



山东朗格环保工程有限公司

Shandong Langge Environmental Protection Engineering Co., Ltd.

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1.1		1-1
1.2		1-12
1.3		1-10
1.4		1-14
1.5		1-19
1.6		1-20
2		2-1
2.1		2-1
2.2		2-7
2.3		2-61
2.4		2-68
3		3-1
3.1		3-1
3.2		3-1
3.3	“ ”	3-31
3.4	.....	3-64
4	.....	4-1
4.1	.....	4-1
4.2	.....	4-1
4.3	.....	4-10
4.4	.....	4-10
4.5	.....	4-16
5	.....	5-1
5.1	.....	5-1
5.2	.....	5-7
5.3	.....	5-21

5.4	.....	5-31
5.5	.....	5-48
5.6	.....	5-52
5.7	.....	5-63
6	.....	6-1
6.1	.....	6-1
6.2	.....	6-2
6.3	.....	6-5
6.4	.....	6-5
6.5	“ ”	6-7
6.6	.....	6-9
7	.....	7-1
7.1	.....	7-1
7.2	.....	7-1
7.3	.....	7-2
8	.....	8-1
8.1	.....	8-1
8.2	.....	8-3
8.3	.....	8-8
8.4	.....	8-9
8.5	.....	8-11
9	.....	9-1
9.1	.....	9-1
9.2	.....	9-10
9.3	.....	9-11
10	.....	10-1
10.1	.....	10-1
10.2	.....	10-9

1			
2			
3			
4			
5	4.5	6	/
6	4.5	6	/
7	4.5	6	/
8			
9			
10			
11			
12			
13			
14	2 × 130t/h		
15	5		
16		5	
17	2 × 24MW		
18	2 × 24MW		
19			
20			
21			1-2
22			
23			
24			3 × 130t/h

25 $5 \times 130\text{t/h}$

26 $5 \times 130\text{t/h}$

27

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概 述

3

4

三、项目环评编制过程

2022 1

- HJ2.1-2016

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2022 1 2022 5

四、分析判定的相关依据

(2019)

2201-371526-04-01-335282

五、关注的主要环境问题及环境影响

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GB12348-2008 3

GB3096-2008

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六、环境影响主要结论

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1.1.1

1 2015 1 1

2 2016 9 1 2018 12 29

3 2018 10 26

4 2017 6 27 2018 1

1

5 2022 6 5

6 2020 4 29

7 2019 1 1

8 2011 3 1

9 2012 7 1

10 2018 10 26

11 2018 10 26

12 2020 1 1

13 [2013]37 2013 9

10

14 645 2013 12 7

15 31 2015 1 1

16 [2015]4 <

> 2015 1 8

17 [2015]17 2015

4 2

18	34	2015 6 5
19	[2016]45	
	2016 4 15	
20	[2016]31	
2016 5 28		
21	[2016]150	
	2016 10 26	
22	[2016]81	
	2016 11 10	
23	42	2016 12 31
24		
	2017 2 7	
25	682	2017 10 1
26	[2017]84	
	2017 11 14	
27	[2018]11	
	2018 1 25	
28	[2018]266	
	2018 5 10	
29	[2018]17	
	2018 6 16	
30	4	2019 1 1
31		2019 4
2018	2019 1 23	
32	2019 8	<
	2019 >	2019 2 27
33	[2019]17	< >

	2019	3	1			
	34		[2019]25			2019
3	28					
	35		[2019]56	<		>
	2019	7	9			
	36			2019	28	
			2019	7	23	
	37		[2019]719			
	2019	9	2			
	38		[2019]92			
				2019	10	15
	39		29		2019	2019
10	30					
	40					

> 2021 9 1

49 [2021]104

			2015	12	31		
4		[2017]176				<	
	2016-2020		2016	9	28		
5		[2016]141					
	2016	9	30				
6				2016	11	1	
7		[2016]37					
		2016	12	31			
8				2017	5	1	
9		[2017]561					
	2017	9	19				
10				67			
		2018	1	23			
11				47		<	
>			2018	1	23		
12				105			
			2018	1	23		
13		<				>	2018 1
23							
14				107			
2018	1	23					
	15		227				2018
1	24						
	16		248				2012
1	4	2018	1	24			
	17		311			<	
	>	33		2018	1	24	
18		[2018]90					
	2018	4	24				
19		[2018]166					

	2018-2020	2018	8	2	
20	[2018]190			<	
		>	2018	8	6
21	[2018]5			<	
		>	2018	11	8
22		99			2018 11
30					2019 1
1					
23	[2019]29				
			2019	2	8
24	[2019]58				
		2019	3	24	
25	[2019]112				
2019	5	8			
26	[2019]113				
		2019	5	28	
27	[2019]126				
2019	8	2			
28	[2019]132				
			2019	9	2
29	[2019]66				
		2019	9	20	
30	[2019]26				
2019	10	16			
31			83		
2020	1	1			
32	[2020]5				
			2020	1	16
33	[2020]6				

48	[2021]8				<
			>	2021	11 13
49	[2021]249				
		2021	11	19	
50	[2021]9			2021-2022	
		2021	11	25	
51	[2022]1				
				2022	4 3
52			11		
2018.1.2					
53			16		
2018.8.30					
54	[2019]6				<
			>		
55	[2019]7				<
			>		
56	[2019]19				<
			>		
57	[2019]39				<
>	2019	7	17		
58	[2020]3				
		2020	01	17	
59	[2020]8				
2020		2020	4	10	
60	[2020]17				
61	[2020]49				
				2020	10 29
62	[2020]65				

63	[2021]6	
		2021 05 21
64	[2022]2	
		2022 01 21
65	[2018]62	
		2019.12.25
66	[2019]30	
		2019.10.18
67	[2019]29	
		2019.10.18
68	[2021]34	
		2020.11.11
69	[2021]3	
		(2021.4.9)
1.1.3		
1		HJ2.1-2016
2		HJ2.2-2018
3		HJ2.3-2018
4		HJ610-2016
5		HJ2.4-2009
6		HJ964-2018
7		HJ169-2018
8		HJ19-2011
9		HJ2000-2010
10		HJ2015-2012
11		HJ2035-2013
12		HJ2034-2013
13		HJ589-2010
14		HJ2042-2014
15		HJ 819-2017

16			HJ942-2018	
17		2021		
18			2015.11	
19			2016.9.26	
20				
21		2018-2035		
1.1.4				
1	1			
2	2			
3	3			
4	4			
5			4.5	
6	/		[2007]21	
5				
6			45000t/a	6
/		[2010]12	6	
7			45000t/a	6
/			7	
8				
			[2014]49	
8				
9				
			[2018]31	
9				
10				
		[2018]96	10	
11				
		[2018]207	11	
12				
		[2019]7	12	

1-11

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1.2

1.2.1

1.2.2

1.2.3

1.3

1.3.1

1.3.1.1

1.3-1

1.3-1

		SS COD BOD

1.3.1.2

1.3-2

1.3-2

	VOCs SO ₂ NO _x	COD _{Cr} BOD ₅	L _{Aeq}	

1.3.2

1.3-3

1.3-3

	SO ₂ NO ₂ PM ₁₀ PM _{2.5} CO O ₃ TSP	SO ₂ NO _x TSP PM ₁₀
	pH SS COD _{Cr} BOD ₅	--
	pH K ⁺ +Na ⁺ Ca ²⁺ Mg ²⁺ CO ₃ ²⁻ HCO ₃ ⁻	--
	Leq A	Leq A

	GB/T14848-2017	
	GB3096-2008	2 3
	GB36600-2018	1 2
	GB15618-2018	1

1.4-2

mg/m³

SO ₂	0.50	0.15	0.06	GB3095-2012
NO ₂	0.20	0.08	0.04	
PM ₁₀		0.15	0.07	
TSP		0.30	0.20	
PM _{2.5}		0.075	0.035	
CO	10	4		
O ₃	0.2	0.16 8		
NO _x	0.25	0.10	0.05	HJ2.2-2018 D
	0.05			
	0.2			
	0.11			
	0.2			

1.4-4

mg/L pH		MPN/100mL				CFU/mL	
	pH						
	6.5~8.5	450	0.50	250	250	1.00	20.0

1,1-	66
-1,2-	596
-1,2-	54
	616
1,2-	1
1,1,1,2-	2.6
1,1,2,2-	1.6
	11
1,1,1-	840
1,1,2-	2.8
	2.8
1,2,3-	0.5
	0.43
	4
	270
1,2-	560
1,4-	20
	28
	1290
	1200
+	570
	640
	76
	260
2-	2256
[a]	15
[a]	1.5
[b]	15
[k]	151
	1293
[a h]	1.5
[1,2,3-cd]	15
	70
C ₁₀ C ₄₀	4500

1.4.2

1.4-8~ 1.4-13

1.4-8

	6 DB37/801.6-2018	1 VOCs 2 3
	GB31572-2015	5

	DB37/2376-2019	1
	GB16297-1996	2
	GB14554-93	1 2
	[2019]39	NO _x
	GB/T31962-2015	GB/T31962-2015 1A
	GB12523-2011	
	GB12348-2008	3
	GB18599-2020	
	GB18597-2001 2013	

1.4-8

		mg/m ³	kg/h	
			m	
1	VOCs	60	/	

1.4-9

		mg/m ³	
1		1.0	GB16297-1996 2
2		0.2	
3		0.08	
4	VOCs		

1.5-1

		1% Pmax=4.88% 10%	
		75.65m³/d	B
		3	
		3dB(A)	

1.6-2

28		W	116.175E	36.846N	1600	950	294	84
29		SSW	116.190E	36.830N	1690	1290	492	140
30		NE	116.214E	36.862N	1700	2360	2695	770
31		SSE	116.210E	36.830N	1710	1810	710	200
32		NE	116.211E	36.863N	1730	2390	98	28
33		NNE	116.204E	36.865N	1760	2310	945	270
34		SSE	116.208E	36.829N	1770	1760	400	114
35		N	116.199E	36.869N	1800	2290	469	134
36		WS W	116.172E	36.842N	1810	1080	693	198
37		NNE	116.210E	36.864N	1820	2460	1050	300
38		ENE	116.222E	36.851N	1830	2390	560	160
39		NE	116.212E	36.864N	1850	2500	1670	--
40		NNE	116.202E	36.867N	1860	2390	350	--
41		NE	116.219E	36.860N	1870	2550	791	226
42		NNE	116.205E	36.867N	1880	2410	300	--
43		NNW	116.191E	36.867N	1890	2340	116	33
44		NE	116.215E	36.865N	1980	2650	2205	630
45		ENE	116.224E	36.850N	2000	2520	994	284
46		W	116.170E	36.849N	2040	1500	787	225
47		NNW	116.186E	36.868N	2060	2430	850	--
48		NE	116.217E	36.865N	2150	2820	840	240
49		NNE	116.208E	36.868N	2170	2750	1610	460
50		ENE	116.226E	36.850N	2170	2770	882	252

60		ENE	116.224E	36.859N	2590	3250	578	165
61		E	116.231E	36.846N	2600	3130	400	--
62		NE	116.222E	36.865N	2600	3290	1190	340
63		S	116.191E	36.821N	2610	2270	613	175
64		E	116.231E	36.850N	2620	3170	600	--
65		NE	116.217E	36.869N	2630	3280	1500	--
66		E	116.231E	36.842N	2630	3130	1554	444
67		ENE	116.229E	36.858N	2650	3300	81	23
68		NE	116.220E	36.868N	2650	3340	420	120
69		ENE	116.231E	36.854N	2670	3280	665	190
70		SSE	116.262E	36.868N	2720	2410	150	--
71		NE	116.222E	36.867N	2730	3420	200	--
72		NW	116.172E	36.871N	2740	2710	784	224
73		ENE	116.230E	36.855N	2750	3400	1890	540
74		E	116.231E	36.847N	2770	3320	1260	360
75		S	116.193E	36.819N	2940	2560	588	168
76		NE	116.215E	36.873N	2970	3610	5355	1530
77		ESE	116.233E	36.839N	2970	3440	732	209
78		SSW	116.179E	36.822N	2970	2410	221	63
79		NE	116.231E	36.860N	2980	3660	2450	700
80		NNE	116.208E	36.875N	3010	3580	840	240
81		NNW	116.190E	36.877N	3020	3470	455	130
82		ENE	116.234E	36.852N	3020	3630	315	90
83		NE	116.226E	36.867N	3050	3750	840	240
84		NE	116.228E	36.866N	3090			

89		SE	116.230E	36.829N	3180	3490	683	195
90		NNE	116.208E	36.877N	3210	3780	998	285
91		NE	116.232E	36.863N	3210	3900	210	60
92		W	116.159E	36.855N	3220	2770	546	156
93		NE	116.230E	36.866N	3230	3930	595	170
94		ENE	116.230E	36.855N	3260	3920	420	120
95		NE	116.225E	36.871N	3270	3950	1260	360
96		E	116.237E	36.844N	3290	3800	350	--
97		E	116.237E	36.843N	3320	3830	840	240
98		ENE	116.237E	36.857N	3350	4000	630	180
99		ENE	116.236E	36.860N	3370	4040	87	25
100		NE	116.222E	36.874N	3380	4050	1260	360
101		NE	116.224E	36.873N	3380	4060	560	160
102		NE	116.233E	36.865N	3380	4080	350	100
103		SW	116.170E	36.823N	3420	2740	308	88
103		ENE	116.236E	36.862N	3460	4140	280	80
105		ENE	116.237E	36.860N	3480	4150	300	--
106		SE	116.227E	36.823N	3480	3670	347	99
107		NE	116.224E	36.874N	3500	4170	1680	480
108		NE	116.235E	36.865N	3520	4210	350	100
109		W	116.155E	36.850N	3520	2920	592	169
110		NE	116.230E	36.871N	3540	4230	1134	324
111		ENE	116.236E	36.863N	3540	4220	455	130
112		ENE	116.237E	36.862N	3580	4250	168	48
113		ENE	116.239E	36.859N	3610	4270	2310	660
114		SSE	116.214E	36.815N	3610	3540	501	143
115		ENE	116.240E	36.855N	3620	4240	1260	360
116		SSW	116.179E	36.815N	3620	3130	546	156
117		ENE	116.238E	36.863N	3640	4320	315	90
118		NE	116.236E	36.865N	3670	4360	2205	630
119		NE	116.232E	36.870N	3680	4370	455	130
120		E	116.241E	36.844N	3680	4190	840	240

121	ENE	116.242E	36.849N	3690	4250	840	240
122	SW	116.167E	36.821N	3700	3010	364	104
123	ENE	116.241E	36.858N	3710	4350	560	160
124	SE	116.236E	36.829N	3710	4050	455	130
125	ESE	116.238E	36.832N	3710	4100	728	208
126	SW	116.163E	36.824N	3770	3040	504	144
127	NW	116.159E	36.868N	3800	3630	462	132
128	NE	116.239E	36.864N	3840	4520	3430	980
129	WS W	116.163E	36.824N	3850	3110	798	228
130	NE	116.231E	36.874N	3900	4590	2310	660
131	ENE	116.243E	36.859N	3980	4620	3850	1100
132	NE	116.237E	36.870N	4030	4720	123	35
133	NNW	116.188E	36.886N	4060	4490	546	156
134	NE	116.234E	36.875N	4110	4810	840	240
135	SSE	116.210E	36.809N	4130	3970	637	182
136	NE	116.230E	36.878N	4140	4830	991	283
137	ESE	116.244E	36.823N	4170	4590	420	120
138	SE	116.233E	36.819N	4170	4370	886	253
139	NE	116.242E	36.866N	4190	4880	1050	300
140	NE	116.240E	36.870N	4220	4900	370	200
141	ENE	116.247E	36.857N	4250	4880	100	--
142	S	116.189E	36.807N	4300	3920	245	70
143	ENE	116.249E	36.851N	4310	4890	700	200
144	E	116.248E	36.843N	4310	4820	315	90
145	ENE	116.249E	36.855N	4350	4970	300	--
146	SSE	116.218E	36.809N	4350	4280	126	36
147	ENE	116.249E	36.849N	4370	4920	630	180
148	SE	116.234E	36.816N	4430	4590	168	48
149	NE	116.246E	36.866N	4450	5130	462	132
150	NE	116.244E	36.870N	4490	5180	1260	360
151	NNE	116.206E	36.889N	4500	5020	672	192
152	NE	116.246E	36.867N	4550	5230	525	150
153	ESE	116.250E	36.836N	4550	5010	616	176
154	SW	116.163E	36.824N	4580	3850	210	60
155	NE	116.242E	36.874N	4610	5310	3360	960
156	ESE	116.248E	36.829N	4610	5000	455	130

157		ENE	116.252E	36.848N	4620	5160	700	200	
158		SE	116.226E	36.809N	4660	4680	536	153	

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2.1

1993 5

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2003 ISO9001

500 2016 360
19 146 2016 500 372
500 60 100 38 50

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2.1-1

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“√”

1		201700	8	2005.10.17 [2005]2021	559 2005.7.6	2005.7	2006.6	[2006]137 2006.10.27		√
2	1 55	1000	55 1		2006.10.20	2006.5	2006.10	2006.12 [2006]02		√
3	2×130t/h	4500	2×130t/h	2002.4.26 0200153	[2002]85 2002.12	2003.1	2003.12	[2008]38 2008 7 2		√
4	5	4850	2 1 50MW	2003.6.25 03006892	[2004]26 2004.7.30	2004.8	2005.6			
5	2×130t/h 2×24MW	9100	2×130t/h 2×24MW	2×24MW 2003.4.15 0300339 2×130t/h 2002.6.17 [2002]02	[2008]200	2002.6	2003.12	[2010]141 2010 9		√
6		2970	1×130t/h	—	[2011]49	2013.5	2014.1	[2014]21		√
7	1-2	2849.26	1# 2#	—	[2015]16	2015.6	2016.7	[2016]6 2016 12		√
8		3288.39	2# 1 4	—	[2016]46	2016.11	2016.7			√

			SNCR							
9	3×130t/h	1300	FOSS	——	[2017]26 2017.5.26	2017.7	2017.7	2018 6		√
10	5×130t/h	2456.87	1# 2# 3# 4# 5×130t/h	2018-371526-44-03-0 44625	[2018]208 2018.12.21	2018.12	2018.12	2019 3		√
11		170	EPS 20	2019-371526-50-03-0 02920	[2019]24 2019.04.25	2019.4	2020.3	2020.4		——

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√

11		1150.87	2850		2011 7 6 [2022]18	2015.10	2017.12	2018 6		√
12		956	50		[2018]96 2018 7 20	2018.07 .21	2019.02.20	2019 3 16		√
13		650	80	2017-371526-30-03-0 72538	[2018]207 2018 12 21	2018.12	2018.12	2019 3 16		√
14		185	50		20173715260000 0255	-				

				68462						
20		350	5000		2006.5.10	2006.5	2007.3	2007.9.8 [2007]21		√
21		2582	1 /		2006.3.13	2006.4	2007.8	2007.9.8 [2007]22		√
22	15	74676	15		[2009]137	2010.2	2011.7	2019 8 27		2011 √
23	15				[2011]174					2015 √
					[2014]37	2014.8				
24	15 VOC	5000	VOC		[2019]56 2019.07.18	2019.08	2019.08	2019.08.27		√
25	10	65491.6	10 130		2012.6.27 [2012]10	2014.12	2016.2	2016.10.9 [2016]25		√
26	VOCs	3053.8	VOCs		[2018]209	2018.12	2019.01	2019.03.16		√
27	20 /	20000	20	2020-371526-41-03-0 01799	[2020]3					—

28	20	987	20	2020-371526-41-03-1 35626	[2020]212			—
----	----	-----	----	------------------------------	-----------	--	--	---

2.2

2.2.1

4.5

2.1-1

45000t/a 6 /

2.1-1

913715261682127528005U

913715261682127528001P

2.2.2

2.2-1

2.2-1

45000t/a 6 /	6	45000t	45~50%
	6	20500t	90%
	6	35000t	55~60%
		30	--
		62	--
		20	--
		1.8	--
		84	--
		100	--
		50	--
		80 m ²	--

4.5

		50	--
		1500	--
		450	--

2.2.3

2.2-2

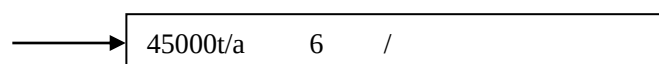
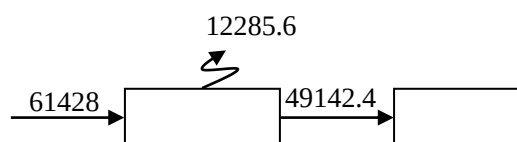
2.2-2

	45000t/a 6 /	3 2
		1 1 1 1
		1
		1

		1		
		2	1	1
		8	1	2
			1	
		2	170m ³ 2	515m ³
			1000m ³	
		2	2.0m ³	
		2	2.0m ³	

			UV 1 15m DA007
			1 44m DA025 1 30m DA024 20m DA018 25m DA029
		45000t/a / 6	
			/ /

4.5		
		759m ³



2.2-2

 m^3/a

2.2.5.2

2.2.5.3

2.2.5.4

2.2-4

2.2-4

			m	m	m ³	t
	4		6.0	6.1	170	612
	2		10	12.8	1000	1800
	2		8.1	10	515	—
	2		1.3	1.6	2.0	0.74
	2		1.3	1.6	2.0	0.88

2.2.6

2.2.6.1 45000t/a 6 /

2.2.6.1.1

1

90

68~71

270

G1-1

G1-2

S1-12

G1-1 G1-2

1

40m

DA012 DA022 DA017

2

-

4.5

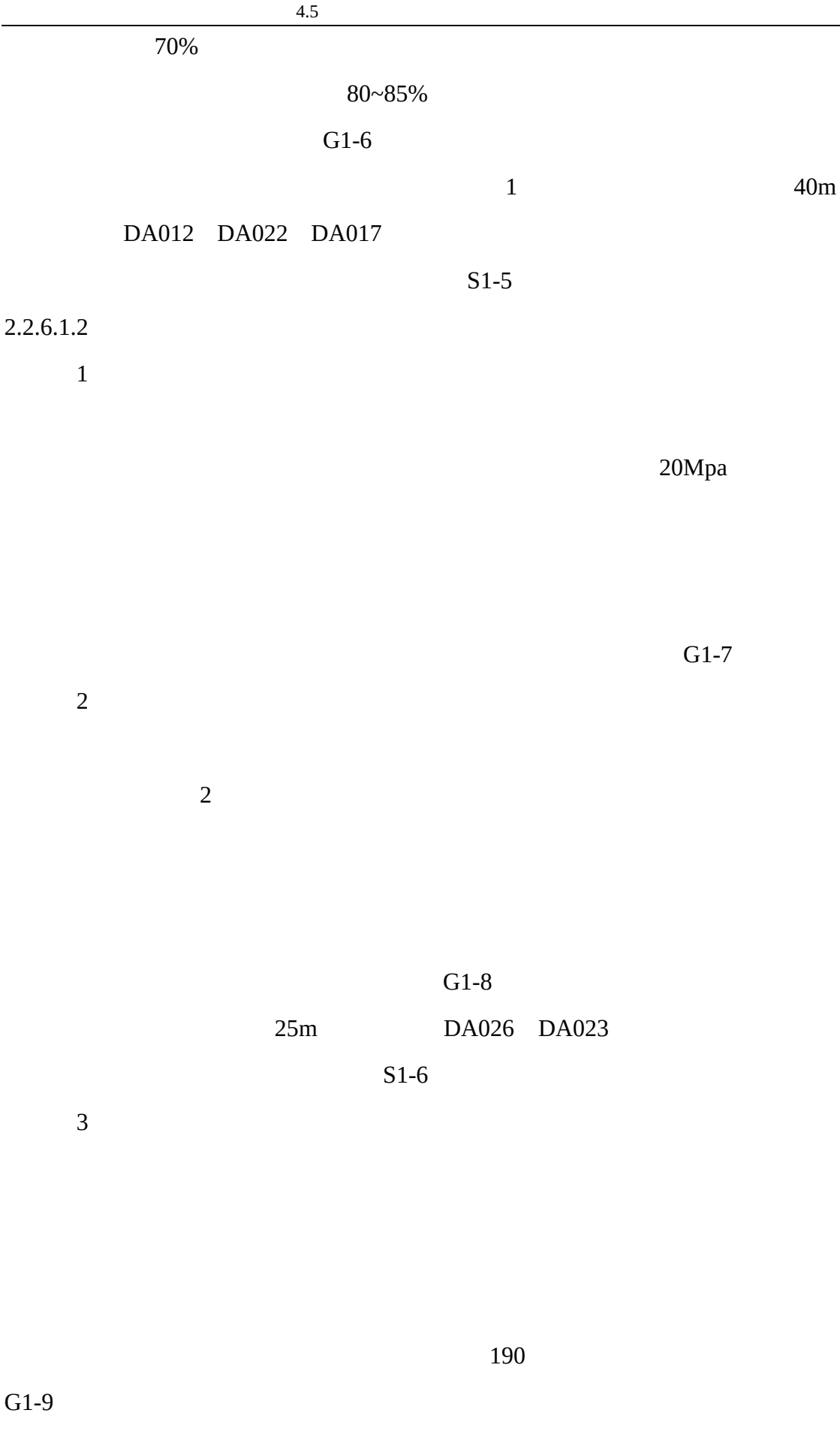
10%

4

0.06%

2

5



		4.5			
			20~25		
				S1-7	
	15m		DA028	DA027	
4					
			S1-8		S1-12
2.2.6.1.3					
			S1-9		
2.2.6.1.4					
					20~30
	-		1.3~2.3		
	pH	25			
G1-10			G1-11		
			G1-16		

1

30m DA013 DA019

G1-12

30m DA013 DA019

G1-13

G1-14 G1-15

G1-13 G1-14 G1-15

35m DA014 DA015 DA020

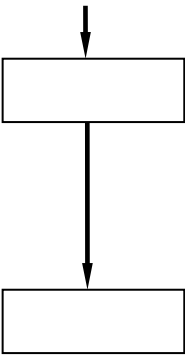
DA016 DA021

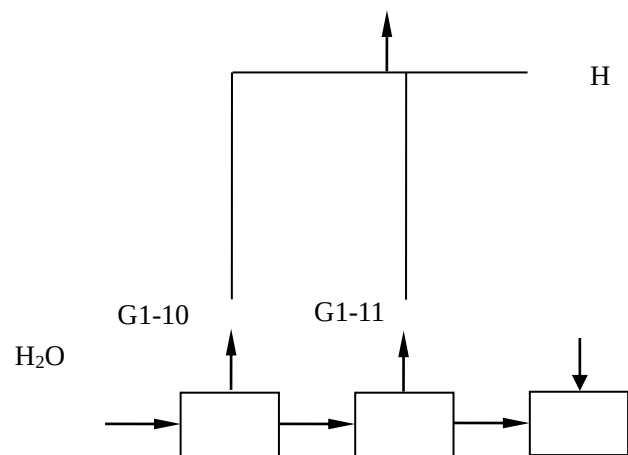
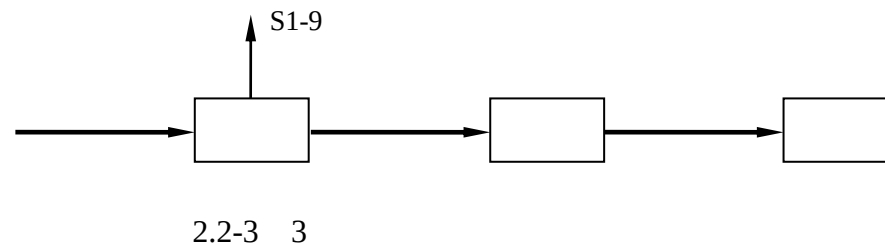
S1-10

S1-12

2.2-3







2.2-3 4

2.2.6.2

2.2.6.2.1

2.2-4~2.2-6

2.2-4

1

/ /

60~110

2

150

160

165

175

180

30

3

/ /

4

5

2.2-8

3

4

8m³

1

8m³

SS

5

6

700

7

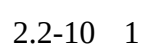
8

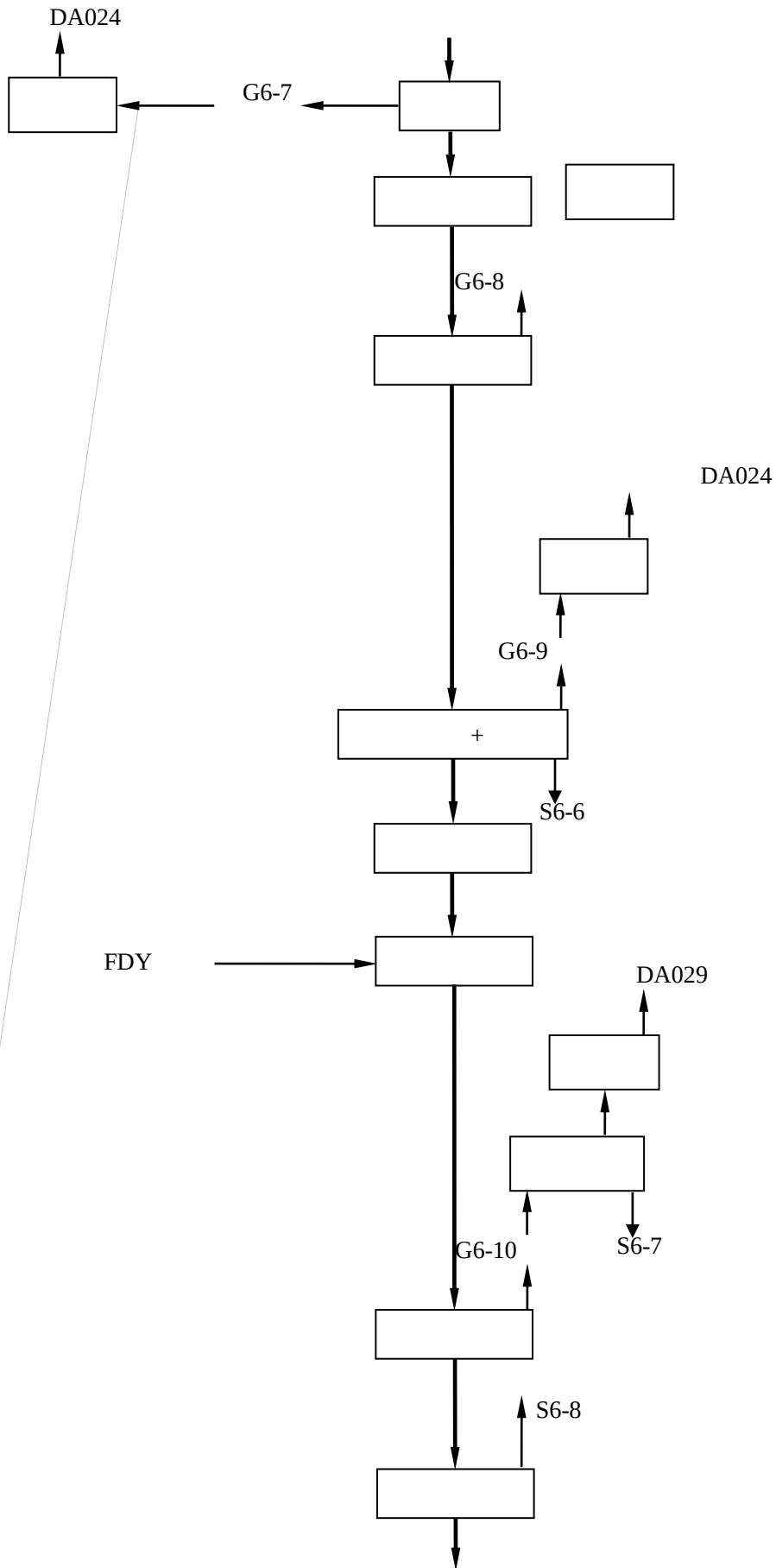


2-26

2.2.6.6

“ 50 A 3 E > 4 3 1 Q Q E M C





2.2.7

2.2.7.1

2.2.7.1.1

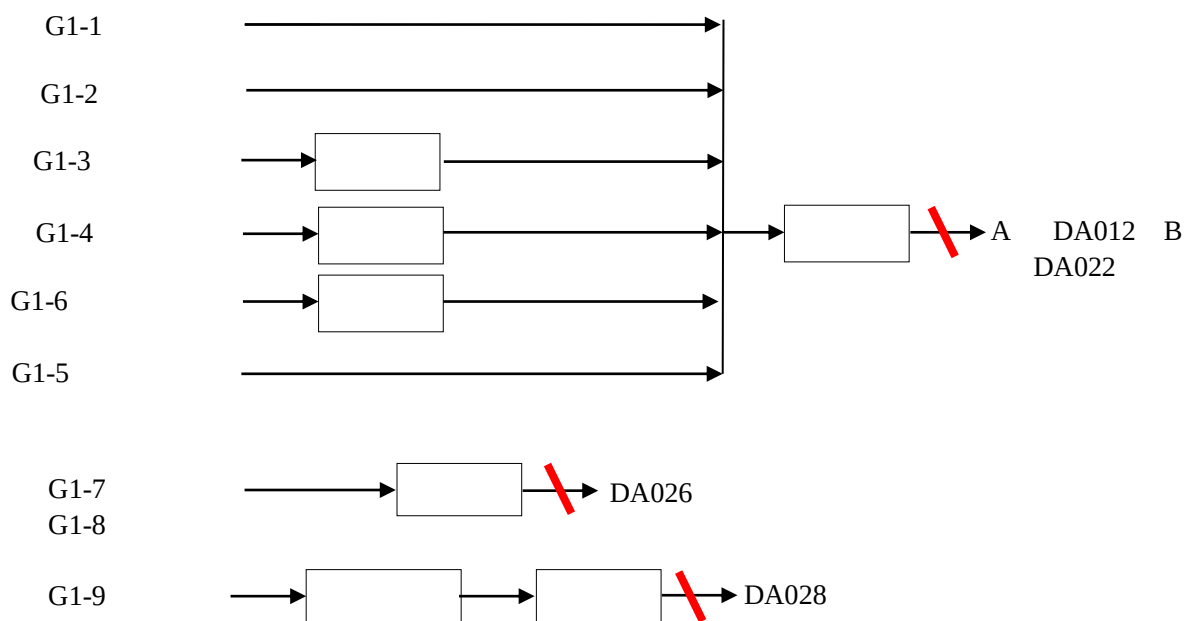
45000t/a 6 /

2.2-5

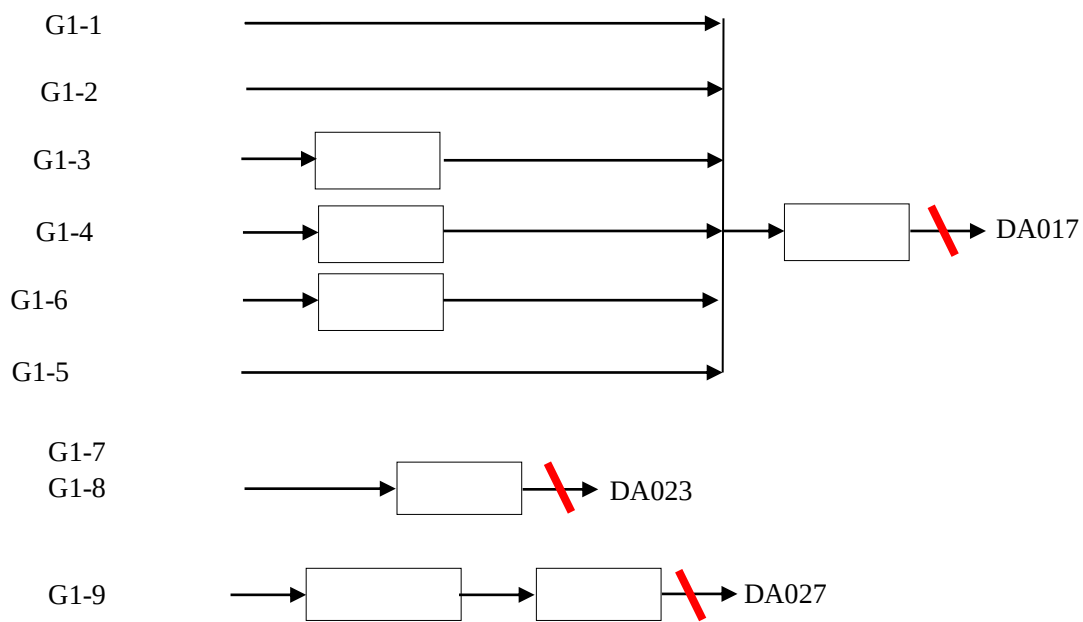
2.2-5

G1-1			1 DA012 DA022 DA017 40m
G1-2			
G1-3			
G1-4			
G1-6			
G1-5			
G1-7			25m DA026 DA023
G1-8			
G1-9			15m DA028 DA027
G1-12			30m DA013 DA019
G1-10			
G1-11			
G1-16			
G1-13			35m DA014 35m DA015 35m DA020
G1-14			35m DA016 DA021
G1-15			

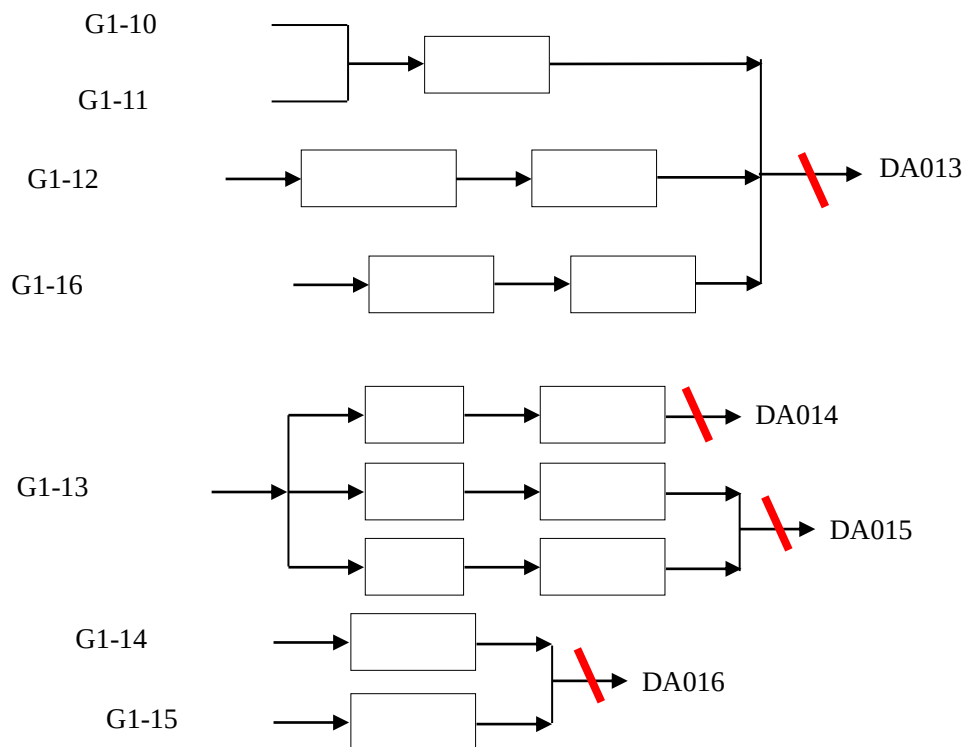
2.2-11~2.2-14



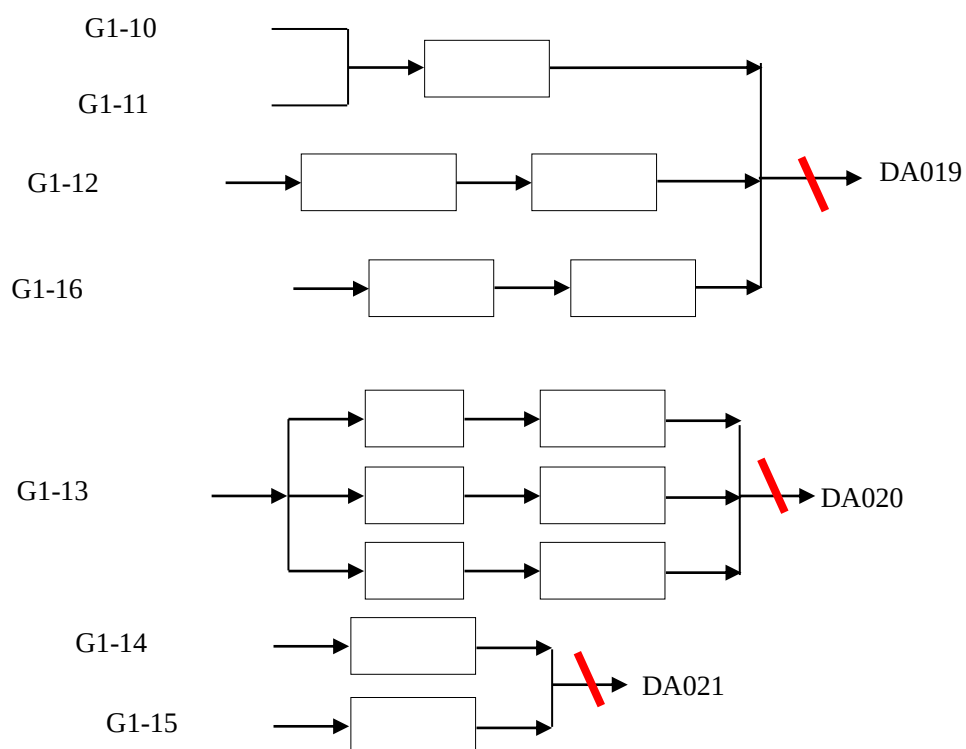
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2.2-12



2.2-13



2.2-14

2022 C220189 2022 1 19

2021 C210848-20

2021 12 11

2022 C220189-02 2022 3 10 -12

2022 C220189-03 2022 4 3

2022 C220189-04

2022 4 24

2.2-6

2.2-6

							kg/h	m m			
				m³/h	mg/m³	kg/h			mg/m³	kg/h	
DA012	VOCs	2022.1.19	1	2022	1.5	0.00303	0.00364	40/0.5	10	39	
			2	2207	1.7	0.00375					
			3	1976	2.1	0.00415					
			1	2022	4.52	0.00914	0.00855		60	3.0	
			2	2022	4.10	0.00829					
			3	2022	4.06	0.00821					
DA022	VOCs	2022.1.19	1	2509	9.4	0.0236	0.0276	30/0.5	10	23	
			2	3564	7.8	0.0278					
			3	3512	8.9	0.0313					
			1	2509	4.13	0.0104	0.0109		60	3.0	
			2	2509	4.28	0.0107					
			3	2509	4.58	0.0115					
DA017	VOCs	2022.1.19	1	683	7.6	0.00519	0.00607	35/0.3	10	31	
			2	936	8.1	0.00758					
			3	747	7.3	0.00545					
			1	683	3.92	0.00268	0.00258		60	3.0	
			2	683	3.99	0.00273					
			3	683	3.40	0.00232					
DA026	VOCs	2021.12.11	1	14420	3.03	0.0437	0.0624	35/1.2	60	3.0	
			2	14747	2.81	0.0414					
			3	21920	4.66	0.102					
DA023	VOCs	2021.12.11	1	30861	5.54	0.171	0.253	30/0.8	60	3.0	

			2	30896	8.87	0.274					
			3	31944	9.80	0.313					
DA028	VOCs	2022.3.10	1	7645	7.28	0.0557	0.0519	35/0.6	60	3.0	
			2	7645	6.92	0.0529					
			3	7645	6.16	0.0471					
			1	7781	3.7	0.0288					
							0.0276				

			3	1031	4.1	0.00423					
			1	1404		—			2	0.15	
			2	1433		—					
			3	1445		—					
			1	1404	0.190	0.0002678	0.0003164		5	0.3	
			2	1433	0.225	0.000365					
			3	1445		—					

2022.4.16

			1	1997	0.7	0.00140	0.00147		5	—	
			2	1997	0.9	0.00180					
			3	1997	0.6	0.00120					
		2022.3.27	1	1159	1.6	0.00185	0.00238		15	—	
			2	1119	2.8	0.00313					
			3	1023	2.1	0.00215					
		2022.4.14	1	1862			0.00000923		2	0.15	
			2	1857							
			3	1858	0.0497	0.0000923					
			1	1862	1.19	0.00222	0.00236		5	0.3	
			2	1857	1.29	0.0024					
			3	1858	1.32	0.00245					
			1	1862	0.252	0.000469	0.000469		8	0.3	
			2	1857	0.251	0.000466					
			3	1858	0.254	0.000472					
			1	1862	0.067	0.000125	0.000121				
			2	1857	0.0662	0.000123					
			3	1858	0.0624	0.000116					
			1	1862	0.125	0.000233	0.000239				
			2	1857	0.128	0.000238					
			3	1858	0.133	0.000247					
			1	1862	0.0601	0.000112	0.000109				
			2	1857	0.0572	0.000106					
		3	1858	0.0586							

4.5

			2	1268	2.3	0.00292					
			3	1246	2.7	0.00336					
			1	1268	2.89	0.00366					

			3	1274									
A015	VOCs	2022.1.20	1	12375	11.9	0.147	0.164	30/0.8	60	3.0			
			2	12375	13.7	0.170							
			3	12226	14.3	0.175							
			1	12375	0.8	0.00990	0.00905		5	—			
			2	12375	0.8	0.00990							
			3	12226	0.6	0.00734							
			1	12375	2.9	0.0124	0.00631		10	23			
			2	12226	2.4	0.00359							
			3	10883	2.7	0.00293							
			1	12375	2.62	0.0324	0.0365		—	20			
			2	12375	3.08	0.0381							
			3	12226	3.19	0.0390							
		2022.3.27	1	4860	5.6	0.0272	0.0231		15	—			
			2	5589	3.5	0.0196							
			3	5241	4.3	0.0225							
		2022.4.15	1	8450					2	0.15			
			2	10316									
			3	8756									
			1	8450			0.0006165		5	0.3			
			2	10316	0.0592	0.000611							
			3	8756	0.0710	0.000622							
			1	8450					8	0.3			
			2	10316									
			3	8756									
			1	8450									
			2	10316									
			3	8756									

			1	8450												
			2	10316												
			3	8756												
			1	8450												
			2	10316												
			3	8756												
	VOCs	2022.1.20	1	2884	5.71	0.0165	0.0175			60	3.0					
			2	2884	6.12	0.0177										
			3	2884	6.36	0.0183										
			1	2884	1.4	0.00404	0.00512			10	23					
			2	2908	1.6	0.00465										
			3	3514	1.9	0.00668										
			1	2884	2.40	0.00692	0.00724			—	20					
			2	2884	2.97	0.00857										
			3	2884	2.16	0.00623										

DA020

30/0.8

4.5

2

3533

			3	6425							
			1	6423							
			2	6328							
			3	6425							
	VOCs	2022.3.07	1	10657	3.02	0.0322					
			2	10496	3.03	0.0318	0.0320		60	3.0	
			3	10343	3.08	0.0319					
			1	6083							
			2	6742					2	0.15	
			3	6963							
			1	6083							
			2	6742	0.0575	0.000388	0.000388		5	0.3	
			3	6963							
			1	6083							
			2	6742							
			3	6963							
			1	6083							
			2	6742							
			3	6963							
			1	6083							
			2	6742							
			3	6963							
			1	6083							
			2	6742							
			3	6963							

2.2-6

GB16297-1996 2

DB37/2376-2019

1 GB14554-93

2 VOCs

6

DB37/801.6-2018 1

6

DB37/801.6-2018 2

GB31572-2015 5

6

DB37/801.6-2018 2

132917m³/h 111650.28 m³/a

1.883t/a VOCs 7.661t/a

1.955t/a 0.213t/a 0.497t/a 0.078kg/a

34.85kg/a 4.96kg/a

1 15m DA031

2021 C210848-20

2021 12 13

2.2-7

2.2-7

							kg/h	m			
				m ³ /h	mg/m ₃	kg/h			mg/m ³	kg/h	
DA031		2021.12.13	1	8822	5.1	0.045	0.0402	15/0.35	10	3.5	
			2	8640	5.6	0.0484					
			3	6469	4.2	0.0272					

2.2-7

GB16297-1996 2

DB37/2376-2019

1

7977m³/h 5743.44 m³/a

0.29t/a

/ G4-1 G4-2

G4-3

G4-4

2.2-8

2.2-8

G4-2		UV 1 15m DA007
G4-1 G4-3	/	VOCs + UV / 1 26m DA005
G4-4		1 15m DA008

2020 12 22

2.2-9

2.2-9

							kg/ h	m			
				m ³ /h	mg/m ₃	kg/h			mg/m ₃	kg/h	
DA007	VOCs	2020.12.22	1	6467.255	8.13	0.0526	0.0490	15	60	3.0	
			2	6467.255	7.50	0.0485					
			3	6467.255	7.12	0.0460					
DA005	VOCs	2020.12.22	1	5125.481	1.79	0.00917	0.00679	26	50	2.0	
			2	5125.734	2.64	0.00135					
			3	5056.011	1.95	0.00986					
			1	5125.481	—	—	0.5		0.2		
			2	5125.734	—						
			3	5056.011	—						

4.5											
			1	5125.481	0.023	0.000118	0.000111		5.0	0.6	
			2	5125.734	0.020	0.000103					
			3	5056.011		——					
			1	5125.481		——	—		15	0.8	
			2	5125.734		——					
			3	5056.011		——					
			1	5125.481	4.6	0.0236	0.0254		10		
			2	5125.734	5.3	0.0272					
			3	5056.011	5.0	0.0253					
DA008		2020.12.22	1	4264.790	4.0	0.0171	0.0169	15	10	3.5	
			2	3814.772	4.3	0.0164					
			3	4540.407	3.8	0.0173					

DA007		VOCs		6		DB37/801.6-2018	
1		GB16297-1996		2		DB37/2376-2019	
DA005		VOCs		1		DB37/2801.5-2018	
5		6		2		DB37/801.6-2018	
1		15776m³/h		3783.84		m³/a	
0.102t/a		0.134t/a		0.27kg/a		VOCs	
G5-5		G5-3		G5-4		2.2-10	
2.2-10		2.2-10		2.2-10		2.2-10	
		UV 1 15m DA007					
G5-3							
G5-4							
G5-5							
2.2-9		DA007		VOCs		4	

2.2-11

2.2-11

G6-1			44m DA025 1
G6-3			
G6-4			
G6-6			
G6-5			30m 1 DA024
G6-2			
G6-7			
G6-8			
G6-9			
G6-8			20m DA018
G6-10			25m DA029

2022 C220189-02 2022

3 18

2.2-12

2.2-12

						kg/h	m m			
			m³/h	mg/m³	kg/h			mg/m³	kg/h	
DA018		1	20265	24.4	0.494	0.449	30/1.2	——	——	——
		2	19567	22.6	0.442					
		3	19374	21.2	0.411					
	VOCs	1	20265	16.5	0.334	0.278		——	——	——
		2	19567	14.0	0.274					
		3	19374	11.7	0.227					
DA018		1	39277	3.1	0.122	0.108	30/1.2	10	23	
		2	41294	2.6	0.107					
		3	40116	2.4	0.0963					
	VOCs	1	41294	11.4	0.185	0.207		60	3.0	
		2	41294	11.4	0.173					
		3	41294	11.4	0.264					
DA024		1	7673	21.5	0.165	0.167	30/0.6	——	——	——
		2	8093	22.2	0.180					
		3	7631	20.5	0.156					
	VOCs	1	8093	3.36	0.0272	0.0264		——	——	——
		2	8093	3.10	0.0251					
		3	8093	3.32	0.0269					
DA024		1	6636	2.4	0.0159	0.0191		10	23	

		2	6562	3.0	0.0197					
		3	6616	3.3	0.0218					
	VOCs	1	6562	3.05	0.0200	0.0216		60	3.0	
		2	6562	3.50	0.0230					
		3	6562	3.36	0.0220					
DA025		1	3130	21.4	0.0670	0.0652	30/0.5	—	—	—
		2	3054	22.1	0.0675					
		3	2968	20.6	0.0611					
	VOCs	1	3054	3.51	0.0107	0.00983		—	—	—
		2	3054	3.14	0.00959					
		3	3054	3.01	0.00919					
DA025		1	3352	2.3	0.00771	0.01	30/0.5	10	23	
		2	3664	3.2	0.0117					
		3	3329	3.2	0.0107					
	VOCs	1	3664	2.91	0.0106	0.0105		60	3.0	
		2	3664	2.73	0.0100					
		3	3664	2.94	0.0108					
DA029		1	11495	23.9	0.275	0.256	25/0.5	—	—	—
		2	12271	20.2	0.248					
		3	11321	21.6	0.245					
	VOCs	1	11495	14.1	0.162	0.167		—	—	—
		2	12271	15.0	0.184					
		3	11321	13.6	0.154					
DA029		1	9601	3.5	0.0336	0.0292		10	14.45	

		2	10925	2.6	0.0248					
		3	10108	2.9	0.0293					
	VOCs	1	10925	4.10	0.0448	0.0479		60	3.0	
		2	10925	5.09	0.0556					
		3	10925	3.95	0.0432					

GB16297-1996

2

DB37/2376-2019 1

VOCs

6

DB37/801.6-2018 1

38112m³/h 27440.64 m³/a VOCs

2.411t/a

1.397t/a

2.2-13

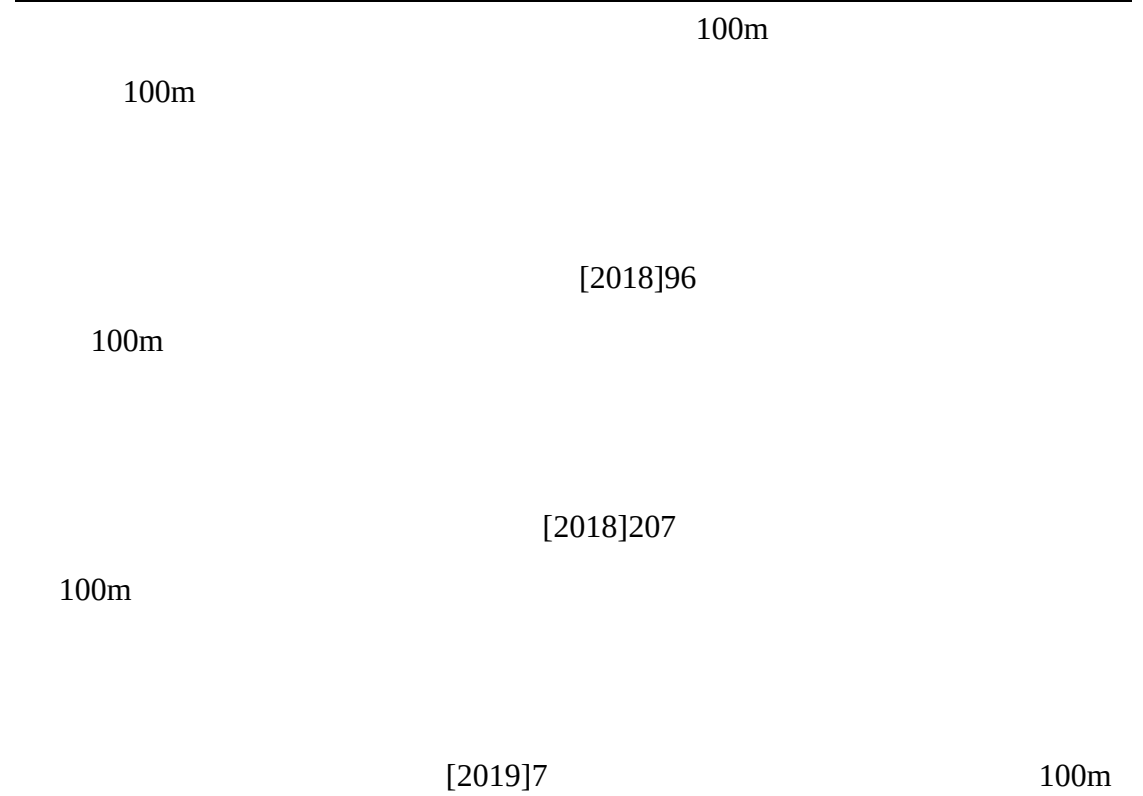
2.2-13

	t/a	VOCs t/a	t/a	t/a	t/a	kg/a	kg/a	kg/a
45000t/a 6 /	1.883	7.661	1.955	0.124	0.306	0.078	34.85	4.96
	0.29	—	—	—	—	—	—	—
	0.102	0.134	—	—	—	—	0.27	—
	1.397	6.453	—	—	—	—	—	—
	3.672	14.248	1.955	0.213	0.497	0.078	35.12	4.96

2.2.7.1.2

2.2-14

4.5	
2.2-14	



2.2.7.2

2.2.7.2.1

2.2-17

2.2-17

1	45000t/a 6 /		
2			
3			
4			
5			

2.2.7.2.2

				1000m ³ /d	“
+	+	+	”		2.2-16

2022 2 -3

2.2-18

2.2-18

2022 2

	m ³ /d	COD _{Cr} mg/L	mg/L	mg/L
2022-02-08 R94.06 0.56W*2054		26.4	364730	

2022-02-14	2026	24.1	6.88	0.653
2022-02-15	1854	28.6	5.69	0.641
2022-02-16	1728	20.1	5.96	0.464
2022-02-17	2183	30.8	11.6	0.931
2022-02-18	1820	28.2	11.7	1.02
2022-02-19	1520	20.1	8.46	0.794
2022-02-20	1424	19.4	6.95	0.655
2022-02-21	1878	22.7	5.38	0.585
2022-02-22	1965	15.8	6.68	0.721
2022-02-23	1706	25.4	6.69	0.596
2022-02-24	2149	29.5	6.68	0.613
2022-02-25	2172	43.2	7.69	0.786
2022-02-26	1907	46.6	7.75	0.815
2022-02-27	1999	46.3	8.25	0.876
2022-02-28	2021	28.1	4.17	0.606
2022-03-01	1340	28.1	6.94	0.833
2022-03-02	1967	31.1	5.53	0.665
2022-03-03	2399	35.3	5.06	0.598
2022-03-04	2284	30.3	5.3	0.596
2022-03-05	2280	35.2	5.84	0.54
2022-03-06	2273	24.8	4.51	0.4
2022-03-07	2255	31.7	5.34	0.607
2022-03-08	2131	25.1	7.89	0.6
	1956	29.6	8.06	0.77
	2551	50.3	15.4	1.53
	1340	15.8	4.17	0.4

GB/T31962-2015

A

29.6mg/L 15.4mg/L 1.53mg/L

21.890186 m³/a

COD_{Cr}

19.4mg/L 0.253mg/L

0.202mg/L 8.61mg/L

4.247t/a 0.055t/a 0.044t/a 1.885t/a

2.2.7.3

2021 C210848-08 2021

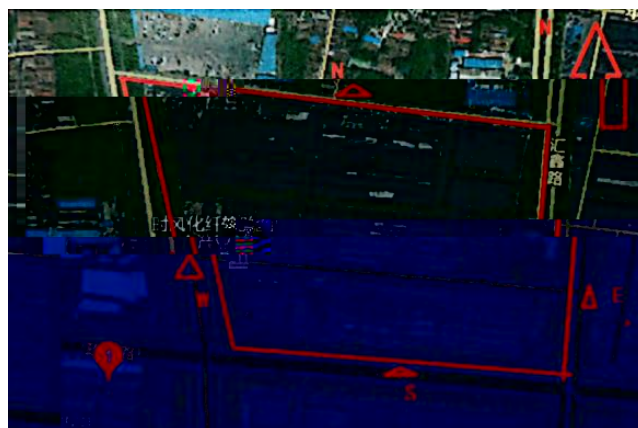
9 27

2.2-17

2.2-19

2.2-19

		2021 9 27	
		dB(A)	dB(A)
1#	1	57.3	48.6
2#	1	52.2	49.1
3#	1	55.4	48.8
4#	1	55.3	47.9
		65	55



2.2-17

52.2~57.3dB(A)

47.9~49.1dB(A)

GB12348-2008 3

2.2.7.4

2.2-20~2.2-25

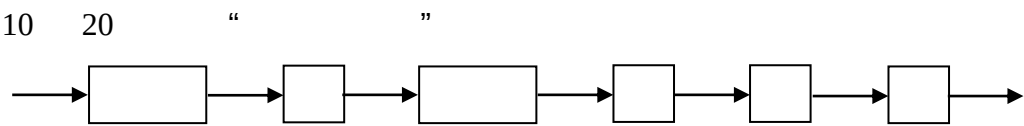
45000t/a 6 /

2.2-20

2.2-20

				t/a	
			--	0.35	
			--	8	
			--	40	
			--	20	
			--	128.53	
			--	185	
			--	265	
			HW08 900-249-08	0.12	
			--	70	
			--	82	
			--	12	
			--	150	
	--		HW49 900-041-49	12	
			HW08 900-249-08	26t/4a	
			HW13 900-015-13	0.4	

2000



2.2-21

2.2-21

				t/a	
			--	10	
			HW08 900-249-08	1.0	
			HW08 900-249-08		
			HW09 900-006-09	1.2	
	--		HW09 900-006-09	2.0	
			--	0.03	
			--	60	

2.2-23

2.2-23

t/a

4.5

			HW49 900-041-49	2	
	UV		HW29 900-023-29	0.01	
			--	4.8	

2.2-25

2.2-25

		t/a		
		0.27		
		6		
		31		
		15		
		69.943		
		142		
		206		
		0.16		
		7		
		32		
FDY	--	2		
		5t/4a		
		10t/4a		
		0.45		

2.2-20~2.2-25

2.2.8

2.2-26

2.2-26

		m ³ /a	148618.2
		t/a	3.672
	VOCs	t/a	14.248
		t/a	1.955
		t/a	0.213

		t/a	0.497
		kg/a	0.078
		kg/a	35.12
		kg/a	4.96
	m ³ /a		218901.86
	COD _{Cr} t/a		4.247
	t/a		0.055
	t/a		0.044
	t/a		1.885
t/a			0

Item	Unit	Value	Standard	Notes
1.787t/a	t/a	14.248t/a	2018	VOCs
6		20	21	VOCs
-		/	-	HJ
734-2014		45000t/a	6	
		C2821	2018	10
23		6		DB 37/
2801.6-2018		VOCs		
		HJ 38-2017		
		VOCs		
		HJ 38-2017		
		6		DB
37/ 2801.6-2018				
		VOCs		
2.2-27				

2.2-13

	VOCs						VOCs
	t/a	t/a	t/a	kg/a	kg/a	kg/a	t/a
45000t/a 6 /	8.897	0.137	0.36	0.078	36.70	4.99	9.436
	0.15	—	—	—	—	—	0.15
	7.638	—	—	—	0.27	—	7.638
	16.685	0.137	0.36	0.078	36.97	4.99	17.224

VOCs 17.224t/a

2.3

2.3.1

2.3.2

2.3-1

2.3-1

	6	20000t	

2.3.3

2.3-2

2.3-2

	2	
	1	

	—	
		12.0m ³
		12.0m ³
		1
		15m P7-1
		25m P7-2
		35m P7-3 P7-4 P7-5
		35m P7-6 P7-7
		15m P7-8
		759m ³

2.3.4

2.2-1

2.3.5

245000t/a

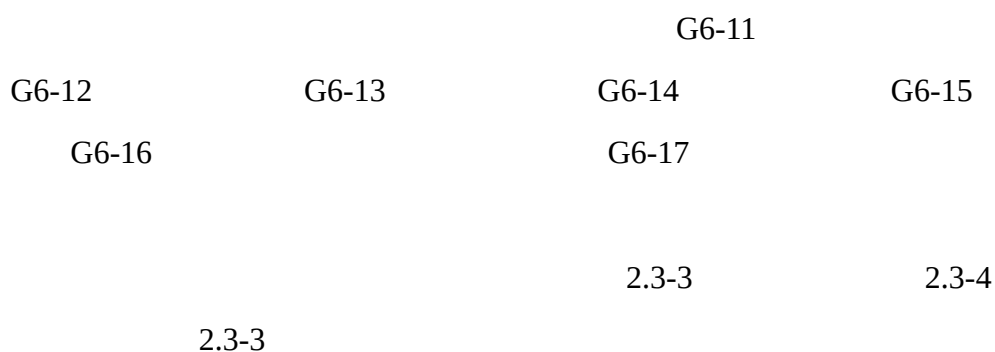
6 /

2.2-3 3 4

2.3.6

2.3.6.1

2.3.6.1.1



1	G6-11	1 15m P6-1
2	G6-12	
3	G6-13	25m P6-2
4	G6-14	P6-4 P6-5 35m P6-3
5	G6-15	35m P6-6
6	G6-16	35m P6-7
7	G6-17	P6-8 15m

2.3-4

								m m
		mg/m ³	kg/h	t/a	mg/m ³	kg/h	t/a	
G6-11		2.03	0.0047	0.039	0.609	0.0014	0.0117	15/0.3
G6-12		0.203	0.00047	0.0039	0.061	0.00014	0.0012	
		0.001	2.34×10 ⁻⁶	0.00002	0.0003	7.02×10 ⁻⁷	0.000006	
P6-1		0.707	1.63×10 ⁻³	0.0137	0.212	4.88×10 ⁻⁴	0.0041	
		0.017	3.96×10 ⁻⁵	0.0003	0.005	1.19×10 ⁻⁵	0.0001	
G6-13		3.03	1.635×10 ⁻²	0.137	0.303	1.635×10 ⁻³	0.0137	25/0.3
		72	0.39	3.276	7.2	0.039	0.3276	
VOCs		22	0.12	1.008	2.2	0.012	0.1008	
		0.17	8.99×10 ⁻⁴	0.008	0.017	8.99×10 ⁻⁵	0.0008	
P6-2		1.03	5.58×10 ⁻³	0.047	0.103	5.58×10 ⁻⁴	0.0047	
		2.96	1.596×10 ⁻²	0.134	0.296	1.596×10 ⁻³	0.0134	
		0.79	4.27×10 ⁻³	0.036	0.079	4.27×10 ⁻⁴	0.0036	

GB16297-1996 2

GB14554-93 2

VOCs

6

DB37/801.6-2018

1

2.3.6.1.2

0.1003t/a

0.00003t/a 2.1883t/a VOCs0.5642t/a 0.0113t/a 0.0501t/a

0.1208t/a 0.0109t/a

GB14554-93 1

GB16297-1996 2

VOCs

6

DB37/801.6-2018 3

2.3.6.2

2.3-5

2.3-5

	t/a	mg/L			
		COD _{Cr}	BOD ₅		
	5489.77	200	100	15	--
	4200	100	60	5	1000
	840	60	20	5	2000
	1260	500	350	5	--
	2016	350	250	30	--
	13805.77				

13805.77t/a COD_{Cr} 2.9t/a 0.17t/a

GB/T31962-2015 1A

GB18918-2002 A

[2017]5 COD_{Cr} NH₃-

13805.77t/a COD_{Cr}

0.55t/a 0.028t/a

2.3.6.3

2.3-6

2.3-6

		t/a		
		60		
		65		
		3		
		10		
FDY	--	8		
		0.15		

2.3.6.4

20

25dB(A)

(GB12348-2008) 3 4

2.3.7

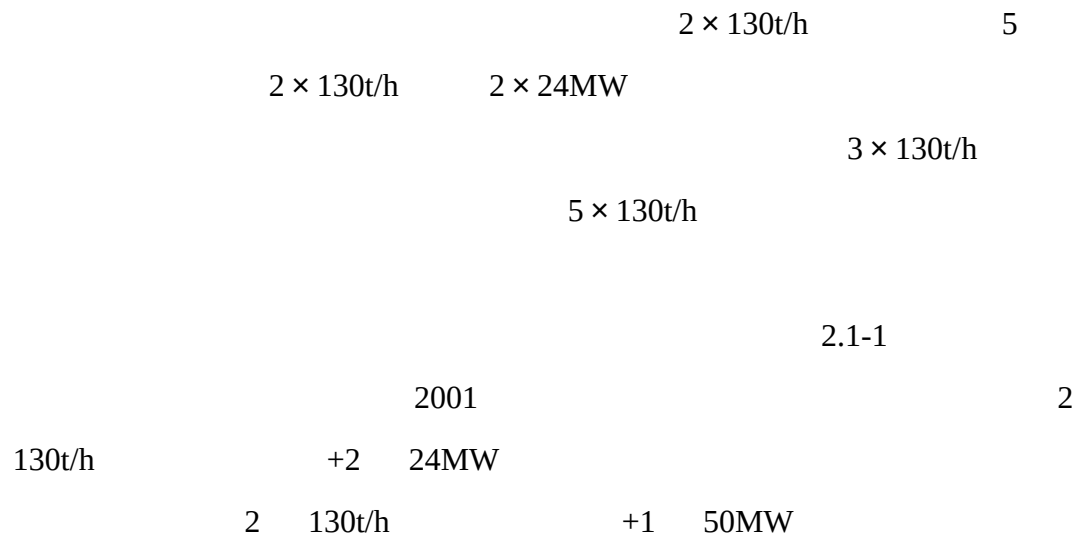
2.3-7

		Nm ³ /a	42000	
		t/a	2.3049	
		t/a	0.0111	
		t/a	0.117	
		t/a	0.0001	
		VOCs		
		t/a	0.6086	
		t/a	0.0109	
		t/a	0.0498	
		t/a	0.1257	
		t/a	2.1883	

--

2.4

2.4.1



4.5			
2016	5		
		[2015]16	
1#	2#	2016	
11		2016	12
2017	2017		5
2.4.2			
2.4-1		2.4-1	
2 × 130t/h	5		
24MW	2 × 130t/h	2 ×	
130t/h		312	t/a
	3 ×		
	5 × 130t/h		

4.5

		1
		1

3311.6m ³ /a									
2									
50m ³ /d									
2.4.5.2									
2.4.6									
5 × 130t/h									
1 50MW									
2 24MW									
1									
2.4.6.1									
SO ₂ NO _x SNCR									
+ + + +									
1 150m									

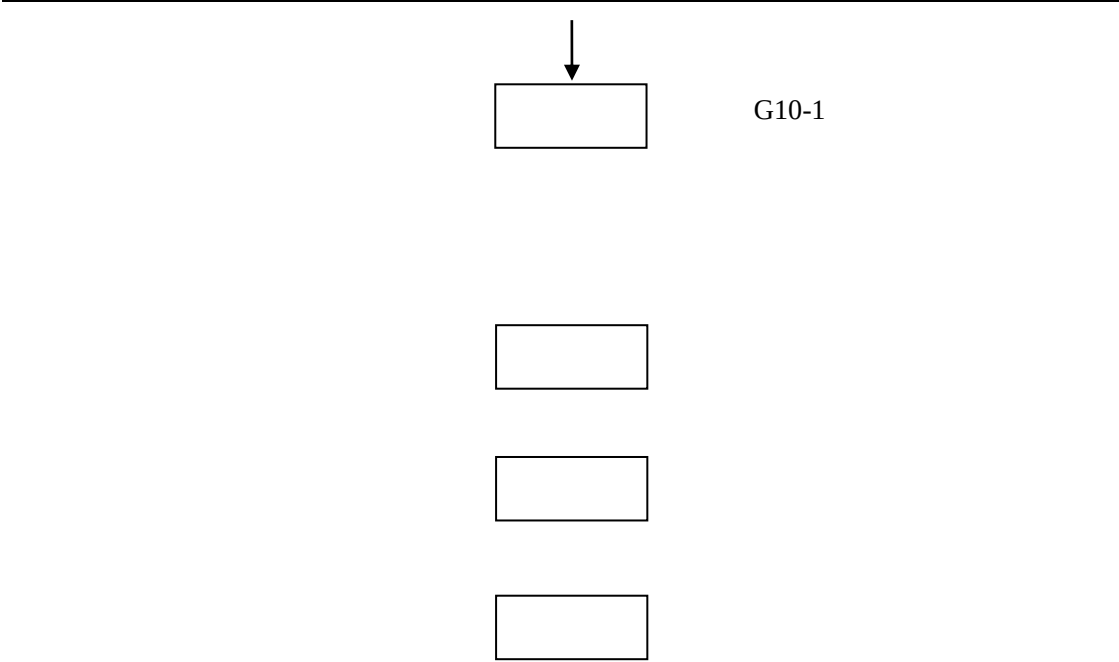
2.4-2

2.4.6.2

~~W~~ á

1

EPS



2.4-3

2.4.7

2.4.7.1

2.4.7.1.1

		5	130t/h						
		SO ₂	NO _x		+SNCR				+
	+		+	+		1	150m		
DA001									
	“	+	+UV	+	”	1	15m		

	SO ₂	NO _x	
2022	2-3		2.4-3

2.4-3

2022 2

	mg/m ³		mg/m ³		mg/m ³		m ³ /h	
2022-02-01	8.26	17.6	17.3	37	0.631	1.35	188554	39.1
2022-02-02	7.57	14.4	18.7	35.6	0.692	1.31	206427	41.2
2022-02-03	4.31	8.15	17.3	32.6	0.671	1.27	212336	41.7
2022-02-04	4.47	8.51	16.9	32.1	0.67	1.28	205347	41
2022-02-05	6.94	13.3	18.5	35.1	0.697	1.33	209894	41.1
2022-02-06	7.88	14.8	18.9	35.7	0.811	1.53	281169	43.1
2022-02-07	8.06	13.9	21.9	37.7	0.871	1.5	279381	47.8
2022-02-08	9.47	15.4	22.3	36.3	0.952	1.54	291612	45
2022-02-09	9.38	15.4	21.1	34.5	0.859	1.41	279320	45.1
2022-02-10	7.04	11.7	21.2	35.1	0.762	1.26	247916	45.6
2022-02-11	5.76	11.1	17.6	34.4	0.65	1.31	250690	42.4
2022-02-12	6.75	13.3	19.9	34.6	0.757	1.38	254931	43.9
2022-02-13	6.75	13.3	19.9	34.6	0.757	1.38	254931	43.9
2022-02-14	6.75	13.3	19.9	34.6	0.757	1.38	254931	43.9
2022-02-15	6.75	13.3	19.9	34.6	0.757	1.38	254931	43.9
2022-02-16	6.75	13.3	19.9	34.6	0.757	1.38	254931	43.9
2022-02-17	6.75	13.3	19.9	34.6	0.757	1.38	254931	43.9
2022-02-18	10	16.9	21.3	36	0.825	1.4	291227	43.2
2022-02-19	10.2	17.2	21.7	36.8	0.827	1.4	311221	43.1
2022-02-20	10	17.1	20.9	35.8	0.823	1.41	309019	42.7
2022-02-21	11	17.7	22.4	36	0.834	1.34	302413	43.8
2022-02-22	11.4	18.1	21.8	34.6	0.837	1.33	308136	44.7
2022-02-23	11.1	17.4	21.9	34.3	0.849	1.34	335684	46.2

4.5

664	2019							
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2021 101911 2021 10 19

2.4-4

2.4-4

				m³/h	mg/m³	mg/m³	kg/h	
DA001		2021.10.13	1	212472	20.7	34.98	0.0044	
			2	232366	23.2	39.44	0.00539	
			3	240790	23.2	39.44	0.00559	
			1	212472	1.23	2.08	0.26	
			2	232366	1.23	2.09	0.29	
			3	240790	1.21	2.06	0.29	
			1	1				

2.4-3 2.4-4

4.5

				m ³ /h	mg/m ³	kg/h
			1	7895		5.92×10^{-6}
			2	9322		6.99×10^{-6}
			3	9684		

DA002

2019.
11.30

4.5

0.139t/a

0.0027kg/a

2.4-5

2.4-5



2.4-4 1



2.4-4 2

2.4-6 1

	2021.12.15			
		mg/m ³	mg/m ³	mg/m ³
		0.04	0.215	—
		0.06	0.199	—
		0.05	0.234	—
		0.07	0.316	—
		0.07	0.283	—
		0.06	0.269	—
		0.08	0.299	—
		0.10	0.286	—
		0.08	0.318	—
		0.07	0.233	—
		0.08	0.267	—
		0.07	0.250	—
		—	—	1.63
		—	—	1.75
		—	—	1.78
		0.10	0.059	1.78
		1.5	1.0	厂界 2.0(厂区内 6)

2.4-6 2

	2019.11.30				
		mg/m ³	mg/m ³	mg/m ³	mg/m ³
		0.53			
		0.54			
		0.54			
		0.49			
		0.86			

4.5

		1.49			
		1.33			
		1.31			
		1.37			
		1.11			
	2019.11.30				
		mg/m ³	mg/m ³	mg/m ³	mg/m ³
		0.54			
		0.53			
		0.47			
		0.46			
		0.79			
		0.79			
		0.92			
		0.5			
		0.94			
		0.93			
		0.96			
		0.99			
		1.64			
		1.55			
		1.68			
		1.68			
		1.68			
		2.0	0.1	0.2	0.2

2.4-7 1

		()		m/s)	(kPa)	%	/
2021.12.15	10 50	3.8	SE	1.6	102.03	60.2	3/5
	13 00	8.6	SE	1.6	101.86	55.6	2/5
	14 00	8.9	SE	1.6	101.83	55.2	2/5
	15 00	9.5	SE	1.7	101.67	53.2	2/4
	22 00	-1.5	S	2.0	102.26	62.8	2/4

2.4-7 2

4.5

		()		m/s)	(kPa)	/
2019.11.30		8.6	E	0.9	102.38	2/5
		8.6	E	0.9	102.38	2/5
		9.3	E	0.7	102.38	2/5
		9.3	E	0.7	102.38	1/5
2019.12.01		6.7	E	0.9	100.93	2/5
		6.7	E	0.9	100.93	2/5
		7.3	E	1.0	102.97	1/5
		7.3	E	1.0	102.97	1/5

2.4-6

GB16297-1996

2

GB14554-93 1

VOCs

6

DB37/801.6-2018 3

VOCs

GB

37822—2019 A.1 VOCs

2.4.7.2

3311.6m³/a

2022

C220190 2022 1 21

2.4-8

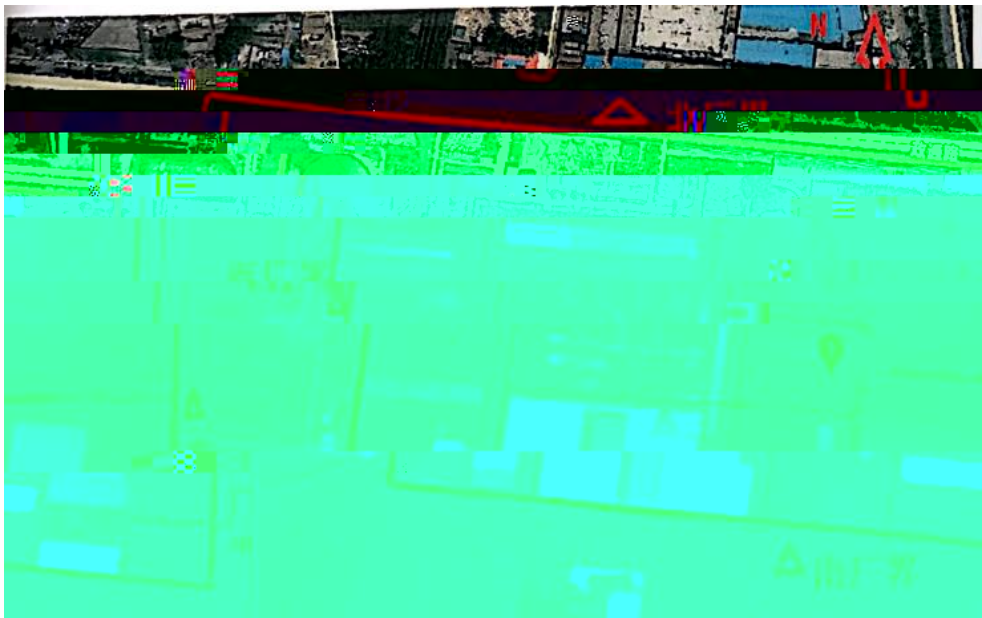
2.4-8 2022 1

	m ³ /d	pH	COD _{Cr} mg/L	mg/L	mg/L	mg/L
2022.1.21	60	6.8	8		0.02	0.11
		7.0	11		0.02	0.14
		6.8	10		0.02	0.18
GB/T31962-2015 A	—	6.5-9.5	500	45	8	100
	—	6.5-9.5	300	20	8	—
	mg/L	mg/L	mg/L	mg/L	mg/L	
2022.1.21	22		1.41	928	0.22	
	20		1.30	906	0.22	
	24		1.46	916	0.19	
GB/T31962-2015 A	400	1	20	1500	15	1

— —

4.5

		dB(A)	dB(A)
1#	1	55.1	49.0
2#	1	57.4	46.5
3#	1	51.7	49.3
4#	1	57.2	49.3
		65	55



2.4-5

51.7~57.4dB(A)

46.5~49.3dB(A)

GB12348-2008 3

2.4.7.4

2.4-10

2.4-10

				t/a	
--	--	--	--	-----	--

4.5

HW29
900-023-29

0.03

3

3.1

10

15

37

3

2

2~3

1

4~5

5000

4~5

3

2018

8

4.5%-5%

100

8

20

30

2

880

3.2-1

3.2-2 6

			/(dtex/											
			2100/2		1870/2		1400/3		1400/2			930/2		
			V ₁	V ₂	V ₁	V ₂	V ₁	V ₂	V ₁	V ₂	V ₃	V ₁	V ₂	V ₃
1		/10cm	88	74	88	74	88	74	100	74	52	126	94	60
2			92	78	92	78	92	78	105	78	55	130	98	64
3			8	10	8	10	8	10	8	10	16	10	12	14
4		tex	28~30											
5		m	L±2%											
6		cm	145±3											
7			2~10 28tex-30tex											
		/10cm	42~45											
		cm	10											

3.2-3 1

()

		1 6 22858m ²	
		1 1 6950m ²	
		1 6 5592.66m ²	
		1	
		1t/h	
		1 666m ²	
	1	1 4032m ² 1	
	2	1 4032m ² 1	
	3	1 4368m ²	
	4	1 1152m ²	
		1 2000m ²	
		1 7.5m ²	
		1 800L	
		1 3.9m ³	
		1 3.9m ³	
		3304.7 kWh	
		4872t	
		1	

		P1-1 30m 30m P1-2	
		RTO 43 P1-3	

3.2-3

		1 1 10000m ²	
		1 6 19008m ²	
		1	
		2t/h	
		1 4 1	
		1 20m ²	
		1 3.9m ³	
		1 3.9m ³	
		1379.2 kWh	
		1512t	

RTO 43 P2-1 P2-2

			13168
			45000
		/	132750
		/	114272.08
		/	15000.83
		/	3750.21
		/	11250.62
		%	33.34
		%	25.49
			31592.78

3.225 2

1	DNP	N,N'- -

2

3

SSW

3.2.7

3.2-7

3.2-7

1			1	
2			1	
3		N-170/98	1	
4			1	
5		STC	31	
6		LTP-R54E4E4 CL51	2	
7		ø4200*19300	1	
8		ASC-23F	1	
9			1	
10			1	
11			1	
12			2	
13			1	
14		ZAX9200iTC	20	
15		TZJB	20	
16		ASG700	6	

17		K3503F	36	
18			6	
19			8	
20		OP425	24	
		VP300L	24	
21			1	
22		ZAX9200iTC	20	
23		TZJB	20	
24		K3503F	36	
25			1	
26			1	

3.2.8

3.2.8.1

3.2.8.2

1

140-150

24-36h

18

90 左右

18

90 左右

2

2

1

20Mpa

G₁

G₂

2

2

270-290

G₃

G₄

S₁

3

19

G₅

20~25

S₂

30m

P1-2

850mm

4

S₃

3

S₄

4

20~3

45 ~50

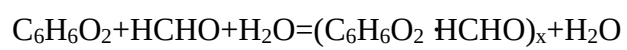
85

95

20~30

-

1.3~2.3



pH

25

G₆

G₇

G₈

25m

P4

110-140

110-140

200

200

G₁₄

G₁₅ G₁₆

G₁₄ G₁₅ G₁₆

RTO

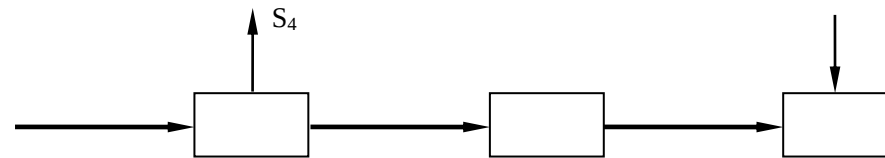
43m

P1-3 P2-1 P2-2

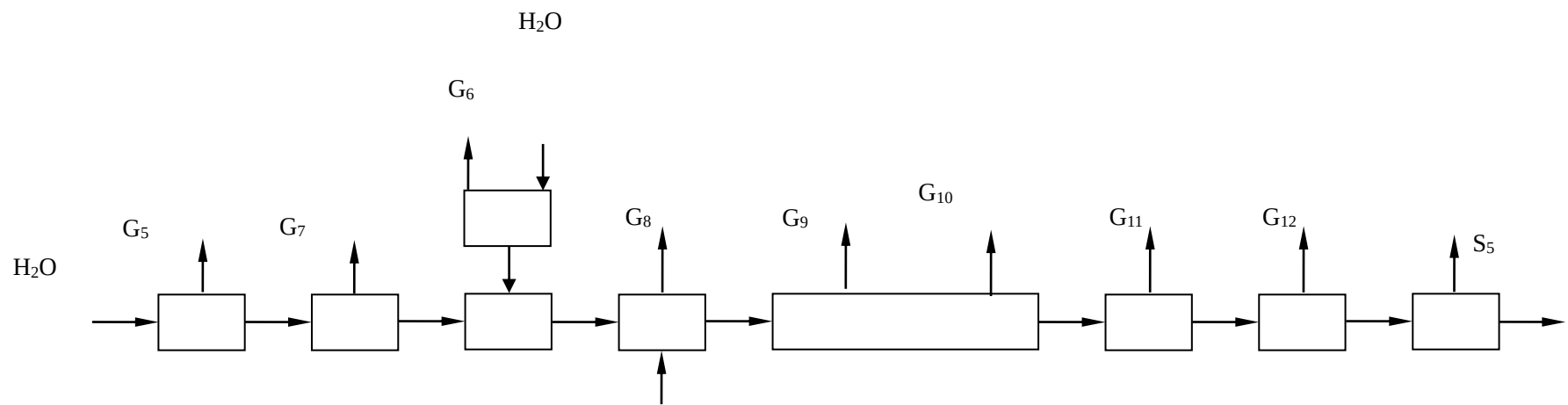
S10

S12

3.2-3



3.2-3 2



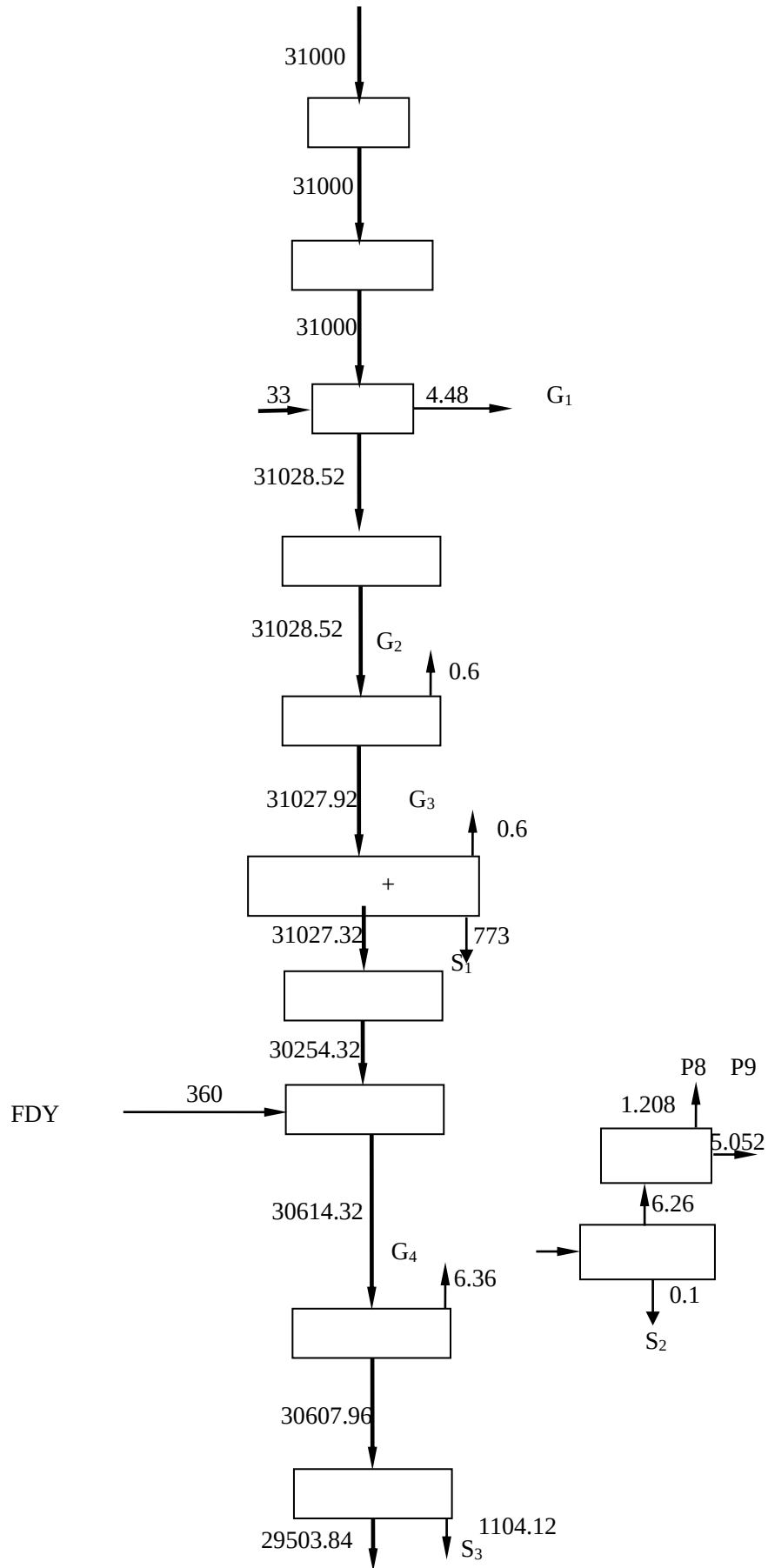
3.2-3 3

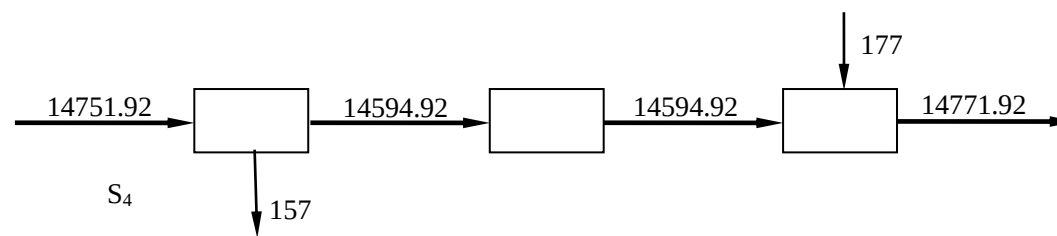
3.2.8.3

3.3-9 3.3-10

3.3-9

	G ₁					
	G ₂				VOCs	30m 0.8m P1-1
	G ₃				VOCs	
	G ₄				VOCs	30m 0.8m P1-2
	G ₅					
	G ₆				VOCs	
	G ₇					
	G ₈				VOCs	
	G ₉				VOCs	
					VOCs	
	G ₁₀					
	G ₁₁				VOCs	
	G ₁₂				VOCs	RTO 43 P1-3

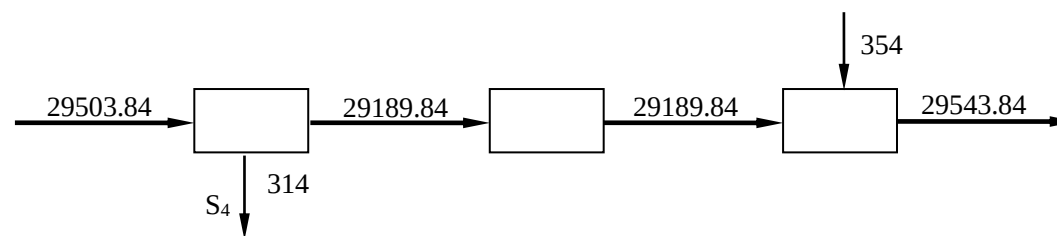




3.3-3 2



3.3-3 3



3.3-3 4



3.3-3 5

3.2.9

3.2.9.1

1

1750m³/a

2

9.6m³/d 3360m³/a19.2m³/d 6720m³/a

3

40m

5m³/d4m³/d 1400m³/a7.2m³/d 2520m³/a14.4m³/d 5040m³/a

30

24

120L/ .

3.6m³/d 1260m³/a2.88m³/d 1008m³/a 173+5>•

6

0.65t/h 5460t/a

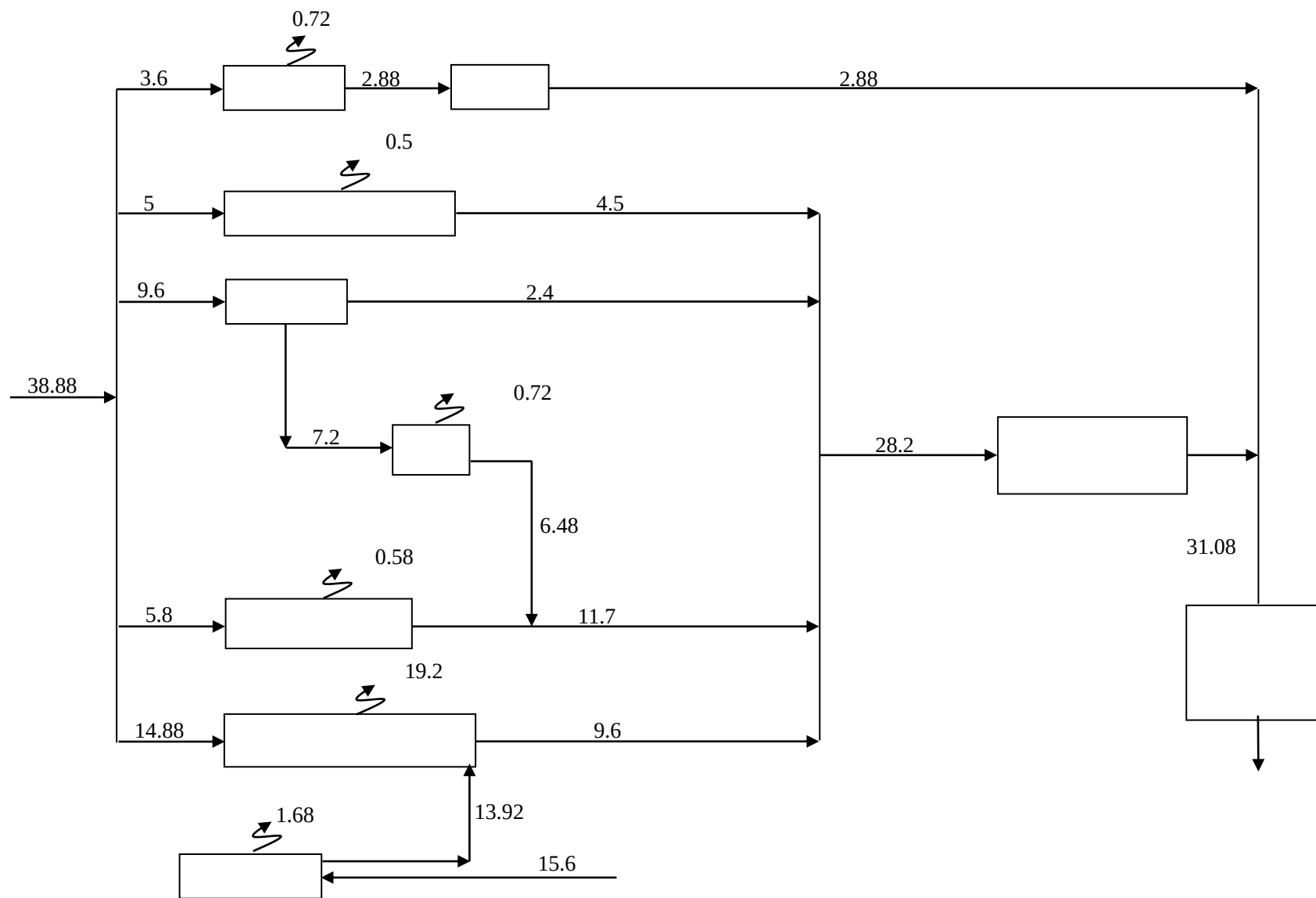
0.07t/h 588t/a

0.58t/h 4872t/a

0.2t/h 1680t/a

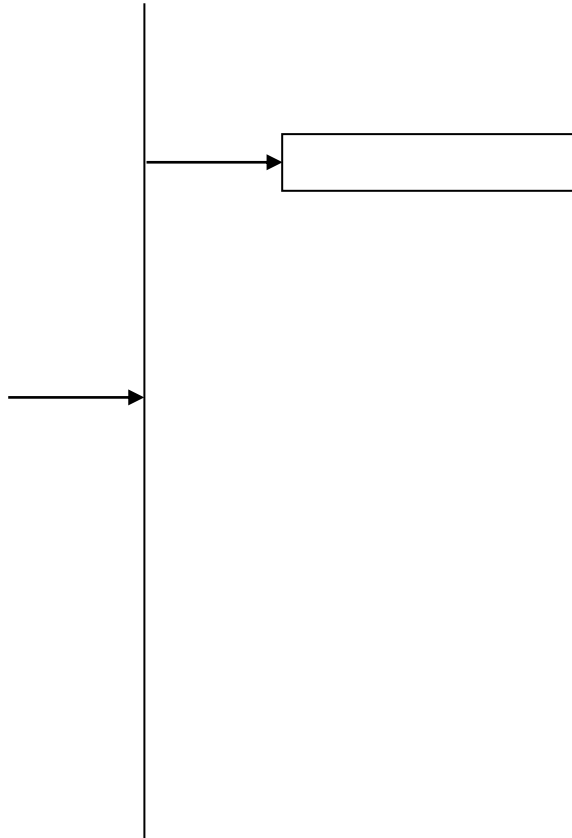
0.02t/h 1680t/a

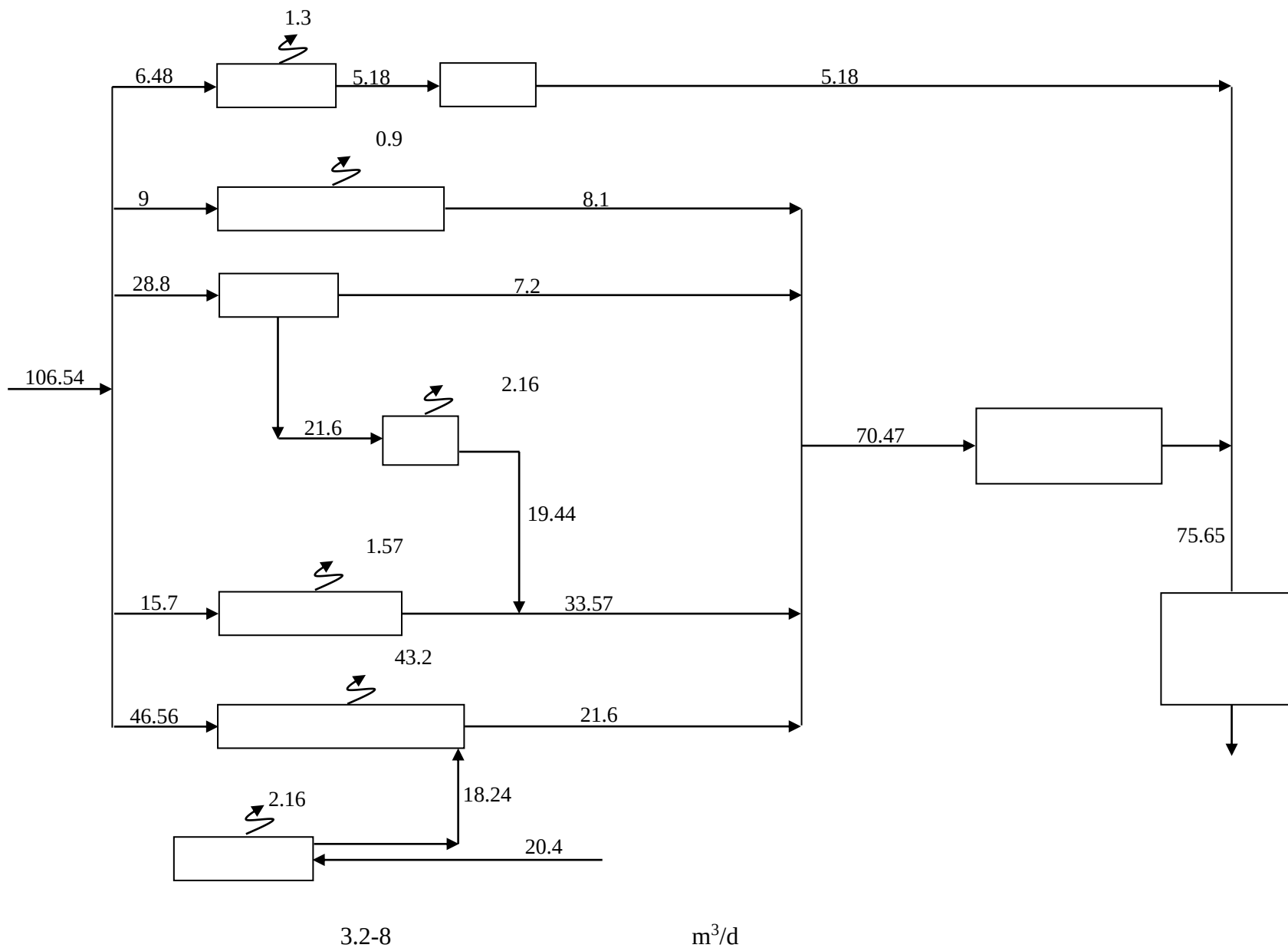
0.18t/h 1512t/a



3.2-6

 m^3/d





3.2.9.3

3304.7 kWh

1379.2 kWh

3.2.9.4

0.65t/h 5460t/a

0.2t/h 1680t/a

		1		1.5	2.2	3.9	0.8	2.54
		1		1.5	2.2	3.9	0.8	2.84
		1		1.5	2.2	3.9	0.8	2.54

3.2.9.6

EDI EDI Electrodeionization

EDI

EDI

EDI

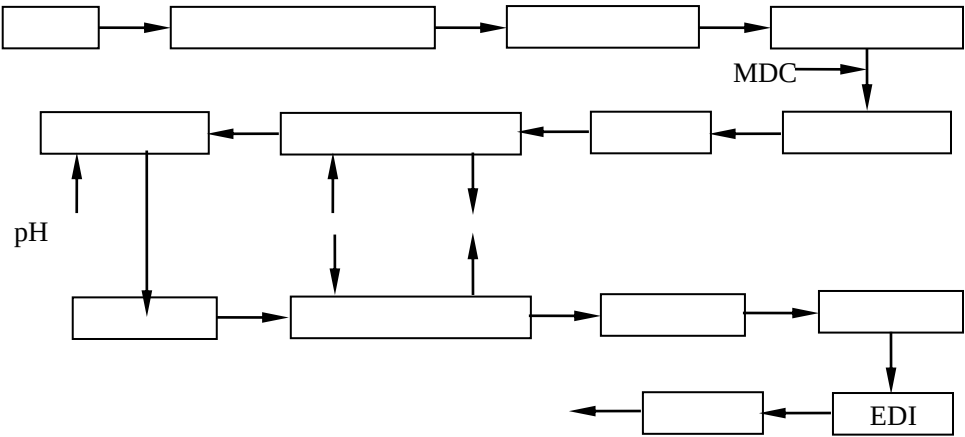
)-E [

EDI

EDI 3~5

EDI

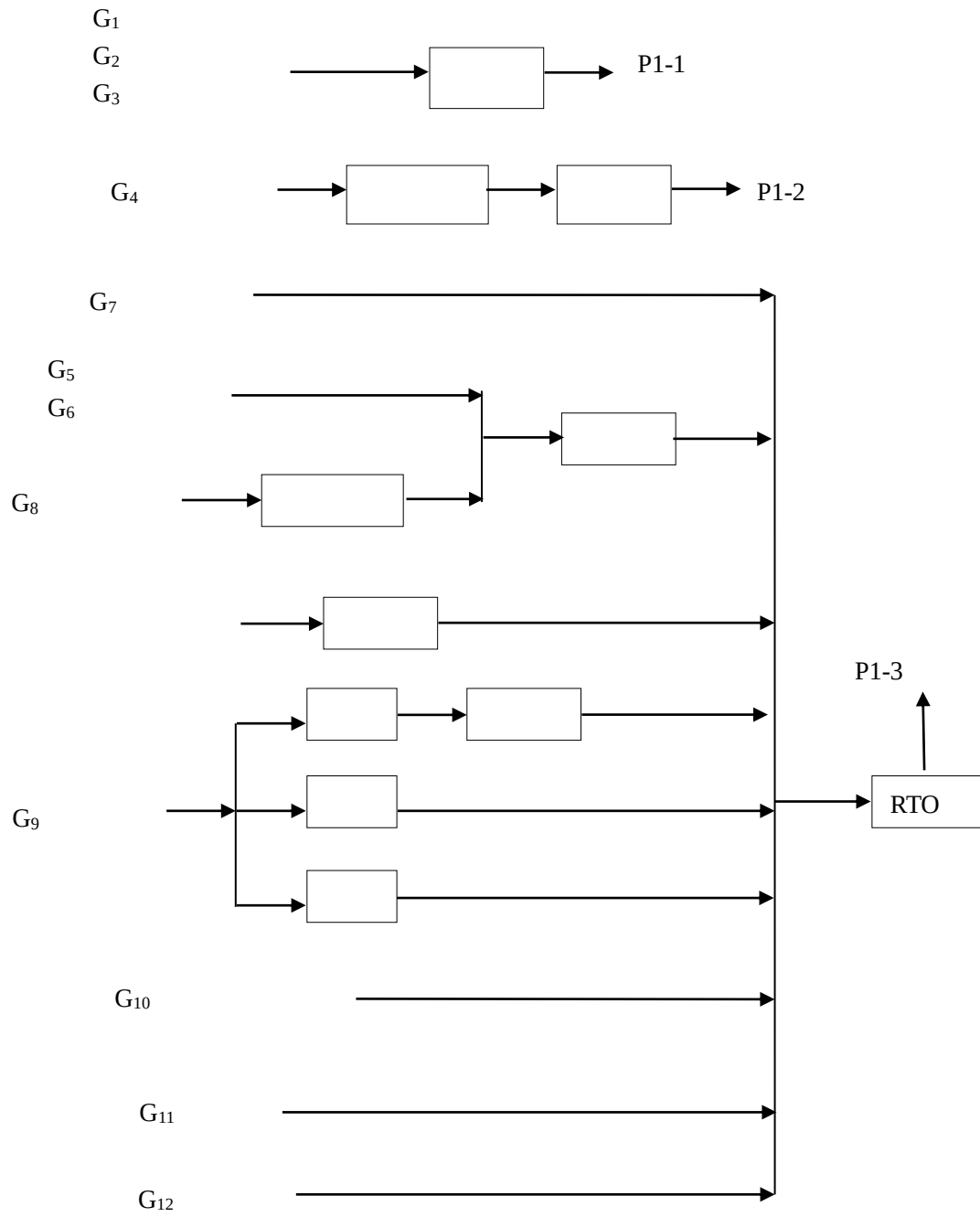
3.2-10



3.2-10

G ₆	G ₇	G ₈	G ₉
G ₁₀	G ₁₁		

45000t/a 6 /



3.3-1

G₈

3.3-2

3.3.1.1

3.3.1.1.1

1

G₁

G₂

G₃

G₁

90%

G₂

G₃

30m

0.8m

P1-1

45000t/a

6

/

2021

12

11

DA026

DA023

HJ 1102-2020 D.1

6

- - - -

- 56.16g/ +

38.19g/ VOCs 1.68t/a

1.2t/a

0.4t/a

85-89%

85%

3.3-1

3.3-1

		(t/a)	kg/h	(mg/m ³)	(m ³ /h)		(%)	(t/a)	(kg/h)	(mg/m ³)
P1-1	VOCs	4.48	0.533	18.7	30000		85	0.672	0.08	2.8
		1.20	0.143	4.7			32	0.816	0.097	3.2

3.4-1

GB16297-1996 2

23kg/h

DB37/2376-2013 2 10mg/m³6 DB37/801.6-2018 1 60mg/m³

3.0kg/h

2 G₄

19

G₄

30m 0.8m P1-2

45000t/a 6 / 2021 12

11 DA028 DA027 2022
 3 18 DA029
 HJ 1102-2020 D.1
 6 56.16g/ +
 38.19g/

3.3-2

3.3-2

		(t/a)	kg/h	(mg/m ³)	(m ³ /h)		(%)	(t/a)	(kg/h)	(mg/m ³)
P1-2		5.88	0.7	23.3	30000	+	85	0.882	0.105	3.5
	VOCs	0.48	0.057	1.9			32	0.326	0.039	1.3

3.4-2

GB16297-1996 2 23kg/h

DB37/2376-2013 2

10mg/m³

6

DB37/801.6-2018 1 60mg/m³ 3.0kg/h

3

3.3-3 3.3-1

3.3-3

G ₅			RTO
G ₆	VOCs		
G ₈			

	VOCs		43m
G ₉	VOCs		
G ₇			
	VOCs		
G ₁₀			
G ₁₁	VOCs		
G ₁₂	VOCs		

1

HJ991-2018

C

C.4

$$Q_{\text{net,ar}} \quad 10467 \text{kJ/m}^3 \quad V_0=0.26 \quad Q_{\text{net,ar}}/1000-0.25$$

$$V_s=0.272 \quad Q_{\text{net,ar}}/1000-0.25+1.061 \quad -1 \quad V_0$$

$$V_0 \quad \text{m}^3/\text{m}^3$$

$$Q_{\text{net,ar}} \quad \text{kJ/m}^3 \quad 36440 \text{kJ/m}^3$$

$$10467 \text{kJ/m}^3$$

$$V_s \quad \text{m}^3/\text{m}^3$$

1.7

$$V_0=0.260 \times 36440/1000-0.25=9.22\text{m}^3/\text{m}^3$$

$$V_s=0.272 \times 36440/1000-0.25+1.0161 \times 1.7-1 \times 9.53=16.44\text{m}^3/\text{m}^3$$

$$10785.3 \quad \text{m}^3/\text{a}$$

$$E_{\text{SO}_2}=2R \times S_t \times (1-s/100) \times K \times 10^{-5}$$

$$E_{\text{SO}_2} \quad \text{t}$$

$$R \quad \text{m}^3$$

$$S_t \quad \text{mg}/\text{m}^3$$

$$s \quad \%$$

$$K$$

$$\text{GB17820-2018} \quad 1$$

$$100\text{mg}/\text{m}^3$$

$$0 \quad K \quad 1 \quad E_{\text{SO}_2}=2 \quad 656.04 \quad 100 \quad 10^{-5}=1.312\text{t/a}$$

$$10\text{mg}/\text{m}^3$$

$$10\text{mg}/\text{m}^3$$

$$1.0785\text{t/a}$$

$$\text{NO}_x$$

$$50\text{mg}/\text{m}^3$$

$$50\text{mg}/\text{m}^3$$

$$5.393\text{t/a}$$

$$3.3-4$$

3.3-4

Nm³/a

90%

RTO RTO

80%

				GB31572-2015	5				
		15mg/m ³		5mg/m ³					6
			15mg/m ³	5mg/m ³	VOCs				
6			DB37/801.6-2018	1		VOCs60mg/m ³	3.0kg/h		
	2mg/m ³	0.15kg/h	5mg/m ³	0.3kg/h		8mg/m ³	0.3kg/h		
				GB14554-93	2			41kg/h	

3.3-7

3.3-7

													m		
		Nm³/h	mg/m³	kg/h	t/a			mg/m³	kg/h	t/a	mg/m³	kg/h			
G1 G2 G3		30000	18.7	0.533	4.48		85%	2.8	0.08	0.672	10	23	P1-1	30	0.8
	VOCs		4.7	0.143	1.20		32%	3.2	0.097	0.816	60	3.0			
G4		30000	23.3	0.7	5.88	+	85%	3.5	0.105	0.882	10	23	P1-2	30	0.8
	VOCs		1.9	0.057	0.48		32%	1.3	0.039	0.326	60	3.0			
G5 G6 G7 G8 G9 G10 G11		30000	7.7	0.232	1.9521	RTO 43m	38%	4.8	0.144	1.2095	10	45.3	P1-3	43	0.8
	SO₂		5.2	0.156	1.312		0	5.2	0.156	1.312	50				
	NOₓ		21.4	0.642	5.393		0	21.4	0.642	5.393	50				
	VOCs		14.9	0.446	3.75		90%	1.5	0.0446	0.375	60	3.0			
			15.5	0.464	3.898		90%	1.55	0.0464	0.3898		41			
			1.8	0.054	0.454		90%	0.18	0.0054	0.0454	5				
			0.9	0.027	0.227		90%	0.09	0.0027	0.0227	15				
			0.0002	6.75 10 ⁻⁶	5.67 10 ⁻⁵		90%	0.00002	6.75 10 ⁻⁷	5.67 10 ⁻⁶	2	0.15			
			0.10	0.003	0.025		90%	0.01	0.0003	0.0025	5	0.3			
			0.013	0.0004	0.003		90%	0.0013	0.00004	0.0003	8	0.3			
		75600 m³/a	2.7635t/a VOCs 0.3898t/a 0.0454t/a			1.517t/a SO₂ 0.0277t/a 0.3kg/a			1.312t/a NOx 0.00567kg/a 2.5kg/a			5.393t/a			

3.3.1.1.2

1.5

1.5

3

2

1

3.3-8

3.3-2

3.3-8

3.3-9 P2-1 P2-2

		(t/a)	kg/h	(mg/m ³)	(m ³ /h)		(%)	(t/a)	(kg/h)	(mg/m ³)
P2-1 P2-2		1.9521	0.232	7.7	30000	RTO 43m	38	1.2095	0.144	4.8
	SO ₂	1.312	0.156	5.2			0	1.312	0.156	5.2
	NO _x	5.393	0.642	21.4			0	5.393	0.642	21.4
	VOCs	3.75	0.446	14.9			90	0.375	0.0446	1.5
		3.898	0.464	15.5			90	0.3898	0.0464	1.55
		0.454	0.054	1.8			90	0.0454	0.0054	0.18
		0.227	0.027	0.9			90	0.0227	0.0027	0.09
		5.67 10 ⁻⁵	6.75 10 ⁻⁶	0.0002			90	5.67 10 ⁻⁶	6.75 10 ⁻⁷	0.00002
		0.025	0.003	0.10			90	0.0025	0.0003	0.01
		0.003	0.0004	0.013			90	0.0003	0.00004	0.0013

3.3-9 P2-1 P2-2

GB16297-1996 2

45.3kg/h

DB37/2376-2019 1

10mg/m³50mg/m³

100mg/m ³		<		>	
[2019]39				50mg/m ³	
				GB31572-2015	
5		15mg/m ³		5mg/m ³	
	6			15mg/m ³	5mg/m ³
VOCs					
	6	DB37/801.6-2018		1	
VOCs60mg/m ³	3.0kg/h	2mg/m ³	0.15kg/h	5mg/m ³	0.3kg/h

3.3-10

													m		
		Nm³/h	mg/m³	kg/h	t/a			mg/m³	kg/h	t/a	mg/m³	kg/h			
G5	SO ₂		7.7	0.232	1.9521		38%	4.8	0.144	1.2095	10	45.3			
			5.2	0.156	1.312		0								
G6															
G7															
G8													P2-1	43	0.8
		30000											P2-2		
G9															
							RTO								
G10															
G11							43m								

3.3-11

													m		
		Nm³/h	mg/m³	kg/h	t/a			mg/m³	kg/h	t/a	mg/m³	kg/h			
G1 G2 G3		30000	18.7	0.533	4.48		85%	2.8	0.08	0.672	10	23	P1-1	30	0.8
	VOCs		4.7	0.143	1.20		32%	3.2	0.097	0.816	60	3.0			
G4		30000	23.3	0.7	5.88	+	85%	3.5	0.105	0.882	10	23	P1-2	30	0.8
	VOCs		1.9	0.057	0.48		32%	--	0.039	0.326	60	3.0			

3.3-11				12600	Nm ³ /a	4.3005t/a	VOCs	
2.267t/a	SO ₂	3.936t/a	NOx	16.179t/a	1.1694t/a	0.1392t/a		0.0731t/a
0.01701kg/a			7.5kg/a		0.9kg/a			

3.3.1.2

3.3.1.2.1

				90%	10%
				1.151t/a	VOCs
0.187t/a					
				90%	10%
				0.0971t/a	VOCs
0.416t/a	0.433t/a	0.05t/a	0.025t/a	0.0063kg/a	
0.003t/a	0.0003t/a				

3.3.1.2.2

				90%	10%
				0.1942t/a	VOCs
0.832t/a	0.866t/a	0.1t/a	0.05t/a	0.0126kg/a	0.006t/a
0.0006t/a					

90%

90%

3.3.2

3.3.2.1

3.3-12

3.3-13

3.3-12

	m ³ /a	m ³ /a	mg/L					
			COD _{Cr}	BOD ₅				
	4095	7654.5	200	100	15	25	700	5
	3360	4200	100	60	5	8	2100	
	840	1680	60	20	5	8	2800	
	1575	1260	500	350	5	8	700	
	1008	805	350	250	30	45	700	
	10878		216	132	11	18	1295	1.9
		15599.5	190	109	11	18	1303	2.5
	26477.5		201	118	11	18	1300	2.2

3.3-13

		m ³ /a	mg/L	t/a	m ³ /a	mg/L	t/a	m ³ /a	mg/L	t/a
1	COD _{Cr}	10878	216	2.35	15599.5	190	2.96	26477.5	201	5.31
2	BOD ₅		132	1.44		109	1.70		118	3.14
3			11	0.12		11	0.17		11	0.29
4			18	0.20		18	0.28		18	0.48
5			1295	14.09		1303	20.33		1300	34.41
6			1.9	0.02		2.5	0.04		2.2	0.06

3.3-13

10878m³/a COD_{Cr}

2.33t/a 0.12t/a

15599.5m³/a COD_{Cr}

2.96t/a 0.17t/a

26477.5m³/aCOD_{Cr}

5.31t/a 0.29t/a

3.3.2.2

2.2.7.2.2

2022 2

CODcr 29.6mg/L 8.06mg/L

GB/T31962-2015 1A

3.3.2.3

1

2004

8

4 m³/d

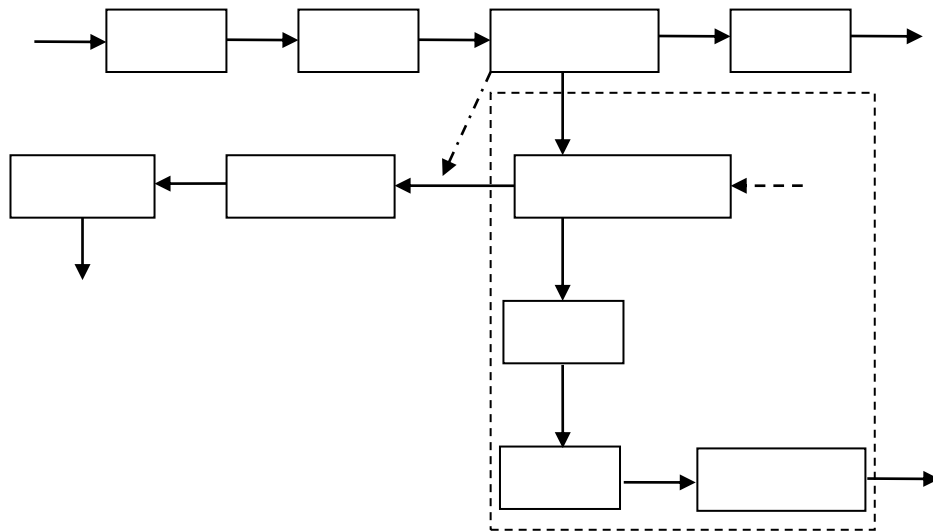
2007 9

8 m³/d 4 m³/d

1 A

2009 5

3.3-3



3.3-3

pH 6~9

$\text{COD}_{\text{Cr}} = ((\text{'D} \times (\text{'D BOD}_5) - (\text{'D} - \text{'D} \text{ (GB18918-2002)} \text{ A}$

[2017]5

$\text{COD}_{\text{Cr}}, (\text{'D NH}_3\text{-F} * \text{'D}$
 2

2021 1~12

3.3-14

3.3-14

2021 1~12

	(m³)	pH				
			(mg/L)			
2021.01	1071636	6.99	14.4	0.253	0.186	6.81
2021.02	1018063	7.25	17.4	0.188	0.202	6.58
2021.03	915311	7.05	13.7	0.152	0.204	9.56
2021.04	666861	6.77	13.5	0.151	0.191	10.9
2021.05	684945	6.96	14.4	0.219	0.278	9.03
2021.06	926823	7.06	20.6	0.244	0.231	8
2021.07	1282826	7.06	17.6	0.343	0.199	8.18
2021.08	1459914	7.06	20.3	0.276	0.188	8.06
2021.09	1381393	7.13	17.1	0.219	0.142	8.45
2021.10	1294080	7.15	26.5	0.151	0.205	10.2
2021.11	1048103	7.27	28.7	0.495	0.198	9.89

2021.12	1424289	7.39	28.1	0.34	0.202	7.66
	1097854	7.1	19.4	0.253	0.202	8.61
	1459914	7.39	28.7	0.495	0.278	10.9
	666861	6.77	13.5	0.151	0.142	6.58
	10881313	/	/	/	/	/
			40	2	4	45

3.4-17

GB18918-2002

A

[2017]5

COD_{Cr} , ('D NH₃-F * 'D

4

GB18918-2002

A

[2017]5 COD_{Cr} , ('D NH₃-F * 'D

3237.3t/a

COD_{Cr}

15.1mg/L 0.148mg/L 6.34mg/L 0.263mg/L 0.049t/a

0.0005t/a 0.02t/a 0.0009t/a 6474.6t/a

COD_{Cr} 0.098t/a 0.001t/a 0.04t/a 0.0018t/a

3.3.2.4

3.4-18

3.3-15

3.3-15

		m ³ /a	mg/L	t/a	m ³ /a	mg/L	t/a
1	COD _{Cr}	10878	29.6	0.32	10878	19.4	0.21
2	BOD ₅		18	0.20		10	0.11
3			8.06	0.088		0.253	0.003
4			13	0.14		8.61	0.09
5			1295	14.09		1295	14.09
6			0.2	0.002		0.2	0.002

3.3-16

		m ³ /a	mg/L	t/a	m ³ /a	mg/L	t/a	m ³ /a	mg/L	t/a
1	COD _{Cr}	15599.5	29.6	0.46	15599.5	19.4	0.30	26477.5	19.4	0.51
2	BOD ₅		18	0.28		10	0.16		10	0.26
3			8.06	0.126		0.253	0.004		0.253	0.007
4			13	0.20		8.61	0.13		8.61	0.23
5			1303	20.33		1303	20.33		1300	34.42
6			0.3	0.005		0.3	0.005		0.26	0.007

10878m³/aCOD_{Cr}

19.4mg/L

0.253mg/L

COD_{Cr}

0.21t/a

0.003t/a

26477.5m³/aCOD_{Cr}

0.30t/a

0.004t/a

26477.5m³/a

COD

		26			85	60
		36			85	60
		6			85	60
		25			90	65
		10			85	60
		50			90	65
		20			85	60
		36			85	60
		20			85	60

3.3.3.2

A

B

C

15 25dB A

GB12348-2008 3

3.3.4

2021

HW08

900-249-08

FDY

HW49

900-041-49

2

FDY

3.3-18

3.3-18

			t/a				
S ₁			773	--		282-999-99	
S ₃			1104.12	--		282-999-99	
S ₄			157	314		282-999-99	
S ₅			472.2	944.4		282-999-99	
S ₂			0.1	--		HW08 (900-249-08)	
			4	3.5		282-999-99	

			0.1	0.2		282-999-99	
			5.3	4.2			
		--	2	3.5		HW49 (900-041-49)	
			1t/4a			HW08 (900-249-08)	
			2518.82	1269.8			
			3.1	3.5			

3.3.5

3.4-22

3.4-23

3.3-19

3.3-19

		Nm ³ /a	75600	0	75600	
		t/a	12.3121	9.5483	2.7635	
		VOCs				
		t/a	5.43	3.913	1.517	
		SO ₂ t/a	1.312	0	1.312	
		NO _x t/a	5.393	0	5.393	
		t/a	3.898	3.5082	0.3898	
		t/a	0.454	0.4086	0.0454	
		t/a	0.227	0.1993	0.0277	
		kg/a	0.0567	0.05103	0.00567	
		kg/a	25	22.5	2.5	
		kg/a	3	2.7	0.3	
		t/a	0.8951	0	0.8951	
		VOCs				
		t/a	0.603	0	0.603	
		t/a	0.433	0	0.433	
		t/a	0.05	0	0.05	

		t/a	0.025	0	0.025	
		kg/a	0.0063	0	0.0063	
		t/a	0.003	0	0.003	
		t/a	0.0003	0	0.0003	
	m ³ /a		10878	0	10878	
	COD _{Cr}	t/a	2.35	2.14	0.21	
	t/a		0.12	0.117	0.003	
	t/a		773	773	0	
	t/a		1104.12	1110	0	
	t/a		4	4	0	
	t/a		157	157	0	
	t/a		472.2	472.2	0	
	t/a		0.1	0.1	0	
	t/a		0.1	0.1	0	
	t/a		5.3	5.3	0	
	t/a		2	2	0	
	t/a		1t/4a	1t/4a	0	

		t/a	0.1942	0	0.1942	
		VOCs				
		t/a	0.832	0	0.832	
		t/a	0.866	0	0.866	
		t/a	0.1	0	0.1	
		t/a	0.26	0	0.26	
		kg/a	0.0126	0	0.0126	
		t/a	0.006	0	0.006	
		t/a	0.0006	0	0.0006	
	m ³ /a		15599.5	0	15599.5	
	COD _{Cr}	t/a	2.96	2.66	0.30	
		t/a	0.17	0.166	0.004	
		t/a	314	314	0	
		t/a	944.4	944.4	0	
		t/a	3.5	3.5	0	
		t/a	0.2	0.2	0	
		t/a	4.2	4.2	0	
		t/a	3.5	3.5	0	
		t/a	1269.8	1269.8	0	

3.3-21

		Nm³/a	126000	0	126000
		t/a	16.2163	11.0038	5.2125
		VOCs t/a	12.93	10.663	2.267
		SO₂ t/a	3.936	0	3.936
		NOx t/a	16.179	0	16.179
		t/a	11.694	10.5246	1.1694
		t/a	1.362	1.2258	0.1362
		t/a	0.681	0.6079	0.0731
		t/a	0.1701	0.15309	0.01701

		t/a	75	67.5	7.5	
		t/a	9	8.1	0.9	
		t/a	1.0893	0	1.0893	
		VOCs t/a	1.435	0	1.435	
		t/a	1.299	0	1.299	
		t/a	0.15	0	0.15	
		t/a	0.285	0	0.285	
		kg/a	0.0189	0	0.0189	
		t/a	0.009	0	0.009	
		t/a	0.0009	0	0.0009	
	m ³ /a		26477.5	0	26477.5	
	COD _{Cr}	t/a	5.31	4.8	0.51	
	t/a		0.29	0.283	0.007	
	t/a		773	773	0	
	t/a		1104.12	1110	0	
	t/a		7.5	7.5	0	
	t/a		471	471	0	
	t/a		1416.8	1416.6	0	
	t/a		0.1	0.1	0	
	t/a		0.3	0.3	0	
	t/a		9.5	9.5	0	
	t/a		5.5	5.5	0	
	t/a		3t/4a	3t/4a	0	
	t/a		2518.82 3.1	1269.8 3.5	0	

3.3.7

3.3.7.1

1 1000m³

3.3.7.2

0

3.3-22

3.3-23

3.3-22

3.3-23

		mg/m ³	kg/h	mg/m ³	kg/h	
P2-1 P2-2		7.7	0.232	10	45.3	
	SO ₂	5.2	0.156	50		
	NO _x	21.4	0.642	50		
	VOCs	14.9	0.446	60	3.0	
		15.5	0.464		41	
		1.8	0.054	5		
		0.9	0.027	15		
		0.0002	6.75 10 ⁻⁶	2	0.15	
		0.10	0.003	5	0.3	
		0.013	0.0004	8	0.3	

DB37/2376-2013 2

3.3.8

3.3-24

3.3-24

	t/a	218901.86	13805.77	10878	243585.6	+10878
	COD t/a	4.247	0.55	0.21	5.007	+0.21
	t/a	0.055	0.028	0.003	0.086	+0.003
	t/a	0.044			0.044	
	t/a	1.885		0.09	1.975	+0.09
	m ³ /a	148618.2	42000	75600	266218.2	+75600
	t/a	3.672	2.3049	2.7635	8.7404	+2.7635
	VOCs	14.248	0.6086	1.517	16.3736	+1.517

	t/a					
	SO ₂ t/a			1.312	1.312	+1.312
	NO _x t/a			5.393	5.393	+5.393
	t/a	1.955	0.117	0.3898	2.4618	+0.3898
	t/a	0.213	0.0001	0.0454	0.2585	+0.0454
	t/a	0.497	0.0111	0.0277	0.5358	+0.0277
	kg/a	0.078	10.9	0.00567	10.98367	+0.00567
	kg/a	35.12	49.8	2.5	87.42	+2.5
	kg/a	4.96	125.7	0.3	130.96	+0.3
	t/a	0	0	0	0	+0

+ -

3.3-25

	t/a	21900	15599.5	37499.5	+15599.5
	COD t/a	0.212	0.30	0.512	+0.30
	t/a		0.004	0.004	+0.004
	t/a	0.0004		0.0004	
	t/a		0.13	0.13	+0.13
	m ³ /a	247155.84	50400	297555.8	+50400
	t/a	1.92	2.419	4.339	+2.419
	VOCs t/a	3.577	0.75	4.327	+0.75
	SO ₂ t/a	20.88	2.624	23.504	+2.624
	NO _x t/a	49.28	10.786		+10.786
	t/a				

1**A**

26.5%

73.5%

Dowtherm A

258

115

12.3

528

4.02MPa

1060kg/m³(20)

293kJ/kg

40194kJ/kg

0.99-3.36%

3B**2**

0.5 6.8mg/m³

135

113

102

122

200

3.4.2

1

6

8 10

6

FDY

2

FDY

3.4.3

1

2

4.5

3.4-2

3.4-2

--	--	--

GB16297-

1

4

4.1

116 ° 36 °

40.8km

42.4km 960km² 9 3 1 603

42 51.4

105 308

2 2 308 107km

316 56km

70km

50 km

2.1-1

4.2

4.2.1

32.00m 22.00m 27m 32.1m

		4.5		
		22.6m	1/7000	1/9000
			3m	
			56.25%	17.65%
	10.83%	6.94%	5.11%	
3.22%				
				7
4.2.2				
4.2.2.1				
				V_4^8
	V_4^{10}	V_4^{11}		V_4^8
	-			
	2000-3500m			
		250m		
1	(Q)			
240-300m				
1	(Q4)			
		12-58m		
		15m		

0.5m

1-2 2-3 1-5m
 20-30m
2 **(Q1 3)**
 90-206m

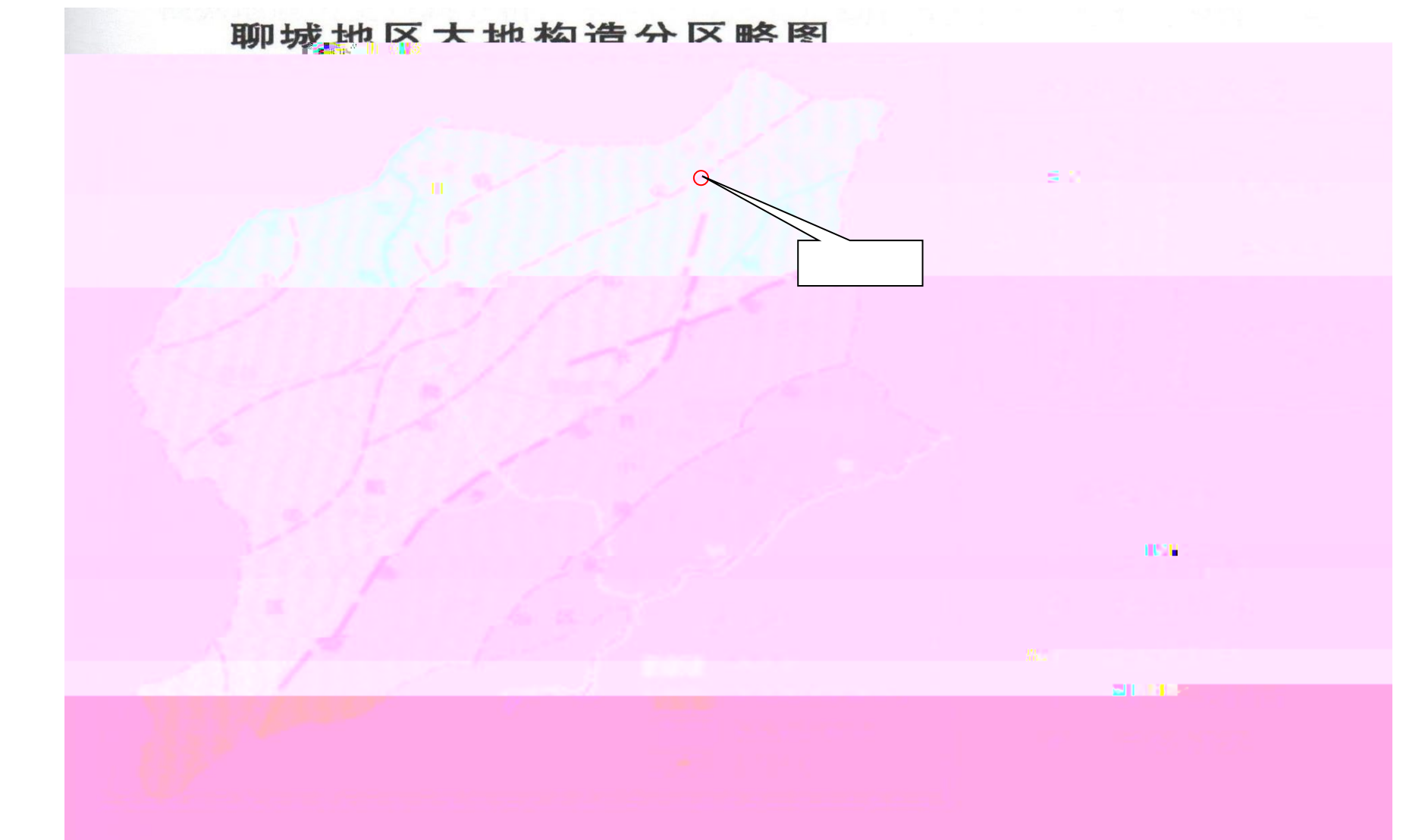
60-70m

3-6m 10m
 10-20m 50-70m 100-200m
 150m
 200m 230m
2 **(N)**

500-800m

300-1000m

3 **(E)**



4.2.3

4.2.3.1

1

-

2

4.2.4

17

			4181.2km ²	
			26km	393.62km ²
	26km	393.6km ²	9	
100km ²		100km ²		
	28km	432.3km ²	6	100km ²
		100km ²		

4.2-2

4.2.5

		13.1		26.6	
41.2	(	1958	6	18	)
				-3.0	-20.8
(	1981	1	26	)	1
				-3.1	7
26.8		195		43cm	31cm
		3.7m/s		4	4.7m/s
	8	2.5m/s			
		508.8mm	7	8	9
73.2		975.9mm	1961		287.1mm 2002
	3.4		1.2mm		121.6mm
	56.1mm		150mm		1644.9mm

4.5							
E601		1892.3mm		1994			
1368.1mm	2007		10m	10	24m/s		
2.3m/s		1.9m/s		2.3m/s			
18%	4%	18%		20	/		
4.2.6							
GB18306-2015							
0.15g		VII					
7							
4.2.7							
142			119				
76.79%	33.41		23.21%				
94.4			65.41%	8.87	6.15%		
7.5	5.2%	1.46	1%				
22.32	15.5%		11.01		7.71%		
		18.68	m³				
2.7		m³	1.56	m³			
60m							
16.7	m³	15.9	m³	0.8	m³		
m³			3.9974		m³		
4.2.8							
142			119				
			83	58%			

14%

27%

20

15%

58715.8

338500

8%

3.4.1.1

1

1

54.6

308

0.6

2

6.7

		4.5	
	6.4		
	12.1		
	7.4		
	6.1		
	9.8		
		0.6	308
		0.3	
3.4.1.2		1064.1	25.5%
	30.4	13	
	5		
	2.0		
3.4.1.3			
1		333.4	8.0%
	9.5		

	4.5			
	0.8			
0.6				
	0.4			
	13			
15			2-3	
2				
	47.6		1.1%	1.4
3				
	22.2		0.5%	
0.6				
4				
	146.8		3.5%	
4.2				
5				
	37.4		0.9%	1.1
6				
	60		1.4%	1.7
7				
	5	/		2 /

7				
		15.6	0.4%	
0.4				
3.4.1.4				
		263.2	6.3%	
7.5				
3.4.1.5				
1				
		1206.1	28.9%	
34.5				
	2013	36		1.0
2				
		65	1.6%	1.9
	1			
3.4.1.6				
				+
3.4.1.7				

2018~2035

4.4-1

4.4.2

2014 12

[2014]220

2008

23km²

316

-

322

4.4-2

4.5

4.5.1

4.5.1.1

1

2020

3.5-1

4.5-1

	SO ₂	NO ₂	PM ₁₀	PM _{2.5}	CO	O ₃
					24 95	8 90
	11	31	89	59	1.6mg/m ³	176
	60	40	70	35	4 mg/m ³	160

2020

SO₂ NO₂

CO 24

95

GB3095-2012

PM₁₀PM_{2.5}O₃

8

HJ2.2-2018

2

4.5-2

4.5-1

4.5-2

			m		
1#		N	40	TSP	
		W	130		
		N			

2#

	4-	HJ/T 32-1999	0.3mg/m ³
		GB/T 15516-1995	0.01mg/m ³

5

4.5-4

4.5-5

4.5-6

4.5-4

			(m/s)	()	(kPa)		/
2022.01.18- 2022.01.19	13:48	S	1.6	7.3	100.34		10/7
	19:44	S	1.5	-3.2	102.27		/
	01:42	S	1.2	-3.5	102.35		/
	07:40	S	2.1	0.2	101.46		10/8
2022.01.18- 2022.01.19	13:48	S	1.6	7.3	100.34		10/7
	19:47	S	1.4	-3.2	102.27		/
	01:47	S	1.3	-3.7	102.35		/
	07:46	S	2.1	0.2	101.46		10/8
2022.01.19- 2022.01.20	13:45	S	1.9	5.6	102.17		10/7
	20:00	S	2.3	-2.9	102.32		/
	01:50	S	1.7	-6.3	102.50		/
	07:45	S	2.0	-6.2	102.63		9/6
2022.01.19- 2022.01.20	14:02	S	1.9	5.7	102.16		10/7
	20:25	S	2.3	-2.8	102.33		/
	02:17	S	1.7	-6.3	102.50		/
	07:56	S	2.0	-6.2	102.63		9/6
2022.01.20- 2022.01.21	13:50	S	1.3	1.2	103.21		10/7
	19:48	S	1.1	-2.1	102.24		/
	01:49	S	1.0	-4.7	103.31		/
	07:50	S	1.1	-4.5	103.31		10/7
2022.01.20- 2022.01.21	13:50	S	1.4	1.3	102.21		10/7
	19:50	S	1.2	-2.2	103.24		/
	01:50	S	1.1	-4.6	103.31		/
	07:50	S	1.2	-4.5	103.31		10/9
2022.01.21-	13:46	S	1.8	2.7	102.24		10/7

2022.01.22	19:48	S	1.9	-2.7	102.31		/
	01:49	S	2.1	-5.9	102.49		/
	07:48	S	1.9	-6.3	102.52		9/7
2022.01.21- 2022.01.22	13:47	S	1.8	2.7	102.24		10/7
	19:49	S	1.9	-2.7	102.31		/
	01:49	S	2.1	-5.9	102.49		/
	07:49	S	1.9	-6.3	102.52		9/7
2022.01.23- 2022.01.24	10:27	S	2.6	1.6	102.52		10/7
	13:50	S	1.5	1.8	102.52		10/7
	19:50	S	1.2	0.6	102.53		/
	01:48	S	1.4	-2.9	102.56		/
	07:50	S	1.1	-4.2	102.58		10/8
2022.01.23- 2022.01.24	10:27	S	2.0	1.5	102.53		10/7
	13:48	S	1.5	1.8	102.52		10/7
	19:47	S	1.2	0.6	102.53		/
	01:48	S	1.4	-2.9	102.56		/
	07:47	S	1.1	-4.2	102.58		10/8
2022.01.24- 2022.01.25	14:00	S	1.9	2.6	102.29		10/7
	19:45	S	1.6	1.5	102.30		/
	01:45	S	1.7	-1.8	102.33		/
	07:45	S	2.0	0.4	102.34		10/8
2022.01.24- 2022.01.25	13:52	S	1.9	2.6	102.29		10/7
	19:58	S	1.6	1.5	102.30		/
	02:31	S	1.7	-1.8	102.33		/
	07:51	S	2.0	0.4	102.34		10/8
2022.01.25- 2022.01.26	13:31	S	1.3	4.3	102.12		3/1
	19:50	S	1.2	-1.2	102.21		/
	01:48	S	1.1	-4.1	102.51		/
	07:50	S	1.2	-4.0	102.51		3/1
2022.01.25- 2022.01.26	13:48	S	1.3	4.5	102.14		3/1
	19:50	S	1.2	-1.2	102.20		/
	01:52	S	1.2	-4.2	102.50		/
	07:50	S	1.2	-4.0	102.51		3/1

4.5-5 1

mg/m³

						NH ₃							
		14:00	20:00	02:00	08:00	14:00	20:00	02:00	08:00	14:02	20:01	02:01	08:02
	2022.1.18- 2022.1.19						0.02	0.03	0.02	0.54	1.02	1.04	0.95
	2022.1.19- 2022.1.20						0.02	0.03	0.02	0.39	1.20	1.12	0.87
	2022.1.20- 2022.1.21						0.02	0.02	0.02	0.70	1.02	0.95	0.67
1 #	2022.1.21- 2022.1.22						0.02	0.02	0.02	0.84	0.34	0.45	0.58

		14:00	20:00	02:00	08:00	14:00	20:00	02:00	08:00	14:02	20:01	02:01	08:02
	2022.1.18- 2022.1.19												
	2022.1.19- 2022.1.20												
	2022.1.20- 2022.1.21												

2
#

4.5

3.5

4.5.1.3

1

TSP

2

GB3095-2012

(HJ2.2-2018) D 1.4-2

3

$$P_i = \frac{C_i}{C_{0i}}$$

C_i i mg/m³
C_{0i} i mg/m³
P_i i

4

4.5-7

4.5-7

			%			%	
1#	TSP				0.38~0.55	0	0
	NH ₃	0.03~0.15	0	0			
		0.10~0.60	0	0			
2#	TSP				0.42~0.61	0	0
	NH ₃	0.03~0.15	0	0			
		0.20~0.65	0	0			

4.5-7

(HJ2.2-2018) D TSP GB3095-2012
p244

4.5.1.4

2021-2022

()

7 0.8
2022

,

()

2 3.6 2021 12

,

10 /

+

SCR

() VOCs

VOCs 10

() 2022 3

4.5.2

4.5.2.1

1

2 4.5-8 4.5-2

4.5-8

1#	200m	
2#	2000m	

2

2022 1 20~23 3

3

pH SS COD_{Cr} BOD₅

32

4

27			GB/T 16489-1996	0.005mg/L
28			HJ 601-2011	0.05mg/L
29		/	HJ 639-2012	0.4 H-
30				0.3 H-
31				0.2 H-
32	+			0.5 H-
33		11.1 11.2	GB/T 5750.6-2006	2.5 H-
34			HJ 755-2015	20MPN/L

5

4.5-10

4.5-10

	1#						2#					
	2022.1.20		2022.1.21		2022.1.23		2022.1.20		2022.1.21		2022.1.22	
	1.0	1.0	1.1	1.1	2.8	2.9	1.0	1.0	1.3	1.2	3.4	3.4
m	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
m	7	7	7	7	7	7	7	7	7	7	7	7
m ³ /h	0.04	0.04	静流	静流	0.08	0.08	0.04	0.04	0.04	0.04	0.08	0.08
pH 值	7.1	7.1	7.2	7.2	7.2	7.3	7.1	7.2	7.1	7.3	7.3	7.3
COD _{Cr} (mg/L)	24	21	27	23	25	20	23	26	21	26	25	28

六价铬 (mg/L)	未	未	未	未	未	未	未	未	未	未	未	未
铅 (μ g/L)	33.8	34.0	34.4	32.0	35.8	35.4	33.7	32.3	34.7	31.6	35.4	31.3
硝酸盐 (mg/L)	4.11	4.03	4.10	4.15	4.10	4.09	4.23	4.16	4.02	4.06	4.16	4.15
亚硝酸盐 (mg/L)	0.113	0.117	0.113	0.115	0.113	0.117	0.180	0.180	0.176	0.170	0.174	0.172
氯化物 (mg/L)	408	418	363	374	360	365	448	458	441	442	457	462
(mg/L)	1.19	1.16	1.41	1.28	1.28	1.12	1.32	1.28	1.16	1.22	1.22	1.32
氰化物 (mg/L)			未	未	未	未	未	未	未	未	未	未
高锰酸盐指数 (mg/L)	5.4	4.8	5.6	4.9	5.4	4.7	5.5	5.3				

4.5.2.2

1

pH SS COD_{Cr} BOD₅

15

14

2

GB3838-2002

GB 3838-2002 2

SS GB5084-2021 1

1.4-3

3

1 ()

$$S_{i,j} = \frac{C_{i,j}}{C_{s,i}}$$

 $S_{i,j}$ $S_{i,j} - 1$ $S_{i,j} - 1$
 $C_{i,j}$ i j mg/l

 $C_{s,i}$ i mg/l

2 --pH

$$S_{pH,j} = \frac{7.0 - pH_j}{7.0 - pH_{sd}} \quad pH_j \leq 7.0$$

$$S_{pH,j} = \frac{pH_j - 7.0}{pH_{su} - 7.0} \quad pH_j > 7.0$$

 S_{pHj} pH

 pH_j pH

 pH_{sd} pH

 pH_{su} pH

3

$$S_{DO_j} = |DO_f - DO_j| / (DO_f - DO_s) \quad DO_j \geq DO_s$$

$$S_{DO_j} = 10 - 9 \frac{DO_j}{DO_s}$$

$$DO_j < DO_s$$

$$S_{DO_j} \quad DO$$

$$DO_f \quad \text{mg/L}$$

$$DO_f = 468 / (31.6 + T) \quad T$$

$$DO_j \quad \text{mg/L}$$

$$DO_s \quad \text{mg/L}$$

4

4.5-11

4.5-11

	1#						2#					
	2022.1.20		2022.1.21		2022.1.23		2022.1.20		2022.1.21		2022.1.22	
pH	0.05	0.05	0.10	0.10	0.10	0.15	0.05	0.10	0.05	0.15	0.15	0.15
	0.80	0.70	0.90	0.77	0.83	0.67	0.77	0.87	0.70	0.87	0.83	0.93
	0.83	0.70	0.87	0.77	0.87	0.73	0.87	0.90	0.77	0.80	0.83	0.77
SS	0.13	0.10	0.19	0.12	0.16	0.11	0.15	0.17	0.12	0.16	0.15	0.19
	0.94	0.96	0.95	0.95	0.93	0.95	0.69	0.71	0.68	0.73	0.72	0.70
	1.30	1.33	1.53	1.60	1.40	1.43	1.73	1.70	1.83	1.87	1.93	1.97
	0.77	0.76	0.77	0.77	0.74	0.73	0.78	0.79	0.77	0.78	0.74	0.74
	0.68	0.68	0.69	0.64	0.72	0.71	0.67	0.65	0.69	0.63	0.71	0.63
	0.41	0.40	0.41	0.42	0.41	0.41	0.42	0.42	0.40	0.41	0.42	0.48
	1.63	1.67	1.45	1.50	1.44	1.46	1.79	1.83	1.76	1.77	1.83	1.85
	0.79	0.77	0.94	0.85	0.85	0.75	0.88	0.85	0.83	0.81	0.81	0.88
	0.54	0.48	0.55	0.49	0.54	0.47	0.55	0.53	0.57	0.53	0.83	0.88
	0.88											

4.5.2.3

2021

2019

2020 5

2020

A²O

4.5.3

4.5.3.1

1

8

4.5-13

4.5-1

4.5-13

			m	
1#		S	145	
		SW	545	
2#		--	--	
3#		--	--	
4#				

5		GB/T 5750.4-2006 7.1		1.0mg/L
6		8.1	GB/T 5750.4-2006	/
7			HJ 535-2009	0.025mg/L
8			GB/T 11911-1989	0.03mg/L
9				0.01mg/L
10		4.1 4.2	GB/T 5750.6-2006	5 H-
11		5.1	GB/T 5750.6-2006	0.05mg/L
12		9.1 9.2	GB/T 5750.6-2006	0.5 H-
13		11.1 11.2	GB/T 5750.6-2006	2.5 H-
14		1.1 S	GB/T 5750.6-2006	0.008mg/L
15		9.1 4-	GB/T 5750.4-2006	0.002mg/L
16			GB/T 7494-1987	0.05mg/L

28	+			0.5 H-
29			HJ 601-2011	0.05mg/L
30	Na ⁺	22.1	GB/T 5750.6-2006	0.01mg/L
31	K ⁺	22.1	GB/T 5750.6-2006	0.05mg/L

	4.5				
mg/L	3.15×10^3	2.62×10^3	2.25×10^3	2.73×10^3	2.71×10^3

$K^{+}+Na^{+}$ Ca^{+} Mg^{+} CO_3^{2-} HCO_3^{-}

2

GB/T14848-2017

1.5-4

3

$Pi=Ci/Si$

Pi

Ci i mg/L

Si i mg/L

pH

) $Pi=(7.0-pH)/(7.0-pH_{sd})$

pH>7 $Pi= (pH -7.0)/(pH_{su}-7.0)$

Pi pH

pH pH

pH_{sd} pH

pH_{su} pH

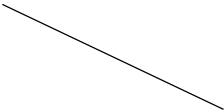
4

4.5-17

4.5-17

2022.1.24

2022.1.18



	0.05	0.40	0.05	0.05	0.73
	0.40	0.40	0.05	0.60	0.70
	0.045	0.008	0.003	0.003	0.003
	0.400	0.740	0.025	0.025	0.025
	0.84	0.86	0.03	0.90	0.93
	0.03	0.01	0.26	0.01	0.01
	0.30	0.36	0.88	0.54	0.44
	3.29	2.99	2.80	2.57	2.93
	4.32	2.76	2.60	3.07	2.83
	0.62	0.90	0.70	0.78	0.81

5

GB/T14848-2017

4.5.4

4.5.4.1

1

1m

6

4.5-18

4.5-3

4.5-18

1#			
2#			
3#			
4#			
5#			
6#			
7#			
8#			
9#			
10#			
11#			

2

L_{Aeq}

		LAeq	Lb	P	LAeq	Lb	P
	1#	57.4	65	-7.6	47.1	55	-7.9
	2#	58.6		-6.4	47.7		-7.3
	3#	57.7		-7.3	47.1		-7.9
	4#	58.9		-6.1	47.8		-7.2
	5#	52.0		-13	44.0		-11
	6#	52.7		-12.3	44.6		-10.4
	7#	57.1		-7.9	46.7		-8.3
	8#	55.4		-9.6	46.4		-8.6
9#		50.6	60	-9.4	40.1	50	-9.9
10#		49.9		-10.1	40.5		-9.5
11#		53.4		-6.6	43.2		-6.8

0.5~1.5m

+

1.5~3m

4

4.5-24

4.5-25

1	pH	pH	HJ 962-2018	/
2		/	HJ 680-2013	0.01mg/kg
3				0.002mg/kg
4			GB/T 17141-1997	0.01mg/kg
5		-	HJ 1082-2019	0.5mg/kg
6			HJ 491-2019	1mg/kg
7				10mg/kg
8			HJ 491-2019	3mg/kg
9		/ -	HJ 605-2011	1.0 µg/kg
10				1.0 µg/kg
11				1.5 µg/kg
12	-1,2-			1.3 µg/kg
13	-1,2-			1.4 µg/kg
14	1,1-			1.2 µg/kg
15				1.1 µg/kg
16	1,1,1-			1.3 µg/kg
17				1.3 µg/kg
18				1.9 µg/kg
19	1,2-			1.3 µg/kg
20				1.2 µg/kg
21	1,2-			1.1 µg/kg

24	1,1,2-			1.2 µg/kg
25				1.4 µg/kg
26				1.2 µg/kg
27				1.2 µg/kg
28	+	/ -	HJ 605-2011	1.2 µg/kg
29				1.2 µg/kg
30	1,1,1,2-			1.2 µg/kg
31	1,1,2,2-			1.2 µg/kg
32	1,2-			1.5 µg/kg
33	1,4-			1.5 µg/kg
34				1.1 µg/kg
35	1,2,3-			1.2 µg/kg
36			HJ 834-2017	0.057mg/kg
37	2-			0.06mg/kg
38				0.09mg/kg
39				0.09mg/kg
40				0.1mg/kg
41	[a]			0.1mg/kg
42	[b]			0.2mg/kg
43	[k]			0.1mg/kg
44	[a,h]			0.1mg/kg
45	[1,2,3-cd]			0.1mg/kg
46	[a]			0.1mg/kg

5

HJ 964-2018

4.5-23

4.5-23(1)

	2022.2.9
	1#
	0~0.2m
	116.19757 36.84259
	5%
pH	7.92
cmol ⁺ /kg	2.8
mV	466
mm/min	0.491
g/cm ³	1.43
%	50.5

4.5-23(2)

	2022.2.9			2022.2.9		
	3#			7#		
	0~0.5m	0.5~1.5m	1.5~3m	0~0.5m	0.5~1.5m	1.5~3m
	东经: 116.19721° 北纬: 36.84333°			东经: 116.20436° 北纬: 36.84593°		
	5%			5%	5%	5%
pH	7.91	7.83	8.03	7.86	8.12	8.01
cmol ⁺ /kg	3.0	2.9	3.1	3.0	3.1	3.4
mV	451	443	448	457	449	468
mm/min	0.491	0.498	0.500	0.497	0.475	0.485
g/cm ³	1.47	1.50	1.53	1.45	1.51	1.53
%	49.1	48.8	48.2	49.3	48.9	48.5

1# 4.5-24 2# 3# 4# 6# 7#
4.5-25 5# 4.5-26
4.5-24 1# mg/kg

	pH						
1#	7.92	0.42	0.150	8.85	37	53	23
			C ₁₀ -C ₄₀			+	

1#

mg/kg	0.044	0.088	0.069	0.068	0.053	0.047
mg/kg	20	27	22	23	29	26
1,1-						
1,2-						
1,1-						
-1,2-						
-1,2-						
1,2-						
1,1,1,2-						
1,1,2,2-						
1,1,1-						
1,1,2-						
1,2,3-						
1,2-						
1,4-						
+						

4.5

4.5-27

4.5-27 1 1#

0.70

0.04

5

5.1

6950

5.1.1

1

2

3

76dB(A) 110dB(A)

$$L_2 = L_1 - 20 \lg(r_2/r_1)$$

 L_2 L_1 r_1 r_2 r_1 r_2 r_1 1

5.1-1

5.1-1

dB(A)

			20m	40m	60m	80m	100m	200m	300m	500m
1		110	84	78	74	72	70	64	60	56

2		97	71	65	61	59	57	51	47	43
3		83	57	51	47	45	43	37	-	-
4		85	59	53	49	47	45	39	-	-
5		85	59	53	49	47	45	39	-	-
6		72	46	40	36	-	-	-	-	-
7		97	71	64	61	59	57	51	47	43
8		83	57	51	47	45	43	37	-	-
9		76	50	44	40	38	36	-	-	-
10		90	64	58	54	52	50	44	40	36
11		78	52	46	42	40	38	-	-	-
12		80	54	48	44	42	40	34	-	-
13		84	58	52	48	46	44	38	-	-
14		110	84	78	74	72	70	64	60	56
15		105	79	73	69	67	65	59	55	51
16		85	59	53	49	47	45	39	-	-

4.1-1

100m

70dB(A)

500m

56dB(A)

4.1-2

1~5dB(A)

15dB(A)

100m

145m

5.1-2

dB(A)

70	55

5.1.2

5.1.3

5.1.4

5.1.5

5.1.6

5.1.6.1

1

2

3

4

5

5.1.6.2

1

2.5m

1.8m

2

2000 /100

3

4

1 2

5

6

7

8

9

40

10

15

10

11

12

13

5.1.6.3

5.1.6.4

5.1.6.5

5.1.7

5.2

5.2.1

20 2001 2020

20 2001 2020

22.0m/s 2005

41.5

2013 -19.2 2001 802.9mm 2009 20

5.2-1 20 5.2-2 5.2-1

20

5.2-1 20 2001 2020

5.2-3

5.2.-4

5.2-5

5.2-2

5.2-3

/	/	
		50
/		41.5
/		-19.2
	/m	90m
	/km	/
	/°	/

4.5

5.2-4

4-10

										6.75 10 ⁻⁷ kg/h 0.003kg/h 0.00004kg/h
--	--	--	--	--	--	--	--	--	--	--

4.2-5

			/m	/m	/m	/°	/m	/h		/ kg/h							
	X	Y									VOCs						
	116.196 E	36.846N	29	78	62	10	27	8400		0.137	0.0223						
	116.199 E	36.846N	29	90	25	10	33	8400		0.0116	0.0495	0.0514	0.006	0.003	7.5 10 ⁻⁷	0.0004	7.1 10 ⁻⁵
	116.193 E	36.843N	30	66	47	10	33	8400		0.0232	0.099	0.1208	0.012	0.006	1.5 10 ⁻⁶	0.0008	1.42 10 ⁻⁴

4.2-4

			/m	/m	/m	/ m/s	/	/h		/ kg/h
	X	Y								
DA012	116.198E	36.849N	29	40	0.5	3.54	30	8400		VOCs 0.00364kg/h 0.00855kg/h
DA022	116.196E	36.849N	29	30	0.5	4.95	30	8400		VOCs 0.0276kg/h 0.0 TJ1 742.66

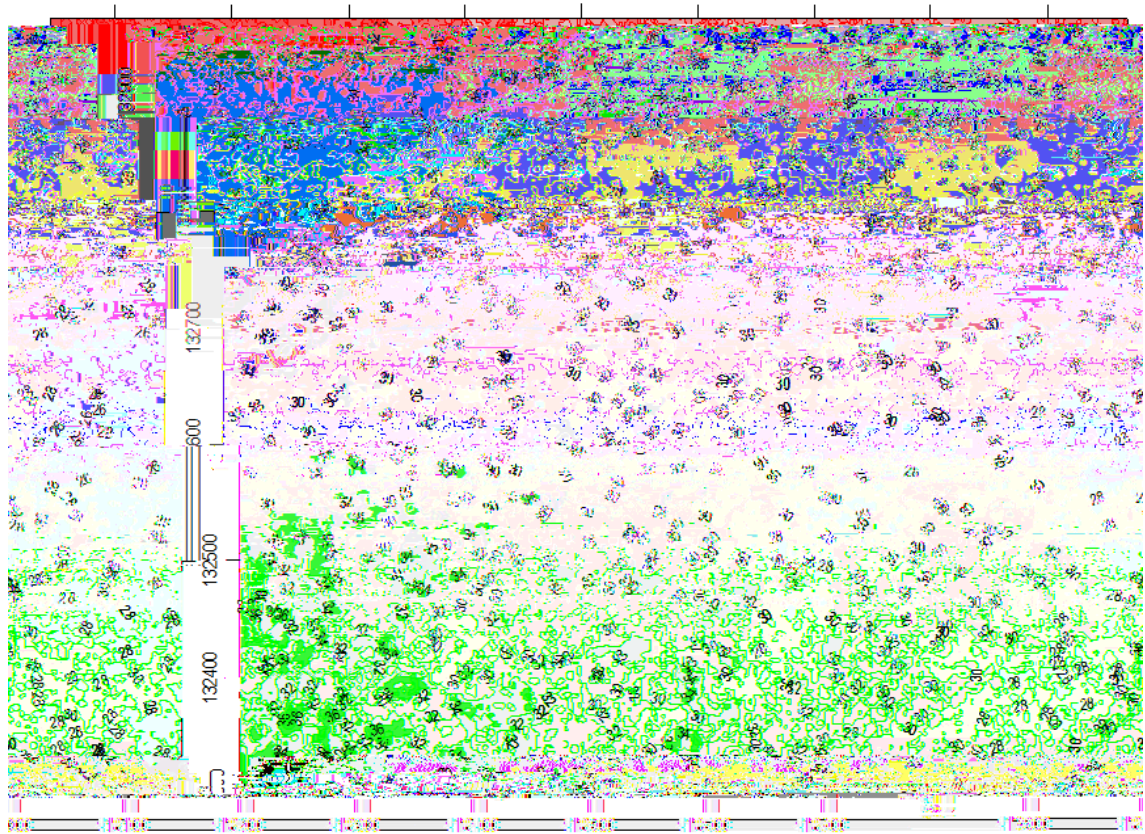
DA020	116.200E	36.849N	29	30	0.8	1.79	20	8400		0.00512kg/h VOCs 0.0175kg/h 0.00724kg/h 0.00212kg/h 0.00367kg/h 0.00039kg/h
DA016	116.199E	36.849N	29	30	0.8	3.48	20	8400		VOCs 0.0213kg/h
DA021	116.200E	36.849N	29	30	0.8	3.96	20	8400		VOCs 0.0320kg/h 0.000388kg/h
DA031	116.196E	36.848N	29	15	0.35	25.33	20	7200		0.0402kg/h
DA005	116.197E	36.848N	29	26	0.4	11.06	20	2400		0.0254kg/h VOCs 0.00679kg/h 0.000111kg/h
DA007	116.197E	36.848N	29	15	0.4	14.38	20	2400		VOCs 0.049kg/h
DA008	116.197E	36.848N	29	15	0.4	9.95	20	2400		0.0169kg/h
DA025	116.196E	36.847N	29	30	0.5	4.95	30	8400		0.01kg/h VOCs 0.0105kg/h
DA024	116.196E	36.847N	29	30	0.6	7.86	30	8400		0.0191kg/h VOCs 0.0216kg/h
DA018	116.196E	36.847N	29	30	1.2	9.83	30	8400		0.0108kg/h VOCs 0.207kg/h
DA029	116.196E	36.848N	29	30	0.80	5.53	30	8400		0.0292kg/h VOCs 0.479kg/h
DA001	116.190 E	36.844 N	30	150	4	4.17	40	8760		SO ₂ 2.393kg/h NO _x 5.63kg/h 0.22kg/h
DA002	116.186E	36.844N	30	15	0.6	10.33	20	4800		1.41×10 ⁻⁵ kg/h 0.065kg/h
P6-1	116.199E	36.845N	29	15	0.3	9.04	20	8400		0.0014kg/h 0.00014kg/h 7.02×10 ⁻⁷ kg/h 4.88×10 ⁻⁴ kg/h 1.19×10 ⁻⁵ kg/h
P6-2	116.199E	36.845N	29	25	0.3	21.23	20	8400		0.039kg/h VOCs0.012kg/h 5.95×10 ⁻⁵ kg/h 8.99×10 ⁻⁵ kg/h 5.58×10 ⁻⁴ kg/h 0.002023kg/h 0.001635kg/h
P6-3 P6-4	116.199E	36.845N	29	35	2.4	1.47	20	8400		0.259kg/h VOCs0.039kg/h

P6-5										0.0009kg/h 0.002688kg/h 0.00621kg/h	0.001026kg/h 0.0186kg/h
P6-6	116.199E	36.845N	29	35	0.8	4.42	20	8400		VOCs0.0122kg/h 0.000113kg/h 0.00591kg/h	0.0000595kg/h 0.00109kg/h 0.00224kg/h
P6-7	116.200E	36.845N	29	35	0.8	4.42	20	8400		VOCs0.00925kg/h 0.0000578kg/h 0.00486kg/h	0.0000595kg/h 0.00159kg/h
P6-8	116.200E	36.845N	29	15	0.3	9.04	20	8400		0.0147kg/h	0.000038kg/h

DA012 A DA022 B DA017 DA026 DA023
 DA028 DA027 DA013 DA019 DA014
 DA015 DA020 DA016 DA021 DA031
 DA005 DA007 DA008 DA025 DA024
 DA018 DA029 DA001 DA002 P6-1
 P6-2 P6-3 P6-4 P6-5 P6-6 P6-7 P6-8

4.2-5

			/m	/m	/m	/°	/m	/h		/ kg/h							
	X	Y									VOCs						
	116.199E	36.845N	57	90	20	0	40	8400		0.0119	0.0672	0.0119	3.6×10 ⁻⁶	0.0013	0.006	0.0144	0.0013



5.2-2

5.2.2.2

5.2-6

		mg/m ³	m	D _{10%}	mg/m ³	% P _{max}
P1-1		0.004342	258		0.45	0.96
	VOCs	0.005265	258		2	0.26
P1-2		0.005697	258		0.45	1.27
	VOCs	0.002116	258			

		0.000015	139		0.2	0.01
		$2 \cdot 10^{-7}$	139		0.2	0.0001
P2-1		0.000703	139		0.45	0.16
	SO ₂	0.000762	139		0.5	0.15
	NO _x	0.003135	139		0.20	1.25
	VOCs	0.003135	139		2	0.16
		0.000227	139		0.2	0.11
		0.000026	139		0.05	0.05
		$3 \cdot 10^{-9}$	139		0.11	$2.7 \cdot 10^{-6}$
		0.000015	139		0.2	0.01
		$2 \cdot 10^{-7}$	139		0.2	0.0001
P2-2		0.000703	139		0.45	0.16
	SO ₂	0.000762	139		0.5	0.15
	NO _x	0.003135	139		0.20	1.25
	VOCs	0.003135	139		2	0.16
		0.000227	139		0.2	0.11
		0.000026	139		0.05	0.05
		$3 \cdot 10^{-9}$	139		0.11	$2.7 \cdot 10^{-6}$
		0.000015	139		0.2	0.01
		$2 \cdot 10^{-7}$	139		0.2	0.0001
		0.006556	72		0.9	0.73
	VOCs	0.002462	72		2	0.12
		0.001281	46		0.9	0.14
	VOCs	0.005487	46		2	0.27
		0.005711	46		0.2	2.86
		0.000659	46		0.05	1.32
		0.000083	46		0.11	0.08
		0.00004	46		0.2	0.02
		0.000004	46		0.2	0.002
		0.00219	42		0.9	0.24
	VOCs	0.009381	42		2	0.47

		0.009764	42		0.2	4.88
		0.001127	42		0.05	2.25
		0.000142	42		0.11	0.13
		0.000068	42		0.2	0.03
		0.000007	42			

2	P1-2		3.5	0.105	0.882	10	23
		VOCs	1.3	0.039	0.326	60	3.0
			4.8	0.144	1.2095	10	45.3

P1-3 P2-1
 3 P2-3

							0.15
						0.08	0.025 0.05 0.075
					GB14554-1993 1	1.5	0.433 0.866 1.299
			VOCs			2.0	0.416 0.832 1.248
					6 DB37/801.6-2018 3	0.1	0.0063kg/a 0.0126kg/a 0.0189kg/a
						0.2	0.003 0.006 0.009
						0.2	0.0003 0.0006 0.0009

		AERMO	ADMS	AUSTAL200	EDMS/	CALPUF		
		C			C 			

5.3

5.3.1

5.3-1

5.3-2

5.3-3

5.3-1

1		COD _{Cr} BOD ₅			T1			DW001		

2

					GB18918-2002 A COD _{Cr} NH ₃ -					70
										5

4.3-3

				/ mg/L	
1	DW001	COD _{Cr}	GB/T31962-2015 1A	500	
		BOD ₅		350	
				45	
				70	
				5	
		COD _{Cr}		300	
				20	
		BOD ₅		150	

5.3.2

(HJ2.3-2018)

B

5.3.3

GB/T31962-2015 1A

(GB18918-2002) A

[2017]5

COD_{Cr}NH₃-26477.5m³/aCOD_{Cr}BOD₅

29.6mg/L

18mg/L

8.06mg/L

13mg/L

0.78t/a

0.48t/a

0.214t/a

0.34t/a

26477.5m³/aCOD_{Cr}BOD₅

0.51t/a 0.26t/a

0.007t/a

0.23t/a

5.3.4

5.3.4.1

2004

8

4 m³/d

2007 9

8 m³/d4 m³/d

1

A

2009

5

8

16km

3.4-3

3.4.2.3

5.3.4.2

8 m³/d 2021.1-12
3.66 m³/d 75.65m³/d
0.17%
BOD₅

BOD₅

5.3.5

26477.5m³/a
0.007t/a COD COD_{Cr} 40mg/L 0.51t/a NH₃-N

5.3.6

5.3-4

5.3-4

		pH	
		40%	40%

4.5



		pH COD _{Cr} TP TN BOD ₅				

5.4

5.4.1

5.4.1.1

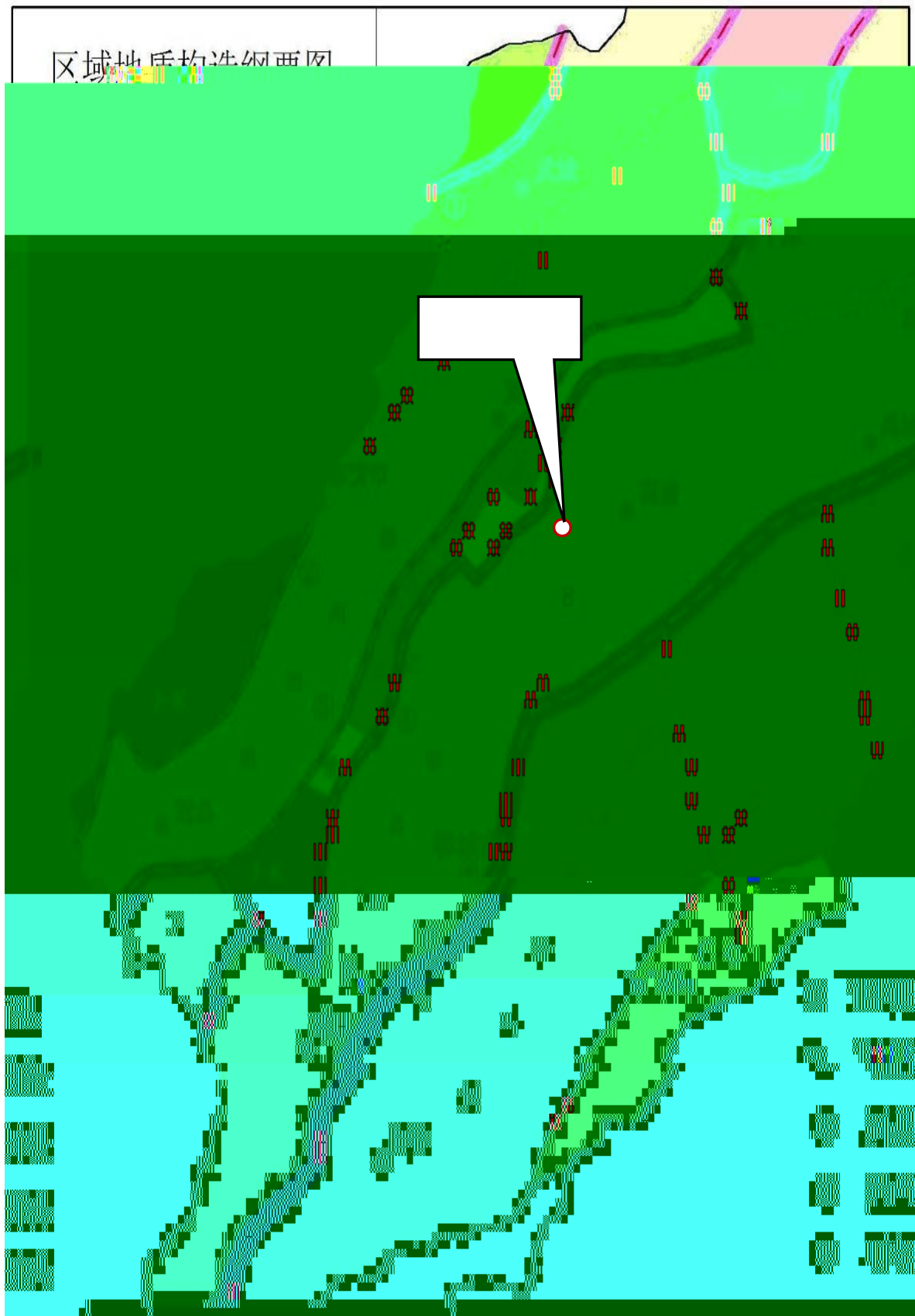
2		1	2
2		1	2
1		3	7
	1	2	3
4	5	6	7

1			
2			6
	4	5	
3			

GB50011-2001

7 0.15g

5.4-1



5.4-1

5.4.1.2

-

- -

(50m) (2g/L)

(50-120m)(2-5g/L)

120-140m (2g/L)

5.4.2

90m

8

1 :

:0.80~1.50m 1.06m :-1.40~-0.70m -0.96m

0.80~1.50m 1.06m

2 :

2.60~3.50m 3.10m

-4.40~-3.70m -4.06m 3.80~4.50m 4.16m

3

2.00~3.00m 2.51m

-6.90~-6.30m -6.57m 6.40~7.00m 6.67m

4

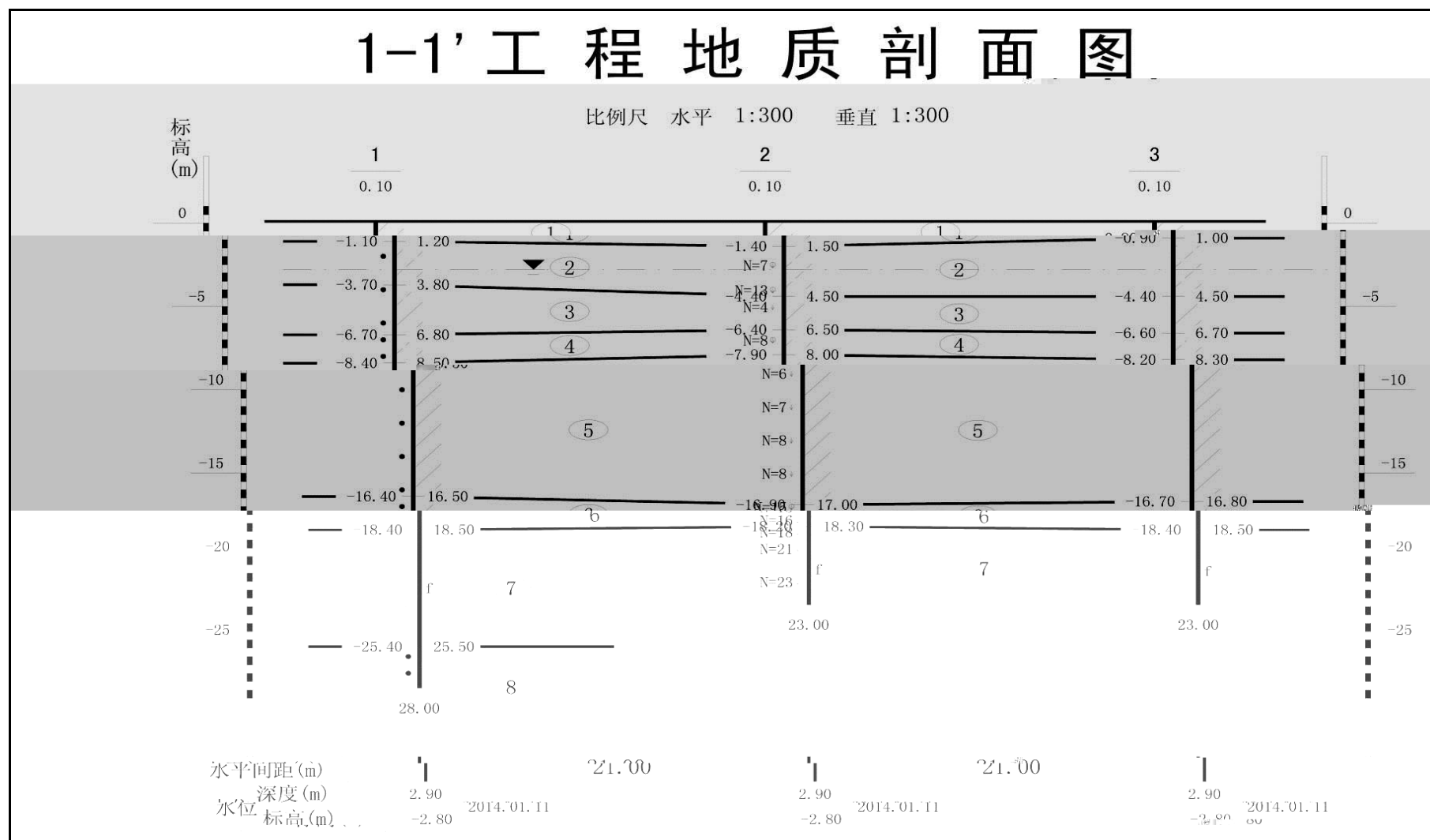
1.00~2.30m 1.78m

-8.70~-7.90m -8.35m 8.00~8.80m 8.45m

5 -

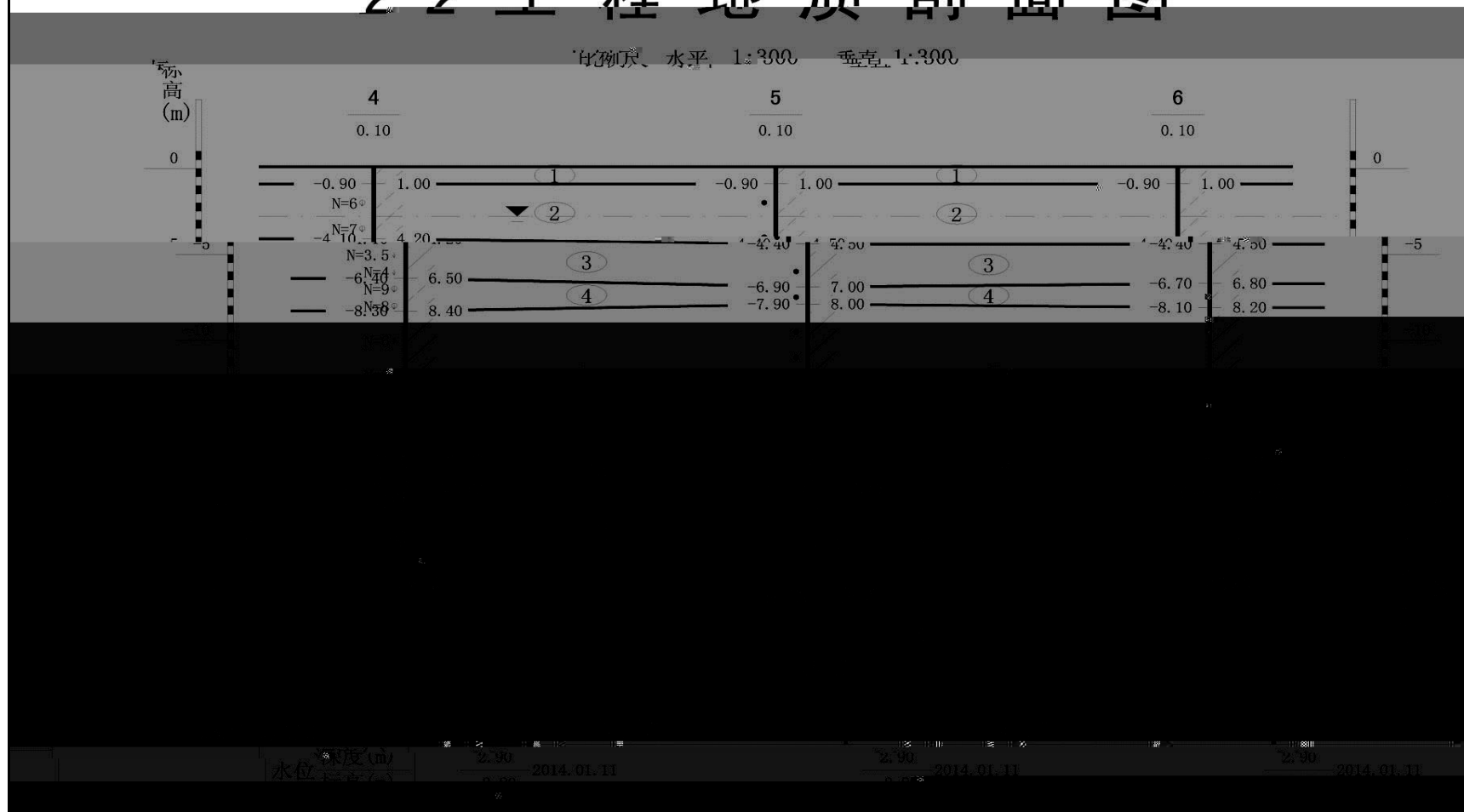
7.60~9.00m 8.32m

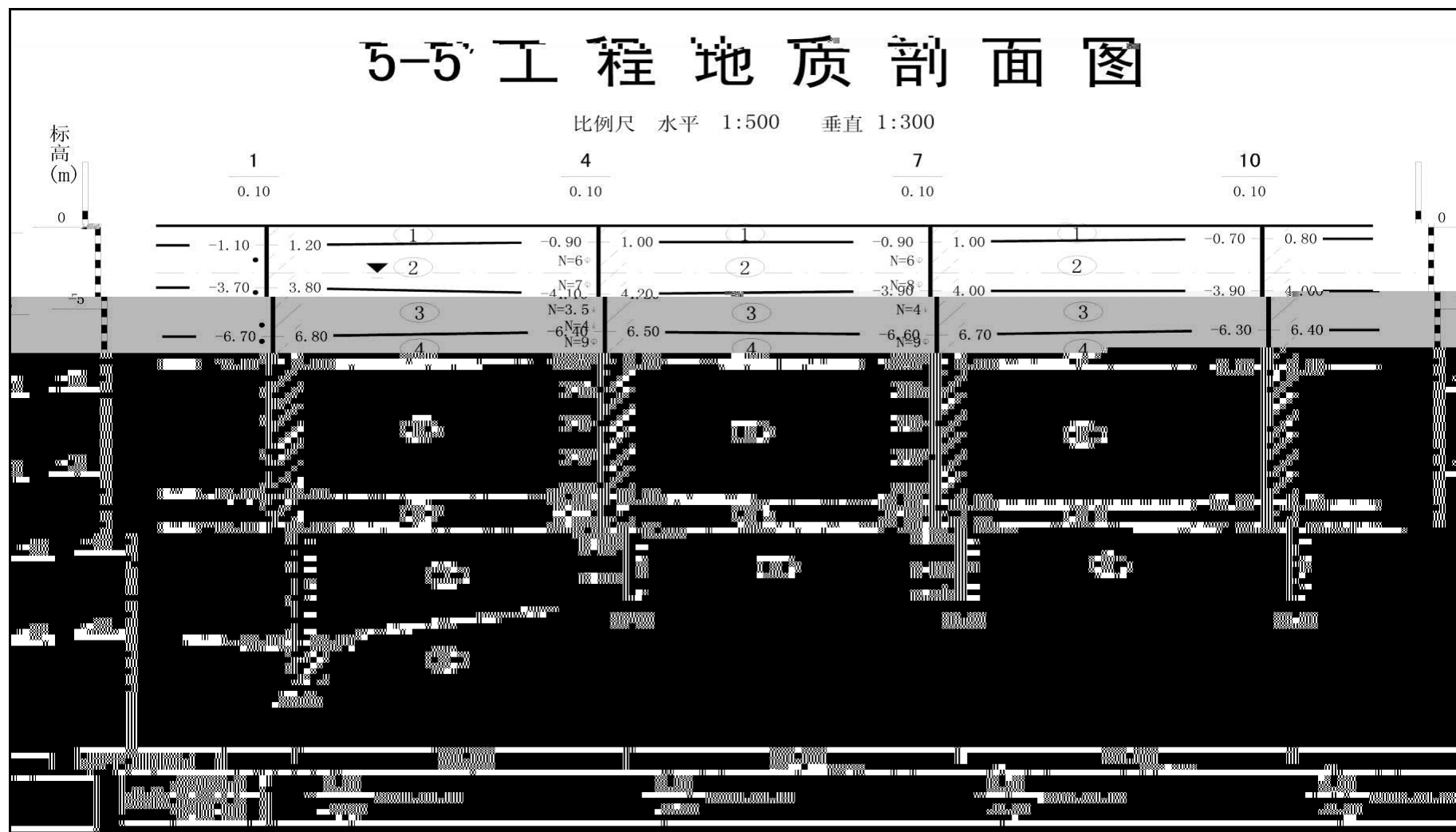
4.5			
6	-17.00~-16.20m	-16.67m	16.30~17.10m 16.77m
		-	1.30~2.50m 1.78m
7	-18.80~-18.20m	-18.44m	18.30~18.90m 18.54m
		6.10~7.10m	6.68m -25.40~-24.70m
8	-25.08m	24.80~25.50m	25.18m
5.4-2~5.4-5			



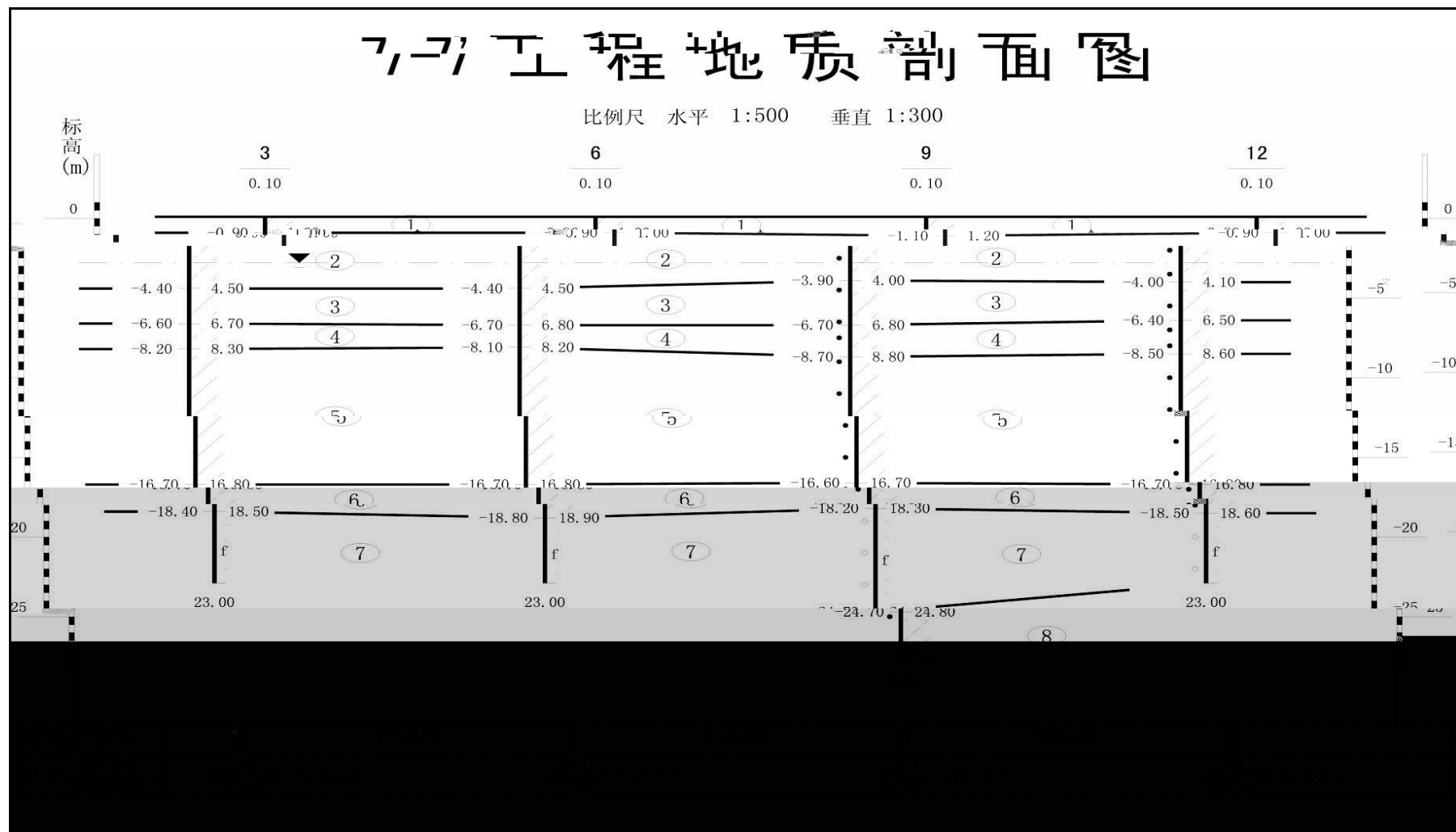
5.4-2

2-2' 工程地质剖面图





5.4-4



5.4-5

5.4.3

5.4.3.1

1

HJ610-2016

HJ610-2016

A

O

119

4.4-1

2

HJ610-2016

4.4-2

4.4.3.2

HJ610-2016

2

4.4-3

	km ²	
	6-20	

1000m

1000m

2000m

6km²

5.4.4

5.4.4.1

1

GB/T31962-2015 1A

2

5.4.4.3

100km²

5.4-6

2km

5.4.4.4

1

2

3

4

6m

 $1.0 \times 10^{-7} \text{ cm/s}$

1.5m

 $1.0 \times 10^{-7} \text{ cm/s}$

5.4-4

5.4-7

5.4-4

		300 C30 600 3:7	6.0m 1.0×10 ⁻⁷ cm/s
		C10 ±0.00 100 20 C35	1.5m 1.0×10 ⁻⁷ cm/s
		3:7 300	--

C30 P8

250mm 150mm

1.0mm

2mm

100m

2

1m

⁻⁷cm/s 2mm ⁻¹⁰cm/s 2mm

1.5m 1×10⁻⁷cm/s

C25 P6

100mm

P6

1.0mm

0.3%

HDPE

4.4.4.5

1

5.4-5

5.4-5

		300mm	400mmC30	P8	
		300mm3:7	200mmC30	P6	6.0m 1.0×10^{-7} cm/s
		2500mm	350mmC30	P8	
		100 C10			
		20		±0.00	1.0×10
			C35		

5.4.4.6

1

5.4-7

5.4-6

5.4-7

	W1	W2	W3	W	
	10 20	11 06	10 20	10 20	
pH ()	7.6 20.7	7.9 19.5	7.8 20.3	7.7 19.8	H
(µg/L)	ND	ND	ND	ND	
(µg/L)	ND	0	ND	ND	500
(mg/L)	0.018	ND	ND	0.046	1
(mg/L)	ND	ND	ND	ND	0.05
(µg/L)	ND	ND	ND	ND	2.0
(Bq/L)	0.054	0.025	0.026	0.050	0.5
(Bq/L)	0.037	0.005	0.006	0.012	1.0
(mg/L)	ND	ND	ND	ND	0.05
(µg/L)	ND	ND	ND	ND	0.01
(mg/L)	849	387	378	1260	450
(mg/L)	0.0013	0.0016	0.0018	0.0010	0.002
(mg/L)	0.82	0.92	0.66	0.53	1.0
(mg/L)	0.379	0.526	0.138	0.046	0.5
(mg/L)	872	257	221	776	250
(µg/L)	ND	0.09	ND	ND	0.001
(NTU)	ND	ND	ND	ND	3
(mg/L)	2750	1930	1260	2530	1000
(µg/L)	ND	ND	ND	ND	700
(mg/L)	ND	ND	ND	ND	
(mg/L)	0.29	0.13	0.27	0.29	
(µg/L)	0.6	3.1	2.0	ND	10
(mg/L)	6.14	0.04	0.18	4.48	20
(mg/L)	ND	ND	ND	ND	0.02
(mg/L)	307	328	250	516	250
(mg/L)	ND	ND	ND	ND	0.08
(mg/L)	2.48	1.80	1.44	1.84	3.0
()	ND	ND	ND	ND	15
(µg/L)	ND	ND	ND	ND	10
(mg/L)	606	662	334	443	200

(µg/L)	4.52	ND	1.40	2.94	300
(µg/L)	0.76	ND	ND	0.12	10
(µg/L)	16.7	53.5	0.44	0.56	1000
(mg/L)	0.048	0.036	0.024	0.044	0.20
(mg/L)	0.014	0.014	0.015	ND	1.00
(µg/L)	79.0	74.5	286	392	100
(µg/L)	0.08	ND	ND	ND	5
(mg/L)	ND	ND	ND	ND	0.3
	， ，	， ，	， ，	， ，	

GB/T14848-2017

5.4.4.7

5.4.5

5.5

80~90dB(A)

5.5.1

5.5-1

5.5-2

5.5-1

dB(A)

					dB(A) 1m	dB(A)
		1			80	55
		1			95	70
		31			95	70
		1			80	55
		1			80	55
		1			85	65
		2			85	60
		1			85	60
		26			85	60
		36			85	60
		6			85	60
		25			90	65
		10			85	60
		50			90	65

		20			85	60
		36			85	60
		20			85	60

5.5-2

		m			
		1#	2#	3#	4#
		370	30	100	390
		310	40	100	325
		335	35	130	370
		365	40	105	380
		365	35	105	385
		360	50	110	370
		310	30	100	330
		330	45	135	365
		125	20	160	305
		30	70	350	300
		30	70	350	300
		40	30	110	330
		50	40	110	320
		35	30	230	270
		75	10	230	230
		10	10	195	200
		20	20	235	275

5.5.2

4

5.5.2.1

HJ2.4-2009

A

$$\begin{array}{ccccccc}
L_A(r) & L_{Aref}(r_0) & (A_{div} & A_{atm} & A_{bar} & A_{gr} & A_{misc}) \\
L_A(r) & & r & A & & dB(A) & \\
L_{Aref}(r_0) & & & r_0 & A & dB(A) & \\
A_{div} & & & & A & dB(A) & \\
A_{atm} & & & & dB(A) & & \\
A_{bar} & & & A & & dB(A) & \\
A_{gr} & & & & dB(A) & & \\
A_{misc} & & & & & dB(A) & \\
i & & & & A & LA_{in,i} & T \\
t_{in,i} & j & & & & A & La_{out,j} & T \\
& & t_{out,j} & & & & & \\
& & N & & M & & & \\
Leq(T) & & in,i 10^{0.1LA_{in,i}} & & out,j 10^{0.1LA_{out,j}} & & & \\
& & i=1 & & j=1 & & & \\
& & T & & N & & M &
\end{array}$$

5.5.2.2

$$\begin{array}{l}
1 \quad A \\
a \quad A_{div}=20Lg(r/r_0) \\
b \quad L_0 \\
\quad r>L_0 \quad r_0>L_0 \quad A_{div}=20Lg(r/r_0) \\
\quad r<L_0/3 \quad r_0<L_0/3 \quad A_{div}=10Lg(r/r_0) \\
\quad L_0/3<r<L_0 \quad L_0/3<r_0<L_0 \quad A_{div}=15Lg(r/r_0) \\
2 \quad A_{atm} \\
3 \quad A_{bar} \\
\quad 0 \quad 10dB(A) \\
5dB(A)
\end{array}$$

4

Agr

5

Amisc

5.5.2.3

5.5-3

5.5-4

4.5-3

1 [#]			36.66	65	-28.34	36.66	55	-10.99
2 [#]			44.01		-20.99	44.01		-21.03
3 [#]			33.97		-31.03	33.97		-30.44
4 [#]			24.56		-40.44	24.56		-13.16
5 [#]			41.84	65	-23.16	41.84	55	-10.85
6 [#]			44.15		-20.85	44.15		-34.16
7 [#]			20.84		-44.16	20.84		-34.98
8 [#]			20.02		-44.98	20.02		-31.52
9 [#]			23.48	60	-36.52	23.48	50	-26.52
10 [#]			25.67		-34.33	25.67		-24.33
11 [#]			22.34		-37.66	22.34		-27.66

4.5-4

dB A

1 [#]			57.4	36.7	36.66	57.47	65	-7.53	47.1	36.7	36.66	47.82	55	-7.18
2 [#]			58.6	42.0	44.01	58.84		-6.16	47.7	42.0	44.01	50.00		-5
3 [#]			57.7	19.5	33.97	57.72		-7.28	47.1	19.5	33.97	47.31		-7.69

4.5											
4 [#]	58.9	19.1	24.56	58.90	-6.1	47.8	19.1	24.56	47.83	-7.17	

4.5

4.6-2

4.6-2

40m

1000m

4

HJ964-2018

4.6-3

4.6-3

									-
								-	-

4.6.1.2

1

HJ964-2018

8.2

1.0km

2

50

3

4

5

$$Is-Ls-Rs \quad / \quad pb \times A \times D$$

g/kg

Is g

17.01g/a

7500g/a

900g/a

73100g/a

Ls g 0

Rs g 0

pb kg/m³ 14896kg/m³A m²200m 4400000m²

D 0.2m

n a

E

Sb g/kg

S g/kg

6

n

5.6-4

5.6-4 1

	mg/kg	S mg/kg	mg/kg	S mg/kg	mg/kg	S mg/kg	mg/kg	S mg/kg
10	1.29763 E-05	1.39263 E-05	5.72149 E-05	5.78649 E-05	0.00068 6578	0.00068 7178	0.05576 5428	

20	2.59527 E-05	2.69027 E-05	0.00011 443	0.00011 508	0.00137 3157	0.00137 3757	0.111530 856	
30	3.8929E -05	3.9879E -05	0.00017 1645	0.00017 2295	0.00205 9735	0.00206 0335	0.16729 6285	
40	5.19053 E-05	5.28553 E-05	0.00022 8859	0.00022 9509	0.00274 6314	0.00274 6914	0.22306 1713	

50

5.6.1.4

5.6-5

5.6-5

			GB15618-2018	1

5.6.1.5

5.6-6

5.6-6

				W	40m
			VOCs	SO ₂	NO _x TSP
					+
			a	b	c d
					4.5-23
				8	2 0~0.2m
				6	0 0~0.5m 0.5~1.5m 1.5~3m
			pH		

			1,1-	1,2-	1,1-
		-1,2-	-1,2-		1,2-
		1,1,1,2-	1,1,2,2-		1,1,1-
		1,1,2-		1,2,3-	
		1,2-	1,4-		+
				2-	[a]
		[b]	[k]	[a h]	[a]
					[1,2,3-cd]

4.5

5.6-7

		--	2	3.5						HW49 (900-041-49)	T/In	
			1t/4a					4		HW08 (900-249-08)	T I	
			2524.7 3.1	1269.8 3.5								

5.6.3

5.6.3.1

5.6.3.2

2021

5.6.3.3

5.6.4

5.6.4.1

GB18599-2020

1

2

$1 \times 10^{-7} \text{ cm/s}$

3

GB1556.2-1995

4

5.6.4.2

1

2

GB18597-2001

2013

a.

b.

c.

d.

1/5

e.

f.

100mm

3

4

5 130t/h 5

2 24MW

SO₂ NO_x

2015

-

VOCs

16cm

1.5km

30m³

24kg

5.7-2

5.7-2

			t/a	t/a		
			31000	885		
			0.218	0.49	800L/	
		-	1/4a	1		
			70	6		
		37%	105	2.54 0.94	3.9m ³ 1	
		20-25%	75	2.84	3.9m ³ 1	
			1.1	0.04		
			656.04 m ³	0.024		
			0.038	4.5 10 ⁻⁶		
			525	0.063		
				6.75 10 ⁻⁶		
				0.003		
				0.0004		
				0.027		
		VOCs		0.646		
			140	4		
			210	2.54 0.94		
		20-25%	150	2.84	3.9m ³ 1	
			2.2	0.06	3.9m ³ 1	
			1312.08 m ³	0.024		

				1.35 10 ⁻⁵		
				0.006		
				0.0008		
				0.054		
		VOCs		0.892		

4.7.2.2

4.7.2.3

MSDS

5.7-3~ 5.7-16

5.7-3

MSDS

					Caprolactam		
	C ₆ H ₁₁ NO		113.18		375		110
	68~70		270		0.67kPa 122		
	=1	1.05(70%)		(kJ/mol)			
	=1						
(vol%)	1.4% 8.0%						
	LD ₅₀ 1155mg/kg() 70g()						
				UN		CAS NO.	105-60-2
					Z01		

5.7-4 - MSDS

	-				Diphenyl and diphenl ether		
							123.9
	12.3		258				
	=1			(kJ/mol)			
	=1						
(vol%)	0.6	121	6.2	160			
	500mg/24h						
				UN		CAS NO.	
					Z01		

5.7-5

MSDS

					m-Dihydroxybenzene		
	C ₆ H ₄ (OH) ₂		110.11		608		127
	110.7		276.8				
	=1	1.28		(kJ/mol)	2847.8		
	=1	3.79					
(vol%)							
	6.1						

5.7-6 MSDS

5.7-7 MSDS

					formaldehyde		
	CH ₂ O		30.03		430		50 (37%)
	-92		-19.4		13.33kPa(-57.3)()		
	=1	0.82		(kJ/mol)	2345		
	=1	1.07			137.2		
(vol%)	7.0 7.3						
	8.3						
	LD50 800mg/kg() 270mg/kg() LC50 590mg/m³()						
				UN	1198	CAS NO.	50-00-0
	83012				O53		8
	15						

5.7-8 MSDS

				Ammonium hydroxide	Ammonia water
	NH4OH		35.05		
				1.59kPa(20)	
	=1	0.91		(kJ/mol)	
	=1			--	
(vol%)					
	8.2				
				UN	2672

5.7-9

MSDS

					Sodiun hydroxide Caustic soda		
	NaOH		40.01		-		-
	318.4		1390		0.13kPa(739)		
	=1	2.12		(kJ/mol)	-		
	=1	-			-		
(vol%)	-						
	-	MAC	2				
	8.2						
	LD50 LC50						
				UN	1823	CAS NO.	1310-73-2
	82001						-
	， ，						
	15 15						
	()						

5.7-10 MSDS

					hydrogen		
	H ₂		2.01		400		
	-259.2		-252.8		13.33 Kpa (-257.9)		
	=1	0.07(-252)		(kJ/mol)		241.0	
	=1	0.07			-240		
(vol%)	4.1 74.1						
	2.1						
	LD ₅₀ LC ₅₀						
				UN	1049	CAS NO.	133-74-0
	21001				052		

5.7-11 MSDS

					Nitrogen		
	N ₂		28.01				
	-209.8		-195.6		1026.42Kpa(-173)		

5.7-12 MSDS

					benzene		
	C ₆ H ₆		78.11		560		-11
	5.5		80.1		13.33kpa 26.1		
	=1	0.88		(kJ/mol)	3264.4		
	=1	2.77			289.5		
	1%)		1.2-8.0				

1%)

5.7-13 MSDS

					Methylbenzene		
	C ₇ H ₈		92.14		535		4
	-94.4		110.6		4.89kPa/30		
	=1	0.87		(kJ/mol)	3905.0		
	=1	3.14			318.6		
(vol%)	1.2-7.0						
	LD ₅₀ 5000mg/kg() LC ₅₀ 12124mg/kg() 71.4g/m ³ 1 8 0.3g/m ³ 8			3g/m ³ 0.2			
				UN	1294	CAS NO.	108-88-3
	32052				O52		

5.7-14

MSDS

					Xylene		
	C ₈ H ₁₀ C ₆ H ₄ (CH ₃) ₂		106.17		528		4
	13.3		138.4		1.16kPa/25		
	=1	0.86		(kJ/mol)			
	=1	3.66			343.1		
(vol%)	1.1-7.0						
	LD501364mg/kg()						
				UN	1307	CAS NO.	106-42-3
	33535				O52		

5.7-15

					Natural gas dehydration		
	CH ₄		16.05		537		-218
	-182.6		-160		53.32kPa(-168.8)		
	=1	0.45()			890.8kJ/mol		
	=1	0.6			-82.25		
	5 15(vol%)						
	2.1						
	-						
				UN	1971	CAS NO.	74-82-8
	21007						
	() () ())						

5.7-16 MSDS

1			-OH 48 20 50% (7 : 3) 10
2	VOCs		VOC VOC

5.7.3

5.7.3.1

$$\begin{aligned}
 &1 \qquad \qquad \qquad P \\
 &1 \qquad \qquad \qquad Q \\
 &\qquad \qquad \qquad B \\
 &\qquad \qquad \qquad Q \\
 &\qquad \qquad \qquad Q \\
 &\qquad \qquad \qquad C.1 \\
 &Q=q_1/Q_1+ q_2/Q_2 \qquad n/Q_n \qquad C.1 \\
 &\qquad \qquad q_1 \quad q_2 \qquad q_n \qquad t \\
 &\qquad \qquad Q_1 \quad Q_2 \qquad Q_n \qquad t
 \end{aligned}$$

Q 1

Q

10

100

(HJ 169-2018)

B

4.7-10

4.7-10

		CAS	t	t	q ₁ /Q ₁	Q
		105-60-2	885	5	177	Q=180. 847 0
		7664-41-7	0.49	5	0.08	
	-	92-52-4	1	2.5	0.4	
		108-46-3	6	5	1.2	
	37%	50-00-0	2.54 0.94	0.5	1.88	
	20-25%	1336-21-6	2.84	10	0.284	
		74-82-8	0.024	10	0.0024	
		71-43-2	6.75 10 ⁻⁶	10	6.75 10 ⁻⁷	
		108-88-3	0.003	10	0.0003	
		1330-20-7	0.0004	10	0.00004	
		108-46-3	4	5	0.8	97 10
		50-00-0	2.54 0.94	0.5	1.88	
	20-25%	1336-21-6	2.84	10	0.284	
		74-82-8	0.024	10	0.0024	
		71-43-2	1.35 10 ⁻⁵	10	1.35 10 ⁻⁶	
		108-88-3	0.006	10	0.0006	
		1330-20-7	0.0008	10	0.00008	

2

M

(HJ 169-2018)C.1

M

M 20

10 M 20

5

M=5

M1 M2 M3 M4

M

4.7-11

4.7-11

M

				/	M
--	--	--	--	---	---

1

2

M				1	5

M=10

M3

M=5

M4

3

P

Q

M

4.7-4

P

P1

P2

P3

P4

4.7-12

P

Q	M			
	M1	M2	M3	M4
	P1	P1	P2	P3
100	P1	P2	P3	P4
10	P2	P3	P4	P4

M3

10

M4

4.7-12

P2

P4

2

E

1

E1

E2

E3

4.7-13

4.7-13

E1	5km 5	200m	500m	1000 200
E2	5km 1	5	500m 200m	500 1000 100
E3	5km 1	500m	500 100	

500m

1000

E1

2

E1

E2

E3

4.7-14

4.7-15

4.7-16

4.7-14

	F1	F2	F3
S1	E1	E1	E2
S2	E1	E2	E3
S3	E1	E2	E3

4.7-15

F1	24h
F2	24h
F3	

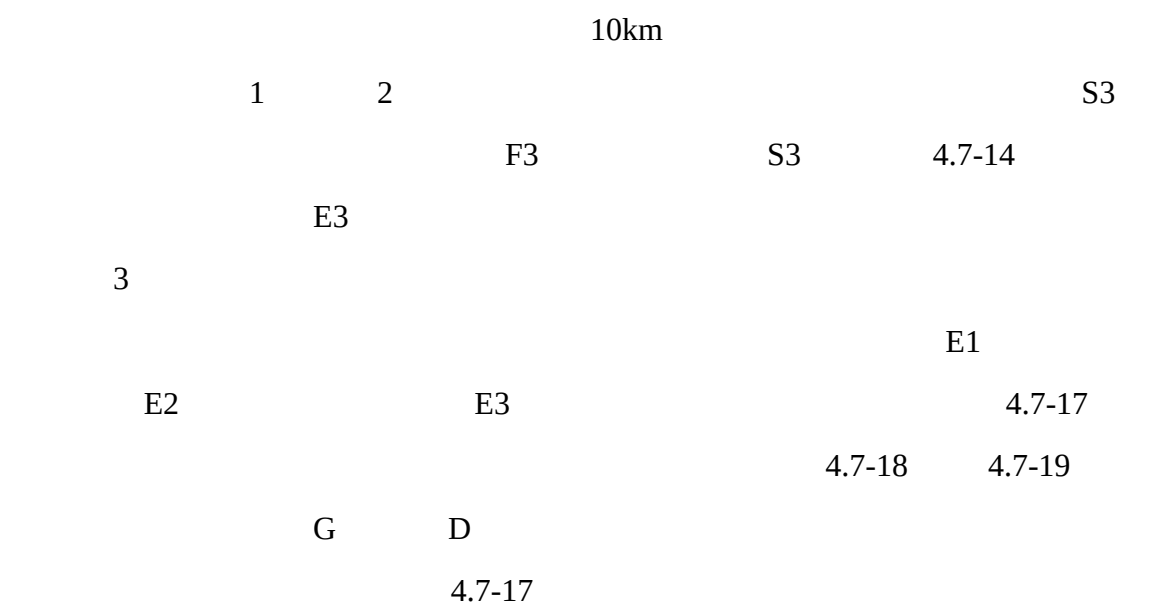
IV

F3

4.7-16

S1	10km

S2	10km
S3	10km 1 2



	G1	G2	G3
D1	E1	E1	E2
D2	E1	E2	E3
D3	E2	E2	E3

4.7-18

G1	
G2	

4.5	
	a
G3	
a	

G3

4.7-19

D3	$\times 10^{-6} \text{cm/s}$
D2	1.0m $\times 10^{-6} \text{cm/s}$ $1.0 \times 10^{-6} \text{cm/s}$ $\times 10^{-4} \text{cm/s}$
D1	
Mb	K

3.1

$3.47 \times 10^{-5} \text{cm/s}$

D2

D2

G3

4.7-9

E3

3

4.7-20

4.7-20

				(m)		
	5km 1.6-1					
	500m					2223
	500m					2412
	5km					144072
	5km					131433
	E					E1
					24h	/km

	1			6.72
	2			
	3			
	E			E3 F3 S3
	1			10 ⁻⁶ 10 ⁻⁴ cm/s
	E			E3 D2 G3

4

/ +

4.7-21

4.7-21

E	P			
	P1	P2	P3	P4
E1	+			
E2				
E3				
+				

P2

P4

E1

E3

5.7.3.2

HJ 169-2018 1

4.7-22

	+			

P2

E1

E3

5km

6km²

1.6-1

1.6-1

1.6-2

5.7.4

HJ 169-2018

/

5.7.4.2

4.7-24

4.7-24

	-			
	VOCs			

5.7.4.3

	-	37%
20-25%		
		-
/		

5.7.4.4

5.7-1

5.7-25

(HJ 169-2018)

E

10

5.7-26

5.7-26

/ /	10mm	$1.00 \times 10^{-4}/a$
/ /	10min	$5.00 \times 10^{-6}/a$
		$5.00 \times 10^{-6}/a$

10%

50mm

1

800L

400kg

 Q_G

$$Q_G = \frac{YC_d A P}{\sqrt{\frac{M}{2\pi} \left(\frac{2}{\gamma - 1} \right)^{\frac{\gamma}{\gamma - 1}}}}$$

 Q_G

kg/s

P

Pa

 C_d

1.00

0.95

0.90

1.00

M

kg/mol

R

J/ mol K

 T_G

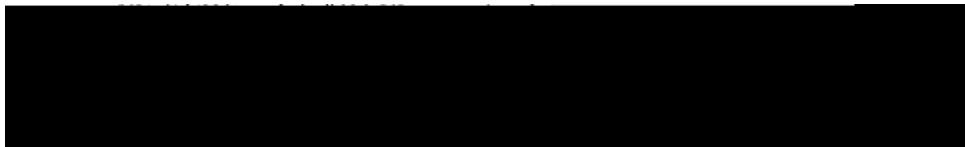
K

A

 m^2

Y

Y=1.0



1.307

15S

5.7-27

5.7-27

	P Pa	C_d	M kg/mol	R J/ mol K	T_G K	A m^2
	1401325	1.00	17	8.3145	298	0.0000785

0.175kg/s

30min

315kg

2

 $3.9m^3$

0.10m

QL

$$Q_L = C_d A \rho \sqrt{\frac{2(P - P_0)}{\rho} + 2gh}$$

Q _L	kg/s
P	Pa
P ₀	Pa
	kg/m ³
g	9.81m/s ²
h	m
C _d	0.65
A	m ²
	30min
	4.7-27
	4.7-27

	P Pa	P ₀ Pa	kg/m ³	h m	A m ²	Q _L kg/s
	101325	101325	815	1.76	0.0000785	0.244

2

HJ/T169-2018

37%

HJ/T169-2018 F.1.4.3

$$Q = \frac{M}{t} \cdot \frac{(2-n)}{(2+n)} \cdot \frac{(4+n)}{(2+n)}$$

Q ₃	kg/s
P	Pa

R 8.314J/ mol K

T₀ 298K

M 0.03kg/mol

u m/s

r m

n 4.7-28

4.7-28

	n	
A B	0.2	3.846×10 ⁻³
D	0.25	4.685×10 ⁻³
E F	0.3	5.285×10 ⁻³

HJ/T169-2018

F 1.5m/s 25 50%

4.7-29

4.7-29

	n		P Pa	u m/s	m ²	r m	min	Q ₃ kg/s
F	0.3	5.285×10 ⁻³	194	1.5	73.5	4.84	30	0.00032

0.00032kg/s

30min

439.2kg

0.576kg

5.7.6.2

1

HJ16-2018

3

1

HJ/T169-2018

F 1.5m/s 25

50% 2020 D 3.18m/s

31.64 65%

2

HJ/T169-2018 H CAS 7664-41-7 1

770mg/m³ 2 110mg/m³ CAS 50-00-0 1

69mg/m³ 2 17mg/m³

3

30min

4

HJ/T169-2018 G

AFTOX

5

F 1.5m/s 25 50%

5.7-30 5.7-2

5.7-3 5.7-4

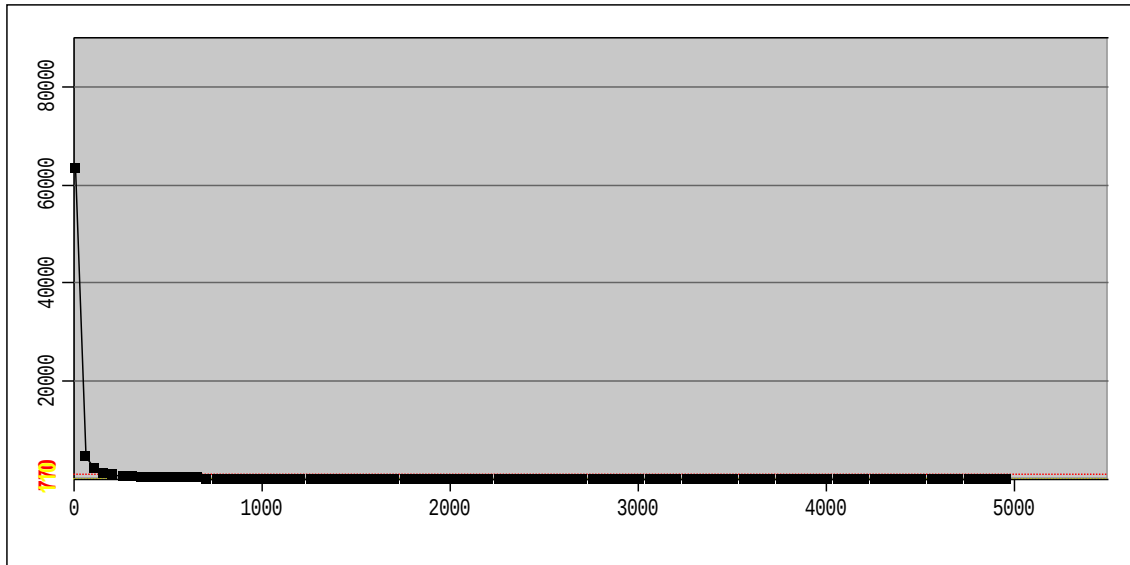
5.7-30

	(m)	min	(mg/m ³)
1	10	0.11	63133.00
2	60	0.67	4533.40
3	110	1.22	2161.50

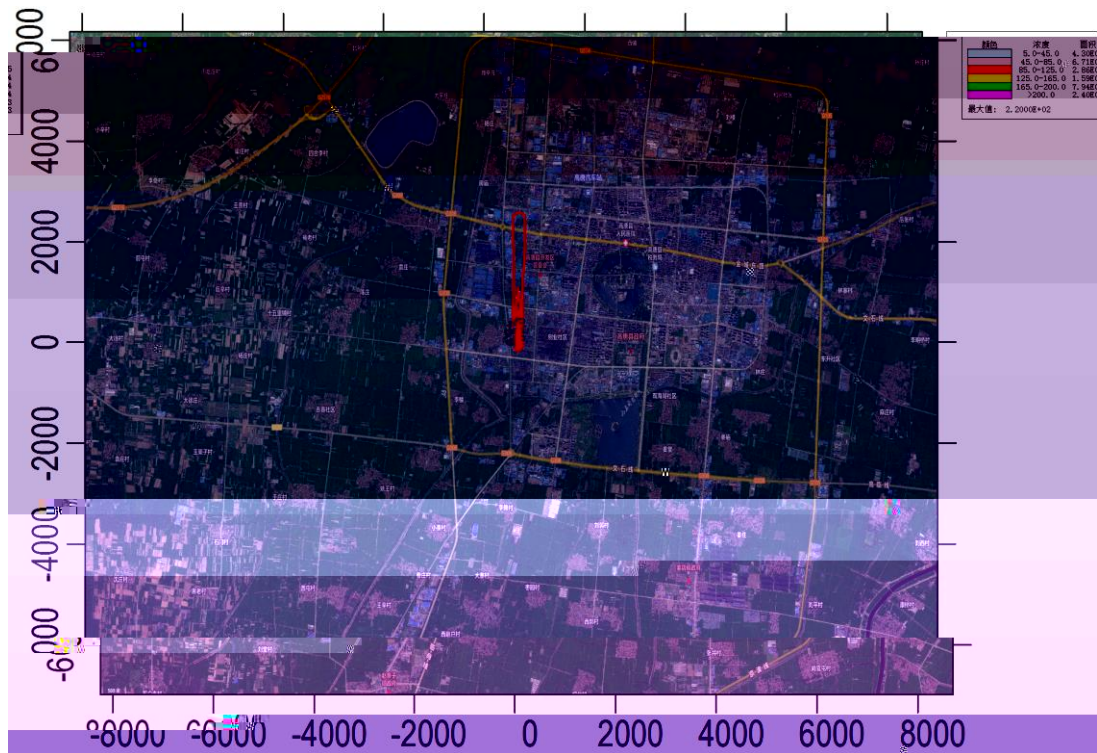
10	460	5.11	273.07
11	510	5.67	231.40
12	560	6.22	198.97
13	610	6.78	173.19
14	660	7.33	152.33
15	710	7.89	135.20
16	760	8.44	120.93
17	810	9.00	108.91
18	860	9.56	98.69
19	910	10.11	89.91
20	960	10.67	82.31
21	1010	11.22	75.69
22	1060	11.78	69.87
23	1110	12.33	64.73
24	1160	12.89	60.17
25	1210	13.44	56.10
26	1260	14.00	52.45
27	1310	14.56	49.17
28	1360	15.11	46.20
29	1410	15.67	43.25
30	1460	16.22	41.30
31	1510	16.78	39.49
32	1560	17.33	37.82
33	1610	17.89	36.27
34	1660	18.44	34.83
35	1710	19.00	33.48
36	1760	19.56	32.23
37	1810	20.11	31.05
38	1860	20.67	29.95
39	1910	21.22	28.91
40	1960	21.78	27.93
41	2010	22.33	27.01
42	2060	22.89	26.15
43	2110	23.44	25.33
44	2160	24.00	24.55
45	2210	24.56	23.81
46	2260	25.11	23.12
47	2310	25.67	22.45
48	2360	26.22	21.82
49	2410	26.78	21.22
50	2460	27.33	20.65
51	2510	27.89	20.11

52	2560	28.44	19.59
53	2610	29.00	19.09
54	2660	29.56	18.61
55	2710	34.11	18.16
56	2760	34.67	17.72
57	2810	35.22	17.30
58	2860	35.78	16.90
59	2910	36.33	16.51
60	2960	36.89	16.14
61	3010	37.44	15.79
62	3060	38.00	15.44
63	3110	38.56	15.11
64	3160	39.11	14.80
65	3210	39.67	14.49
66	3260	40.22	14.20
67	3310	40.78	13.91
68	3360	41.33	13.64
69	3410	41.89	13.37
70	3460	42.44	13.11
71	3510	43.00	12.86
72	3560	43.56	12.62
73	3610	44.11	12.39
74	3660	45.67	12.17
78	3710	46.22	11.95
76	3760	46.78	11.74
77	3810	47.33	11.53
78	3860	47.89	11.33
79	3910	48.44	11.14
80	3960	49.00	10.95

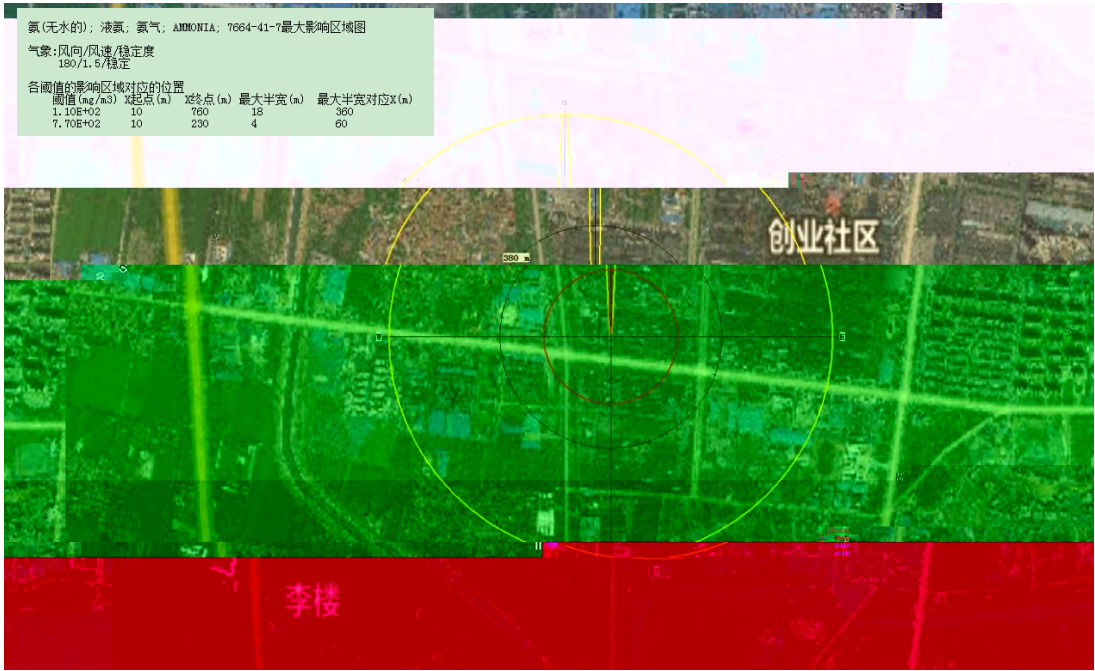
94	4660	57.78	8.82
95	4710	58.33	8.69
96	4760	58.89	8.57
97	4810	59.45	8.45
98	4860	60.00	8.34
99	4910	60.56	8.22
100	4960	61.11	8.11



5.7-2



5.7-3



5.7-4

110mg/m³ 760m 9min
770mg/m³ 230m 3min

2020 D 3.18m/s 31.64
65% 5.7-31

5.7-5

5.7-6

5.7-7

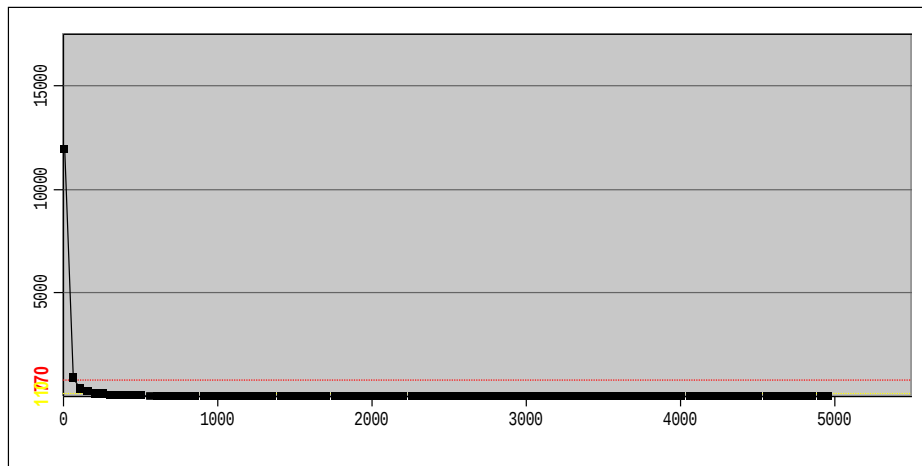
5.7-31 2020

	(m)	min	(mg/m³)
1	10	0.05	11952.00
2	60	0.31	870.90
3	110	0.58	374.41
4	160	0.84	208.96
5	210	1.10	134.25
6	260	1.36	94.12
7	310	1.62	70.00

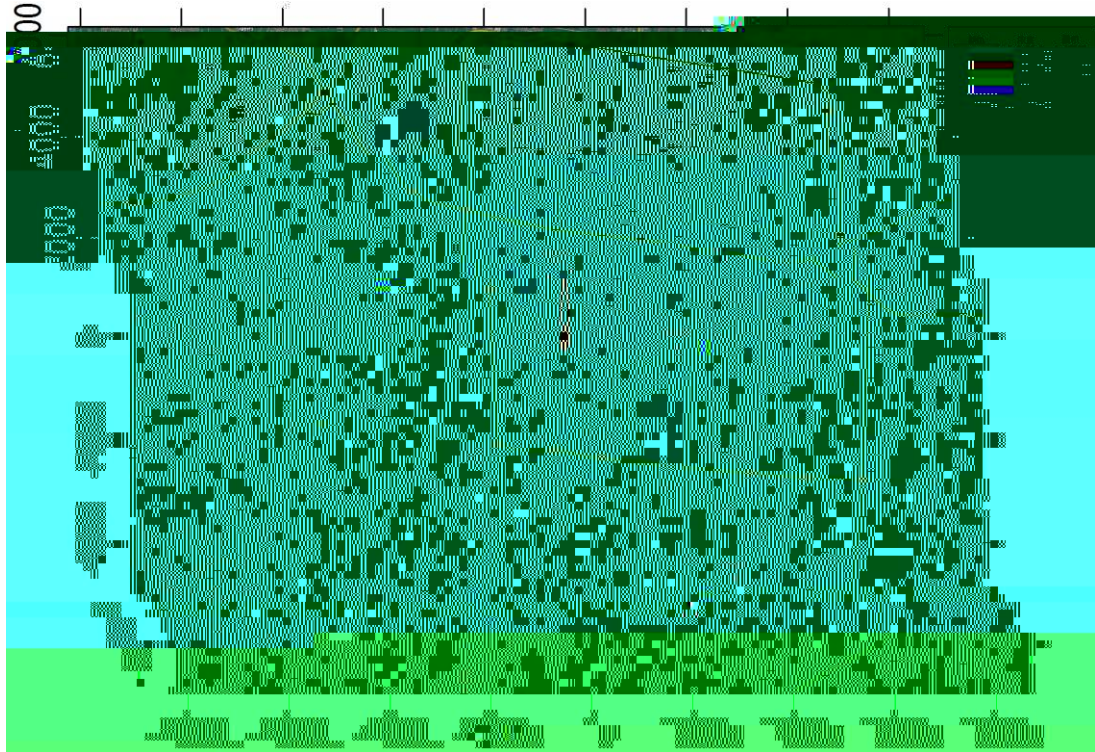
8	360	1.89	54.32
9	410	2.15	43.52
10	460	2.41	35.74
11	510	2.67	29.94
12	560	2.94	25.49
13	610	3.20	22.00
14	660	3.46	19.20
15	710	3.72	16.93
16	760	3.98	15.05
17	810	4.25	13.48
18	860	4.51	12.15
19	910	4.77	11.02
20	960	5.03	10.05
21	1010	5.29	9.20
22	1060	5.56	8.46
23	1110	5.82	7.77
24	1160	6.08	7.28
25	1210	6.34	6.84
26	1260	6.60	6.44
27	1310	6.87	6.08
28	1360	7.13	5.75
29	1410	7.39	5.46
30	1460	7.65	5.18
31	1510	7.91	4.93
32	1560	8.18	4.70
33	1610	8.44	4.48
34	1660	8.70	4.29
35	1710	8.96	4.10
36	1760	9.22	3.93
37	1810	9.49	3.77
38	1860	9.75	3.62
39	1910	10.01	3.48
40	1960	10.27	3.35
41	2010	10.54	3.23
42	2060	10.80	3.12
43	2110	11.06	3.01
44	2160	11.32	2.90
45	2210	11.58	2.81
46	2260	11.85	2.72
47	2310	12.11	2.63
48	2360	12.37	2.55
49	2410	12.63	2.47

50	2460	12.89	2.40
51	2510	13.16	2.33
52	2560	13.42	2.26
53	2610	13.68	2.20
54	2660	13.94	2.14

92	4560	23.90	0.96
93	4610	24.16	0.95
94	4660	24.42	0.93
95	4710	24.69	0.92
96	4760	24.95	0.90
97	4810	25.21	0.89
98	4860	25.47	0.88
99	4910	25.73	0.86
100	4960	26.00	0.85



5.7-5 2020



5.7-6 2020



5.7-7 2020

110mg/m³

230m

2min

770mg/m³

60m

1min

F

1.5m/s

25

50%

5.7-32

5.7-8

5.7-9

5.7-10

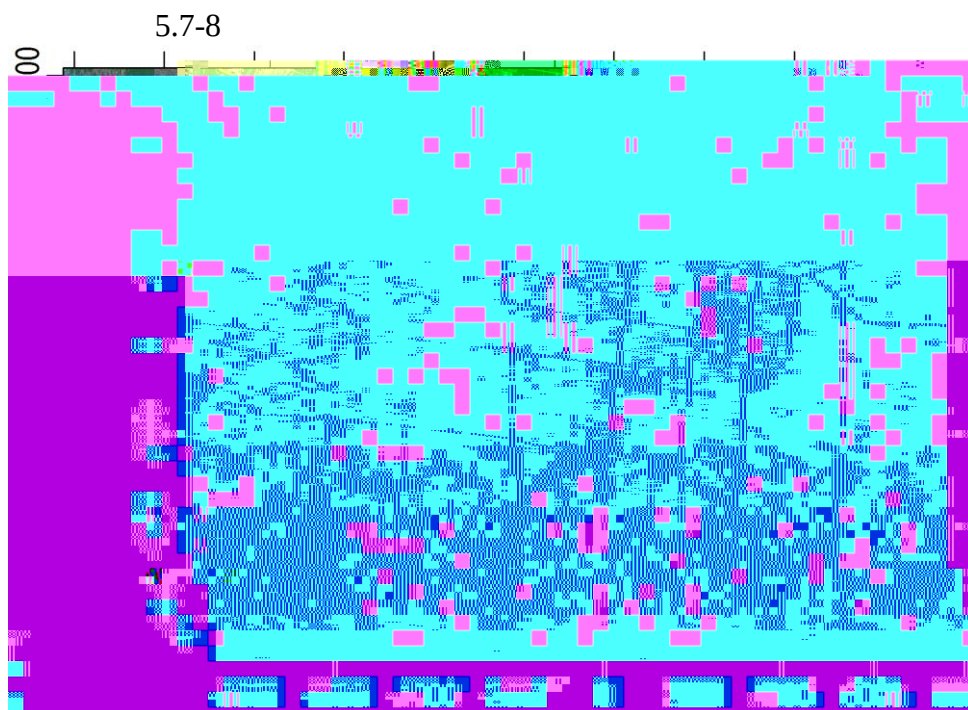
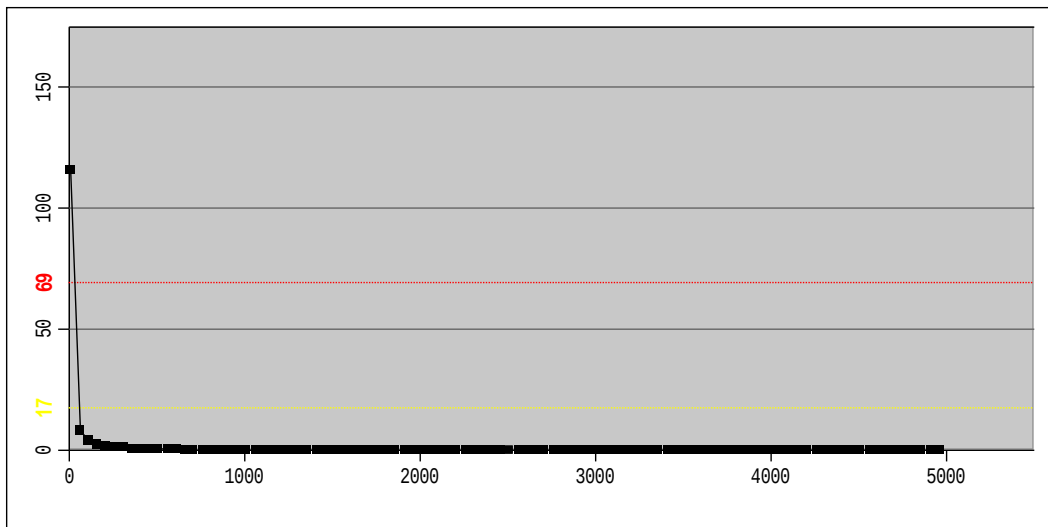
5.7-32

	(m)	min	(mg/m ³)
1	10	0.11	115.44
2	60	0.67	8.29
3	110	1.22	3.95
4	160	1.78	2.43
5	210	2.33	1.66
6	260	2.89	1.21
7	310	3.44	0.93

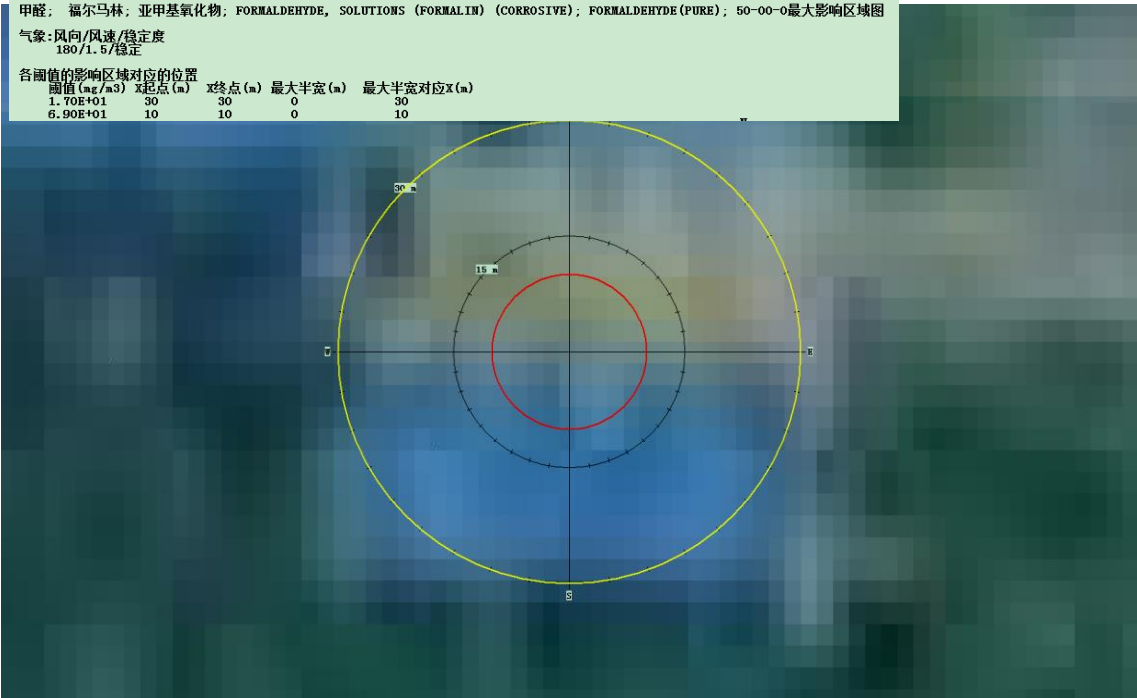
8	360	4.00	0.74
9	410	4.56	0.60
10	460	5.11	0.50
11	510	5.67	0.42
12	560	6.22	0.36
13	610	6.78	0.32
14	660	7.33	0.28
15	710	7.89	0.25
16	760	8.44	0.22
17	810	9.00	0.20
18	860	9.56	0.18
19	910	10.11	0.16
20	960	10.67	0.15
21	1010	11.22	0.14
22	1060	11.78	0.13
23	1110	12.33	0.12
24	1160	12.89	0.11
25	1210	13.44	0.10
26	1260	14.00	0.10
27	1310	14.56	0.09
28	1360	15.11	0.08
29	1410	15.67	0.08
30	1460	16.22	0.08
31	1510	16.78	0.07
32	1560	17.33	0.07
33	1610	17.89	0.07
34	1660	18.44	0.06
35	1710	19.00	0.06
36	1760	19.56	0.06
37	1810	20.11	0.06
38	1860	20.67	0.05
39	1910	21.22	0.05
40	1960	21.78	0.05
41	2010	22.33	0.05
42	2060	22.89	0.05
43	2110	23.44	0.05
44	2160	24.00	0.04
45	2210	24.56	0.04
46	2260	25.11	0.04
47	2310	25.67	0.04

50	2460	27.33	0.04
51	2510	27.89	0.04
52	2560	28.44	0.04
53	2610	29.00	0.03
54	2660	29.56	0.03
55	2710	34.11	0.03
56	2760	34.67	0.03
57	2810	35.22	0.03
58	2860	35.78	0.03
59	2910	36.33	0.03
60	2960	36.89	0.03
61	3010	37.44	0.03
62	3060	38.00	0.03
63	3110	38.56	0.03
64	3160	39.11	0.03
65	3210	39.67	0.03
66	3260	40.22	0.03
67	3310	40.78	0.03
68	3360	41.33	0.02
69	3410	41.89	0.02
70	3460	42.44	0.02
71	3510	43.00	0.02
72	3560	43.56	0.02
73	3610	44.11	0.02
74	3660	45.67	0.02
78	3710	46.22	0.02
76	3760	46.78	0.02
77	3810	47.33	0.02
78	3860	47.89	0.02
79	3910	48.44	0.02
80	3960	49.00	0.02
81	4010	49.56	0.02
82	4060	50.11	0.02
83	4110	50.67	0.02
84	4160	51.22	0.02
85	4210	51.78	0.02
86	4260	52.33	0.02
87	4310	52.89	0.02
88	4360	53.44	0.02
89	4410	54.00	0.02
90	4460	54.56	0.02
91	4510	55.11	0.02

92	4560	55.67	0.02
93	4610	56.22	0.02
94	4660	57.78	0.02
95	4710	58.33	0.02
96	4760	58.89	0.02
97	4810	59.45	0.02
98	4860	60.00	0.02
99	4910	60.56	0.02
100	4960	61.11	0.01



5.7-9



5.7-10

	17mg/m ³	30m	0.5min
69mg/m ³	10m	0.5min	

5.7-33

5.7-33

	10%				
		/	25	/Mpa	1.4
		/kg	400	/mm	10
/kg/s	0.175	/min	30	/kg	315
/m	1.2	/kg	315		4.0×10 ⁻⁵ /h
			mg/m ³	/m	/min

		-1	110	760	9
		-2	770	230	3
			/min	/min	/mg/m ³
			0.11	9	63133.00
		5	25		

1

HJ2.3-2018 E E.2.1

$$C = \frac{C_p Q_p + C_h Q_h}{Q_p + Q_h}$$

C mg/L
C_p mg/L
Q_p m³/s
C_h mg/L
Q_h m³/s

2

3

5.7-34 2022 1 20-23

5.9-24

		m ³ /h	mg/L	CODcr mg/L
1		1.857	2.5	190
2		0.06	0.025	23.3

4

2.42mg/L

pH COD SS

5.7-35

		/	25	/Mpa	0.101325	
	CODcr	/kg	0.0023 CODcr 0.176	/mm		
/ kg/s	0.000077 CODcr 0.00588	/min	30	/kg	0.0023 CODcr 0.176	
/m	0	/kg	/		1.00×10 ⁻⁴ /a	
	CODcr		/m		/h	
			12680		745882	
			/h	/h	/h	/
		/	/	/	/	/

5.7.7

5.7.7.1

1

1

2

RTO

2

1

2

3

4

5

5.7.7.2

1

1

2

3

2

2.1m×2m×2m

17.5m×4.2m×1.2m

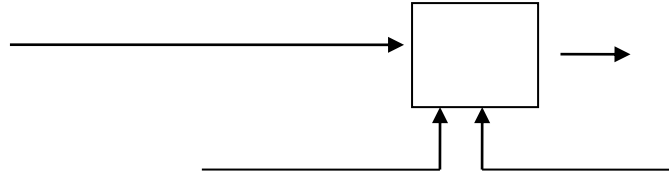
760m³300m³

19m 8m 5m

$$\begin{aligned}
 V &= V_1 + V_2 + V_{\max} - V_3 \\
 V_1 + V_2 + V_{\max} &= 3.9\text{m}^3 + 180\text{m}^3 + 25\text{L/s} \times 2 \\
 V_1 &= 3.9\text{m}^3 \\
 V_2 &= 180\text{m}^3 \\
 V_3 &= 88.2\text{m}^3 \\
 V &= 10qF \\
 q &= \frac{q_a}{n} \quad q_a = 508.8\text{mm} \quad n = 8.48\text{mm} \\
 F &= 3.6276\text{hm}^2 \\
 V_5 &= 307.62\text{m}^3 \\
 V &= 3.9 + 180 - 88.2 + 307.62 = 403.32\text{m}^3 \\
 V &= 3.9 + 180 - 88.2 + 111.66 = 207.36\text{m}^3
 \end{aligned}$$

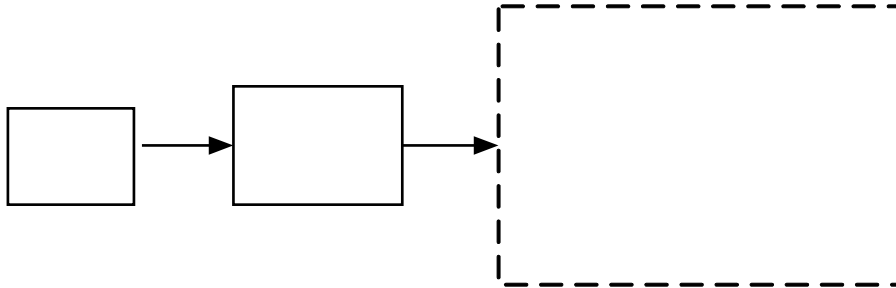
230m³

5.7-11



5.7-11

5.7-12



5.7-12

5.7.7.3

-

VOCs

1

2

-

()

3

4

5.7.7.4

1

2

3

4

5

6

7

8

5.7.7.5

1

2

3

5.7.7.6

1

2

3

4

5

5.7-33

5.7-33

--	--	--	--

1

2

1

5

		230m ³
3		
4		
5		
6		760m ³ / 230m ³

5.7.8

4.7.8.1

2020 12 30

371526-2021-004-L

4.7.8.2

1

4.7-31

4.7-31

	200m 500m 1000m 1500m 2000m	NO _x SO ₂ VOCs
	2	

pH BOD₅

COD SS

2

5.7-32

5.7-32

	pH BOD ₅ COD SS

2

3

(5)

5.7.9

-

VOCs

5.7-33

5.7-33

					-		37%

/t

885

0.49

1

6

2.54

5.7-33	

6.1

6.1.1

26477.5t/a COD_{Cr}

5.31t/a 0.29t/a

6.1.2

6.1.2.1

1000m³/d + + +

2.2-16

24664.5m³/a 70.47m³/d

1956m³/d 2500m³/d 544m³/d

70.47m³/d

GB/T31962-2015 1A

		GB18918-2002	A	
		26477.5m ³ /a	COD _{Cr}	0.51t/a
0.007t/a				
6.1.3				
		10		100000
0.01%				
6.2				
6.2.1				
30m	P1-1			
30m	P1-2			
		RTO	43	P1-3 P2-1 P2-2

6.2.2

20~25

RTO

VOCs

RTO

99%

RTO

VOCs

10a

95%

VOCs

RTO

VOCs

RTO

GB16297-1996

2

DB37/2376-2019

1

<

>

[2019]39

GB31572-2015

5

6

DB37/801.6-2018

1

GB14554-93

2

RTO

HJ1093-2020

6.1-1

6.1-1 RTO

HJ1093

	HJ1093			
6.1		105%	105%	
		95%	RTO 98% 90%	
		98%	RTO 95%	
		90%		
		GB50051	0.8m 43m	
6.2			RTO	
6.3			DN200 RTO	
		760	RTO 760 750 850	
6.4				
6.5			RTO	
		25%		

6.2.3

500

45000

1.11%

6.4

6.4.1

-

6.4.2

6.4.2.1

6.4.2.2

2021

HW08

900-249-08

FDY

HW49

900-041-49

6.4.3

6.5

6.5-1

6.5-1

“ ”

		1 30m P1-1	GB16297-1996 2 2 DB37/2376-2013 VOCs 6 DB37/801.6-2018 1	
		30m P1-2	VOCs 6 DB37/801.6-2018 1	

		P1-3 P2-1 P2-2	6 DB37/801.6-2018 1 GB14554-93 2 41kg/h	
			GB16297-1996 2 GB14554-93 1 VOCs 6 DB37/801.6-2018 3 GB14554-1993 1	

GB/T31962-2015 1A

				1m L _{Aeq} (A) 65dB(A) 55dB(A)

6.6

7 环境影响经济损益分析

7.1 经济效益分析

7.1-1

表 7.1-1 工程主要经济指标一览表

			45000
		/	132750
		/	114272.08
		/	15000.83
		/	3750.21
		/	11250.62
		%	33.34
		%	25.49
			31592.78
			3.9
		%	31.97

25.49%

3.9

9.0

31.97%

7.2 环保投资及效益分析

7.2.1

772

45000

1.72%

7.2-1

表 7.2-1 工程环保投资估算表

1			2	20		
2			4	20		
			6	90		
			2	30		
			2	40		

		RTO	3	500		
			5	30		
3				20		
4				2		
5				20		
				772		

7.2.2

7.3 社会效益分析

2

1

2

a

b

c

d

a

b

c

d

8.2

8.2-1

8.2-1

								t/a		
		VOCs		30m P1-1	2.8mg/m³	GB16297-1996 2	0.672t/a	--	30m	
					VOCs 3.2 mg/m³	DB37/2376-2013 2 6 DB37/801.6-2018 1	0.816t/a			
		VOCs		30m P1-2	3.5mg/m³	GB16297-1996 2	0.882t/a	--	30m	
					VOCs 1.3mg/m³	DB37/2376-2013 2 6 DB37/801.6-2018 1	0.326t/a			
					4.8 mg/m³	GB16297-1996 2	1.2095t/a	--	43m	
SO₂ NOx VOCs +RTO										

					VOCs 1.5 mg/m ³	DB37/2376-2013 2	VOCs 0.375t/a			
					1.55mg/m ³	GB31572-2015 5	0.3898t/a			
					0.18mg/m ³		0.0454t/a			
				RTO 43 P1-3 P2-1 P2-2 3	0.09mg/m ³	6 DB37/801.6-2018 1	0.0227t/a			
					0.00002mg/m ³	GB14554-93 2	5.67 × 10 ⁻⁶ t/a			
					0.01mg/m ³		0.0025t/a			
					0.0013mg/m ³		0.0003t/a			
	VOCs	--	--	--	--	GB16297-1996 2	1.2481t/a VOCs			VOCs
						GB14554-1993 1	0.603t/a			
						VOCs 6	0.433t/a			SO ₂
						DB37/801.6-2018 3	0.05t/a 0.025t/a			NO _x
							0.0063kg/a			

							0.003t/a 0.0003t/a 0.1942t/a VOCs 0.832t/a 0.866t/a 0.1t/a 0.05t/a 0.0126kg/a 0.006t/a 0.0006t/a			
		pH COD _{Cr} NH ₃ -N								
		pH COD _{Cr} NH ₃ -N								
		pH COD _{Cr} NH ₃ -N SS			COD _{Cr} 50mg/L 5mg/L	GB/T31962-2015 1A	COD _{Cr} 0.51t/a 0.26t/a	--		

pH COD_{Cr}
NH₃-N

8.3

8.3.1

HJ 1102-2020

HJ 1139-2020

()

8.3-1

8.3-1

	P1-1	VOCs		
	P1-2			
		VOCs		
	P1-3	VOCs		
		SO ₂ NO _x		
		VOCs		
	P2-1 P2-2	SO ₂ NO _x		
		pH COD _{Cr}		
		BOD ₅ SS		
		A		
		pH		

--	--	--	--	--

8.3-2

8.3-2

			pH	
			+	
			pH	
			+	

8.3.2

8.3-2

8.3-2

1		JDC-109	1
2		GC-14C	1
3		GC-2010	1
4		AA7002	1
5	COD	JH-12	1
6		PHS-3C	1
7	COD	--	2
8		HS5660A	1
9		2020	1
10		DIS30	1
11		--	1
12		--	1
13		--	

8.4

8.4.1

1

2

3

8.4.2

1

[1996]470

2

DB37/T 2463-2014

3

DB37/T3535-2019

0.5m

≥ 1.2m

100mm × 2mm

≥ 100mm

≤ 10mm

4

8.4.3

1

600mm

300mm

2m

2

GB15562.1

[2003]95

3

**

4

8.5

8.5.1

8.5.1.1

“ ”

“ ”

8.5.1.2

“ ” “ ”

SO₂ NO_x
COD NH₃-N

8.5.2

26477.5m³/a COD_{Cr} 0.51t/a
0.007t/a COD_{Cr}

COD _{Cr}							
1.787t/a				2018			
45000t/a				6	/	VOCs	
2018				6	20	21	
				-	/	-	HJ 734-2014
45000t/a				6	/		
C2821				2018 10			
23					6	DB 37/	
2801.6-2018	VOCs				HJ 38-2017		
VOCs							
HJ 38-2017							
				6			
DB 37/ 2801.6-2018							
VOCs				45000t/a			
6	/	20500t/a				6	
VOCs		4.43t/a	20000t/a				
VOCs				4.322t/a			
VOCs							
8.5-1							
8.5-1							
	VOCs						VOCs
	t/a	t/a	t/a	kg/a	kg/a	kg/a	t/a

45000t/a 6 /	8.897	0.137	0.36	0.078	36.70	4.99	9.436
	0.15	—	—	—	—	—	0.15
	7.638	—	—	—	0.27	—	7.638
	—	—	—	—	—	—	4.322
	16.685	0.137	0.36	0.078	36.97	4.99	21.546

VOCs 2.267t/a
 0.1392t/a 0.0731t/a 0.01701kg/a 7.5kg/a
 0.9kg/a SO₂ 3.936t/a NO_x 16.179t/a
 5.1825t/a
 VOCs
 2.4877t/a
 VOCs24.0337t/a SO₂ 3.936t/a
 NO_x 16.179t/a 5.1825t/a

[2019]132

9

9.1

9.1.1

2019

29

		28%	RTO
		90%	
		14%	
		PM _{2.5}	
		48ug/m ³	
		70%	GB3838-2002
		2020	
		92%	
			GB3096-2008
			3

	1	316	322 20m	SO ₂ NO _x RTO
		-		
	2	VOCs	(	
	3		)	
	4			
	5			
	2			VOCs VOCs +RTO
	4			

		VOCs	
		VOCs	
	6	VOCs	
	10		
	11		
	1		
	+		
	2		

		36575-2018 4	
		5	

9.1.3

2021 58

9.1-2

9.1-2

	2019	2019	

		VOCs SO ₂ NO _x	

9.1.4

9.1-3

9.1-3

9.1.5

2021 2023

9.1-4

9.1-4

[2021]3	
---------	--

	2023 39600 4400 6% 5	
	2023 10% 150 150 2021 150 2023 90%	

2023

[2021]65

9.1-5

	VOCs VOCs 0.3m/s	VOCs VOCs 0.3m/s
	VOCs VOCs VOCs 800mg/g	VOCs RTO

--	--	--

9.1.7

2021 2025

[2021]30

2021 2025

[2021]30

9.1-6

9.1-6

2021 2025

[2021]30

	2021 2025	
	8	
VOCs	VOCs VOCs 2025 30 20% 2021 VOCs 2025 2022 2025 80% LDAR LDAR O ₃ 2023 LDAR	VOCs VOCs VOCs VOCs VOC RTO
	2023	

NOx		
-----	--	--

2021 2025

[2021]30

9.2

9.2.1

2003-2020

9.2.2

2003-2020

9.2.3

100m

40m

9.2.4

9.2.5

9.2.6

1

2

3

2

4

9.3

10

10.1

10.1.1

三

4.5

万

万

万

45000

1

1

6

万上3

t

6

万

4.5

t

10.1.2

万

产

万

三

10.1.3

万

100m

万

40m

10.1.3

万

万

万

45000t/a

6

/

上

代

万

10.1.4.1

三	4.5	万			
	GB16297-1996	2			
三			DB37/2376-2013		
			GB14554-93	2	
	VOCs				
三			6		万
DB37/801.6-2018	1				
万	GB31572-2015	5			
			GB16297-1996	2	
			GB16297-1996	2	
			GB14554-93		
1			VOCs		
三			6		万
DB37/801.6-2018	3				
10.1.4.2					
			万		
			万		
			GB/T31962-2015	1A	
10.1.4.3					
10.1.4.4					
			万		万
万	GB12348-2008	3			
10.1.5					
10.1.5.1					

上

上

[illegible]

	万		万	
GB14554-93	1			
		GB16297-1996	2	
	VOCs		三	
6		万	DB37/801.6-2018	3

10.1.5.2

			万	
			26477.5m ³ /a	COD _{Cr}
	0.78t/a	0.214t/a		
		26477.5 m ³ /a		COD _{Cr}
19.4mg/L	0.253mg/L		0.51t/a	0.23t/a

10.1.5.3

				上
上	万	万	代	

10.1.5.4

10.1.6

10.1.6.1

令

令

PM₁₀ SO₂ NO₂ CO

GB3095-2012

PM₁₀ PM_{2.5} O₃

GB3095-2012

PM₁₀ PM_{2.5}

万

令

(HJ2.2-2018)

D TSP

GB3095-2012

p244

10.1.6.2

1# 2#

GB3838-2002

GB3838-2002

GB18918-2002

A

GB3838-2002

10.1.6.3

5

GB/T14848-2017

10.1.6.4

万 万

GB12348-2008 3

GB3096-2008 2

10.1.7

10.1.7.1

令

10.1.7.2

万

26477.5m³/a

COD_{Cr} 0.78t/a 0.214t/a

26477.5 m³/a

COD_{Cr}

19.4mg/L 0.253mg/L

0.51t/a 0.23t/a

10.1.7.3

10.1.7.4

万 万

GB12348-2008 3

GB3096-2008 3

10.1.7.5

10.1.8

10.1.9

万

COD_{Cr}

COD_{Cr}

VOCs

VOCs

21.546t/a

VOCs

2.4877t/a

VOCs

24.0337t/a

SO₂

3.936t/a

NOx

16.179t/a

5.1825t/a

三

[2019]132

2

10.1.10

令

10.1.11

令

202214

2022141

三

2022515525

三

202252023

10.1.12

代

10.1.13

三

4.5

万

万

10.2

10.2.1

10.2-1

10.2-1

	上 上	30m P1-1	GB16297-1996 2 三 DB37/2376-2013 2 VOCs 6 万 DB37/801.6-2018 1
		30m P1-2	GB16297-1996 2 三 DB37/2376-2013 2 VOCs 6 万 DB37/801.6-2018 1

			GB12348-2008 3 4	

10.2.2

- 1
- 2万
- 令
- 3
- 4万
- 5
- 令万
- 万