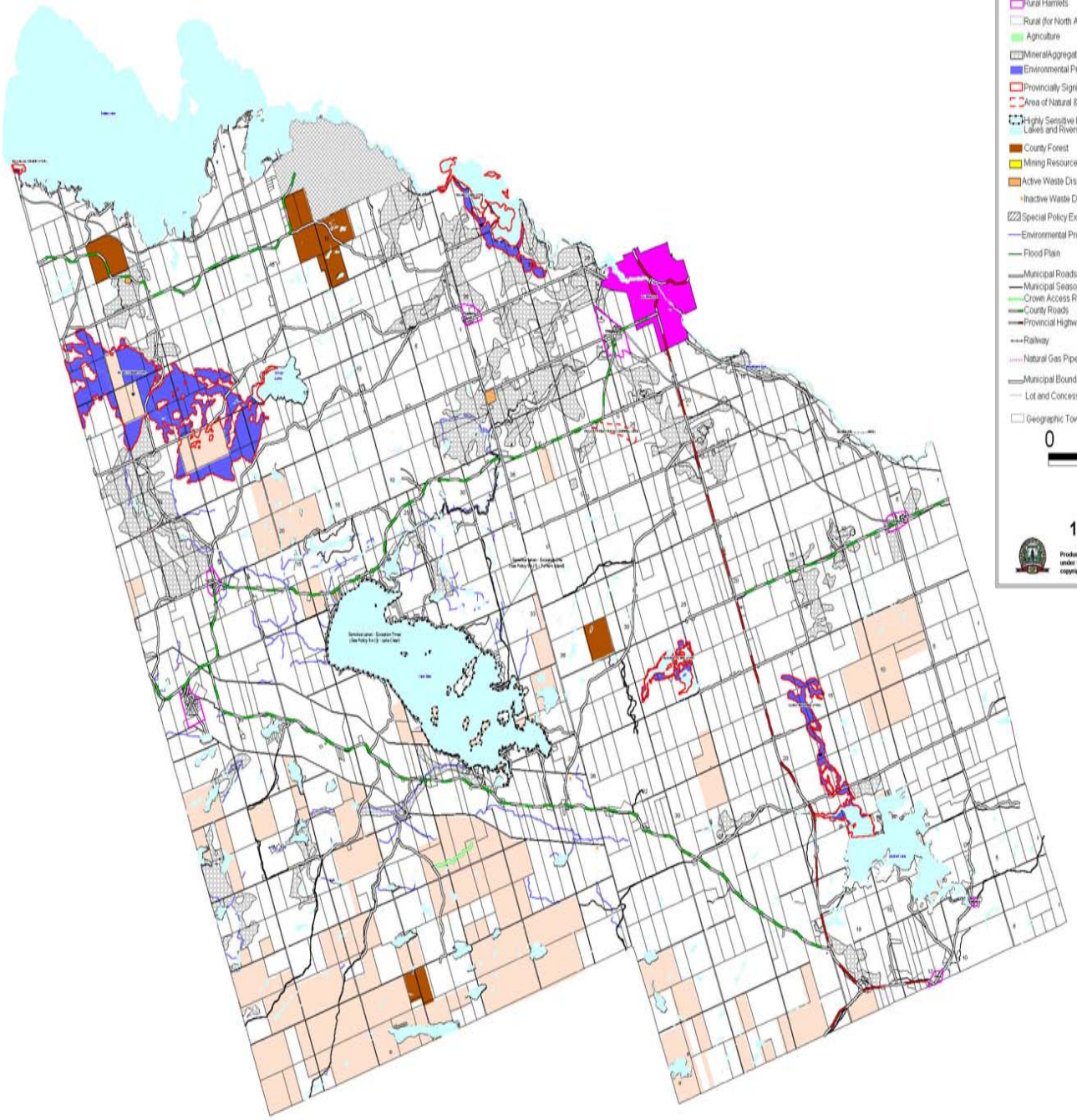
PROFILE VIEWS OF THE PROPOSED SITE AND NEARBY RESIDENTS

Drawn By: SNR	Checked By: JPD	Scale: HORZ: 1:4000 VERT: 1:2000
Date: October 2008		
Revision Date:		Figure: 5
Project No.: 1219-001		

Appendix A
Zoning By-Law and Official Plan

COUNTY OF RENFREW OFFICIAL PLAN
SCHEDULE "A"
Township of Bonnechere Valley Enlargement



LEGEND

- Non County Areas
- Crown Land
- Urban Community (see Local Official Plan)
- Village Community
- Rural Hamlets
- Rural (for North Algona Wilberforce see Policy 5.4 (C) - Forestry)
- Agriculture
- Mineral Aggregate
- Environmental Protection Area
- Provincially Significant Wetland
- Area of Natural & Scientific Interest
- Highly Sensitive Lakes (see Policies 9.4 (1) and 9.4 (3))
- Lakes and Rivers (for all islands in Bonnechere Valley see Policy 9.4 (2))
- County Forest
- Mining Resource
- Active Waste Disposal Site
- Inactive Waste Disposal Sites
- Special Policy Exception Areas
- Environmental Protection
- Flood Plain
- Municipal Roads
- Municipal Seasonal Roads
- Crown Access Roads
- County Roads
- Provincial Highways
- Railway
- Natural Gas Pipeline
- Municipal Boundary
- Lot and Concession Lines
- Geographic Township Boundary

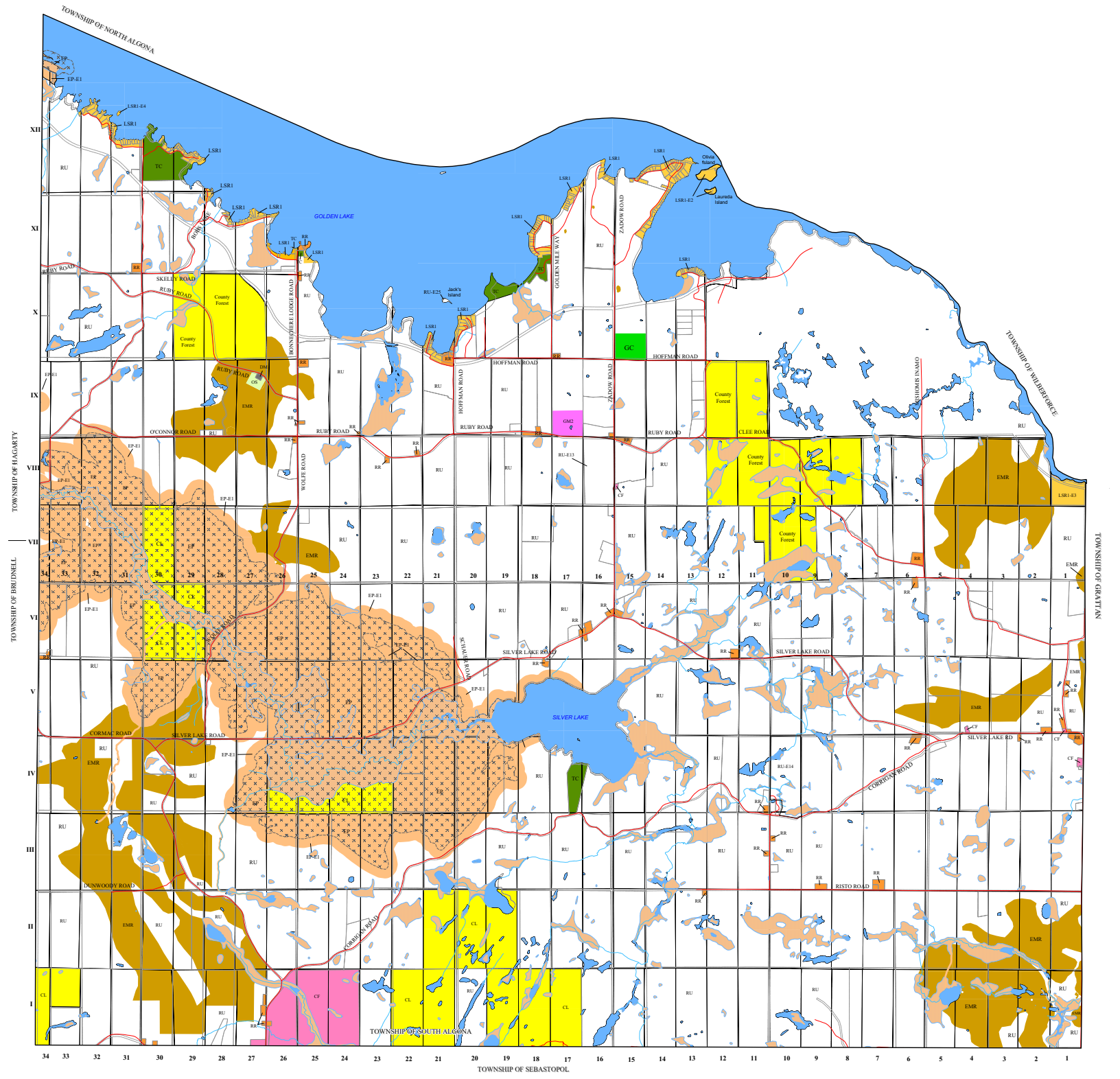
0 2.5 5

Kilometres

1 : 40,000

DATE of CONSOLIDATION/REVISION

Minister's Modifications #66 and 61 - June 19, 2003



TOWNSHIP OF BONNECHERE VALLEY

Comprehensive Zoning By-law Schedule "A-1"

Schedule A-1 (South Algona)

This is Schedule "A-1" to By-law Number _____
Passed the _____ day of _____

Signature of the Signing Officers.

_____ _____

Mayor **Clerk**

Legend

Zoning Classes

- Community Facility (CF)
- Crown Land & County Forest (CL)
- Development (D)
- Disposal Industrial (DM)
- Extractive Industrial (EM)
- Extractive Industrial Reserve (EMR)
- Environmental Protection (EP)
- General Commercial (GC)
- General Industrial One (GM1)
- General Industrial Two (GM2)
- Highway Commercial (HC)
- Limited Service Residential One (LSR1)
- Limited Service Residential Two (LSR2)
- Neighbourhood Commercial (NC)
- Open Space (OS)
- Residential One (R1)
- Residential Two (R2)
- Residential Three (R3)
- Residential Four (R4)
- Rural Residential (RR)
- Rural (RU)
- Tourist Commercial (TC)

Other Classes

- Provincially Significant Wetlands (PSW)

N

Scale 1:16,000

0 200 400 600 800 1000 m

Mapping compiled by Jp2g Consultants Inc. and GeoSolutions Consulting Inc.
Digital base mapping provided by Ontario Ministry of Natural Resources and County of Renfrew.
Date Prepared: October 2004, Revised March 27, 2006

Jp2g Consultants Inc.

Jp2g Consultants Inc.
Engineers - Planners - Project Managers
12 International Drive
Pembroke, ON, K8A 6W5
tel: (613) 735-2507
www.jp2g.com

GeoSolutions Consulting

GeoSolutions Consulting Inc.
6367 McCordick Road
North Gower, ON, K0A 2T0
tel: (613) 489-0550
www.geosolutions.com

Appendix B
Meteorological Data

Renfrew

[Ontario]

Current Conditions

Observed at: CFB Petawawa 09:00 AM EDT Monday 20 October 2008

Condition:	Cloudy
Temperature:	7.6°C
Pressure / Tendency:	102.1 kPa / falling
Visibility:	24 km
Humidity:	82%
Dew Point:	4.8°C
Wind Speed:	ESE 8 km/h

Forecast

Issued: 5.00 AM EDT Monday 20 October 2008

Today:	Cloudy. 60 percent chance of showers early this morning. Periods of rain beginning late this afternoon. High 12.
Tonight:	Periods of rain. Low plus 5.
Tuesday:	Periods of rain becoming mixed with wet snow late in the day. Temperature falling to plus 2 in the afternoon.
Wednesday:	Sunny. Low minus 5. High plus 4.
Thursday:	Sunny. Low minus 8. High 6.
Friday:	Sunny. Low minus 7. High 9.

Historical Data

Yesterday	
Max:	13.6°C
Min:	-4.2°C
Precip.:	0.5 mm
Normals	
Max:	10°C
Min:	0°C
Today	
Sunrise:	7:30
Sunset:	18:13

Imperial Units | Past 24 Hours | Air Quality | UV Forecast | Record Values | Historical Weather |

Date Modified: 2008-09-30

Appendix C
Noise Output Data

QSLM 8789 (3).sdat

2900 Integrating/Logging Sound Level Meter

FW Version: 02.4 Serial Number:

Name: Background

Project: 1219-001

Comments: At Ruby Road Waste Disposal Site with noise

Group 1 Test 121

Test Started: 10/20/2008 10:19:04 AM
Test Ended: 10/20/2008 10:19:14 AM
Run Time: 00:00:10

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level: 73.8 dB, 10/20/2008 10:19:12AM

Max Level: 31.6 dB, 10/20/2008 10:19:04AM
Min Level: 31.6 dB, 10/20/2008 10:19:05AM
Overload: 0.00%

LEQ:	31.6 dB	SEL(3):	41.9 dB	TWA:	0.0 dB	TAKM5:	31.3 dB
LDN:	31.6 dB	CNEL:	31.6 dB	Pa2Sec:	0.0		
L5:	31.6 dB	L10:	31.6 dB	L50:	31.6 dB	L90:	31.6 dB

Filter Model: OB300 Filter Frequency: 63.0 Hz

Group 1 Test 122

Test Started: 10/20/2008 10:19:17 AM
Test Ended: 10/20/2008 10:19:28 AM
Run Time: 00:00:10

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level: 69.6 dB, 10/20/2008 10:19:20AM

Max Level: 31.6 dB, 10/20/2008 10:19:17AM
Min Level: 31.6 dB, 10/20/2008 10:19:18AM
Overload: 0.00%

LEQ:	31.6 dB	SEL(3):	41.9 dB	TWA:	0.0 dB	TAKM5:	31.3 dB
LDN:	31.6 dB	CNEL:	31.6 dB	Pa2Sec:	0.0		
L5:	31.6 dB	L10:	31.6 dB	L50:	31.6 dB	L90:	31.6 dB

Filter Model: OB300 Filter Frequency: 125.0 Hz

Group 1 Test 123

Test Started:	10/20/2008 10:19:30 AM
Test Ended:	10/20/2008 10:19:41 AM
Run Time:	00:00:10

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	68.4 dB, 10/20/2008 10:19:35AM						
Max Level:	34.5 dB, 10/20/2008 10:19:33AM						
Min Level:	31.6 dB, 10/20/2008 10:19:31AM						
Overload:	0.00%						
LEQ:	32.6 dB	SEL(3):	42.9 dB	TWA:	0.0 dB	TAKM5:	34.0 dB
LDN:	32.6 dB	CNEL:	32.6 dB	Pa2Sec:	0.0		
L5:	33.9 dB	L10:	33.6 dB	L50:	32.4 dB	L90:	31.6 dB
Filter Model:	OB300	Filter Frequency:		250.0 Hz			

Group 1 Test 124

Test Started:	10/20/2008 10:19:43 AM
Test Ended:	10/20/2008 10:19:54 AM
Run Time:	00:00:10

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	67.3 dB, 10/20/2008 10:19:52AM						
Max Level:	32.9 dB, 10/20/2008 10:19:52AM						
Min Level:	31.6 dB, 10/20/2008 10:19:44AM						
Overload:	0.00%						
LEQ:	31.7 dB	SEL(3):	42.0 dB	TWA:	0.0 dB	TAKM5:	31.9 dB
LDN:	31.7 dB	CNEL:	31.7 dB	Pa2Sec:	0.0		
L5:	32.4 dB	L10:	31.9 dB	L50:	31.6 dB	L90:	31.6 dB
Filter Model:	OB300	Filter Frequency:		500.0 Hz			

Group 1 Test 125

Test Started:	10/20/2008 10:19:56 AM
Test Ended:	10/20/2008 10:20:07 AM
Run Time:	00:00:10

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	75.6 dB, 10/20/2008 10:20:03AM						
Max Level:	43.1 dB, 10/20/2008 10:20:02AM						
Min Level:	32.0 dB, 10/20/2008 10:19:57AM						
Overload:	0.00%						
LEQ:	38.5 dB	SEL(3):	48.8 dB	TWA:	4.4 dB	TAKM5:	41.1 dB
LDN:	38.5 dB	CNEL:	38.5 dB	Pa2Sec:	0.0		
L5:	42.2 dB	L10:	41.5 dB	L50:	37.2 dB	L90:	33.6 dB
Filter Model:	OB300	Filter Frequency:		1.00 KHz			

Group 1 Test 126

Test Started:	10/20/2008 10:20:10 AM
Test Ended:	10/20/2008 10:20:20 AM
Run Time:	00:00:10

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	76.2 dB, 10/20/2008 10:20:12AM						
Max Level:	42.4 dB, 10/20/2008 10:20:14AM						
Min Level:	35.7 dB, 10/20/2008 10:20:11AM						
Overload:	0.00%						
LEQ:	39.9 dB	SEL(3):	50.2 dB	TWA:	5.8 dB	TAKM5:	41.9 dB
LDN:	39.9 dB	CNEL:	39.9 dB	Pa2Sec:	0.0		
L5:	41.7 dB	L10:	41.1 dB	L50:	39.9 dB	L90:	38.8 dB
Filter Model:	OB300	Filter Frequency:		2.00 KHz			

Group 1 Test 127

Test Started:	10/20/2008 10:20:23 AM
Test Ended:	10/20/2008 10:20:34 AM
Run Time:	00:00:10

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	70.0 dB, 10/20/2008 10:20:28AM						
Max Level:	38.5 dB, 10/20/2008 10:20:28AM						
Min Level:	37.2 dB, 10/20/2008 10:20:31AM						
Overload:	0.00%						
LEQ:	37.8 dB	SEL(3):	48.1 dB	TWA:	3.6 dB	TAKM5:	38.1 dB
LDN:	37.8 dB	CNEL:	37.8 dB	Pa2Sec:	0.0		
L5:	38.3 dB	L10:	38.1 dB	L50:	37.8 dB	L90:	37.5 dB
Filter Model:	OB300	Filter Frequency:		4.00 KHz			

Group 1 Test 128

Test Started:	10/20/2008 10:20:36 AM
Test Ended:	10/20/2008 10:20:47 AM
Run Time:	00:00:10

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	82.1 dB, 10/20/2008 10:20:38AM						
Max Level:	41.0 dB, 10/20/2008 10:20:37AM						
Min Level:	31.6 dB, 10/20/2008 10:20:37AM						
Overload:	0.00%						
LEQ:	34.7 dB	SEL(3):	45.0 dB	TWA:	0.5 dB	TAKM5:	38.5 dB
LDN:	34.7 dB	CNEL:	34.7 dB	Pa2Sec:	0.0		
L5:	39.3 dB	L10:	37.3 dB	L50:	33.1 dB	L90:	31.6 dB
Filter Model:	OB300	Filter Frequency:		8.00 KHz			

QSLM 8789 (3).sdat

2900 Integrating/Logging Sound Level Meter

FW Version: 02.4 Serial Number:

Name: Loader

Project: 1219-001

Comments: Loader Full Back

Group 1 Test 111

Test Started: 10/20/2008 9:30:18 AM
Test Ended: 10/20/2008 9:30:32 AM
Run Time: 00:00:13

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level: 94.8 dB, 10/20/2008 9:30:26AM

Max Level: 60.1 dB, 10/20/2008 9:30:26AM
Min Level: 42.8 dB, 10/20/2008 9:30:24AM
Overload: 0.00%

LEQ:	54.5 dB	SEL(3):	65.9 dB	TWA:	21.4 dB	TAKM5:	56.9 dB
LDN:	54.5 dB	CNEL:	54.5 dB	Pa2Sec:	0.0		
L5:	59.7 dB	L10:	59.1 dB	L50:	53.0 dB	L90:	46.5 dB

Filter Model: OB300 Filter Frequency: 63.0 Hz

Group 1 Test 112

Test Started: 10/20/2008 9:30:34 AM
Test Ended: 10/20/2008 9:30:45 AM
Run Time: 00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level: 97.6 dB, 10/20/2008 9:30:40AM

Max Level: 63.0 dB, 10/20/2008 9:30:40AM
Min Level: 52.3 dB, 10/20/2008 9:30:37AM
Overload: 0.00%

LEQ:	59.4 dB	SEL(3):	69.7 dB	TWA:	25.3 dB	TAKM5:	61.5 dB
LDN:	59.4 dB	CNEL:	59.4 dB	Pa2Sec:	0.0		
L5:	62.8 dB	L10:	62.7 dB	L50:	58.6 dB	L90:	53.4 dB

Filter Model: OB300 Filter Frequency: 125.0 Hz

Group 1 Test 113

Test Started:	10/20/2008 9:30:47 AM
Test Ended:	10/20/2008 9:30:58 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	97.3 dB, 10/20/2008 9:30:54AM						
Max Level:	63.8 dB, 10/20/2008 9:30:53AM						
Min Level:	53.0 dB, 10/20/2008 9:30:51AM						
Overload:	0.00%						
LEQ:	60.4 dB	SEL(3):	70.7 dB	TWA:	26.3 dB	TAKM5:	62.6 dB
LDN:	60.4 dB	CNEL:	60.4 dB	Pa2Sec:	0.0		
L5:	63.5 dB	L10:	63.4 dB	L50:	60.3 dB	L90:	54.7 dB
Filter Model:	OB300			Filter Frequency:	250.0 Hz		

Group 1 Test 114

Test Started:	10/20/2008 9:31:01 AM
Test Ended:	10/20/2008 9:31:12 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	96.7 dB, 10/20/2008 9:31:08AM						
Max Level:	67.8 dB, 10/20/2008 9:31:07AM						
Min Level:	59.3 dB, 10/20/2008 9:31:11AM						
Overload:	0.00%						
LEQ:	64.3 dB	SEL(3):	74.6 dB	TWA:	30.2 dB	TAKM5:	66.0 dB
LDN:	64.3 dB	CNEL:	64.3 dB	Pa2Sec:	0.0		
L5:	67.5 dB	L10:	67.3 dB	L50:	63.5 dB	L90:	61.2 dB
Filter Model:	OB300			Filter Frequency:	500.0 Hz		

Group 1 Test 115

Test Started:	10/20/2008 9:31:14 AM
Test Ended:	10/20/2008 9:31:25 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	96.6 dB, 10/20/2008 9:31:21AM						
Max Level:	71.6 dB, 10/20/2008 9:31:23AM						
Min Level:	62.3 dB, 10/20/2008 9:31:15AM						
Overload:	0.00%						
LEQ:	67.9 dB	SEL(3):	78.2 dB	TWA:	33.8 dB	TAKM5:	69.7 dB
LDN:	67.9 dB	CNEL:	67.9 dB	Pa2Sec:	0.0		
L5:	71.4 dB	L10:	71.2 dB	L50:	66.8 dB	L90:	64.5 dB
Filter Model:	OB300		Filter Frequency:		1.00 KHz		

Group 1 Test 116

Test Started:	10/20/2008 9:31:27 AM
Test Ended:	10/20/2008 9:31:38 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	96.7 dB, 10/20/2008 9:31:35AM						
Max Level:	75.3 dB, 10/20/2008 9:31:35AM						
Min Level:	62.7 dB, 10/20/2008 9:31:28AM						
Overload:	0.00%						
LEQ:	71.0 dB	SEL(3):	81.3 dB	TWA:	36.9 dB	TAKM5:	73.2 dB
LDN:	71.0 dB	CNEL:	71.0 dB	Pa2Sec:	0.1		
L5:	75.1 dB	L10:	74.9 dB	L50:	69.3 dB	L90:	65.6 dB
Filter Model:	OB300		Filter Frequency:		2.00 KHz		

Group 1 Test 117

Test Started:	10/20/2008 9:31:41 AM
Test Ended:	10/20/2008 9:31:52 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	97.2 dB, 10/20/2008 9:31:49AM						
Max Level:	69.3 dB, 10/20/2008 9:31:49AM						
Min Level:	59.1 dB, 10/20/2008 9:31:47AM						
Overload:	0.00%						
LEQ:	64.3 dB	SEL(3):	74.7 dB	TWA:	30.2 dB	TAKM5:	66.8 dB
LDN:	64.3 dB	CNEL:	64.3 dB	Pa2Sec:	0.0		
L5:	68.8 dB	L10:	68.1 dB	L50:	62.5 dB	L90:	59.4 dB
Filter Model:	OB300		Filter Frequency:		4.00 KHz		

Group 1 Test 118

Test Started:	10/20/2008 9:31:54 AM
Test Ended:	10/20/2008 9:32:05 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	95.9 dB, 10/20/2008 9:32:04AM						
Max Level:	56.7 dB, 10/20/2008 9:32:04AM						
Min Level:	48.9 dB, 10/20/2008 9:32:00AM						
Overload:	0.00%						
LEQ:	52.7 dB	SEL(3):	63.0 dB	TWA:	18.6 dB	TAKM5:	55.6 dB
LDN:	52.7 dB	CNEL:	52.7 dB	Pa2Sec:	0.0		
L5:	56.4 dB	L10:	56.3 dB	L50:	51.1 dB	L90:	49.2 dB
Filter Model:	OB300		Filter Frequency:		8.00 KHz		

QSLM 8789 (3).sdat

2900 Integrating/Logging Sound Level Meter

FW Version:	02.4	Serial Number:	
Name:	Loader		
Project:	1219-001		
Comments:	Loader Full Front		

Group 1 Test 102

Test Started:	10/20/2008 9:28:03 AM
Test Ended:	10/20/2008 9:28:18 AM
Run Time:	00:00:14

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	93.2 dB, 10/20/2008 9:28:08AM						
Max Level:	57.7 dB, 10/20/2008 9:28:09AM						
Min Level:	41.6 dB, 10/20/2008 9:28:04AM						
Overload:	0.00%						
LEQ:	52.6 dB	SEL(3):	64.3 dB	TWA:	19.8 dB	TAKM5:	54.3 dB
LDN:	52.6 dB	CNEL:	52.6 dB	Pa2Sec:	0.0		
L5:	57.3 dB	L10:	56.5 dB	L50:	51.5 dB	L90:	46.2 dB
Filter Model:	OB300	Filter Frequency:	63.0 Hz				

Group 1 Test 103

Test Started:	10/20/2008 9:28:20 AM
Test Ended:	10/20/2008 9:28:31 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	93.0 dB, 10/20/2008 9:28:21AM						
Max Level:	58.8 dB, 10/20/2008 9:28:23AM						
Min Level:	48.5 dB, 10/20/2008 9:28:21AM						
Overload:	0.00%						
LEQ:	55.5 dB	SEL(3):	65.9 dB	TWA:	21.5 dB	TAKM5:	58.1 dB
LDN:	55.5 dB	CNEL:	55.5 dB	Pa2Sec:	0.0		
L5:	58.4 dB	L10:	58.0 dB	L50:	55.5 dB	L90:	49.9 dB
Filter Model:	OB300	Filter Frequency:	125.0 Hz				

Group 1 Test 104

Test Started:	10/20/2008 9:28:34 AM
Test Ended:	10/20/2008 9:28:44 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	94.0 dB, 10/20/2008 9:28:36AM						
Max Level:	58.9 dB, 10/20/2008 9:28:37AM						
Min Level:	50.5 dB, 10/20/2008 9:28:35AM						
Overload:	0.00%						
LEQ:	56.0 dB	SEL(3):	66.3 dB	TWA:	21.9 dB	TAKM5:	58.1 dB
LDN:	56.0 dB	CNEL:	56.0 dB	Pa2Sec:	0.0		
L5:	58.6 dB	L10:	58.0 dB	L50:	56.0 dB	L90:	51.7 dB
Filter Model:	OB300	Filter Frequency:		250.0 Hz			

Group 1 Test 105

Test Started:	10/20/2008 9:28:47 AM
Test Ended:	10/20/2008 9:28:58 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	94.3 dB, 10/20/2008 9:28:49AM						
Max Level:	60.0 dB, 10/20/2008 9:28:51AM						
Min Level:	49.2 dB, 10/20/2008 9:28:55AM						
Overload:	0.00%						
LEQ:	55.8 dB	SEL(3):	66.2 dB	TWA:	21.7 dB	TAKM5:	58.9 dB
LDN:	55.8 dB	CNEL:	55.8 dB	Pa2Sec:	0.0		
L5:	59.8 dB	L10:	59.5 dB	L50:	54.4 dB	L90:	50.6 dB
Filter Model:	OB300	Filter Frequency:		500.0 Hz			

Group 1 Test 106

Test Started:	10/20/2008 9:29:00 AM
Test Ended:	10/20/2008 9:29:11 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	93.3 dB, 10/20/2008 9:29:03AM						
Max Level:	61.5 dB, 10/20/2008 9:29:05AM						
Min Level:	53.8 dB, 10/20/2008 9:29:01AM						
Overload:	0.00%						
LEQ:	57.5 dB	SEL(3):	67.8 dB	TWA:	23.4 dB	TAKM5:	61.1 dB
LDN:	57.5 dB	CNEL:	57.5 dB	Pa2Sec:	0.0		
L5:	61.0 dB	L10:	60.4 dB	L50:	56.5 dB	L90:	54.1 dB
Filter Model:	OB300	Filter Frequency:		1.00 KHz			

Group 1 Test 107

Test Started:	10/20/2008 9:29:13 AM
Test Ended:	10/20/2008 9:29:24 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	96.6 dB, 10/20/2008 9:29:17AM						
Max Level:	63.9 dB, 10/20/2008 9:29:14AM						
Min Level:	54.4 dB, 10/20/2008 9:29:22AM						
Overload:	0.00%						
LEQ:	61.0 dB	SEL(3):	71.4 dB	TWA:	26.9 dB	TAKM5:	63.2 dB
LDN:	61.0 dB	CNEL:	61.0 dB	Pa2Sec:	0.0		
L5:	63.5 dB	L10:	63.2 dB	L50:	61.7 dB	L90:	55.0 dB
Filter Model:	OB300	Filter Frequency:		2.00 KHz			

Group 1 Test 108

Test Started:	10/20/2008 9:29:27 AM
Test Ended:	10/20/2008 9:29:38 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	94.0 dB, 10/20/2008 9:29:31AM						
Max Level:	55.9 dB, 10/20/2008 9:29:31AM						
Min Level:	44.7 dB, 10/20/2008 9:29:37AM						
Overload:	0.00%						
LEQ:	51.7 dB	SEL(3):	62.0 dB	TWA:	17.6 dB	TAKM5:	55.5 dB
LDN:	51.7 dB	CNEL:	51.7 dB	Pa2Sec:	0.0		
L5:	55.6 dB	L10:	55.2 dB	L50:	50.4 dB	L90:	45.5 dB
Filter Model:	OB300	Filter Frequency:		4.00 KHz			

Group 1 Test 109

Test Started:	10/20/2008 9:29:40 AM
Test Ended:	10/20/2008 9:29:51 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	94.8 dB, 10/20/2008 9:29:45AM						
Max Level:	45.7 dB, 10/20/2008 9:29:45AM						
Min Level:	41.6 dB, 10/20/2008 9:29:41AM						
Overload:	0.00%						
LEQ:	42.8 dB	SEL(3):	53.2 dB	TWA:	8.7 dB	TAKM5:	44.9 dB
LDN:	42.8 dB	CNEL:	42.8 dB	Pa2Sec:	0.0		
L5:	45.5 dB	L10:	45.3 dB	L50:	41.6 dB	L90:	41.6 dB
Filter Model:	OB300	Filter Frequency:		8.00 KHz			

QSLM 8789.sdat

2900 Integrating/Logging Sound Level Meter

FW Version: 02.4 Serial Number:

Name: Loader

Project: 1219-001

Comments: Loader Full LS

Group 1 Test 81

Test Started: 10/20/2008 9:22:36 AM
Test Ended: 10/20/2008 9:22:55 AM
Run Time: 00:00:19

Measuring Parameters

Range:	50 - 110 dB		Weighting:	A		Time Constant:	Slow
Threshold:	Off		Exchange Rate:		3 dB	Peak Weighting:	C

Summary

Peak Level: 94.8 dB, 10/20/2008 9:22:45AM

Max Level: 58.6 dB, 10/20/2008 9:22:43AM
Min Level: 47.0 dB, 10/20/2008 9:22:50AM
Overload: 0.00%

LEQ:	55.5 dB	SEL(3):	68.2 dB	TWA:	23.8 dB	TAKM5:	57.1 dB
LDN:	55.5 dB	CNEL:	55.5 dB	Pa2Sec:	0.0		
L5:	58.1 dB	L10:	57.8 dB	L50:	55.6 dB	L90:	50.5 dB

Filter Model: OB300 Filter Frequency: 63.0 Hz

Group 1 Test 82

Test Started: 10/20/2008 9:22:57 AM
Test Ended: 10/20/2008 9:23:08 AM
Run Time: 00:00:10

Measuring Parameters

Range:	50 - 110 dB		Weighting:	A		Time Constant:	Slow
Threshold:	Off		Exchange Rate:		3 dB	Peak Weighting:	C

Summary

Peak Level: 95.0 dB, 10/20/2008 9:22:59AM

Max Level: 62.6 dB, 10/20/2008 9:23:07AM
Min Level: 50.0 dB, 10/20/2008 9:22:58AM
Overload: 0.00%

LEQ:	56.5 dB	SEL(3):	66.9 dB	TWA:	22.4 dB	TAKM5:	58.6 dB
LDN:	56.5 dB	CNEL:	56.5 dB	Pa2Sec:	0.0		
L5:	61.5 dB	L10:	58.6 dB	L50:	55.6 dB	L90:	51.8 dB

Filter Model: OB300 Filter Frequency: 125.0 Hz

Group 1 Test 83

Test Started:	10/20/2008 9:23:10 AM						
Test Ended:	10/20/2008 9:23:21 AM						
Run Time:	00:00:10						

Measuring Parameters

Range:	50 - 110 dB			Weighting:	A	Time Constant:	Slow
Threshold:	Off			Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	94.7 dB, 10/20/2008 9:23:13AM						
Max Level:	62.3 dB, 10/20/2008 9:23:15AM						
Min Level:	54.7 dB, 10/20/2008 9:23:18AM						
Overload:	0.00%						
LEQ:	59.5 dB	SEL(3):	69.9 dB	TWA:	25.4 dB	TAKM5:	61.9 dB
LDN:	59.5 dB	CNEL:	59.5 dB	Pa2Sec:	0.0		
L5:	61.9 dB	L10:	61.6 dB	L50:	59.5 dB	L90:	55.5 dB
Filter Model:	OB300			Filter Frequency:	250.0 Hz		

Group 1 Test 84

Test Started:	10/20/2008 9:23:24 AM						
Test Ended:	10/20/2008 9:23:35 AM						
Run Time:	00:00:10						

Measuring Parameters

Range:	50 - 110 dB			Weighting:	A	Time Constant:	Slow
Threshold:	Off			Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	95.4 dB, 10/20/2008 9:23:28AM						
Max Level:	67.4 dB, 10/20/2008 9:23:27AM						
Min Level:	58.4 dB, 10/20/2008 9:23:25AM						
Overload:	0.00%						
LEQ:	63.6 dB	SEL(3):	73.9 dB	TWA:	29.5 dB	TAKM5:	66.4 dB
LDN:	63.6 dB	CNEL:	63.6 dB	Pa2Sec:	0.0		
L5:	67.1 dB	L10:	66.9 dB	L50:	62.8 dB	L90:	59.1 dB
Filter Model:	OB300			Filter Frequency:	500.0 Hz		

Group 1 Test 85

Test Started:	10/20/2008 9:23:37 AM						
Test Ended:	10/20/2008 9:23:48 AM						
Run Time:	00:00:10						

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	94.5 dB, 10/20/2008 9:23:40AM						
Max Level:	68.9 dB, 10/20/2008 9:23:42AM						
Min Level:	63.5 dB, 10/20/2008 9:23:38AM						
Overload:	0.00%						
LEQ:	66.5 dB	SEL(3):	76.8 dB	TWA:	32.4 dB	TAKM5:	68.4 dB
LDN:	66.5 dB	CNEL:	66.5 dB	Pa2Sec:	0.0		
L5:	68.6 dB	L10:	68.4 dB	L50:	66.3 dB	L90:	64.0 dB
Filter Model:	OB300		Filter Frequency:		1.00 KHz		

Group 1 Test 86

Test Started:	10/20/2008 9:23:50 AM						
Test Ended:	10/20/2008 9:24:01 AM						
Run Time:	00:00:10						

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	94.6 dB, 10/20/2008 9:23:54AM						
Max Level:	69.3 dB, 10/20/2008 9:23:54AM						
Min Level:	63.6 dB, 10/20/2008 9:23:51AM						
Overload:	0.00%						
LEQ:	66.9 dB	SEL(3):	77.3 dB	TWA:	32.8 dB	TAKM5:	68.7 dB
LDN:	66.9 dB	CNEL:	66.9 dB	Pa2Sec:	0.0		
L5:	69.1 dB	L10:	69.0 dB	L50:	66.7 dB	L90:	63.9 dB
Filter Model:	OB300		Filter Frequency:		2.00 KHz		

Group 1 Test 87

Test Started:	10/20/2008 9:24:03 AM
Test Ended:	10/20/2008 9:24:14 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	95.5 dB, 10/20/2008 9:24:06AM						
Max Level:	64.3 dB, 10/20/2008 9:24:06AM						
Min Level:	57.9 dB, 10/20/2008 9:24:10AM						
Overload:	0.00%						
LEQ:	61.4 dB	SEL(3):	71.8 dB	TWA:	27.3 dB	TAKM5:	63.2 dB
LDN:	61.4 dB	CNEL:	61.4 dB	Pa2Sec:	0.0		
L5:	64.0 dB	L10:	63.6 dB	L50:	61.2 dB	L90:	58.4 dB

Group 1 Test 88

Test Started:	10/20/2008 9:24:17 AM
Test Ended:	10/20/2008 9:24:28 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	94.6 dB, 10/20/2008 9:24:20AM						
Max Level:	55.2 dB, 10/20/2008 9:24:21AM						
Min Level:	46.8 dB, 10/20/2008 9:24:25AM						
Overload:	0.00%						
LEQ:	52.0 dB	SEL(3):	62.4 dB	TWA:	17.9 dB	TAKM5:	54.3 dB
LDN:	52.0 dB	CNEL:	52.0 dB	Pa2Sec:	0.0		
L5:	54.9 dB	L10:	54.7 dB	L50:	51.7 dB	L90:	48.1 dB
Filter Model:	OB300	Filter Frequency:		8.00 KHz			

QSLM 8789 (3).sdat

2900 Integrating/Logging Sound Level Meter

FW Version:	02.4	Serial Number:	
Name:	Loader		
Project:	1219-001		
Comments:	Loader Full RS		

Group 1 Test 93

Test Started:	10/20/2008 9:25:46 AM
Test Ended:	10/20/2008 9:25:57 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB		Weighting:	A		Time Constant:	Slow
Threshold:	Off		Exchange Rate:		3 dB	Peak Weighting:	C

Summary

Peak Level:	97.3 dB, 10/20/2008 9:25:54AM						
Max Level:	61.6 dB, 10/20/2008 9:25:47AM						
Min Level:	48.1 dB, 10/20/2008 9:25:51AM						
Overload:	0.00%						
LEQ:	57.4 dB	SEL(3):	67.7 dB	TWA:	23.3 dB	TAKM5:	60.2 dB
LDN:	57.4 dB	CNEL:	57.4 dB	Pa2Sec:	0.0		
L5:	61.3 dB	L10:	61.0 dB	L50:	56.6 dB	L90:	50.5 dB
Filter Model:	OB300		Filter Frequency:		63.0 Hz		

Group 1 Test 94

Test Started:	10/20/2008 9:25:59 AM
Test Ended:	10/20/2008 9:26:10 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB		Weighting:	A		Time Constant:	Slow
Threshold:	Off		Exchange Rate:		3 dB	Peak Weighting:	C

Summary

Peak Level:	95.8 dB, 10/20/2008 9:26:00AM						
Max Level:	61.6 dB, 10/20/2008 9:26:00AM						
Min Level:	51.9 dB, 10/20/2008 9:26:09AM						
Overload:	0.00%						
LEQ:	58.7 dB	SEL(3):	69.0 dB	TWA:	24.5 dB	TAKM5:	60.6 dB
LDN:	58.7 dB	CNEL:	58.7 dB	Pa2Sec:	0.0		
L5:	61.4 dB	L10:	61.3 dB	L50:	58.4 dB	L90:	53.4 dB
Filter Model:	OB300		Filter Frequency:		125.0 Hz		

Group 1 Test 95

Test Started:	10/20/2008 9:26:13 AM
Test Ended:	10/20/2008 9:26:24 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	94.8 dB, 10/20/2008 9:26:17AM						
Max Level:	64.5 dB, 10/20/2008 9:26:23AM						
Min Level:	56.1 dB, 10/20/2008 9:26:16AM						
Overload:	0.00%						
LEQ:	61.6 dB	SEL(3):	71.9 dB	TWA:	27.5 dB	TAKM5:	63.5 dB
LDN:	61.6 dB	CNEL:	61.6 dB	Pa2Sec:	0.0		
L5:	64.0 dB	L10:	63.7 dB	L50:	61.6 dB	L90:	57.9 dB
Filter Model:	OB300	Filter Frequency:	250.0 Hz				

Group 1 Test 96

Test Started:	10/20/2008 9:26:26 AM
Test Ended:	10/20/2008 9:26:37 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	94.9 dB, 10/20/2008 9:26:35AM						
Max Level:	68.3 dB, 10/20/2008 9:26:30AM						
Min Level:	59.8 dB, 10/20/2008 9:26:28AM						
Overload:	0.00%						
LEQ:	64.6 dB	SEL(3):	74.9 dB	TWA:	30.5 dB	TAKM5:	67.9 dB
LDN:	64.6 dB	CNEL:	64.6 dB	Pa2Sec:	0.0		
L5:	67.9 dB	L10:	67.4 dB	L50:	63.9 dB	L90:	60.6 dB
Filter Model:	OB300	Filter Frequency:	500.0 Hz				

Group 1 Test 97

Test Started:	10/20/2008 9:26:39 AM
Test Ended:	10/20/2008 9:26:50 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	95.0 dB, 10/20/2008 9:26:41AM						
Max Level:	69.6 dB, 10/20/2008 9:26:43AM						
Min Level:	62.6 dB, 10/20/2008 9:26:40AM						
Overload:	0.00%						
LEQ:	66.8 dB	SEL(3):	77.1 dB	TWA:	32.7 dB	TAKM5:	68.8 dB
LDN:	66.8 dB	CNEL:	66.8 dB	Pa2Sec:	0.0		
L5:	69.1 dB	L10:	68.9 dB	L50:	66.8 dB	L90:	63.3 dB
Filter Model:	OB300		Filter Frequency:		1.00 KHz		

Group 1 Test 98

Test Started:	10/20/2008 9:26:53 AM
Test Ended:	10/20/2008 9:27:03 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	95.2 dB, 10/20/2008 9:27:02AM						
Max Level:	69.6 dB, 10/20/2008 9:27:02AM						
Min Level:	62.4 dB, 10/20/2008 9:26:54AM						
Overload:	0.00%						
LEQ:	66.6 dB	SEL(3):	77.0 dB	TWA:	32.5 dB	TAKM5:	68.7 dB
LDN:	66.6 dB	CNEL:	66.6 dB	Pa2Sec:	0.0		
L5:	69.3 dB	L10:	68.9 dB	L50:	66.7 dB	L90:	63.4 dB
Filter Model:	OB300		Filter Frequency:		2.00 KHz		

Group 1 Test 99

Test Started:	10/20/2008 9:27:06 AM
Test Ended:	10/20/2008 9:27:17 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	95.1 dB, 10/20/2008 9:27:15AM						
Max Level:	64.5 dB, 10/20/2008 9:27:16AM						
Min Level:	57.2 dB, 10/20/2008 9:27:07AM						
Overload:	0.00%						
LEQ:	60.6 dB	SEL(3):	70.9 dB	TWA:	26.5 dB	TAKM5:	62.8 dB
LDN:	60.6 dB	CNEL:	60.6 dB	Pa2Sec:	0.0		
L5:	64.1 dB	L10:	63.6 dB	L50:	59.8 dB	L90:	57.5 dB
Filter Model:	OB300		Filter Frequency:		4.00 KHz		

Group 1 Test 100

Test Started:	10/20/2008 9:27:19 AM
Test Ended:	10/20/2008 9:27:30 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	95.9 dB, 10/20/2008 9:27:21AM						
Max Level:	54.8 dB, 10/20/2008 9:27:20AM						
Min Level:	47.8 dB, 10/20/2008 9:27:27AM						
Overload:	0.00%						
LEQ:	51.9 dB	SEL(3):	62.3 dB	TWA:	17.8 dB	TAKM5:	54.2 dB
LDN:	51.9 dB	CNEL:	51.9 dB	Pa2Sec:	0.0		
L5:	54.1 dB	L10:	53.9 dB	L50:	51.8 dB	L90:	48.9 dB
Filter Model:	OB300		Filter Frequency:		8.00 KHz		

SLM 8789 (2).sdat

2900 Integrating/Logging Sound Level Meter

FW Version:	02.4	Serial Number:	
Name:	Loader		
Project:	1219-001		
Comments:	Idle Back		

Group 1 Test 52

Test Started:	10/20/2008 9:13:35 AM
Test Ended:	10/20/2008 9:13:49 AM
Run Time:	00:00:13

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.9 dB, 10/20/2008 9:13:44AM						
Max Level:	41.6 dB, 10/20/2008 9:13:35AM						
Min Level:	41.6 dB, 10/20/2008 9:13:36AM						
Overload:	0.00%						
LEQ:	41.6 dB	SEL(3):	52.8 dB	TWA:	8.3 dB	TAKM5:	40.4 dB
LDN:	41.6 dB	CNEL:	41.6 dB	Pa2Sec:	0.0		
L5:	41.6 dB	L10:	41.6 dB	L50:	41.6 dB	L90:	41.6 dB
Filter Model:	OB300	Filter Frequency:		63.0 Hz			

Group 1 Test 53

Test Started:	10/20/2008 9:13:51 AM
Test Ended:	10/20/2008 9:14:02 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	86.7 dB, 10/20/2008 9:13:55AM						
Max Level:	46.5 dB, 10/20/2008 9:13:56AM						
Min Level:	44.5 dB, 10/20/2008 9:13:52AM						
Overload:	0.00%						
LEQ:	45.8 dB	SEL(3):	56.2 dB	TWA:	11.7 dB	TAKM5:	46.0 dB
LDN:	45.8 dB	CNEL:	45.8 dB	Pa2Sec:	0.0		
L5:	46.3 dB	L10:	46.1 dB	L50:	45.9 dB	L90:	45.5 dB
Filter Model:	OB300	Filter Frequency:		125.0 Hz			

Group 1 Test 54

Test Started:	10/20/2008 9:14:04 AM
Test Ended:	10/20/2008 9:14:15 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	86.7 dB, 10/20/2008 9:14:10AM						
Max Level:	52.9 dB, 10/20/2008 9:14:08AM						
Min Level:	51.3 dB, 10/20/2008 9:14:05AM						
Overload:	0.00%						
LEQ:	52.5 dB	SEL(3):	62.8 dB	TWA:	18.4 dB	TAKM5:	52.5 dB
LDN:	52.5 dB	CNEL:	52.5 dB	Pa2Sec:	0.0		
L5:	52.8 dB	L10:	52.8 dB	L50:	52.6 dB	L90:	51.9 dB
Filter Model:	OB300	Filter Frequency:		250.0 Hz			

Group 1 Test 55

Test Started:	10/20/2008 9:14:18 AM
Test Ended:	10/20/2008 9:14:28 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.0 dB, 10/20/2008 9:14:20AM						
Max Level:	59.7 dB, 10/20/2008 9:14:19AM						
Min Level:	55.3 dB, 10/20/2008 9:14:19AM						
Overload:	0.00%						
LEQ:	57.3 dB	SEL(3):	67.6 dB	TWA:	23.1 dB	TAKM5:	58.3 dB
LDN:	57.3 dB	CNEL:	57.3 dB	Pa2Sec:	0.0		
L5:	59.3 dB	L10:	58.8 dB	L50:	57.0 dB	L90:	56.3 dB
Filter Model:	OB300	Filter Frequency:		500.0 Hz			

Group 1 Test 56

Test Started:	10/20/2008 9:14:31 AM
Test Ended:	10/20/2008 9:14:42 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	86.4 dB, 10/20/2008 9:14:36AM						
Max Level:	62.9 dB, 10/20/2008 9:14:33AM						
Min Level:	61.7 dB, 10/20/2008 9:14:32AM						
Overload:	0.00%						
LEQ:	62.4 dB	SEL(3):	72.7 dB	TWA:	28.3 dB	TAKM5:	62.4 dB
LDN:	62.4 dB	CNEL:	62.4 dB	Pa2Sec:	0.0		
L5:	62.7 dB	L10:	62.6 dB	L50:	62.4 dB	L90:	62.3 dB
Filter Model:	OB300	Filter Frequency:		1.00 KHz			

Group 1 Test 57

Test Started:	10/20/2008 9:14:44 AM
Test Ended:	10/20/2008 9:14:55 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	86.7 dB, 10/20/2008 9:14:51AM						
Max Level:	65.3 dB, 10/20/2008 9:14:51AM						
Min Level:	63.5 dB, 10/20/2008 9:14:45AM						
Overload:	0.00%						
LEQ:	64.7 dB	SEL(3):	75.0 dB	TWA:	30.6 dB	TAKM5:	64.8 dB
LDN:	64.7 dB	CNEL:	64.7 dB	Pa2Sec:	0.0		
L5:	65.2 dB	L10:	65.2 dB	L50:	64.9 dB	L90:	64.1 dB
Filter Model:	OB300	Filter Frequency:		2.00 KHz			

Group 1 Test 58

Test Started:	10/20/2008 9:14:57 AM
Test Ended:	10/20/2008 9:15:08 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	86.6 dB, 10/20/2008 9:15:06AM						
Max Level:	58.2 dB, 10/20/2008 9:14:58AM						
Min Level:	56.0 dB, 10/20/2008 9:15:03AM						
Overload:	0.00%						
LEQ:	56.6 dB	SEL(3):	66.9 dB	TWA:	22.5 dB	TAKM5:	57.2 dB
LDN:	56.6 dB	CNEL:	56.6 dB	Pa2Sec:	0.0		
L5:	57.5 dB	L10:	57.0 dB	L50:	56.5 dB	L90:	56.2 dB
Filter Model:	OB300	Filter Frequency:		4.00 KHz			

Group 1 Test 59

Test Started:	10/20/2008 9:15:11 AM
Test Ended:	10/20/2008 9:15:21 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.0 dB, 10/20/2008 9:15:16AM						
Max Level:	49.2 dB, 10/20/2008 9:15:12AM						
Min Level:	45.4 dB, 10/20/2008 9:15:21AM						
Overload:	0.00%						
LEQ:	46.4 dB	SEL(3):	56.7 dB	TWA:	12.3 dB	TAKM5:	47.7 dB
LDN:	46.4 dB	CNEL:	46.4 dB	Pa2Sec:	0.0		
L5:	48.3 dB	L10:	47.5 dB	L50:	46.1 dB	L90:	45.7 dB
Filter Model:	OB300	Filter Frequency:		8.00 KHz			

SLM 8789 (3).sdat

2900 Integrating/Logging Sound Level Meter

FW Version:	02.4	Serial Number:	
Name:	Loader		
Project:	1219-001		
Comments:	Idle Front		

Group 1 Test 72

Test Started:	10/20/2008 9:18:34 AM
Test Ended:	10/20/2008 9:18:39 AM
Run Time:	00:00:05

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	84.3 dB, 10/20/2008 9:18:39AM						
Max Level:	41.6 dB, 10/20/2008 9:18:34AM						
Min Level:	41.6 dB, 10/20/2008 9:18:35AM						
Overload:	0.00%						
LEQ:	41.6 dB	SEL(3):	49.1 dB	TWA:	4.7 dB	TAKM5:	41.1 dB
LDN:	41.6 dB	CNEL:	41.6 dB	Pa2Sec:	0.0		
L5:	41.6 dB	L10:	41.6 dB	L50:	41.6 dB	L90:	41.6 dB
Filter Model:	OB300	Filter Frequency:		63.0 Hz			

Group 1 Test 73

Test Started:	10/20/2008 9:18:42 AM
Test Ended:	10/20/2008 9:18:53 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	84.3 dB, 10/20/2008 9:18:44AM						
Max Level:	46.5 dB, 10/20/2008 9:18:43AM						
Min Level:	44.9 dB, 10/20/2008 9:18:43AM						
Overload:	0.00%						
LEQ:	46.0 dB	SEL(3):	56.3 dB	TWA:	11.9 dB	TAKM5:	46.1 dB
LDN:	46.0 dB	CNEL:	46.0 dB	Pa2Sec:	0.0		
L5:	46.4 dB	L10:	46.3 dB	L50:	46.1 dB	L90:	45.7 dB
Filter Model:	OB300	Filter Frequency:		125.0 Hz			

Group 1 Test 74

Test Started:	10/20/2008 9:18:55 AM
Test Ended:	10/20/2008 9:19:06 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	84.3 dB, 10/20/2008 9:19:00AM						
Max Level:	50.2 dB, 10/20/2008 9:18:59AM						
Min Level:	47.9 dB, 10/20/2008 9:18:56AM						
Overload:	0.00%						
LEQ:	49.1 dB	SEL(3):	59.4 dB	TWA:	15.0 dB	TAKM5:	49.8 dB
LDN:	49.1 dB	CNEL:	49.1 dB	Pa2Sec:	0.0		
L5:	50.0 dB	L10:	49.9 dB	L50:	49.1 dB	L90:	48.3 dB
Filter Model:	OB300	Filter Frequency:		250.0 Hz			

Group 1 Test 75

Test Started:	10/20/2008 9:19:08 AM
Test Ended:	10/20/2008 9:19:19 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.6 dB, 10/20/2008 9:19:18AM						
Max Level:	63.2 dB, 10/20/2008 9:19:18AM						
Min Level:	50.4 dB, 10/20/2008 9:19:09AM						
Overload:	0.00%						
LEQ:	55.3 dB	SEL(3):	65.6 dB	TWA:	21.2 dB	TAKM5:	58.4 dB
LDN:	55.3 dB	CNEL:	55.3 dB	Pa2Sec:	0.0		
L5:	62.3 dB	L10:	59.6 dB	L50:	52.3 dB	L90:	51.0 dB
Filter Model:	OB300	Filter Frequency:		500.0 Hz			

Group 1 Test 76

Test Started:	10/20/2008 9:19:21 AM
Test Ended:	10/20/2008 9:19:32 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	83.7 dB, 10/20/2008 9:19:25AM						
Max Level:	57.5 dB, 10/20/2008 9:19:22AM						
Min Level:	52.3 dB, 10/20/2008 9:19:28AM						
Overload:	0.00%						
LEQ:	54.1 dB	SEL(3):	64.4 dB	TWA:	20.0 dB	TAKM5:	55.5 dB
LDN:	54.1 dB	CNEL:	54.1 dB	Pa2Sec:	0.0		
L5:	56.9 dB	L10:	56.3 dB	L50:	53.2 dB	L90:	52.6 dB
Filter Model:	OB300	Filter Frequency:		1.00 KHz			

Group 1 Test 77

Test Started:	10/20/2008 9:19:35 AM
Test Ended:	10/20/2008 9:19:46 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	86.0 dB, 10/20/2008 9:19:39AM						
Max Level:	54.0 dB, 10/20/2008 9:19:37AM						
Min Level:	51.3 dB, 10/20/2008 9:19:36AM						
Overload:	0.00%						
LEQ:	53.1 dB	SEL(3):	63.4 dB	TWA:	19.0 dB	TAKM5:	53.3 dB
LDN:	53.1 dB	CNEL:	53.1 dB	Pa2Sec:	0.0		
L5:	53.8 dB	L10:	53.7 dB	L50:	53.1 dB	L90:	52.5 dB
Filter Model:	OB300	Filter Frequency:		2.00 KHz			

Group 1 Test 78

Test Started:	10/20/2008 9:19:48 AM
Test Ended:	10/20/2008 9:19:59 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	84.6 dB, 10/20/2008 9:19:58AM						
Max Level:	47.3 dB, 10/20/2008 9:19:49AM						
Min Level:	45.6 dB, 10/20/2008 9:19:52AM						
Overload:	0.00%						
LEQ:	46.1 dB	SEL(3):	56.4 dB	TWA:	12.0 dB	TAKM5:	46.6 dB
LDN:	46.1 dB	CNEL:	46.1 dB	Pa2Sec:	0.0		
L5:	46.7 dB	L10:	46.5 dB	L50:	46.0 dB	L90:	45.7 dB
Filter Model:	OB300		Filter Frequency:		4.00 KHz		

Group 1 Test 79

Test Started:	10/20/2008 9:20:01 AM
Test Ended:	10/20/2008 9:20:12 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	84.0 dB, 10/20/2008 9:20:03AM						
Max Level:	41.6 dB, 10/20/2008 9:20:01AM						
Min Level:	41.6 dB, 10/20/2008 9:20:02AM						
Overload:	0.00%						
LEQ:	41.6 dB	SEL(3):	51.9 dB	TWA:	7.5 dB	TAKM5:	41.2 dB
LDN:	41.6 dB	CNEL:	41.6 dB	Pa2Sec:	0.0		
L5:	41.6 dB	L10:	41.6 dB	L50:	41.6 dB	L90:	41.6 dB
Filter Model:	OB300		Filter Frequency:		8.00 KHz		

SLM 8789 (3).sdat

2900 Integrating/Logging Sound Level Meter

FW Version:	02.4	Serial Number:	
Name:	Loader		
Project:	1219-001		
Comments:	Idle LS		

Group 1 Test 61

Test Started:	10/20/2008 9:16:02 AM
Test Ended:	10/20/2008 9:16:18 AM
Run Time:	00:00:15

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	89.5 dB, 10/20/2008 9:16:16AM						
Max Level:	41.6 dB, 10/20/2008 9:16:02AM						
Min Level:	41.6 dB, 10/20/2008 9:16:03AM						
Overload:	0.00%						
LEQ:	41.6 dB	SEL(3):	53.4 dB	TWA:	9.0 dB	TAKM5:	41.5 dB
LDN:	41.6 dB	CNEL:	41.6 dB	Pa2Sec:	0.0		
L5:	41.6 dB	L10:	41.6 dB	L50:	41.6 dB	L90:	41.6 dB
Filter Model:	OB300	Filter Frequency:		63.0 Hz			

Group 1 Test 62

Test Started:	10/20/2008 9:16:20 AM
Test Ended:	10/20/2008 9:16:31 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	89.3 dB, 10/20/2008 9:16:27AM						
Max Level:	48.8 dB, 10/20/2008 9:16:28AM						
Min Level:	47.5 dB, 10/20/2008 9:16:21AM						
Overload:	0.00%						
LEQ:	48.1 dB	SEL(3):	58.4 dB	TWA:	13.9 dB	TAKM5:	48.2 dB
LDN:	48.1 dB	CNEL:	48.1 dB	Pa2Sec:	0.0		
L5:	48.5 dB	L10:	48.5 dB	L50:	48.1 dB	L90:	47.7 dB
Filter Model:	OB300	Filter Frequency:		125.0 Hz			

Group 1 Test 63

Test Started:	10/20/2008 9:16:33 AM
Test Ended:	10/20/2008 9:16:44 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB		Weighting:	A		Time Constant:	Slow
Threshold:	Off		Exchange Rate:		3 dB	Peak Weighting:	C

Summary

Peak Level:	88.3 dB, 10/20/2008 9:16:39AM						
Max Level:	54.9 dB, 10/20/2008 9:16:43AM						
Min Level:	50.1 dB, 10/20/2008 9:16:34AM						
Overload:	0.00%						
LEQ:	53.8 dB	SEL(3):	64.2 dB	TWA:	19.7 dB	TAKM5:	54.1 dB
LDN:	53.8 dB	CNEL:	53.8 dB	Pa2Sec:	0.0		
L5:	54.7 dB	L10:	54.7 dB	L50:	54.2 dB	L90:	51.9 dB
Filter Model:	OB300		Filter Frequency:		250.0 Hz		

Group 1 Test 64

Test Started:	10/20/2008 9:16:47 AM
Test Ended:	10/20/2008 9:16:57 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB		Weighting:	A		Time Constant:	Slow
Threshold:	Off		Exchange Rate:		3 dB	Peak Weighting:	C

Summary

Peak Level:	88.3 dB, 10/20/2008 9:16:48AM						
Max Level:	59.9 dB, 10/20/2008 9:16:55AM						
Min Level:	57.7 dB, 10/20/2008 9:16:48AM						
Overload:	0.00%						
LEQ:	59.0 dB	SEL(3):	69.4 dB	TWA:	24.9 dB	TAKM5:	59.1 dB
LDN:	59.0 dB	CNEL:	59.0 dB	Pa2Sec:	0.0		
L5:	59.8 dB	L10:	59.7 dB	L50:	59.0 dB	L90:	58.5 dB
Filter Model:	OB300		Filter Frequency:		500.0 Hz		

Group 1 Test 65

Test Started:	10/20/2008 9:17:00 AM
Test Ended:	10/20/2008 9:17:11 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.6 dB, 10/20/2008 9:17:10AM						
Max Level:	63.3 dB, 10/20/2008 9:17:05AM						
Min Level:	61.7 dB, 10/20/2008 9:17:01AM						
Overload:	0.00%						
LEQ:	62.8 dB	SEL(3):	73.2 dB	TWA:	28.7 dB	TAKM5:	62.8 dB
LDN:	62.8 dB	CNEL:	62.8 dB	Pa2Sec:	0.0		
L5:	63.2 dB	L10:	63.2 dB	L50:	63.0 dB	L90:	62.6 dB
Filter Model:	OB300	Filter Frequency:		1.00 KHz			

Group 1 Test 66

Test Started:	10/20/2008 9:17:13 AM
Test Ended:	10/20/2008 9:17:24 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.2 dB, 10/20/2008 9:17:16AM						
Max Level:	64.1 dB, 10/20/2008 9:17:15AM						
Min Level:	62.9 dB, 10/20/2008 9:17:14AM						
Overload:	0.00%						
LEQ:	63.6 dB	SEL(3):	73.9 dB	TWA:	29.5 dB	TAKM5:	63.6 dB
LDN:	63.6 dB	CNEL:	63.6 dB	Pa2Sec:	0.0		
L5:	64.0 dB	L10:	64.0 dB	L50:	63.7 dB	L90:	63.4 dB
Filter Model:	OB300	Filter Frequency:		2.00 KHz			

Group 1 Test 67

Test Started:	10/20/2008 9:17:26 AM
Test Ended:	10/20/2008 9:17:37 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.0 dB, 10/20/2008 9:17:28AM						
Max Level:	56.7 dB, 10/20/2008 9:17:27AM						
Min Level:	54.3 dB, 10/20/2008 9:17:29AM						
Overload:	0.00%						
LEQ:	54.8 dB	SEL(3):	65.1 dB	TWA:	20.7 dB	TAKM5:	55.6 dB
LDN:	54.8 dB	CNEL:	54.8 dB	Pa2Sec:	0.0		
L5:	56.0 dB	L10:	55.4 dB	L50:	54.7 dB	L90:	54.5 dB
Filter Model:	OB300	Filter Frequency:		4.00 KHz			

Group 1 Test 68

Test Started:	10/20/2008 9:17:40 AM
Test Ended:	10/20/2008 9:17:50 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.7 dB, 10/20/2008 9:17:45AM						
Max Level:	47.7 dB, 10/20/2008 9:17:41AM						
Min Level:	44.5 dB, 10/20/2008 9:17:46AM						
Overload:	0.00%						
LEQ:	45.5 dB	SEL(3):	55.8 dB	TWA:	11.4 dB	TAKM5:	46.5 dB
LDN:	45.5 dB	CNEL:	45.5 dB	Pa2Sec:	0.0		
L5:	47.1 dB	L10:	46.4 dB	L50:	45.3 dB	L90:	44.9 dB
Filter Model:	OB300	Filter Frequency:		8.00 KHz			

SLM 8789 (2).sdat

2900 Integrating/Logging Sound Level Meter

FW Version:	02.4	Serial Number:	
Name:	Loader		
Project:	1219-001		
Comments:	Idle RS		

Group 1 Test 42

Test Started:	10/20/2008 9:11:24 AM
Test Ended:	10/20/2008 9:11:32 AM
Run Time:	00:00:08

Measuring Parameters

Range:	60 - 120 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.2 dB, 10/20/2008 9:11:27AM						
Max Level:	51.6 dB, 10/20/2008 9:11:24AM						
Min Level:	51.6 dB, 10/20/2008 9:11:25AM						
Overload:	0.00%						
LEQ:	51.6 dB	SEL(3):	60.7 dB	TWA:	16.2 dB	TAKM5:	49.5 dB
LDN:	51.6 dB	CNEL:	51.6 dB	Pa2Sec:	0.0		
L5:	51.6 dB	L10:	51.6 dB	L50:	51.6 dB	L90:	51.6 dB
Filter Model:	OB300	Filter Frequency:	63.0 Hz				

Group 1 Test 43

Test Started:	10/20/2008 9:11:34 AM
Test Ended:	10/20/2008 9:11:45 AM
Run Time:	00:00:10

Measuring Parameters

Range:	60 - 120 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.0 dB, 10/20/2008 9:11:36AM						
Max Level:	51.6 dB, 10/20/2008 9:11:34AM						
Min Level:	51.6 dB, 10/20/2008 9:11:35AM						
Overload:	0.00%						
LEQ:	51.6 dB	SEL(3):	61.9 dB	TWA:	17.5 dB	TAKM5:	51.2 dB
LDN:	51.6 dB	CNEL:	51.6 dB	Pa2Sec:	0.0		
L5:	51.6 dB	L10:	51.6 dB	L50:	51.6 dB	L90:	51.6 dB
Filter Model:	OB300	Filter Frequency:	125.0 Hz				

Group 1 Test 44

Test Started:	10/20/2008 9:11:48 AM
Test Ended:	10/20/2008 9:11:54 AM
Run Time:	00:00:06

Measuring Parameters

Range:	60 - 120 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.6 dB, 10/20/2008 9:11:51AM						
Max Level:	51.6 dB, 10/20/2008 9:11:48AM						
Min Level:	51.6 dB, 10/20/2008 9:11:49AM						
Overload:	0.00%						
LEQ:	51.6 dB	SEL(3):	59.8 dB	TWA:	15.3 dB	TAKM5:	50.4 dB
LDN:	51.6 dB	CNEL:	51.6 dB	Pa2Sec:	0.0		
L5:	41.6 dB	L10:	41.6 dB	L50:	41.6 dB	L90:	41.6 dB
Filter Model:	OB300	Filter Frequency:		250.0 Hz			

Group 1 Test 46

Test Started:	10/20/2008 9:12:01 AM
Test Ended:	10/20/2008 9:12:12 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.6 dB, 10/20/2008 9:12:09AM						
Max Level:	56.8 dB, 10/20/2008 9:12:10AM						
Min Level:	56.0 dB, 10/20/2008 9:12:04AM						
Overload:	0.00%						
LEQ:	56.3 dB	SEL(3):	66.7 dB	TWA:	22.2 dB	TAKM5:	56.4 dB
LDN:	56.3 dB	CNEL:	56.3 dB	Pa2Sec:	0.0		
L5:	56.7 dB	L10:	56.6 dB	L50:	56.4 dB	L90:	56.1 dB
Filter Model:	OB300	Filter Frequency:		500.0 Hz			

Group 1 Test 47

Test Started:	10/20/2008 9:12:14 AM
Test Ended:	10/20/2008 9:12:25 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	89.1 dB, 10/20/2008 9:12:19AM						
Max Level:	60.5 dB, 10/20/2008 9:12:24AM						
Min Level:	58.4 dB, 10/20/2008 9:12:15AM						
Overload:	0.00%						
LEQ:	59.5 dB	SEL(3):	69.8 dB	TWA:	25.4 dB	TAKM5:	59.5 dB
LDN:	59.5 dB	CNEL:	59.5 dB	Pa2Sec:	0.0		
L5:	60.3 dB	L10:	60.1 dB	L50:	59.5 dB	L90:	59.0 dB
Filter Model:	OB300	Filter Frequency:	1.00 KHz				

Group 1 Test 48

Test Started:	10/20/2008 9:12:27 AM
Test Ended:	10/20/2008 9:12:38 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.7 dB, 10/20/2008 9:12:32AM						
Max Level:	61.3 dB, 10/20/2008 9:12:35AM						
Min Level:	60.1 dB, 10/20/2008 9:12:28AM						
Overload:	0.00%						
LEQ:	60.8 dB	SEL(3):	71.1 dB	TWA:	26.7 dB	TAKM5:	60.8 dB
LDN:	60.8 dB	CNEL:	60.8 dB	Pa2Sec:	0.0		
L5:	61.2 dB	L10:	61.1 dB	L50:	60.9 dB	L90:	60.6 dB
Filter Model:	OB300	Filter Frequency:	2.00 KHz				

Group 1 Test 49

Test Started:	10/20/2008 9:12:41 AM
Test Ended:	10/20/2008 9:12:52 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.1 dB, 10/20/2008 9:12:44AM						
Max Level:	53.8 dB, 10/20/2008 9:12:42AM						
Min Level:	50.7 dB, 10/20/2008 9:12:48AM						
Overload:	0.00%						
LEQ:	51.4 dB	SEL(3):	61.7 dB	TWA:	17.3 dB	TAKM5:	52.3 dB
LDN:	51.4 dB	CNEL:	51.4 dB	Pa2Sec:	0.0		
L5:	52.9 dB	L10:	52.4 dB	L50:	51.2 dB	L90:	50.9 dB
Filter Model:	OB300	Filter Frequency:	4.00 KHz				

Group 1 Test 50

Test Started:	10/20/2008 9:12:54 AM
Test Ended:	10/20/2008 9:13:05 AM
Run Time:	00:00:10

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.0 dB, 10/20/2008 9:13:02AM						
Max Level:	44.3 dB, 10/20/2008 9:12:55AM						
Min Level:	41.6 dB, 10/20/2008 9:13:01AM						
Overload:	0.00%						
LEQ:	42.3 dB	SEL(3):	52.6 dB	TWA:	8.2 dB	TAKM5:	43.1 dB
LDN:	42.3 dB	CNEL:	42.3 dB	Pa2Sec:	0.0		
L5:	43.5 dB	L10:	43.1 dB	L50:	42.2 dB	L90:	41.9 dB
Filter Model:	OB300	Filter Frequency:	8.00 KHz				

SLM 8789 (2).sdat

2900 Integrating/Logging Sound Level Meter

FW Version:	02.4	Serial Number:	
Name:	Waste Disposal Truck		
Project:	1219-001		
Comments:	Back		

Group 1 Test 29

Test Started:	10/20/2008 9:05:01 AM
Test Ended:	10/20/2008 9:05:21 AM
Run Time:	00:00:19

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	96.7 dB, 10/20/2008 9:05:04AM						
Max Level:	48.0 dB, 10/20/2008 9:05:14AM						
Min Level:	38.9 dB, 10/20/2008 9:05:02AM						
Overload:	0.00%						
LEQ:	46.9 dB	SEL(3):	59.9 dB	TWA:	15.5 dB	TAKM5:	46.4 dB
LDN:	46.9 dB	CNEL:	46.9 dB	Pa2Sec:	0.0		
L5:	47.9 dB	L10:	47.8 dB	L50:	47.3 dB	L90:	44.7 dB
Filter Model:	OB300	Filter Frequency:		63.0 Hz			

Group 1 Test 30

Test Started:	10/20/2008 9:05:23 AM
Test Ended:	10/20/2008 9:05:40 AM
Run Time:	00:00:17

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	99.2 dB, 10/20/2008 9:05:35AM						
Max Level:	65.6 dB, 10/20/2008 9:05:36AM						
Min Level:	45.1 dB, 10/20/2008 9:05:24AM						
Overload:	0.00%						
LEQ:	61.1 dB	SEL(3):	73.4 dB	TWA:	28.9 dB	TAKM5:	62.3 dB
LDN:	61.1 dB	CNEL:	61.1 dB	Pa2Sec:	0.0		
L5:	65.3 dB	L10:	65.0 dB	L50:	59.9 dB	L90:	47.3 dB
Filter Model:	OB300	Filter Frequency:		125.0 Hz			

Group 1 Test 31

Test Started:	10/20/2008 9:05:42 AM
Test Ended:	10/20/2008 9:05:59 AM
Run Time:	00:00:17

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	92.7 dB, 10/20/2008 9:05:43AM						
Max Level:	54.9 dB, 10/20/2008 9:05:43AM						
Min Level:	45.8 dB, 10/20/2008 9:05:53AM						
Overload:	0.00%						
LEQ:	48.6 dB	SEL(3):	60.9 dB	TWA:	16.5 dB	TAKM5:	50.8 dB
LDN:	48.6 dB	CNEL:	48.6 dB	Pa2Sec:	0.0		
L5:	53.9 dB	L10:	52.4 dB	L50:	46.5 dB	L90:	46.1 dB
Filter Model:	OB300	Filter Frequency:		250.0 Hz			

Group 1 Test 32

Test Started:	10/20/2008 9:06:02 AM
Test Ended:	10/20/2008 9:06:19 AM
Run Time:	00:00:17

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	84.6 dB, 10/20/2008 9:06:19AM						
Max Level:	57.2 dB, 10/20/2008 9:06:19AM						
Min Level:	51.9 dB, 10/20/2008 9:06:03AM						
Overload:	0.00%						
LEQ:	53.3 dB	SEL(3):	65.6 dB	TWA:	21.2 dB	TAKM5:	53.5 dB
LDN:	53.3 dB	CNEL:	53.3 dB	Pa2Sec:	0.0		
L5:	54.5 dB	L10:	54.1 dB	L50:	53.3 dB	L90:	52.7 dB
Filter Model:	OB300	Filter Frequency:		500.0 Hz			

Group 1 Test 33

Test Started:	10/20/2008 9:06:21 AM
Test Ended:	10/20/2008 9:06:38 AM
Run Time:	00:00:17

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	84.8 dB, 10/20/2008 9:06:27AM						
Max Level:	57.6 dB, 10/20/2008 9:06:25AM						
Min Level:	53.3 dB, 10/20/2008 9:06:30AM						
Overload:	0.00%						
LEQ:	54.2 dB	SEL(3):	66.5 dB	TWA:	22.1 dB	TAKM5:	56.1 dB
LDN:	54.2 dB	CNEL:	54.2 dB	Pa2Sec:	0.0		
L5:	56.5 dB	L10:	55.8 dB	L50:	53.8 dB	L90:	53.6 dB
Filter Model:	OB300	Filter Frequency:		1.00 KHz			

Group 1 Test 34

Test Started:	10/20/2008 9:06:41 AM
Test Ended:	10/20/2008 9:06:58 AM
Run Time:	00:00:17

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	83.7 dB, 10/20/2008 9:06:42AM						
Max Level:	47.7 dB, 10/20/2008 9:06:42AM						
Min Level:	45.9 dB, 10/20/2008 9:06:52AM						
Overload:	0.00%						
LEQ:	46.3 dB	SEL(3):	58.6 dB	TWA:	14.2 dB	TAKM5:	46.4 dB
LDN:	46.3 dB	CNEL:	46.3 dB	Pa2Sec:	0.0		
L5:	47.2 dB	L10:	46.8 dB	L50:	46.3 dB	L90:	46.1 dB
Filter Model:	OB300	Filter Frequency:		2.00 KHz			

Group 1 Test 35

Test Started:	10/20/2008 9:07:00 AM
Test Ended:	10/20/2008 9:07:17 AM
Run Time:	00:00:17

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	84.8 dB, 10/20/2008 9:07:05AM						
Max Level:	55.6 dB, 10/20/2008 9:07:05AM						
Min Level:	40.3 dB, 10/20/2008 9:07:16AM						
Overload:	0.00%						
LEQ:	46.1 dB	SEL(3):	58.4 dB	TWA:	13.9 dB	TAKM5:	53.2 dB
LDN:	46.1 dB	CNEL:	46.1 dB	Pa2Sec:	0.0		
L5:	53.6 dB	L10:	50.7 dB	L50:	41.2 dB	L90:	40.5 dB
Filter Model:	OB300		Filter Frequency:		4.00 KHz		

Group 1 Test 36

Test Started:	10/20/2008 9:07:19 AM
Test Ended:	10/20/2008 9:07:37 AM
Run Time:	00:00:17

Measuring Parameters

Range:	40 - 100 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	82.7 dB, 10/20/2008 9:07:25AM						
Max Level:	34.4 dB, 10/20/2008 9:07:21AM						
Min Level:	32.1 dB, 10/20/2008 9:07:27AM						
Overload:	0.00%						
LEQ:	32.7 dB	SEL(3):	45.0 dB	TWA:	0.5 dB	TAKM5:	32.8 dB
LDN:	32.7 dB	CNEL:	32.7 dB	Pa2Sec:	0.0		
L5:	33.9 dB	L10:	33.4 dB	L50:	32.5 dB	L90:	32.3 dB
Filter Model:	OB300		Filter Frequency:		8.00 KHz		

SLM 8789.sdat

2900 Integrating/Logging Sound Level Meter

FW Version: 02.4 Serial Number:

Name: Waste Disposal Truck

Project: 1219-001

Comments: Front

Group 1 Test 10

Test Started: 10/20/2008 8:58:08 AM
Test Ended: 10/20/2008 8:58:28 AM
Run Time: 00:00:19

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level: 88.1 dB, 10/20/2008 8:58:11AM

Max Level: 50.4 dB, 10/20/2008 8:58:09AM
Min Level: 47.8 dB, 10/20/2008 8:58:09AM
Overload: 0.00%

LEQ:	49.9 dB	SEL(3):	62.8 dB	TWA:	18.4 dB	TAKM5:	49.2 dB
LDN:	49.9 dB	CNEL:	49.9 dB	Pa2Sec:	0.0		
L5:	50.3 dB	L10:	50.2 dB	L50:	50.0 dB	L90:	49.7 dB

Filter Model: OB300 Filter Frequency: 63.0 Hz

Group 1 Test 11

Test Started: 10/20/2008 8:58:30 AM
Test Ended: 10/20/2008 8:58:47 AM
Run Time: 00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level: 88.0 dB, 10/20/2008 8:58:41AM

Max Level: 49.9 dB, 10/20/2008 8:58:42AM
Min Level: 47.8 dB, 10/20/2008 8:58:31AM
Overload: 0.00%

LEQ:	49.1 dB	SEL(3):	61.4 dB	TWA:	16.9 dB	TAKM5:	49.0 dB
LDN:	49.1 dB	CNEL:	49.1 dB	Pa2Sec:	0.0		
L5:	49.7 dB	L10:	49.6 dB	L50:	49.2 dB	L90:	48.8 dB

Filter Model: OB300 Filter Frequency: 125.0 Hz

Group 1 Test 12

Test Started:	10/20/2008 8:58:49 AM
Test Ended:	10/20/2008 8:59:06 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.4 dB, 10/20/2008 8:58:52AM						
Max Level:	57.2 dB, 10/20/2008 8:58:51AM						
Min Level:	55.7 dB, 10/20/2008 8:59:04AM						
Overload:	0.00%						
LEQ:	56.4 dB	SEL(3):	68.7 dB	TWA:	24.2 dB	TAKM5:	56.3 dB
LDN:	56.4 dB	CNEL:	56.4 dB	Pa2Sec:	0.0		
L5:	56.9 dB	L10:	56.9 dB	L50:	56.4 dB	L90:	56.1 dB
Filter Model:	OB300	Filter Frequency:	250.0 Hz				

Group 1 Test 13

Test Started:	10/20/2008 8:59:08 AM
Test Ended:	10/20/2008 8:59:25 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.6 dB, 10/20/2008 8:59:09AM						
Max Level:	62.3 dB, 10/20/2008 8:59:22AM						
Min Level:	60.0 dB, 10/20/2008 8:59:09AM						
Overload:	0.00%						
LEQ:	61.3 dB	SEL(3):	73.6 dB	TWA:	29.1 dB	TAKM5:	61.3 dB
LDN:	61.3 dB	CNEL:	61.3 dB	Pa2Sec:	0.0		
L5:	62.1 dB	L10:	62.0 dB	L50:	61.3 dB	L90:	60.8 dB
Filter Model:	OB300	Filter Frequency:	500.0 Hz				

Group 1 Test 14

Test Started:	10/20/2008 8:59:28 AM
Test Ended:	10/20/2008 8:59:45 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	89.7 dB, 10/20/2008 8:59:41AM						
Max Level:	63.5 dB, 10/20/2008 8:59:33AM						
Min Level:	62.3 dB, 10/20/2008 8:59:29AM						
Overload:	0.00%						
LEQ:	62.9 dB	SEL(3):	75.2 dB	TWA:	30.7 dB	TAKM5:	62.9 dB
LDN:	62.9 dB	CNEL:	62.9 dB	Pa2Sec:	0.0		
L5:	63.3 dB	L10:	63.2 dB	L50:	63.0 dB	L90:	62.8 dB
Filter Model:	OB300		Filter Frequency:		1.00 KHz		

Group 1 Test 15

Test Started:	10/20/2008 8:59:47 AM
Test Ended:	10/20/2008 9:00:04 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.2 dB, 10/20/2008 8:59:59AM						
Max Level:	62.0 dB, 10/20/2008 9:00:02AM						
Min Level:	60.9 dB, 10/20/2008 8:59:48AM						
Overload:	0.00%						
LEQ:	61.4 dB	SEL(3):	73.6 dB	TWA:	29.2 dB	TAKM5:	61.2 dB
LDN:	61.4 dB	CNEL:	61.4 dB	Pa2Sec:	0.0		
L5:	61.8 dB	L10:	61.8 dB	L50:	61.3 dB	L90:	61.1 dB
Filter Model:	OB300		Filter Frequency:		2.00 KHz		

Group 1 Test 16

Test Started:	10/20/2008 9:00:06 AM
Test Ended:	10/20/2008 9:00:23 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.0 dB, 10/20/2008 9:00:10AM						
Max Level:	57.1 dB, 10/20/2008 9:00:07AM						
Min Level:	55.7 dB, 10/20/2008 9:00:15AM						
Overload:	0.00%						
LEQ:	56.3 dB	SEL(3):	68.5 dB	TWA:	24.1 dB	TAKM5:	56.2 dB
LDN:	56.3 dB	CNEL:	56.3 dB	Pa2Sec:	0.0		
L5:	56.9 dB	L10:	56.7 dB	L50:	56.3 dB	L90:	55.9 dB
Filter Model:	OB300	Filter Frequency:	4.00 KHz				

Group 1 Test 17

Test Started:	10/20/2008 9:00:26 AM
Test Ended:	10/20/2008 9:00:43 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting: A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.4 dB, 10/20/2008 9:00:28AM						
Max Level:	49.6 dB, 10/20/2008 9:00:27AM						
Min Level:	46.3 dB, 10/20/2008 9:00:37AM						
Overload:	0.00%						
LEQ:	46.9 dB	SEL(3):	59.2 dB	TWA:	14.7 dB	TAKM5:	47.5 dB
LDN:	46.9 dB	CNEL:	46.9 dB	Pa2Sec:	0.0		
L5:	48.5 dB	L10:	47.6 dB	L50:	46.7 dB	L90:	46.5 dB
Filter Model:	OB300	Filter Frequency:	8.00 KHz				

SLM 8789.sdat

2900 Integrating/Logging Sound Level Meter

FW Version:	02.4	Serial Number:	
Name:	Waste Disposal Truck		
Project:	1219-001		
Comments:	LS		

Group 1 Test 19

Test Started:	10/20/2008 9:01:26 AM
Test Ended:	10/20/2008 9:01:46 AM
Run Time:	00:00:19

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	89.6 dB, 10/20/2008 9:01:28AM						
Max Level:	52.6 dB, 10/20/2008 9:01:27AM						
Min Level:	48.7 dB, 10/20/2008 9:01:27AM						
Overload:	0.00%						
LEQ:	51.8 dB	SEL(3):	64.8 dB	TWA:	20.4 dB	TAKM5:	51.2 dB
LDN:	51.8 dB	CNEL:	51.8 dB	Pa2Sec:	0.0		
L5:	52.2 dB	L10:	52.2 dB	L50:	52.0 dB	L90:	51.6 dB
Filter Model:	OB300	Filter Frequency:		63.0 Hz			

Group 1 Test 20

Test Started:	10/20/2008 9:01:48 AM
Test Ended:	10/20/2008 9:02:05 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.9 dB, 10/20/2008 9:01:55AM						
Max Level:	50.1 dB, 10/20/2008 9:01:52AM						
Min Level:	48.9 dB, 10/20/2008 9:01:49AM						
Overload:	0.00%						
LEQ:	49.5 dB	SEL(3):	61.7 dB	TWA:	17.3 dB	TAKM5:	49.5 dB
LDN:	49.5 dB	CNEL:	49.5 dB	Pa2Sec:	0.0		
L5:	49.9 dB	L10:	49.8 dB	L50:	49.5 dB	L90:	49.2 dB
Filter Model:	OB300	Filter Frequency:		125.0 Hz			

Group 1 Test 21

Test Started:	10/20/2008 9:02:07 AM
Test Ended:	10/20/2008 9:02:24 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	92.3 dB, 10/20/2008 9:02:22AM						
Max Level:	54.0 dB, 10/20/2008 9:02:22AM						
Min Level:	51.2 dB, 10/20/2008 9:02:08AM						
Overload:	0.00%						
LEQ:	52.4 dB	SEL(3):	64.6 dB	TWA:	20.2 dB	TAKM5:	52.5 dB
LDN:	52.4 dB	CNEL:	52.4 dB	Pa2Sec:	0.0		
L5:	53.8 dB	L10:	53.7 dB	L50:	52.2 dB	L90:	51.9 dB
Filter Model:	OB300		Filter Frequency:		250.0 Hz		

Group 1 Test 22

Test Started:	10/20/2008 9:02:27 AM
Test Ended:	10/20/2008 9:02:44 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.6 dB, 10/20/2008 9:02:28AM						
Max Level:	62.1 dB, 10/20/2008 9:02:36AM						
Min Level:	60.0 dB, 10/20/2008 9:02:28AM						
Overload:	0.00%						
LEQ:	61.5 dB	SEL(3):	73.7 dB	TWA:	29.3 dB	TAKM5:	61.4 dB
LDN:	61.5 dB	CNEL:	61.5 dB	Pa2Sec:	0.0		
L5:	61.9 dB	L10:	61.9 dB	L50:	61.6 dB	L90:	61.1 dB
Filter Model:	OB300		Filter Frequency:		500.0 Hz		

Group 1 Test 23

Test Started:	10/20/2008 9:02:46 AM
Test Ended:	10/20/2008 9:03:03 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.2 dB, 10/20/2008 9:02:48AM						
Max Level:	60.2 dB, 10/20/2008 9:02:51AM						
Min Level:	59.0 dB, 10/20/2008 9:02:47AM						
Overload:	0.00%						
LEQ:	59.6 dB	SEL(3):	71.9 dB	TWA:	27.4 dB	TAKM5:	59.5 dB
LDN:	59.6 dB	CNEL:	59.6 dB	Pa2Sec:	0.0		
L5:	60.1 dB	L10:	60.0 dB	L50:	59.7 dB	L90:	59.3 dB
Filter Model:	OB300		Filter Frequency:		1.00 KHz		

Group 1 Test 24

Test Started:	10/20/2008 9:03:05 AM
Test Ended:	10/20/2008 9:03:22 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	92.2 dB, 10/20/2008 9:03:18AM						
Max Level:	61.5 dB, 10/20/2008 9:03:13AM						
Min Level:	58.6 dB, 10/20/2008 9:03:06AM						
Overload:	0.00%						
LEQ:	60.0 dB	SEL(3):	72.2 dB	TWA:	27.8 dB	TAKM5:	60.3 dB
LDN:	60.0 dB	CNEL:	60.0 dB	Pa2Sec:	0.0		
L5:	61.3 dB	L10:	61.1 dB	L50:	59.7 dB	L90:	59.3 dB
Filter Model:	OB300		Filter Frequency:		2.00 KHz		

Group 1 Test 25

Test Started:	10/20/2008 9:03:25 AM
Test Ended:	10/20/2008 9:03:42 AM
Run Time:	00:00:16

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.8 dB, 10/20/2008 9:03:39AM						
Max Level:	55.1 dB, 10/20/2008 9:03:26AM						
Min Level:	54.1 dB, 10/20/2008 9:03:36AM						
Overload:	0.00%						
LEQ:	54.4 dB	SEL(3):	66.6 dB	TWA:	22.2 dB	TAKM5:	54.3 dB
LDN:	54.4 dB	CNEL:	54.4 dB	Pa2Sec:	0.0		
L5:	54.8 dB	L10:	54.8 dB	L50:	54.5 dB	L90:	54.2 dB
Filter Model:	OB300	Filter Frequency:		4.00 KHz			

Group 1 Test 26

Test Started:	10/20/2008 9:03:44 AM
Test Ended:	10/20/2008 9:03:55 AM
Run Time:	00:00:11

Measuring Parameters

Range:	50 - 110 dB	Weighting:	A	Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	87.2 dB, 10/20/2008 9:03:48AM						
Max Level:	46.8 dB, 10/20/2008 9:03:45AM						
Min Level:	43.0 dB, 10/20/2008 9:03:52AM						
Overload:	0.00%						
LEQ:	43.8 dB	SEL(3):	54.3 dB	TWA:	9.8 dB	TAKM5:	45.0 dB
LDN:	43.8 dB	CNEL:	43.8 dB	Pa2Sec:	0.0		
L5:	36.0 dB	L10:	35.0 dB	L50:	33.4 dB	L90:	33.2 dB
Filter Model:	OB300	Filter Frequency:		8.00 KHz			

SLM 8789.sdat

2900 Integrating/Logging Sound Level Meter

FW Version:	02.4	Serial Number:	
Name:	Waste Disposal Truck		
Project:	1219-001		
Comments:	RS		

Group 1 Test 1

Test Started:	10/20/2008 8:54:45 AM
Test Ended:	10/20/2008 8:55:06 AM
Run Time:	00:00:21

Measuring Parameters

Range:	60 - 120 dB	Weighting A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.4 dB, 10/20/2008 8:54:48AM						
Max Level:	51.6 dB, 10/20/2008 8:54:45AM						
Min Level:	51.6 dB, 10/20/2008 8:54:46AM						
Overload:	0.00%						
LEQ:	51.6 dB	SEL(3):	64.8 dB	TWA:	20.4 dB	TAKM5:	51.4 dB
LDN:	51.6 dB	CNEL:	51.6 dB	Pa2Sec:	0.0		
L5:	51.6 dB	L10:	51.6 dB	L50:	51.6 dB	L90:	51.6 dB
Filter Model:	OB300	Filter Frequency:	63.0 Hz				

Group 1 Test 2

Test Started:	10/20/2008 8:55:09 AM
Test Ended:	10/20/2008 8:55:25 AM
Run Time:	00:00:16

Measuring Parameters

Range:	60 - 120 dB	Weighting A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	93.8 dB, 10/20/2008 8:55:18AM						
Max Level:	56.5 dB, 10/20/2008 8:55:17AM						
Min Level:	51.6 dB, 10/20/2008 8:55:10AM						
Overload:	0.00%						
LEQ:	52.9 dB	SEL(3):	65.2 dB	TWA:	20.7 dB	TAKM5:	54.4 dB
LDN:	52.9 dB	CNEL:	52.9 dB	Pa2Sec:	0.0		
L5:	54.9 dB	L10:	54.1 dB	L50:	52.5 dB	L90:	52.0 dB
Filter Model:	OB300	Filter Frequency:	125.0 Hz				

Group 1 Test 3

Test Started:	10/20/2008 8:55:28 AM
Test Ended:	10/20/2008 8:55:45 AM
Run Time:	00:00:16

Measuring Parameters

Range:	60 - 120 dB	Weighting A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	90.5 dB, 10/20/2008 8:55:43AM						
Max Level:	58.0 dB, 10/20/2008 8:55:42AM						
Min Level:	54.7 dB, 10/20/2008 8:55:33AM						
Overload:	0.00%						
LEQ:	56.0 dB	SEL(3):	68.3 dB	TWA:	23.8 dB	TAKM5:	56.5 dB
LDN:	56.0 dB	CNEL:	56.0 dB	Pa2Sec:	0.0		
L5:	57.5 dB	L10:	57.0 dB	L50:	56.1 dB	L90:	55.1 dB
Filter Model:	OB300		Filter Frequency:		250.0 Hz		

Group 1 Test 4

Test Started:	10/20/2008 8:55:47 AM
Test Ended:	10/20/2008 8:56:04 AM
Run Time:	00:00:16

Measuring Parameters

Range:	60 - 120 dB	Weighting A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	90.9 dB, 10/20/2008 8:56:00AM						
Max Level:	64.6 dB, 10/20/2008 8:56:03AM						
Min Level:	60.1 dB, 10/20/2008 8:55:48AM						
Overload:	0.00%						
LEQ:	61.8 dB	SEL(3):	74.0 dB	TWA:	29.6 dB	TAKM5:	62.1 dB
LDN:	61.8 dB	CNEL:	61.8 dB	Pa2Sec:	0.0		
L5:	63.9 dB	L10:	63.6 dB	L50:	61.3 dB	L90:	60.7 dB
Filter Model:	OB300		Filter Frequency:		500.0 Hz		

Group 1 Test 5

Test Started:	10/20/2008 8:56:06 AM
Test Ended:	10/20/2008 8:56:23 AM
Run Time:	00:00:16

Measuring Parameters

Range:	60 - 120 dB	Weighting A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	88.0 dB, 10/20/2008 8:56:07AM						
Max Level:	60.9 dB, 10/20/2008 8:56:07AM						
Min Level:	58.9 dB, 10/20/2008 8:56:08AM						
Overload:	0.00%						
LEQ:	59.9 dB	SEL(3):	72.1 dB	TWA:	27.6 dB	TAKM5:	60.0 dB
LDN:	59.9 dB	CNEL:	59.9 dB	Pa2Sec:	0.0		
L5:	60.3 dB	L10:	60.1 dB	L50:	59.9 dB	L90:	59.4 dB
Filter Model:	OB300		Filter Frequency:		1.00 KHz		

Group 1 Test 6

Test Started:	10/20/2008 8:56:25 AM
Test Ended:	10/20/2008 8:56:42 AM
Run Time:	00:00:16

Measuring Parameters

Range:	60 - 120 dB	Weighting A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	86.6 dB, 10/20/2008 8:56:29AM						
Max Level:	58.4 dB, 10/20/2008 8:56:34AM						
Min Level:	57.4 dB, 10/20/2008 8:56:26AM						
Overload:	0.00%						
LEQ:	57.8 dB	SEL(3):	70.0 dB	TWA:	25.6 dB	TAKM5:	57.7 dB
LDN:	57.8 dB	CNEL:	57.8 dB	Pa2Sec:	0.0		
L5:	58.2 dB	L10:	58.1 dB	L50:	57.9 dB	L90:	57.6 dB
Filter Model:	OB300		Filter Frequency:		2.00 KHz		

Group 1 Test 7

Test Started:	10/20/2008 8:56:45 AM
Test Ended:	10/20/2008 8:57:02 AM
Run Time:	00:00:16

Measuring Parameters

Range:	60 - 120 dB	Weighting A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	93.3 dB, 10/20/2008 8:57:00AM						
Max Level:	69.6 dB, 10/20/2008 8:56:59AM						
Min Level:	52.9 dB, 10/20/2008 8:56:50AM						
Overload:	0.00%						
LEQ:	59.5 dB	SEL(3):	71.7 dB	TWA:	27.3 dB	TAKM5:	64.5 dB
LDN:	59.5 dB	CNEL:	59.5 dB	Pa2Sec:	0.0		
L5:	67.6 dB	L10:	64.6 dB	L50:	53.3 dB	L90:	53.1 dB
Filter Model:	OB300		Filter Frequency:		4.00 KHz		

Group 1 Test 8

Test Started:	10/20/2008 8:57:04 AM
Test Ended:	10/20/2008 8:57:21 AM
Run Time:	00:00:16

Measuring Parameters

Range:	60 - 120 dB	Weighting A		Time Constant:	Slow
Threshold:	Off	Exchange Rate:	3 dB	Peak Weighting:	C

Summary

Peak Level:	85.8 dB, 10/20/2008 8:57:09AM						
Max Level:	52.2 dB, 10/20/2008 8:57:05AM						
Min Level:	51.6 dB, 10/20/2008 8:57:05AM						
Overload:	0.00%						
LEQ:	51.6 dB	SEL(3):	63.8 dB	TWA:	19.4 dB	TAKM5:	51.3 dB
LDN:	51.6 dB	CNEL:	51.6 dB	Pa2Sec:	0.0		
L5:	51.6 dB	L10:	51.6 dB	L50:	51.6 dB	L90:	51.6 dB
Filter Model:	OB300		Filter Frequency:		8.00 KHz		

Appendix D
Sound Level Calculations

Sound Level Meter Raw Data

Unit Operation	Position	Leq (dBA) Measured at Bandwidths[1] 63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	Total Leq[2] (dBA)	Average Leq[3] (dBA)
Loader Idle											
	Front	41.6	46	49.1	55.3	54.1	53.1	46.1	41.6	**60**	**66**
	Back	41.6	45.8	52.5	57.3	62.4	64.7	56.6	46.4	**68**	
	Right	51.6	51.6	51.6	56.3	59.5	60.8	51.4	42.3	**65**	
	Left	41.6	48.1	53.8	59	62.8	63.6	54.8	45.5	**68**	
Loader Full											
	Front	52.6	55.5	56	55.8	57.5	61	51.7	42.8	**65**	**72**
	Back	54.5	59.4	60.4	64.3	67.9	71	64.3	52.7	**74**	
	Right	57.4	58.7	61.6	64.6	66.8	66.6	60.6	51.9	**72**	
	Left	55.5	56.5	59.5	63.6	66.5	66.9	61.4	52	**72**	
Truck Full											
	Front	49.9	49.1	56.4	61.4	62.9	61.4	56.3	46.9	**68**	**66**
	Back	46.9	61.1	48.6	53.3	54.2	46.3	46.1	32.7	**63**	
	Right	51.6	52.9	56	61.8	59.9	57.8	59.5	51.6	**67**	
	Left	51.8	49.5	52.4	61.5	59.6	60	54.4	43.8	**66**	
Background											
	At Proposed Ruby Road Waste Disposal Site	31.6	31.6	32.6	31.7	38.5	39.9	37.8	34.7	**45**	

[1] measurements taken with Quest 2900 Intergrating/Logging Sound Level Meter with frequency filter

[2] $$L_{eq_{total}} = 10 \cdot \log(10^{\frac{Leq1}{10}} + 10^{\frac{Leq2}{10}} + \cdots + 10^{\frac{Leqn}{10}})$$

[3] $$L_{eq_{average}} = 10 \cdot log\left[\frac{1}{N} \times (10^{\frac{Leq1}{10}} + 10^{\frac{Leq2}{10}} + \cdots + 10^{\frac{Leqn}{10}})\right]$$

Projected Maximum Sound Levels Expected at the Ruby Road Waste Disposal Site

Equipment	Measured Distance from Equipment (r_1)[1] (m)	Individual Measured Leq[2] (dBA)	Distance to Residence (r_2)[3] (m)	Projected Leq at Residence[4] (dBA)	Projected Total Leq at Residence[5] (dBA)	Allowable Sound Level Limits[6] (dBA)	Expected Percentage of the Limit[7] (dBA)
RI							
Loader	15.0	71.8	620.0	39.5	41	55.0	**26.3%**
Truck	15.0	66.2	620.0	33.9			
R2							
Loader	15.0	71.8	640.0	39.2	40	55.0	**26.8%**
Truck	15.0	66.2	640.0	33.6			
R3							
Loader	15.0	71.8	590.0	39.9	41	55.0	**25.5%**
Truck	15.0	66.2	590.0	34.3			
R4							
Loader	15.0	71.8	810.0	37.2	38	55.0	**30.5%**
Truck	15.0	66.2	810.0	31.6			
R5							
Loader	15.0	71.8	715.0	38.3	39	55.0	**28.5%**
Truck	15.0	66.2	715.0	32.6			

[1] Distance from the equipment at which the measurements were taken from

[2] Leq measured using a sound level meter

[3] Distance from the location from which the noise generating equipement is operated to the nearby residents

[4] Leq projected from the measured value at distance r_1 to distance r_2 using: $L_{P2} = L_{P1} + 20\log\left(\frac{r_1}{r_2}\right)$

[5] Total Leq calculated using: $L_{eq_{total}} = 10 \cdot \log(10^{\frac{Leq1}{10}} + 10^{\frac{Leq2}{10}} + \cdots + 10^{\frac{Leqn}{10}})$

[6] From the Ministry of the Environment Landfill Standards Guideline, May 2008

[7] **bold** indicates the amount is below the corresponding limit and highlighted indicates a noise exceedance at that residence

Projected Idle Sound Levels Expected at the Ruby Road Waste Disposal Site

Equipment	Measured Distance from Equipment (r_1)[1] (m)	Individual Measured Leq[2] (dBA)	Distance to Residence (r_2)[3] (m)	Projected Leq at Residence[4] (dBA)	Projected Total Leq at Residence[5] (dBA)	Allowable Sound Level Limits[6] (dBA)	Expected Percentage of the Limit[7] (dBA)
RI							
Loader	15.0	65.9	620.0	33.6	36.8	55.0	**33.2%**
Truck	15.0	66.2	620.0	33.9			
R2							
Loader	15.0	65.9	640.0	33.3	36.5	55.0	**33.7%**
Truck	15.0	66.2	640.0	33.6			
R3							
Loader	15.0	65.9	590.0	34.0	37.2	55.0	**32.4%**
Truck	15.0	66.2	590.0	34.3			
R4							
Loader	15.0	65.9	810.0	31.3	34.4	55.0	**37.4%**
Truck	15.0	66.2	810.0	31.6			
R5							
Loader	15.0	65.9	715.0	32.4	35.5	55.0	**35.4%**
Truck	15.0	66.2	715.0	32.6			

[1] Distance from the equipment at which the measurements were taken from

[2] Leq measured using a sound level meter

[3] Distance from the location from which the noise generating equipement is operated to the nearby residents

[4] Leq projected from the measured value at distance r_1 to distance r_2 using: $L_{P2} = L_{P1} + 20\log\left(\frac{r_1}{r_2}\right)$

[5] Total Leq calculated using: $L_{eq_{total}} = 10 \cdot \log(10^{\frac{Leq1}{10}} + 10^{\frac{Leq2}{10}} + \cdots + 10^{\frac{Leqn}{10}})$

[6] From the Ministry of the Environment Landfill Standards Guideline, May 2008

[7] **bold** indicates the amount is below the corresponding limit and highlighted indicates a noise exceedance at that residence

Minimum separation distance to maintain the allowable sound level limit during day time hours due to the waste disposal truck and the loader unit running at full capacity

Type of Machine	Loader	
Position of the Machine	Back	
Source Ground factor (GF) =	1	
Receiver GF =	1	
Mid-region GF=	1	
hs =	3	m
hr =	4.5	m
d =	92	m
dref =	15	m

Filter Frequency (Hz)	Lp (dBA)
63	54.5
125	59.4
250	60.4
500	64.3
1000	67.9
2000	71
4000	64.3
8000	52.7

Frequency (Hz)	a'(h)	b'(h)	c'(h)	d'(h)	As	a'(h)	b'(h)	c'(h)	d'(h)	Ar	30(hs+hr)	q	Am	Agr	z	Kmet	Wavelength	Dz	Abar
63	3.062	5.167	1.688	1.501	-1.500	3.949	2.731	1.500	1.500	-1.500	225.000	-1.446	4.337	1.337	0	1	5.46	4.77	3.43
125	3.062	5.167	1.688	1.501	1.562	3.949	2.731	1.500	1.500	2.449	225.000	-1.446	0.000	4.010	0	1	2.752	4.77	0.76
250	3.062	5.167	1.688	1.501	3.667	3.949	2.731	1.500	1.500	1.231	225.000	-1.446	0.000	4.898	0	1	1.376	4.77	-0.13
500	3.062	5.167	1.688	1.501	0.188	3.949	2.731	1.500	1.500	0.000	225.000	-1.446	0.000	0.188	0	1	0.688	4.77	4.58
1000	3.062	5.167	1.688	1.501	0.001	3.949	2.731	1.500	1.500	0.000	225.000	-1.446	0.000	0.001	0	1	0.344	4.77	4.77
2000	3.062	5.167	1.688	1.501	0.000	3.949	2.731	1.500	1.500	0.000	225.000	-1.446	0.000	0.000	0	1	0.172	4.77	4.77
4000	3.062	5.167	1.688	1.501	0.000	3.949	2.731	1.500	1.500	0.000	225.000	-1.446	0.000	0.000	0	1	0.086	4.77	4.77
8000	3.062	5.167	1.688	1.501	0.000	3.949	2.731	1.500	1.500	0.000	225.000	-1.446	0.000	0.000	0	1	0.043	4.77	4.77

Frequency (Hz)	Lp1 (dB)	Lp2 (dB)	Lw	Dc	Adiv	Aatm	A	Af	Lft	10^Lft	L_{AT} (DW)
63	80.7	64.94607	115.222	0.000	50.276	0.0	55.06	26.2	33.966	2492.101	
125	75.5	59.74607	110.022	0.000	50.276	0.0	55.07	16.1	38.847	7668.768	
250	69	53.24607	103.522	0.000	50.276	0.1	55.15	8.6	39.774	9492.172	
500	67.5	51.74607	102.022	0.000	50.276	0.2	55.27	3.2	43.554	22667.6	
1000	67.9	52.14607	102.422	0.000	50.276	0.4	55.42	0	46.998	50091.68	**53**
2000	69.8	54.04607	104.322	0.000	50.276	0.8	55.81	-1.2	49.711	93567.63	
4000	63.3	47.54607	97.822	0.000	50.276	2.2	57.23	-1	41.594	14435.96	
8000	53.8	38.04607	88.322	0.000	50.276	7.6	62.66	1.1	24.557	285.5786	

Minimum separation distance to maintain the allowable sound level limit during day time hours due to the waste disposal truck and the loader unit running at full capacity

Type of Machine	Truck
Position of the Machine	Front

Source Ground factor (GF) =	1	
Receiver GF =	1	
Mid-region GF=	1	
hs =	3	m
hr =	4.5	m
d =	92	m
dref =	15	m

Filter Frequency (Hz)	Lp (dBA)
63	49.9
125	49.1
250	56.4
500	61.4
1000	62.9
2000	61.4
4000	56.3
8000	46.9

Frequency (Hz)	a'(h)	b'(h)	c'(h)	d'(h)	As	a'(h)	b'(h)	c'(h)	d'(h)	Ar	30(hs+hr)	q	Am	Agr	z	Kmet	Wavelength	Dz	Abar
63	3.062	5.167	1.688	1.501	-1.500	3.949	2.731	1.500	1.500	-1.500	225.000	-1.446	4.337	1.337	0	1	5.46	4.77	3.43
125	3.062	5.167	1.688	1.501	1.562	3.949	2.731	1.500	1.500	2.449	225.000	-1.446	0.000	4.010	0	1	2.752	4.77	0.76
250	3.062	5.167	1.688	1.501	3.667	3.949	2.731	1.500	1.500	1.231	225.000	-1.446	0.000	4.898	0	1	1.376	4.77	-0.13
500	3.062	5.167	1.688	1.501	0.188	3.949	2.731	1.500	1.500	0.000	225.000	-1.446	0.000	0.188	0	1	0.688	4.77	4.58
1000	3.062	5.167	1.688	1.501	0.001	3.949	2.731	1.500	1.500	0.000	225.000	-1.446	0.000	0.001	0	1	0.344	4.77	4.77
2000	3.062	5.167	1.688	1.501	0.000	3.949	2.731	1.500	1.500	0.000	225.000	-1.446	0.000	0.000	0	1	0.172	4.77	4.77
4000	3.062	5.167	1.688	1.501	0.000	3.949	2.731	1.500	1.500	0.000	225.000	-1.446	0.000	0.000	0	1	0.086	4.77	4.77
8000	3.062	5.167	1.688	1.501	0.000	3.949	2.731	1.500	1.500	0.000	225.000	-1.446	0.000	0.000	0	1	0.043	4.77	4.77

Frequency (Hz)	Lp1 (dB)	Lp2 (dB)	Lw	Dc	Adiv	Aatm	A	Af	Lft	10^Lft	L_{AT} (DW)
63	76.1	60.34607	110.622	0.000	50.276	0.0	55.06	26.2	29.366	864.1032	
125	65.2	49.44607	99.722	0.000	50.276	0.0	55.07	16.1	28.547	715.6911	
250	65	49.24607	99.522	0.000	50.276	0.1	55.15	8.6	35.774	3778.902	
500	64.6	48.84607	99.122	0.000	50.276	0.2	55.27	3.2	40.654	11625.34	**47**
1000	62.9	47.14607	97.422	0.000	50.276	0.4	55.42	0	41.998	15840.38	
2000	60.2	44.44607	94.722	0.000	50.276	0.8	55.81	-1.2	40.111	10259.49	
4000	55.3	39.54607	89.822	0.000	50.276	2.2	57.23	-1	33.594	2287.945	
8000	48	32.24607	82.522	0.000	50.276	7.6	62.66	1.1	18.757	75.11482	

Allowable Day Time Noise Level =	**55**	dBA
Total Calculated Noise Level at 92 m =	**54**	dBA

Minimum separation distance to maintain the allowable sound level limit during night time hours due to the waste disposal truck and the loader unit running at full capacity

Type of Machine	Loader	
Position of the Machine	Back	
Source Ground factor (GF) =	1	
Receiver GF =	1	
Mid-region GF=	1	
hs =	3	m
hr =	4.5	m
d =	255	m
dref =	15	m

Filter Frequency (Hz)	Lp (dBA)
63	54.5
125	59.4
250	60.4
500	64.3
1000	67.9
2000	71
4000	64.3
8000	52.7

Frequency (Hz)	a'(h)	b'(h)	c'(h)	d'(h)	As	a'(h)	b'(h)	c'(h)	d'(h)	Ar	30(hs+hr)	q	Am	Agr	z	Kmet	Wavelength	Dz	Abar
63	3.345	5.320	1.722	1.502	-1.500	4.394	2.884	1.500	1.500	-1.500	225.000	0.118	-0.353	-3.353	0	1	5.46	4.77	8.12
125	3.345	5.320	1.722	1.502	1.845	4.394	2.884	1.500	1.500	2.894	225.000	0.118	0.000	4.739	0	1	2.752	4.77	0.03
250	3.345	5.320	1.722	1.502	3.820	4.394	2.884	1.500	1.500	1.384	225.000	0.118	0.000	5.204	0	1	1.376	4.77	-0.43
500	3.345	5.320	1.722	1.502	0.222	4.394	2.884	1.500	1.500	0.000	225.000	0.118	0.000	0.222	0	1	0.688	4.77	4.55
1000	3.345	5.320	1.722	1.502	0.002	4.394	2.884	1.500	1.500	0.000	225.000	0.118	0.000	0.002	0	1	0.344	4.77	4.77
2000	3.345	5.320	1.722	1.502	0.000	4.394	2.884	1.500	1.500	0.000	225.000	0.118	0.000	0.000	0	1	0.172	4.77	4.77
4000	3.345	5.320	1.722	1.502	0.000	4.394	2.884	1.500	1.500	0.000	225.000	0.118	0.000	0.000	0	1	0.086	4.77	4.77
8000	3.345	5.320	1.722	1.502	0.000	4.394	2.884	1.500	1.500	0.000	225.000	0.118	0.000	0.000	0	1	0.043	4.77	4.77

Frequency (Hz)	Lp1 (dB)	Lp2 (dB)	Lw	Dc	Adiv	Aatm	A	Af	Lft	10^Lft	L_{AT} (DW)
63	80.7	56.09102	115.222	0.000	59.131	0.0	63.93	26.2	25.094	323.1699	
125	75.5	50.89102	110.022	0.000	59.131	0.1	63.98	16.1	29.943	987.0312	
250	69	44.39102	103.522	0.000	59.131	0.3	64.18	8.6	30.739	1185.58	
500	67.5	42.89102	102.022	0.000	59.131	0.6	64.51	3.2	34.308	2696.379	**43**
1000	67.9	43.29102	102.422	0.000	59.131	1.0	64.95	0	37.474	5590.246	
2000	69.8	45.19102	104.322	0.000	59.131	2.1	66.02	-1.2	39.503	8919.303	
4000	63.3	38.69102	97.822	0.000	59.131	6.0	69.95	-1	28.876	772.0242	
8000	53.8	29.19102	88.322	0.000	59.131	21.1	85.02	1.1	2.206	1.661808	

Minimum separation distance to maintain the allowable sound level limit during night time hours due to the waste disposal truck and the loader unit running at full capacity

Type of Machine	Truck
Position of the Machine	Front

Source Ground factor (GF) =	1	
Receiver GF =	1	
Mid-region GF=	1	
hs =	3	m
hr =	4.5	m
d =	255	m
dref =	15	m

Filter Frequency (Hz)	Lp (dBA)
63	49.9
125	49.1
250	56.4
500	61.4
1000	62.9
2000	61.4
4000	56.3
8000	46.9

Frequency (Hz)	a'(h)	b'(h)	c'(h)	d'(h)	As	a'(h)	b'(h)	c'(h)	d'(h)	Ar	30(hs+hr)	q	Am	Agr	z	Kmet	Wavelength	Dz	Abar
63	3.345	5.320	1.722	1.502	-1.500	4.394	2.884	1.500	1.500	-1.500	225.000	0.118	-0.353	-3.353	0	1	5.46	4.77	8.12
125	3.345	5.320	1.722	1.502	1.845	4.394	2.884	1.500	1.500	2.894	225.000	0.118	0.000	4.739	0	1	2.752	4.77	0.03
250	3.345	5.320	1.722	1.502	3.820	4.394	2.884	1.500	1.500	1.384	225.000	0.118	0.000	5.204	0	1	1.376	4.77	-0.43
500	3.345	5.320	1.722	1.502	0.222	4.394	2.884	1.500	1.500	0.000	225.000	0.118	0.000	0.222	0	1	0.688	4.77	4.55
1000	3.345	5.320	1.722	1.502	0.002	4.394	2.884	1.500	1.500	0.000	225.000	0.118	0.000	0.002	0	1	0.344	4.77	4.77
2000	3.345	5.320	1.722	1.502	0.000	4.394	2.884	1.500	1.500	0.000	225.000	0.118	0.000	0.000	0	1	0.172	4.77	4.77
4000	3.345	5.320	1.722	1.502	0.000	4.394	2.884	1.500	1.500	0.000	225.000	0.118	0.000	0.000	0	1	0.086	4.77	4.77
8000	3.345	5.320	1.722	1.502	0.000	4.394	2.884	1.500	1.500	0.000	225.000	0.118	0.000	0.000	0	1	0.043	4.77	4.77

Frequency (Hz)	Lp1 (dB)	Lp2 (dB)	Lw	Dc	Adiv	Aatm	A	Af	Lft	10^Lft	L_{AT} (DW)
63	76.1	51.49102	110.622	0.000	59.131	0.0	63.93	26.2	20.494	112.0549	
125	65.2	40.59102	99.722	0.000	59.131	0.1	63.98	16.1	19.643	92.11512	
250	65	40.39102	99.522	0.000	59.131	0.3	64.18	8.6	26.739	471.9879	
500	64.6	39.99102	99.122	0.000	59.131	0.6	64.51	3.2	31.408	1382.869	
1000	62.9	38.29102	97.422	0.000	59.131	1.0	64.95	0	32.474	1767.791	**37**
2000	60.2	35.59102	94.722	0.000	59.131	2.1	66.02	-1.2	29.903	977.9821	
4000	55.3	30.69102	89.822	0.000	59.131	6.0	69.95	-1	20.876	122.3576	
8000	48	23.39102	82.522	0.000	59.131	21.1	85.02	1.1	-3.594	0.4371	

Allowable Day Time Noise Level =	**45**	dBA
Total Calculated Noise Level at 255 m =	**44**	dBA