

Appendix 3.11 Calculation of Odour Emission Source at Retained Pig Farm and RTS

Proposed Refuse Transfer Station

H2S and NH3 Monitoring data at WKTS

Maximum Total Odour Emission at DO Inlets (OU/s)	Odour Contribution by H ₂ S (OU/s)	Odour contribution by NH ₃ (OU/s)
485532.85	482360.83	3172.01

Remark:

Based on the monitoring data recorded from Jan 2021 to May 2022 in West Kowloon Refuse Transfer Station (WKTS) and it covers the odour from the wastewater treatment plant.

Odour threshold of H₂S = 0.00047 ppm

Odour threshold of NH₃ = 0.037 ppm

MSW Handling Capacity of Proposed RTS (tpd)	MSW Handling Capacity of WKTS (tpd)	Odour Emission Adjustment factor
3000	2700	1.11

Estimation of Odour Emission from Proposed RTS

	Emission Rate (OU/s)	Adjustment factor	Removal Efficiency	Controlled Odour Emission (OU/s)
Odour by H ₂ S	482360.83	1.11	99.90%	535.96
Odour by NH ₃	3172.01	1.11	90.00%	352.45
Total odour emission (OU/s)				888.40

Remark:

Two stage deodorisation system with 99.9% and 90% removal efficiency for H₂S and NH₃ are adopted for the proposed RTS.

Continuous monitoring of actual H₂S and NH₃ concentrations after commissioning is required.

The odour emission rate is the total emission rate to be evenly distributed among the six deodorizing units RTS_DO1-RTS_DO6 below.

Exhaust Points of Waste Transfer Building

Deodouriser	Description	Source Type	Exhaust Location		Exhaust Diameter (m)	Height (mAG)	Exit Temperature (K)	Exit Velocity (m/s)
			X	Y				
RTS_DO1	Exhaust point	POINT	827349.99	840396.11	1.20	41.41	Ambient	15.0
RTS_DO2	Exhaust point	POINT	827332.42	840401.79	1.20	41.41	Ambient	15.0
RTS_DO3	Exhaust point	POINT	827314.86	840407.48	1.20	41.41	Ambient	15.0
RTS_DO4	Exhaust point	POINT	827297.30	840413.16	1.20	41.41	Ambient	15.0
RTS_DO5	Exhaust point	POINT	827279.74	840418.85	1.20	41.41	Ambient	15.0
RTS_DO6	Exhaust point	POINT	827262.17	840424.53	1.20	41.41	Ambient	15.0

Remark:

The exhaust parameters refers to the expansion of WKTS with 3,182 tpd in Refurbishment and Upgrading Studies for (A) West Kowloon Transfer Station and (B) Island West and Island East Transfer Stations

Conversion of 1-hour Average to 5-second Average Concentration

Deodouriser	Emission Rate (OU/s)	Stability Class	Conversion Multiplier	Emission Rate with 5-second Peak Factor (OU/s)	Reference
RTS_DO1	148	A, B, C, D, E, F	2.3	340.55	- Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales. - Katestone Scientific 1995, The Evaluation of Peak-to-Mean Ratios for Odour Assessments, volumes I and II, Katestone Scientific Pty Ltd, Brisbane. - Katestone Scientific 1998, Peak-to-Mean Concentration Ratios for Odour Assessments, Katestone Scientific Pty Ltd, Brisbane.
RTS_DO2	148	A, B, C, D, E, F	2.3	340.55	
RTS_DO3	148	A, B, C, D, E, F	2.3	340.55	
RTS_DO4	148	A, B, C, D, E, F	2.3	340.55	
RTS_DO5	148	A, B, C, D, E, F	2.3	340.55	
RTS_DO6	148	A, B, C, D, E, F	2.3	340.55	

Remark:

6-stack configuration is assumed for the proposed RTS, with reference to the expansion of WKTS with 3,182 tpd in Refurbishment and Upgrading Studies for (A) West Kowloon Transfer Station and (B) Island West and Island East Transfer Stations.

Emission Source Listing in AERMOD

Source ID	Type	X	Y	Exhaust Diameter (m)	Height (mAG)	Exit Temperature (K)	Exit Velocity(m/s)	Emission Rate with 5-second Peak Factor (OU/s)
RTS_DO1	POINT	827349.99	840396.11	1.20	41.41	Ambient	15.00	340.55
RTS_DO2	POINT	827332.42	840401.79	1.20	41.41	Ambient	15.00	340.55
RTS_DO3	POINT	827314.86	840407.48	1.20	41.41	Ambient	15.00	340.55
RTS_DO4	POINT	827297.30	840413.16	1.20	41.41	Ambient	15.00	340.55
RTS_DO5	POINT	827279.74	840418.85	1.20	41.41	Ambient	15.00	340.55
RTS_DO6	POINT	827262.17	840424.53	1.20	41.41	Ambient	15.00	340.55

Appendix 3.11 Calculation of Odour Emission Source at Retained Pig Farm and RTS

Retained Pig Farm

ID	Use	Dimension, m ^[2]			Area, m ²	Assumed SOER, OU/m ² /s ^[1]	Emission Rate, OUs	SOER Reference from Pig Farm 18/19/P43 ^[1]
PF01	Pig House	3.78	x	5.76	21.8	2.89	62.81	Pig House
PF02	Pig House	6.03	x	2.92	17.6	2.89	50.80	Pig House
PF03	Pig House	10	x	23.6	236.0	2.89	680.86	Pig House
PF04	Pig House	3.6	x	7.6	27.4	2.89	78.93	Pig House
PF05	Pig House	4.7	x	30.98	145.6	2.89	420.07	Pig House
PF06	Pig House	2	x	5.88	11.8	2.89	33.93	Pig House
PF07	Pig House	5.7	x	6	34.2	2.89	98.67	Pig House
PF08	Pig House	4.9	x	15.44	75.7	2.89	218.27	Pig House
PF09	Pig House	4.8	x	3.5	16.8	2.89	48.47	Pig House
PF10	Pig House	3.3	x	8.8	29.0	2.89	83.78	Pig House
PF11	Pig House	4.45	x	6.02	26.8	2.89	77.29	Pig House
12	Feed Store	9.4	x	5.92	55.6	[3]	-	[3]
13	Store Room	2.75	x	3.25	8.9	[3]	-	[3]
PF14	Pig House	3	x	8.96	26.9	2.89	77.55	Pig House
PF15	Pig House	7.26	x	5.99	43.5	2.89	125.46	Pig House
PF16	Pig House	9.95	x	2.94	29.3	2.89	84.39	Pig House
PF17	Pig House	12.11	x	10.95	132.6	2.89	382.56	Pig House
PF18	Pig House	15.25	x	5.08	77.5	2.89	223.50	Pig House
PF19	Pig House	10.15	x	7.98	81.0	2.89	233.68	Pig House
PF20	Pig House	4.2	x	9.86	41.4	2.89	119.47	Pig House
PF21	Pig House	6.36	x	6.15	39.1	2.89	112.84	Pig House
PF22	Pig House	-	-	-	88.5	2.89	255.32	Pig House
PF23	Pig House	12	x	9	108.0	2.89	311.58	Pig House
PFA	Collection Tank ^[4]	2	x	2	4.0	51.34	-	Collection Tank
PFB	Collection Tank ^[4]	2	x	2	4.0	51.34	-	Collection Tank
PFC	Collection Tank ^[4]	2	x	2	4.0	51.34	-	Collection Tank
PFD	Waste segregation facility ^{[4][5]}	-	-	-	1.0	14.04	-	Waste segregation facility
PFE	Sludge Storage Tank ^[4]	11	x	1.7	18.7	44.96	-	Sludge Storage Tank
PFF	Sludge Storage Tank ^[4]	2	x	12.3	24.6	44.96	-	Sludge Storage Tank
PFG	Filtration Tank ^{[4][6]}	9	x	3.5	31.5	12.35	-	Anaerobic Digestion Tank
PFH	Filtration Tank ^{[4][6]}	9	x	3.5	31.5	12.35	-	Anaerobic Digestion Tank
RFI	Filtration Tank ^{[4][6]}	9	x	3.5	31.5	12.35	-	Anaerobic Digestion Tank
PFJ	Filtration Tank ^{[4][6]}	9	x	3.5	31.5	12.35	-	Anaerobic Digestion Tank
PFK	Aeration Tank ^[4]	4.2	x	3.4	14.3	0.77	-	Aeration Tank
PFL	Aeration Tank ^[4]	5.2	x	3.4	17.7	0.77	-	Aeration Tank
PFM	Aeration Tank ^[4]	5.2	x	3.4	17.7	0.77	-	Aeration Tank
PFN	Aeration Tank ^[4]	5.2	x	7	36.4	0.77	-	Aeration Tank
PFO	Sedimentation Tank ^[4]	2.8	x	6.4	17.9	0.12	-	Sedimentation Tank

Remarks:

[1] SOER refers to Working Paper on Odour Sampling Results and Odour Emission Inventory – Pig Farm LK801 (Revision 2) dated 31 January 2022 which has been approved by EPD.

[2] Dimension of the odour sources referenced to the farm layout plan provided by AFCD and is in Appendix 3.11, except for the feed store and the store room.

[3] The area was not identified odourous for odour sampling for Pig Farm 18/19/P43.

[4] PFA-PFO are area sources and hence their emission rates are presented as OU/m²/s.

[5] It is a stand-alone machine identified from the farm layout plan. 1 m² is assumed for the purpose of calculation.

[6] The area was not identified odourous for odour sampling for Pig Farm 18/19/P43. SOER of anaerobic digestion tank is adopted for assessment purpose to avoid underestimation of odour impact.

Appendix 3.11 Calculation of Odour Emission Source at Retained Pig Farm and RTS

Retained Pig Farm

Source ID Group	Source ID	Description	Source Type	X	Y	Area (m ²)	Width (m)	1-hour Average Odour Emission Rate ^[1]	Conversion Multiplier	5-second Average Odour Emission Rate ^[1]	Release Height (mAG) ^[3]	No. of Vertices	Initial lateral Dimension (m)	Initial Vertical Dimension (m)	Row Labels	Sum of Area (m ²)
PF01	PF01a	Pig House	VOLUME	827222.51	840760.60	11.24	4.81	32.41	2.3	74.55	2.00	-	1.12	1.86	PF01	21.8
PF01	PF01b	Pig House	VOLUME	827224.88	840762.25	10.54	4.70	30.40	2.3	69.92	2.00	-	1.09	1.86	PF02	17.6
PF02	PF02a	Pig House	VOLUME	827232.85	840755.25	8.70	4.17	25.09	2.3	57.71	2.00	-	0.97	1.86	PF03	236.0
PF02	PF02b	Pig House	VOLUME	827235.45	840756.78	8.91	4.22	25.70	2.3	59.12	2.00	-	0.98	1.86	PF04	27.4
PF03	PF03a	Pig House	VOLUME	827206.01	840742.49	83.45	13.03	240.76	2.3	553.75	2.00	-	3.03	1.86	PF05	145.6
PF03	PF03b	Pig House	VOLUME	827212.90	840746.61	76.98	12.62	222.09	2.3	510.81	2.00	-	2.93	1.86	PF06	11.8
PF03	PF03c	Pig House	VOLUME	827219.45	840750.52	75.57	12.53	218.01	2.3	501.42	2.00	-	2.91	1.86	PF07	34.2
PF04	PF04a	Pig House	VOLUME	827240.67	840758.46	13.71	5.24	39.55	2.3	90.96	2.00	-	1.22	1.86	PF08	75.7
PF04	PF04b	Pig House	VOLUME	827243.72	840760.71	13.65	5.23	39.39	2.3	90.59	2.00	-	1.22	1.86	PF09	16.8
PF05	PF05a	Pig House	VOLUME	827208.86	840730.52	22.69	6.74	65.47	2.3	150.58	2.00	-	1.57	1.86	PF10	29.0
PF05	PF05b	Pig House	VOLUME	827213.04	840733.38	24.99	7.10	72.10	2.3	165.83	2.00	-	1.65	1.86	PF11	26.8
PF05	PF05c	Pig House	VOLUME	827217.43	840736.39	24.99	7.10	72.10	2.3	165.83	2.00	-	1.65	1.86	PF14	26.9
PF05	PF05d	Pig House	VOLUME	827221.63	840739.27	22.93	6.78	66.16	2.3	152.16	2.00	-	1.58	1.86	PF15	43.5
PF05	PF05e	Pig House	VOLUME	827225.87	840742.18	25.40	7.16	73.27	2.3	168.51	2.00	-	1.67	1.86	PF16	29.3
PF05	PF05f	Pig House	VOLUME	827230.26	840745.18	24.60	7.04	70.97	2.3	163.24	2.00	-	1.64	1.86	PF17	132.6
PF06	PF06a	Pig House	VOLUME	827227.74	840736.36	3.64	2.71	10.51	2.3	24.17	2.00	-	0.63	1.86	PF18	77.5
PF06	PF06b	Pig House	VOLUME	827228.59	840734.59	4.21	2.90	12.15	2.3	27.94	2.00	-	0.68	1.86	PF19	81.0
PF06	PF06c	Pig House	VOLUME	827229.48	840732.77	3.91	2.80	11.27	2.3	25.92	2.00	-	0.65	1.86	PF20	41.4
PF07	PF07a	Pig House	VOLUME	827233.50	840736.71	34.20	8.28	98.67	2.3	226.94	2.00	-	1.92	1.86	PF21	39.1
PF08	PF08a	Pig House	VOLUME	827237.89	840739.64	23.51	6.86	67.83	2.3	156.02	2.00	-	1.59	1.86	PF22	88.5
PF08	PF08b	Pig House	VOLUME	827242.41	840742.03	26.57	7.31	76.67	2.3	176.33	2.00	-	1.70	1.86	PF23	108.0
PF08	PF08c	Pig House	VOLUME	827247.12	840744.51	25.57	7.16	73.77	2.3	169.66	2.00	-	1.66	1.86	PFA	4.0
PF09	PF09a	Pig House	VOLUME	827254.76	840748.80	16.80	5.94	48.47	2.3	111.48	2.00	-	1.38	1.86	PFB	4.0
PF10	PF10a	Pig House	VOLUME	827239.68	840729.82	14.29	5.45	41.23	2.3	94.83	2.00	-	1.27	1.86	PFC	4.0
PF10	PF10b	Pig House	VOLUME	827243.99	840730.72	14.75	5.56	42.55	2.3	97.87	2.00	-	1.29	1.86	PFD	1.0
PF11	PF11a	Pig House	VOLUME	827250.81	840731.11	26.79	7.49	77.29	2.3	177.76	2.00	-	1.74	1.86	PFE	18.7
PF14	PF14a	Pig House	VOLUME	827265.95	840743.84	9.21	4.29	26.57	2.3	61.12	2.00	-	1.00	1.86	PFF	24.6
PF14	PF14b	Pig House	VOLUME	827268.71	840745.17	9.18	4.29	26.49	2.3	60.93	2.00	-	1.00	1.86	PFG	31.5
PF14	PF14c	Pig House	VOLUME	827271.36	840746.45	8.49	4.12	24.48	2.3	56.31	2.00	-	0.96	1.86	PFH	31.5
PF15	PF15a	Pig House	VOLUME	827271.79	840740.20	43.49	9.41	125.46	2.3	288.56	2.00	-	2.19	1.86	PFI	31.5
PF16	PF16a	Pig House	VOLUME	827276.44	840747.90	8.15	4.04	23.52	2.3	54.10	2.00	-	0.94	1.86	PFJ	31.5
PF16	PF16b	Pig House	VOLUME	827277.78	840744.97	10.82	4.71	31.20	2.3	71.77	2.00	-	1.10	1.86	PFK	14.3
PF16	PF16c	Pig House	VOLUME	827279.27	840741.70	10.28	4.57	29.67	2.3	68.23	2.00	-	1.06	1.86	PFL	17.7
PF17	PF17a	Pig House	VOLUME	827245.77	840718.90	132.60	16.33	382.57	2.3	879.90	2.00	-	3.80	1.86	PFM	17.7
PF18	PF18a	Pig House	VOLUME	827245.42	840710.55	23.24	6.84	67.05	2.3	154.22	2.00	-	1.59	1.86	PFN	36.4
PF18	PF18b	Pig House	VOLUME	827250.26	840711.75	27.40	7.41	79.06	2.3	181.84	2.00	-	1.72	1.86	PFO	17.9
PF18	PF18c	Pig House	VOLUME	827255.44	840713.04	26.82	7.33	77.39	2.3	177.99	2.00	-	1.70	1.86		
PF19	PF19a	Pig House	VOLUME	827279.00	840727.62	81.00	12.91	233.68	2.3	537.46	2.00	-	3.00	1.86		
PF20	PF20a	Pig House	VOLUME	827279.71	840719.28	20.55	6.45	59.30	2.3	136.38	2.00	-	1.50	1.86		
PF20	PF20b	Pig House	VOLUME	827284.60	840719.91	20.86	6.50	60.18	2.3	138.40	2.00	-	1.51	1.86		
PF21	PF21a	Pig House	VOLUME	827279.53	840776.94	39.11	8.85	112.84	2.3	259.54	2.00	-	2.06	1.86		
PF22	PF22a	Pig House	VOLUME	827281.27	840770.35	44.75	9.53	129.10	2.3	296.93	2.00	-	2.22	1.86		
PF22	PF22b	Pig House	VOLUME	827283.11	840763.40	43.75	9.40	126.22	2.3	290.31	2.00	-	2.19	1.86		
PF23	PF23a	Pig House	VOLUME	827212.66	840757.53	108.00	15.00	311.58	2.3	716.64	2.00	-	3.49	1.86		
PFA	PFA	Collection Tank	AREAPOLY	827285.37	840727.92	4.00	-	51.34	2.5	128.35	2.00	4	-	-		
PFB	PFB	Collection Tank	AREAPOLY	827285.37	840727.92	4.00	-	51.34	2.5	128.35	3.00	4	-	-		
PFC	PFC	Collection Tank	AREAPOLY	827285.20	840729.91	4.00	-	51.34	2.5	128.35	3.00	4	-	-		
PFD	PFD	Waste segregation facility	AREAPOLY	827285.27	840731.93	1.00	-	14.04	2.5	35.10	3.00	4	-	-		
PFE	PFE	Sludge Storage Tank	AREAPOLY	827222.16	840784.40	18.70	-	44.96	2.5	112.40	1.00	4	-	-		
PFF	PFF	Sludge Storage Tank	AREAPOLY	827222.16	840784.40	24.60	-	44.96	2.5	112.40	1.00	4	-	-		
PFG	PFG	Filtration Tank	AREAPOLY	827224.02	840785.14	31.50	-	12.35	2.5	30.88	1.00	4	-	-		
PFH	PFH	Filtration Tank	AREAPOLY	827225.31	840781.88	31.50	-	12.35	2.5	30.88	1.00	4	-	-		
PFI	PFI	Filtration Tank	AREAPOLY	827226.60	840778.63	31.50	-	12.35	2.5	30.88	1.00	4	-	-		
PFJ	PFJ	Filtration Tank	AREAPOLY	827227.89	840775.38	31.50	-	12.35	2.5	30.88	1.00	4	-	-		
PFK	PFK	Aeration Tank	AREAPOLY	827253.97	840772.09	14.28	-	0.77	2.5	1.93	1.00	4	-	-		
PFL	PFL	Aeration Tank	AREAPOLY	827253.97	840772.09	17.68	-	0.77	2.5	1.93	4.50	4	-	-		
PFM	PFM	Aeration Tank	AREAPOLY	827250.13	840770.39	17.68	-	0.77	2.5	1.93	4.50	4	-	-		
PFN	PFN	Aeration Tank	AREAPOLY	827248.75	840773.49	36.40	-	0.77	2.5	1.93	4.50	4	-	-		
PFO	PFO	Sedimentation Tank	AREAPOLY	827261.94	840763.93	17.92	-	0.12	2.5	0.30	2.50	4	-	-		

Remark

- [1] The unit of odour emission rate for volume source is OU/s, and for area source it is OU/m²·s.
- [2] The emission rate of each volume sources is calculated based on the proportion of the area of each source to the total area of their source group.
- [3] The height of the pig house is assumed to be 4 mAG, and the release height is assumed to be half of the height and thus 2 mAG.

Appendix 3.11 Calculation of Odour Emission Source at Retained Pig Farm and RTS

Retained Pig Farm

Conversion of 1-hour Average to 5-second Average Concentration

Source ID	Emission Rate ¹	Stability Class	Conversion Multiplier	Emission Rate with 5-second Peak Factor ¹	Reference
PF01a	32.41	A, B, C, D, E, F	2.3	74.55	- Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales. - Katestone Scientific 1995, The Evaluation of Peak-to-Mean Ratios for Odour Assessments, volumes I and II, Katestone Scientific Pty Ltd, Brisbane. - Katestone Scientific 1998, Peak-to-Mean Concentration Ratios for Odour Assessments, Katestone Scientific Pty Ltd, Brisbane.
PF01b	30.40	A, B, C, D, E, F	2.3	69.92	
PF02a	25.09	A, B, C, D, E, F	2.3	57.71	
PF02b	25.70	A, B, C, D, E, F	2.3	59.12	
PF03a	240.76	A, B, C, D, E, F	2.3	553.75	
PF03b	222.09	A, B, C, D, E, F	2.3	510.81	
PF03c	218.01	A, B, C, D, E, F	2.3	501.42	
PF04a	39.55	A, B, C, D, E, F	2.3	90.96	
PF04b	39.39	A, B, C, D, E, F	2.3	90.59	
PF05a	65.47	A, B, C, D, E, F	2.3	150.58	
PF05b	72.10	A, B, C, D, E, F	2.3	165.83	
PF05c	72.10	A, B, C, D, E, F	2.3	165.83	
PF05d	66.16	A, B, C, D, E, F	2.3	152.16	
PF05e	73.27	A, B, C, D, E, F	2.3	168.51	
PF05f	70.97	A, B, C, D, E, F	2.3	163.24	
PF06a	10.51	A, B, C, D, E, F	2.3	24.17	
PF06b	12.15	A, B, C, D, E, F	2.3	27.94	
PF06c	11.27	A, B, C, D, E, F	2.3	25.92	
PF07a	98.67	A, B, C, D, E, F	2.3	226.94	
PF08a	67.83	A, B, C, D, E, F	2.3	156.02	
PF08b	76.67	A, B, C, D, E, F	2.3	176.33	
PF08c	73.77	A, B, C, D, E, F	2.3	169.66	
PF09a	48.47	A, B, C, D, E, F	2.3	111.48	
PF10a	41.23	A, B, C, D, E, F	2.3	94.83	
PF10b	42.55	A, B, C, D, E, F	2.3	97.87	
PF11a	77.29	A, B, C, D, E, F	2.3	177.76	
PF14a	26.57	A, B, C, D, E, F	2.3	61.12	
PF14b	26.49	A, B, C, D, E, F	2.3	60.93	
PF14c	24.48	A, B, C, D, E, F	2.3	56.31	
PF15a	125.46	A, B, C, D, E, F	2.3	288.56	
PF16a	23.52	A, B, C, D, E, F	2.3	54.10	
PF16b	31.20	A, B, C, D, E, F	2.3	71.77	
PF16c	29.67	A, B, C, D, E, F	2.3	68.23	
PF17a	382.57	A, B, C, D, E, F	2.3	879.90	
PF18a	67.05	A, B, C, D, E, F	2.3	154.22	
PF18b	79.06	A, B, C, D, E, F	2.3	181.84	
PF18c	77.39	A, B, C, D, E, F	2.3	177.99	
PF19a	233.68	A, B, C, D, E, F	2.3	537.46	
PF20a	59.30	A, B, C, D, E, F	2.3	136.38	
PF20b	60.18	A, B, C, D, E, F	2.3	138.40	
PF21a	112.84	A, B, C, D, E, F	2.3	259.54	
PF22a	129.10	A, B, C, D, E, F	2.3	296.93	
PF22b	126.22	A, B, C, D, E, F	2.3	290.31	
PF23a	311.58	A, B, C, D, E, F	2.3	716.64	
PFA	51.34	A, B, C, D, E, F	2.5	128.35	
PFB	51.34	A, B, C, D, E, F	2.5	128.35	
PFC	51.34	A, B, C, D, E, F	2.5	128.35	
PFD	14.04	A, B, C, D, E, F	2.5	35.10	
PFE	44.96	A, B, C, D, E, F	2.5	112.40	
PFF	44.96	A, B, C, D, E, F	2.5	112.40	
PFG	12.35	A, B, C, D, E, F	2.5	30.88	
PFH	12.35	A, B, C, D, E, F	2.5	30.88	
RFI	12.35	A, B, C, D, E, F	2.5	30.88	
RFJ	12.35	A, B, C, D, E, F	2.5	30.88	
RFK	0.77	A, B, C, D, E, F	2.5	1.93	
RFL	0.77	A, B, C, D, E, F	2.5	1.93	
RFM	0.77	A, B, C, D, E, F	2.5	1.93	
RFN	0.77	A, B, C, D, E, F	2.5	1.93	
RFO	0.12	A, B, C, D, E, F	2.5	0.30	

Remark:

1. The unit of odour emission rate for volume source is OU/s, and for area source it is OU/m².s.

Appendix 3.11 Calculation of Odour Emission Source at Retained Pig Farm and RTS

Retained Pig Farm

Emission Source Listing in AERMOD

Source ID	Source Type	X	Y	Width (m)	Height (mAG)	No. of Vertices	Syinit (m)	Szinit (m)	Emission Rate with 5-second Peak Factor ¹
PF01a	VOLUME	827222.51	840760.60	4.81	2.00	-	1.12	1.86	74.55
PF01b	VOLUME	827224.88	840762.25	4.70	2.00	-	1.09	1.86	69.92
PF02a	VOLUME	827232.85	840755.25	4.17	2.00	-	0.97	1.86	57.71
PF02b	VOLUME	827235.45	840756.78	4.22	2.00	-	0.98	1.86	59.12
PF03a	VOLUME	827206.01	840742.49	13.03	2.00	-	3.03	1.86	553.75
PF03b	VOLUME	827212.90	840746.61	12.62	2.00	-	2.93	1.86	510.81
PF03c	VOLUME	827219.45	840750.52	12.53	2.00	-	2.91	1.86	501.42
PF04a	VOLUME	827240.67	840758.46	5.24	2.00	-	1.22	1.86	90.96
PF04b	VOLUME	827243.72	840760.71	5.23	2.00	-	1.22	1.86	90.59
PF05a	VOLUME	827208.86	840730.52	6.74	2.00	-	1.57	1.86	150.58
PF05b	VOLUME	827213.04	840733.38	7.10	2.00	-	1.65	1.86	165.83
PF05c	VOLUME	827217.43	840736.39	7.10	2.00	-	1.65	1.86	165.83
PF05d	VOLUME	827221.63	840739.27	6.78	2.00	-	1.58	1.86	152.16
PF05e	VOLUME	827225.87	840742.18	7.16	2.00	-	1.67	1.86	168.51
PF05f	VOLUME	827230.26	840745.18	7.04	2.00	-	1.64	1.86	163.24
PF06a	VOLUME	827227.74	840736.36	2.71	2.00	-	0.63	1.86	24.17
PF06b	VOLUME	827228.59	840734.59	2.90	2.00	-	0.68	1.86	27.94
PF06c	VOLUME	827229.48	840732.77	2.80	2.00	-	0.65	1.86	25.92
PF07a	VOLUME	827233.50	840736.71	8.28	2.00	-	1.92	1.86	226.94
PF08a	VOLUME	827237.89	840739.64	6.86	2.00	-	1.59	1.86	156.02
PF08b	VOLUME	827242.41	840742.03	7.31	2.00	-	1.70	1.86	176.33
PF08c	VOLUME	827247.12	840744.51	7.16	2.00	-	1.66	1.86	169.66
PF09a	VOLUME	827254.76	840748.80	5.94	2.00	-	1.38	1.86	111.48
PF10a	VOLUME	827239.68	840729.82	5.45	2.00	-	1.27	1.86	94.83
PF10b	VOLUME	827243.99	840730.72	5.56	2.00	-	1.29	1.86	97.87
PF11a	VOLUME	827250.81	840731.11	7.49	2.00	-	1.74	1.86	177.76
PF14a	VOLUME	827265.95	840743.84	4.29	2.00	-	1.00	1.86	61.12
PF14b	VOLUME	827268.71	840745.17	4.29	2.00	-	1.00	1.86	60.93
PF14c	VOLUME	827271.36	840746.45	4.12	2.00	-	0.96	1.86	56.31
PF15a	VOLUME	827271.79	840740.20	9.41	2.00	-	2.19	1.86	288.56
PF16a	VOLUME	827276.44	840747.90	4.04	2.00	-	0.94	1.86	54.10
PF16b	VOLUME	827277.78	840744.97	4.71	2.00	-	1.10	1.86	71.77
PF16c	VOLUME	827279.27	840741.70	4.57	2.00	-	1.06	1.86	68.23
PF17a	VOLUME	827245.77	840718.90	16.33	2.00	-	3.80	1.86	879.90
PF18a	VOLUME	827245.42	840710.55	6.84	2.00	-	1.59	1.86	154.22
PF18b	VOLUME	827250.26	840711.75	7.41	2.00	-	1.72	1.86	181.84
PF18c	VOLUME	827255.44	840713.04	7.33	2.00	-	1.70	1.86	177.99
PF19a	VOLUME	827279.00	840727.62	12.91	2.00	-	3.00	1.86	537.46
PF20a	VOLUME	827279.71	840719.28	6.45	2.00	-	1.50	1.86	136.38
PF20b	VOLUME	827284.60	840719.91	6.50	2.00	-	1.51	1.86	138.40
PF21a	VOLUME	827279.53	840776.94	8.85	2.00	-	2.06	1.86	259.54
PF22a	VOLUME	827281.27	840770.35	9.53	2.00	-	2.22	1.86	296.93
PF22b	VOLUME	827283.11	840763.40	9.40	2.00	-	2.19	1.86	290.31
PF23a	VOLUME	827212.66	840757.53	15.00	2.00	-	3.49	1.86	716.64
PFA	AREAPOLY	827285.37	840727.92	-	2.00	4	-	-	128.35
PFB	AREAPOLY	827285.37	840727.92	-	3.00	4	-	-	128.35
PFC	AREAPOLY	827285.20	840729.91	-	3.00	4	-	-	128.35
PDF	AREAPOLY	827285.27	840731.93	-	3.00	4	-	-	35.10
PFE	AREAPOLY	827222.16	840784.40	-	1.00	4	-	-	112.40
PFF	AREAPOLY	827222.16	840784.40	-	1.00	4	-	-	112.40
PFG	AREAPOLY	827224.02	840785.14	-	1.00	4	-	-	30.88
PFH	AREAPOLY	827225.31	840781.88	-	1.00	4	-	-	30.88
PFJ	AREAPOLY	827226.60	840778.63	-	1.00	4	-	-	30.88
PFJ	AREAPOLY	827227.89	840775.38	-	1.00	4	-	-	30.88
PFK	AREAPOLY	827253.97	840772.09	-	1.00	4	-	-	1.93
PFL	AREAPOLY	827253.97	840772.09	-	4.50	4	-	-	1.93
PFM	AREAPOLY	827250.13	840770.39	-	4.50	4	-	-	1.93
PFN	AREAPOLY	827248.75	840773.49	-	4.50	4	-	-	1.93
PFO	AREAPOLY	827261.94	840763.93	-	2.50	4	-	-	0.30

Remark:

1. The unit of odour emission rate for volume source is OU/s, and for area source it is OU/m²-s.

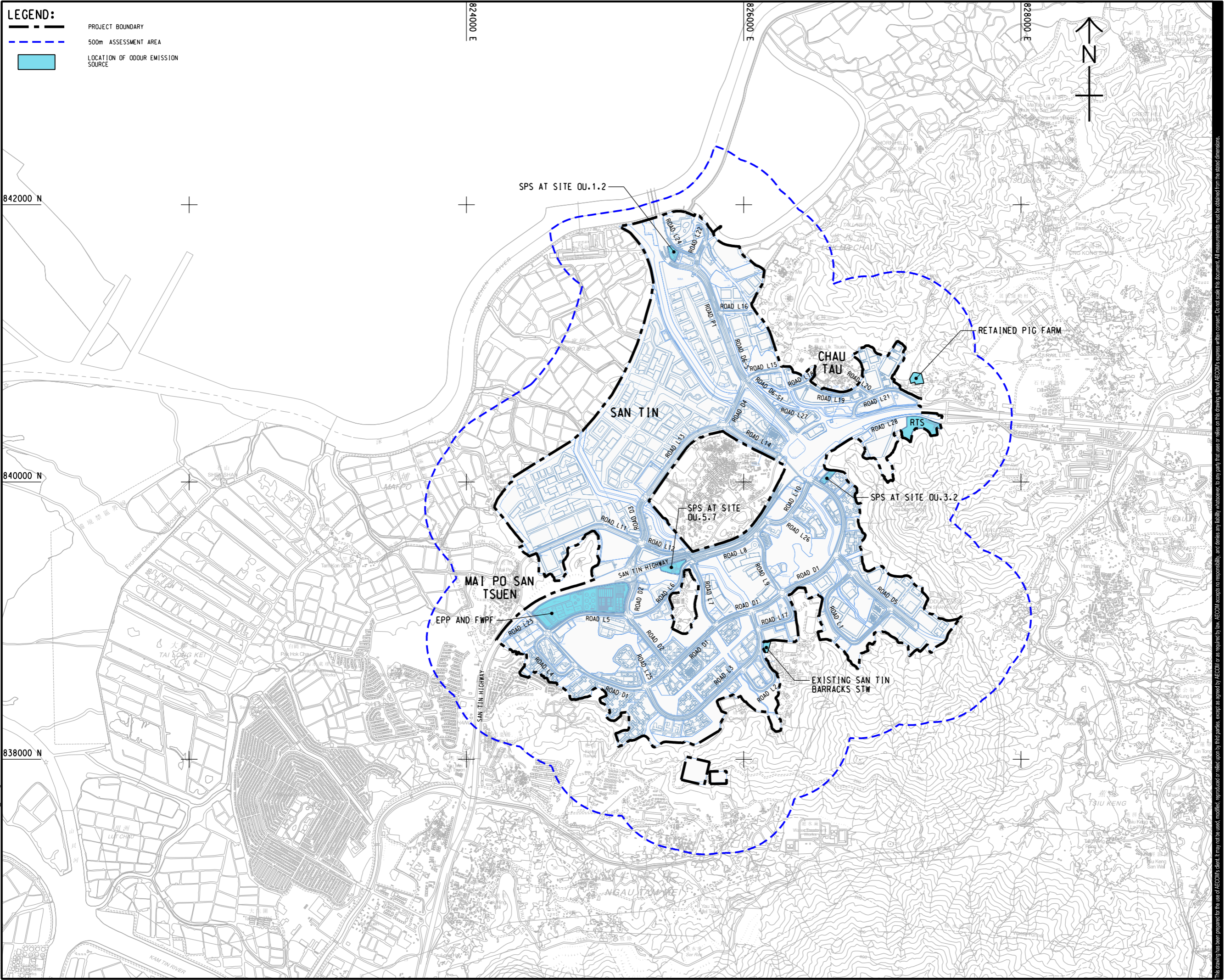
Appendix 3.11 Calculation of Odour Emission Source at Retained Pig Farm and RTS

Retained Pig Farm

Vertices of Area Source

Source ID	Vertex 1		Vertex 2		Vertex 3		Vertex 4	
	X	Y	X	Y	X	Y	X	Y
PFA	827285.37	840727.92	827287.36	840728.08	827287.52	840726.09	827285.53	840725.93
PFB	827285.37	840727.92	827285.20	840729.91	827287.20	840730.08	827287.36	840728.08
PFC	827285.20	840729.91	827285.04	840731.91	827287.03	840732.07	827287.20	840730.08
PFD	827285.27	840731.93	827285.18	840732.92	827286.18	840733.00	827286.26	840732.01
PFE	827222.16	840784.40	827221.53	840785.98	827231.75	840790.04	827232.38	840788.46
PFF	827222.16	840784.40	827224.02	840785.14	827228.55	840773.70	827226.70	840772.97
PFG	827224.02	840785.14	827232.38	840788.46	827233.67	840785.20	827225.31	840781.88
PFH	827225.31	840781.88	827233.67	840785.20	827234.96	840781.95	827226.60	840778.63
PFI	827226.60	840778.63	827234.96	840781.95	827236.26	840778.70	827227.89	840775.38
PFJ	827227.89	840775.38	827236.26	840778.70	827237.55	840775.45	827229.18	840772.12
PFK	827253.97	840772.09	827255.35	840768.98	827251.51	840767.28	827250.13	840770.39
PFL	827253.97	840772.09	827257.08	840773.47	827259.19	840768.71	827256.08	840767.34
PFM	827250.13	840770.39	827248.75	840773.49	827253.50	840775.60	827254.88	840772.49
PFN	827248.75	840773.49	827245.91	840779.89	827250.67	840782.00	827253.50	840775.60
PFO	827261.94	840763.93	827259.37	840769.79	827261.93	840770.91	827264.51	840765.05

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LEGEND:

- PROJECT BOUNDARY
- 500m ASSESSMENT AREA
- LOCATION OF ODOUR EMISSION SOURCE



PROJECT
 項目
 FIRST PHASE DEVELOPMENT OF THE NEW TERRITORIES NORTH – SAN TIN / LOK MA CHAU DEVELOPMENT NODE – INVESTIGATION

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IR	DATE	DESCRIPTION	CHK.
修訂	日期	內容描述	核對

STATUS
 階段

SCALE
 比例
 A3 1 : 25000

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

PROJECT NO.
 項目編號
 60670882

AGREEMENT NO.
 協議編號
 CE 20/2021

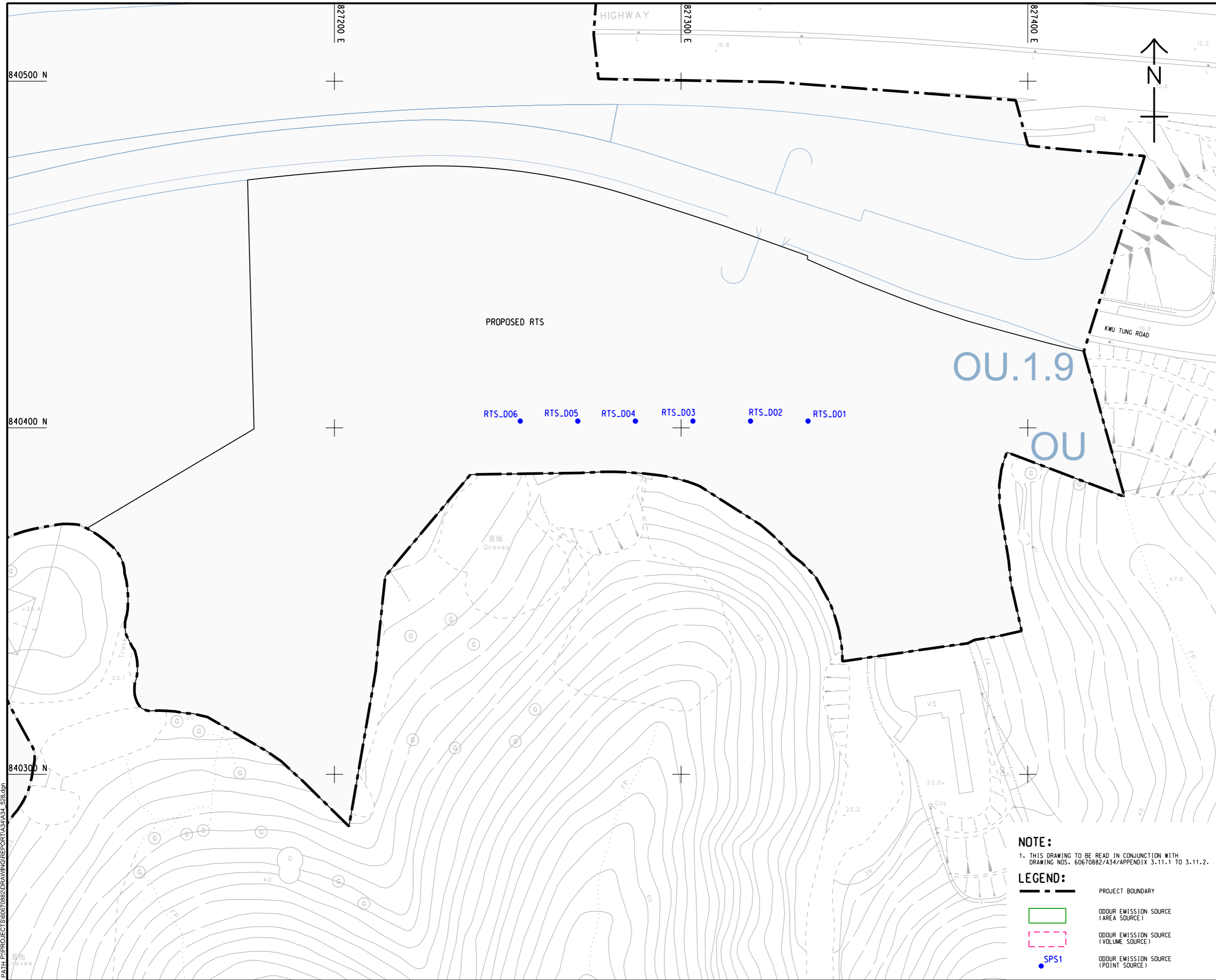
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 圖紙名稱
 LOCATION OF ODOUR EMISSION SOURCES (OVERVIEW)

SHEET NUMBER
 圖紙編號
 60670882/A34/Appendix 3.10

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項目
FIRST PHASE DEVELOPMENT OF
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SAN TIN / LOK MA CHAU
DEVELOPMENT NODE –
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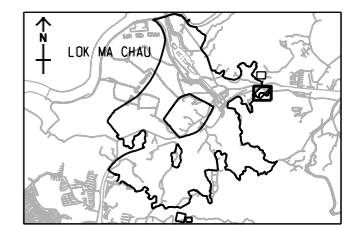
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STATUS
階段

SCALE
比例
A3 1: 1000

DIMENSION UNIT
尺寸單位
METRES

KEY PLAN A3 1: 150000
索引圖



NOTE:
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH
DRAWING NOS. 60670882/A34/APPENDIX 3.11.1 TO 3.11.2.

- LEGEND:**
- PROJECT BOUNDARY
 - ODOUR EMISSION SOURCE (AREA SOURCE)
 - ODOUR EMISSION SOURCE (VOLUME SOURCE)
 - ODOUR EMISSION SOURCE (POINT SOURCE)

PROJECT NO.
項目編號
60670882

AGREEMENT NO.
協議編號
CE 20/2021

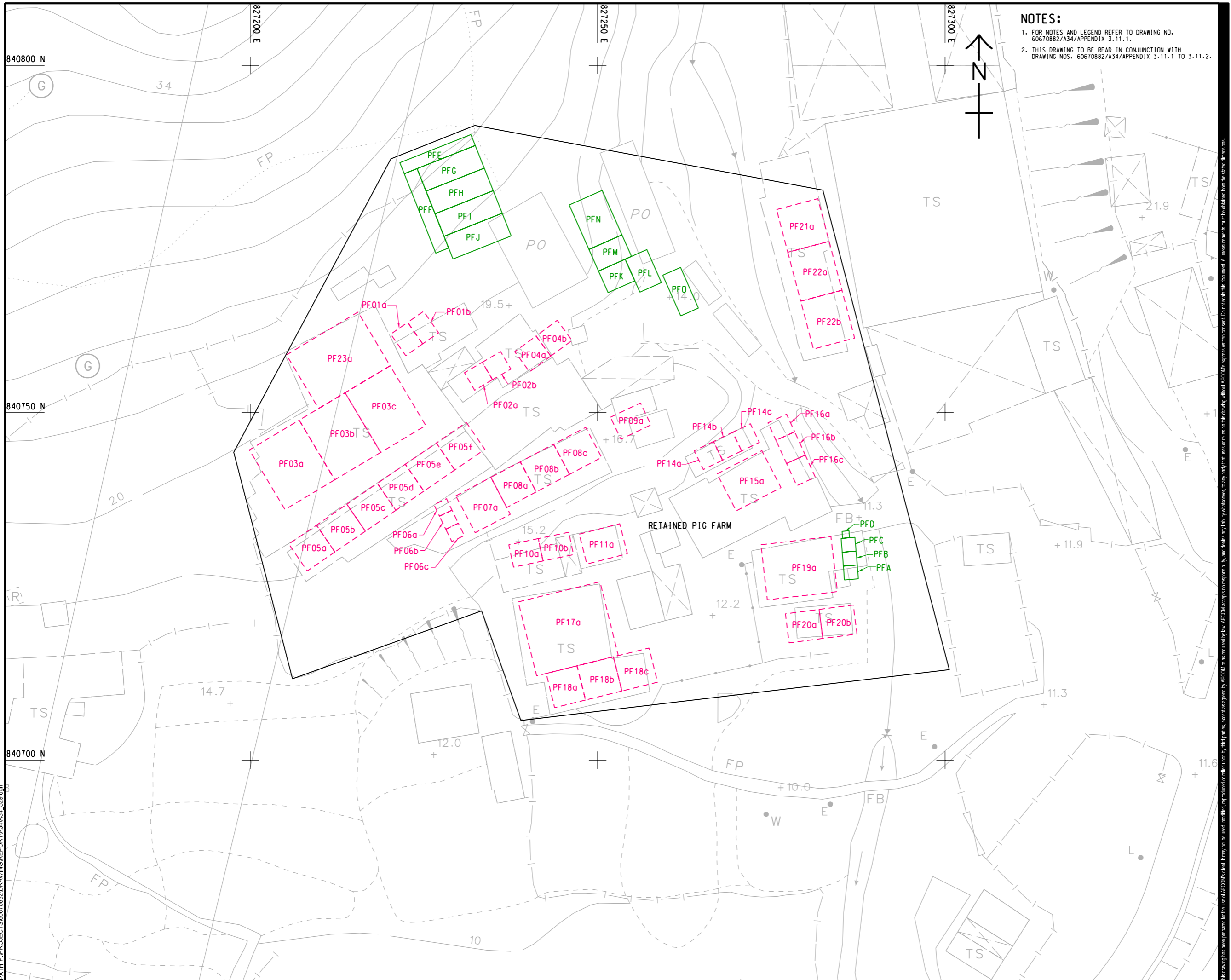
SHEET TITLE
圖紙名稱
LOCATION OF ODOUR EMISSION
SOURCES (RETAINED PIG FARM
AND PROPOSED RTS)

SHEET 1 OF 2

SHEET NUMBER
圖紙編號
60670882/A34/Appendix 3.11.1

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NOTES:
 1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60670882/A34/APPENDIX 3.11.1.
 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60670882/A34/APPENDIX 3.11.1 TO 3.11.2.



PROJECT
 項目
FIRST PHASE DEVELOPMENT OF THE NEW TERRITORIES NORTH – SAN TIN / LOK MA CHAU DEVELOPMENT NODE – INVESTIGATION

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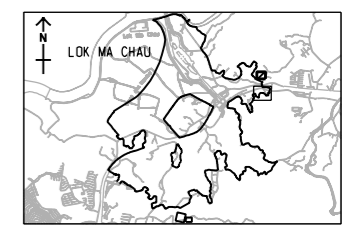
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修訂	日期	內容摘要	核對

STATUS
 階段

SCALE
 比例
 A3 1 : 500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN A3 1 : 150000
 索引圖



PROJECT NO.
 項目編號
 60670882

AGREEMENT NO.
 協議編號
 CE 20/2021

SHEET TITLE
 圖紙名稱

LOCATION OF ODOUR EMISSION SOURCES (RETAINED PIG FARM AND PROPOSED RTS)

SHEET NUMBER
 圖紙編號
 60670882/A34/Appendix 3.11.2

SHEET 2 OF 2

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