

**Scenario B1:** Tug Boat Operated in Zone B  
Case 1 - Tug Boat in operation only

**Grab Dredger Operated in Zone B**

<b>NSR 1</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo Prince</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	B	110	1	110	332	-58.4	-0.3	0	54.3	54

<b>NSR 2</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo Gateway</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	B	110	1	110	260	-56.3	-0.3	0	56.5	56

<b>NSR 3</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo HK</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	B	110	1	110	176	-52.9	-0.2	0	59.9	60

<b>NSR 4</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo Gateway</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	B	110	1	110	231	-55.3	-0.2	0	57.5	58

<b>NSR 5</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo HK</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	B	110	1	110	232	-55.3	-0.2	0	57.5	57

**Scenario B1: Tug Boat Operated in Zone B**  
**Case 2 - Grab Dredger in operation only**

**Grab Dredger Operated in Zone B**

NSR 1 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Prince											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	B	112	1	112	332	-58.4	-0.3	0	56.3	56

NSR 2 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Gateway											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	B	112	1	112	260	-56.3	-0.3	0	58.5	58

NSR 3 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo HK											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	B	112	1	112	176	-52.9	-0.2	0	61.9	62

NSR 4 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Gateway											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	B	112	1	112	231	-55.3	-0.2	0	59.5	60

NSR 5 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo HK											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	B	112	1	112	232	-55.3	-0.2	0	59.5	59

**Definition of terms:**

- C-dis - noise correction due to distance attenuation, dB(A)
- C-atm - the air absorption correction, dB(A) (Air Absorption = 0.1 dB(A)/100m at 20°C, 70% RH for 250 Hz noise) [ISO 9613-1:1993 Part 1]
- C-bar - noise reduction due to barrier effect, dB(A)
- CNL<sub>PME</sub> - the predicted noise level at NSR resulted from respective PME, dB(A)
- CNL<sub>All</sub> - the predicted noise level at NSR resulted from from all PME items, dB(A)

**Scenario B1:** Tug Boat Operated in Zone B  
 Case 1 - Tug Boat in operation only

**Grab Dredger Operated in Zone C**

<b>NSR 1</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo Prince</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	B	110	1	110	332	-58.4	-0.3	0	54.3	54

<b>NSR 2</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo Gateway</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	B	110	1	110	260	-56.3	-0.3	0	56.5	56

<b>NSR 3</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo HK</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	B	110	1	110	176	-52.9	-0.2	0	59.9	60

<b>NSR 4</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo Gateway</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	B	110	1	110	231	-55.3	-0.2	0	57.5	58

<b>NSR 5</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo HK</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	B	110	1	110	232	-55.3	-0.2	0	57.5	57

**Scenario B1:** Tug Boat Operated in Zone B  
Case 2 - Grab Dredger in operation only

**Grab Dredger Operated in Zone C**

NSR 1 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Prince											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	C	112	1	112	515	-62.2	-0.5	0	52.3	52

NSR 2 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Gateway											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	C	112	1	112	257	-56.2	-0.3	0	58.6	59

NSR 3 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo HK											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	C	112	1	112	188	-53.5	-0.2	0	61.3	61

NSR 4 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Gateway											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	C	112	1	112	374	-59.4	-0.4	0	55.2	55

NSR 5 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo HK											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	C	112	1	112	398	-60.0	-0.4	0	54.6	55

**Definition of terms:**

- C-dis - noise correction due to distance attenuation, dB(A)
- C-atm - the air absorption correction, dB(A) (Air Absorption = 0.1 dB(A)/100m at 20°C, 70% RH for 250 Hz noise) [ISO 9613-1:1993 Part 1]
- C-bar - noise reduction due to barrier effect, dB(A)
- CNL<sub>PME</sub> - the predicted noise level at NSR resulted from respective PME, dB(A)
- CNL<sub>All</sub> - the predicted noise level at NSR resulted from from all PME items, dB(A)

**Scenario B1:** Tug Boat Operated in Zone C  
 Case 1 - Tug Boat in operation only

**Grab Dredger Operated in Zone B**

<b>NSR 1</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo Prince</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	C	110	1	110	515	-62.2	-0.5	0	50.3	50

<b>NSR 2</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo Gateway</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	C	110	1	110	257	-56.2	-0.3	0	56.6	57

<b>NSR 3</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo HK</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	C	110	1	110	188	-53.5	-0.2	0	59.3	59

<b>NSR 4</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo Gateway</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	C	110	1	110	374	-59.4	-0.4	0	53.2	53

<b>NSR 5</b>											
Noise Limit: 62 dB(A) evening (1900-2300)											
<b>Marco Polo HK</b>											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	C	110	1	110	398	-60.0	-0.4	0	52.6	53

**Scenario B1:** Tug Boat Operated in Zone C  
Case 2 - Grab Dredger in operation only

**Grab Dredger Operated in Zone B**

NSR 1 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Prince											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	B	112	1	112	332	-58.4	-0.3	0	56.3	56

NSR 2 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Gateway											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	B	112	1	112	260	-56.3	-0.3	0	58.5	58

NSR 3 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo HK											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	B	112	1	112	176	-52.9	-0.2	0	61.9	62

NSR 4 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Gateway											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	B	112	1	112	231	-55.3	-0.2	0	59.5	60

NSR 5 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo HK											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	B	112	1	112	232	-55.3	-0.2	0	59.5	59

**Definition of terms:**

- C-dis - noise correction due to distance attenuation, dB(A)
- C-atm - the air absorption correction, dB(A) (Air Absorption = 0.1 dB(A)/100m at 20°C, 70% RH for 250 Hz noise) [ISO 9613-1:1993 Part 1]
- C-bar - noise reduction due to barrier effect, dB(A)
- CNL<sub>PME</sub> - the predicted noise level at NSR resulted from respective PME, dB(A)
- CNL<sub>All</sub> - the predicted noise level at NSR resulted from from all PME items, dB(A)

**Scenario B1:** Tug Boat Operated in Zone C  
Case 1 - Tug Boat in operation only

**Grab Dredger Operated in Zone C**

NSR 1 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Prince											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	C	110	1	110	515	-62.2	-0.5	0	50.3	50

NSR 2 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Gateway											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	C	110	1	110	257	-56.2	-0.3	0	56.6	57

NSR 3 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo HK											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	C	110	1	110	188	-53.5	-0.2	0	59.3	59

NSR 4 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Gateway											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	C	110	1	110	374	-59.4	-0.4	0	53.2	53

NSR 5 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo HK											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Tug Boat	CNP 221	C	110	1	110	398	-60.0	-0.4	0	52.6	53

**Scenario B1:** Tug Boat Operated in Zone C  
Case 2 - Grab Dredger in operation only

**Grab Dredger Operated in Zone C**

NSR 1 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Prince											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	C	112	1	112	515	-62.2	-0.5	0	52.3	52

NSR 2 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Gateway											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	C	112	1	112	257	-56.2	-0.3	0	58.6	59

NSR 3 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo HK											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	C	112	1	112	188	-53.5	-0.2	0	61.3	61

NSR 4 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo Gateway											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	C	112	1	112	374	-59.4	-0.4	0	55.2	55

NSR 5 Noise Limit: 62 dB(A) evening (1900-2300)											
Marco Polo HK											
Plant Item	ID	Work Zone	SWL, dB(A)	No. of Plant	Total SWL, dB(A)	Notional Distance, m	Correction, dB(A)			PNL <sub>PME</sub> , dB(A)	PNL <sub>All</sub> , dB(A)
							C-dis	C-atm	C-bar		
Grab Dredger	CNP 063	C	112	1	112	398	-60.0	-0.4	0	54.6	55

**Definition of terms:**

- C-dis - noise correction due to distance attenuation, dB(A)
- C-atm - the air absorption correction, dB(A) (Air Absorption = 0.1 dB(A)/100m at 20°C, 70% RH for 250 Hz noise) [ISO 9613-1:1993 Part 1]
- C-bar - noise reduction due to barrier effect, dB(A)
- CNL<sub>PME</sub> - the predicted noise level at NSR resulted from respective PME, dB(A)
- CNL<sub>All</sub> - the predicted noise level at NSR resulted from from all PME items, dB(A)