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Acoustical Assessment Report for the Proposed Whitesand First Nation Cogeneration and Pellet Mill Project located near Armstrong, Thunder Bay District, Ontario

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Submitted to:

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Statement of Liability

Akoustik Engineering Limited prepared this acoustical assessment report for Neegan Burnside Ltd. for the proposed Whitesand First Nation Cogeneration and Pellet Mill Project. The material in it reflects Peter D'Angela and Colin Novak's judgement in light of the information available to them and Akoustik Engineering Limited at the time of the study. Any use that a Third Party makes of this report (other than Neegan Burnside or Sagatay Cogeneration LP), or any reliance on decisions made based on it, is the responsibility of such Third Parties. Akoustik Engineering Limited accepts no responsibility for damages, if any, suffered by any Third Party resulting from decisions made or actions based on this report.

Introduction

This report is an acoustical assessment report for the proposed Whitesand First Nation Cogeneration and Pellet Mill Project. This assessment was performed in accordance to the procedures for noise and vibration outlined by the Ministry of the Environment and Climate Change (MOECC) Noise Pollution Control Guidelines (NPC) in support of applications for Renewable Energy Approval (REA) and Environmental Compliance Approval (ECA). Sagatay Cogeneration LP, with its General Partner Sagatay Cogeneration Ltd., and Whitsesand First Nation as agent, is proposing the construction of a green biomass fuelled electrical power and heat 3.6 MWe cogeneration plant and pellet mill. The facility is to be located within an industrial area off of Highway 527 near Armstrong, Thunder Bay District in Ontario. This acoustic assessment has been prepared to assess the potential sources of noise proposed to be located at the site for submission to the MOECC as part of the REA and ECA. There are no significant sources of vibration proposed for this site, and as such, none are considered. Using noise modelling procedures, the expected worst-case noise levels resulting from the daily operations of the proposed plant have been predicted to determine the noise impacts at the nearest representative sensitive receptors. Problem areas, which may prevent allowable operations of the proposed facility with respect to noise emissions, have been identified if applicable.

Facility Description

The proposed pellet and biomass plant is to be located on an access road from Highway 527 near Armstrong, Thunder Bay District, Ontario. The latitude and longitude of the facility is approximately 50°17’04.2” N and 89°02’47.0” W respectively. An aerial view of the proposed plant location is provided in Appendix A for reference. The proposed site is located in a mixed area containing industrial, commercial, and residential, and as such is classified as a Class 3 area, given that the region exhibit features of a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic. A land use map illustrating the significant points of interest for the area is provided in Appendix B. The Land Use Policy for this area is also provided in Appendix B.

The proposed facility site will include a green biomass fuelled electrical power and heat cogeneration plant, a solid wood fuel pellet plant and ancillary equipment. Waste heat is used from the cogeneration plant to operate the pellet mill biomass feedstock dryer as well as for low-pressure process steam and site building heat. The operating hours of the plant are proposed to include two 12-hour shifts, resulting in a 24-hour continuous operation. Drawings that detail the facility layout and operational plan, including the location of the proposed noise sources, are given in Appendix C. The information contained in Appendix C is used to approximate the locations of the identified noise sources used to represent the worst-case scenario. It is worth noting that some of the drawings contain partial information that is no longer relevant (e.g. debarking and chipping equipment have

been removed in the yard area) to the present design, however these drawings have been included as some the information in the drawing is used as part of the assessment. The most current layout drawings are labeled as "Updated" and are provided in Appendix C.

Ministry of the Environment and Climate Change Noise Criteria

In accordance with the MOECC Noise Pollution Control (NPC) Guideline, NPC-300, the following sound level limits for residential developments within a Class 3 area are as shown in Table's 1a and 1b below. The proposed facility is within an area which is classified as Class 3, given that the region exhibit features of a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic.

Table 1a: Ministry of the Environment Noise Criteria for a Class 3 Area – Stationary Sources

Location	Daytime L_{eq} [dBA]	Evening L_{eq} [dBA]	Nighttime L_{eq} [dBA]
Outdoor Points of Reception	45	40	--
Plane of Window	45	40	40

Table 1b: Ministry of the Environment Noise Criteria for a Class 3 Area – Stationary Sources – Emergency Equipment Operated for Testing/Maintenance

Location	Daytime L_{eq} [dBA]	Evening L_{eq} [dBA]	Night time L_{eq} [dBA]
Outdoor Points of Reception	50	45	--
Plane of Window	50	45	40

From Table's 1a and 1b, daytime refers to the period from 07:00 to 19:00, evening refers to the period from 19:00 to 23:00 and night time refers to the period from 23:00 to 07:00 hours.

Evaluation of Noise Sources

From the technical information provided, the proposed facility will have 77 significant noise sources. Four of these sources are equipment associated with emergency backup operations and are assessed separately as per the MOE NPC-300 guidelines. The emergency equipment includes a stand-by generator and the fire pump building with associated equipment noise sources. The remaining 73 sources have been categorized based on the proposed installation location. The locations are as follows: boiler/turbine plant, pellet plant, other site buildings (garage and electrical substation) and the open yard. These sources include, but are not limited to, the general building

noise, bag house vents, exhaust fans, material conveyor belts, material transfer equipment, mobile equipment (e.g. loaders, forklift), and major vehicle traffic associated with product delivery/shipment. All equipment is assumed to be operating on a 24-hour continuous basis, excluding the shipping/delivery traffic, which is limited to the daytime period from 07:00 to 19:00 hours. Based on this information, the evening and night time noise impacts are the same and as such, only the daytime and night time periods will be presented.

Excluding the shipping/receiving vehicle noise, the noise emission data is provided in the Noise Summary Table 2 below. All noise data and relevant information provided for the equipment, including manufacturer's specifications, is included in Appendix D for reference. No noise data was provided for the transformers that are located in the electrical substation. Instead, generic noise data for larger units was instead used for this assessment (a 10,000 kVA and 1,000 kVA in place of the main and secondary transformers respectively) as a worst-case representative. Both of the transformers exhibit tonal sound characterises and as such, a 5 dB penalty has been applied. All calculation tables, showing the conversion of sound pressure levels to sound power levels (if applicable) as well the correction of the noise emission data for distance (for sources located within a building), directivity, and other factors prior to inputting into the prediction model, are also included in Appendix D.

For the shipping/receiving vehicle noise, measured noise data used for a previous assessment having transport trucks travelling at 40 km/h was used and is provided in Appendix D. Based on the per day proposed vehicle traffic volume, a maximum of 33 transport trucks will enter/exit the site to transport material (11 delivering hogged biomass for the cogen plant pile, 12 delivering chipped biomass for the pellet plant pile, 9 for shipping wood pellets and 1 for the ash waste truck). All personal vehicle-related traffic noise has been omitted from the assessment. The vehicle flow was modeled as a moving noise source at worst-case conditions based on the hours of operation. The travel path of the vehicles is modeled in accordance with the proposed path given in the site layout drawing and also with the intention of representing the worst-case operating condition.

It should be noted that future plans are to construct an enclosure around sources 81, 82 and 83; however, since no details of the design for the enclosure were not provided at the time that this report was prepared, the assessment was carried without the inclusion of the enclosure which instead represents a worst-case impact.

Table 2: Noise Source Data Summary

Source ID	Source Description	Sound Pressure Level (dBA) at "X" distance (m)	Sound Power Level (dBA)	Sound Characteristics	Noise Control Measures
30	Stand-by Generator (500 kW)	88 at 7	--	S	U
31	Fire Pump Diesel Engine	97.2 at 1	--	S	U
31E	Fire Pump Diesel Engine - Exhaust	119.5 at 1	--	S	U

MFP	Main Fire Pump	85 at 1	--	S	U
29	Bag House	--	60	S	U
38	Dust Pick-ups and Screen Fines-Bag House Vent	--	85	S	U
39	Pellet Cooler-Cyclone Vent	--	85	S	U
40	Fine Hammer Mill-Bag House Vent	--	85	S	U
42	Building Noise	--	75	S	U
48	Garage HVAC	--	100	S	U
51	Re-sizer Equipment Enclosure	20	--	S	U
52	Garage Vehicle Exhaust System	--	100	S	U
53	Pellet Storage Silo Vent	--	65	S	U
57	Dry Chip Storage Silo Vent	--	65	S	U
58_1	Chip Dryer	--	83	S	U
58_2	Chip Dryer	--	83	S	U
58_3	Chip Dryer	--	83	S	U
58_4	Chip Dryer	--	83	S	U
58E_1	Chip Dryer - Exhaust	--	93	S	U
58E_2	Chip Dryer - Exhaust	--	93	S	U
58E_3	Chip Dryer - Exhaust	--	93	S	U
58E_4	Chip Dryer - Exhaust	--	93	S	U
59_1	Cooling Tower	--	85	S	U
59_2	Cooling Tower	--	85	S	U
60_1	Truck Dumper	--	95	C	U
60_2	Truck Dumper	--	95	C	U
70	Biomass Fuel Screen and Hog	105 at 1	--	S	U
71	Imported Biomass Transfer Conveyor	--	70	S	U
73	Raw Fuel Infeed	--	70	S	U
74	Chip Screen Overs	--	70	S	U
75	Fuel Transfer Conveyor 1	--	70	S	U
76	Fuel Transfer Conveyor to Stacker	--	70	S	U
77	Fuel Stacker	--	70	S	U
78	Fuel Re-claim	--	70	S	U
79	Fuel Re-claim Transfer	--	70	S	U
80	Fuel Transfer 2	--	70	S	U
81	Disk Screen	--	70	S	U
82	12 hr Enclosed Storage w/ Re-claim	--	70	S	U
83	Fuel Transfer Conveyor	--	70	S	U
84	Fuel Infeed Conveyor	--	70	S	U
85	Chip Transfer Conveyor	--	70	S	U
86	Chip Transfer Conveyor 2	--	70	S	U

87	Chip Transfer Conveyor 3	--	70	S	U
89	Chip Stacker-Aspen/Birch	--	70	S	U
91	Chip Re-claim	--	70	S	U
92	Reclaim Conveyor	--	70	S	U
93	Reclaim Conveyor 2	--	70	S	U
94	Reclaim Conveyor 3	--	70	S	U
95	Dried Chip Storage Feed Conveyors	--	70	S	U
96	Dried Chip Storage Discharge Conveyors	--	70	S	U
97	Bag House Fines Conveyors	--	70	S	U
98	Dried Pellet Storage Feed Conveyors	--	70	S	U
99	Dried Pellet Storage Discharge Conveyors	--	70	S	U
BFHSWT	Biomass Fuel Hog Swing Hammer Type	105 at 1	--	S	U
Boiler	Boiler	90 at 1	--	S	U
FGRF	Flue Gas Recirculation Fan	95 at 1	--	S	U
Forklift	ME - Forklift - Pellet Shipping Forklift	--	105	S	U
HM	Hammer Mill	110 at 1	--	S	U
IDF	Induced Draft Fan	110 at 1	--	S	U
Loader Bio	ME - Front End Loader - Biomass Receiving	--	105	S	U
Loader Chip	ME - Front End Loader - Chip Reclaim	--	105	S	U
Loader Fuel	ME - Front End Loader - Biomass Fuel Reclaim	--	105	S	U
MT	Main Transformer (1500 kVA)	--	73 (68 + 5 dB penalty)	T	U
OFAF	Over Fire Air Fan	101 at 1	--	S	U
PM	Pellet Mill	85 at 1	--	S	U
ST	Secondary Transformer (750 kVA)	--	63 (58 + 5 dB penalty)	T	U
TR1	Hogged Biomass Delivery - Transport Truck	--	96.37	S	U
TR2	Chipped Biomass Delivery - Transport Truck	--	96.37	S	U
TR3	Shipping Wood Pellets - Transport Truck	--	96.37	S	U
TR4	Ash Waste Truck - Transport Truck	--	96.37	S	U
Turbine	Turbine Generator	90 at 1	--	S	U
UFAF	Under Fire Air Fan	99 at 1	--	S	U
VENTBD	Wastewater System Vent – Bed Dosing	--	75	S	U

VENTCB	Wastewater System Vent – Cogeneration Building	--	75	S	U
VENTPB	Wastewater System Vent – Pellet Building	--	75	S	U
LB	Load Bank	--	68	S	U
LR	Line Reactor	--	68	S	U

Where:

N/N	No noise	C	Cyclic
N/A	Not available	Si	Silencer, acoustic louver, muffler
O	Located/installed outside the building	A	Acoustic lining, plenum
I	Located/installed inside building	Ba	Barrier, berm, screening
S	Steady	L	Lagging
Q	Quasi steady impulsive	E	Acoustic Enclosure
Im	Impulsive	Ot	Other
B	Buzzing	U	Uncontrolled
T	Tonal		

Evaluation of Points of Reception

The Ministry of the Environment and Climate Change defines a Point of Reception (POR) as an existing, or zoned for future use, residence, hotel, nursing or retirement home, hospital, campground or other sensitive building/area within 500 metres of the facility. For this project, no receptors within 500 m have been identified, with the closest receptor having a setback distance of over 1000 m from the facility. Thus, for the purposes of this project, the closest receptors are identified, regardless of the setback distance from the facility. It is also worth noting that the immediate area surrounding the proposed site location is a heavily forested area. An aerial photo has been included in Appendix A, which provides an illustration of the current land use surrounding the proposed facility, including the nearby PORs. For this facility, three representative sensitive receptors have been identified, two to the north and one to the south of the facility. These POR 1, POR 2, and POR 3 represent the nearest sensitive receptors that may potentially be impacted by the noise from the operations of the proposed facility.

POR 1 is the closest receptor to the facility and is identified as the Armstrong Public School, located approximately 1233 m north of the proposed facility. Based on the school's hours of operation, only the daytime period is applicable for this receptor. POR 2 is the McKenzie Inn/Cottages, located approximately 1795 m south of the proposed facility. POR 3 is a residential dwelling located approximately 1564 m north of the facility. POR 3 was selected for the acoustical assessment to analyze the worst-case noise impact at a sensitive receptor north of the proposed

facility during the nighttime period. The daytime period impact height is modelled at 1.5 meters to represent the outdoor living area (OLA) and 4.5 meters to represent the plane of a window; the night time period is modelled at 4.5 meters only to represent the plane of a bedroom window.

Table's 3a, 3b, and 3c are the Noise Impact Tables for Regular Operations (during the daytime and evening/night time period) and Emergency Operations (during the daytime period only). As per the MOE guideline, NPC-300, the assessment of all the emergency equipment noise impacts is carried out separately from all other sources of noise. The purpose of these tables is to present the predicted noise emission levels that the applicable noise sources, identified as significant in the Noise Source Summary Table (Table 2), have at the identified points of reception. The noise modeling software used for this study is the Brüel & Kjær Predictor Type 7810 software, which follows the procedure specified by ISO 9613. As such, the prediction model takes into account the sound level attenuation of the inputted sound power data with distance as well as any attenuation provided by shielding and absorption; including atmospheric attenuation. Appendix E illustrates the input data used for the Predictor models including scaled aerial maps identifying the significant sources. It should be noted that the negative calculated noise levels are simply less than the reference level representing the un-weighted noise level for the threshold of hearing.

Table 3a: Noise Impact Table – Regular Operations – Daytime Period (07:00-19:00)

Source ID	Source Description	POR 1		POR 2		POR 3	
		1.5 m Impact Height (dBA)	4.5 m Impact Height (dBA)	1.5 m Impact Height (dBA)	4.5 m Impact Height (dBA)	1.5 m Impact Height (dBA)	4.5 m Impact Height (dBA)
29	Bag House	-30.3	-29.8	-19.0	-15.5	-38.0	-37.0
38	Dust Pick-ups and Screen Fines-Bag House Vent	-2.4	0.5	-4.9	-2.6	0.1	3.6
39	Pellet Cooler-Cyclone Vent	7.5	10.9	-9.6	-7.0	5.2	8.7
40	Fine Hammer Mill-Bag House Vent	2.9	0.1	3.0	3.4	-2.2	0.9
42	Building Noise	-20.3	-17.9	-13.0	-9.6	-24.6	-22.5
48	Garage HVAC	25.2	28.6	6.0	8.9	23.0	26.4
51	Re-sizer Equipment Enclosure	-64.5	-61.3	-58.6	-55.2	-67.0	-63.8
52	Garage Vehicle Exhaust System	8.8	11.6	20.1	23.5	8.2	11.1
53	Pellet Storage Silo Vent	-23.5	-23.0	-23.5	-20.1	-22.3	-21.8
57	Dry Chip Storage Silo Vent	-19.1	-15.7	-23.7	-20.2	-21.3	-17.9
58	Chip Dryer	4.9	8.3	1.7	4.4	2.7	6.1
58	Chip Dryer	-3.4	-0.2	1.1	3.9	-1.6	1.7
58	Chip Dryer	0.0	3.3	-5.4	-4.6	-4.8	-1.6
58	Chip Dryer	-6.5	-3.4	-7.2	-6.4	-3.9	-0.6
58E	Chip Dryer - Exhaust	14.9	18.3	11.9	14.6	12.7	16.1

58E	Chip Dryer - Exhaust	6.9	10.2	11.2	14.0	12.6	16.1
58E	Chip Dryer - Exhaust	10.4	13.7	4.7	5.6	5.8	9.0
58E	Chip Dryer - Exhaust	4.5	7.6	2.8	3.7	7.3	10.4
59	Cooling Tower	7.8	9.0	6.1	9.5	2.8	3.8
59	Cooling Tower	7.1	7.7	6.1	9.5	2.2	2.6
60	Truck Dumper	10.3	13.8	7.2	10.6	8.5	11.9
60	Truck Dumper	10.0	13.5	7.7	11.1	8.1	11.5
70	Biomass Fuel Screen & Hog	12.1	15.2	25.0	28.4	9.6	12.7
71	Imported Biomass Transfer Conveyor	-0.9	2.6	-7.9	-4.6	-2.8	0.7
73	Raw Fuel Infeed	-15.6	-13.8	-18.2	-16.9	-16.8	-15.0
74	Chip Screen Overs	-6.4	-3.0	-24.1	-21.4	-8.3	-4.9
75	Fuel Transfer Conveyor 1	-2.8	0.6	-2.4	1.1	-9.1	-5.9
76	Fuel Transfer Conveyor to Stacker	1.9	5.3	-0.4	3.1	-0.1	3.4
77	Fuel Stacker	3.0	4.5	0.6	4.0	1.0	4.4
78	Fuel Re-claim	2.7	3.5	0.5	4.0	1.4	4.8
79	Fuel Re-claim Transfer	5.7	9.1	2.5	5.9	2.7	3.4
80	Fuel Transfer 2	-0.8	1.5	1.1	4.5	-0.3	3.1
81	Disk Screen	-15.2	-13.3	-10.4	-6.9	-12.4	-10.5
82	12 hr Enclosed Storage w/ Re-claim	-13.0	-11.1	-12.9	-9.4	-11.9	-8.5
83	Fuel Transfer Conveyor	-6.4	-4.3	-5.6	-2.2	-4.6	-1.2
84	Fue Infeed Conveyor	-11.1	-8.1	-1.6	1.9	-9.2	-6.1
85	Chip Transfer Conveyor	-1.7	1.8	-4.8	-3.5	-3.5	-0.1
86	Chip Transfer Conveyor 2	-0.4	3.1	-3.6	-2.1	-2.2	1.2
87	Chip Transfer Conv3	3.1	6.5	-0.5	2.9	1.2	4.6
89	Chip Stacker-Aspen/Birch	3.5	7.0	-0.2	3.3	1.6	5.0
91	Chip Re-claim-Aspen/Birch	3.1	6.5	-0.8	2.7	3.0	5.8
92	Reclaim Conveyor 1	0.1	3.5	-3.7	-0.3	0.1	2.8
93	Reclaim Conveyor 2	10.9	13.2	6.0	9.4	9.5	11.9
94	Reclaim Conveyor 3	3.7	7.0	0.6	3.7	4.2	6.4
95	Dried Chip Storage Feed Conveyors	-2.4	1.0	-2.2	-1.5	2.1	5.6
96	Dried Chip Storage Discharge Conveyors	-1.5	1.9	-24.1	-21.0	-3.8	-0.4
97	Baghouse Fines Conveyors	3.9	7.3	-20.0	-17.1	1.6	5.1
98	Dried Pellet Storage Feed Conveyors	-19.2	-16.1	-12.0	-8.6	-22.1	-18.9
99	Dried Pellet Storage Discharge Conveyors	-23.8	-20.7	-15.5	-14.5	-25.5	-22.5
BFHSWT	Biomass Fuel Hog Swing Hammer Type	15.1	18.2	25.0	28.4	12.1	15.2
Boiler	Boiler	-3.6	-0.6	-6.9	-3.4	-7.3	-7.3

FGRF	Flue Gas Recirculation Fan	18.9	22.3	15.4	18.8	16.7	20.1
Forklift	ME - Forklift - Pellet Shipping Forklift	13.3	16.7	10.6	14.0	11.5	14.9
HM	Hammer Mill	16.2	17.8	21.9	25.0	15.8	17.6
IDF	Induced Draft Fan	35.7	38.9	32.5	35.9	33.6	37.0
LoaderBio	ME - Front End Loader - Biomass Receiving	11.7	15.1	8.5	11.6	9.9	13.3
LoaderChip	ME - Front End Loader - Chip Reclaim	16.2	19.7	11.4	14.2	14.3	17.7
LoaderFuel	ME - Front End Loader - Biomass Fuel Reclaim	20.0	23.0	17.4	20.9	18.2	21.2
MT	Main Transformer (1500 kVA)	-4.8	-1.3	-7.3	-4.5	-7.0	-3.6
OFAF	Over Fire Air Fan	29.4	32.8	15.1	17.5	27.2	30.7
PM	Pellet Mill	-4.2	-1.7	-4.6	-3.2	-8.4	-6.5
ST	Secondary Transformer (750 kVA)	-14.8	-11.4	-17.3	-14.5	-17.1	-13.6
TR1	Hogged Biomass Delivery - Transport Truck	1.5	2.1	-3.5	-2.8	-0.8	-0.1
TR2	Chipped Biomass Delivery - Transport Truck	1.4	2.0	-3.2	-2.5	-0.9	-0.2
TR3	Shipping Wood Pellets - Transport Truck	-3.7	-3.1	-11.6	-11.0	-6.7	-6.1
TR4	Ash Waste Truck - Transport Truck	-12.3	-11.7	-19.6	-19.0	-14.5	-13.9
Turbine	Turbine Generator	-3.7	-3.1	-25.6	-24.3	-6.3	-6.0
UFAF	Under Fire Air Fan	24.8	28.2	21.4	24.9	22.6	25.8
VENTBD	Wastewater System Vent – Bed Dosing	-2.8	0.6	-9.4	-8.4	-5.0	-1.6
VENTCB	Wastewater System Vent – Cogeneration Building	-2.7	-2.2	-16.4	-16.2	-5.2	-5.0
VENTPB	Wastewater System Vent – Pellet Building	0.1	3.5	-21.1	-17.9	-2.2	1.3
LB	Load Bank	-9.8	-6.4	-13.6	-10.1	-12.1	-8.6
LR	Line Reactor	-9.8	-6.4	-13.5	-10.1	-12.1	-8.6
TOTAL		**37.5**	**40.7**	**34.7**	**38.1**	**35.3**	**38.7**

Table 3b: Noise Impact Table – Regular Operations – Evening/Night time Period (19:00-07:00)

Source ID	Source Description	POR 2	POR 2	POR 3	POR 3
		1.5 m Impact Height (dBA)	4.5 m Impact Height (dBA)	1.5 m Impact Height (dBA)	4.5 m Impact Height (dBA)
29	Bag House	-19.0	-15.5	-38.0	-37.0

38	Dust Pick-ups and Screen Fines-Bag House Vent	-4.9	-2.6	0.1	3.6
39	Pellet Cooler-Cyclone Vent	-9.6	-7.0	5.2	8.7
40	Fine Hammer Mill-Bag House Vent	3.0	3.4	-2.2	0.9
42	Building Noise	-13.0	-9.6	-24.6	-22.5
48	Garage HVAC	6.0	8.9	23.0	26.4
51	Re-sizer Equipment Enclosure	-58.6	-55.2	-67.0	-63.8
52	Garage Vehicle Exhaust System	20.1	23.5	8.2	11.1
53	Pellet Storage Silo Vent	-23.5	-20.1	-22.3	-21.8
57	Dry Chip Storage Silo Vent	-23.7	-20.2	-21.3	-17.9
58	Chip Dryer	1.7	4.4	2.7	6.1
58	Chip Dryer	1.1	3.9	-1.6	1.7
58	Chip Dryer	-5.4	-4.6	-4.8	-1.6
58	Chip Dryer	-7.2	-6.4	-3.9	-0.6
58E	Chip Dryer - Exhaust	11.9	14.6	12.7	16.1
58E	Chip Dryer - Exhaust	11.2	14.0	12.6	16.1
58E	Chip Dryer - Exhaust	4.7	5.6	5.8	9.0
58E	Chip Dryer - Exhaust	2.8	3.7	7.3	10.4
59	Cooling Tower	6.1	9.5	2.8	3.8
59	Cooling Tower	6.1	9.5	2.2	2.6
60	Truck Dumper	7.2	10.6	8.5	11.9
60	Truck Dumper	7.7	11.1	8.1	11.5
70	Biomass Fuel Screen & Hog	25.0	28.4	9.6	12.7
71	Imported Biomass Transfer Conveyor	-7.9	-4.6	-2.8	0.7
73	Raw Fuel Infeed	-18.2	-16.9	-16.8	-15.0
74	Chip Screen Overs	-24.1	-21.4	-8.3	-4.9
75	Fuel Transfer Conveyor 1	-2.4	1.1	-9.1	-5.9
76	Fuel Transfer Conveyor to Stacker	-0.4	3.1	-0.1	3.4
77	Fuel Stacker	0.6	4.0	1.0	4.4
78	Fuel Re-claim	0.5	4.0	1.4	4.8
79	Fuel Re-claim Transfer	2.5	5.9	2.7	3.4
80	Fuel Transfer 2	1.1	4.5	-0.3	3.1
81	Disk Screen	-10.4	-6.9	-12.4	-10.5
82	12 hr Enclosed Storage w/ Re-claim	-12.9	-9.4	-11.9	-8.5
83	Fuel Transfer Conveyor	-5.6	-2.2	-4.6	-1.2
84	Fue Infeed Conveyor	-1.6	1.9	-9.2	-6.1
85	Chip Transfer Conveyor	-4.8	-3.5	-3.5	-0.1
86	Chip Transfer Conveyor 2	-3.6	-2.1	-2.2	1.2
87	Chip Transfer Conv3	-0.5	2.9	1.2	4.6
89	Chip Stacker-Aspen/Birch	-0.2	3.3	1.6	5.0
91	Chip Re-claim-Aspen/Birch	-0.8	2.7	3.0	5.8

92	Reclaim Conveyor 1	-3.7	-0.3	0.1	2.8
93	Reclaim Conveyor 2	6.0	9.4	9.5	11.9
94	Reclaim Conveyor 3	0.6	3.7	4.2	6.4
95	Dried Chip Storage Feed Conveyors	-2.2	-1.5	2.1	5.6
96	Dried Chip Storage Discharge Conveyors	-24.1	-21.0	-3.8	-0.4
97	Baghouse Fines Conveyors	-20.0	-17.1	1.6	5.1
98	Dried Pellet Storage Feed Conveyors	-12.0	-8.6	-22.1	-18.9
99	Dried Pellet Storage Discharge Conveyors	-15.5	-14.5	-25.5	-22.5
BFHSWT	Biomass Fuel Hog Swing Hammer Type	25.0	28.4	12.1	15.2
Boiler	Boiler	-6.9	-3.4	-7.3	-7.3
FGRF	Flue Gas Recirculation Fan	15.4	18.8	16.7	20.1
Forklift	ME - Forklift - Pellet Shipping Forklift	10.6	12.8	11.5	13.7
HM	Hammer Mill	21.9	25.0	15.8	17.6
IDF	Induced Draft Fan	32.5	35.9	33.6	37.0
LoaderBio	ME - Front End Loader - Biomass Receiving	8.5	10.4	9.9	12.1
LoaderChip	ME - Front End Loader - Chip Reclaim	11.4	13.0	14.3	16.4
LoaderFuel	ME - Front End Loader - Biomass Fuel Reclaim	17.4	19.6	18.2	20.0
MT	Main Transformer (1500 kVA)	-7.3	-4.5	-7.0	-3.6
OFAF	Over Fire Air Fan	15.1	17.5	27.2	30.7
PM	Pellet Mill	-4.6	-3.2	-8.4	-6.5
ST	Secondary Transformer (750 kVA)	-17.3	-14.5	-17.1	-13.6
TR1	Hogged Biomass Delivery - Transport Truck	--	--	--	--
TR2	Chipped Biomass Delivery - Transport Truck	--	--	--	--
TR3	Shipping Wood Pellets - Transport Truck	--	--	--	--
TR4	Ash Waste Truck - Transport Truck	--	--	--	--
Turbine	Turbine Generator	-25.6	-24.3	-6.3	-6.0
UFAF	Under Fire Air Fan	21.4	24.9	22.6	25.8
VENTBD	Wastewater System Vent – Bed Dosing	-9.4	-8.4	-5.0	-1.6
VENTCB	Wastewater System Vent – Cogeneration Building	-16.4	-16.2	-5.2	-5.0
VENTPB	Wastewater System Vent – Pellet Building	-21.1	-17.9	-2.2	1.3
LB	Load Bank	-13.6	-10.1	-12.1	-8.6

LR	Line Reactor	-13.5	-10.1	-12.1	-8.6
TOTAL		**34.7**	**38.1**	**35.3**	**38.7**

Table 3c: Noise Impact Table – Emergency Equipment Testing Operations – Daytime Period (07:00-19:00)

Source ID	Source Description	POR 1		POR 2		POR 3	
		OLA - 1.5 m Impact Height (dBA)	4.5 m Impact Height (dBA)	OLA - 1.5 m Impact Height (dBA)	4.5 m Impact Height (dBA)	OLA - 1.5 m Impact Height (dBA)	4.5 m Impact Height (dBA)
30	Stand-by Generator (500 kW)	32.5	32.8	24.4	27.1	30.2	30.4
31	Fire Pump Diesel Engine	28.2	31.6	23.6	25.2	26.4	29.8
31E	Fire Pump Diesel Engine - Exhaust	41.4	44.8	40.2	43.6	39.5	43.0
MFP	Main Fire Pump	10.0	13.4	-2.5	0.1	8.1	11.6
TOTAL		**42.1**	**45.2**	**40.4**	**43.8**	**40.2**	**43.4**

For the identified noise sources, the source sound pressure or sound power data is corrected for distance, directional characteristics, and other absorption effects in order to predict the sound level at the points of reception. To accomplish this, the model uses the following general equation:

$$L_w = L_P + 20\log(r) + 11 \pm DI_\theta \pm ground\ \&\ atmospheric\ corrections$$

Through utilization of the Brüel & Kjær Predictor software, the impact on the identified PORs from the noise sources, in absence of any ambient noise contributors from nearby road traffic or stationary noise sources is calculated. Appendix F provides the output from the Predictor models, which includes the identifying labels for the three representative points of reception (PORs). Every effort was taken in the above analysis to present the worst-case scenario.

Acoustic Assessment

The Noise Study Summary Tables are given as Table's 4a and 4b. These tables summarize the predicted worst-case sound levels at the points of reception based on the modeling of the noise sources for the proposed facility. The noise guideline limits presented in Table's 4a and 4b are based on the MOE Noise Pollution Control Guideline, NPC-300. Select pages from the NPC-300 document have been included in Appendix G for reference.

Table 4a: Noise Study Summary – Regular Operations

POR ID	Predicted Daytime/ Evening Sound Level at POR, 1.5 m Height (dBA)	Predicted Daytime Sound Level at POR, 4.5 m Height (dBA)	Predicted Evening & Night time Sound Level at POR, 4.5 m Height (dBA)	Verified by Acoustic Audit (Yes/No)	Performance Limit (LAeq) Day	Performance Limit (LAeq) Evening for Outdoor & Plane of Window POR	Performance Limit (LAeq) Night time	Compliance with Performance Limits (Yes/No)
POR 1	38	41	--	No	45	40	40	Yes
POR 2	35	38	38	No	45	40	40	Yes
POR 3	36	39	39	No	45	40	40	Yes

Table 4b: Noise Study Summary – Emergency Equipment Testing Operations

POR ID	Predicted Daytime OLA Sound Level at POR, 1.5 m Height (dBA)	Predicted Daytime Sound Level at POR, 4.5 m Height (dBA)	Verified by Acoustic Audit (Yes/No)	Performance Limit (LAeq) Day	Compliance with Performance Limits (Yes/No)
POR 1	42	45	No	50	Yes
POR 2	40	44	No	50	Yes
POR 3	40	43	No	50	Yes

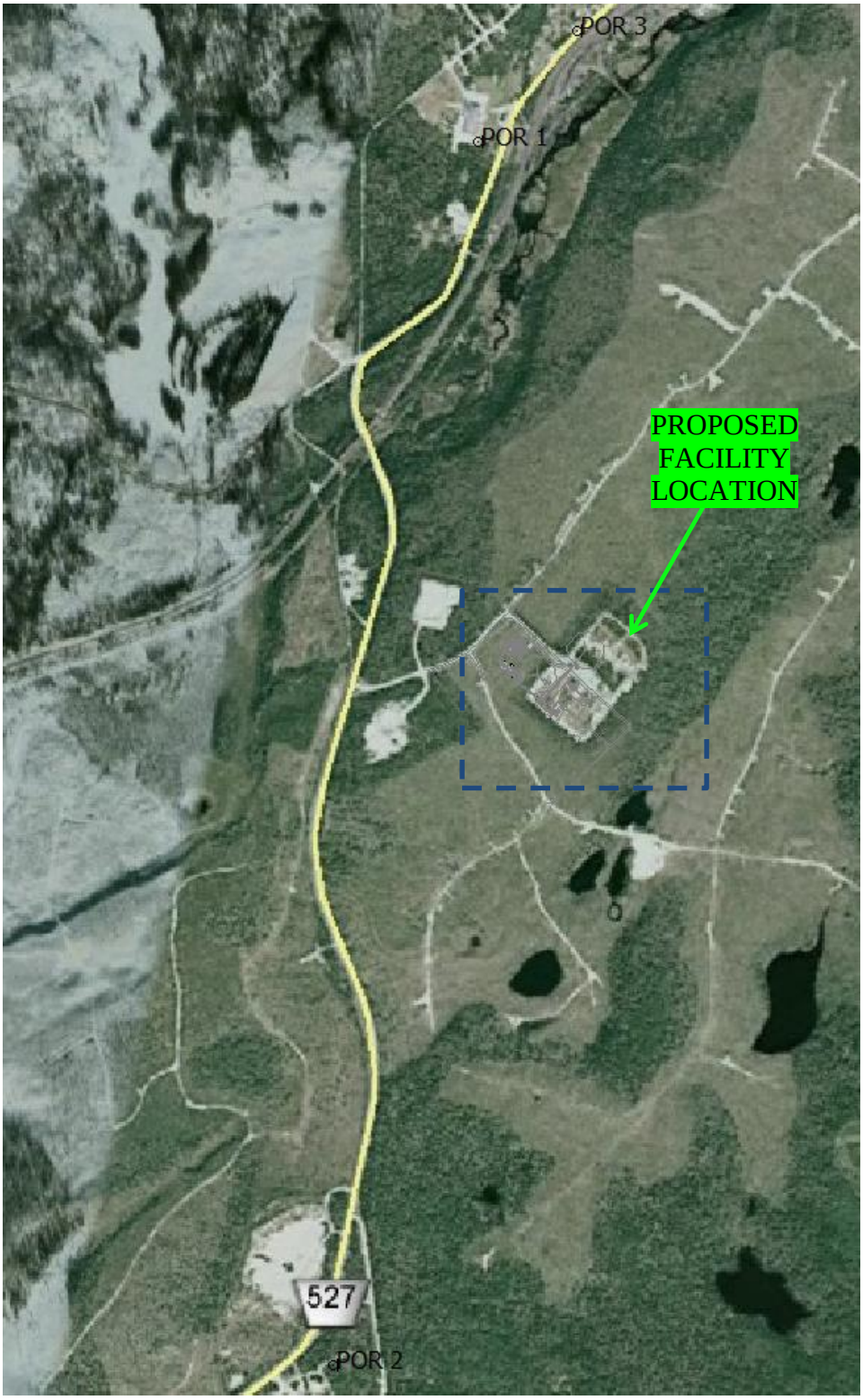
It should be noted that effort was taken to represent the worst-case operating conditions. Contour plots of the calculated model results are provided in Appendix F for reference.

Conclusions

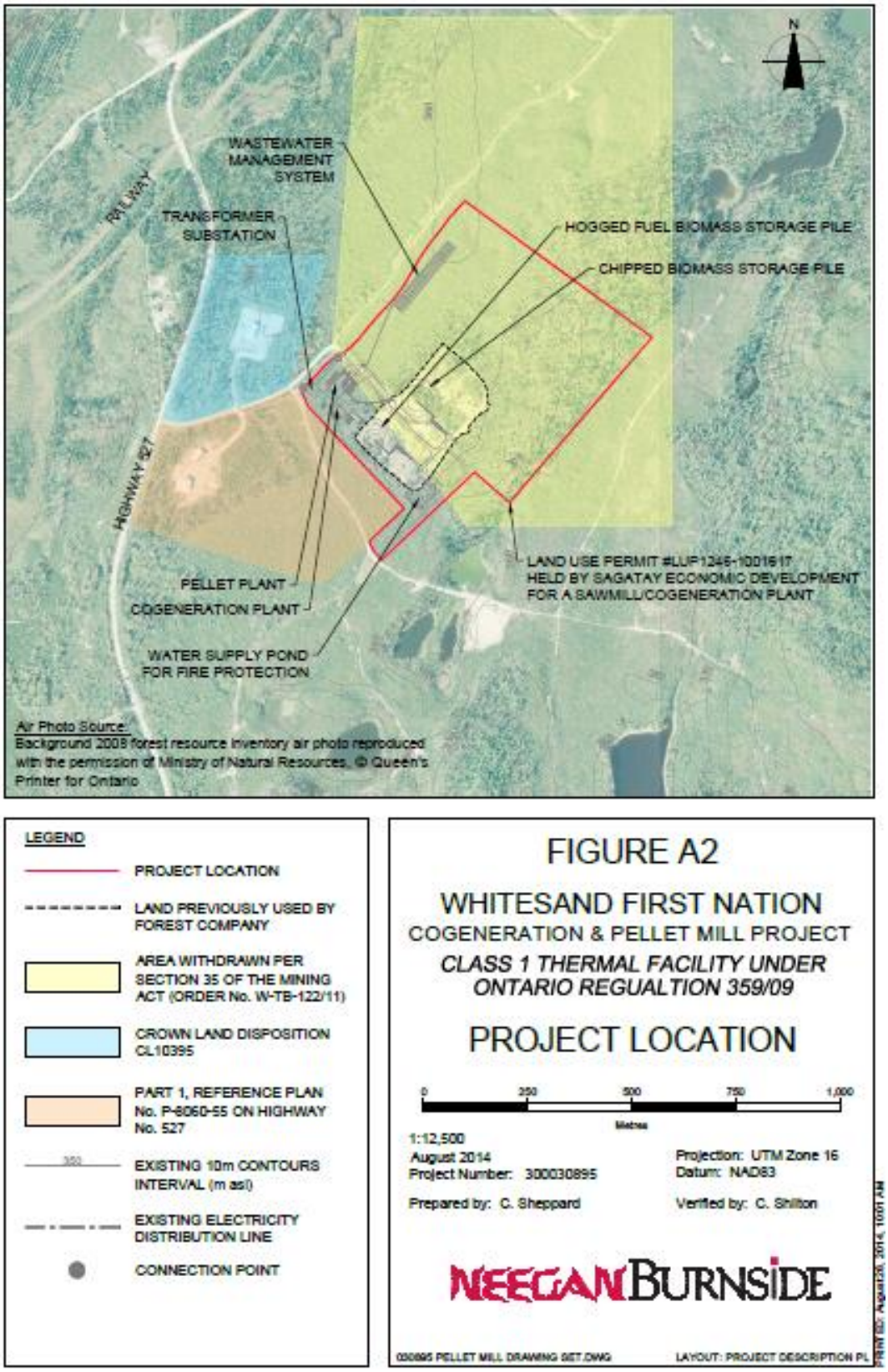
The predicted noise impact analysis at the nearest identified sensitive receptors has demonstrated that the expected worst-case noise emissions from the proposed Whitesand First Nation Cogeneration and Pellet Mill Project comply with all requirements of the applicable MOECC Noise Pollution Control documents for continuous 24-hour operation. As such, the operations of this facility do not require further mitigation procedures.

For akoustik engineering limited		
	Prepared by: **Peter D'Angela, M.A.Sc., EIT**	**Reviewed by:** **Colin Novak, Ph.D., PEng**

Appendix A: Proposed Site Location

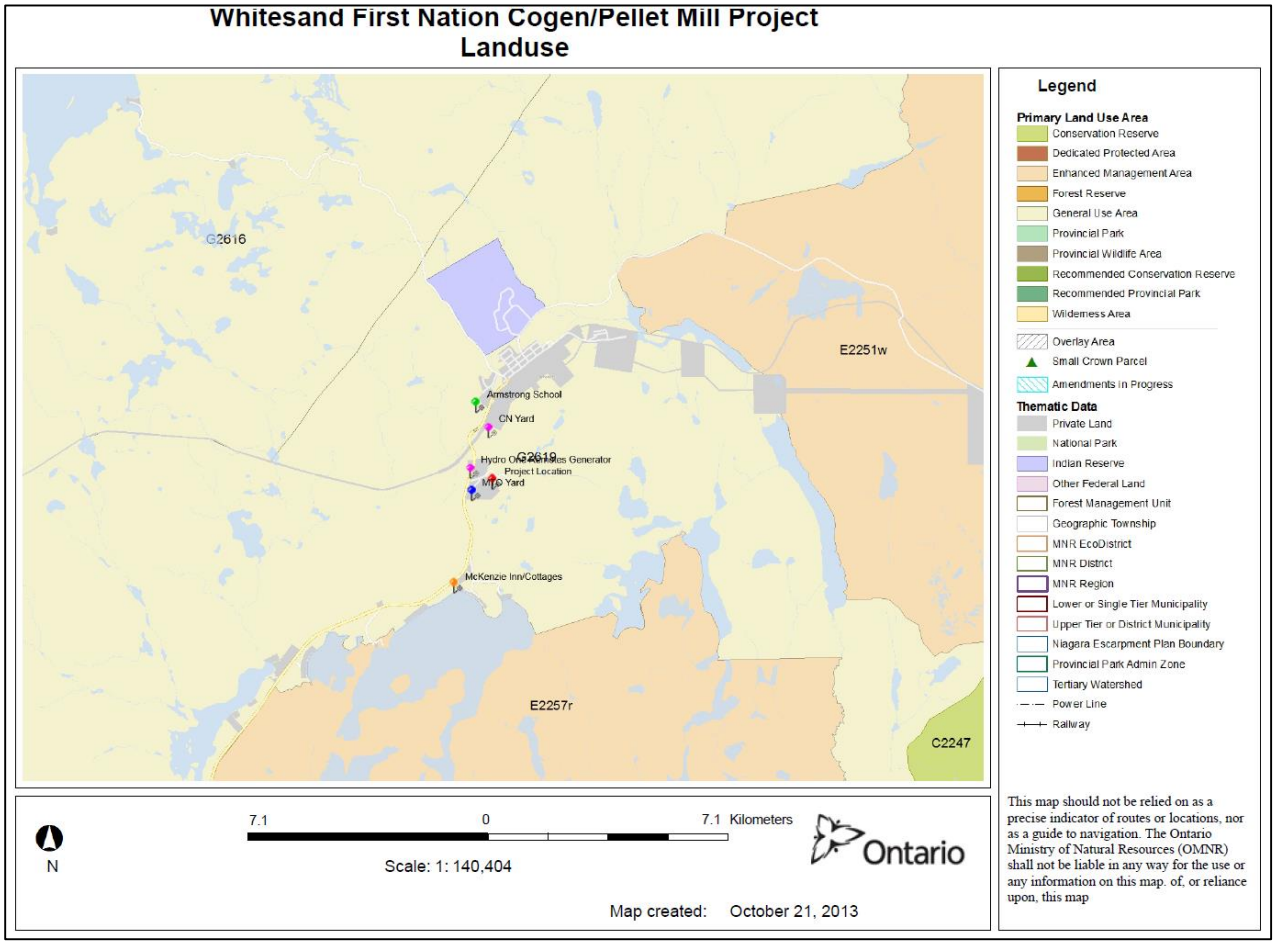


A1: Aerial View of Proposed Facility Location and Nearby Points of Reception Identified

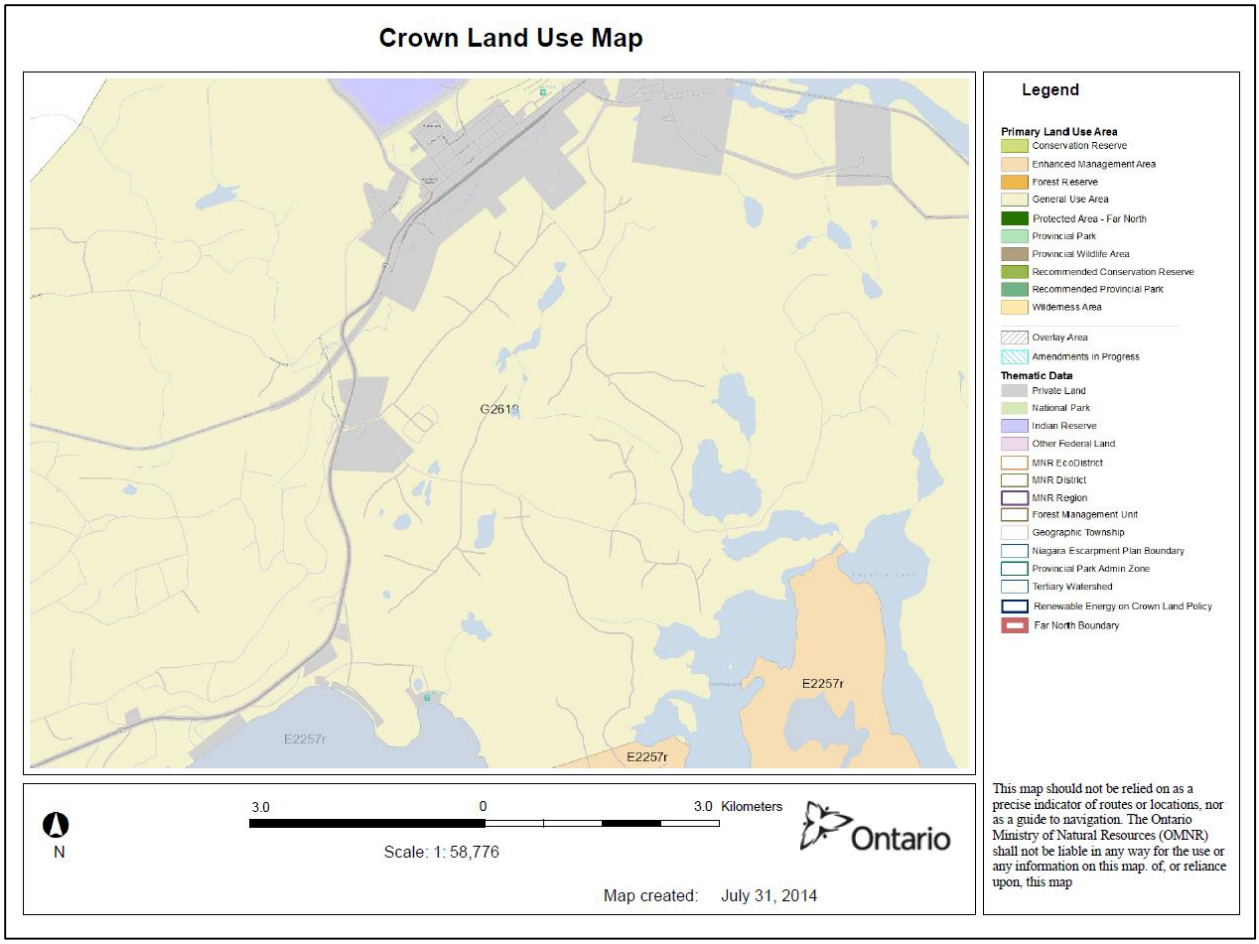


A2: Aerial View of Proposed Facility Location

Appendix B: Land Use Layout



B1: Land Use Map of Surrounding Area



B 2: Crown Land Use Map of Surrounding Area – Magnified View

Ontario

Ministry of Natural Resources

Crown Land Use Policy Atlas
Policy Report
G2619: Armstrong / Kagianagami

ID: G2619
Area Name: Armstrong / Kagianagami
Designation: General Use Area
District(s): Nipigon , **Thunder Bay**
Area (hectares): 772823
Date Policy Report Last Updated: November 29, 2006

DESCRIPTION:

This area extends from south of Wabakimi to Kagianagami Lake. Present activities include timber harvesting, mineral exploration, trapping, tourist outfitting and Crown land recreation. There are tourist lakes and lake trout lakes that will be recognized relative to resource extraction activities. The Gull Bay Indian Reserve is partly in this area. Several small unorganized communities are located along the CNR tracks. Armstrong is the largest. Most of the area does not have road access. Highway 527 from Thunder Bay meets the CNR line at Armstrong. Outstanding issues to be addressed in future management of this area are increased road access relative to existing tourist facilities and lake trout waters as well as the location of a reserve for the Whitesand Indian Band.

This area contains lake(s) designated for lake trout management. For a current list of designated lakes associated with this area, refer to the Lake Trout Lake Search Index accessible via the 'Source of Direction' portion of this policy report.

LAND USE INTENT:

The primary use will be continued extraction of resources (forestry, mining, trapping). Additional remote tourism development will be considered. The maintenance of the existing lake trout fisheries and the enhancement of associated tourism opportunities will also be a priority. Land use conflicts will be resolved recognizing the importance of resource extraction to the District targets. Road access will be managed to maintain commercial recreation and fish and wildlife values. Any development near the Armstrong airport must comply with MTC airport requirements. This will be monitored at the time of Crown land disposition or issuance of a work permit.

Management of this area is also governed by the general policies contained in Nipigon District Land Use Guidelines (1983).

MANAGEMENT DIRECTION:

In addition to provincial and regional policies, the following local policies will apply to the management of Natural lake trout lakes:

- lakes shall have a 120 metre area of concern
- when feasible permanent forest roads will be located a minimum of 1.6 kilometres
- temporary roads will be destroyed after intended uses are fulfilled

The following are designated as Tourism Lakes:Aino, Aldridge, Allard, Baldhead, Butland, Cerulean, D'Orsonnes, Gzowski, Jessiman, Junior, Kagianagami, Kathleen, Kenakskaniss, Lamaune, Magotte, Mahamo, Mokikit, North Lamaune, Ogoki Reservoir, Pawshowconk, Ratte, Rushbay,Sandison, Scamp, Survey, Tempest, Thickhead, Van Poele, Zig-Zag, Lehtinen, Snowshoe, Return. This list contains lakes, which have existing outpost or lodge development as well as lakes with potential for development. The number of outposts will be determined using lake capacity methodologies. When feasible permanent forest roads will be located a minimum of 1.6 kilometers from them or on other lakes indicated by the District Manager. Around these lakes temporary roads will be destroyed after intended uses are fulfilled.

B 3: Crown Land Use Policy – Page 1

COMMERCIAL ACTIVITIES		
Activity	**Permitted**	**Guidelines**
Aggregate Extraction	Yes	Operating guidelines for protection of tourism values and fish and wildlife habitat will be reflected in aggregate permits.
Bait Fishing	Yes	Additional licences will be considered on a case-by-case basis.
Commercial Fishing	Yes	Expansion will be considered only if the resource is available and it will not conflict with existing or proposed commercial, private or public recreational development.
Commercial Fur Harvesting	Yes	Efforts will be made to increase the harvest to 100% of existing quotas.
Commercial Hydro Development	Yes	
Commercial Power Generation Development	Yes	
Commercial Timber Harvest	Yes	Operating and annual plans will contain specific guidelines for the protection of tourism values and fish and wildlife habitat.
Commercial Tourism (Services and/or Facilities), Existing	Yes	Additional outpost camps will be considered on a case-by-case basis.
Commercial Tourism (Services and/or Facilities), New	Yes	Additional outpost camps will be considered on a case-by-case basis.
Mineral Exploration and Development	Yes	
Peat Extraction	Yes	
Wild Rice Harvesting	Yes	

LAND AND RESOURCE MANAGEMENT ACTIVITIES		
Activity	**Permitted**	**Guidelines**
Crown Land Disposition	Maybe	There are significant restrictions on land disposition on designated lake trout lakes. See specific direction in Crown land disposition policy (PL 4.02.01 Appendix A).
Crown Land Disposition, Agriculture	No	
Crown Land Disposition, Cottaging	No	
Crown Land Disposition, Rural Residential	Yes	Existing settlements will be allowed to continue. New development will have to be authorized by the Ministry of Municipal Affairs and Housing.
	No	

B 4: Crown Land Use Policy – Page 2

Activity	Permitted	Guidelines
Crown Land Disposition, Urban Development		
Road Development and Maintenance, Existing	Yes	Road access will be managed to maintain commercial recreation and fish and wildlife values. New roads will be developed in a manner consistent with the need to access the area for resource extraction purposes.
Road Development and Maintenance, New	Yes	Road access will be managed to maintain commercial recreation and fish and wildlife values. New roads will be developed in a manner consistent with the need to access the area for resource extraction purposes.

RECREATION ACTIVITIES AND FACILITIES

Activity	Permitted	Guidelines
Crown Land Recreation	Yes	A few new access points may be developed along the Obonga Lake Road and Ogoki Road.
Hunting	Yes	
Road Use (public), Existing	Yes	Road access will be managed to maintain commercial recreation and fish and wildlife values. No unauthorized vehicular access is permitted on the Ogoki Road from the Ogoki River northward.
Road Use (public), New	Yes	New roads will be developed in a manner consistent with the need to access the area for resource extraction purposes.
Sport Fishing	Yes	

ADDITIONAL INFORMATION:

Note: *MNR will consider the Land Use Intent and Management Direction outlined in this policy report when reviewing applications for permitted activities that require licences, leases, permits, or other forms of approval. The review of individual applications involves the consideration of a variety of factors and requirements on a site-specific basis in addition to land use policy.*

SOURCE OF DIRECTION:

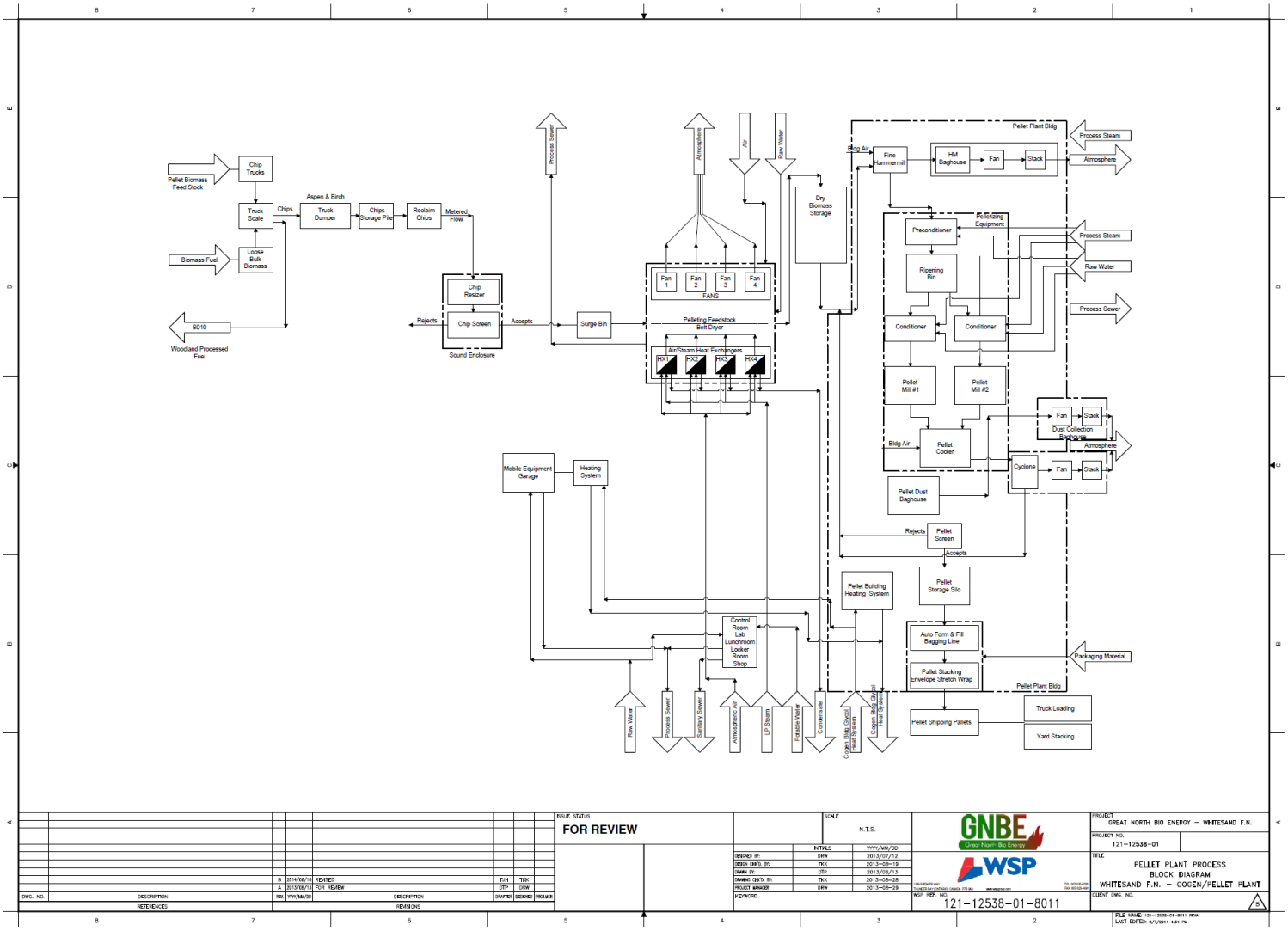
Amendment to Area-specific Crown Land Use Policy #2006-12 (2006)
Amendment to Area-specific Crown Land Use Policy #2006-13 (2006)
Crown Land Disposition Policy - Appendix A (2008) (2008)
Inland Ontario Lakes Designated for Lake Trout Management (2006)
Amendment to Area-specific Crown Land Use Policy #2007-25 (2009)
Nipigon District Land Use Guidelines (1983)
Amendment to Area-specific Crown Land Use Policy #2004-31 (2005)

Cette Rapport d'orientation en français

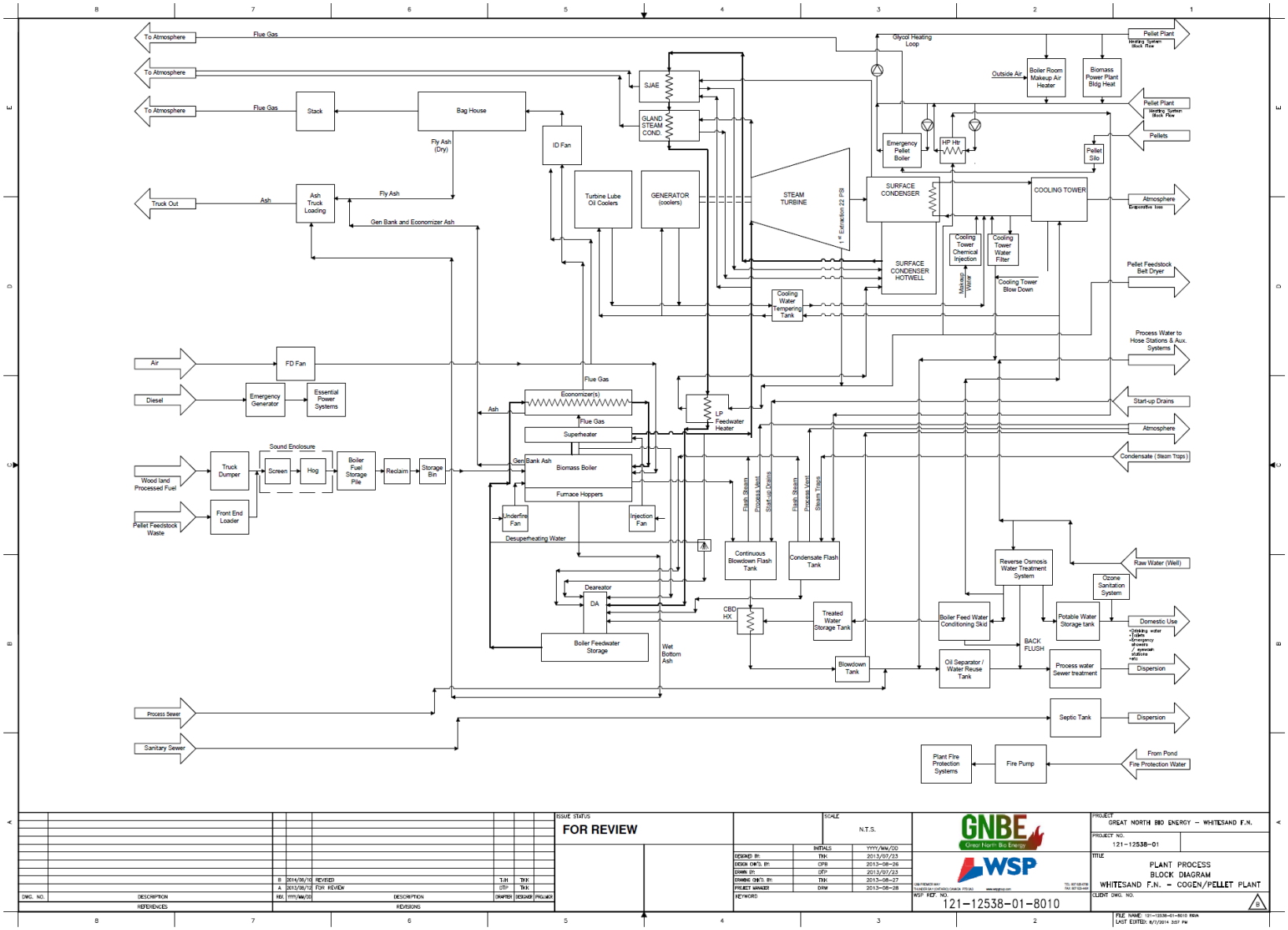
This policy report is available online at the following address: http://crownlanduseatlas.mnr.gov.on.ca

B 5: Crown Land Use Policy – Page 3

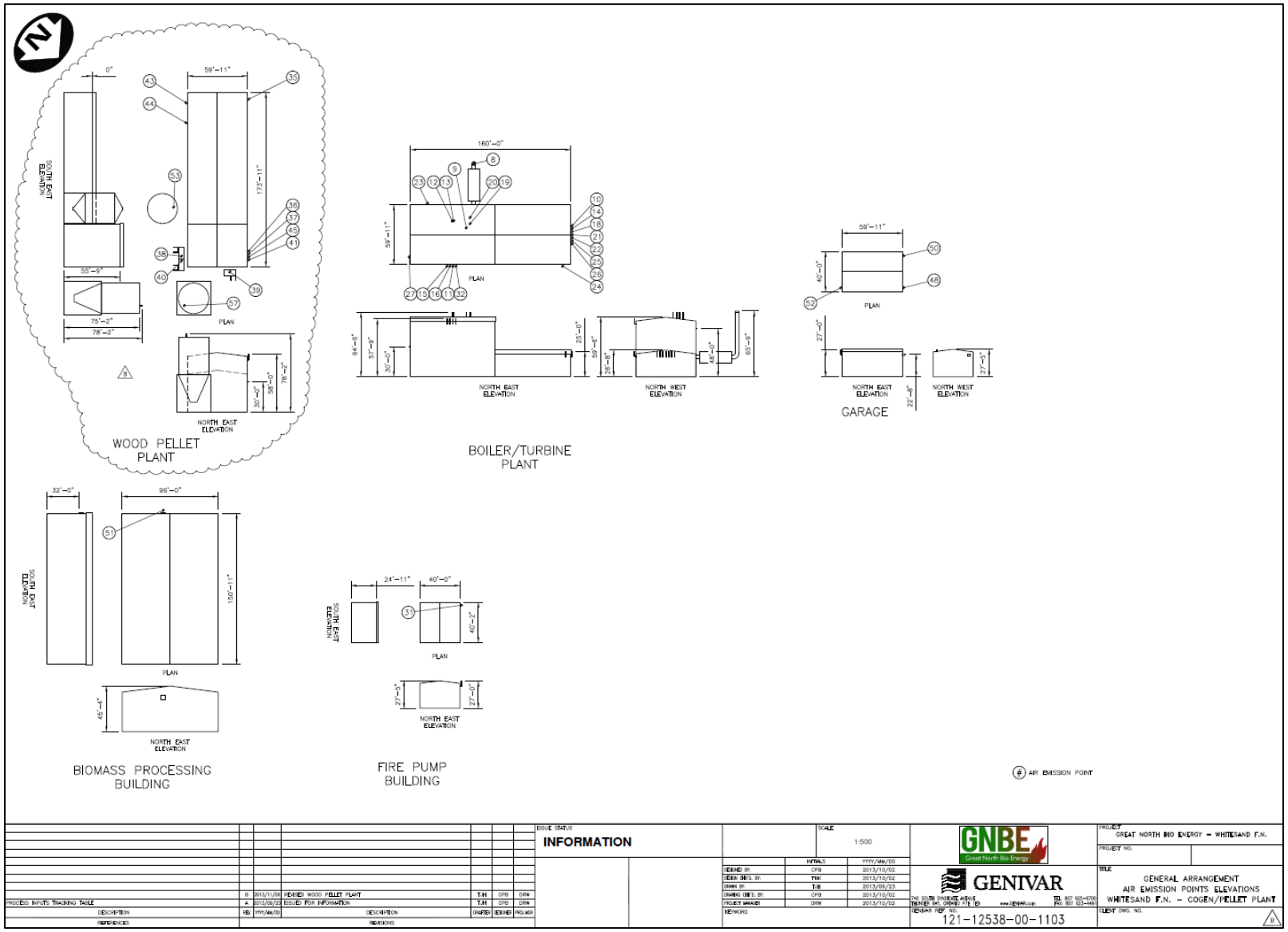
Appendix C: Proposed Facility Layout



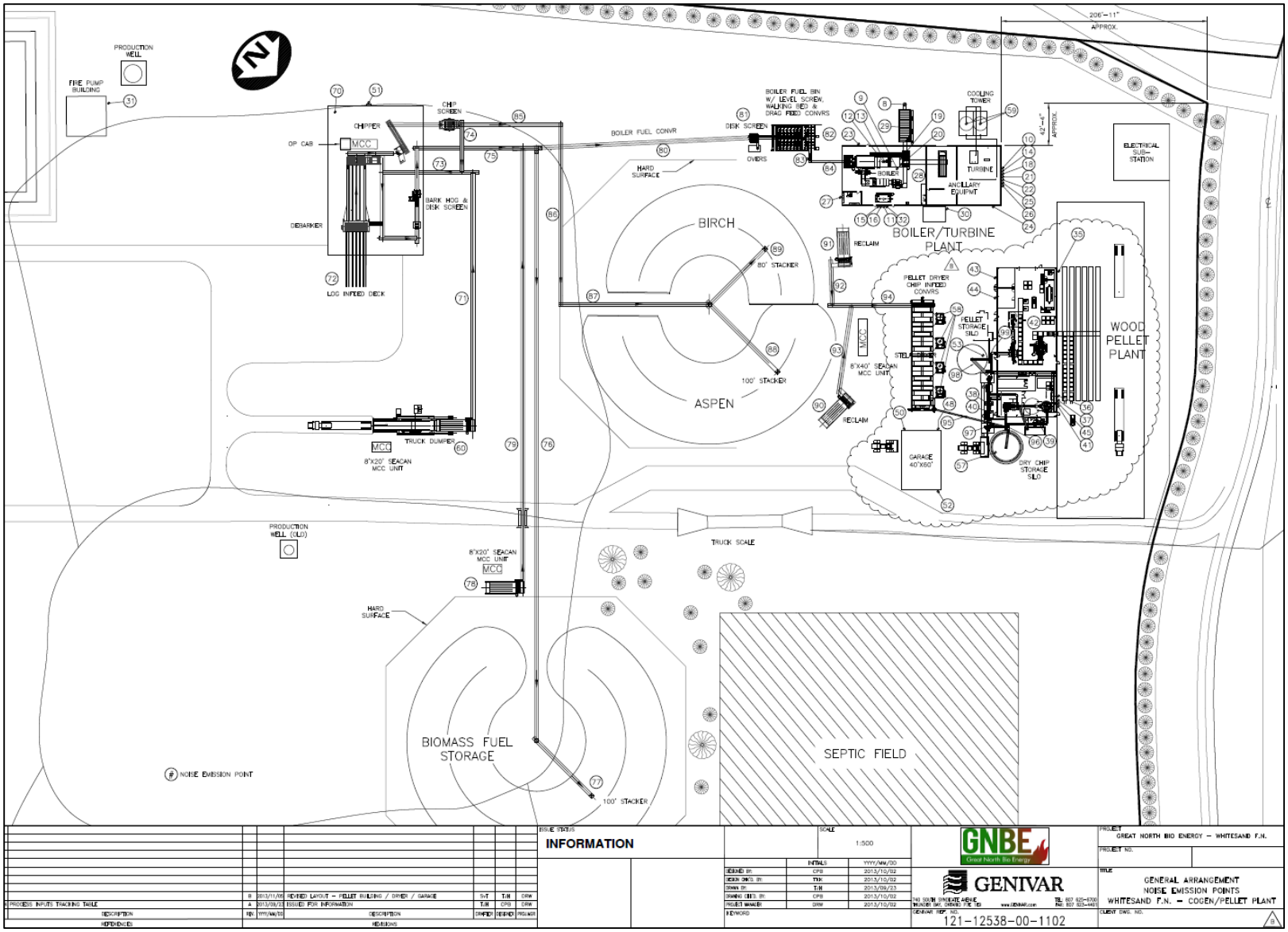
C1: Proposed Facility Plant Process – Block Diagram 1 - Updated



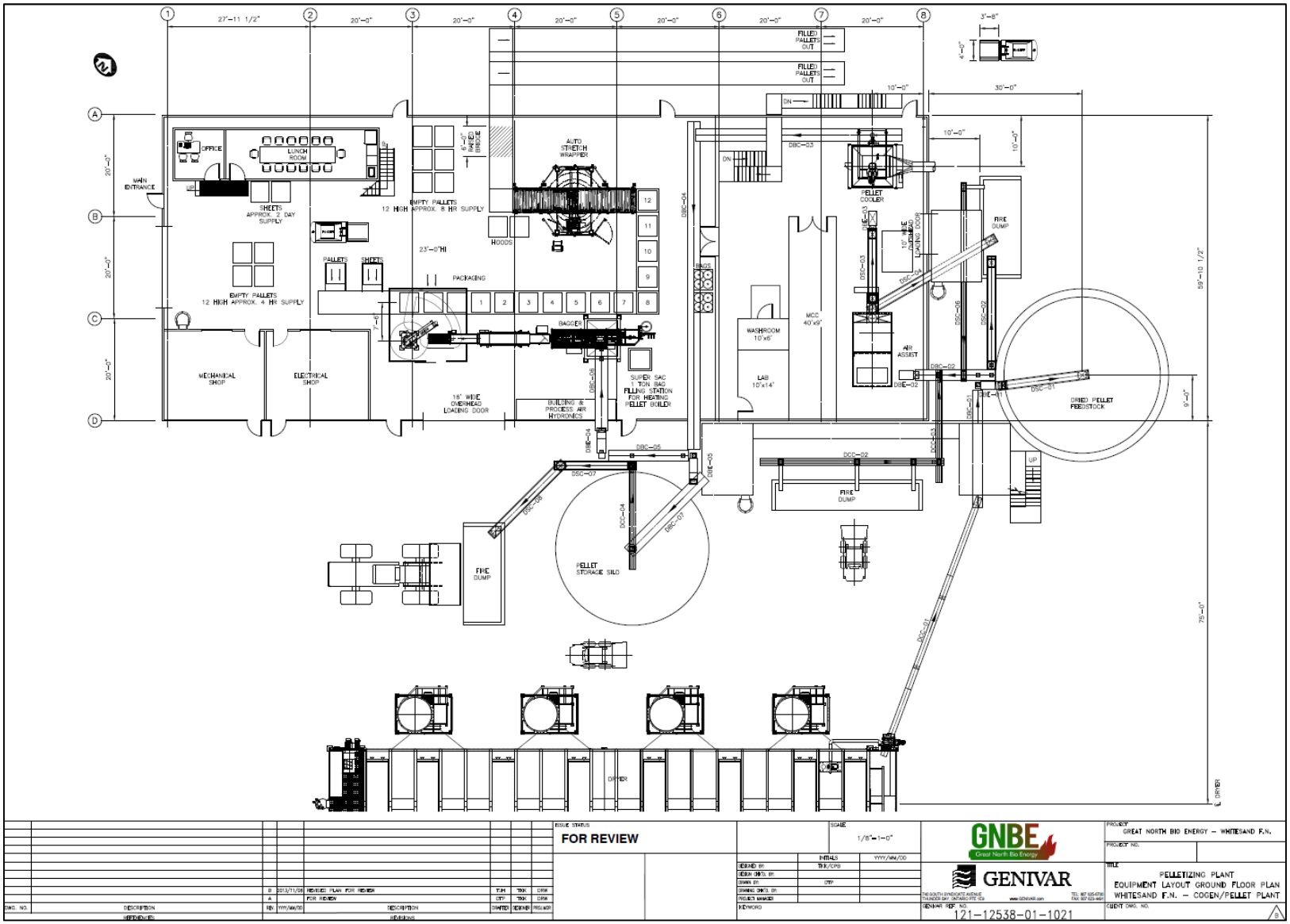
C2: Proposed Facility Plant Process – Block Diagram 2 - Updated



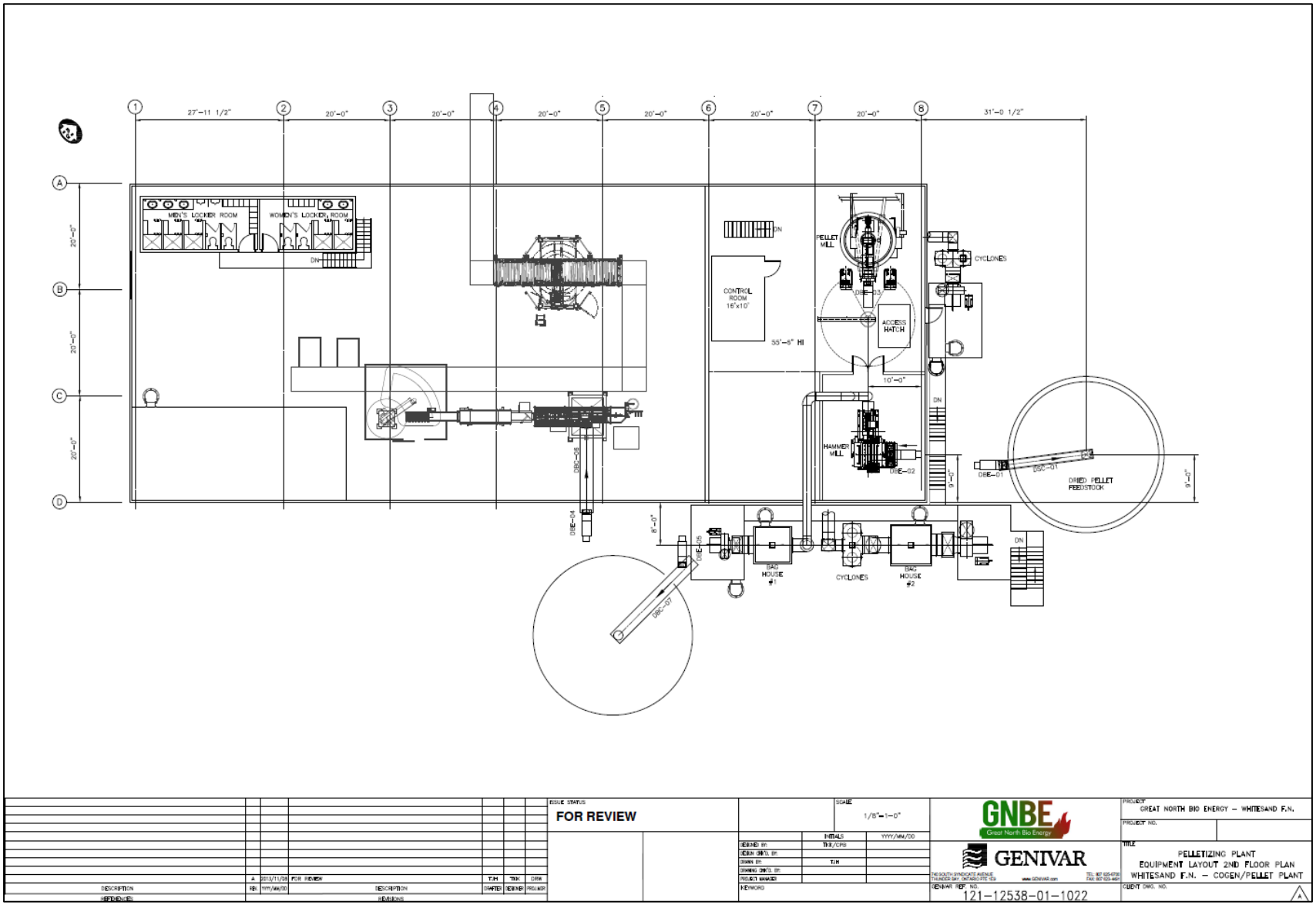
C3: Proposed Facility Site Plan – General Arrangement – Emission Point Elevations – Revision B



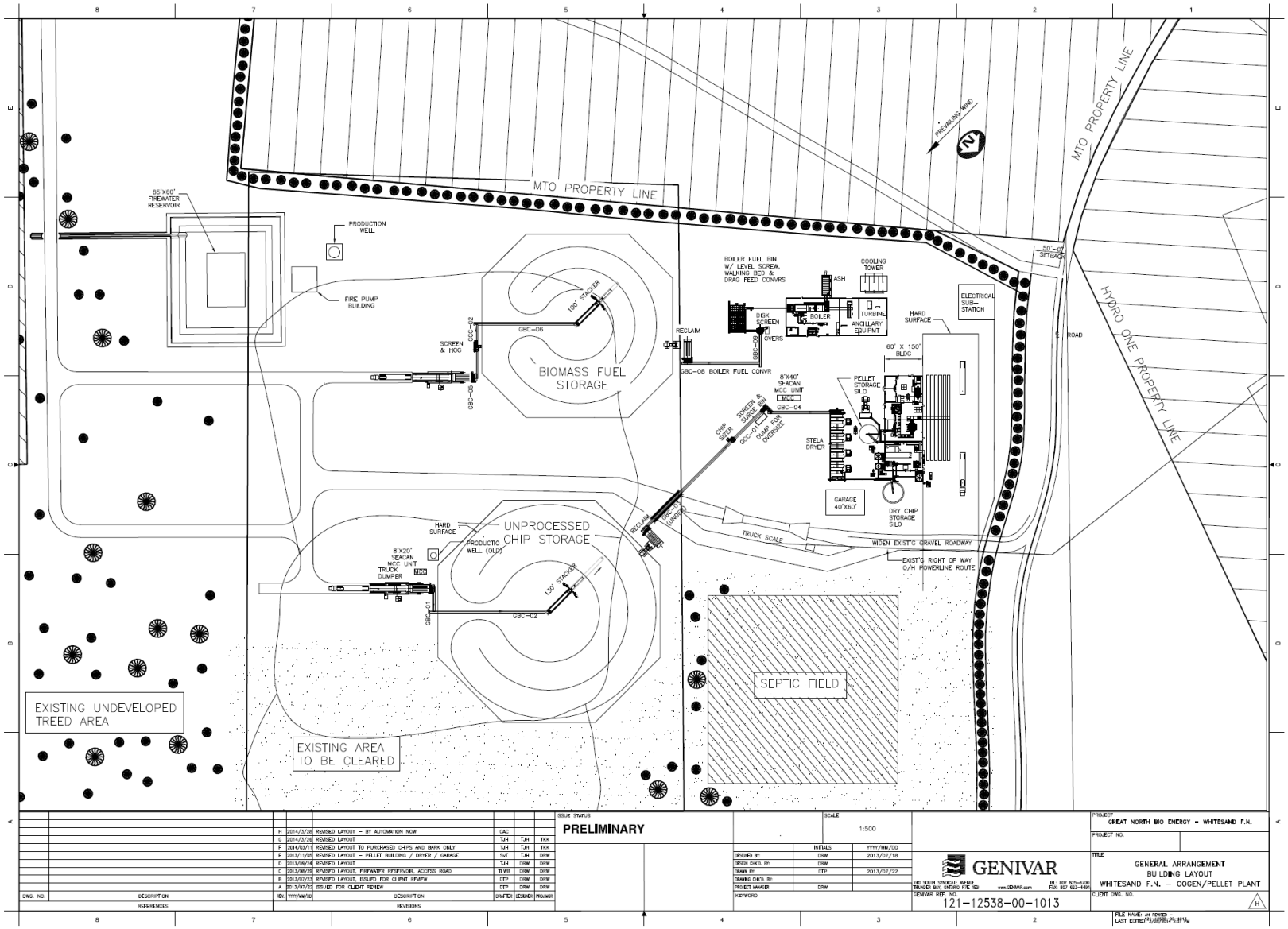
C4: Proposed Facility Site Plan – General Arrangement – Noise Emission Points – Revision B



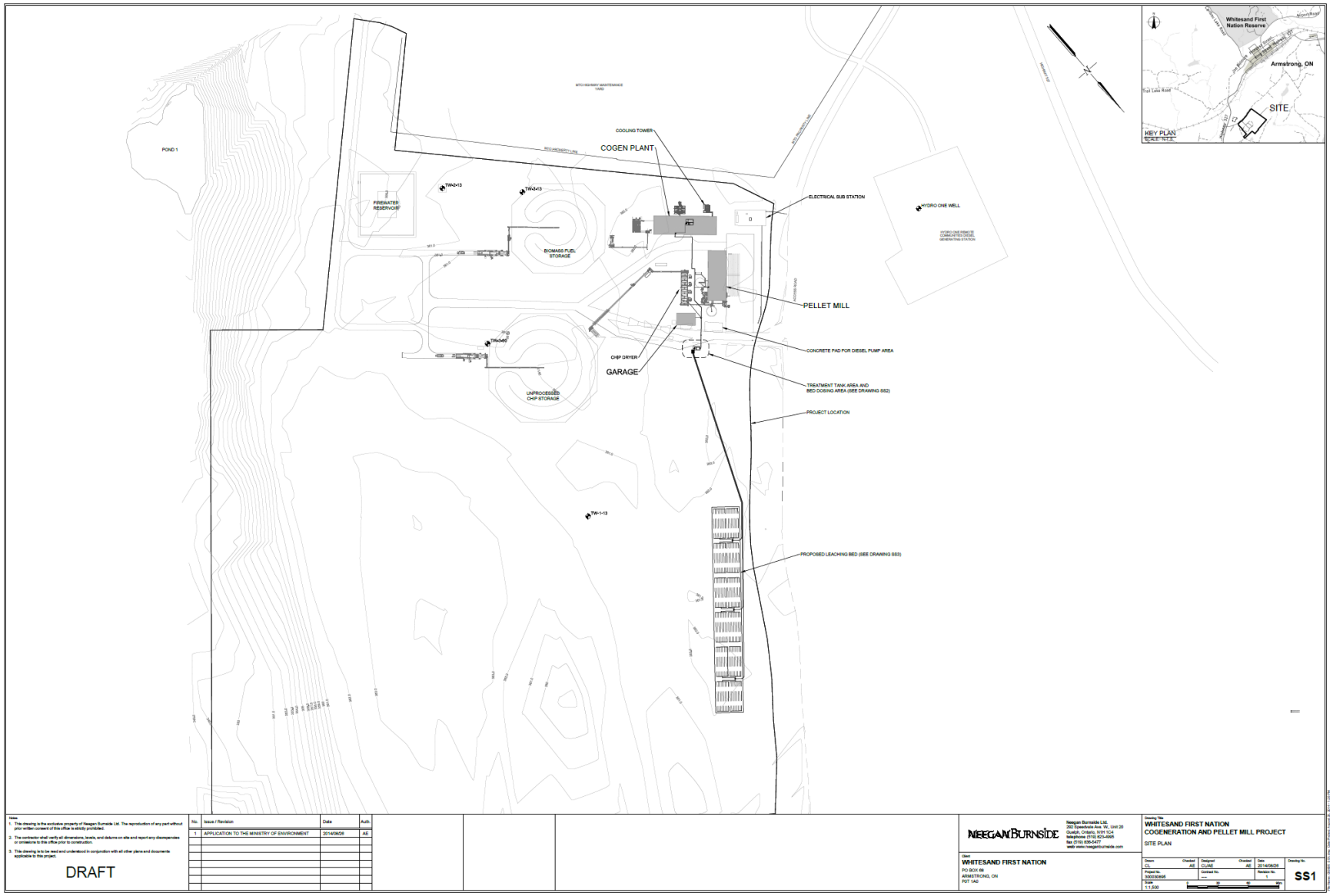
C5: Proposed Facility Site Plan – Pelletizing Plant – Equipment Layout Ground Floor – Revision B



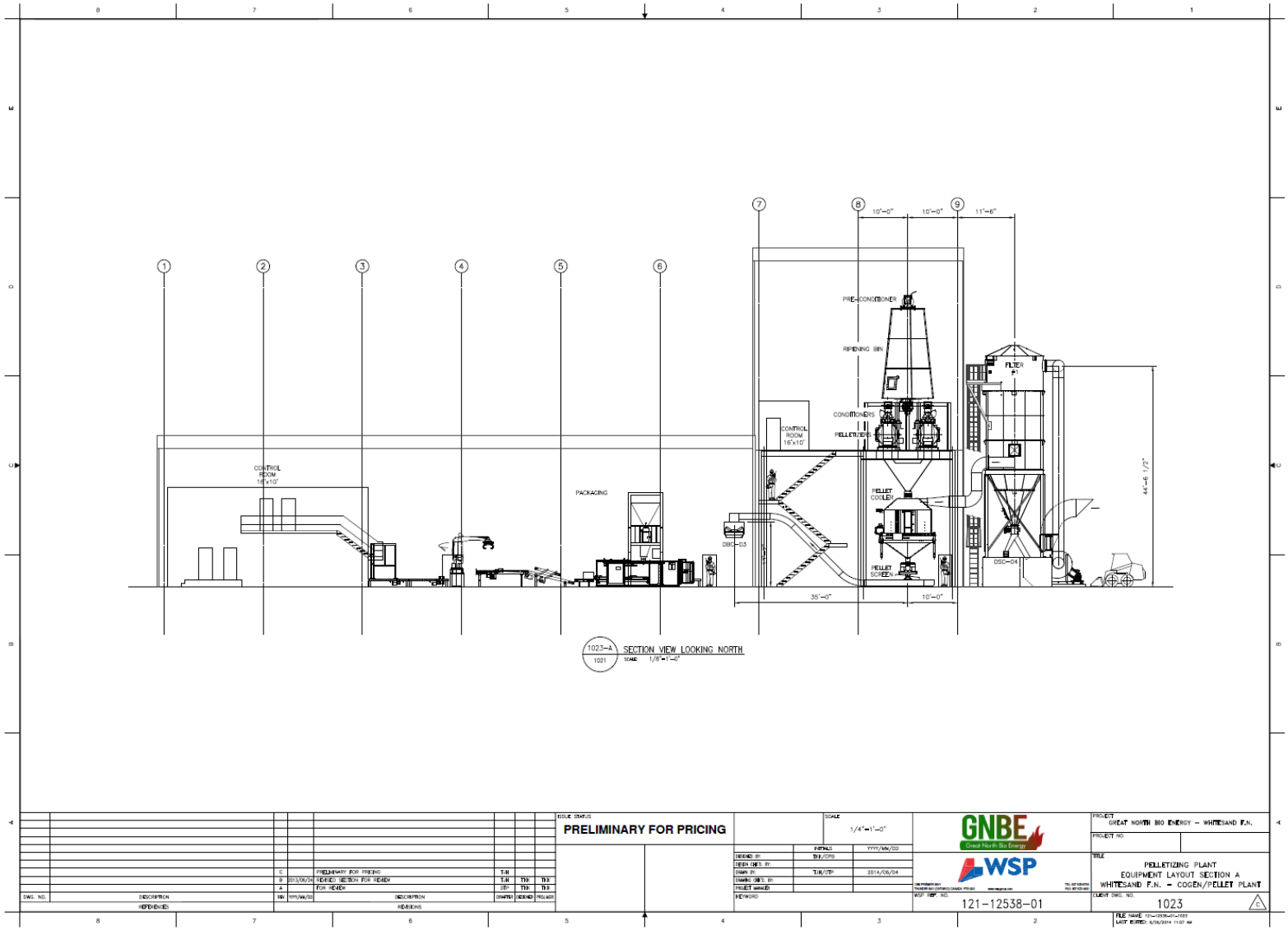
C6: Proposed Facility Site Plan – Pelletizing Plant – Equipment Layout 2nd Floor



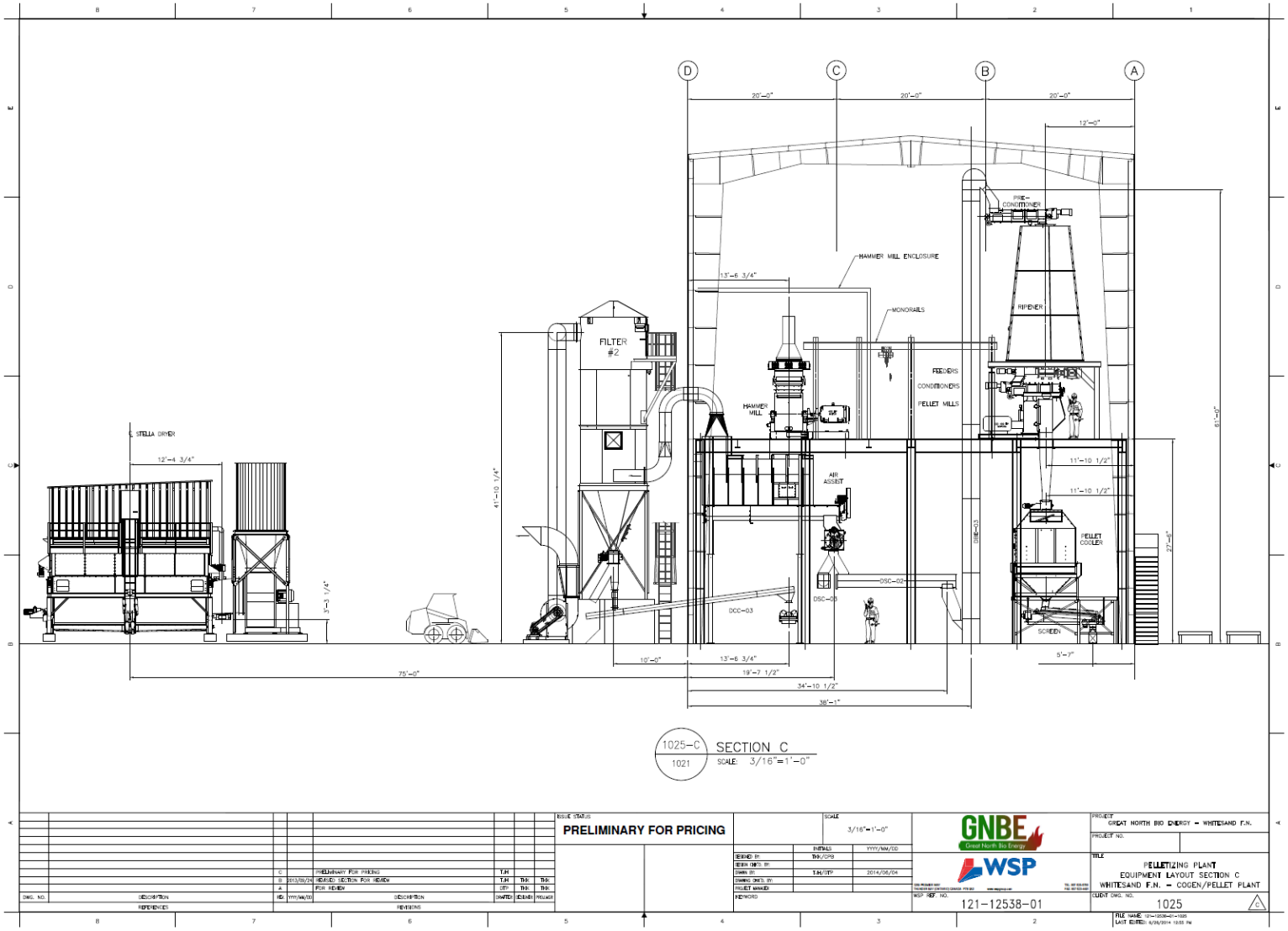
C7: Proposed Facility Site Plan – General Arrangement Building Layout – Updated



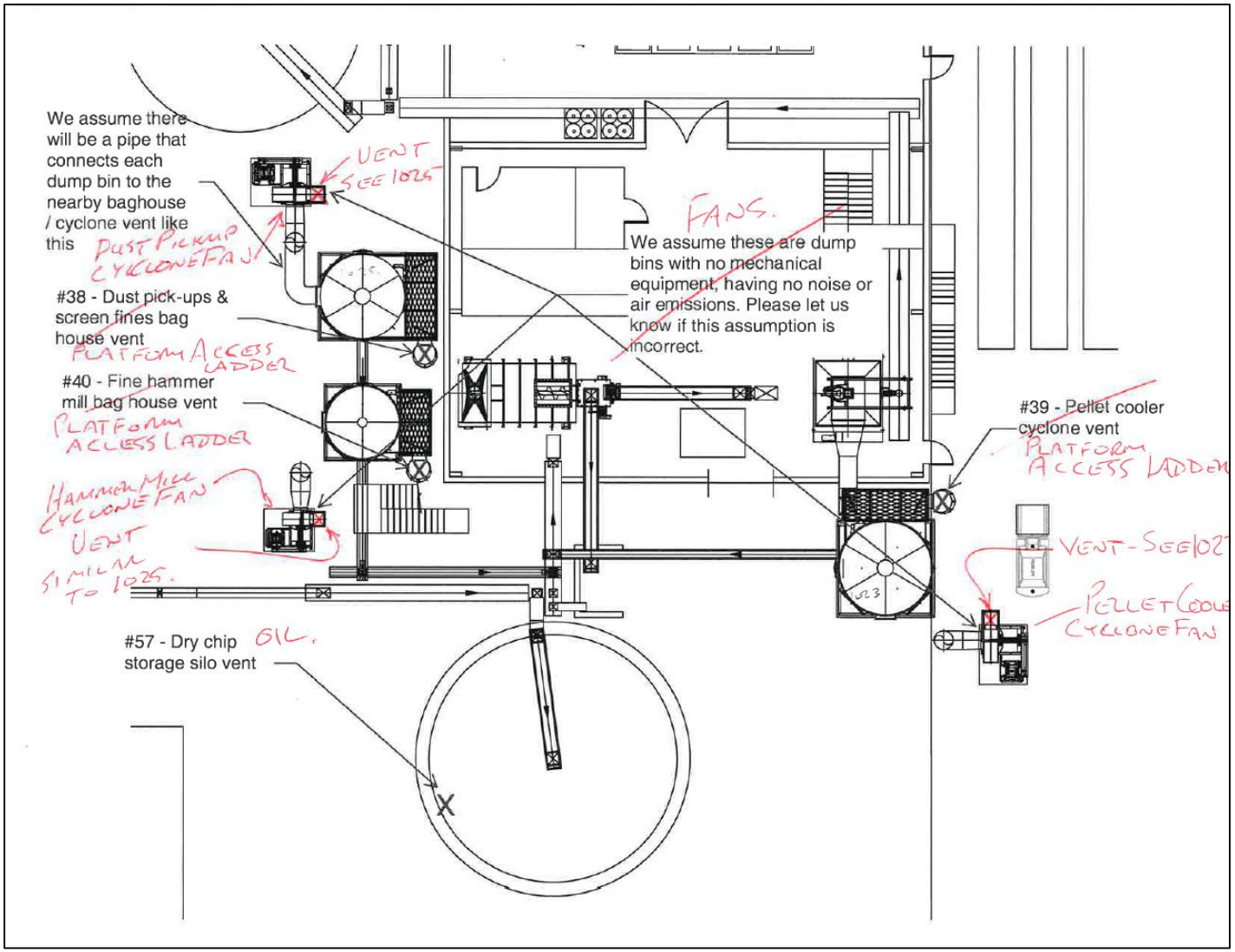
C8: Proposed Facility Site Plan – Updated



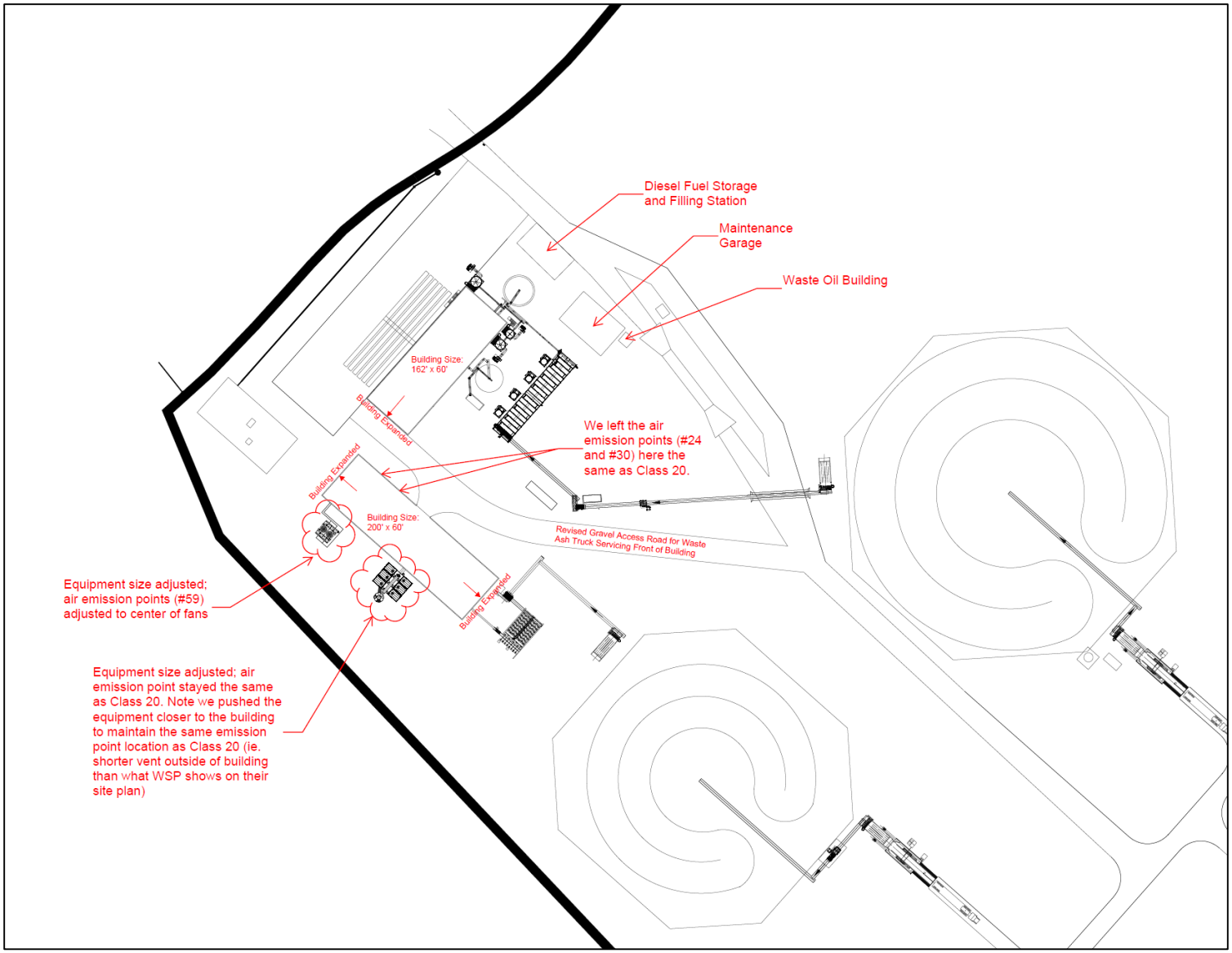
C9: Proposed Facility Site Plan – Pelletizing Plant – Equipment Layout Section A – Updated



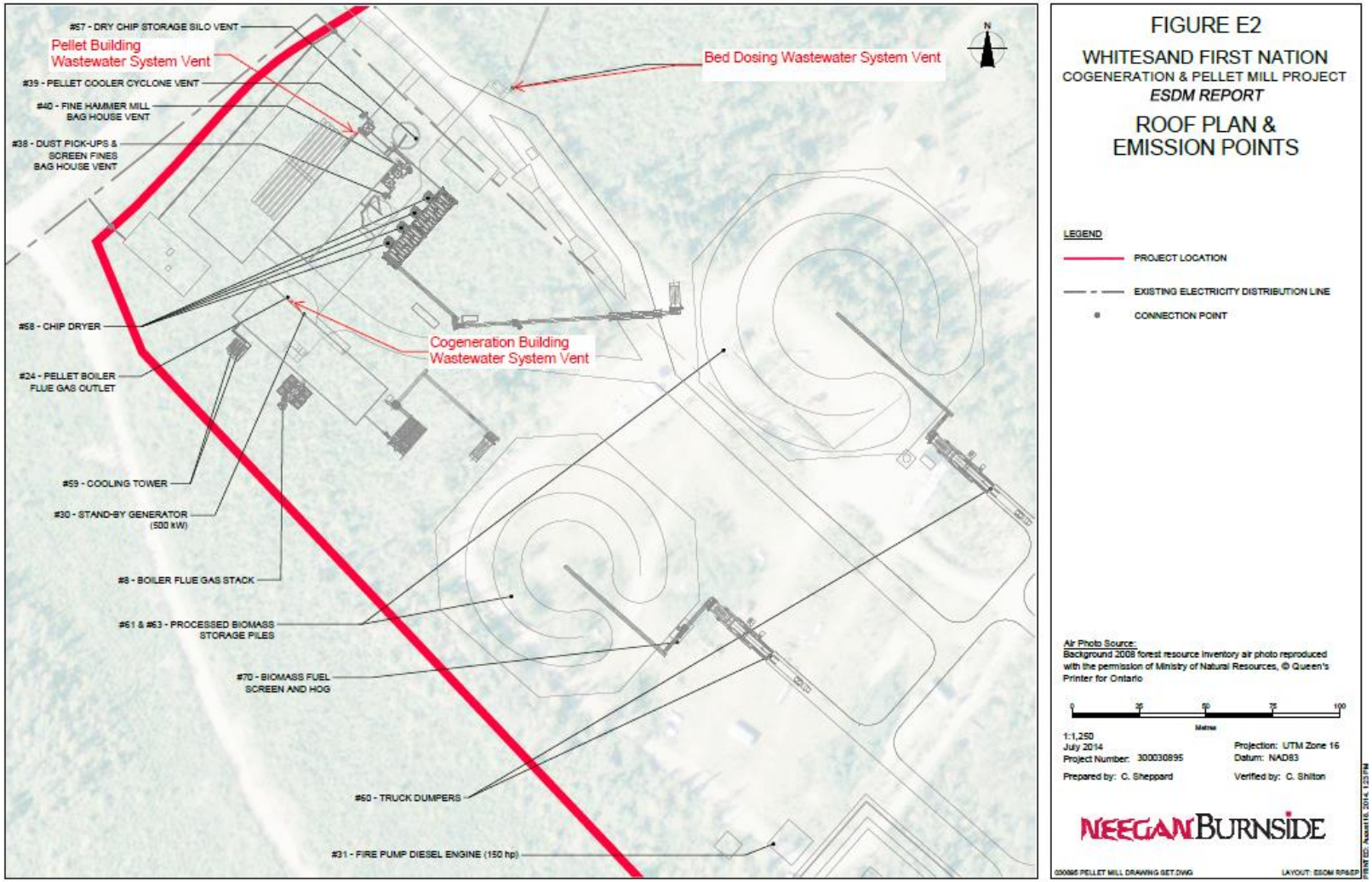
C10: Proposed Facility Site Plan – Pelletizing Plant – Equipment Layout Section C – Updated



C11: Proposed Facility Site Plan – Pelletizing Plant – Aerial View with Notes – Updated



C12: Proposed Facility Site Plan – Building/Source Changes – Aerial View with Notes – Updated



C13: Proposed Facility Site Plan – Wastewater Equipment Layout – Aerial View with Notes – Updated

Appendix D: Noise Emission Information and Data Specifications

D 1: Point of Emission Noise Data

Emission Point				Noise			
Point #	Point Name	Stack height Above Grade	Stack height Above Roof	dBA	Duration	Comment	Units / comments
	Boiler/ Turbine Plant						
29	Bag House	Outside	N/A	Minimal			
	PELLET PLANT						
38	Pellet Plant – Dust Pick-ups and Screen Fines - Bag House Vent	46'-0"	N/A	85		dBA (Lp) when standing near it. Loud fan, typically things are kept under 85 dBA for safety	
39	Pellet Plant – Pellet Cooler - Cyclone Vent	46'-0"	N/A	85		dBA (Lp) when standing near it. Loud fan, typically things are kept under 85 dBA for safety	
40	Pellet Plant – Fine Hammer Mill - Bag House Vent	46'-0"	N/A	85		dBA (Lp) when standing near it. Loud fan, typically things are kept under 85 dBA for safety	
42	Pellet Plant – Building Noise			75		dBA (Lp) outside wall estimate (100 inside -25 dBA for wall) estimate Only'	
	OTHER SITE BUILDINGS						
53	Pellet Storage Silo Vent	23'-8"	3'-0"	65			
	SITE						

57	Dry Chip Storage Silo Vent	78'-2"	3'-0"	65	When filling	dBA (Lp) when standing near it	
58	Chip Dryer	23'-0"	N/A	85	Continuous	85 from fans, dryer 75. By vendor indication of typical.	dBA(P) 1 m away
59	Cooling Tower	22'-0"	N/A	=<85	Continuous	By sample cut sheets	LdBA(P) 5 ft away
60	Truck Dumper	N/A	N/A	95	Intermittent	Mainly loud metal on metal bumping noise, HPU when in use.	
65	Mobile Equipment - Forklift - Pellet Shipping Forklift			105	Continuous		
66	Mobile Equipment – Log Carry-Lift			105	Continuous		Lw
67	Mobile Equipment – Front End Loader – Biomass Receiving			105	Continuous		Lw
68	Mobile Equipment – Front End Loader – Chip Reclaim			105	Continuous		Lw
69	Mobile Equipment – Front End Loader – Biomass Fuel Reclaim			105	Continuous		Lw
70	Biomass Fuel Screen and Hog, debarking ect Building			75	Continuous		
71	Imported Biomass			60-70	Continuous	Squeaky bearing ect. By experience	dBA (Lp) when

	Transfer Conveyor					similar to being besides a cloths dryer or in a car on the highway.	standing near it
72	Log Infeed			95	Intermittent	Dropping logs onto conveyors	
73	Raw Fuel Infeed			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
74	Chip Screen Overs			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
75	Fuel Transfer conveyor 1			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
76	Fuel Transfer conveyor to stacker			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
77	Fuel Stacker	N/A	N/A	60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
78	Fuel Reclaim	N/A	N/A	60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
79	Fuel Re-claim Transfer			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths	dBA (Lp) when standing near it

						dryer or in a car on the highway.	
80	Fuel Transfer 2			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
81	Disc Screen	N/A	N/A	60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
82	12 hr Enclosed Fuel Storage w/reclaim	N/A	N/A	60-70	Continuous	HPU/Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
83	Fuel Transfer Conveyor			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
84	Fuel Infeed Conveyor			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
85	Chip Transfer Conveyor 1			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
86	Chip Transfer Conveyor 2			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
87	Chip Transfer Conveyor 3			60-70	Continuous	Squeaky bearing ect. By experience similar to being	dBA (Lp) when

						besides a cloths dryer or in a car on the highway.	standing near it
88	Chip Stacker Aspen	N/A	N/A	60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
89	Chip Stacker Birch	N/A	N/A	60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
90	Chip Reclaim Aspen	N/A	N/A	60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
91	Chip Reclaim Birch	N/A	N/A	60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
92	Reclaim Conveyor 1			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
93	Reclaim Conveyor 2			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
94	Reclaim Conveyor 3			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it

95	Dried Chip Storage Feed Conveyors			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
96	Dried Chip Storage Discharge Conveyors			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
97	Baghouse Fines Conveyors			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
98	Dried Pellet Storage Feed Conveyors			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it
99	Dried Pellet Storage Discharge Conveyors			60-70	Continuous	Squeaky bearing ect. By experience similar to being besides a cloths dryer or in a car on the highway.	dBA (Lp) when standing near it

D 2: Point of Emission Noise Data – Additional Information

						Note / comment
Boiler / Turbine Building						
Equipment	**Manufacturer**	**Model / Size**	**Noise Level**	**units**	**@ X ft**	
Turbine Generator	Arani		90	dBA	3	
Boiler	Hurst		90	dBA	3	
Induced Draft Fan	Twin City Fan & Blower	RBO/R /937	110	dBA	3	
Under Fire Air Fan	Twin City Fan & Blower	RBA / 919	99	dBA	3	

Over Fire Air Fan	Twin City Fan & Blower	RBA / 923	101	dBA	3	
Flue Gas Recirculation Fan	Twin City Fan & Blower	TBD	est 95	dBA	3	
Stand by Generator	Cummins	500 kWe	88	dBA	3	76 dBA is available
Pellet Building						
Equipment	**Manufacturer**	**Model**	**Noise Level**	**units**	**@ X ft**	
Hammer Mill	California Pellet Mills	HM-54-48	110	dBA	3	
Pellet Mill	California Pellet Mills	7932-5	85	dBA	3	
Biomass Preparation Building						
Equipment	**Manufacturer**	**Model**	**Noise Level**	**units**	**@ X ft**	
Debarker, pocket Rotary type	Deal	SD RD2L320	87	dBA	3	
Horizontal feed Slant Disc Chipper	Acrowood	8425	>110, <90	dBA	3	
Biomass Fuel Screen, Heavy-Duty Design Disc Screen	West Salem Machinery	30-6 Heavy-Duty	90	dBA	3	
Biomass Fuel Hog, Swing Hammer type	West Salem Machinery	4032B	105	dBA	3	
Garage						
Equipment	**Manufacturer**	**Model**	**Noise Level**	**units**	**@ X ft**	
Maint Operations, Air Impact Gun			>90	dBA	3	
Heavy Equipment, running during testing			= Machine noise level	dBA	3	
Fire Pump Building						
Equipment	**Manufacturer**	**Model**	**Noise Level**	**units**	**@ X ft**	

Fire Pump (main Pump)	Armstrong	TBD	85	dBA	3	
Fire Pump (Diesel standby Pump)	Armstrong / Cummins	Engine - CFP9E-F50 - 1760 rpm, 350 hp.	97.2	dBA	3	beside engine
			119.6	dBA	3	at exhaust (lower dBA may be available)

Choose from weather protective enclosure or three levels of sound attenuation:

Sound levels (dB(A))*				
kW	Model	Weather-protective	Level I	Level II
Diesel				
10	DSKAA	78	68	65
15	DSKAB	81	69	66
20	DSKBA	80	70	67
25	DSKFA	82	72	69
35	DGBB	82	71	63
35	DGGD	81	72	66
40	DGBC	82	72	63
40	DGHD	79	71	64
50	DGCA	83	72	66
50	DGHE	79	70	65
60	DGCB	84	73	67
60	DSFAD	87	79	71
80	DGCG	84	76	67
80	DSFAE	87	82	72
100	DGDB	86	77	70
100	DSGAA*	87	-	73
100	DSHAF	95	88	78
125	DGDK	86	80	71
125	DSGAB*	87	-	74
125	DSHAE	95	88	78
150	DGFA	89	77	72
150	DSGAC*	88	-	75
150	DSHAA	95	88	78
175	DGFB	90	78	72
175	DSHAB	95	88	78
200	DGFC	91	80	74
200	DSHAC	95	88	78
230	DGFS	91	81	75
230	DSHAD	96	89	78
250	DQDAA	90	86	71
275	DQDAB	89	86	71
275	DQHAA	86	85	74
300	DFCB	86	84	71
300	DQDAC	89	86	71
300	DQHAB	89	88	76
350	DFCC	87	85	72
350	DFEG	85	83	72
400	DFCE	89	85	73
400	DFEG	89	85	73
450	DFEJ	87	84	73
500	DFEK	88	85	76
600	DFGB	85	78	74
600	DQCA	87	79	74
750	DFGE	87	80	75
750	DFHA	91	81	77
750	DQCB	87	79	74
750	DQFAA	89	79	75
800	DFHB	91	81	77
800	DQCC	87	79	74
800	DQFAB	89	79	75
900	DFHC	93	83	78
900	DQFAC	88	80	76
1000	DFHD	90	80	76
1000	DQFAD	90	80	76

Sound levels (dB(A))*				
kW	Model	Weather-protective	Level I	Level II
Spark-ignited				
20	GGMA	77	N/A	66
25	GGMB	78	N/A	66
30	GGMC	79	N/A	67
35	GGFD	80	73	65
42/47	GGFE	83	73	66
60	GGHE	86	77	68
70/75	GGHF	87	77	69
85	GGHG	85	79	75
100	GGHH	86	80	76
125	GGLA	85	79	75
150	GGLB	85	79	75

***Also available Level III**

100 kW	DSGAA	68 dB(A)
125 kW	DSGAB	69 dB(A)
150 kW	DSGAC	70 dB(A)

Diesel generator sets from 100 to 150 kW (models **DSGAA, DSGAB, DSGAC**) are available in **Level III** sound attenuation.

Shown: 100 kW Tier 3 diesel generator set (model DSGAA).

* Full load at 7 meters, steel enclosures

www.cumminspower.com

D 3: Standby Generator Set Manufacturer Specifications

Twin City Fan & Blower

A Twin City Fan Company

5959 Trenton Lane · Minneapolis, MN 55442-3238
Phone (763) 551-7600 · Fax (763) 551-7601 · www.tcf.com

ISO 9001 CERTIFIED

Customer: Hurst Boiler & Welding Company
Job Name: GNBE Whitesand - PRELIMINARY
Job ID: Over Fire Fan

July 19, 2013
Page: 1

Fan Description		Fan Performance		Motor Data	
Tag	OF Fan	CFM	1800	HP	100
Quantity	1	Operating SP (in.wg)	15	RPM	1800
Type	RBA	Standard SP (in.wg)	20.1	Voltage	460V
Size	923	RPM	1601	Phase	3
Width	SWSI	Tip Speed (fpm)	16,766	Hz	60
Arrangement	9	Oper. BHP	63.74	Enclosure	TEFC
Class	32	Standard BHP	85.42	Efficiency	Std. Eff./EPACT*
Rotation	CW	Outlet area (sq. ft)	2.9	Frame	365T
Discharge	UBD	Outlet Velocity (fpm)	6,207	Motor position	L
Wheel diameter (in.)	40	Temperature (°F)	225		
Drive method	60 Hz belt drive	Altitude (ft)	1,000		
Percentage width	100%	Density (lb/ft³)	0.056		
Percentage diameter	100%	Max RPM for Class	1879		
		Static Efficiency	66.59		
		Mechanical Efficiency	74.54		

Modifiers

Compressibility

Sound

Sound Power Levels in dB re. 10^{-12} Watts:

Octave Bands	1	2	3	4	5	6	7	8	LwA
Level at Inlet	116	119	117	107	98	92	87	83	111

Estimated sound pressure level in dBA (re: 0.0002 microbar) based on a single* ducted installation:

Distance in ft	1	3	5
dBA at Inlet	111	101	97

*To estimate dBA level for ducted inlet and ducted outlet (into and out of the room) type installation, deduct 20 from the LWA value shown.

Using a directivity factor of 1.

Estimated Sound Pressure based on free field, spherical (Q = 1) radiation at the stated distance.

Definitions:

LwA — The overall (single value) fan sound power level, 'A' weighted.

dBA — The environment for each fan installation influences its measured sound value, therefore dBA levels cannot be guaranteed. Consult AMCA Publication 303 for further details.
A fan's dBA is influenced by nearby reflective surfaces.

Ver 9.2Z - Report B

* Where Applicable, Std. Eff. Motors meet EPACT Requirements.

D 4: Over Fire Fan Manufacturer Specifications

Twin City Fan & Blower

A Twin City Fan Company

5959 Trenton Lane · Minneapolis, MN 55442-3238
Phone (763) 551-7600 · Fax (763) 551-7601 · www.tcf.com

ISO 9001 CERTIFIED

Customer: Hurst Boiler & Welding Company
Job Name: GNBE Whitesand - PRELIMINARY
Job ID: Induced Draft Fan

July 19, 2013
Page: 1

Fan Description	
Tag	ID Fan
Quantity	1
Type	RBO/R
Size	937
Width	SWSI
Arrangement	1
Class	45
Rotation	CCW
Discharge	UBD
Wheel diameter (in.)	64.38
Drive method	60 Hz belt drive
Percentage width	100%
Percentage diameter	100%

Fan Performance	
CFM	46,000
Operating SP (in.wg)	20
Standard SP (in.wg)	35.6
RPM	1254
Tip Speed (fpm)	21,134
Oper. BHP	229.50
Standard BHP	408.60
Outlet area (sq. ft)	7.51
Outlet Velocity (fpm)	6,125
Temperature (°F)	450
Altitude (ft)	1,000
Density (lb/ft³)	0.042
Max RPM for Class	1342
Static Efficiency	63.01
Mechanical Efficiency	67.15

Motor Data	
HP	300
RPM	1800
Voltage	460V
Phase	3
Hz	60
Enclosure	TEFC
Efficiency	Std. Eff./EPACT*
Frame	447T
Motor position	W

Modifiers

Compressibility

Sound

Sound Power Levels in dB re. 10-12 Watts:

Octave Bands	1	2	3	4	5	6	7	8	LwA
Level at Inlet	131	133	120	109	102	98	94	89	120

Estimated sound pressure level in dBA (re: 0.0002 microbar) based on a single* ducted installation:

Distance in ft	1	3	5
dBA at Inlet	120	110	106

*To estimate dBA level for ducted inlet and ducted outlet (into and out of the room) type installation, deduct 20 from the LWA value shown.

Using a directivity factor of 1.

Estimated Sound Pressure based on free field, spherical (Q = 1) radiation at the stated distance.

Definitions:

LwA The overall (single value) fan sound power level, 'A' weighted.

dBA The environment for each fan installation influences its measured sound value, therefore dBA levels cannot be guaranteed. Consult AMCA Publication 303 for further details.
A fan's dBA is influenced by nearby reflective surfaces.

Ver 9.2Z - Report B

* Where Applicable, Std. Eff. Motors meet EPACT Requirements.

D 5: Induced Draft Fan Manufacturer Specifications

Twin City Fan & Blower

A Twin City Fan Company

5959 Trenton Lane · Minneapolis, MN 55442-3238
Phone (763) 551-7600 · Fax (763) 551-7601 · www.tcf.com

ISO 9001 CERTIFIED

Customer: Hurst Boiler & Welding Company
Job Name: GNBE Whitesand - PRELIMINARY
Job ID: Under Fire Fan

July 19, 2013
Page: 1

Fan Description	
Tag	UF Fan
Quantity	1
Type	RBA
Size	919
Width	SWSI
Arrangement	9A
Class	22
Rotation	CW
Discharge	BHD
Wheel diameter (in.)	33
Drive method	60 Hz belt drive
Percentage width	100%
Percentage diameter	100%

Fan Performance	
CFM	10,000
Operating SP (in.wg)	10
Standard SP (in.wg)	13.4
RPM	1602
Tip Speed (fpm)	13,840
Oper. BHP	24.34
Standard BHP	32.62
Outlet area (sq. ft)	1.97
Outlet Velocity (fpm)	5,076
Temperature (°F)	225
Altitude (ft)	1,000
Density (lb/ft³)	0.056
Max RPM for Class	1901
Static Efficiency	64.58
Mechanical Efficiency	72.33

Motor Data	
HP	30
RPM	1800
Voltage	230/460V
Phase	3
Hz	60
Enclosure	TEFC
Efficiency	Std. Eff./EPACT*
Frame	286T
Motor position	R

Modifiers

Compressibility

Sound

Sound Power Levels in dB re. 10-12 Watts:

Octave Bands	1	2	3	4	5	6	7	8	LwA
Level at Inlet	115	117	115	101	94	88	84	81	109

Estimated sound pressure level in dBA (re: 0.0002 microbar) based on a single* ducted installation:

Distance in ft	1	3	5
dBA at Inlet	109	99	95

*To estimate dBA level for ducted inlet and ducted outlet (into and out of the room) type installation, deduct 20 from the LWA value shown.

Using a directivity factor of 1.

Estimated Sound Pressure based on free field, spherical (Q = 1) radiation at the stated distance.

Definitions:

LwA — The overall (single value) fan sound power level, 'A' weighted.

dBA — The environment for each fan installation influences its measured sound value, therefore dBA levels cannot be guaranteed. Consult AMCA Publication 303 for further details.
A fan's dBA is influenced by nearby reflective surfaces.

Ver 9.2Z - Report B

* Where Applicable, Std. Eff. Motors meet EPACT Requirements.

D 6: Under Fire Fan Manufacturer Specifications

Fire Power	Engine Data Sheet **Cummins Fire Power** De Pere, WI 54115 http://www.cumminsfirepower.com	Basic Engine Model **CFP9E-F10,F20,F30,F40, F50, F60** Curve Number: **FR - 91518** CPL Code: **8641**
Configuration Number: **D563004CX03** Installation Drawing: **15550**		Engine Family: **Industrial** Revision Date: **July 2011**

General Engine Data

Type	4 Cycle; In-Line; 6 Cylinder	
Aspiration	Turbocharged, Chrg Air Cooled	
Bore & Stroke - in. (mm)	4.49 x 5.69	(114 x 145)
Displacement - in.^{3} (litre)	543	(8.9)
Compression Ratio	17.8:1	
Valves per Cylinder - Intake	2	
- Exhaust	2	
Maximum Allowable Bending Moment @ Rear Face of Block - lb.-ft. (N-m)	1000	(1356)

Air Induction System

Max. Temperature Rise Between Ambient Air and Engine Air Inlet - °F (°C)	30	(16.7)
Maximum Inlet Restriction with Dirty Filter - in. H_2O (mm H_2O)	25	(635)
Recommended Air Cleaner Element - (Standard)	FLG Industrial AH19220	

Lubrication System

Oil Pressure Range at Rated - PSI (kPa)	40-60	(276-414)
Oil Capacity of Pan (High - Low) - U.S. quarts (litre)	24-20	
Total System Capacity - U.S. Gal. (litre)	6.5	(24.6)
Recommended Lube Oil Filter	Fleetguard (Cummins) LF9009	(3401544)

Cooling System

Raw Water Working Pressure Range at Heat Exchanger - PSI (kPa)	60	(413) MAX
Recommended Min. Water Supply Pipe Size to Heat Exchanger - in. (mm)	1	(25.40)
Recommended Min. Water Disch. Pipe Size From Heat Exchanger - in. (mm)	1.25	(31.75)
Coolant Water Capacity (Engine Side) - U.S. gal. (litre)	2.9	(11.0)
Standard Thermostat - Type	Modulating	
- Range - deg F (deg C)	180-199	(82-93)
Minimum Raw Water Flow		
with Water Temperatures to 50 °F (10 °C) - U.S. GPM (litre/s)	20	(1.26)
with Water Temperatures to 75 °F (24 °C) - U.S. GPM (litre/s)	25	(1.58)
with Water Temperatures to 90 °F (32 °C) - U.S. GPM (litre/s)	30	(1.89)
Recommended Cooling Water Filter	Fleetguard (Cummins) WF2074	-3100307

A jacket water heater is mandatory on this engine. The recommended heater wattage is 2250 down to 40 °F (4 °C).

Exhaust System

Max. Back Pressure Imposed by Complete Exhaust System in in. H_2O (kPa)	40.8	(10.2)
Exhaust Pipe Size Normally Acceptable - in. (mm)	5.0	(127)

Noise Emissions

Top	97.2 dBa
Right Side	97.2 dBa
Left Side	97.2 dBa
Front	97.2 dBa
Exhaust	119.5 dBa

The noise emission values are estimated sound pressure levels at 3.3 ft. (1 m.).

Data Sheet for: CFP9E-F10-F60 Drawing No.9747 Rev G Page 1 of 3

D 7: Fire Pump Diesel Engine Manufacturer Specifications

D 8: Transport Truck Noise Measurement Data and Sound Power Calculation

Frequency	Lzeq (dB)	A-weighting Correction (dBA)	LAeq (dBA)	Sound Power (dBA)
12.5 Hz	72.6	-63.4	9.2	43.2
16 Hz	73.1	-63.4	9.7	43.7
20 Hz	73.7	-50.5	23.2	57.2
25 Hz	68.9	-44.7	24.2	58.2
31.5 Hz	66.9	-39.4	27.5	61.5
40 Hz	68.3	-34.6	33.7	67.7
50 Hz	67.4	-30.2	37.2	71.2
63 Hz	72.7	-26.2	46.5	80.5
80 Hz	65.7	-22.5	43.2	77.2
100 Hz	63.6	-19.1	44.5	78.5
125 Hz	63.2	-16.1	47.1	81.1
160 Hz	57.2	-13.4	43.8	77.8
200 Hz	57.7	-10.9	46.8	80.8
250 Hz	57.6	-8.6	49	83.0
315 Hz	53.9	-6.6	47.3	81.3
400 Hz	53.7	-4.8	48.9	82.9
500 Hz	57.9	-3.2	54.7	88.7
630 Hz	56.1	-1.9	54.2	88.2
800 Hz	57	-0.8	56.2	90.2
1 kHz	57.8	0	57.8	91.8
1.25 kHz	58.2	0.6	58.8	92.8
1.6 kHz	57.2	1	58.2	92.2
2 kHz	56.3	1.2	57.5	91.5
2.5 kHz	53.2	1.3	54.5	88.5
3.15 kHz	51	1.2	52.2	86.2
4 kHz	47.5	1	48.5	82.5
5 kHz	45.3	0.5	45.8	79.8
6.3 kHz	43.7	-0.1	43.6	77.6
8 kHz	41.8	-1.1	40.7	74.7
10 kHz	38.6	-2.5	36.1	70.1
12.5 kHz	35	-4.3	30.7	64.7
16 kHz	29.9	-6.6	23.3	57.3

D 9: List of Insignificant Sources

Emission Point	
Point #	Point Name
	BOILER/TURBINE PLANT
1	Boiler Blow Down
2	RO system Blow Down
3	Filter Back Wash
4	Soft Regen
5	Washup and Floor Drains
6	Ash transfer shed washup
7	Boiler Building Washrooms/showers
8	Boiler Flue Gas Stack
9	Boiler Blow Down Vent
10	Gland Steam Vent
11	Boiler De-Aerator Vent
24	Pellet Boiler Flue Gas Outlet
25	Turbine Lube System Vent
26	Turbine Surface Condenser Air Ejector Vent
27	Boiler Bathroom Exhaust Fan Outlet
	PELLET PLANT
34	Pellet Plant Washup and Floor Drains
35	Pellet Plant Washroom, Showers and Locker room
36	Office HVAC
37	Pellet Mill Lab Exhaust Fan
41	Pellet Plant – Ripening Bin – Vent
43	Mechanical Shop Exhaust Fan
44	Electrical Shop Exhaust Fan
45	Control Room Exhaust Fan
	OTHER SITE BUILDINGS
49	Garage Washup and Floor Drains
50	Garage Bathroom
	SITE
56	Biomass Boiler Ash
61	Biomass Pile-Birch
62	Biomass Pile-Aspen
63	Biomass Pile-Fuel
64	Contaminated Biomass
Note 1	Boiler Flue Gas Stack is 46 in diameter tapering to 40" in last 12"
Note 2	70** = 70°F min. to Ambient

Appendix E: Predictor Input Data

Regular Operations

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Line sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. ISO H ISO Terr. HDef. InputLw Cb(D) Cb(E) Cb(N)
85 Chip Transfer Conveyor 2.00 0.00 Relative False 0.00 0.00 0.00
75 Fuel Transfer Conveyor 1 2.00 0.00 Relative False 0.00 0.00 0.00
79 Fuel Re-claim Transfer 2.00 0.00 Relative False 0.00 0.00 0.00
91 Chip Re-claim-Aspen/Birch 2.00 0.00 Relative False 0.00 0.00 0.00
94 Reclaim Conveyor 3 2.00 0.00 Relative False 0.00 0.00 0.00
73 Raw Fuel Infeed 2.00 0.00 Relative False 0.00 0.00 0.00
78 Fuel Re-claim 2.00 0.00 Relative False 0.00 0.00 0.00
80 Fuel Transfer 2 2.00 0.00 Relative False 0.00 0.00 0.00
83 Fuel Transfer Conveyor 2.00 0.00 Relative False 0.00 0.00 0.00
84 Fuel Infeed Conveyor 2.00 0.00 Relative False 0.00 0.00 0.00
93 Reclaim Conveyor 2 2.00 0.00 Relative False 0.00 0.00 0.00
95 Dried Chip Storage Feed Conveyors 2.00 0.00 Relative False 0.00 0.00 0.00
96 Dried Chip Storage Discharge Conveyors 2.00 0.00 Relative False 0.00 0.00 0.00
97 Baghouse Fines Conveyors 2.00 0.00 Relative False 0.00 0.00 0.00
98 Dried Pellet Storage Feed Conveyors 2.00 0.00 Relative False 0.00 0.00 0.00
99 Dried Pellet Storage Discharge Conveyors 2.00 0.00 Relative False 0.00 0.00 0.00
76 Fuel Transfer Conveyor to Stacker 1.00 0.00 Relative False 0.00 0.00 0.00
77 Fuel Stacker 2.00 0.00 Relative False 0.00 0.00 0.00
87 Chip Transfer Conv3 1.00 0.00 Relative False 0.00 0.00 0.00
89 Chip Stacker-Aspen/Birch 2.00 0.00 Relative False 0.00 0.00 0.00
92 Reclaim Conveyor 1 2.00 0.00 Relative False 0.00 0.00 0.00
86 Chip Transfer Conveyor 2 2.00 0.00 Relative False 0.00 0.00 0.00
71 Imported Biomass Transfer Conveyor 2.00 0.00 Relative False 0.00 0.00 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Line sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Max.dist. No refl. No building No ind.site LwM 1 LwM 2 LwM 3 LwM 4 LwM 5 LwM 6 LwM 7 LwM 8 LwM 9
85 25.00 No No No -- -- -- -- -- -- -- -- --
75 25.00 No No No -- -- -- -- -- -- -- -- --
79 100.00 No No No -- -- -- -- -- -- -- -- --
91 100.00 No No No -- -- -- -- -- -- -- -- --
94 25.00 No No No -- -- -- -- -- -- -- -- --
73 25.00 No No No -- -- -- -- -- -- -- -- --
78 100.00 No No No -- -- -- -- -- -- -- -- --
80 100.00 No No No -- -- -- -- -- -- -- -- --
83 25.00 No No No -- -- -- -- -- -- -- -- --
84 25.00 No No No -- -- -- -- -- -- -- -- --
93 25.00 No No No -- -- -- -- -- -- -- -- --
95 25.00 No No No -- -- -- -- -- -- -- -- --
96 25.00 No No No -- -- -- -- -- -- -- -- --
97 25.00 No No No -- -- -- -- -- -- -- -- --

98 25.00 No No No -- -- -- -- -- -- -- -- --
99 25.00 No No No -- -- -- -- -- -- -- -- --
76 100.00 No No No -- -- -- -- -- -- -- -- --
77 25.00 No No No -- -- -- -- -- -- -- -- --
87 100.00 No No No -- -- -- -- -- -- -- -- --
89 25.00 No No No -- -- -- -- -- -- -- -- --
92 100.00 No No No -- -- -- -- -- -- -- -- --
86 25.00 No No No -- -- -- -- -- -- -- -- --
71 25.00 No No No -- -- -- -- -- -- -- -- --
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Line sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name LwM 10 LwM 11 LwM 12 LwM 13 LwM 14 LwM 15 LwM 16 LwM 17 LwM 18 LwM 19 LwM 20 LwM 21 LwM 22
85 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
75 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
79 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
91 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
94 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
73 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
78 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
80 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
83 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
84 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
93 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
95 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
96 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
97 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
98 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
99 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
76 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
77 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
87 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
89 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
92 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
86 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
71 -- -- -- 70.00 -- -- -- -- -- -- -- -- --
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Line sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name LwM 23 LwM 24 LwM 25 LwM 26 LwM 27 Lw 1 Lw 2 Lw 3 Lw 4 Lw 5 Lw 6 Lw 7 Lw 8 Lw 9 Lw 10 Lw 11
85 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
75 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
79 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
91 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
94 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
73 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
78 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
80 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --

83 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
84 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
93 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
95 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
96 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
97 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
98 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
99 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
76 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
77 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
87 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
89 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
92 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
86 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
71 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Line sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Lw 12 Lw 13 Lw 14 Lw 15 Lw 16 Lw 17 Lw 18 Lw 19 Lw 20 Lw 21 Lw 22 Lw 23 Lw 24 Lw 25 Lw 26
85 -- 78.38 -- -- -- -- -- -- -- -- -- -- -- -- --
75 -- 77.64 -- -- -- -- -- -- -- -- -- -- -- -- --
79 -- 85.43 -- -- -- -- -- -- -- -- -- -- -- -- --
91 -- 82.57 -- -- -- -- -- -- -- -- -- -- -- -- --
94 -- 85.00 -- -- -- -- -- -- -- -- -- -- -- -- --
73 -- 79.54 -- -- -- -- -- -- -- -- -- -- -- -- --
78 -- 83.36 -- -- -- -- -- -- -- -- -- -- -- -- --
80 -- 81.50 -- -- -- -- -- -- -- -- -- -- -- -- --
83 -- 77.27 -- -- -- -- -- -- -- -- -- -- -- -- --
84 -- 81.29 -- -- -- -- -- -- -- -- -- -- -- -- --
93 -- 89.15 -- -- -- -- -- -- -- -- -- -- -- -- --
95 -- 83.36 -- -- -- -- -- -- -- -- -- -- -- -- --
96 -- 74.88 -- -- -- -- -- -- -- -- -- -- -- -- --
97 -- 80.27 -- -- -- -- -- -- -- -- -- -- -- -- --
98 -- 72.27 -- -- -- -- -- -- -- -- -- -- -- -- --
99 -- 70.82 -- -- -- -- -- -- -- -- -- -- -- -- --
76 -- 86.86 -- -- -- -- -- -- -- -- -- -- -- -- --
77 -- 83.19 -- -- -- -- -- -- -- -- -- -- -- -- --
87 -- 87.47 -- -- -- -- -- -- -- -- -- -- -- -- --
89 -- 83.19 -- -- -- -- -- -- -- -- -- -- -- -- --
92 -- 79.61 -- -- -- -- -- -- -- -- -- -- -- -- --
86 -- 79.62 -- -- -- -- -- -- -- -- -- -- -- -- --
71 -- 79.54 -- -- -- -- -- -- -- -- -- -- -- -- --
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Line sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Lw 27 Red 1 Red 2 Red 3 Red 4 Red 5 Red 6 Red 7 Red 8 Red 9 Red 10 Red 11
85 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
75 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
79 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
91 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

94 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
73 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
78 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
80 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
83 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
84 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
93 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
95 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
96 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
97 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
98 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
99 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
76 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
77 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
87 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
89 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
92 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
86 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
71 -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Line sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Red 12 Red 13 Red 14 Red 15 Red 16 Red 17 Red 18 Red 19 Red 20 Red 21 Red 22 Red 23
85 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
75 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
79 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
91 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
94 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
73 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
78 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
80 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
83 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
84 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
93 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
95 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
96 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
97 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
98 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
99 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
76 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
77 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
87 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
89 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
92 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
86 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
71 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Line sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Red 24 Red 25 Red 26 Red 27

85 0.00 0.00 0.00 0.00
75 0.00 0.00 0.00 0.00
79 0.00 0.00 0.00 0.00
91 0.00 0.00 0.00 0.00
94 0.00 0.00 0.00 0.00
73 0.00 0.00 0.00 0.00
78 0.00 0.00 0.00 0.00
80 0.00 0.00 0.00 0.00
83 0.00 0.00 0.00 0.00
84 0.00 0.00 0.00 0.00
93 0.00 0.00 0.00 0.00
95 0.00 0.00 0.00 0.00
96 0.00 0.00 0.00 0.00
97 0.00 0.00 0.00 0.00
98 0.00 0.00 0.00 0.00
99 0.00 0.00 0.00 0.00
76 0.00 0.00 0.00 0.00
77 0.00 0.00 0.00 0.00
87 0.00 0.00 0.00 0.00
89 0.00 0.00 0.00 0.00
92 0.00 0.00 0.00 0.00
86 0.00 0.00 0.00 0.00
71 0.00 0.00 0.00 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Moving source, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. ISO H ISO Terr. HDef. Flow(D) Flow(E) Flow(N)
TR2 Chipped Biomass Delivery - Transport Truck 1.50 0.00 Relative 11 -- --
TR4 Ash Waste Truck - Transport Truck 1.50 0.00 Relative 1 -- --
TR3 Wood Pellet Shipment - Transport Truck 1.50 0.00 Relative 9 -- --
TR1 Biomass Delivery - Transport Truck 1.50 0.00 Relative 11 -- --
LoaderChip ME - Front End Loader - Chip Reclaim 2.00 0.00 Relative 96 24 48
Forklift ME - Forklift - Pellet Shipping Forklift 0.75 0.00 Relative 96 24 48
LoaderBio ME - Front End Loader - Biomass Receiving 2.00 0.00 Relative 96 24 48
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Moving source, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Cb(D) Cb(E) Cb(N) Avg.speed Max.dist. Lw 1 Lw 2 Lw 3 Lw 4 Lw 5 Lw 6 Lw 7 Lw 8
TR2 26.46 -- -- 40 100.00 -- -- -- 80.52 -- -- 81.12 --
TR4 37.70 -- -- 40 100.00 -- -- -- 80.52 -- -- 81.12 --
TR3 27.90 -- -- 40 100.00 -- -- -- 80.52 -- -- 81.12 --
TR1 26.67 -- -- 40 100.00 -- -- -- 80.52 -- -- 81.12 --
LoaderChip 19.69 20.94 20.94 25 100.00 -- -- -- -- -- -- -- --
Forklift 13.68 14.93 14.93 15 100.00 -- -- -- -- -- -- -- --
LoaderBio 15.84 17.09 17.09 25 100.00 -- -- -- -- -- -- -- --
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)

Listing of: Moving source, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Lw 9 Lw 10 Lw 11 Lw 12 Lw 13 Lw 14 Lw 15 Lw 16 Lw 17 Lw 18 Lw 19 Lw 20 Lw 21
TR2 -- 83.02 -- -- 88.72 -- -- 91.82 -- -- 91.52 -- --
TR4 -- 83.02 -- -- 88.72 -- -- 91.82 -- -- 91.52 -- --
TR3 -- 83.02 -- -- 88.72 -- -- 91.82 -- -- 91.52 -- --
TR1 -- 83.02 -- -- 88.72 -- -- 91.82 -- -- 91.52 -- --
LoaderChip -- -- -- -- 105.00 -- -- -- -- -- -- -- --
Forklift -- -- -- -- 105.00 -- -- -- -- -- -- -- --
LoaderBio -- -- -- -- 105.00 -- -- -- -- -- -- -- --
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Moving source, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Lw 22 Lw 23 Lw 24 Lw 25 Lw 26 Lw 27 Red 1 Red 2 Red 3 Red 4 Red 5 Red 6
TR2 82.52 -- -- 74.72 -- -- 0.00 0.00 0.00 0.00 0.00 0.00
TR4 82.52 -- -- 74.72 -- -- 0.00 0.00 0.00 0.00 0.00 0.00
TR3 82.52 -- -- 74.72 -- -- 0.00 0.00 0.00 0.00 0.00 0.00
TR1 82.52 -- -- 74.72 -- -- 0.00 0.00 0.00 0.00 0.00 0.00
LoaderChip -- -- -- -- -- -- 0.00 0.00 0.00 0.00 0.00 0.00
Forklift -- -- -- -- -- -- 0.00 0.00 0.00 0.00 0.00 0.00
LoaderBio -- -- -- -- -- -- 0.00 0.00 0.00 0.00 0.00 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Moving source, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Red 7 Red 8 Red 9 Red 10 Red 11 Red 12 Red 13 Red 14 Red 15 Red 16 Red 17
TR2 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
TR4 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
TR3 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
TR1 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
LoaderChip 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Forklift 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
LoaderBio 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Moving source, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Red 18 Red 19 Red 20 Red 21 Red 22 Red 23 Red 24 Red 25 Red 26 Red 27
TR2 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
TR4 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
TR3 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
TR1 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
LoaderChip 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Forklift 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
LoaderBio 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)

Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. Height Terrain L HDef.
51 Re-sizer Equipment Enclosure 9.76 0.00 Relative to Objects
70 Biomass Fuel Screen & Hog 2.00 0.00 Relative
29 Bag House 3.00 0.00 Relative to Objects
74 Chip Screen Overs 9.76 0.00 Relative to Objects
VENTCB Wastewater System Vent - Cogeneration Bldg 7.62 0.00 Relative
VENTPB Wastewater System Vent - Pellet Bldg 9.14 0.00 Relative
VENTBD Wastewater System Vent - Bed Dosing 2.50 0.00 Relative
LR Line Reactor 4.00 0.00 Relative
LB Load Bank 4.00 0.00 Relative
38 Dust Pick-ups and Acreen Fines-Bag House Vent 14.02 0.00 Relative to Objects
39 Pellet Cooler-Cyclone Vent 14.02 0.00 Relative to Objects
42 Building Noise 0.50 7.01 Relative to Objects
53 Pellet Storage Silo Vent 0.90 16.99 Relative to Objects
57 Dry Chip Storage Silo Vent 18.00 0.00 Relative to Objects
58E Chip Dryer - Exhaust 2.50 0.00 Relative to Objects
58E Chip Dryer - Exhaust 2.50 0.00 Relative to Objects
58E Chip Dryer - Exhaust 2.50 0.00 Relative to Objects
58E Chip Dryer - Exhaust 2.50 0.00 Relative to Objects
59 Cooling Tower 6.71 0.00 Relative to Objects
59 Cooling Tower 6.71 0.00 Relative to Objects
60 Truck Dumper 1.00 0.00 Relative
81 Disk Screen 2.00 0.00 Relative
82 12 hr Enclosed Storage w/ Re-claim 2.00 0.00 Relative
Turbine Turbine Generator 2.00 0.00 Relative to Objects
Boiler Boiler 2.00 18.14 Relative to Objects
IDF Induced Draft Fan 1.00 18.14 Relative to Objects
UFAF Under Fire Air Fan 1.00 18.14 Relative to Objects
OFAF Over Fire Air Fan 1.00 8.13 Relative to Objects
FGRF Flue Gas Recirculation Fan 1.00 8.13 Relative to Objects
HM Hammer Mill 0.00 0.00 Relative to Objects
PM Pellet Mill 0.00 0.00 Relative to Objects
BFHSWT Biomass Fuel Hog Swing Hammer Type 2.00 0.00 Relative to Objects
52 Garage Vehicle Exhaust System 2.50 0.00 Relative to Objects
48 Garage HVAC 2.50 0.00 Relative to Objects
58 Chip Dryer 2.50 0.00 Relative to Objects
58 Chip Dryer 2.50 0.00 Relative to Objects
58 Chip Dryer 2.50 0.00 Relative to Objects
58 Chip Dryer 2.50 0.00 Relative to Objects
40 Fine Hammer Mill-Bag House Vent 14.02 0.00 Relative to Objects
ST Secondary Transformer (750 kVA) 6.00 0.00 Relative to Objects
MT Main Transformer (1500 kVA) 6.00 0.00 Relative to Objects
60 Truck Dumper 1.00 0.00 Relative
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Type Dir. Angle Ca(D) Ca(E) Ca(N) No refl. No building No ind.site Lw 1
51 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
70 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
29 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
74 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
VENTCB Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --

VENTPB Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
VENTBD Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
LR Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
LB Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
38 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
39 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
42 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
53 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
57 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
58E Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
58E Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
58E Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
58E Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
59 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
59 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
60 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
81 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
82 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
Turbine Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
Boiler Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
IDF Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
UFAF Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
OFAF Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
FGRF Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
HM Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
PM Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
BFHSWT Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
52 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
48 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
58 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
58 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
58 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
58 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
40 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
ST Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
MT Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
60 Normal point source 0.00 360.00 0.00 0.00 0.00 No No No --
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Lw 2 Lw 3 Lw 4 Lw 5 Lw 6 Lw 7 Lw 8 Lw 9 Lw 10 Lw 11 Lw 12 Lw 13 Lw 14 Lw 15 Lw 16 Lw 17
51 -- -- -- -- -- -- -- -- -- -- -- 20.00 -- -- -- --
70 -- -- -- -- -- -- -- -- -- -- -- 105.00 -- -- -- --
29 -- -- -- -- -- -- -- -- -- -- -- 60.00 -- -- -- --
74 -- -- -- -- -- -- -- -- -- -- -- 70.00 -- -- -- --
VENTCB -- -- -- -- -- -- -- -- -- -- -- 75.00 -- -- -- --
VENTPB -- -- -- -- -- -- -- -- -- -- -- 75.00 -- -- -- --
VENTBD -- -- -- -- -- -- -- -- -- -- -- 75.00 -- -- -- --
LR -- -- -- -- -- -- -- -- -- -- -- 68.00 -- -- -- --
LB -- -- -- -- -- -- -- -- -- -- -- 68.00 -- -- -- --
38 -- -- -- -- -- -- -- -- -- -- -- 85.00 -- -- -- --
39 -- -- -- -- -- -- -- -- -- -- -- 85.00 -- -- -- --
42 -- -- -- -- -- -- -- -- -- -- -- 75.00 -- -- -- --

53 -- -- -- -- -- -- -- -- -- -- -- 65.00 -- -- -- --
57 -- -- -- -- -- -- -- -- -- -- -- 65.00 -- -- -- --
58E -- -- -- -- -- -- -- -- -- -- -- 93.00 -- -- -- --
58E -- -- -- -- -- -- -- -- -- -- -- 93.00 -- -- -- --
58E -- -- -- -- -- -- -- -- -- -- -- 93.00 -- -- -- --
58E -- -- -- -- -- -- -- -- -- -- -- 93.00 -- -- -- --
59 -- -- -- -- -- -- -- -- -- -- -- 85.00 -- -- -- --
59 -- -- -- -- -- -- -- -- -- -- -- 85.00 -- -- -- --
60 -- -- -- -- -- -- -- -- -- -- -- 95.00 -- -- -- --
81 -- -- -- -- -- -- -- -- -- -- -- 70.00 -- -- -- --
82 -- -- -- -- -- -- -- -- -- -- -- 70.00 -- -- -- --
Turbine -- -- -- -- -- -- -- -- -- -- -- 76.02 -- -- -- --
Boiler -- -- -- -- -- -- -- -- -- -- -- 76.02 -- -- -- --
IDF -- -- -- -- -- -- -- -- -- -- -- 120.00 -- -- -- --
UFAF -- -- -- -- -- -- -- -- -- -- -- 109.00 -- -- -- --
OFAF -- -- -- -- -- -- -- -- -- -- -- 111.00 -- -- -- --
FGRF -- -- -- -- -- -- -- -- -- -- -- 103.00 -- -- -- --
HM -- -- -- -- -- -- -- -- -- -- -- 118.00 -- -- -- --
PM -- -- -- -- -- -- -- -- -- -- -- 93.00 -- -- -- --
BFHSWT -- -- -- -- -- -- -- -- -- -- -- 105.00 -- -- -- --
52 -- -- -- -- -- -- -- -- -- -- -- 100.00 -- -- -- --
48 -- -- -- -- -- -- -- -- -- -- -- 100.00 -- -- -- --
58 -- -- -- -- -- -- -- -- -- -- -- 83.00 -- -- -- --
58 -- -- -- -- -- -- -- -- -- -- -- 83.00 -- -- -- --
58 -- -- -- -- -- -- -- -- -- -- -- 83.00 -- -- -- --
58 -- -- -- -- -- -- -- -- -- -- -- 83.00 -- -- -- --
40 -- -- -- -- -- -- -- -- -- -- -- 85.00 -- -- -- --
ST -- -- -- -- -- -- -- -- -- -- -- 63.00 -- -- -- --
MT -- -- -- -- -- -- -- -- -- -- -- 73.00 -- -- -- --
60 -- -- -- -- -- -- -- -- -- -- -- 95.00 -- -- -- --
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Lw 18 Lw 19 Lw 20 Lw 21 Lw 22 Lw 23 Lw 24 Lw 25 Lw 26 Lw 27 Red 1 Red 2 Red 3 Red 4
51 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
70 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
29 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
74 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
VENTCB -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
VENTPB -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
VENTBD -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
LR -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
LB -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
38 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
39 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
42 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
53 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
57 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
58E -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
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58E -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
58E -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
59 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00

59 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
60 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
81 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
82 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
Turbine -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
Boiler -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
IDF -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
UFAF -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
OFAF -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
FGRF -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
HM -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
PM -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
BFHSWT -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
52 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
48 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
58 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
58 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
58 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
58 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
40 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
ST -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
MT -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
60 -- -- -- -- -- -- -- -- -- -- 0.00 0.00 0.00 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Red 5 Red 6 Red 7 Red 8 Red 9 Red 10 Red 11 Red 12 Red 13 Red 14 Red 15
51 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
70 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
29 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
74 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VENTCB 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VENTPB 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VENTBD 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
LR 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
LB 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
38 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
39 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
42 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
53 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
57 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
58E 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
58E 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
58E 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
58E 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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59 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
60 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
81 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
82 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Turbine 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Boiler 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
IDF 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

UFAF 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
OFAF 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
FGRF 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
HM 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
PM 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
BFHSWT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
52 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
48 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
58 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
58 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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58 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
40 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
ST 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
MT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
60 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Red 16 Red 17 Red 18 Red 19 Red 20 Red 21 Red 22 Red 23 Red 24 Red 25 Red 26
51 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
70 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
29 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
74 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VENTCB 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VENTPB 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VENTBD 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
LR 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
LB 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
38 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
39 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
42 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
53 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
57 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
58E 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
58E 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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60 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
81 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
82 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Turbine 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Boiler 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
IDF 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
UFAF 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
OFAF 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
FGRF 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
HM 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
PM 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
BFHSWT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
52 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

48 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
58 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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58 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
58 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
40 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
ST 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
MT 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
60 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Red 27
51 0.00
70 0.00
29 0.00
74 0.00
VENTCB 0.00
VENTPB 0.00
VENTBD 0.00
LR 0.00
LB 0.00
38 0.00
39 0.00
42 0.00
53 0.00
57 0.00
58E 0.00
58E 0.00
58E 0.00
58E 0.00
59 0.00
59 0.00
60 0.00
81 0.00
82 0.00
Turbine 0.00
Boiler 0.00
IDF 0.00
UFAF 0.00
OFAF 0.00
FGRF 0.00
HM 0.00
PM 0.00
BFHSWT 0.00
52 0.00
48 0.00
58 0.00
58 0.00
58 0.00
58 0.00
40 0.00
ST 0.00

MT 0.00
60 0.00
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Grids, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. Height Terrain L DeltaX DeltaY
Grid Grid 4.50 0.00 20 20
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Receivers, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. Terrain L HDef. Height A Height B Height C Height D Height E Height F
POR 1 Armstrong Public School 0.00 Relative 1.50 4.50 -- -- -- --
POR 2 McKenzie Inn/Cottages 0.00 Relative 1.50 4.50 -- -- -- --
POR 3 Residence 0.00 Relative 1.50 4.50 -- -- -- --
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Receivers, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Façade
POR 1 Yes
POR 2 Yes
POR 3 Yes
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Buildings, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. Height Terrain L HDef. Cp Refl. 1 Refl. 2 Refl. 3
Bio Buid. Biomass Processing Building 13.82 0.00 Relative 0 dB 0.80 0.80 0.80
Garage Garage 8.36 0.00 Relative 0 dB 0.80 0.80 0.80
B/T Boiler/Turbine Plant SE Section 18.14 0.00 Relative 0 dB 0.80 0.80 0.80
B/T Boiler/Turbine Plant NW Section 8.13 0.00 Relative 0 dB 0.80 0.80 0.80
Fire Fire Pump Building 8.36 0.00 Relative 0 dB 0.80 0.80 0.80
Wood Plant Wood Pellet Plant NE Section 22.91 0.00 Relative 0 dB 0.80 0.80 0.80
Wood Plant Wood Pellet Plant SW Section 7.01 0.00 Relative 0 dB 0.80 0.80 0.80
57 Dry Chip Storage Silo Vent 22.91 0.00 Relative 0 dB 0.80 0.80 0.80
53 Pellet Storage Silo Vent 16.99 0.00 Relative 0 dB 0.80 0.80 0.80
Predictor V10.00 2014-12-22 4:52:21 PM

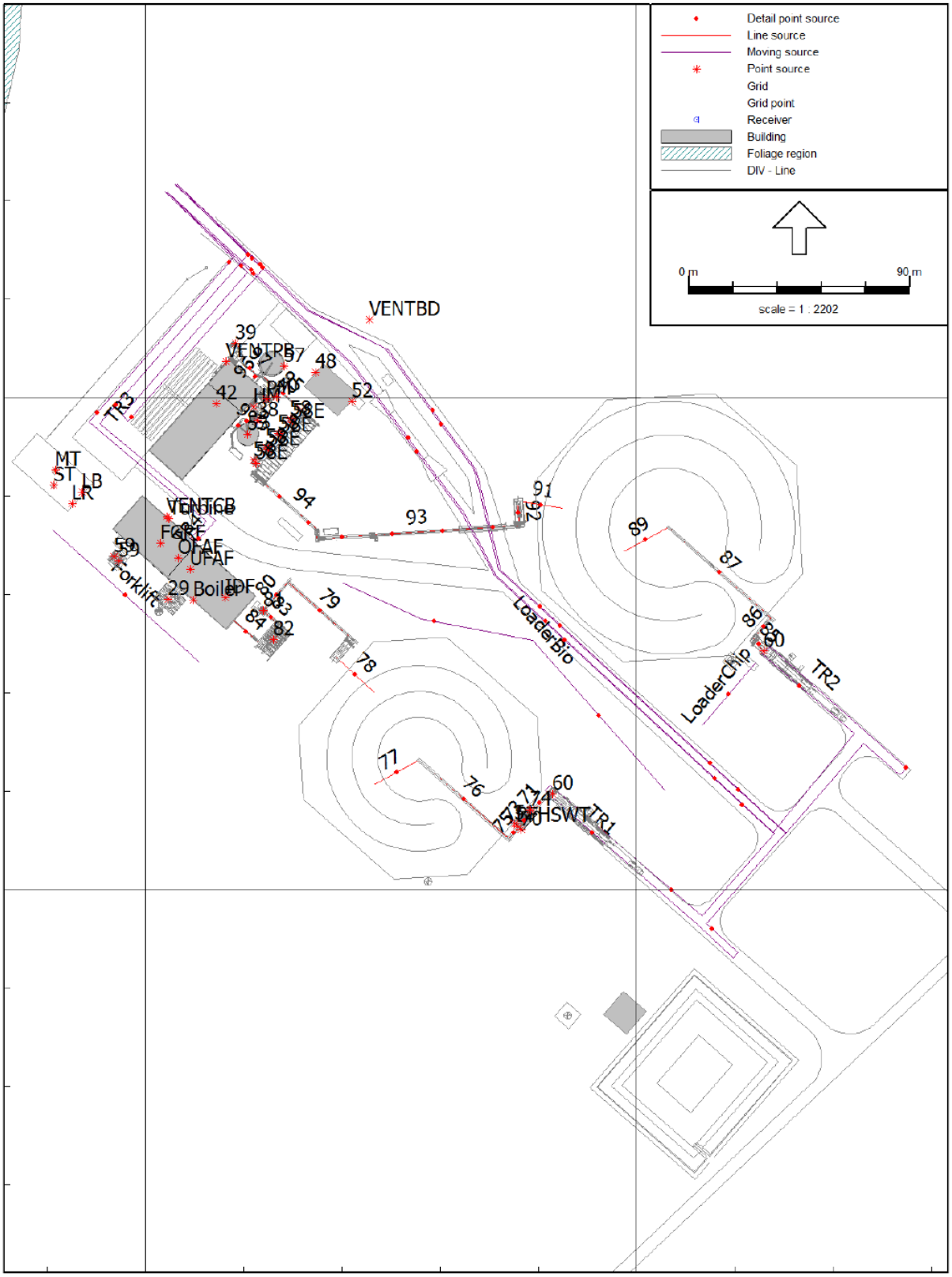
Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Buildings, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Refl. 4 Refl. 5 Refl. 6 Refl. 7 Refl. 8 Refl. 9 Refl. 10 Refl. 11 Refl. 12 Refl. 13 Refl. 14
Bio Buid. 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Garage 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
B/T 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80

B/T 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Fire 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
57 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
53 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Predictor V10.00 2014-12-22 4:52:21 PM

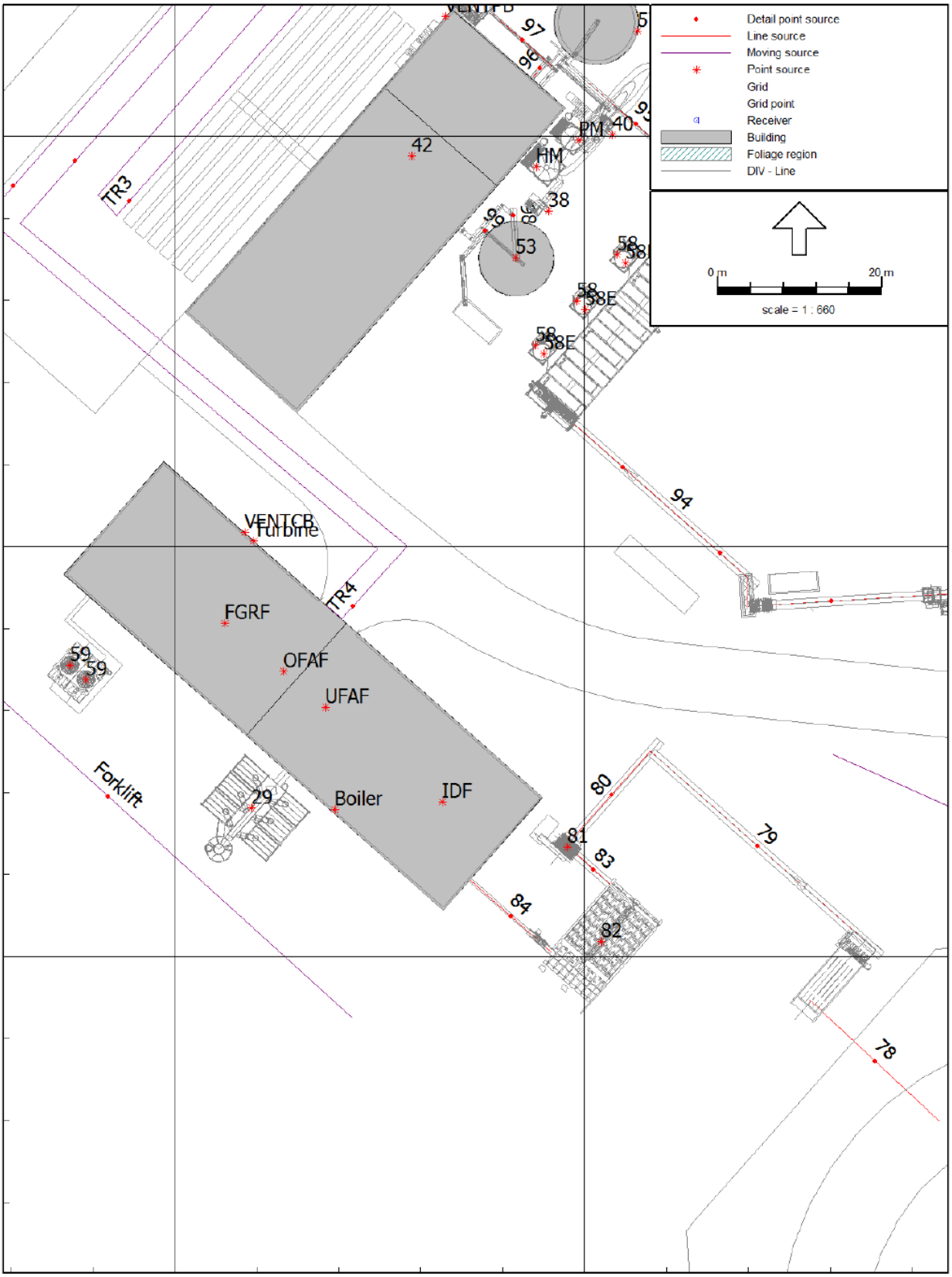
Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Buildings, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Refl. 15 Refl. 16 Refl. 17 Refl. 18 Refl. 19 Refl. 20 Refl. 21 Refl. 22 Refl. 23 Refl. 24
Bio Buid. 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Garage 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
B/T 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
B/T 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Fire 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
57 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
53 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Predictor V10.00 2014-12-22 4:52:21 PM

Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Buildings, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Refl. 25 Refl. 26 Refl. 27
Bio Buid. 0.80 0.80 0.80
Garage 0.80 0.80 0.80
B/T 0.80 0.80 0.80
B/T 0.80 0.80 0.80
Fire 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80
57 0.80 0.80 0.80
53 0.80 0.80 0.80
Predictor V10.00 2014-12-22 4:52:21 PM

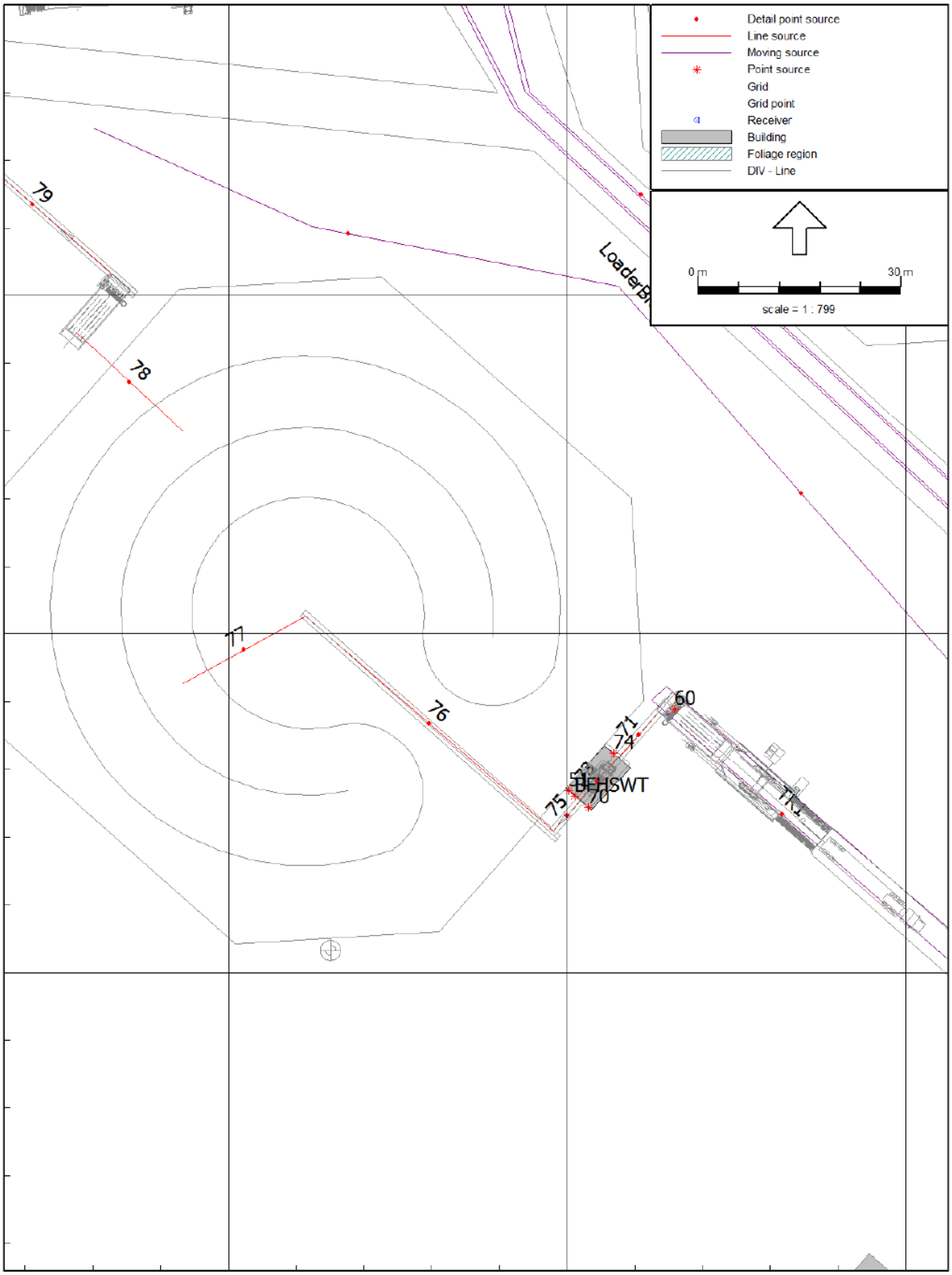
Model: Regular Operations - 2014 Updated Model
version of Area - Area
Group: (main group)
Listing of: Foliage regions, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. Height Terrain L HDef.
Forest Forested Area 1 10.00 0.00 Relative
Forest Forested Area 2 10.00 0.00 Relative
Predictor V10.00 2014-12-22 4:52:21 PM



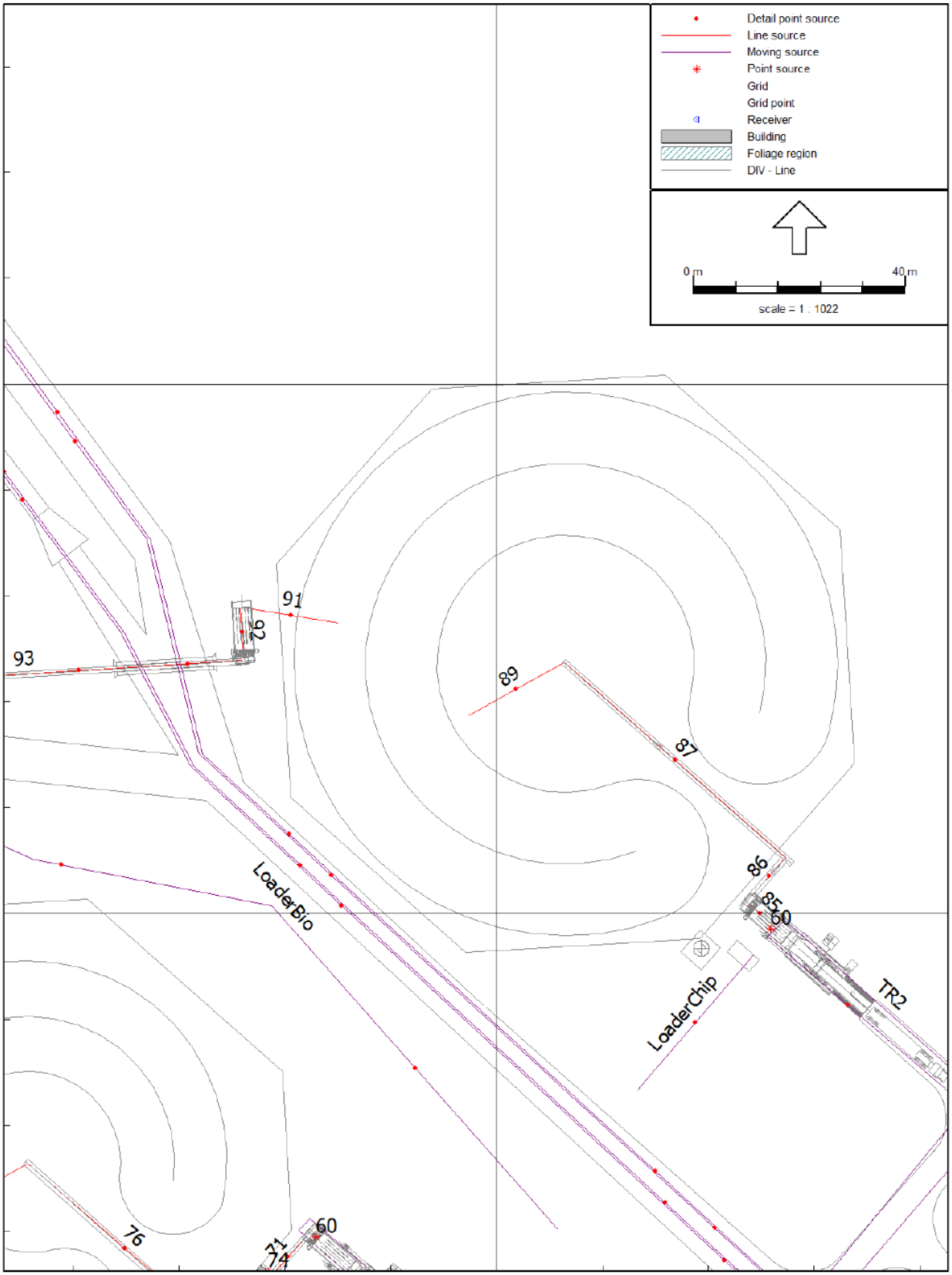
E 1: Plot of Source Attributes – Regular Operations – Full View



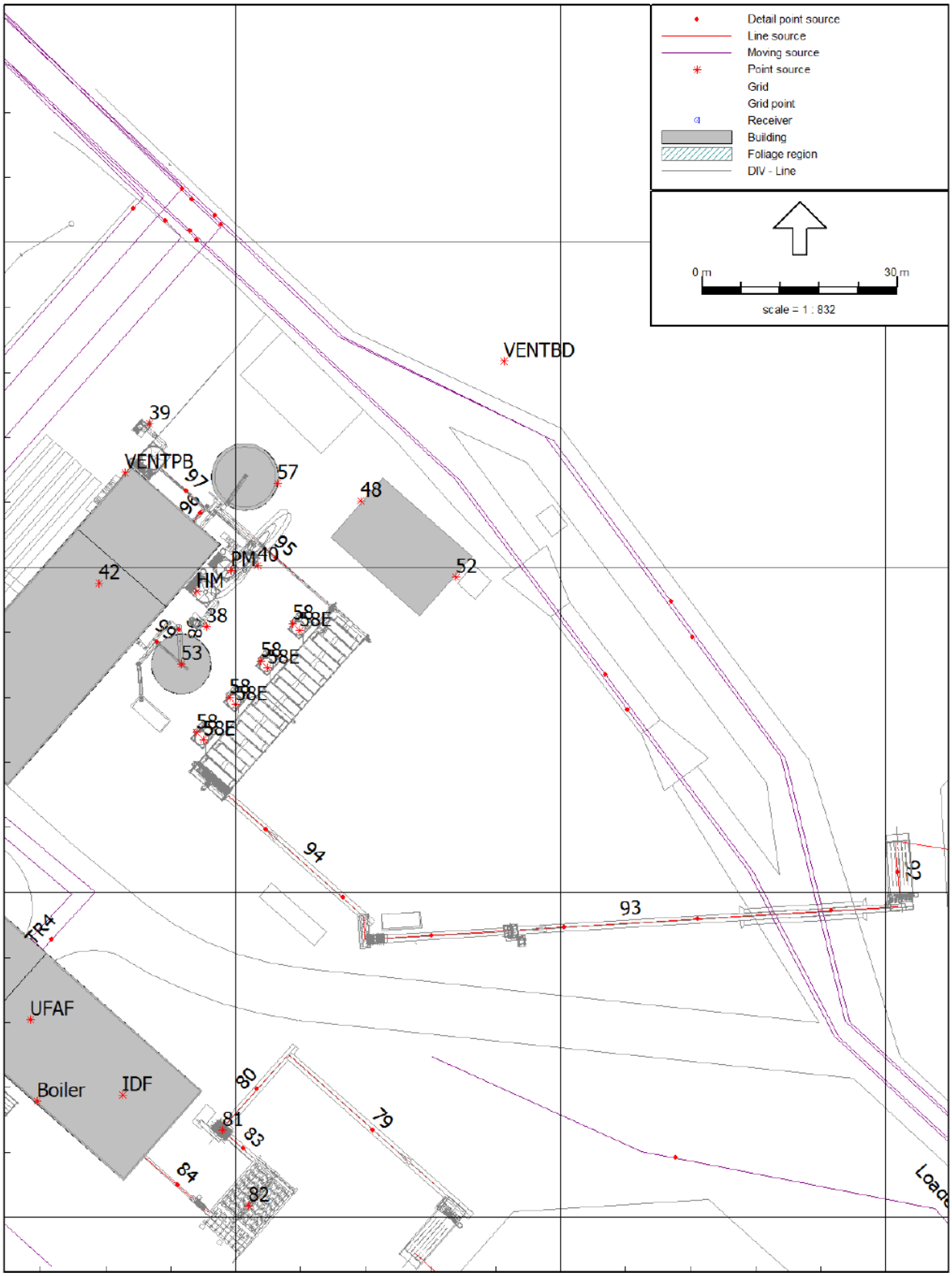
E 2: Plot of Source Attributes – Regular Operations – Boiler/Turbine Building



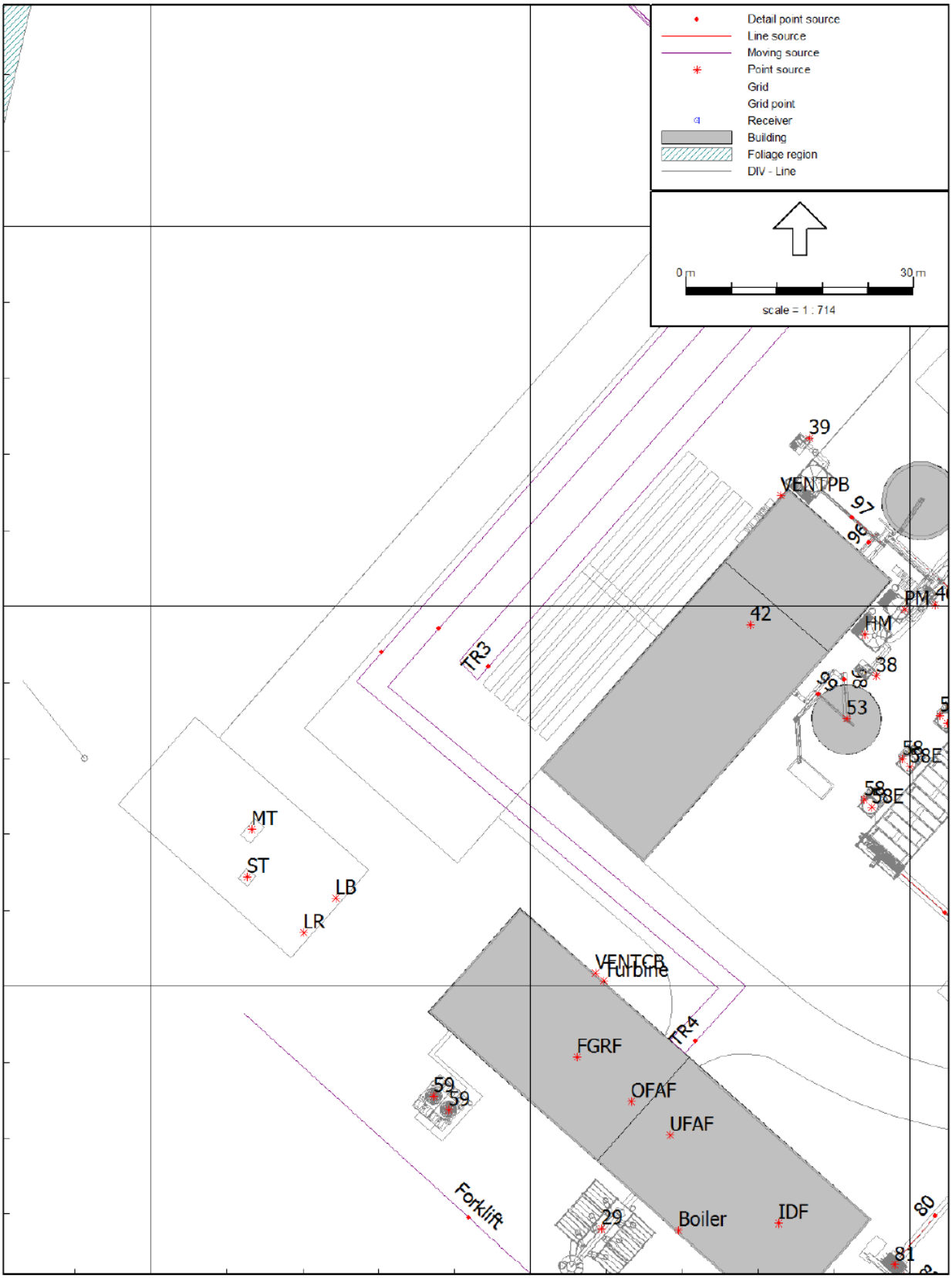
E 3: Plot of Source Attributes – Regular Operations – Fuel Storage Area



E 4: Plot of Source Attributes – Regular Operations – Chip Storage Area



E 5: Plot of Source Attributes – Regular Operations – Pellet Mill



E 6: Plot of Source Attributes – Regular Operations – Electrical Transformers

Emergency Equipment Operations

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. Height Terrain L HDef. Type Dir.
31 Fire Pump Diesel Engine 8.23 0.00 Relative to Objects Normal point source 0.00
30 Stand by Generator (500kW) 8.23 0.00 Relative to Objects Normal point source 0.00
31E Fire Pump Diesel Engine - Exhaust 1.00 8.36 Relative to Objects Normal point source 0.00
Main FP Fire Pump Main 1.00 0.00 Relative to Objects Normal point source 0.00
2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Angle Ca(D) Ca(E) Ca(N) No refl. No building No ind.site Lw 1 Lw 2 Lw 3 Lw 4 Lw 5 Lw 6
31 360.00 0.00 0.00 0.00 No No No -- -- -- -- -- --
30 360.00 0.00 0.00 0.00 No No No -- -- -- -- -- --
31E 360.00 0.00 0.00 0.00 No No No -- -- -- -- -- --
Main FP 360.00 0.00 0.00 0.00 No No No -- -- -- -- -- --
2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Lw 7 Lw 8 Lw 9 Lw 10 Lw 11 Lw 12 Lw 13 Lw 14 Lw 15 Lw 16 Lw 17 Lw 18 Lw 19 Lw 20 Lw 21
31 -- -- -- -- -- -- 105.20 -- -- -- -- -- -- -- --
30 -- -- -- -- -- -- 112.90 -- -- -- -- -- -- -- --
31E -- -- -- -- -- -- 127.00 -- -- -- -- -- -- -- --
Main FP -- -- -- -- -- -- 93.00 -- -- -- -- -- -- -- --
2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Lw 22 Lw 23 Lw 24 Lw 25 Lw 26 Lw 27 Red 1 Red 2 Red 3 Red 4 Red 5 Red 6 Red 7
31 -- -- -- -- -- -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00
30 -- -- -- -- -- -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00
31E -- -- -- -- -- -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Main FP -- -- -- -- -- -- 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Red 8 Red 9 Red 10 Red 11 Red 12 Red 13 Red 14 Red 15 Red 16 Red 17 Red 18
31 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
30 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
31E 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Main FP 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Point sources, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Red 19 Red 20 Red 21 Red 22 Red 23 Red 24 Red 25 Red 26 Red 27
31 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
30 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
31E 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Main FP 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Grids, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. Height Terrain L DeltaX DeltaY
Grid Grid 4.50 0.00 20 20
2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Receivers, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. Terrain L HDef. Height A Height B Height C Height D Height E Height F
POR 1 Armstrong Public School 0.00 Relative 1.50 4.50 -- -- -- --
POR 2 McKenzie Inn/Cottages 0.00 Relative 1.50 4.50 -- -- -- --
POR 3 Residence 0.00 Relative 1.50 4.50 -- -- -- --
2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Receivers, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Façade
POR 1 Yes
POR 2 Yes
POR 3 Yes
2014-Predictor V9.11 08-19 3:25:45 PM

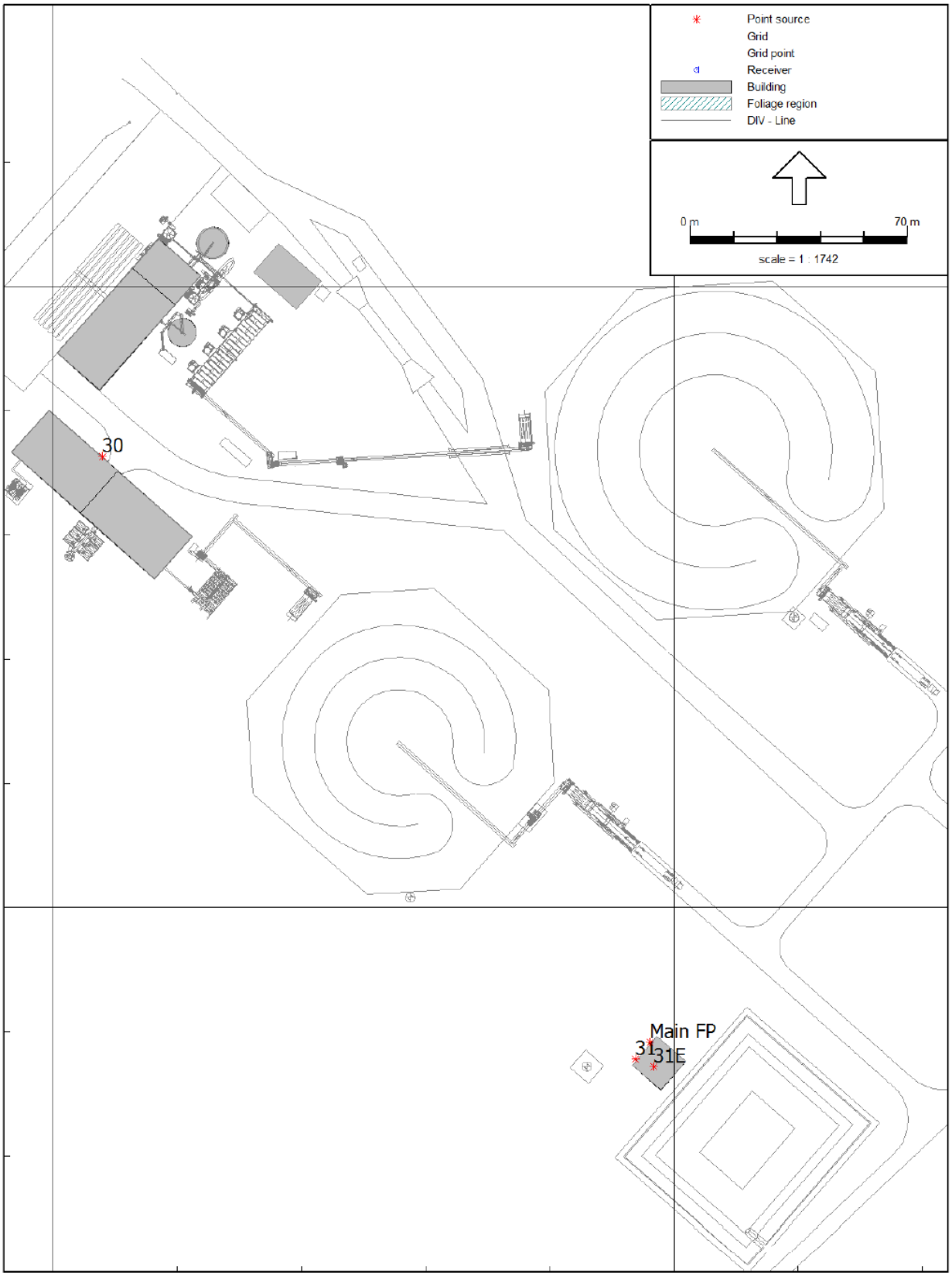
Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Buildings, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. Height Terrain L HDef. Cp Refl. 1 Refl. 2 Refl. 3
Garage Garage 8.36 0.00 Relative 0 dB 0.80 0.80 0.80
B/T Boiler/Turbine Plant SE Section 18.14 0.00 Relative 0 dB 0.80 0.80 0.80
B/T Boiler/Turbine Plant NW Section 8.13 0.00 Relative 0 dB 0.80 0.80 0.80
Fire Fire Pump Building 8.36 0.00 Relative 0 dB 0.80 0.80 0.80
Wood Plant Wood Pellet Plant NE Section 22.91 0.00 Relative 0 dB 0.80 0.80 0.80
Wood Plant Wood Pellet Plant SW Section 7.01 0.00 Relative 0 dB 0.80 0.80 0.80
57 Dry Chip Storage Silo Vent 22.91 0.00 Relative 0 dB 0.80 0.80 0.80
53 Pellet Storage Silo Vent 16.99 0.00 Relative 0 dB 0.80 0.80 0.80
2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Buildings, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Refl. 4 Refl. 5 Refl. 6 Refl. 7 Refl. 8 Refl. 9 Refl. 10 Refl. 11 Refl. 12 Refl. 13 Refl. 14
Garage 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
B/T 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
B/T 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Fire 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
57 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
53 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Buildings, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Refl. 15 Refl. 16 Refl. 17 Refl. 18 Refl. 19 Refl. 20 Refl. 21 Refl. 22 Refl. 23 Refl. 24
Garage 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
B/T 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
B/T 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Fire 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
57 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
53 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
2014-Predictor V9.11 08-19 3:25:45 PM

Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Buildings, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Refl. 25 Refl. 26 Refl. 27
Garage 0.80 0.80 0.80
B/T 0.80 0.80 0.80
B/T 0.80 0.80 0.80
Fire 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80
Wood Plant 0.80 0.80 0.80
57 0.80 0.80 0.80
53 0.80 0.80 0.80

2014-Predictor V9.11 08-19 3:25:45 PM
Model: Emergency Operations - 2014 August Updated Model
version of Area - Area
Group: (main group)
Listing of: Foliage regions, for method Industrial noise - ISO 9613.1/2 (1/3 Octave)
Name Desc. Height Terrain L HDef.
Forest Forested Area 1 10.00 0.00 Relative
Forest Forested Area 2 10.00 0.00 Relative
2014-Predictor V9.11 08-19 3:25:45 PM



E 7: Plot of Source Attributes – Emergency Equipment Operations – Full View

Appendix F: Predictor Output Results

Regular Operations

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 1_A - Armstrong Public School
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
POR 1_A Armstrong Public School 1.50 37.5 37.5
29 Bag House 3.00 -30.3 -30.3
38 Dust Pick-ups and Acreen Fines-Bag House Vent 14.02 -2.4 -2.4
39 Pellet Cooler-Cyclone Vent 14.02 7.5 7.5
40 Fine Hammer Mill-Bag House Vent 14.02 -2.9 -2.9
42 Building Noise 0.50 -20.3 -20.3
48 Garage HVAC 2.50 25.2 25.2
51 Re-sizer Equipment Enclosure 9.76 -64.5 -64.5
52 Garage Vehicle Exhaust System 2.50 8.8 8.8
53 Pellet Storage Silo Vent 0.90 -23.5 -23.5
57 Dry Chip Storage Silo Vent 18.00 -17.2 -17.2
58 Chip Dryer 2.50 4.9 4.9
58 Chip Dryer 2.50 -3.4 -3.4
58 Chip Dryer 2.50 0.0 0.0
58 Chip Dryer 2.50 -6.5 -6.5
58E Chip Dryer - Exhaust 2.50 14.9 14.9
58E Chip Dryer - Exhaust 2.50 6.9 6.9
58E Chip Dryer - Exhaust 2.50 10.4 10.4
58E Chip Dryer - Exhaust 2.50 4.5 4.5
59 Cooling Tower 6.71 7.8 7.8
59 Cooling Tower 6.71 7.1 7.1
60 Truck Dumper 1.00 10.3 10.3
60 Truck Dumper 1.00 10.0 10.0
70 Biomass Fuel Screen & Hog 2.00 12.1 12.1
71 Imported Biomass Transfer Conveyor 2.00 -0.9 -0.9
73 Raw Fuel Infeed 2.00 -15.6 -15.6
74 Chip Screen Overs 9.76 -6.4 -6.4
75 Fuel Transfer Conveyor 1 2.00 -2.8 -2.8
76 Fuel Transfer Conveyor to Stacker 1.00 1.9 1.9
77 Fuel Stacker 2.00 3.0 3.0
78 Fuel Re-claim 2.00 2.7 2.7
79 Fuel Re-claim Transfer 2.00 5.7 5.7
80 Fuel Transfer 2 2.00 -0.8 -0.8
81 Disk Screen 2.00 -15.2 -15.2
82 12 hr Enclosed Storage w/ Re-claim 2.00 -13.0 -13.0
83 Fuel Transfer Conveyor 2.00 -6.4 -6.4
84 Fuel Infeed Conveyor 2.00 -11.1 -11.1
85 Chip Transfer Conveyor 2.00 -1.7 -1.7
86 Chip Transfer Conveyor 2 2.00 -0.4 -0.4
87 Chip Transfer Conv3 1.00 3.1 3.1
89 Chip Stacker-Aspen/Birch 2.00 3.5 3.5
91 Chip Re-claim-Aspen/Birch 2.00 3.1 3.1
92 Reclaim Conveyor 1 2.00 0.1 0.1

93 Reclaim Conveyor 2 2.00 10.9 10.9
94 Reclaim Conveyor 3 2.00 3.7 3.7
95 Dried Chip Storage Feed Conveyors 2.00 -2.4 -2.4
96 Dried Chip Storage Discharge Conveyors 2.00 -1.5 -1.5
97 Baghouse Fines Conveyors 2.00 3.9 3.9
98 Dried Pellet Storage Feed Conveyors 2.00 -19.2 -19.2
99 Dried Pellet Storage Discharge Conveyors 2.00 -23.8 -23.8
BFHSWT Biomass Fuel Hog Swing Hammer Type 2.00 15.1 15.1
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 1_A - Armstrong Public School
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
Boiler Boiler 2.00 -3.6 -3.6
FGRF Flue Gas Recirculation Fan 1.00 18.9 18.9
Forklift ME - Forklift - Pellet Shipping Forklift 0.75 5.7 4.5
HM Hammer Mill 0.00 16.2 16.2
IDF Induced Draft Fan 1.00 35.7 35.7
LB Load Bank 4.00 -9.8 -9.8
LoaderBio ME - Front End Loader - Biomass Receiving 2.00 12.2 10.9
LoaderChip ME - Front End Loader - Chip Reclaim 2.00 5.1 3.9
LR Line Reactor 4.00 -9.8 -9.8
MT Main Transformer (1500 kVA) 6.00 -4.8 -4.8
OFAF Over Fire Air Fan 1.00 29.4 29.4
PM Pellet Mill 0.00 -4.2 -4.2
ST Secondary Transformer (750 kVA) 6.00 -14.8 -14.8
TR1 Biomass Delivery - Transport Truck 1.50 1.5 --
TR2 Chipped Biomass Delivery - Transport Truck 1.50 1.4 --
TR3 Wood Pellet Shipment - Transport Truck 1.50 -3.7 --
TR4 Ash Waste Truck - Transport Truck 1.50 -12.3 --
Turbine Turbine Generator 2.00 -3.9 -3.9
UFAF Under Fire Air Fan 1.00 24.8 24.8
VENTBD Wastewater System Vent - Bed Dosing 2.50 -2.8 -2.8
VENTCB Wastewater System Vent - Cogeneration Bldg 7.62 -2.7 -2.7
VENTPB Wastewater System Vent - Pellet Bldg 9.14 0.1 0.1
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 1_B - Armstrong Public School
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
POR 1_B Armstrong Public School 4.50 40.7 40.7
29 Bag House 3.00 -29.8 -29.8
38 Dust Pick-ups and Acreen Fines-Bag House Vent 14.02 0.5 0.5
39 Pellet Cooler-Cyclone Vent 14.02 10.9 10.9
40 Fine Hammer Mill-Bag House Vent 14.02 0.1 0.1
42 Building Noise 0.50 -17.9 -17.9

48 Garage HVAC 2.50 28.6 28.6
51 Re-sizer Equipment Enclosure 9.76 -61.3 -61.3
52 Garage Vehicle Exhaust System 2.50 11.6 11.6
53 Pellet Storage Silo Vent 0.90 -23.0 -23.0
57 Dry Chip Storage Silo Vent 18.00 -14.0 -14.0
58 Chip Dryer 2.50 8.3 8.3
58 Chip Dryer 2.50 -0.2 -0.2
58 Chip Dryer 2.50 3.3 3.3
58 Chip Dryer 2.50 -3.4 -3.4
58E Chip Dryer - Exhaust 2.50 18.3 18.3
58E Chip Dryer - Exhaust 2.50 10.2 10.2
58E Chip Dryer - Exhaust 2.50 13.7 13.7
58E Chip Dryer - Exhaust 2.50 7.6 7.6
59 Cooling Tower 6.71 9.0 9.0
59 Cooling Tower 6.71 7.7 7.7
60 Truck Dumper 1.00 13.8 13.8
60 Truck Dumper 1.00 13.5 13.5
70 Biomass Fuel Screen & Hog 2.00 15.2 15.2
71 Imported Biomass Transfer Conveyor 2.00 2.6 2.6
73 Raw Fuel Infeed 2.00 -13.8 -13.8
74 Chip Screen Overs 9.76 -3.0 -3.0
75 Fuel Transfer Conveyor 1 2.00 0.6 0.6
76 Fuel Transfer Conveyor to Stacker 1.00 5.3 5.3
77 Fuel Stacker 2.00 4.5 4.5
78 Fuel Re-claim 2.00 3.5 3.5
79 Fuel Re-claim Transfer 2.00 9.1 9.1
80 Fuel Transfer 2 2.00 1.5 1.5
81 Disk Screen 2.00 -13.3 -13.3
82 12 hr Enclosed Storage w/ Re-claim 2.00 -11.1 -11.1
83 Fuel Transfer Conveyor 2.00 -4.3 -4.3
84 Fuel Infeed Conveyor 2.00 -8.1 -8.1
85 Chip Transfer Conveyor 2.00 1.8 1.8
86 Chip Transfer Conveyor 2 2.00 3.1 3.1
87 Chip Transfer Conv3 1.00 6.5 6.5
89 Chip Stacker-Aspen/Birch 2.00 7.0 7.0
91 Chip Re-claim-Aspen/Birch 2.00 6.5 6.5
92 Reclaim Conveyor 1 2.00 3.5 3.5
93 Reclaim Conveyor 2 2.00 13.2 13.2
94 Reclaim Conveyor 3 2.00 7.0 7.0
95 Dried Chip Storage Feed Conveyors 2.00 1.0 1.0
96 Dried Chip Storage Discharge Conveyors 2.00 1.9 1.9
97 Baghouse Fines Conveyors 2.00 7.3 7.3
98 Dried Pellet Storage Feed Conveyors 2.00 -16.1 -16.1
99 Dried Pellet Storage Discharge Conveyors 2.00 -20.7 -20.7
BFHSWT Biomass Fuel Hog Swing Hammer Type 2.00 18.2 18.2
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 1_B - Armstrong Public School
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
Boiler Boiler 2.00 -0.6 -0.6

FGRF Flue Gas Recirculation Fan 1.00 22.3 22.3
Forklift ME - Forklift - Pellet Shipping Forklift 0.75 6.4 5.1
HM Hammer Mill 0.00 17.8 17.8
IDF Induced Draft Fan 1.00 38.9 38.9
LB Load Bank 4.00 -6.4 -6.4
LoaderBio ME - Front End Loader - Biomass Receiving 2.00 15.6 14.4
LoaderChip ME - Front End Loader - Chip Reclaim 2.00 8.6 7.3
LR Line Reactor 4.00 -6.4 -6.4
MT Main Transformer (1500 kVA) 6.00 -1.3 -1.3
OFAF Over Fire Air Fan 1.00 32.8 32.8
PM Pellet Mill 0.00 -1.7 -1.7
ST Secondary Transformer (750 kVA) 6.00 -11.4 -11.4
TR1 Biomass Delivery - Transport Truck 1.50 2.1 --
TR2 Chipped Biomass Delivery - Transport Truck 1.50 2.0 --
TR3 Wood Pellet Shipment - Transport Truck 1.50 -3.1 --
TR4 Ash Waste Truck - Transport Truck 1.50 -11.7 --
Turbine Turbine Generator 2.00 -3.3 -3.3
UFAF Under Fire Air Fan 1.00 28.2 28.2
VENTBD Wastewater System Vent - Bed Dosing 2.50 0.6 0.6
VENTCB Wastewater System Vent - Cogeneration Bldg 7.62 -2.2 -2.2
VENTPB Wastewater System Vent - Pellet Bldg 9.14 3.5 3.5
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 2_A - McKenzie Inn/Cottages
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
POR 2_A McKenzie Inn/Cottages 1.50 34.7 34.7
29 Bag House 3.00 -19.0 -19.0
38 Dust Pick-ups and Acreen Fines-Bag House Vent 14.02 -4.9 -4.9
39 Pellet Cooler-Cyclone Vent 14.02 -9.6 -9.6
40 Fine Hammer Mill-Bag House Vent 14.02 3.0 3.0
42 Building Noise 0.50 -13.0 -13.0
48 Garage HVAC 2.50 6.0 6.0
51 Re-sizer Equipment Enclosure 9.76 -58.6 -58.6
52 Garage Vehicle Exhaust System 2.50 20.1 20.1
53 Pellet Storage Silo Vent 0.90 -23.5 -23.5
57 Dry Chip Storage Silo Vent 18.00 -19.6 -19.6
58 Chip Dryer 2.50 1.7 1.7
58 Chip Dryer 2.50 1.1 1.1
58 Chip Dryer 2.50 -5.4 -5.4
58 Chip Dryer 2.50 -7.2 -7.2
58E Chip Dryer - Exhaust 2.50 11.9 11.9
58E Chip Dryer - Exhaust 2.50 11.2 11.2
58E Chip Dryer - Exhaust 2.50 4.7 4.7
58E Chip Dryer - Exhaust 2.50 2.8 2.8
59 Cooling Tower 6.71 6.1 6.1
59 Cooling Tower 6.71 6.1 6.1
60 Truck Dumper 1.00 7.2 7.2
60 Truck Dumper 1.00 7.7 7.7
70 Biomass Fuel Screen & Hog 2.00 25.0 25.0
71 Imported Biomass Transfer Conveyor 2.00 -7.9 -7.9

73 Raw Fuel Infeed 2.00 -18.2 -18.2
74 Chip Screen Overs 9.76 -24.1 -24.1
75 Fuel Transfer Conveyor 1 2.00 -2.4 -2.4
76 Fuel Transfer Conveyor to Stacker 1.00 -0.4 -0.4
77 Fuel Stacker 2.00 0.6 0.6
78 Fuel Re-claim 2.00 0.5 0.5
79 Fuel Re-claim Transfer 2.00 2.5 2.5
80 Fuel Transfer 2 2.00 1.1 1.1
81 Disk Screen 2.00 -10.4 -10.4
82 12 hr Enclosed Storage w/ Re-claim 2.00 -12.9 -12.9
83 Fuel Transfer Conveyor 2.00 -5.6 -5.6
84 Fuel Infeed Conveyor 2.00 -1.6 -1.6
85 Chip Transfer Conveyor 2.00 -4.8 -4.8
86 Chip Transfer Conveyor 2 2.00 -3.6 -3.6
87 Chip Transfer Conv3 1.00 -0.5 -0.5
89 Chip Stacker-Aspen/Birch 2.00 -0.2 -0.2
91 Chip Re-claim-Aspen/Birch 2.00 -0.8 -0.8
92 Reclaim Conveyor 1 2.00 -3.7 -3.7
93 Reclaim Conveyor 2 2.00 6.0 6.0
94 Reclaim Conveyor 3 2.00 0.6 0.6
95 Dried Chip Storage Feed Conveyors 2.00 -2.2 -2.2
96 Dried Chip Storage Discharge Conveyors 2.00 -24.1 -24.1
97 Baghouse Fines Conveyors 2.00 -20.0 -20.0
98 Dried Pellet Storage Feed Conveyors 2.00 -12.0 -12.0
99 Dried Pellet Storage Discharge Conveyors 2.00 -15.5 -15.5
BFHSWT Biomass Fuel Hog Swing Hammer Type 2.00 25.0 25.0
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 2_A - McKenzie Inn/Cottages
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
Boiler Boiler 2.00 -6.9 -6.9
FGRF Flue Gas Recirculation Fan 1.00 15.4 15.4
Forklift ME - Forklift - Pellet Shipping Forklift 0.75 4.9 3.7
HM Hammer Mill 0.00 21.9 21.9
IDF Induced Draft Fan 1.00 32.5 32.5
LB Load Bank 4.00 -13.6 -13.6
LoaderBio ME - Front End Loader - Biomass Receiving 2.00 9.2 8.0
LoaderChip ME - Front End Loader - Chip Reclaim 2.00 2.2 1.0
LR Line Reactor 4.00 -13.5 -13.5
MT Main Transformer (1500 kVA) 6.00 -7.3 -7.3
OFAF Over Fire Air Fan 1.00 15.1 15.1
PM Pellet Mill 0.00 -4.6 -4.6
ST Secondary Transformer (750 kVA) 6.00 -17.3 -17.3
TR1 Biomass Delivery - Transport Truck 1.50 -3.5 --
TR2 Chipped Biomass Delivery - Transport Truck 1.50 -3.2 --
TR3 Wood Pellet Shipment - Transport Truck 1.50 -11.6 --
TR4 Ash Waste Truck - Transport Truck 1.50 -19.6 --
Turbine Turbine Generator 2.00 -25.6 -25.6
UFAF Under Fire Air Fan 1.00 21.4 21.4
VENTBD Wastewater System Vent - Bed Dosing 2.50 -9.4 -9.4

VENTCB Wastewater System Vent - Cogeneration Bldg 7.62 -16.4 -16.4
VENTPB Wastewater System Vent - Pellet Bldg 9.14 -21.1 -21.1
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 2_B - McKenzie Inn/Cottages
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
POR 2_B McKenzie Inn/Cottages 4.50 38.1 38.1
29 Bag House 3.00 -15.5 -15.5
38 Dust Pick-ups and Acreen Fines-Bag House Vent 14.02 -2.6 -2.6
39 Pellet Cooler-Cyclone Vent 14.02 -7.0 -7.0
40 Fine Hammer Mill-Bag House Vent 14.02 3.4 3.4
42 Building Noise 0.50 -9.6 -9.6
48 Garage HVAC 2.50 8.9 8.9
51 Re-sizer Equipment Enclosure 9.76 -55.2 -55.2
52 Garage Vehicle Exhaust System 2.50 23.5 23.5
53 Pellet Storage Silo Vent 0.90 -20.1 -20.1
57 Dry Chip Storage Silo Vent 18.00 -19.1 -19.1
58 Chip Dryer 2.50 4.4 4.4
58 Chip Dryer 2.50 3.9 3.9
58 Chip Dryer 2.50 -4.6 -4.6
58 Chip Dryer 2.50 -6.4 -6.4
58E Chip Dryer - Exhaust 2.50 14.6 14.6
58E Chip Dryer - Exhaust 2.50 14.0 14.0
58E Chip Dryer - Exhaust 2.50 5.6 5.6
58E Chip Dryer - Exhaust 2.50 3.7 3.7
59 Cooling Tower 6.71 9.5 9.5
59 Cooling Tower 6.71 9.5 9.5
60 Truck Dumper 1.00 10.6 10.6
60 Truck Dumper 1.00 11.1 11.1
70 Biomass Fuel Screen & Hog 2.00 28.4 28.4
71 Imported Biomass Transfer Conveyor 2.00 -4.6 -4.6
73 Raw Fuel Infeed 2.00 -16.9 -16.9
74 Chip Screen Overs 9.76 -21.4 -21.4
75 Fuel Transfer Conveyor 1 2.00 1.1 1.1
76 Fuel Transfer Conveyor to Stacker 1.00 3.1 3.1
77 Fuel Stacker 2.00 4.0 4.0
78 Fuel Re-claim 2.00 4.0 4.0
79 Fuel Re-claim Transfer 2.00 5.9 5.9
80 Fuel Transfer 2 2.00 4.5 4.5
81 Disk Screen 2.00 -6.9 -6.9
82 12 hr Enclosed Storage w/ Re-claim 2.00 -9.4 -9.4
83 Fuel Transfer Conveyor 2.00 -2.2 -2.2
84 Fuel Infeed Conveyor 2.00 1.9 1.9
85 Chip Transfer Conveyor 2.00 -3.5 -3.5
86 Chip Transfer Conveyor 2 2.00 -2.1 -2.1
87 Chip Transfer Conv3 1.00 2.9 2.9
89 Chip Stacker-Aspen/Birch 2.00 3.3 3.3
91 Chip Re-claim-Aspen/Birch 2.00 2.7 2.7
92 Reclaim Conveyor 1 2.00 -0.3 -0.3
93 Reclaim Conveyor 2 2.00 9.4 9.4

94 Reclaim Conveyor 3 2.00 3.7 3.7
95 Dried Chip Storage Feed Conveyors 2.00 -1.5 -1.5
96 Dried Chip Storage Discharge Conveyors 2.00 -21.0 -21.0
97 Baghouse Fines Conveyors 2.00 -17.1 -17.1
98 Dried Pellet Storage Feed Conveyors 2.00 -8.6 -8.6
99 Dried Pellet Storage Discharge Conveyors 2.00 -14.5 -14.5
BFHSWT Biomass Fuel Hog Swing Hammer Type 2.00 28.4 28.4
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 2_B - McKenzie Inn/Cottages
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
Boiler Boiler 2.00 -3.4 -3.4
FGRF Flue Gas Recirculation Fan 1.00 18.8 18.8
Forklift ME - Forklift - Pellet Shipping Forklift 0.75 8.4 7.1
HM Hammer Mill 0.00 25.0 25.0
IDF Induced Draft Fan 1.00 35.9 35.9
LB Load Bank 4.00 -10.1 -10.1
LoaderBio ME - Front End Loader - Biomass Receiving 2.00 12.7 11.4
LoaderChip ME - Front End Loader - Chip Reclaim 2.00 4.1 2.8
LR Line Reactor 4.00 -10.1 -10.1
MT Main Transformer (1500 kVA) 6.00 -4.5 -4.5
OFAF Over Fire Air Fan 1.00 17.5 17.5
PM Pellet Mill 0.00 -3.2 -3.2
ST Secondary Transformer (750 kVA) 6.00 -14.5 -14.5
TR1 Biomass Delivery - Transport Truck 1.50 -2.8 --
TR2 Chipped Biomass Delivery - Transport Truck 1.50 -2.5 --
TR3 Wood Pellet Shipment - Transport Truck 1.50 -11.0 --
TR4 Ash Waste Truck - Transport Truck 1.50 -19.0 --
Turbine Turbine Generator 2.00 -24.4 -24.4
UFAF Under Fire Air Fan 1.00 24.9 24.9
VENTBD Wastewater System Vent - Bed Dosing 2.50 -8.4 -8.4
VENTCB Wastewater System Vent - Cogeneration Bldg 7.62 -16.2 -16.2
VENTPB Wastewater System Vent - Pellet Bldg 9.14 -17.9 -17.9
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 3_A - Residence
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
POR 3_A Residence 1.50 35.3 35.3
29 Bag House 3.00 -38.0 -38.0
38 Dust Pick-ups and Acreen Fines-Bag House Vent 14.02 0.1 0.1
39 Pellet Cooler-Cyclone Vent 14.02 5.2 5.2
40 Fine Hammer Mill-Bag House Vent 14.02 -2.2 -2.2
42 Building Noise 0.50 -24.6 -24.6
48 Garage HVAC 2.50 23.0 23.0

51 Re-sizer Equipment Enclosure 9.76 -67.0 -67.0
52 Garage Vehicle Exhaust System 2.50 8.2 8.2
53 Pellet Storage Silo Vent 0.90 -22.3 -22.3
57 Dry Chip Storage Silo Vent 18.00 -18.8 -18.8
58 Chip Dryer 2.50 2.7 2.7
58 Chip Dryer 2.50 -1.6 -1.6
58 Chip Dryer 2.50 -4.8 -4.8
58 Chip Dryer 2.50 -3.9 -3.9
58E Chip Dryer - Exhaust 2.50 12.7 12.7
58E Chip Dryer - Exhaust 2.50 12.6 12.6
58E Chip Dryer - Exhaust 2.50 5.8 5.8
58E Chip Dryer - Exhaust 2.50 7.3 7.3
59 Cooling Tower 6.71 2.8 2.8
59 Cooling Tower 6.71 2.2 2.2
60 Truck Dumper 1.00 8.5 8.5
60 Truck Dumper 1.00 8.1 8.1
70 Biomass Fuel Screen & Hog 2.00 9.6 9.6
71 Imported Biomass Transfer Conveyor 2.00 -2.8 -2.8
73 Raw Fuel Infeed 2.00 -16.8 -16.8
74 Chip Screen Overs 9.76 -8.3 -8.3
75 Fuel Transfer Conveyor 1 2.00 -9.1 -9.1
76 Fuel Transfer Conveyor to Stacker 1.00 -0.1 -0.1
77 Fuel Stacker 2.00 1.0 1.0
78 Fuel Re-claim 2.00 1.4 1.4
79 Fuel Re-claim Transfer 2.00 2.7 2.7
80 Fuel Transfer 2 2.00 -0.3 -0.3
81 Disk Screen 2.00 -12.4 -12.4
82 12 hr Enclosed Storage w/ Re-claim 2.00 -11.9 -11.9
83 Fuel Transfer Conveyor 2.00 -4.6 -4.6
84 Fuel Infeed Conveyor 2.00 -9.2 -9.2
85 Chip Transfer Conveyor 2.00 -3.5 -3.5
86 Chip Transfer Conveyor 2 2.00 -2.2 -2.2
87 Chip Transfer Conv3 1.00 1.2 1.2
89 Chip Stacker-Aspen/Birch 2.00 1.6 1.6
91 Chip Re-claim-Aspen/Birch 2.00 3.0 3.0
92 Reclaim Conveyor 1 2.00 0.1 0.1
93 Reclaim Conveyor 2 2.00 9.5 9.5
94 Reclaim Conveyor 3 2.00 4.2 4.2
95 Dried Chip Storage Feed Conveyors 2.00 2.1 2.1
96 Dried Chip Storage Discharge Conveyors 2.00 -3.8 -3.8
97 Baghouse Fines Conveyors 2.00 1.6 1.6
98 Dried Pellet Storage Feed Conveyors 2.00 -22.1 -22.1
99 Dried Pellet Storage Discharge Conveyors 2.00 -25.5 -25.5
BFHSWT Biomass Fuel Hog Swing Hammer Type 2.00 12.1 12.1
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 3_A - Residence
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
Boiler Boiler 2.00 -7.3 -7.3
FGRF Flue Gas Recirculation Fan 1.00 16.7 16.7

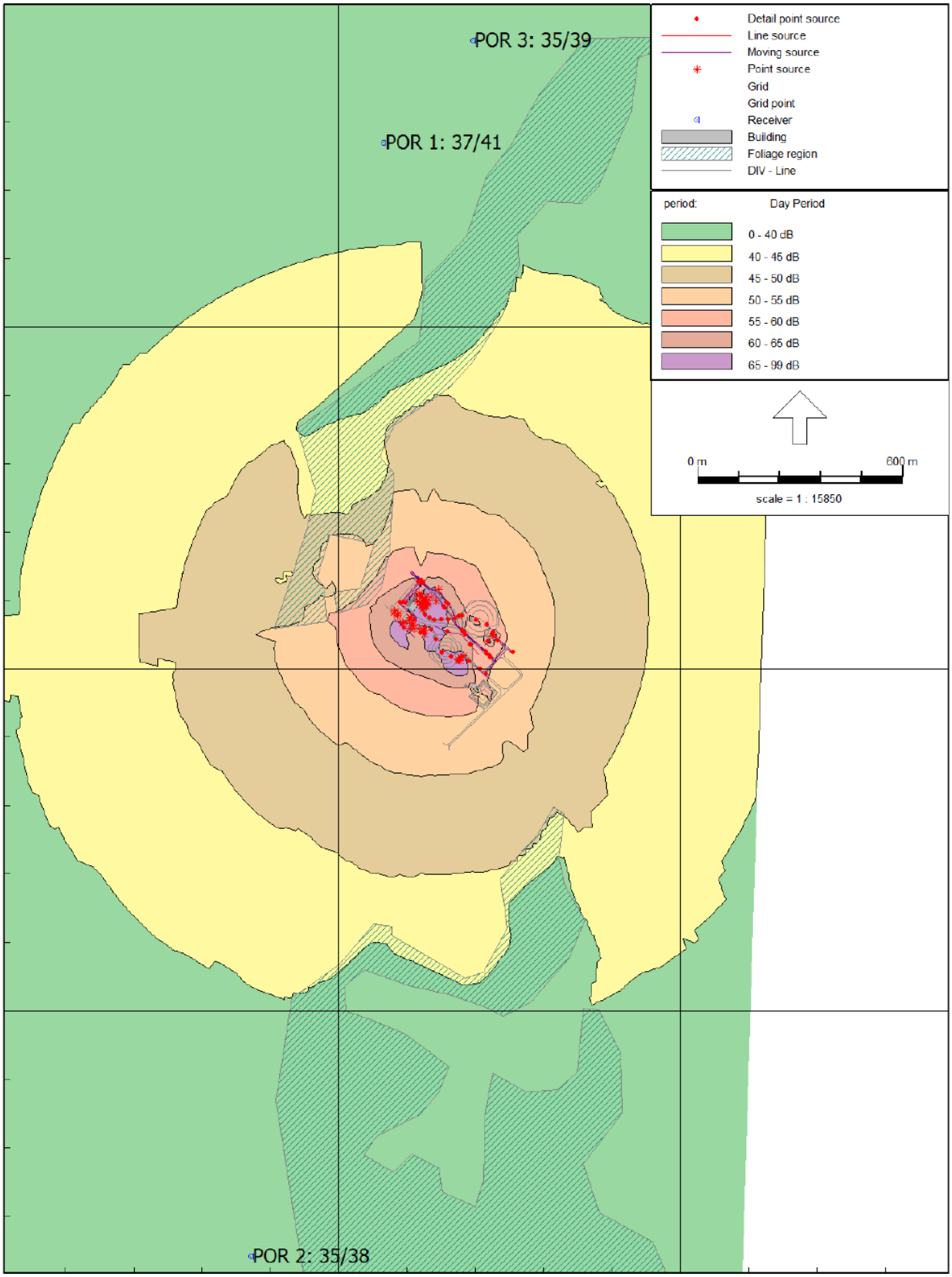
Forklift ME - Forklift - Pellet Shipping Forklift 0.75 2.9 1.6
HM Hammer Mill 0.00 15.8 15.8
IDF Induced Draft Fan 1.00 33.6 33.6
LB Load Bank 4.00 -12.1 -12.1
LoaderBio ME - Front End Loader - Biomass Receiving 2.00 10.2 9.0
LoaderChip ME - Front End Loader - Chip Reclaim 2.00 3.3 2.0
LR Line Reactor 4.00 -12.1 -12.1
MT Main Transformer (1500 kVA) 6.00 -7.0 -7.0
OFAF Over Fire Air Fan 1.00 27.2 27.2
PM Pellet Mill 0.00 -8.4 -8.4
ST Secondary Transformer (750 kVA) 6.00 -17.1 -17.1
TR1 Biomass Delivery - Transport Truck 1.50 -0.8 --
TR2 Chipped Biomass Delivery - Transport Truck 1.50 -0.9 --
TR3 Wood Pellet Shipment - Transport Truck 1.50 -6.7 --
TR4 Ash Waste Truck - Transport Truck 1.50 -14.5 --
Turbine Turbine Generator 2.00 -6.3 -6.3
UFAF Under Fire Air Fan 1.00 22.6 22.6
VENTBD Wastewater System Vent - Bed Dosing 2.50 -5.0 -5.0
VENTCB Wastewater System Vent - Cogeneration Bldg 7.62 -5.2 -5.2
VENTPB Wastewater System Vent - Pellet Bldg 9.14 -2.2 -2.2
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 3_B - Residence
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
POR 3_B Residence 4.50 38.7 38.7
29 Bag House 3.00 -37.0 -37.0
38 Dust Pick-ups and Acreen Fines-Bag House Vent 14.02 3.6 3.6
39 Pellet Cooler-Cyclone Vent 14.02 8.7 8.7
40 Fine Hammer Mill-Bag House Vent 14.02 0.9 0.9
42 Building Noise 0.50 -22.5 -22.5
48 Garage HVAC 2.50 26.4 26.4
51 Re-sizer Equipment Enclosure 9.76 -63.8 -63.8
52 Garage Vehicle Exhaust System 2.50 11.1 11.1
53 Pellet Storage Silo Vent 0.90 -21.8 -21.8
57 Dry Chip Storage Silo Vent 18.00 -15.6 -15.6
58 Chip Dryer 2.50 6.1 6.1
58 Chip Dryer 2.50 1.7 1.7
58 Chip Dryer 2.50 -1.6 -1.6
58 Chip Dryer 2.50 -0.6 -0.6
58E Chip Dryer - Exhaust 2.50 16.1 16.1
58E Chip Dryer - Exhaust 2.50 16.1 16.1
58E Chip Dryer - Exhaust 2.50 9.0 9.0
58E Chip Dryer - Exhaust 2.50 10.4 10.4
59 Cooling Tower 6.71 3.8 3.8
59 Cooling Tower 6.71 2.6 2.6
60 Truck Dumper 1.00 11.9 11.9
60 Truck Dumper 1.00 11.5 11.5
70 Biomass Fuel Screen & Hog 2.00 12.7 12.7
71 Imported Biomass Transfer Conveyor 2.00 0.7 0.7
73 Raw Fuel Infeed 2.00 -15.0 -15.0

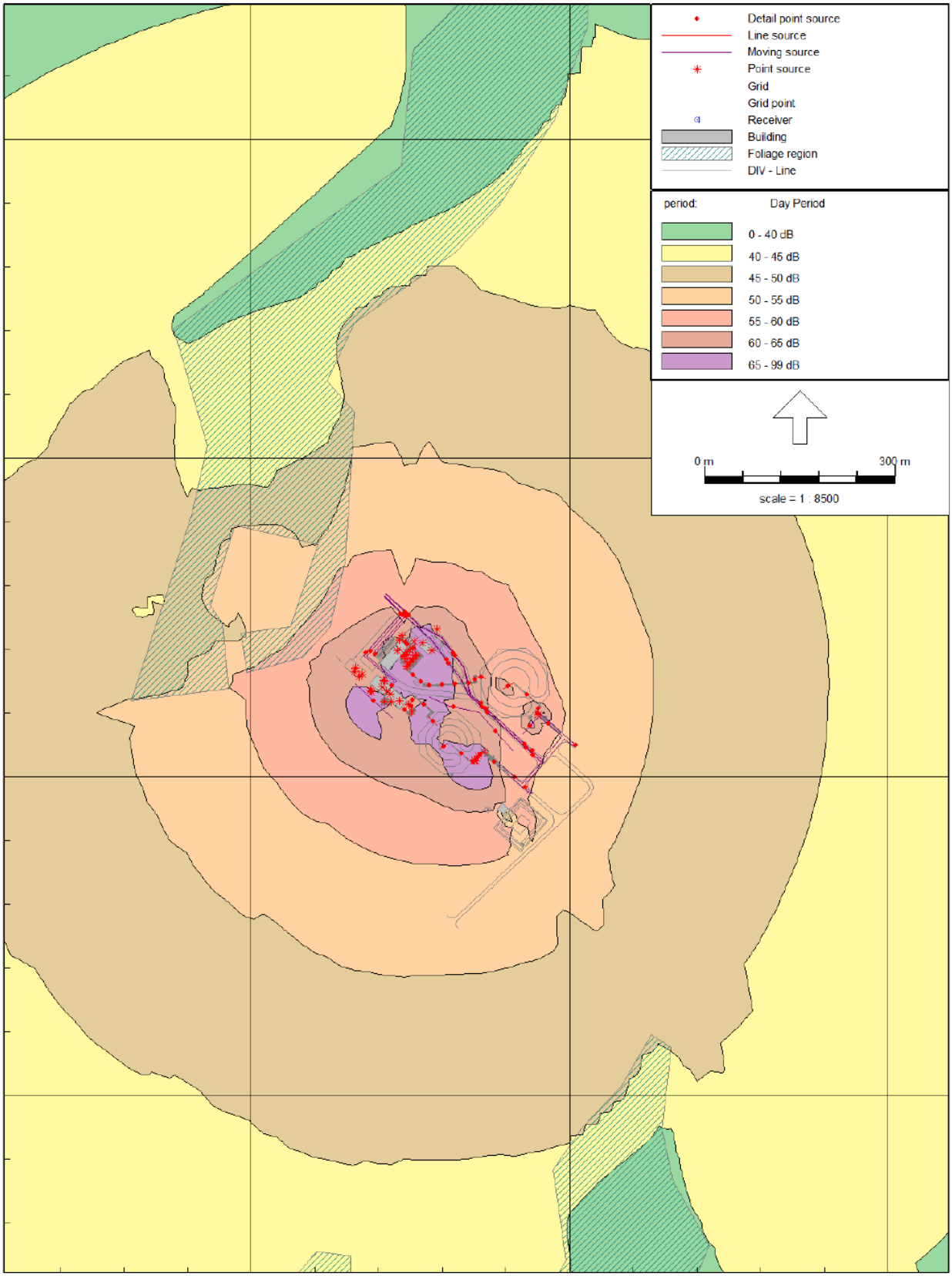
74 Chip Screen Overs 9.76 -4.9 -4.9
75 Fuel Transfer Conveyor 1 2.00 -5.9 -5.9
76 Fuel Transfer Conveyor to Stacker 1.00 3.4 3.4
77 Fuel Stacker 2.00 4.4 4.4
78 Fuel Re-claim 2.00 4.8 4.8
79 Fuel Re-claim Transfer 2.00 3.4 3.4
80 Fuel Transfer 2 2.00 3.1 3.1
81 Disk Screen 2.00 -10.5 -10.5
82 12 hr Enclosed Storage w/ Re-claim 2.00 -8.5 -8.5
83 Fuel Transfer Conveyor 2.00 -1.2 -1.2
84 Fuel Infeed Conveyor 2.00 -6.1 -6.1
85 Chip Transfer Conveyor 2.00 -0.1 -0.1
86 Chip Transfer Conveyor 2 2.00 1.2 1.2
87 Chip Transfer Conv3 1.00 4.6 4.6
89 Chip Stacker-Aspen/Birch 2.00 5.0 5.0
91 Chip Re-claim-Aspen/Birch 2.00 5.8 5.8
92 Reclaim Conveyor 1 2.00 2.8 2.8
93 Reclaim Conveyor 2 2.00 11.9 11.9
94 Reclaim Conveyor 3 2.00 6.4 6.4
95 Dried Chip Storage Feed Conveyors 2.00 5.6 5.6
96 Dried Chip Storage Discharge Conveyors 2.00 -0.4 -0.4
97 Baghouse Fines Conveyors 2.00 5.1 5.1
98 Dried Pellet Storage Feed Conveyors 2.00 -18.9 -18.9
99 Dried Pellet Storage Discharge Conveyors 2.00 -22.5 -22.5
BFHSWT Biomass Fuel Hog Swing Hammer Type 2.00 15.2 15.2
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM

Report: Table of Results
Model: Regular Operations - 2014 Updated Model
LAeq: by Source for receiver POR 3_B - Residence
Group: (main group)
Group Reduction: No
Name
Source Description Height Day Night
Boiler Boiler 2.00 -7.3 -7.3
FGRF Flue Gas Recirculation Fan 1.00 20.1 20.1
Forklift ME - Forklift - Pellet Shipping Forklift 0.75 3.1 1.8
HM Hammer Mill 0.00 17.6 17.6
IDF Induced Draft Fan 1.00 37.0 37.0
LB Load Bank 4.00 -8.6 -8.6
LoaderBio ME - Front End Loader - Biomass Receiving 2.00 13.7 12.4
LoaderChip ME - Front End Loader - Chip Reclaim 2.00 6.7 5.5
LR Line Reactor 4.00 -8.7 -8.7
MT Main Transformer (1500 kVA) 6.00 -3.6 -3.6
OFAF Over Fire Air Fan 1.00 30.7 30.7
PM Pellet Mill 0.00 -6.5 -6.5
ST Secondary Transformer (750 kVA) 6.00 -13.6 -13.6
TR1 Biomass Delivery - Transport Truck 1.50 -0.1 --
TR2 Chipped Biomass Delivery - Transport Truck 1.50 -0.2 --
TR3 Wood Pellet Shipment - Transport Truck 1.50 -6.1 --
TR4 Ash Waste Truck - Transport Truck 1.50 -13.9 --
Turbine Turbine Generator 2.00 -6.1 -6.1
UFAF Under Fire Air Fan 1.00 25.8 25.8
VENTBD Wastewater System Vent - Bed Dosing 2.50 -1.6 -1.6
VENTCB Wastewater System Vent - Cogeneration Bldg 7.62 -5.0 -5.0

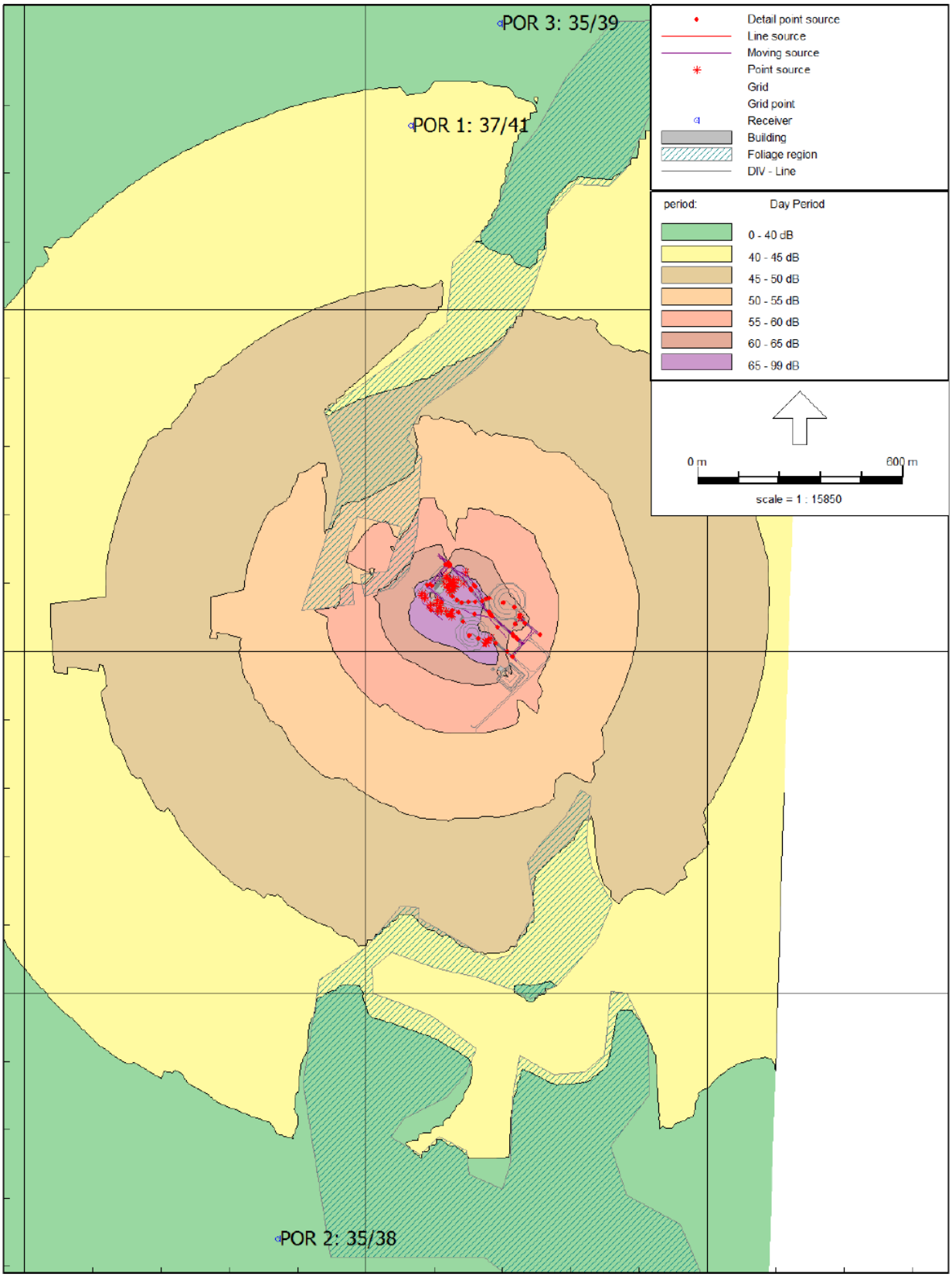
VENTPB Wastewater System Vent - Pellet Bldg 9.14 1.3 1.3
All shown dB values are A-weighted
Predictor V10.00 2014-12-22 4:52:58 PM



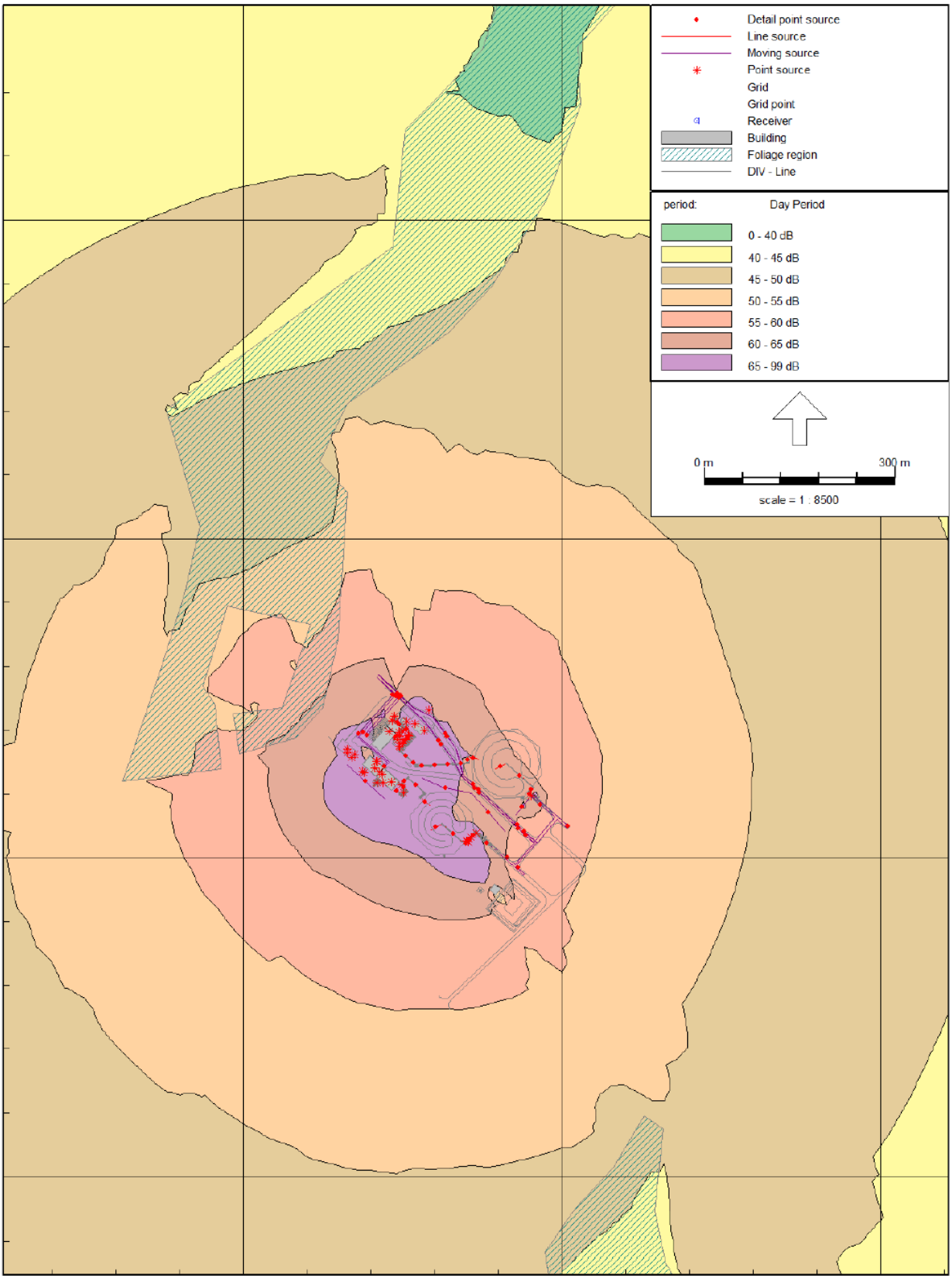
F 8: Predictor Daytime Contour Plot – Regular Operations – 1.5 m Impact Height – Full View



F 9: Predictor Daytime Contour Plot – Regular Operations – 1.5 m Impact Height – Isolated View



F 10: Predictor Daytime Contour Plot – Regular Operations – 4.5 m Impact Height – Full View



F 11: Predictor Daytime Contour Plot – Regular Operations – 4.5 m Impact Height – Isolated View

Emergency Equipment Operations

Report: Table of Results
Model: Emergency Operations - 2014 August Updated Model
LAeq: by Source for receiver POR 1_A - Armstrong Public School
Group: (main group)
Group Reduction: No
Name
Source Description Height Day
POR 1_A Armstrong Public School 1.50 42.1
30 Stand by Generator (500kW) 8.23 32.5
31 Fire Pump Diesel Engine 8.23 28.2
31E Fire Pump Diesel Engine - Exhaust 1.00 41.4
Main FP Fire Pump Main 1.00 10.0
All shown dB values are A-weighted
2014-Predictor V9.11 08-19 3:25:28 PM

Report: Table of Results
Model: Emergency Operations - 2014 August Updated Model
LAeq: by Source for receiver POR 1_B - Armstrong Public School
Group: (main group)
Group Reduction: No
Name
Source Description Height Day
POR 1_B Armstrong Public School 4.50 45.2
30 Stand by Generator (500kW) 8.23 32.8
31 Fire Pump Diesel Engine 8.23 31.6
31E Fire Pump Diesel Engine - Exhaust 1.00 44.8
Main FP Fire Pump Main 1.00 13.4
All shown dB values are A-weighted
2014-Predictor V9.11 08-19 3:25:28 PM

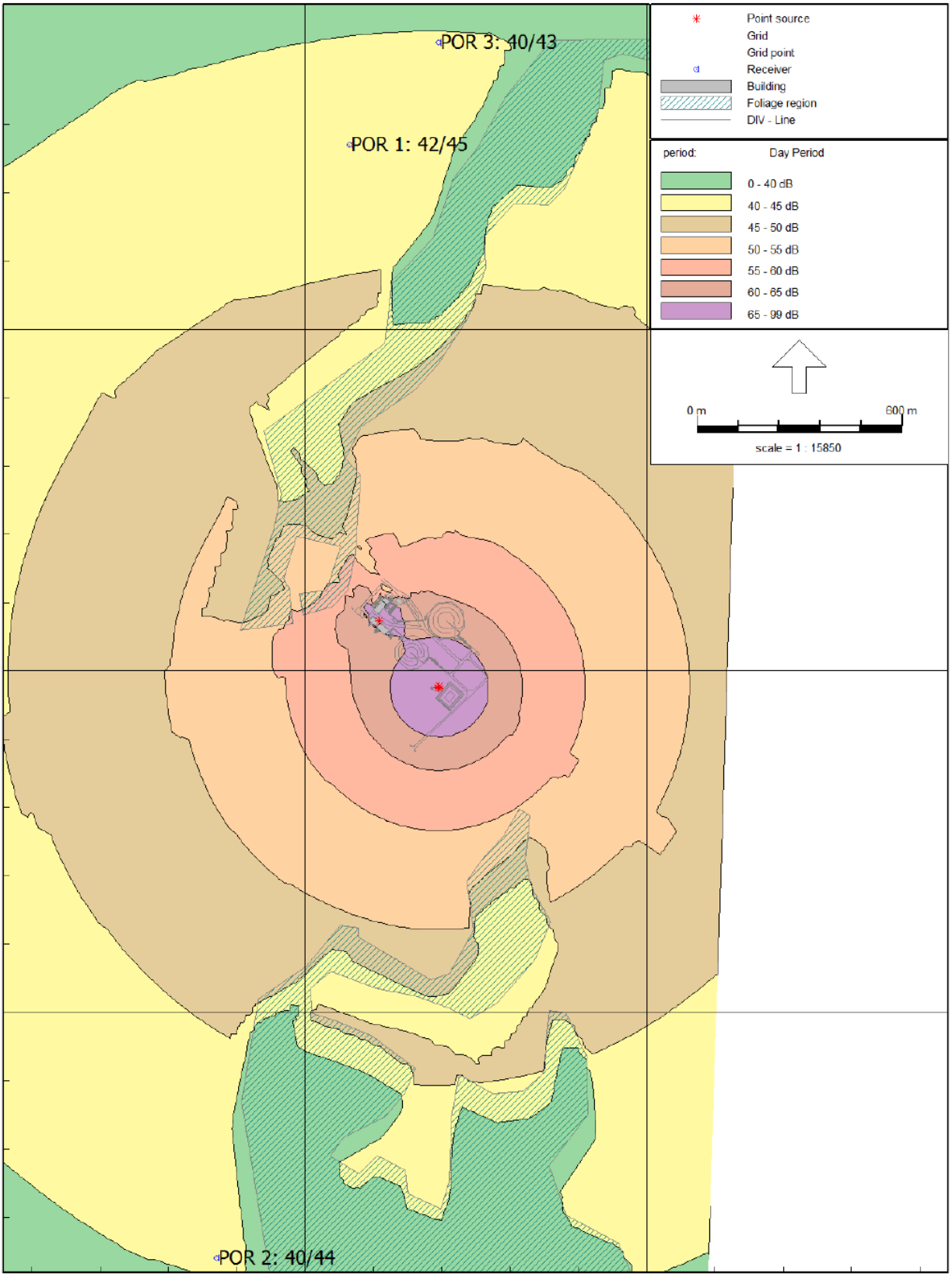
Report: Table of Results
Model: Emergency Operations - 2014 August Updated Model
LAeq: by Source for receiver POR 2_A - McKenzie Inn/Cottages
Group: (main group)
Group Reduction: No
Name
Source Description Height Day
POR 2_A McKenzie Inn/Cottages 1.50 40.4
30 Stand by Generator (500kW) 8.23 24.4
31 Fire Pump Diesel Engine 8.23 23.6
31E Fire Pump Diesel Engine - Exhaust 1.00 40.2
Main FP Fire Pump Main 1.00 -2.5
All shown dB values are A-weighted
2014-Predictor V9.11 08-19 3:25:28 PM

Report: Table of Results
Model: Emergency Operations - 2014 August Updated Model
LAeq: by Source for receiver POR 2_B - McKenzie Inn/Cottages
Group: (main group)
Group Reduction: No
Name
Source Description Height Day
POR 2_B McKenzie Inn/Cottages 4.50 43.8

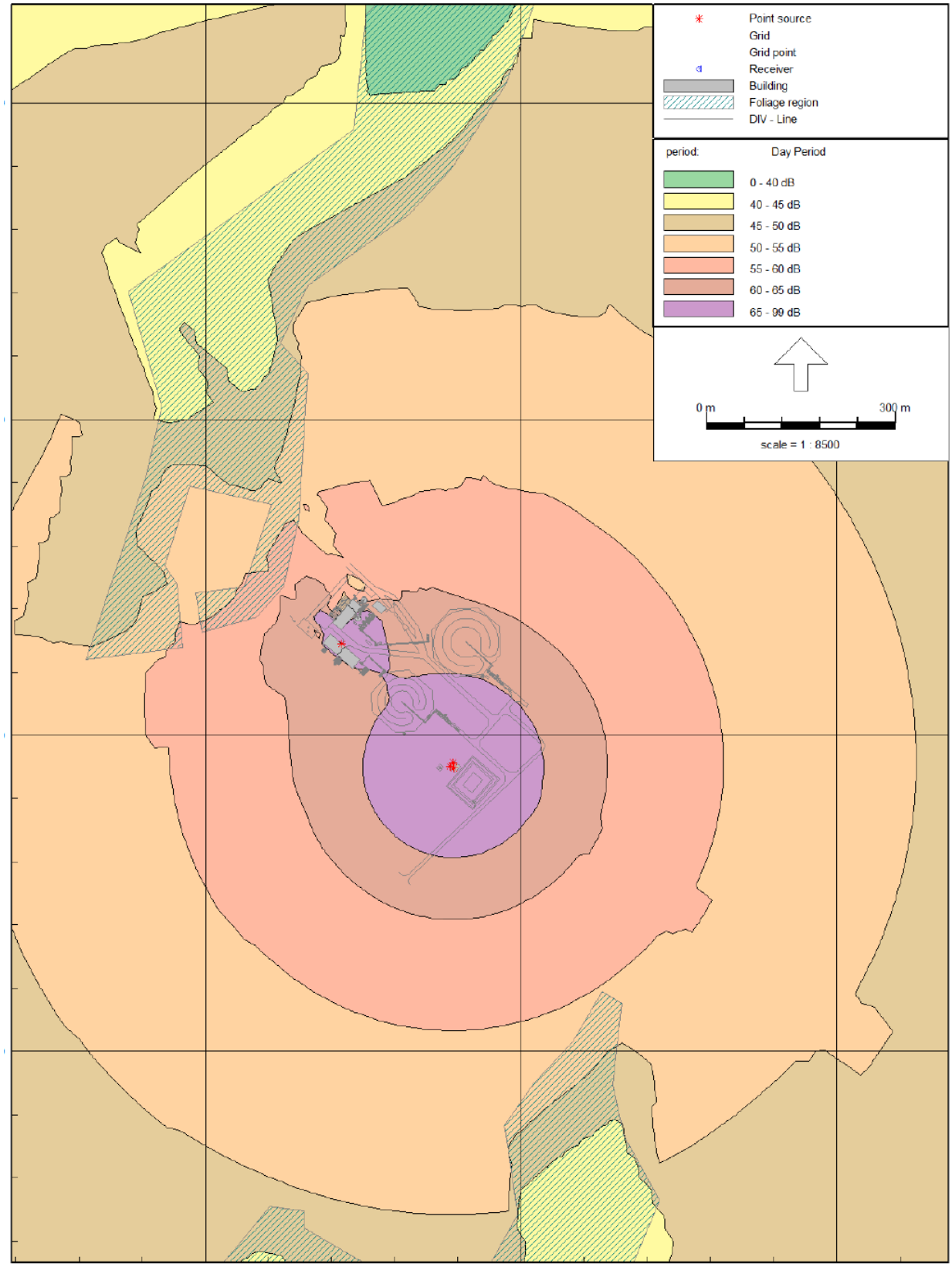
30 Stand by Generator (500kW) 8.23 27.1
31 Fire Pump Diesel Engine 8.23 25.2
31E Fire Pump Diesel Engine - Exhaust 1.00 43.6
Main FP Fire Pump Main 1.00 0.1
All shown dB values are A-weighted
2014-Predictor V9.11 08-19 3:25:28 PM

Report: Table of Results
Model: Emergency Operations - 2014 August Updated Model
LAeq: by Source for receiver POR 3_A - Residence
Group: (main group)
Group Reduction: No
Name
Source Description Height Day
POR 3_A Residence 1.50 40.2
30 Stand by Generator (500kW) 8.23 30.2
31 Fire Pump Diesel Engine 8.23 26.4
31E Fire Pump Diesel Engine - Exhaust 1.00 39.5
Main FP Fire Pump Main 1.00 8.1
All shown dB values are A-weighted
2014-Predictor V9.11 08-19 3:25:28 PM

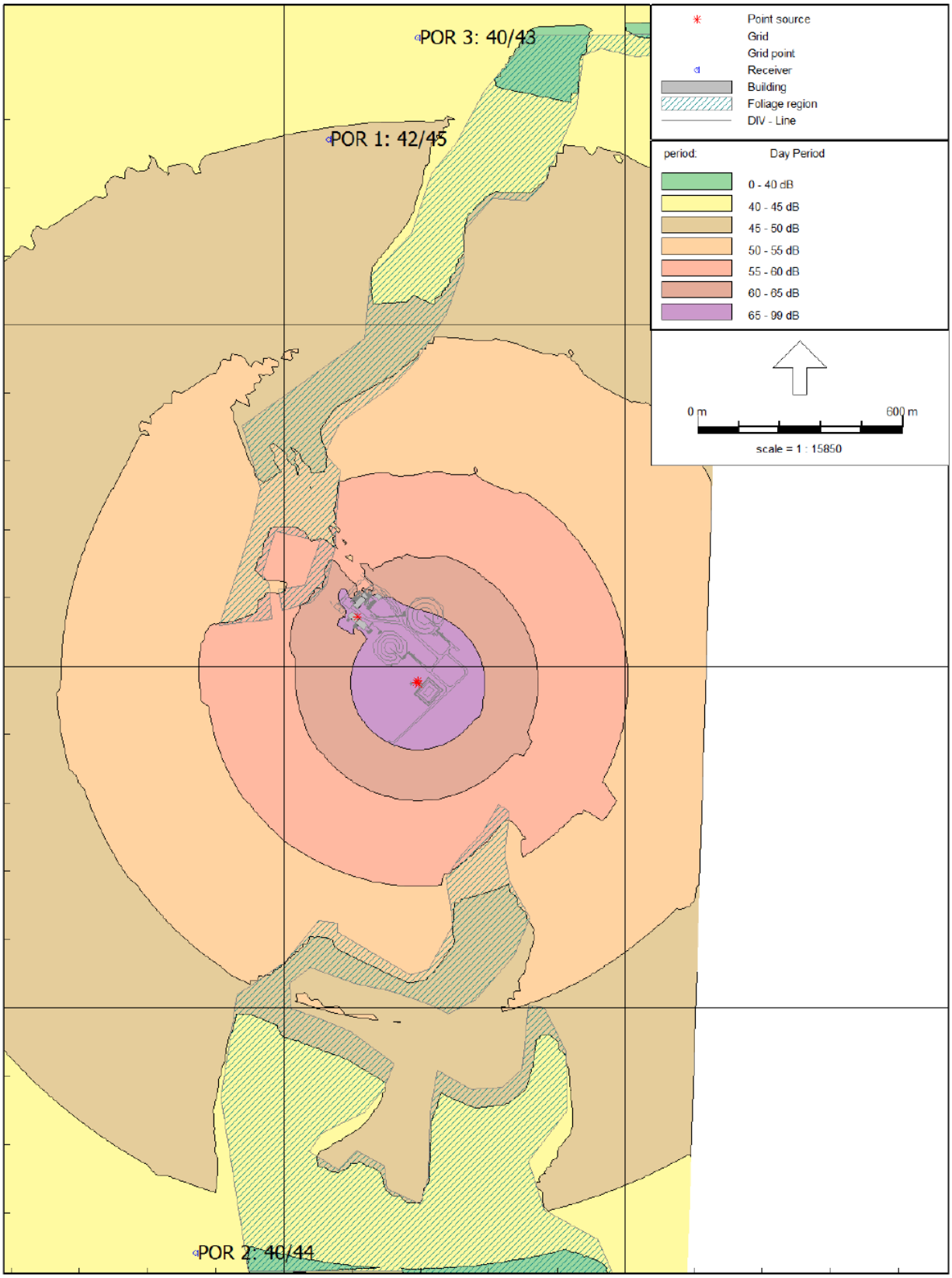
Report: Table of Results
Model: Emergency Operations - 2014 August Updated Model
LAeq: by Source for receiver POR 3_B - Residence
Group: (main group)
Group Reduction: No
Name
Source Description Height Day
POR 3_B Residence 4.50 43.4
30 Stand by Generator (500kW) 8.23 30.4
31 Fire Pump Diesel Engine 8.23 29.8
31E Fire Pump Diesel Engine - Exhaust 1.00 43.0
Main FP Fire Pump Main 1.00 11.6
All shown dB values are A-weighted
2014-Predictor V9.11 08-19 3:25:28 PM



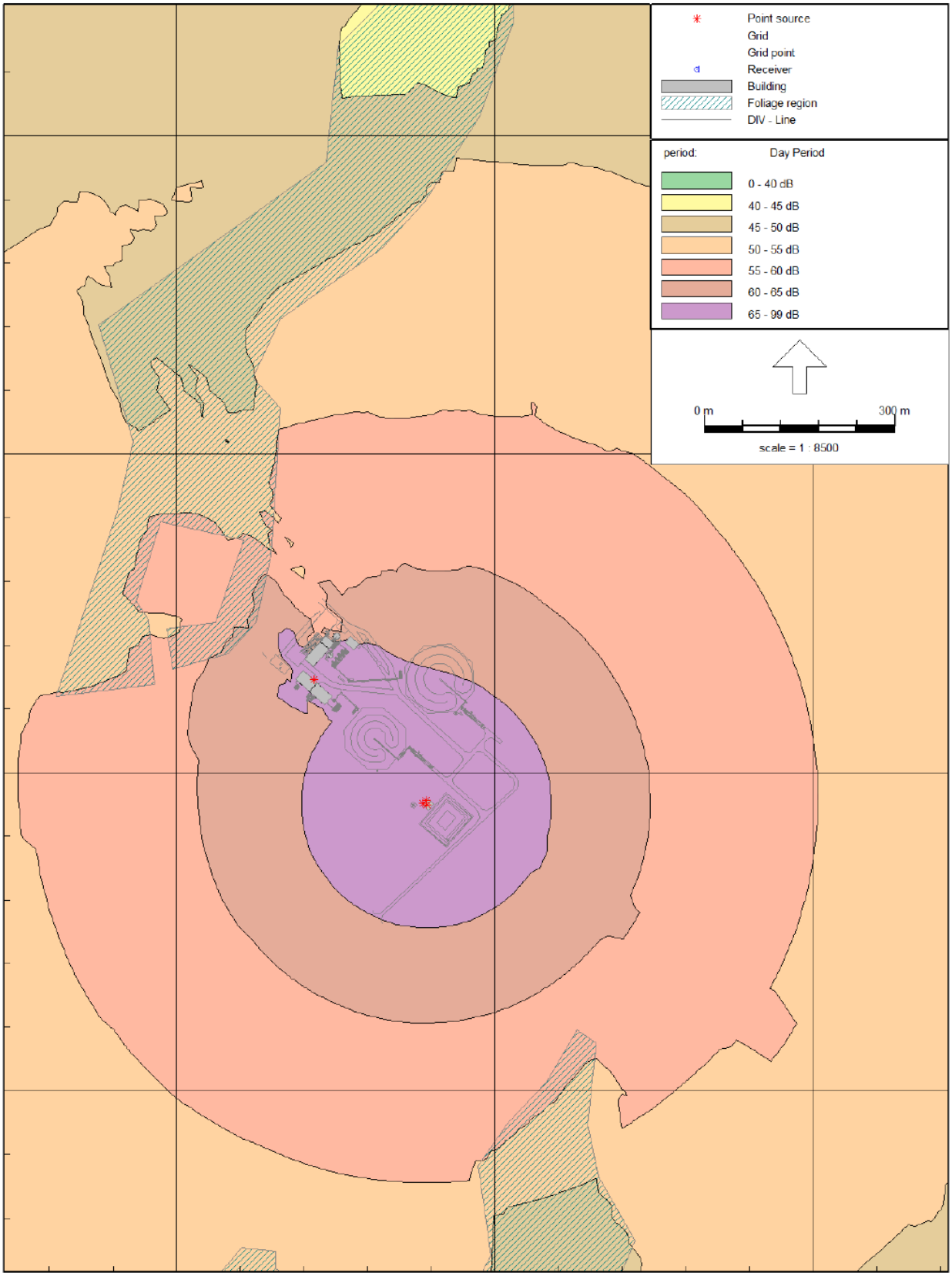
F 12: Predictor Daytime Contour Plot – Emergency Equipment Operations – 1.5 m Impact Height – Full View



F 13: Predictor Daytime Contour Plot – Emergency Equipment Operations – 1.5 m Impact Height – Isolated View



F 14: Predictor Daytime Contour Plot – Emergency Equipment Operations – 4.5 m Impact Height – Full View



F 15: Predictor Daytime Contour Plot – Emergency Equipment Operations – 4.5 m Impact Height – Isolated View

Appendix G: NPC-300 Reference Pages

for that point of reception. The outdoor sound level limits for stationary sources apply only to daytime and evening (07:00 – 23:00 hours). Sound level limits apply during the nighttime period (23:00 – 07:00) for the plane of the window of a noise sensitive space. In general, the outdoor points of reception will be protected during the nighttime as a consequence of meeting the sound level limits at the adjacent plane of window of noise sensitive spaces.

Note that for Class 1, 2 and 3 areas, the plane of window limits apply to a window that is assumed to be open. For Class 4 areas, the plane of window limits apply to a window which is assumed to be closed. This distinction does not affect the prediction of plane of window sound levels.

Table B-1
Exclusion Limit Values of One-Hour Equivalent Sound Level (L_{eq}, dBA)
Outdoor Points of Reception

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 19:00	50	50	45	55
19:00 – 23:00	50	45	40	55

Table B-2
Exclusion Limit Values of One-Hour Equivalent Sound Level (L_{eq}, dBA)
Plane of Window of Noise Sensitive Spaces

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 19:00	50	50	45	60
19:00 – 23:00	50	50	40	60
23:00 – 07:00	45	45	40	55

B7.2 Impulsive Sound – Outdoors and Plane of Window

For impulsive sound, other than Quasi-Steady Impulsive Sound, from a stationary source, the sound level limit at a point of reception expressed in terms of the Logarithmic Mean Impulse Sound Level (L_{LM}) is the higher of the applicable exclusion limit value given in Table B-3 or Table B-4, or the background sound level for that point of reception. The outdoor sound level limits for stationary sources apply only to daytime and evening (07:00 – 23:00 hours). Sound level limits apply during the nighttime period (23:00 – 07:00) for the plane of the window of a noise sensitive space. In general, the outdoor points of reception will be protected during the nighttime as a consequence of meeting the sound level limits at the adjacent plane of window of noise sensitive spaces.

Notwithstanding Publication NPC-103, Reference [29], the following sound level limits in Table B-3 and Table B-4 below apply to impulsive sound:

G 1: Exclusion Limit Values for Stationary Sources

Table B-3
Exclusion Limit Values for Impulsive Sound Level (L_{LM}, dBAI)
Outdoor Points of Reception

Time of Day	Actual Number of Impulses in Period of One-Hour	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 23:00	9 or more	50	50	45	55
	7 to 8	55	55	50	60
	5 to 6	60	60	55	65
	4	65	65	60	70
	3	70	70	65	75
	2	75	75	70	80
	1	80	80	75	85

Table B-4
Exclusion Limit Values for Impulsive Sound Level (L_{LM}, dBAI)
Plane of Window – Noise Sensitive Spaces (Day/Night)

Actual Number of Impulses in Period of One-Hour	Class 1 Area (07:00–23:00)/ (23:00–07:00)	Class 2 Area (07:00–23:00)/ (23:00–07:00)	Class 3 Area (07:00–19:00)/ (19:00–07:00)	Class 4 Area (07:00–23:00)/ (23:00–07:00)
9 or more	50/45	50/45	45/40	60/55
7 to 8	55/50	55/50	50/45	65/60
5 to 6	60/55	60/55	55/50	70/65
4	65/60	65/60	60/55	75/70
3	70/65	70/65	65/60	80/75
2	75/70	75/70	70/65	85/80
1	80/75	80/75	75/70	90/85

B7.3 Sound Level Limits for Emergency Equipment

The sound level limits for noise produced by emergency equipment operating in non-emergency situations, such as testing or maintenance of such equipment, are 5 dB greater than the sound level limits otherwise applicable to stationary sources, described in Sections B7.1 and B7.2.

The noise produced by emergency equipment operating in non-emergency situations should be assessed independently of all other stationary sources of noise. Specifically, the emissions are not required to be included with the overall noise assessment of a stationary source facility.

G 2: Sound Level Limits for Emergency Equipment

In addition, sound level limits do not apply to emergency equipment operating in emergency situations.

B7.4 Sound Level Limits for Layover Sites

The sound level limit for noise from a layover site in any hour, expressed in terms of the One-Hour Equivalent Sound Level (L_{eq}) is the higher of either 55 dBA or the background sound level.

B8 Noise Impact Assessment – Multiple Sources

Impulse sources, non-impulse sources and emergency equipment are to be analyzed separately. Where there are multiple, non-impulse sources at a stationary source, the noise assessment needs to be based on the combined effect of all sources comprising the stationary source, added together on an energy basis.

B9 Determination of Area Class

Area classification refers to the receptor location.

B9.1 Class 1, 2 and 3 Areas

Determination of whether an area is Class 1, 2 or 3 can usually be done by determining the proximity of the point of reception to roads, the volumes of road traffic (and associated sound levels), and the nature of land uses and activities (or lack thereof) in the area, as a function of time.

B9.2 Class 4 Area

Class 4 area classification is based on the principle of formal confirmation of the classification by the land use planning authority. Such confirmation would be issued at the discretion of the land use planning authority and under the procedures developed by the land use planning authority, in the exercise of its responsibility and authority under the Planning Act.

The following considerations apply to new noise sensitive land uses proposed in a Class 4 area:

- an appropriate noise impact assessment should be conducted for the land use planning authority as early as possible in the land use planning process that verifies that the applicable sound level limits will be met;
- noise control measures may be required to ensure the stationary source complies with the applicable sound level limits at the new noise sensitive land use;

G 3: Determination of Area Class