

山东朗格环保工程有限公司

Shandong Lange Environmental Protection Engineering Co., Ltd

1

1.1

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 1996 10 2021 12 24

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 [2015]162 2015 12 10

20 [2016]45 2016 4 15

21 [2016]31 2016 5 28

22 [2016]150 2016 10 26

23 [2016]81 2016 11 10

24 42 2016 12 31

25 2017 2 7

26 682 2017 10 1

27 [2017]84 2017 11 14

28 《关于京津冀大气污染传输通道城市执行大气污染物特别排放限值的公告》（环保部公告2018年第9号）；

29 [2018] 48 2018 1 10

30 [2018]11 2018 1 25

31 [2018]266 2018 5 10

32 [2018]17 2018 6 16

33 4 2019 1 1

34 2019 4
2018 2019 1 23

35 2019 8 <
2019 > 2019 2 27

36 [2019]17 < >
2019 3 1

37 [2019]25 2019
3 28

38 [2019]56 < >
2019 7 9

39 2019 28
2019 7 23

40 环办固体函[2019]719号《关于开展危险废物专项治理工作的通知》（2019年9月2日）；

41 [2019]92
2019 10 15

42 29 2019 2019
10 30

43 [2020]463 <
2021 2023 >< 2021 >
2020 9 1

44 环办土壤[2020]23号《关于加强土壤污染防治项目管理的通知》（2020年9月8日）；

45 16 2021
1 1

46 [2020]688 <
> 2020 12 13

47 736 2021 1 24

48 [2021]969

2021 7 1

49 [2021]65

2021 8 4

50 [2021]635

2021 8 16

51 [2021]20 <

> 2021 9 1

52 [2021]104 <2021-2022

> 2021 10 28

53 [2021]1524 <

> 2021 10 29

54 [2021]495 < 2021 >

2021 11 2

55 2021

11 2

56 [2021]108

2021 11 19

57 748 2021 12 1

58 23

2021 11 30

59 [2021]26

2021 12 21

60 [2021]120

2021 12 29

61 2021 82 <

> 2021 12 30

62 [2022]17 2022

3 3

63 [2022]26 <

> 2022 4 1

1.1.2

1 [2015]249

2015 12 10

2 [2015]259

2015 12 18

3 [2015]31

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

2020 4 7

34 [2020]50

2020 4 20

35 [2020]83

2020 6 19

36 [2020]29

2020 6 22

37 [2020]48

2020 11 6

38 2020 11 27

39

2020 11 27

40 [2021]58

2021-2025

2021-2025 2021-2025

2021 8 22

46 [2021]12

2021 8 22

47 [2021]3 <

2021-2023 > 2021 10 26

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

13

13

14 2 130t/h

[2002]85 14

15 5

15

16 5

16

17 2 24MW

17

18 2 24MW

18

19

19

20

20

21 1-2

21

22

22

23

23

24 3 130t/h

24

25 5 130t/h

25

26 5 130t/h

26

27

27

28

28

29 29

30 30

31 31

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

1.4

1.4.1

1.4-1~ 1.4-7

1.4-1

	GB3095-2012	
	HJ2.2-2018	D
	GB3838-2002	
	GB5084-2021	1
	GB/T14848-2017	
	GB3096-2008	2 3
	GB36600-2018	1 2
	GB15618-2018	1

1.4-2 mg/m^3

	10mg/L	0.3mg/L	1.0mg/L	2.0mg/L	0.02mg/L	0.1mg/L
	0.001mg/L	0.005mg/L	0.05mg/L	0.05mg/L	10mg/L	250mg/L
	1.5mg/L	0.2mg/L	250mg/L	0.01mg/L	0.5mg/L	20000 /L
	0.5mg/L	0.9mg/L	0.01mg/L	0.7mg/L	0.5mg/L	

1.4-4

mg/L pH MPN/100mL CFU/mL

	pH						
	6.5~8.5	450	0.50	250	250	1.00	20.0
	1000	3.0	1.0	0.02	0.002	3.0	100
	0.005	0.1	0.3	0.01	0.01	0.001	0.05
	0.05	0.20	1.00	1.00	0.01	0.7	0.5
		Ca^{2+}	Mg^{2+}	CO_3^{2-}	HCO_3^-	K^+	
	0.3	--	--	--	--	--	200

1.4-5 dB A

2	60	50
3	65	55

1.4-6 mg/kg

	65
	5.7
	18000
	800
	38
	900
	2.8
	0.9
	37

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	2
	[redacted]	

7		50	/	/	DB37/2376-2019 1 [2019]39 GB16297-1996 2
8	SO_2	50	/	/	
9		10	30	23	
			35	31	
			36	32.6	
			38	35.8	
10		/	27	20	GB14554-93 2

1.4-9

		mg/m^3	
1		1.0	GB16297-1996 2
2		0.2	
3		0.08	
4	VOCs	2.0	6 DB37/801.6-2018 3
5		0.1	
6		0.2	
7		0.2	
8		1.5	GB14554-93

1.4-10 mg/L

		GB/T31962-2015 1A	
1	pH	6.5~9.5	6.5~9.5
2	COD	500	300
3	BOD_5	350	150
4		45	20
5	TN	70	
6		--	1600
7		5	

1.4-11

	dB A	dB A	
	70	55	GB12523-2011
	65	55	GB12348-2008 3

1.4-12

	GB18599-2020
	GB18597-2001 2013

1.5

1.5-1

1.5-1

			一级
		Pmax=20.37% 10%	
		123.46m^3/d	B
		3	

	500m 2000m
	1000m 1000m 2000m 6km^2
	200m
	50m

2

2.1

1993 5 18

2003 ISO9001

500 2016 360 19 146 2016 500 372 500 60 100 38 50 1

2.1-1

2.1-1

2.1-1

“√”

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	1 55		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	2018-371526-44-03-044625	[2018]208 2018.12.21	2018.12	2018.12	2019 3		√
11		170	EPS 20	2019-371526-50-03-002920	[2019]24 2019.04.25	2019.4	2020.3	2020.4		——

8 4500 /

f

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	2017-371526-30-03-072538	[2018]207 2018 12 21	2018.12	2018.12	2019 3 16		√
14		185	50		201737152600000255	-				

				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 [2011]174	2010.2	2011.7	2019 8 27		**2011** √
23	15				[2014]37	2014.8				**2015** √
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	2020-371526-41-03-001799	[2020]3					——

28	20	987	20	2020-371526-41-03-135626	[2020]212			——

2.2

2.2.1

4.5

2.2-1

45000t/a 6 /

2.1-1

91371526168212752800 5U

91371526168212752800 1P

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	--

		50	--
		1500	--
		450	--

2.2.3

2.2-2

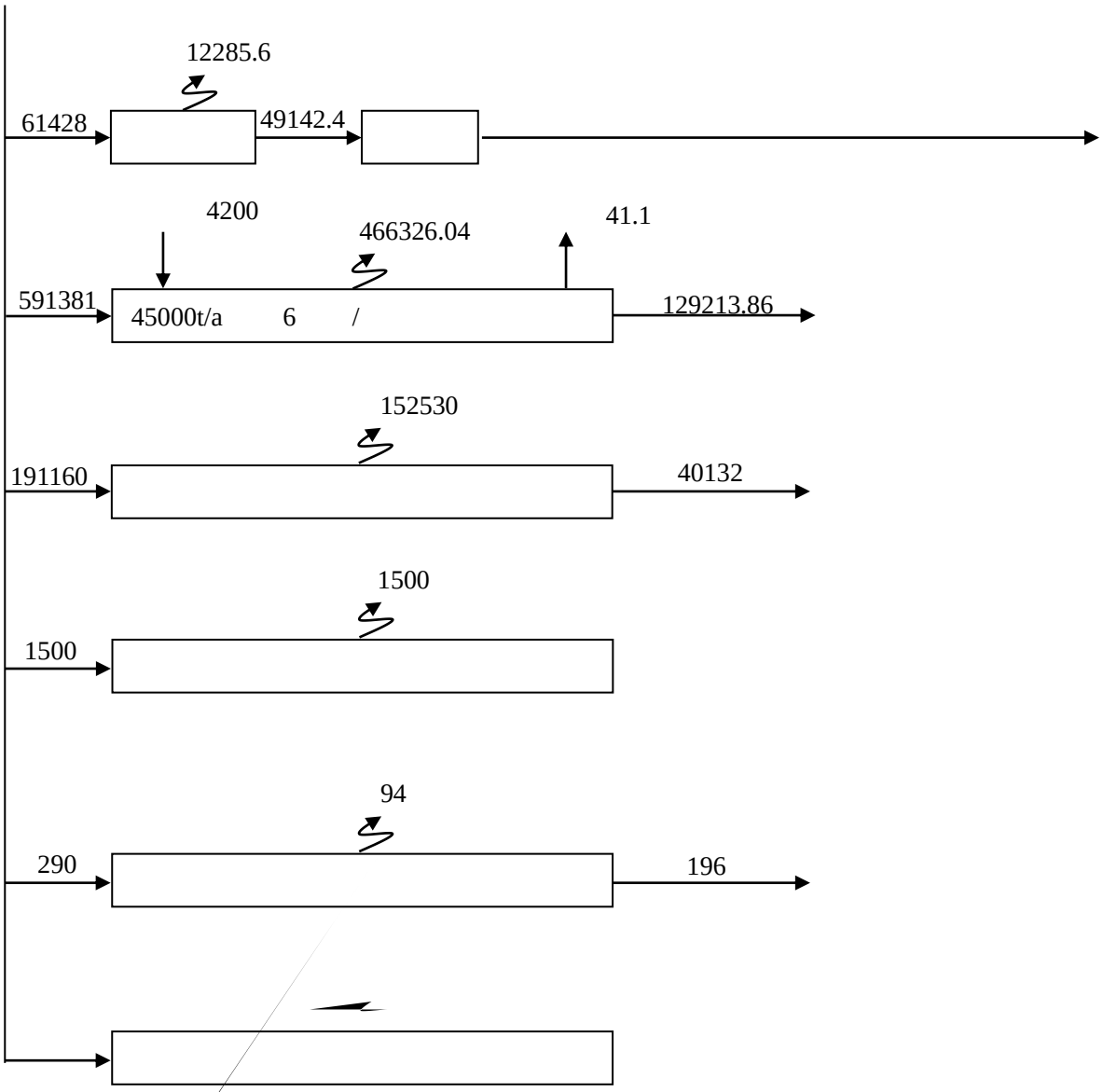
2.2-2

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

		1
		2 1 1
		8 1 2 1 170m^3 2 515m^3 2 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 /	
			/ /

		759m^3


12285.6
61428
49142.4
4200
466326.04
41.1
591381
45000t/a 6 /
129213.86
152530
191160
40132
1500
1500
94
290
196

2.2-3 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

-

10%

4

0.06%

2

5

70%

80~85%

G1-6

1 40m

DA012 DA022 DA017

S1-5

2.2.6.1.2

1

20Mpa

G1-7

2

2

G1-8

25m DA026 DA023

S1-6

3

190

G1-9

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

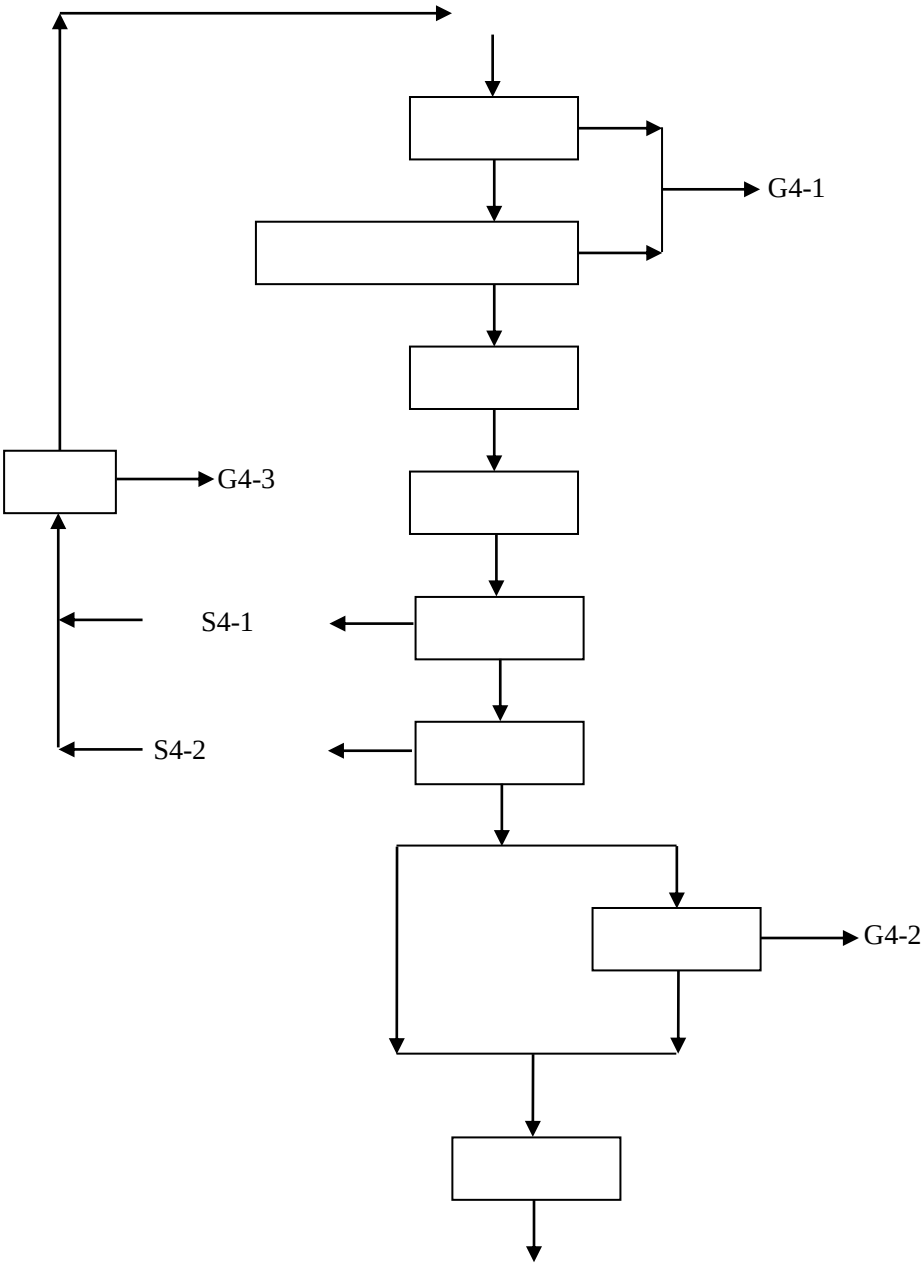
2.2-4

2.2.6.2

2.2.6.2.1

2.2-5~2.2-7

2.2-5



2.2-9

2.2.6.5

1

2

3

4

$8m^3$

1

$8m^3$ SS

5

6 700

7

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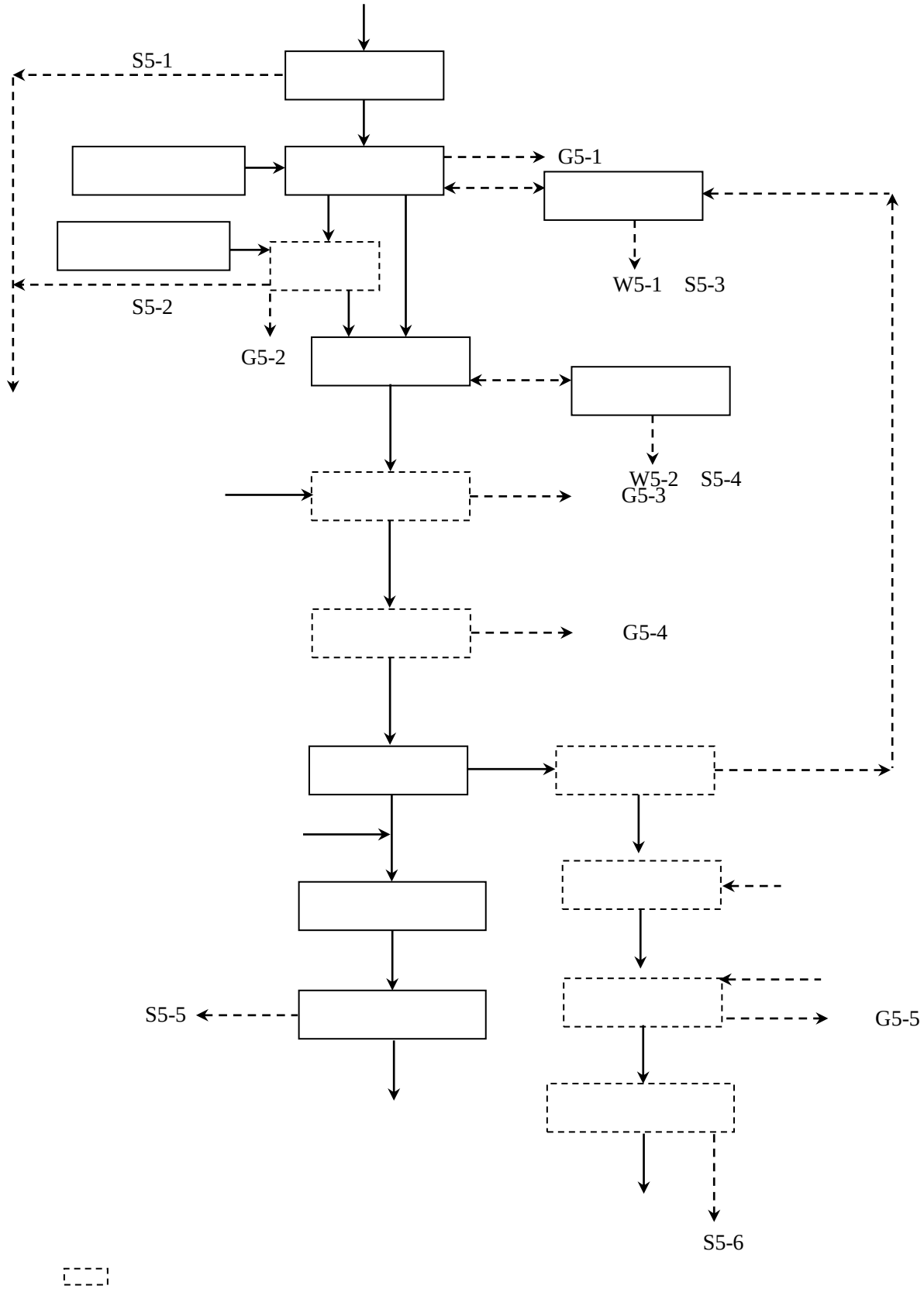
8

Ⅱ / Æ



2.2-10

2.2.6.6

“ -

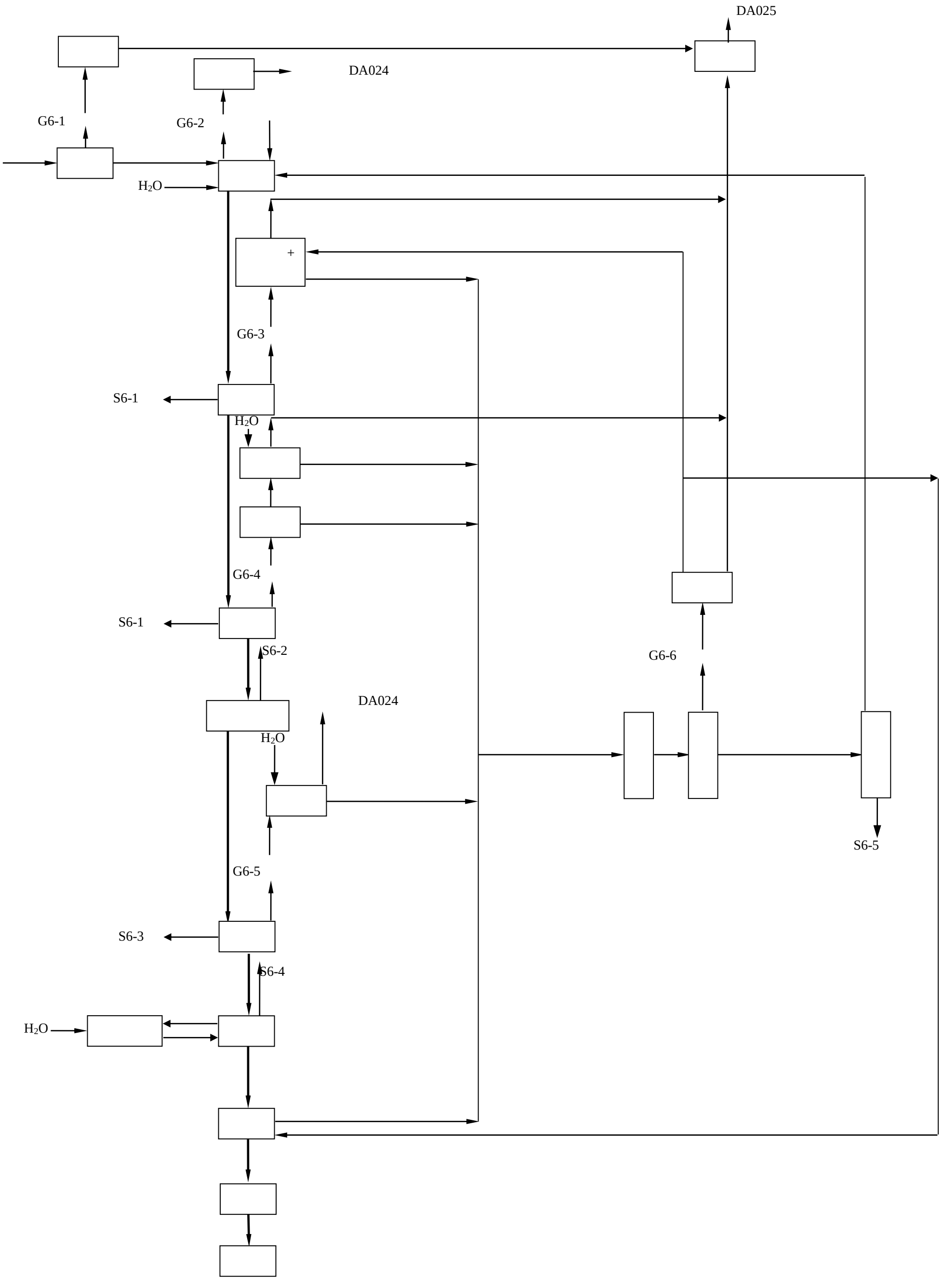
” “ ”

“ -

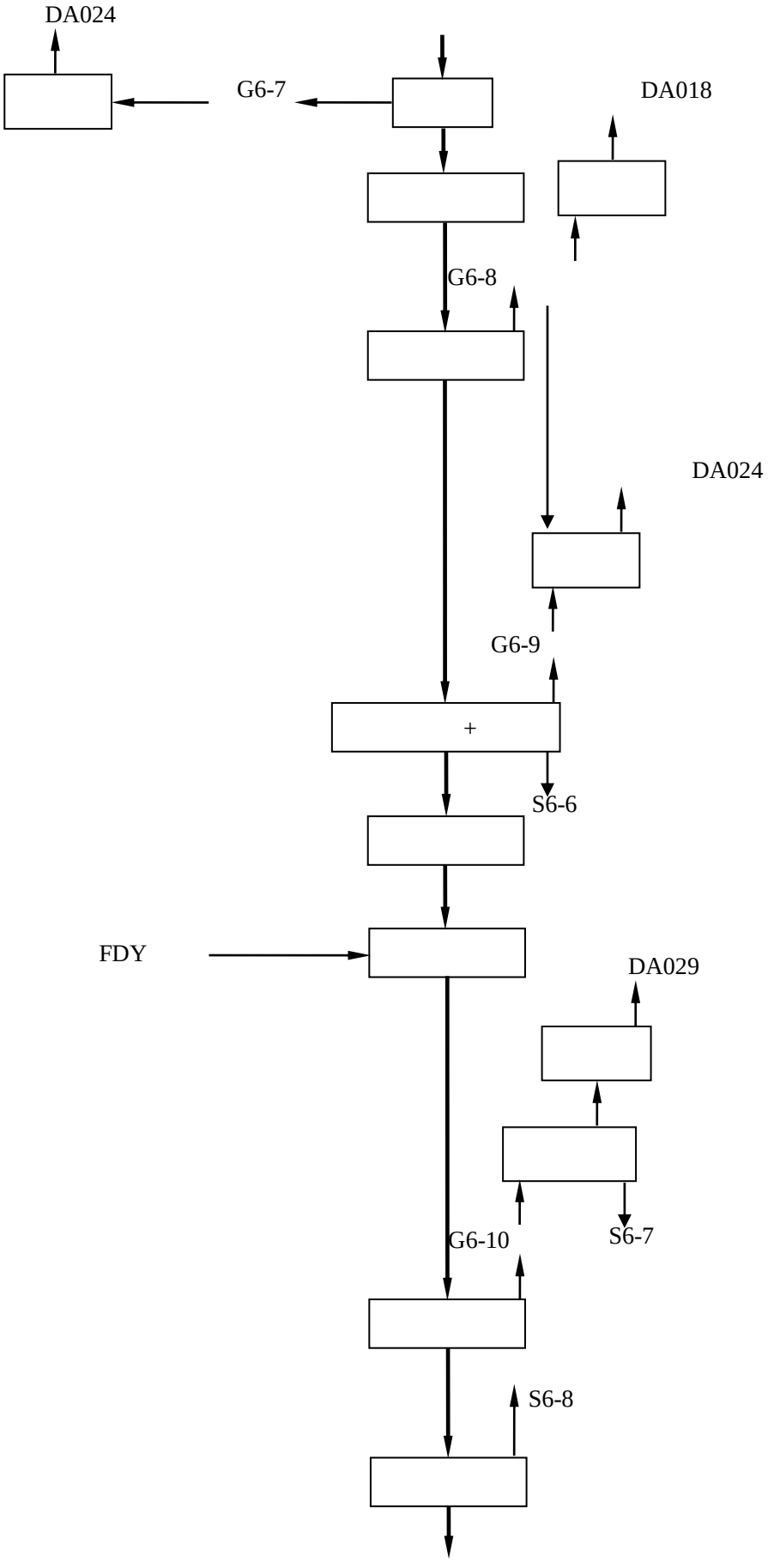
” “ ”

“ ”

2.2.6.1.1 2.2-11


DA025
DA024
G6-1
G6-2
H_2O
+
G6-3
S6-1
H_2O
G6-4
S6-1
S6-2
G6-6
DA024
H_2O
S6-5
G6-5
S6-3
S6-4
H_2O

2.2-11 1



2.2-11 2

2.2.7

2.2.7.1

2.2.7.1.1

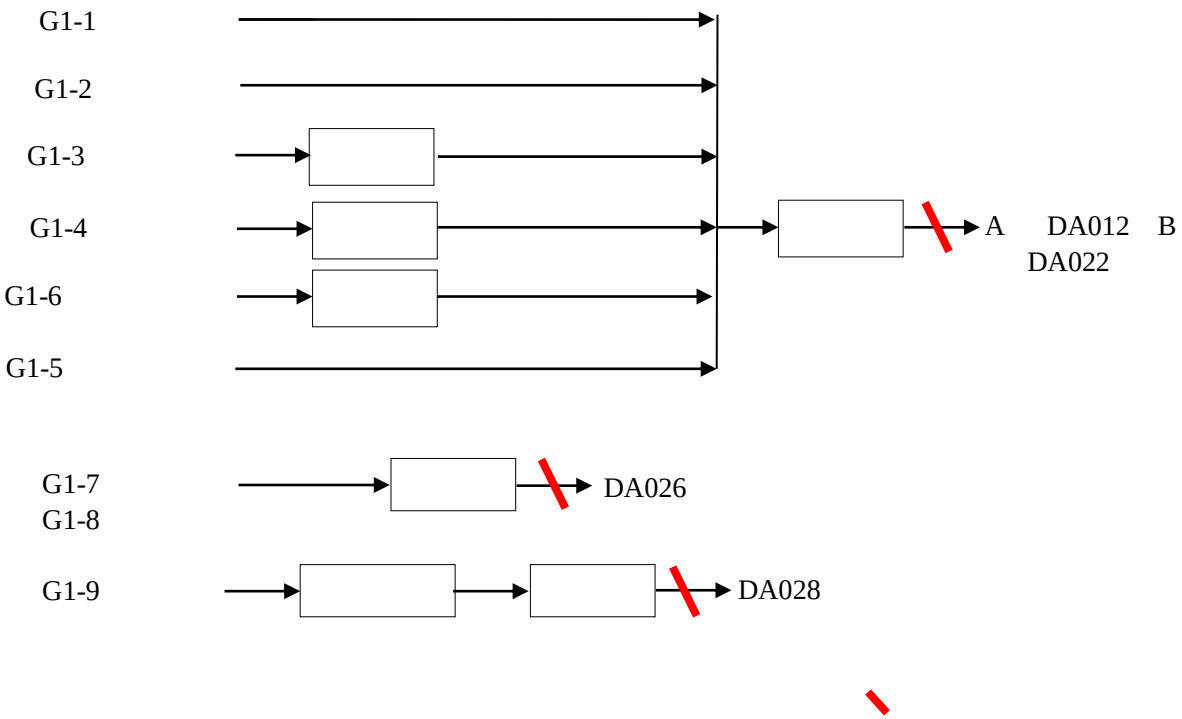
45000t/a 6 /

2.2-5

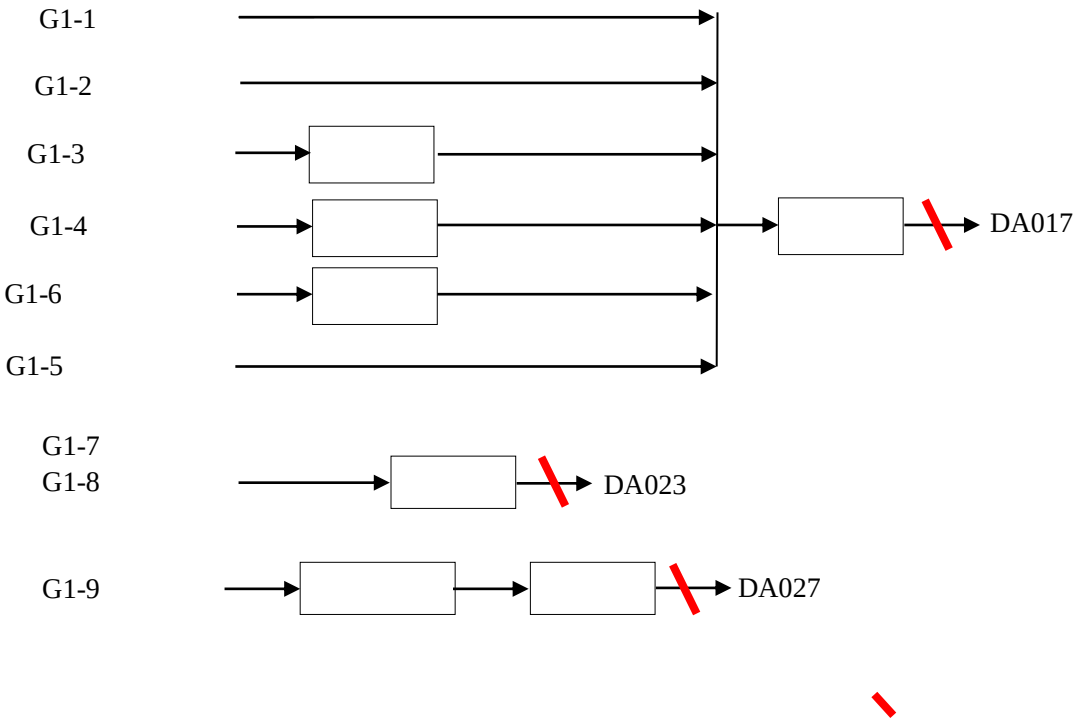
2.2-5

G1-1			1 40m DA012 DA022 DA017
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			

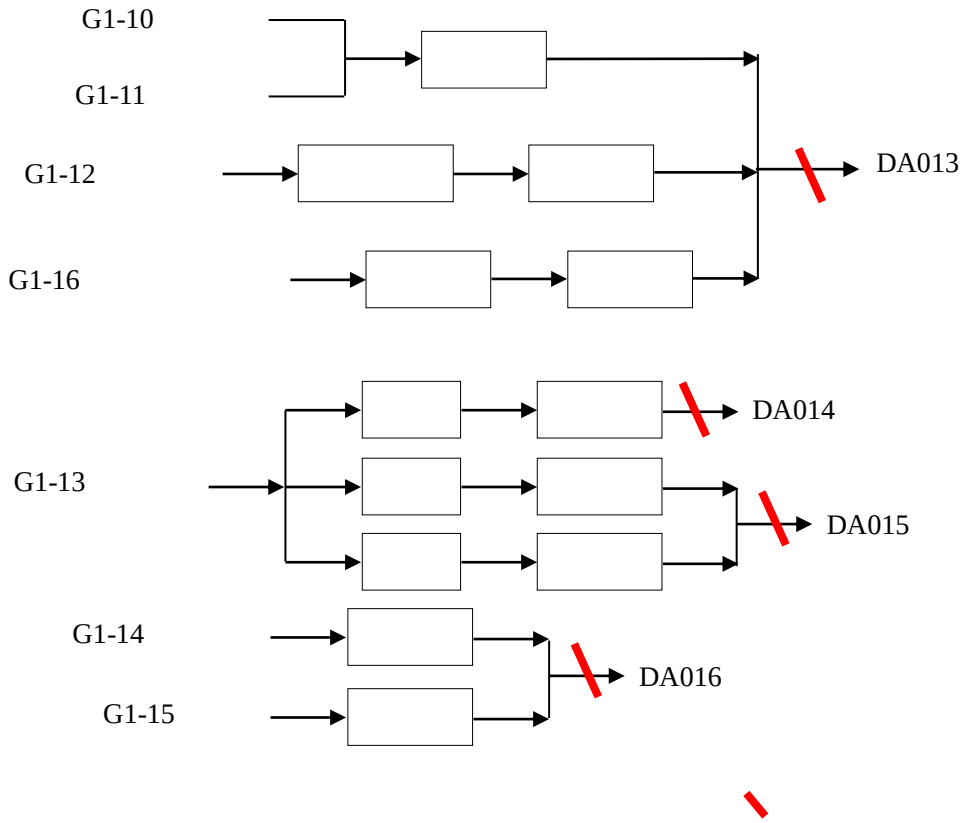
G1


G1-1
G1-2
G1-3
G1-4
G1-6
G1-5
A
DA012
B
DA022
G1-7
G1-8
DA026
G1-9
DA028

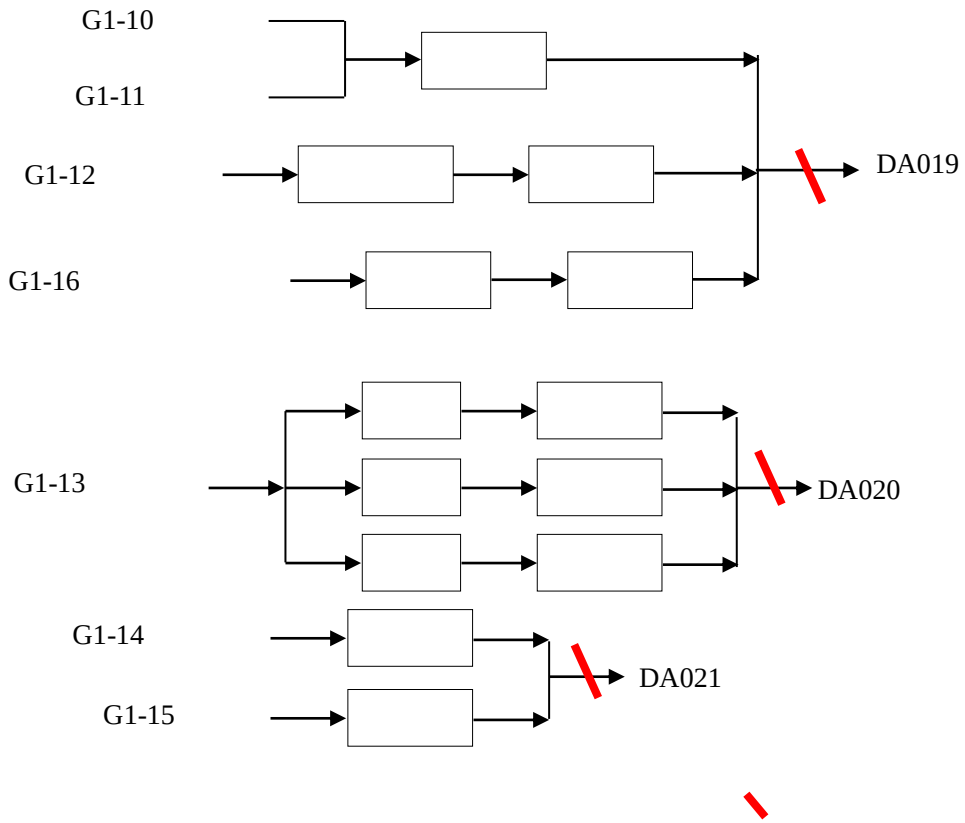
2.2-11


G1-1
G1-2
G1-3
G1-4
G1-6
G1-5
DA017
G1-7
G1-8
DA023
G1-9
DA027

2.2-12


G1-10
G1-11
G1-12
G1-16
DA013
G1-13
DA014
DA015
G1-14
G1-15
DA016

2.2-13


G1-10
G1-11
G1-12
G1-16
DA019
G1-13
DA020
G1-14
G1-15
DA021

2.2-14

2022 C220189 2022 1 19

2021 C210848-20

2021 12 11

2022 C220189-02 2022 3 10 -12

2.2-6

2.2-6

								m m			
				m^3/h	mg/m^3	kg/h	kg/h		mg/m^3	kg/h	
DA012		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					
	VOCs		1	2022	4.52	0.00914	0.00855		60	3.0	
			2	2022	4.10	0.00829					
			3	2022	4.06	0.00821					
DA022		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					
	VOCs		1	2509	4.13	0.0104	0.0109		60	3.0	
			2	2509	4.28	0.0107					
			3	2509	4.58	0.0115					
DA017		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					
	VOCs		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				

			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		10	31	
			2	7645	3.8	0.0291					
			3	7822	3.2	0.0250					
DA027	VOCs	2022.3.11	1	40366	2.77	0.112	0.108	30/1.2	60	3.0	
			2	40366	2.52	0.102					
			3	40366	2.74	0.111					
			1	40366	3.9	0.157	0.138		10	23	
			2	39725	3.4	0.135					
			3	38398	3.2	0.123					
DA013		2022.1.20	1	2094	1.1	0.00230	0.00313	28/0.3	10	19.58	
			2	2095	1.5	0.00314					
			3	1979	2.0	0.00396					
	VOCs		1	2094	43.0	0.0900	0.0990		60	3.0	
			2	2094	57.6	0.121					
			3	2094	41.0	0.0859					
			1	2094	3.46	0.00725	0.00835		—	17.6	
			2	2094	4.71	0.00986					
			3	2094	3.79	0.00794					
			1	2094	0.6	0.00126	0.00133		5	—	
			2	2094	0.7	0.00147					
			3	2094	0.6	0.00126					
		2022.3.27	1	921	3.6	0.00332	0.00375		15	—	
			2	1118	3.3	0.00369					

			3	1031	4.1	0.00423						
			1	1718	1.9	0.00326						
			2	1997	2.3	0.00459	0.00374		10	23		
			3	1536	2.2	0.00338						

2022.1.20

DA019

30/0.5

		2022.3.27	1	2169	1.2	0.00260	0.00348		15	—	
			2	2609	1.6	0.00417					
			3	2041	1.8	0.00367					
DA015	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					

			2	2884	0.7	0.00202					
			3	2884	0.7	0.00202					
			1	2733	1.2	0.00328					
		2022.3.27	2	2953	1.8	0.00523	0.00367		15	—	
			3	2786	0.9	0.00251					
DA016	VOCs		1	5606	3.63	0.0203					
		2022.3.07	2	6160	3.97	0.0245	0.0213		60	3.0	
			3	5529	3.48	0.0192					
			1	7471	2.5	0.0187					
			2	6612	2.0	0.0132	0.0162		15	—	
			3	7970	2.1	0.0167					
			1	7471	0.8	0.00598		30/0.8			
		2022.3.27	2	6612	1.2	0.00793	0.00676		5	—	
			3	7970	0.8	0.00638					
			1	7471	21.9	0.164					
			2	6612	19.4	0.128	0.158		—	20	
			3	7970	22.9	0.183					
DA021	VOCs		1	10657	3.02	0.0322					
		2022.3.07	2	10496	3.03	0.0318	0.0320		60	3.0	
			3	10343	3.08	0.0319					
			1	4839	1.5	0.00726					
			2	5170	0.8	0.00414	0.00664		15	—	
			3	5011	1.7	0.00852					
		2022.3.27	1	4839	0.7	0.00339		30/0.8			
			2	5170	0.9	0.00465	0.00385		5	—	
			3	5011	0.7	0.00351					
			1	4839	2.22	0.0107	0.0112		—	20	

2	5170	2.59

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

133566m^3/h 69857.28 m^3/a

1.883t/a VOCs 7.661t/a

1.955t/a 0.213t/a 0.497t/a t/a

t/a t/a

1 15m DA031

2021 C210848-20

2021 12 13

2.2-7

2.2-7

				m^3/h	mg/m^3	kg/h	kg/h	m	mg/m^3	kg/h
DA031		2021.12.13	1	8822	5.1	0.045	0.0402	15/0.35	10	3.5

2.2-7

GB16297-1996 2

DB37/2376-2019

1

7977m^3/h 5743.44 m^3/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

				m^3/h	mg/m^3	kg/h	kg/h	m	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		——					

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

2.2-11

2.2-11

G6-1			
G6-3			
G6-4			1
G6-6			44m DA025
G6-5			
G6-2			

G6 1

30m DA024

2.2-12

							m m			
			m^3/h	mg/m^3	kg/h	kg/h		mg/m^3	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		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

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

38112m^3/h 27440.64 m^3/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	t/a	t/a	t/a
45000t/a 6 /	1.882	7.661	1.955	0.212	0.497			
	0.29	—	—	—	—	—	—	—
	0.102	0.134	—	—	—	—	—	—
	1.397	2.411	—	—	—	—	—	—
	3.619	10.139	1.955	0.212	0.497			

2.2.7.1.2

2.2-14

2.2-14

1	45000t/a 6 /	

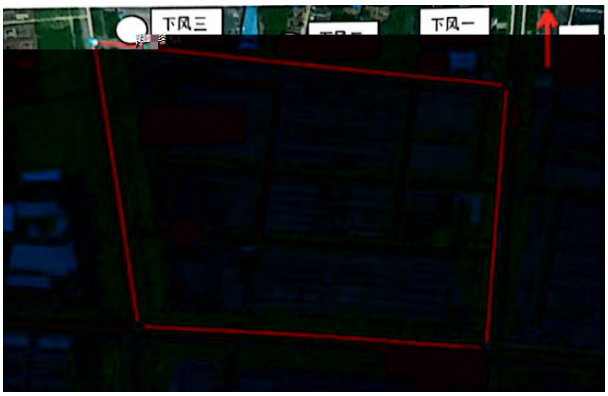
2		
3		
4		
5		

2021 C210848-08

2021 9 30

2.2-15

2.2-16 2.2-15



2.2-15

2.2-15

	2021.9.30						
		mg/m^3	HCl mg/m^3	mg/m^3	mg/m^3	VOCs mg/m^3	mg/m^3
	09:00	0.04		0.01	0.003	0.86	0.25
	11:00	0.04		0.01	0.006	0.98	0.217
	13:00	0.02		0.01	0.004	0.97	0.267

	09:00	**0.11**	0.023	0.01	0.007	1.31	0.284
	11:00	0.09	0.026	0.02	0.008	1.30	0.250
	13:00	0.09	0.034	0.01	0.007	1.44	**0.333**
	09:00	——	——	——	——	1.53	——
	11:00	——	——	——	——	1.51	——
	13:00	——	——	——	——	**1.61**	——
		0.11	0.059	0.02	0.009	1.61	0.333
		1.5	0.2	0.2	0.06	2.0	1.0

2.2-16

		( )		m/s)	%	(hPa)	/
2021.9.30	09:00	20.6	S	1.5	65.8	1005.1	3/2
	11:00	23.5	S	1.6	60.1	1004.8	3/1
	13:00	25.6	S	1.5	58.1	1003.4	3/2

2.2-15

HCl

GB16297-1996 2

GB14554-93 1

VOCs 4

DB37/2801.4-2017 3 5

DB37/2801.5-2018 3

6 DB37/801.6-2018 3

2.2.7.1.3

45000t/a 6 /

45000t/a 6 /

100m

100m 11

100m

100m

[2018]96

100m

[2018]207

100m

[2019]7 100m

2.2.7.2

2.2.7.2.1

2.2-17

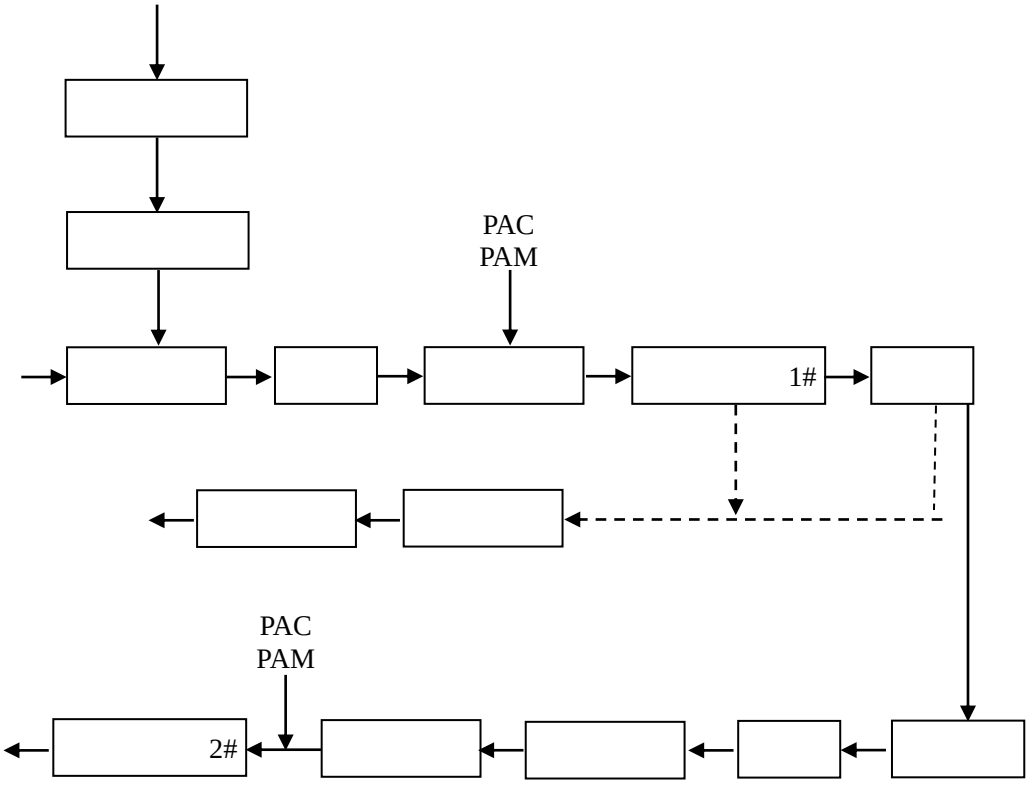
2.2-17

1	45000t/a 6 /		
2			
3			
4			
5			

2.2.7.2.2

1000m^3/d “

+ + + ” 2.2-16



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	2054	26.4	11.7	1.09
2022-02-09	1399	27.7	15.3	1.24
2022-02-10	1602	50.3	14.5	1.39
2022-02-11	1473	33.8	15.4	1.53
2022-02-12	2354	23.9	9.03	0.598

2022-02-13	2551	26.9	11	0.888
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	——	500	45	8
	——	300	20	8

GB/T31962-2015 1A

2.2.7.2.3

21.890186 m^3/a

COD_{Cr}

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

21.890186 m^3/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

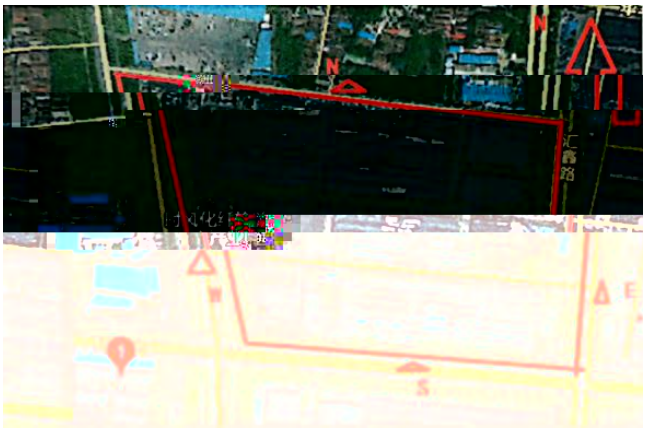
2021 C210848-08 2021

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	

			HW12 900-253-12	0.02	
			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	101084.16
		t/a	3.619
		VOCs t/a	10.139

		t/a	1.955
		t/a	0.212
		t/a	0.497
		t/a	
		t/a	
		t/a	
	m³/a		218901.86
	COD_{Cr} t/a		4.247
	t/a		0.055
	t/a		0.044
	t/a		1.885
t/a			0

2.2.9

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
	—	
		1 2.0m³

		1 2.0m^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

2.2-2

2.3.5

2 45000t/a

6 /

2.2-4 3 4

2.3.6

2.3.6.1

2.3.6.1.1

G6-11

4.5

G6-12 G6-13 G6-14 G6-15

G6-16 G6-17

2.3-3 2.3-4

2.3-3

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

2.3-4

		mg/m^3	kg/h	t/a	mg/m^3	kg/h	t/a	m m
G6-11 G6-12 P6-1		2.03	0.0047	0.039	0.609	0.0014	0.0117	15/0.3
		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	
		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 P6-2		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	
		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	
		0.11	5.95×10^{-4}	0.005	0.011	5.95×10^{-5}	0.0005	
G6-14		2.59	0.0207	0.174	0.259	2.07×10^{-3}		

P6-3 P6-4 P6-5		97.5	0.78	6.552	9.75	0.078	0.6552	
	VOCs	16.25	0.13	1.092	1.625	0.013	0.1092	
		0.43	3.41×10^{-3}	0.029	0.043	3.41×10^{-4}	0.0029	
		1.12	8.96×10^{-3}	0.075	0.112	8.96×10^{-4}	0.0075	
[redacted]		0.68	5.44×10^{-3}	0.046	0.068	5.44×10^{-4}	0.0046	

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

4.5

[2017]5 COD_{Cr} NH_3-

13805.77t/a COD_{Cr}

0.55t/a 0.028t/a

2.3.6.3

2.3-6

2.3-6

t/a

		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	--
		t/a	0.0109	
		t/a	0.1003	
		t/a	0.00003	
		VOCs t/a	0.5642	
		t/a	0.0113	
		t/a	0.0501	
		t/a	0.1208	
	t/a		13805.77	
	COD_{Cr} t/a		0.55	
	t/a		0.028	
	t/a		0	

2.4

2.4.1

2 × 130t/h 5

2 × 130t/h 2 × 24MW

3 × 130t/h

5 × 130t/h

2.1-1

2001 2

130t/h +2 24MW

2 130t/h +1 50MW

1# 2#

3# 4# 2004

[2002]85

[2004]26 2004 10

[2008]38

1# 2#

2008 9

[2008]200 2010

9 [2010]141

2008 4 130t/h 2

2 1# 2#

95% 2010 1

2011 5# 2011 12

2014 10

2015 1# 2# 2015 5

[2015]16

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 2 × 130t/h 2 × 24MW 3 × 130t/h 5 × 130t/h		312 t/a 58800	5 × 130t/h 5 2 × 24MW
	EPS	20 m^3/a	--

2.4.3

2.4-2

2.4-2

		5 × 130t/h 1 50MW 2 24MW
		1 1
		2
		1
		4
		1
		1
		1

SO_2 NO_X +SNCR
+ + + +
1 150m
+

2.4.4

2

2.4-1

2.4.5

2.4.5.1

1

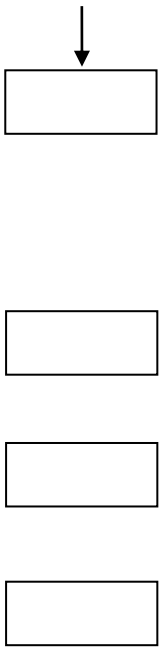
3311.6m^3/a

2

50m^3/d

2.4.5.2

4.5



4 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

4.5

	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	12.2	18.9	34.6	0.757	1.38	254021	42.9
2022-02-13	6.39	11.5	18.9	34.3	0.739	1.34	252152	43.1
2022-02-14	5.58	10.3	18.8	35	0.688	1.28	262152	42.3
2022-02-15	7.12	12.8	18.4	33.3	0.812	1.47	286572	41.6
2022-02-16	8.39	14.6	19.2	33.5	0.817	1.42	302780	42
2022-02-17	9.53	16.6	20.7	36.2	0.816	1.42	310628	41.9
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

2021 101911 2021 10 19

2.4-4

2.4-4

				m^3/h	mg/m^3	mg/m^3	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

DB37/664 2019 2

5mg/m^3 35mg/m^3 50mg/m^3 0.03mg/m^3

1

HJ2301-2017 8mg/m^3

277140m^3/h 242774.64 m^3/a

20.88t/a 49.28t/a 1.92t/a

2020

2020

67% 2019.11.30 66%

2019.12.01 2.4-5

2.4-4

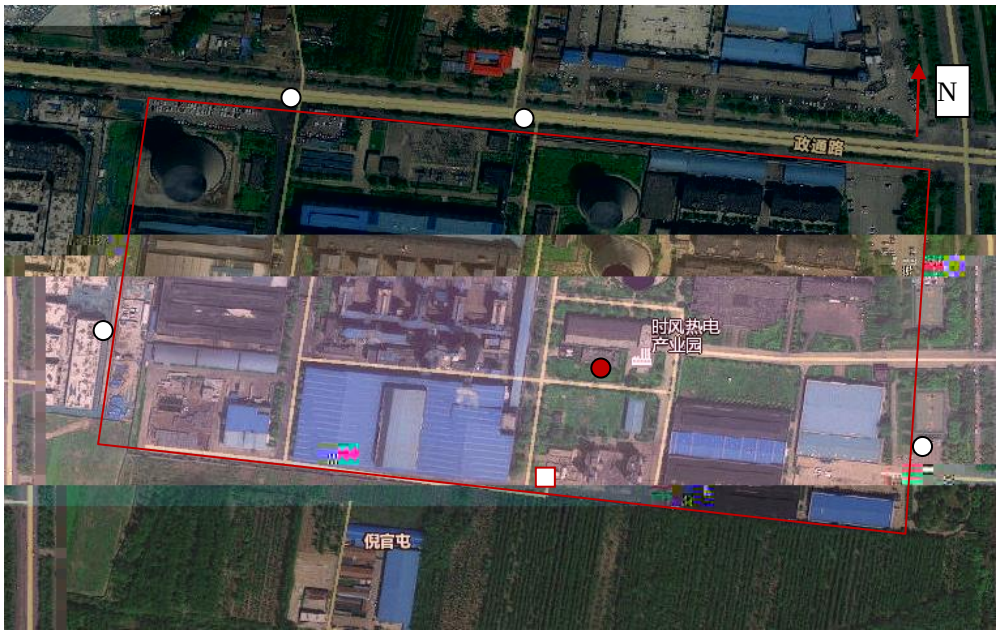
				m^3/h	mg/m^3	kg/h

DA002		2019.11.30	1	7895		5.92×10^{-6}
			2	9322		6.99×10^{-6}
			3	9684		7.26×10^{-6}
			1	7895		5.92×10^{-6}
			2	9322		6.99×10^{-6}
			3	9684		7.26×10^{-6}
			1	7895		5.92×10^{-6}
			2	9322		6.99×10^{-6}
			3	9684		7.26×10^{-6}
			1	7895	1.88	0.014
			2	[redacted]	2.30	[redacted]

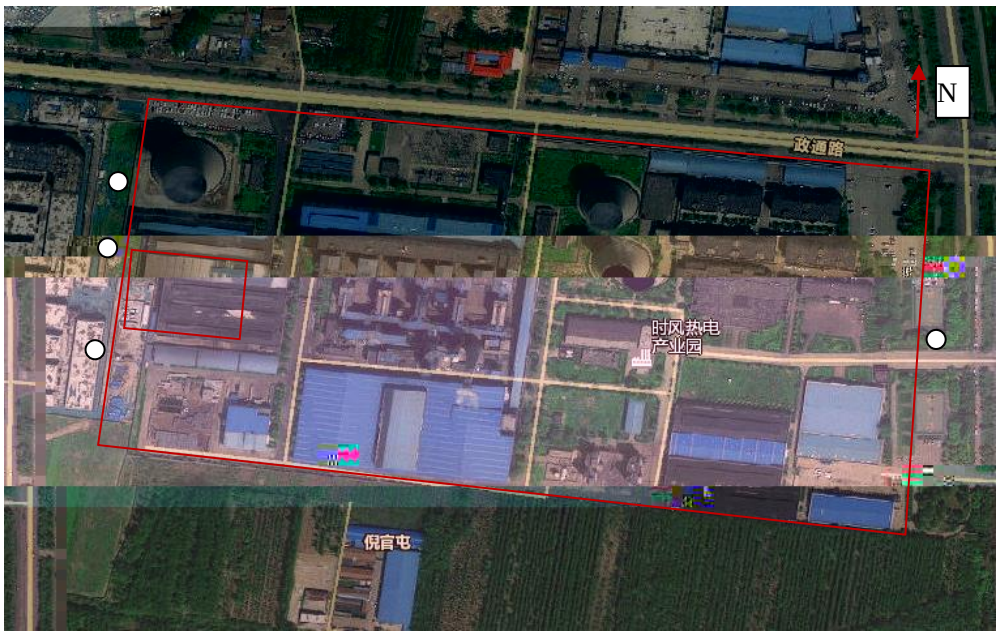
2.4-5

2.4-5

t/a kg/a kg/a kg/a
t/a t/a t/a



2.4-4　1



2.4-4　2

2.4-6 1

	2021.12.15			
		mg/m³	mg/m³	mg/m³
		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/m³	mg/m³	mg/m³	mg/m³
		0.53			
		0.54			
		0.54			
		0.49			
		0.86			
		1.21			
		1.01			
		1.03			
		1.78			
		1.54			
		1.48			
		1.49			
		1.33			

		1.31			
		1.37			
		1.11			
	2019.11.30				
		mg/m³	mg/m³	mg/m³	mg/m³
		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		

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

3311.6m^3/a

2022

C220190 2022 1 21

2.4-8

2.4-8 2022 1

		pH	COD_{Cr}			

	m^3/d		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	mg/L
2022.1.21	22		1.41	928	0.22	
	20		1.30	906	0.22	
	24		1.46	916	0.19	

		dB(A)	dB(A)
1#	1	55.1	49.0

			HW29 900-023-29	0.03	
			HW08 900-218-08	0.085	

2.4-10

2.4.8

2.4-11

2.4-11

		m^3/a	247155.84
		t/a	20.88
		t/a	49.28
		t/a	1.92
		kg/a	0.0027
		kg/a	0.0027
		kg/a	0.0027
		VOCs t/a	3.577
		kg/a	0.0027
	m ?a		21900
	COD_{Cr} t/a		0.212
	t/a		0.0004
t/a			0

2.4.9

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

3.2.1

4.5

2.1-1

1 1 1

1 1

6 3 t 6 4.5

t

100000

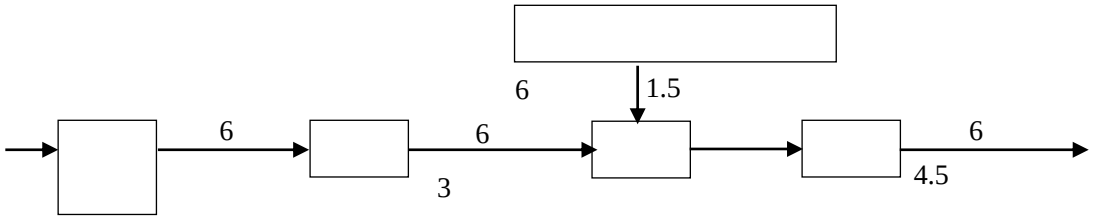
54 30 24

8 350d 8400h

3.2.2

3.2-1 3.2-2

3.2-1



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											
L 2100dtex/2 1200m 1400dtex/3 930dtex/2-V_1 V_2 1100m 1870dtex/2 1280m 1400dtex/2-V_1 V_2 1310m 1400dtex/2-V_3 1160m 930dtex/2-V_3 2200m 720m														

3.2.3

3.2-3

3.2-3 1 ( )

		1 6 22858m^2	
		1 1 6950m^2	

		30m P1 25m P2 1 35m P3 36m P4 浸胶 38m P5 37m P6	

3.2-3

		1 1 10000m^2	
		1 6 19008m^2	
		1	
		8t/h	
		1 4 1	
		1 20m^2	

		1	2.0m^3	

1	6	t/a	30000
	6	t/a	15000
2	6	t/a	30000
		d/a	350
			500 270 230
		m^2	49444 36276 13168
			45000
		/	132750
		/	114272.08
		/	15000.83
		/	3750.21
		/	11250.62
		%	33.34
		%	25.49
			31592.78
			3.9
		%	31.97

3.2.5

3.2.5.1

3.2-5

3.2-5 1

		t/a	t			
1		35105	1810	99.98%	25kg/	
2	FDY	350	15	TF-6 HQ-699	180kg/	
3	DNP/A\B\C\D	5.5 DNP 49 A\B\C\D	5	--	25kg/	
4			0.4	99%	400kg/	
5		1198	60	40.5%	1000kg/	
6		300	20	40.5%	1000kg/	
7		70	6	99.8%	25kg/	
8		108	0.93	37%	180kg/	

9		70	1.1	20~25%	180kg/	
10		2.2	1	99%	25kg/	
1		1198	60	40.5%	1000kg/	
2		300	20	40.5%	1000kg/	
3		70	6	99.8%	25kg/	
4		108	0.93	37%	180kg/	
5		70	1.1	20~25%	180kg/	
6		2.2	1	99%	25kg/	

3.2-5 2

1	DNP	N,N'- -
2	A\B\C\D	2~ / / BBM 4 4'- 6- -3- / TMTD
3	FDY	
4		- -5

3.2-1

3.2.6.2

1

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	

140-150

24-36h

18

90 左右

18

90 左右

2

2

1

20Mpa

G_1

G_2

2

2

270-290

4

S_3

3

S_4

4

20~3

45 ~50

85 95

20~30

- 1.3~2.3

$$C_6H_6O_2+HCHO+H_2O=(C_6H_6O_2\text{-}HCHO)_x+H_2O$$

pH 25

G_6 G_7

1

1 15m P3

G_8

25m P4

110-140

110-140 200

200

G14

G15 G16 G14 G15 G16

35m P12 P13 P14 P15 P16

S10 S12

3.3-2

3.3.8

3.3-3 3.3-4

3.3.9

3.3.9.1

1

5m^3/d

1750m^3/a

4m^3/d 1400m^3/a

2

7.2m^3/d 2520m^3/a

9.6m^3/d 3360m^3/a

14.4m^3/d 5040m^3/a

19.2m^3/d 6720m^3/a

3

40m^3/h 336000m^3/a

3% 1.2m^3/h 28.8m^3/d 10080m^3/a

50m^3/h 420000m^3/a

3% 1.5m^3/h 36m^3/d 12600m^3/a

4

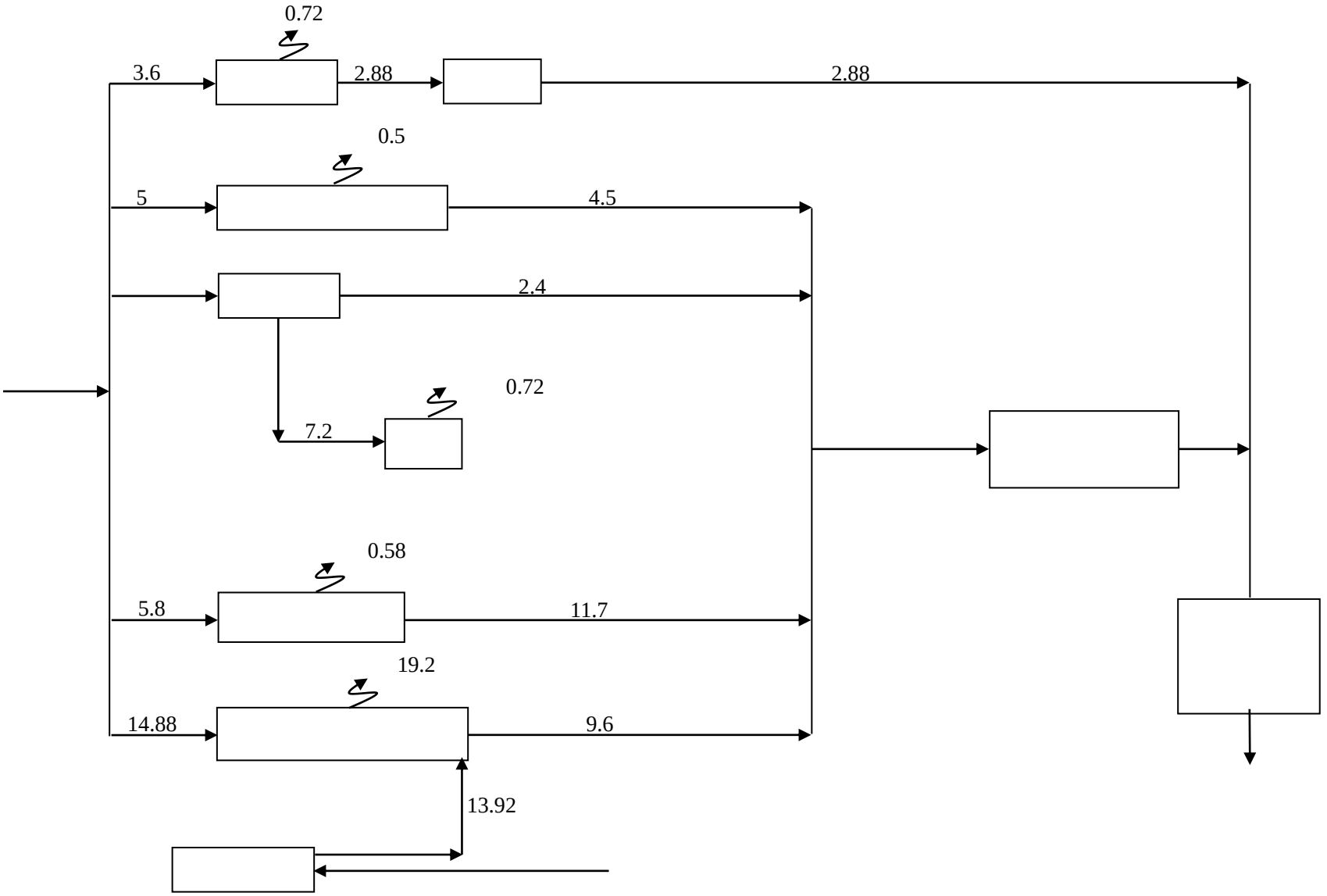
5.8m^3/d 2030m^3/a

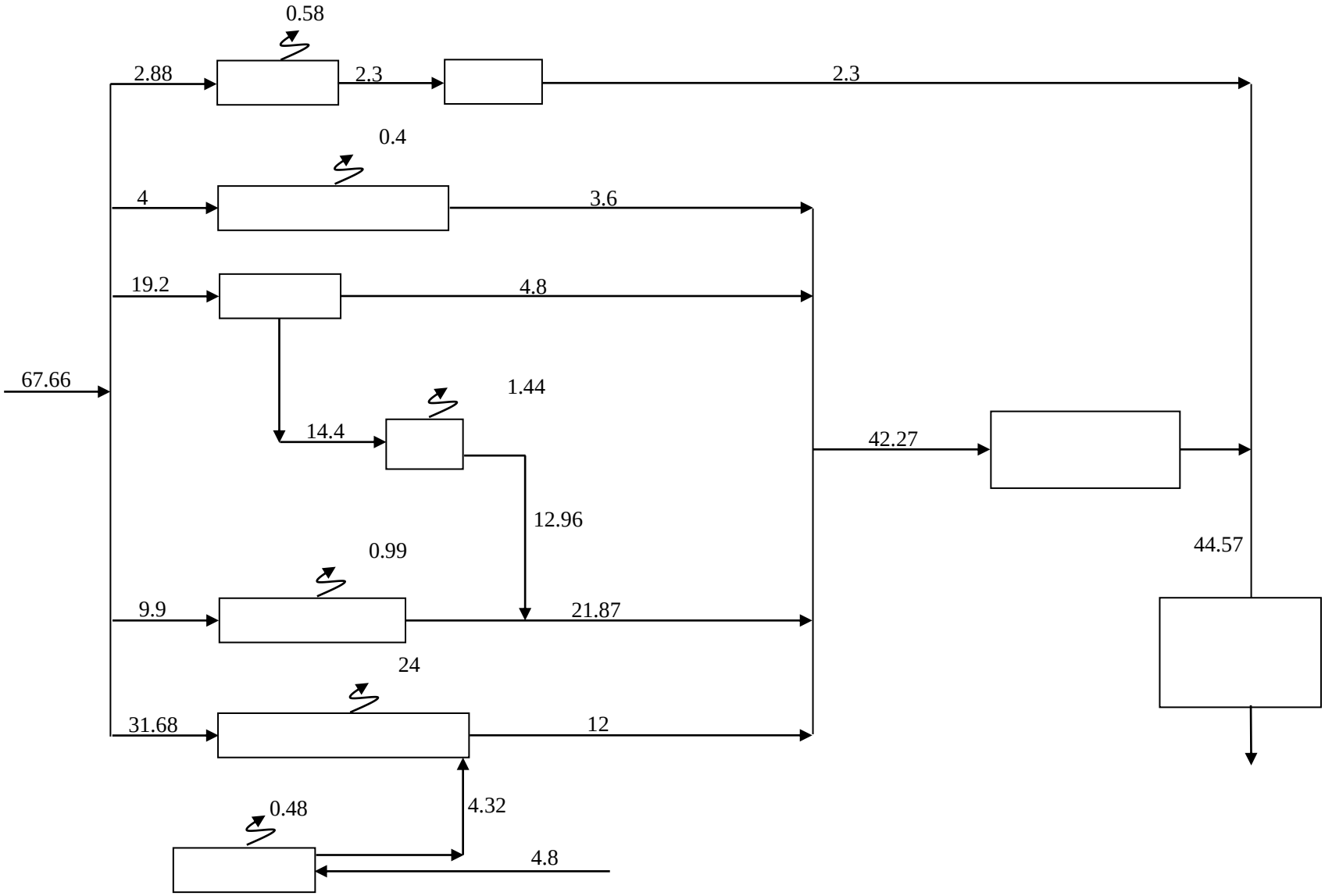
9.9m^3/d 3465m^3/a

5

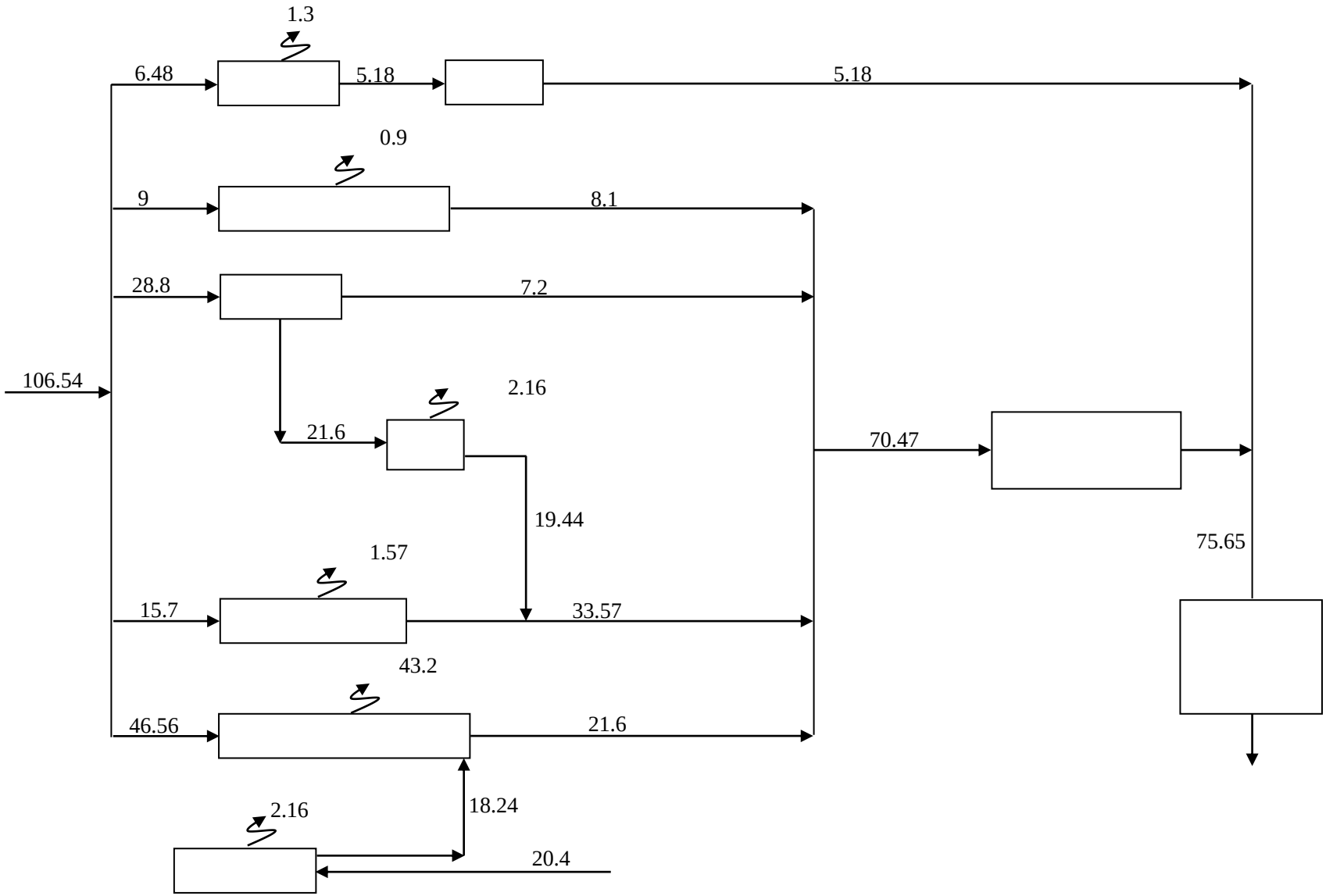
30 24

120L/ · 3.6m^3/d 1260m

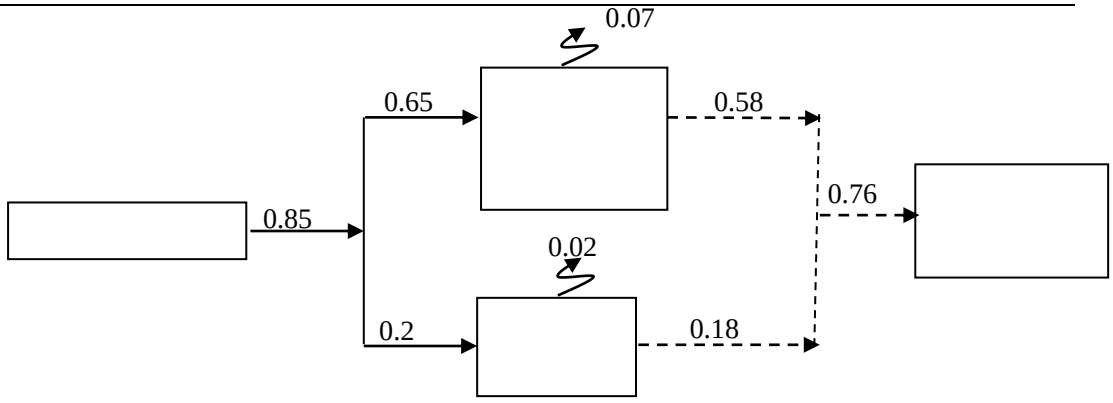

0.72
3.6
2.88
2.88
0.5
5
4.5
2.4
0.72
7.2
0.58
5.8
11.7
19.2
14.88
9.6
13.92


0.58
2.88
2.3
2.3
0.4
4
3.6
19.2
4.8
67.66
1.44
14.4
42.27
12.96
44.57
0.99
9.9
21.87
24
31.68
12
0.48
4.32
4.8

3.3-6 m^3/d


1.3
6.48
5.18
5.18
0.9
9
8.1
28.8
7.2
106.54
2.16
21.6
70.47
19.44
75.65
1.57
15.7
33.57
43.2
46.56
21.6
18.24
2.16
20.4

3.3-7 m^3/d



3.3-8 t/h

3.3.9.3

3304.7 kWh

1379.2 kWh

3.3.9.4

0.65t/h 5460t/a 0.2t/h 1680t/a

781m^3/h 656.04 m^3/a 1562m^3/h 1312.08 m^3/a

3.3.9.5

3.3-11

3.3-11

				m	m	m^3		t
		1		1.5	2.2	3.9	0.8	2.84
		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

3.3.9.6

EDI EDI Electrodeionization

EDI

EDI EDI

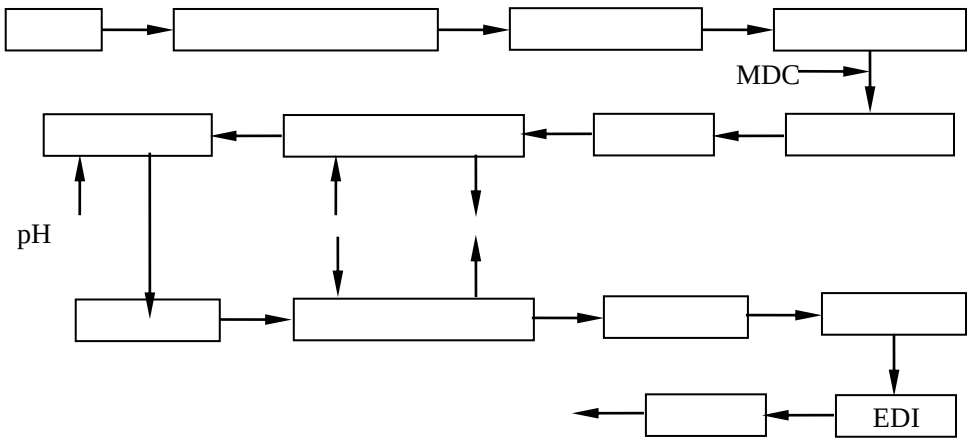
*. F '\

EDI

EDI 3~5

EDI

3.3-9



3.3-9

R134a

1

40Nm^3/min

140Nm^3/h 100Nm^3/h 1

170Nm^3/h

5

20kg/d 7t/a

$2NH_3==3H_2+N_2$

3.4

3.4.1

G_1 G_2

G_3 G_4 G_5

G_6 G_7 G_8 G_9

G_{10} G_{11}

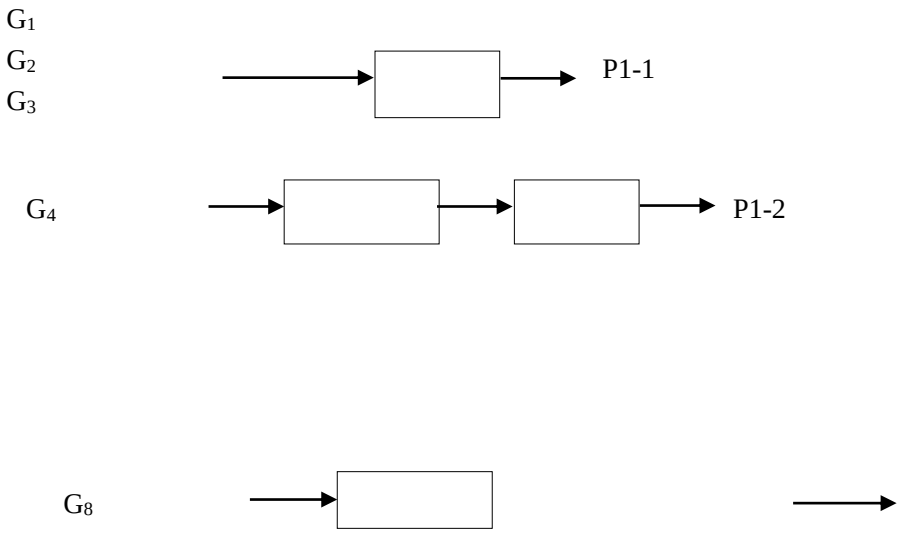
G_5

G_6 G_7 G_8 G_9

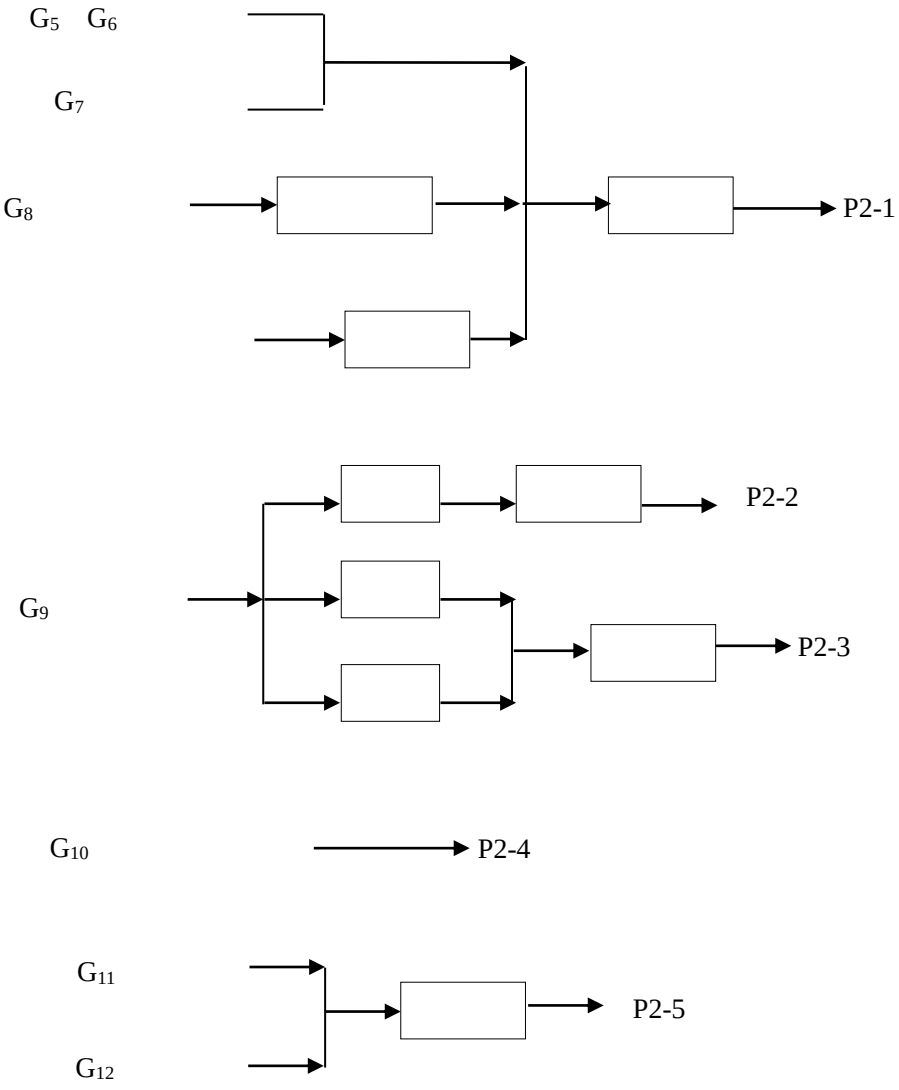
G_{10} G_{11}

45000t/a 6 /

3.4-1 3.4-2



3.4-1



3.4-2

3.4.1.1

3.4.1.1.1

1 G_1 G_2 G_3

G_1

90%

G_2 G_3

30m 0.8m P1-1

45000t/a 6 /

2021 12 11 DA026 DA023

HJ 1102-2020 D.1

6 56.16g/

+ 38.19g/

85-89% 85%

3.4-1

3.4-1

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

3.4-1

3.0kg/h

2 G_4

19

G_4

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/

3.4-2

3.4-2

		(t/a)	kg/h	(mg/m^3)	(m^3/h)		(%)	(t/a)	(kg/h)	(mg/m^3)
P1-2	VOCs	0.48	0.057	1.9	30000	+	32	0.326	0.039	1.3

G_5 G_6

G_7 G_8

35m 0.3m P1-3

90%

85%

HJ 1102-2020 D.1 6

32%

10% 5000m^3/h P1-3

3.4-3

3.4-3 P1-3

		(t/a)	kg/h	(mg/m^3)	(m^3/h)		(%)	(t/a)	(kg/h)	(mg/m^3)
P1-3		0.532	0.0633	12.7	5000		85	0.0798	0.0095	1.9
	VOCs	2.606	0.310	61.9			32	1.772	0.211	42.1

1.722 0.205 41

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 27kg/h

4 G_9

36m

0.4m P1-4 38m

0.5m P1-5

3.4-4 3.4-5

3.4-4

		(t/a)	kg/h	(mg/m^3)	(m^3/h)		(%)	(t/a)	(kg/h)	(mg/m^3)
P1-4		1.28	0.152	25.3	6000		85	0.192	0.0228	3.8
	VOCs	0.407	0.0485	8.1			32	0.277	0.033	5.5

	1.16	0.138	23		90	0.116	0.0138	2.3
	0.336	0.04	6		90	0.0336	0.004	0.6
	0.111	0.0132	2.2		32	0.0756	0.009	1.5
	1.8144	0.216	18		85	0.272		

P1-5 12000

GB16297-1996 2

36m 32.6kg/h 38m 35.8kg/h

DB37/2376-2013 2

10mg/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

6 DB37/801.6-2018

2 15mg/m^3 5mg/m^3

5 G_{10}

781m^3/h 656.04 m^3/a 30m

0.5m P1-6

HJ991-2018 C

C.4

Qnet,ar 10467kJ/m^3 V_0=0.26 Qnet,ar/1000-0.25

V_s=0.272 Qnet,ar/1000-0.25+1.061 -1 V_0

V_0 m^3/m^3

Qnet,ar kJ/m^3 36440kJ/m^3

10467kJ/m^3

V_s m^3/m^3

1.7

V_0=0.260×36440/1000-0.25=9.22m^3/m^3

V_s=0.272×36440/1000-0.25+1.0161× 1.7-1 ×9.53=16.44m^3/m^3

10785.3 m^3/a

E_{SO2}=2R×S_t×(1- $_s$/100)×K×10^{-5}

E_{SO2}

[2019]39						

3.4-6

DB37/2376-2019 1

10mg/m^3 50mg/m^3 100mg/m^3

< > [2019]39

50mg/m^3

6 G_{11} G_{12}

G_{11} G_{12}

35m 0.5m P15

90%

HJ 1102-2020

D.1 6

32% 10%

12000m^3/h

3.4-13

3.4-7

		(t/a)	kg/h	(mg/m^3)	(m^3/h)		(%)	(t/a)	(kg/h)	(mg/m^3)
P1-7	VOCs	0.504	0.06	5	12000		32	0.343	0.0408	3.4
		2.22	0.264	22			90	0.222	0.0264	2.2
		0.907	0.108	9			90	0.0907	0.0108	0.9
		0.266	0.0317	2.6			32	0.181	0.0216	1.8

3.4-7

GB14554-93 2 30.2kg/h 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

6

DB37/801.6-2018 2 15mg/m^3

5mg/m^3

3.4-8

3.4-8

													m		
		Nm^3/h	mg/m^3	kg/h	t/a			mg/m^3	kg/h	t/a	mg/m^3	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	VOCs	30000	1.9	0.057	0.48	+	32%	--	0.039	0.326	60	3.0	P1-2	30	0.8
G5		5000	12.7	0.0633	0.532		85%	1.9	0.00995	0.0798	10	31	P1-3	35	0.3
G6	VOCs		61.9	0.310	2.606		32%	42.1	0.211	1.772	60	3.0			
			41	0.205	1.722		90%	4.1	0.0205	0.1722		27			
G7			7	0.035	0.294		90%	0.7	0.0035	0.0294	5				
G8															

			2.2	0.0132	0.111		32%	1.5	0.009	0.0756	15				
G9		12000	18	0.216	1.8144		85%	2.7	0.0324	0.272	10	35.8	P1-5	38	0.5
	VOCs		19.6	0.235	1.976		32%	13.3	0.160	1.344	60	3.0			
			30	0.360	3.02		90%	3.0	0.036	0.302		28.6			
			7	0.0840	0.706		90%	0.7	0.0084	0.0706	5				
			6.6	0.0795	0.668		32%	4.5	0.054	0.454	15				
		12839.6	10	0.128	1.0785		0	10	0.128	1.079	10		P1-6	30	0.5
	SO_2		17.2	0.156	1.312		0	17.2	0.156	1.312	50				
	NO_x		50	0.642	5.393		0	50	0.642	5.393	50				
G10	VOCs	12000	5	0.06	0.504		32%	3.4	0.0408	0.343	60	3.0	P1-7	35	0.5
G11			22	0.264	2.22		90%	2.2	0.0264	0.222		30.2			
			9	0.108	0.907		[redacted]	0.9	0.0108	0.0907	5				

3.4.1.1.2

1.5 1.5

3

2

1 G_5 G_6

G_7 G_8

G_5 G_6 G_7

G_8

+

G_5 G_6

G_7 G_8

35m 0.5m P2-1

90%

85%

HJ 1102-2020 D.1 6

32%

10% 10000m^3/h P2-1

3.4-9

3.4-9 P2-1

		(t/a)	kg/h	(mg/m^3)	(m^3/h)		(%)	(t/a)	(kg/h)	(mg/m^3)
P2-1		1.064	0.1266	12.7	10000		85	0.1596	0.019	1.9

	VOCs	5.212	0.620	61.9		32	3.544	0.422	42.1	
		3.444	0.41	41		90	0.3444	0.041	4.1	
		0.588	0.07	7		90	0.0588	0.007	0.7	
		0.358	0.0426	4.3		32	0.2436	0.029	2.9	

3.4-9 P2-1

GB16297-1996 2 31kg/h

DB37/2376-2013 2

10mg/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 8mg/m^3 0.3kg/h

GB14554-93 2 27kg/h

2 G_9

36m

0.5m P2-2 38m

0.7m P2-3

3.4-10 3.4-11

3.4-10

	0.7	0.0248		5		
	4.5	0.126		15		

3.4-10 3.4-11

GB14554-93 2 36m 28.6kg/h 38m 31.8kg/h

GB16297-1996 2

36m 32.6kg/h 38m 35.8kg/h

DB37/2376-2013 2

10mg/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

6 DB37/801.6-2018

2 15mg/m^3 5mg/m^3

3 G_{10}

1562m^3/h 1312.08 m^3/a 30m

0.8m P2-4

HJ991-2018 C

C.4

Qnet,ar 10467kJ/m^3 V_0=0.26 Qnet,ar/1000-0.25

V_s=0.272 Qnet,ar/1000-0.25+1.061 -1 V_0

V_0 m^3/m^3

Qnet,ar kJ/m^3 36440kJ/m^3

10467kJ/m^3

V_s m^3/m^3

1.7

V_0=0.260×36440/1000-0.25=9.22m^3/m^3

V_s=0.272×36440/1000-0.25+1.0161× 1.7-1 ×9.53=16.44m^3/m^3

21570.6 m^3/a

$E_{SO2}=2R\times S_t\times(1-\ _s/100)\times K\times10^{-5}$

E_{SO2} t

R m^3

S_t mg/m^3

$_s$ %

K

GB17820-2018 1

$100mg/m^3$

0 K 1 E_{SO2}=2 1312.08 100 10^{-5}=2.624t/a

$10mg/m^3$ $10mg/m^3$

2.157t/a

NOx $50mg/m^3$

$50mg/m^3$

10.785t/a

3.4-12

3.4-12

	Nm^3/a						
				SO_2		NO_x	
		t/a	mg/Nm^3	t/a	mg/Nm^3	t/a	mg/Nm^3

	21570.6	2.157	10	2.264	12.2	10.785	50
DB37/2376-2019 1			10		50		100
[2019]39							50

3.4-12

DB37/2376-2019 1

10mg/m^3 50mg/m^3 100mg/m^3

< > [2019]39

50mg/m^3

	1.814	0.216	9	90	0.1814	0.0216	0.9
	0.532	0.0634	2.6	32	0.362	0.0432	1.8

3.4-13

GB14554-93 2 30.2kg/h 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

6

DB37/801.6-2018 2 15mg/m^3

5mg/m^3

3.4-14

3.4-14

												m			
		Nm^3/h	mg/m^3	kg/h	t/a			mg/m^3	kg/h	t/a	mg/m^3	kg/h			
G5		5000	12.7	0.1266	1.064		85%	1.9	0.019	0.1596	10	31	P2-1	35	0.5
G6	VOCs		61.9	0.620	5.212		32%	42.1	0.422	3.544	60	3.0			
			41	0.41	3.444		90%	4.1	0.041	0.3444		27			
G7			7	0.07	0.588		90%	0.7	0.007	0.0588	5				
G8			4.3	0.0426	0.358		32%	2.9	0.029	0.2436	15				
G9		12000	25.3	0.304	2.56		85%	3.8	0.0456	0.384	10	32.6	P2-2	36	0.2
	VOCs		8.1	0.097	0.814		32%	5.5	0.066	0.554	60	3.0			
			23	0.276	2.32		90%	2.3	0.0276	0.232		28.6			
			6	0.08	0.672		90%	0.6	0.008	0.0672	5				
			2.2	0.0132	0.111		32%	1.5	0.018	0.1512	15				
G9		24000	18	0.432	3.6288		85%	2.7	0.0648	0.544	10	35.8	P2-3	38	0.4
	VOCs		19.6	0.47	3.952		32%	13.3	0.32	2.688	60	3.0			
			30	0.72	6.04		90%	3.0	0.072	0.604		28.6			

			7	0.168	1.412		90%	0.7	0.0168	0.1412	5				
			6.6	0.159	1.336		32%	4.5	0.108	0.908	15				
			10	0.257	2.157		0	10	0.257	2.157	10				
		25679.3											P2-4	30	0.5

3.4-15

													m		
		Nm^3/h	mg/m^3	kg/h	t/a			mg/m^3	kg/h	t/a	mg/m^3	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	VOCs	30000	1.9	0.057	0.48	+	32%	--	0.039	0.326	60	3.0	P1-2		

4.5

			2.2	0.0132	0.111		32%	1.5	0.009	0.0756	15				
			18	0.0633	0.532		85%	2.7	0.0324	0.272	10	35.8			

G9			12000									P1-5	38	0.5	

4.5

G9		6000	25.3	0.304	2.56		85%	3.8	0.0456	0.384	10	32.6	P2-2	36	0.2
	VOCs		8.1	0.097	0.814		32%	5.5	0.066	0.554	60	3.0			
			23	0.276	2.32		90%	2.3	0.0276	0.232		28.6			
			6	0.08	0.672		90%	0.6	0.008	0.0672	5				
			2.2	0.0132	0.111		32%	1.5	0.018	0.1512	15				
G9		12000	18	0.1266	1.064		85%	2.7	0.0648	0.544	10	35.8	P2-3	38	0.4
	VOCs		19.6	0.47	3.952		32%	13.3	0.32	2.688	60	3.0			
			30	0.72	6.04		90%	3.0	0.072	0.604		28.6			
			7	0.168	1.412		90%	0.7	0.0168	0.1412	5				
			6.6	0.159	1.336		32%	4.5	0.108	0.908	15				

25679.3

3.4-15 141555.876 Nm^3/a 5.5389t/a VOCs

12.35t/a SO_2 3.936t/a NOx 16.178t/a 2.4366t/a 0.6729t/a 2.4972t/a

3.4.1.2

3.4.1.2.1

90% 10%

0.498t/a VOCs

0.187t/a

90% 10%

0.2604t/a VOCs

0.61t/a 0.902t/a 0.249t/a 0.136t/a

3.4.1.2.2

90% 10%

0.806t/a VOCs

1.221t/a 1.805t/a 0.498t/a 0.26t/a

90%

90%

3.4.2

3.4.2.1

3.4-16 3.4-17

3.4-16

			mg/L				
	m^3/a	m^3/a	COD_{Cr}	BOD_5			
	4095	7654.5	200	100	15	25	700
	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
		15599.5	190	109	11	18	1303
	26477.5		201	118	11	18	1300

3.4-16

		m^3/a	mg/L	t/a	m^3/a	mg/L	t/a	m^3/a	mg/L	t/a
1	CODcr		216	2.35		190	2.96		201	5.31
2	BOD_5		132	1.44		109	1.70		118	3.14
3		10878	11	0.12	15599.5	11	0.17	26477.5	11	0.29

CODcr 29.6mg/L 8.06mg/L

GB/T31962-2015 1A

3.4.2.3

1

2004

8 4 m^3/d

2007 9

8 m^3/d 4 m^3/d

1 A

2009 5 8

16km

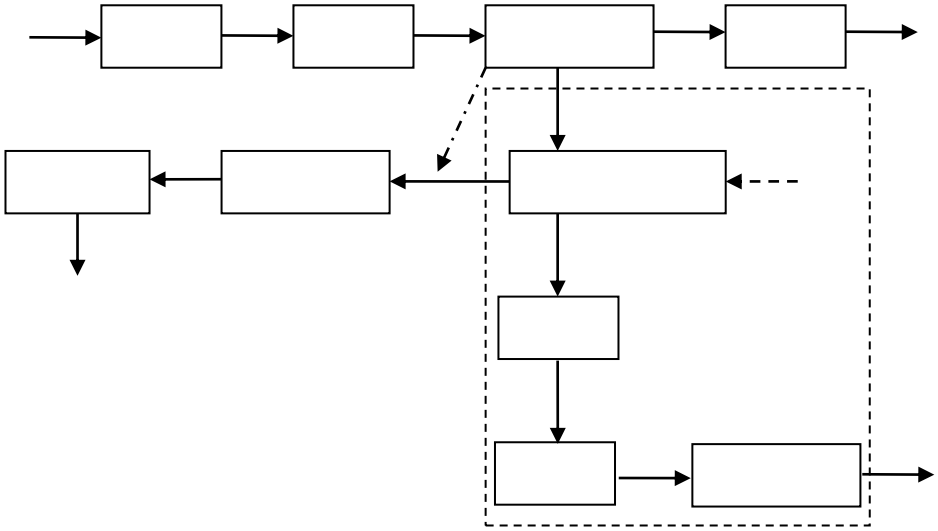
0.9mm

BIOLAK

Bl0lAK

BlOLAK

3.4-3



3.4-3

pH 6~9

COD_{Cr} ,)) (E +) (E BOD_5 *.) (E *. (E

(GB18918-2002) A

[2017]5

COD_{Cr} -) (E NH_3-G + (E

2

2021 1~12

3.4-17

3.4-17 2021 1~12

	(m^3)	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} -) (E NH_3-G + (E

4

GB18918-2002 A

[2017]5 COD_{Cr} -) (E NH_3-G + (E

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

3.4.2.4

3.4-18

3.4-19

3.4-18

		m^3/a	mg/L	t/a	m^3/a	mg/L	t/a
1	CODcr	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

3.4-19

		m^3/a	mg/L	t/a	m^3/a	mg/L	t/a	m^3/a	mg/L	t/a
1	CODcr	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

10878m^3/a

COD_{Cr} 19.4mg/L 0.253mg/L COD_{Cr}

0.21t/a 0.003t/a 26477.5m^3/a

COD_{Cr} 0.30t/a 0.004t/a 26477.5m^3/a

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

3.4.3

3.4.3.1

80 95dB A

3.4-20

3.4-20

					dB(A) 1m	dB(A)
		1			80	55
		1			95	70
		31			95	70
		1			80	55
		1			80	55

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

3.4.3.2

A

B

C

15 25dB A

GB12348-2008 3 4

3.4.4

2021

HW08 900-249-08

FDY

HW49 900-041-49

2

FDY

3.4-21

3.4-21

			t/a				
S_1			773	--		282-999-99	
S_3			1110	--		282-999-99	
S_4			157	314		282-999-99	
S_5			472.6	945.2		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)	
			2535.1 3.1	1272.6 3.5			

3.4.5

3.4-22

3.4-23

3.4-24

3.4-22

		Nm^3/a	90585.26	0	90585.26	
		t/a	9.1849	6.8906	2.2943	
		VOCs t/a	7.173	2.295	4.878	
		SO_2 t/a	1.312	0	1.312	
		NOx t/a	5.393	0	5.393	
		t/a	8.122	0.3916	0.8122	
		t/a	2.243	6.8906	0.2243	
		t/a	1.224	2.295	0.8324	
		t/a	0.2604	0	0.2604	
		VOCs t/a	0.61	0	0.61	
		t/a	0.0902	0	0.0902	
		t/a	0.249	0	0.249	
		t/a	0.136	0	0.136	
	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	1110	1110	0	
	t/a	4	4	0	
	t/a	157	157	0	
	t/a	472.6	472.6	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	515.573	515.573	0	

3.4-23

	Nm^3/a	50970.61	0	[redacted]	

t/a	314	314	

	t/a	1110	1110	0	
	t/a	7.5	7.5	0	
	t/a	471	471	0	
	t/a	1417.8	1417.8	0	
	t/a	0.1	0.1	0	

(4D41992ETOE413732TJETO EMC /P <</MCID 19>7 BDC 115.94 708M1e56/Lang 1 >] TJETO/F2 10.56 Tf 1 0 0 1 205200.815628G[<2

		mg/m^3	kg/h	mg/m^3	kg/h	
P1-1		18.7	0.533	10	23	
	VOCs	4.7	0.143	60	3.0	
P1-2	VOCs	1.9	0.057	60	3.0	
P1-3		12.7	0.0633	10	31	
	VOCs	61.9	0.310	60	3.0	
		41	0.205		27	
		7	0.035	5		
		4.3	0.0213	15		
P1-4		25.3	0.152	10	32.6	
	VOCs	8.1	0.0485	60	3.0	
		23	0.138		28.6	
		6	0.04	5		
		2.2	0.0132	15		
P1-5		18	0.216	10	35.8	
	VOCs	19.6	0.235	60	3.0	
		30	0.360		28.6	
		7	0.0840	5		
		6.6	0.0795	15		
P1-7	VOCs	5	0.06	60	3.0	
		22	0.264		30.2	
		9	0.108	5		
		2.6	0.0317	15		
		0.17	0.00038	5	0.26	

3.4-26

		mg/m^3	kg/h	mg/m^3	

		23	0.276		28.6	
		6	0.08	5		
		2.2	0.0132	15		
P2-3		18	0.432	10	35.8	
	VOCs	19.6	0.47	60	3.0	
		30	0.72		28.6	
		7	0.168	5		
		6.6	0.159	15		
P2-5	VOCs	5	0.12	60	3.0	
		22	0.528		30.2	
		9	0.216	5		
		2.6	0.0634	15		
		0.17	0.00038	5	0.26	

DB37/2376-2013 2 VOCs

6

	VOCs t/a	10.139	0.6086	4.878
	SO_2 t/a			1.312
	NOx t/a			5.393
	t/a	1.955	0.117	0.8122

73.5% Dowtherm A 258 115

12.3 528 4.02MPa 1060kg/m^3(20)

293kJ/kg 40194kJ/kg

0.99-3.36%

3B

2

1.1 12.5mg/m^3

0.5 6.8mg/m^3

135 113 102 122

200

3.5.2

1

6

8 10

6

FDY

2

FDY

3.5.3

1

2

20%

3

3.5.4

3.5-1

3.5-1

					kg/t
	m^3/t		0.829	0.086kg/m^3	0.0713
	kWh/t		1041	0.404kg/kWh	420.16
	t/t		0.16	0.129kg/kg	0.021
	m^3/t		437.4	1.2143kg/m3	531.13

3.5-1

3.5.5

3.5.6

3.5.7

3.5-2

3.5-2

1		GB16297-1996 2 DB37/2376-2013 2 GB14554-93 1 2 6 DB37/801.6-2018 1 2 3 GB31572-2015 5 9 GB12348-2008 3 4 GB18599-2020 GB18597-2001
2		3
3		
4		
5		
6		

3.5-2

3.5.8

1

2

3

4

4.1

116 ° 36 ′40′

116°00′00" 116°30′00" 36°37′30" 37°02′30"

40.8km

42.4km 960km^2 9 3 1 603

42 51.4

105 308

2 2 308 107km

316 56km

70km

50 km

2.2-1

4.2

4.2.1

32.00m 22.00m 27m 32.1m

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 l-5m

20-30m

2 (Q1 3)

90-206m

60-70m

3-6m l0m

10-20m 50-70m l00-200m

150m

200m 230m

2 (N)

500-800m

300-l000m

3 (E)

4.2.2.2

——

II

III

—

——

270km NEl0°-30° NW 40°-70°

- -

6.3m

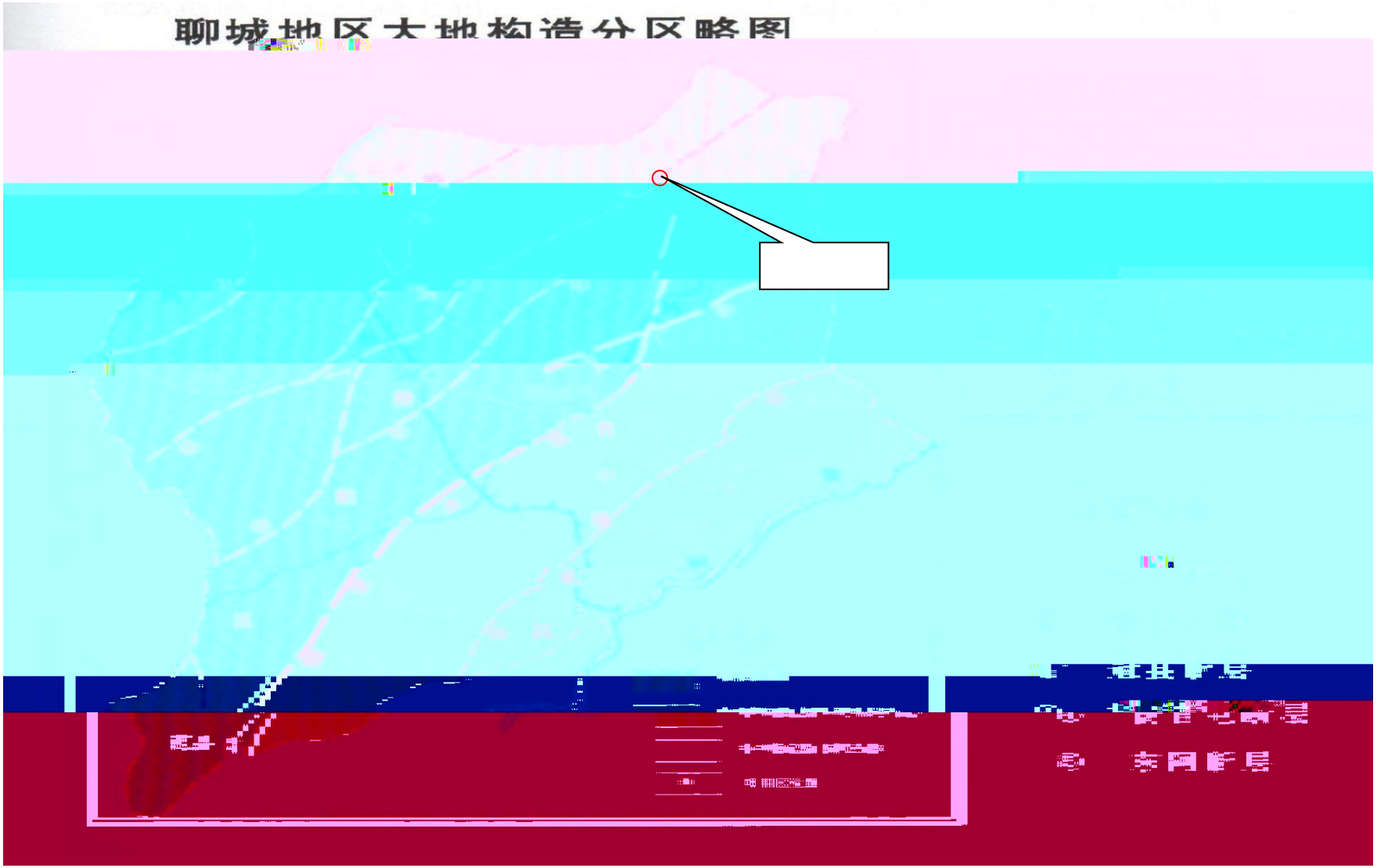
800-l000m 6500-7000m 5000-6500m 40°-45°

55km

145km

III IV V

4.2-1



4.2-1

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

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 m^3
2.7 m^3 1.56 m^3
60m
16.7 m^3 15.9 m^3 0.8 m^3 1.34 m^3 3.9974 m^3

4.2.8

142 119

83 58%

19.9 14%

40 27%

2—3m

20 15%

4.2.9

58715.8 338500 8%

3.4.1.1

1

1

54.6

308

0.6

2

6.7

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

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 /

2018~2035

4.4-1

4.4.2

2014 12

[2014]220

2008

23km^2

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
	17	39	106	62	1.7mg/m^3	185
	60	40	70	35	4 mg/m^3	160

2019 SO_2 NO_2 CO 24 95 GB3095-2012 PM_{10} $PM_{2.5}$ O_3 8 90 GB3095-2012 $PM_{2.5}$ PM_{10} O_3

2

HJ2.2-2018

3.5-1 2019 PM_{10} $PM_{2.5}$ O_3 8 90 GB3095-2012

4.5.1.2

1

S

HJ2.2-2018 2

4.5-2 **4.5-1**

4.5-2

			m		
1#		N	40	TSP	
		W	130		
2#		N	100		
		NE	660		

2

TSP

9

3

2022 1 18 ~1 25

7

	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/m ³

						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
1#	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
	2022.1.21-2022.1.22						0.02	0.02	0.02	0.84	0.34	0.45	0.58
	2022.1.23-2022.1.24						0.02	0.02	0.02	0.29	0.96	0.76	0.77

[redacted]

		14:00	20:00	02:00	08:00	14:00	20:00	02:00	08:00	14:02	20:01	02:01	08:02
2#	2022.1.18-2022.1.19												
	2022.1.19-2022.1.20												
	2022.1.20-2022.1.21												
	2022.1.21-2022.1.22												
	2022.1.23-2022.1.24												
	2022.1.24-2022.1.25												
	2022.1.25-2022.1.26												

4.5-5 3 mg/m ³

						TSP	( )			
		14:00	20:00	02:00	08:00		14:08	20:06	02:08	08:06
1#	2022.1.18-2022.1.19				0.004	0.113	11	12	14	14
	2022.1.19-2022.1.20					0.136	11	13	14	14
	2022.1.20-2022.1.21	0.004	0.004			0.165	11	14	14	13
	2022.1.21-2022.1.22					0.172	11	13	14	13
	2022.1.23-2022.1.24			0.004		0.149	11	12	13	13
	2022.1.24-2022.1.25					0.136	11	14	15	13
	2022.1.25-2022.1.26					0.155	11	13	14	14
		14:00	20:00	02:00	08:00		14:09	20:06	02:06	08:09
2#	2022.1.18-2022.1.19	0.004		0.004	0.004	0.159	11	13	12	14
	2022.1.19-2022.1.20		0.004	0.004		0.155	12	15	13	13
	2022.1.20-2022.1.21	0.004	0.004	0.004	0.004	0.132	12	14	13	14
	2022.1.21-2022.1.22					0.147	12	14	14	13
	2022.1.23-2022.1.24		0.004	0.004	0.004	0.168	11	14	14	13
	2022.1.24-2022.1.25					0.182	11	15	12	13
	2022.1.25-2022.1.26		0.004	0.004	0.004	0.126	12	14	13	14

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/m^3

C_{0i}— i mg/m^3

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

2021 12

VOCs VOCs

( )

( ) 7 /

( )

( )

2021 12 VOCs

VOCs

65%

2021

( ) 2022 3

4.5-9

1			GB/T 13195-1991	/
2			HJ 506-2009	/
3	pH	pH	HJ 1147-2020	/
4			GB/T 11901-1989	/
5			HJ 828-2017	4mg/L
6		BOD_5	HJ 505-2009	0.5mg/L
7			GB/T 11893-1989	0.01mg/L
8			HJ 535-2009	0.025mg/L
9			HJ 636-2012	0.05mg/L
10			GB/T 7475-1987	0.05mg/L
11				0.05mg/L
12		9.1	GB/T 5750.6-2006	0.5μg/L
13			HJ 694-2014	0.3μg/L
14				0.4μg/L
15				0.4μg/L
16			GB/T 7467-1987	0.004mg/L
17			GB/T 7493-1987	0.003mg/L
18			HJ/T 346-2007	0.08mg/L
19			HJ/T 51-1999	/
20		F^- Cl^- NO_2^- Br^- NO_3^-	HJ 84-2016	0.007mg/L
21		PO_4^{3-} SO_3^{2-} SO_4^{2-}		0.018mg/L
22			GB/T 7484-1987	0.05mg/L
23			HJ 484-2009	0.004mg/L
24			GB/T 11892-1989	0.5mg/L
25		4-	HJ 503-2009	0.0003mg/L
26			HJ 970-2018	0.01mg/L

27			GB/T 16489-1996	0.005mg/L
28			HJ 601-2011	0.05mg/L
29		/ -	HJ 639-2012	0.4 μg/L
30				0.3μg/L
31				0.2μg/L
32	+			0.5μg/L
33		11.1 11.2	GB/T 5750.6-2006	2.5μg/L
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
BOD_5（mg/L）	5.0	4.2	5.2	4.6	5.2	4.4	5.2	5.4	4.6	4.8	5.0	4.6
SS（mg/L）	13	10	19	12	16	11	15	17	12	16	15	19
氨氮（mg/L）	1.41	1.44	1.42	1.43	1.40	1.42	1.04	1.07	1.02	1.09	1.08	1.05
总磷（mg/L）	0.39	0.40	0.46	0.48	0.42	0.43	0.52	0.51	0.55	0.56	0.58	0.59
总氮（mg/L）	4.81	5.05	5.13	5.10	5.28	5.13	4.83	4.88	4.75	4.80	4.96	4.83
溶解氧（mg/L）	5.6	5.7	5.6	5.6	5.8	5.9	5.5	5.4	5.6	5.5	5.7	5.7
铜（mg/L）	未	未	未	未	未	未	未	未	未	未	未	未
锌（mg/L）	未	未	未	未	未	未	未	未	未	未	未	未
（mg/L）	未	未	未	未	未	未	未	未	未	未	未	未
砷（mg/L）	未	未	未	未	未	未	未	未	未	未	未	未
汞（mg/L）	未	未	未	未	未	未	未	未	未	未	未	未
镉（mg/L）	未	未	未	未	未	未	未	未	未	未	未	未

六价铬（mg/L）	未	未	未	未	未	未	未	未	未	未	未	未
铅（μg/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	5.7	5.3	5.4	5.1
硫酸盐（mg/L）	220	218	220	22	230	232	218	212	202	202	217	192
全盐量（mg/L）	1620	1500	1760	1190	1600	1370	1630	1500	1850	1280	1770	1470
挥发酚（mg/L）			未		未	未	未	未	未	未	未	未
石油类（mg/L）	0.02	0.03	0.03	0.02	0.03	0.03	0.02	0.02	0.03	0.03	0.02	0.03

maα 0 G f( )] TJ ET Q Q EM33 /P <</MCID 275> 17.21> 126.98 370.51 Tm 0 g 0.48 e W* n BT /F13 10.8.2025 G-U$q 0 G [( )] TJ ET Q Q EM33/P <</MCID 276>> 17

4.5.2.2

1

pH SS COD_{Cr} BOD_5

15

14

2

GB3838-2002

GB 3838-2002 2

SS GB5084-2021 1

1.4-3

3

1 ( )

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

$S_{i,j}$— $S_{i,j} \leq 1$ $S_{i,j}$ 1

$C_{i,j}$— i j mg/l

$C_{s,i}$— i mg/l

2 --pH

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

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

S_{pHj}—pH

pH_j—pH

pH_{sd}— pH

pH_{su}— pH

3

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

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

S_{DO_j} ——DO

DO_f —— mg/L

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

DO_j—— mg/L

DO_s—— 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 1 521.16 362.57 0 1 521.16 362..168 0 1 521.16 362..168 405.65 33.984 0.48001 405.65

4.5.2.3

2021

2019

2020 5

2020

A^2O

4.5-13

			m	
1#		S	145	
		SW	545	
2#		--	--	
3#		--	--	
4#		N	40	
		W	130	
5#		SW	660	
		N	100	
6#		SW	790	
		SW	1420	
7#		W	950	
		W	1600	
8#		NW	12900	
		N	765	

2

1#~5# pH

K^++Na^+ Ca^{2+} Mg^{2+} CO_3^{2-} HCO_3^- 36

6#~8#

3

GB/T5760-2006

HJ610-2016

4.5-14

4.5-14

1	pH	pH	HJ 1147-2020	/
2			GB/T 13195-1991	/
3			HJ 694-2014	0.3μg/L
4				0.04μg/L

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	5μg/L
11		5.1	GB/T 5750.6-2006	0.05mg/L
12		9.1 9.2	GB/T 5750.6-2006	0.5μg/L
13		11.1 11.2	GB/T 5750.6-2006	2.5μg/L
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
17			GB/T 16489-1996	0.005mg/L
18			GB/T 7484-1987	0.05mg/L
19			HJ 484-2009	0.004mg/L
20		1.1	GB/T 5750.7-2006	0.05mg/L
21			GB/T 7493-1987	0.003mg/L
22			HJ/T 346-2007	0.08mg/L
23		F^- Cl^- - Br^-	HJ 84-2016	0.007mg/L
24		NO_3^- PO_4^{3-} SO_3^{2-} SO_4^{2-}		0.018mg/L
25		/	HJ 639-2012	0.4μg/L
26		-		0.4μg/L
27				0.2μg/L

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

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

16

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

pH≤7 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		
	1#	2#	3#	4#	5#
pH	0.07	0.07	0.07	0.00	0.00
	3.53	**3.42**	**2.32**	**3.61**	**3.76**
	3.15	**2.62**	**2.25**	**2.73**	**2.71**
	0.47	0.50	0.55	0.48	0.45

	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

4.5-4

4.5-18

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

2

L_{Aeq}

3

2022 1 19 -1 20 2

GB3096-2008

4

4.5-19

4.5-19 dB(A)

2022.1.19		1#	57.4	47.1
		2#	58.6	47.7
		3#	57.7	47.1
		4#	58.9	47.8
		5#	52.0	44.0
		6#	52.7	44.6
		7#	57.1	46.7
		8#	55.4	46.4
2022.1.19	9#		50.6	40.1
	10#		49.9	40.5
2022.1.20	11#		53.4	43.2

4.5.4.2

1

GB3096-2008 3

65dB(A) 55dB(A)

GB3096-2008 2 60dB(A) 50dB(A)

2

A Leq(A)

$P=Leq-L_b$

P— dB(A)

Leq— A dB(A)

L_b— dB(A)

4.5-20

4.5-20 dB(A)

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

3

GB3096-2008 2

HJ964-2018

10

4.5-21 **4.5-5**

4.5-21

116.193E	36.841N	0~0.2m	GB15618-2018 +		

116.199E 36.850N 0~0.2m

				0.5~1.5m 1.5~3m	+		
4#		116.194E	36.843N	0~0.5m 0.5~1.5m 1.5~3m			
5#		116.189E	36.845N	0~0.5m 0.5~1.5m 1.5~3m			
6#		116.194E	36.845N	0~0.2m			
7#		116.195E	36.850N	0~0.5m 0.5~1.5m 1.5~3m	GB36600-2018 +		
8#		116.200E	36.849N	0~0.5m 0.5~1.5m 1.5~3m			
9#		116.196E	36.846N	0~0.5m 0.5~1.5m 1.5~3m			
10#		116.200E	36.845N	0~0.2m			

2

1# GB15618-2018 1

pH +

13

3# 7# GB36600-2018 1

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] [a]

[b] [k] [a h] [1,2,3-cd] 46

2# 4# 5# 6# 8# 9# 10#

+ 5

3

2022

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	1.0μg/kg
10				1.0μg/kg
11				1.5μg/kg
12	-1,2-			1.3μg/kg
13	-1,2-			1.4μg/kg
14	1,1-			1.2μg/kg
15				1.1μg/kg
16	1,1,1-			1.3μg/kg
17				1.3μg/kg
18				1.9μg/kg
19	1,2-			1.3μg/kg
20				1.2μg/kg
21	1,2-			1.1μg/kg
22	1,1-			1.0μg/kg
23				1.3μg/kg

24	1,1,2-			1.2μg/kg
25				1.4μg/kg
26				1.2μg/kg
27				1.2μg/kg
28	+			1.2μg/kg
29				1.2μg/kg
30	1,1,1,2-			1.2μg/kg
31	1,1,2,2-	/ -	HJ 605-2011	1.2μg/kg
32	1,2-			1.5μg/kg
33	1,4-			1.5μg/kg
34				1.1μg/kg
35	1,2,3-			1.2μg/kg
36				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]		HJ 834-2017	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)

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#	22	146	39				

4.5-25 1 2# 4# 5# 6# mg/kg g/kg

	2#	4#			5#			6#
		0~0.5m	0.5~1.5m	1.5~3m	0~0.5m	0.5~1.5m	1.5~3m	
C_{10}-C_{40}	21	18	20	26	46	23	29	45
+								

4.5-25 2 8# 9# 10# mg/kg g/kg

	8#			9#			10#
	0~0.5m	0.5~1.5m	1.5~3m	0~0.5m	0.5~1.5m	1.5~3m	
C_{10}-C_{40}	16	19	14	23	20	24	15

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

	31	24	23	27	23	25

4.5.5.2

1

1# 9

+

2# 4# 5# 6# 8# 9# 10# 1 +

3# 7# 7

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] [a] [b] [k]

[a h] [1,2,3-cd]

2

1#

GB15618-2018 1

GB36600-2018 1 2

1.4-6 1.4-7

3

$$P_i=C_i/S_i$$

P_i— i

C_i—i mg/kg

S_i—i mg/kg

4

4.5-27

4.5-27 1 1#

	0.70	0.04	0.35	0.22	0.31	0.23	0.12	0.49	0.0087

4.5-27 2 2# 4# 5# 6# 8# 9# 10#

	2#	4#			5#			6#
		0~0.5m	0.5~1.5m	1.5~3m	0~0.5m	0.5~1.5m	1.5~3m	
	0.005	0.004	0.004	0.006	0.01	0.005	0.006	0.01
		8#			9#			10#
		0~0.5m	0.5~1.5m	1.5~3m	0~0.5m	0.5~1.5m	1.5~3m	
		0.004	0.004	0.003	0.004	0.004	0.005	0.003

4.5-27 3 3# 7#

3#	0~0.5m	0.15	0.006	0.0008	0.02	0.001	0.02	0.007
	0.5~1.5m	0.17	0.006	0.001	0.03	0.002	0.03	0.005
	1.5~3m	0.19	0.005	0.001	0.02	0.002	0.02	0.005
7#	0~0.5m	0.18	0.006	0.001	0.05	0.002	0.03	0.006
	0.5~1.5m	0.18	0.005	0.001	0.07	0.001	0.03	0.005
	1.5~3m	0.16	0.005	0.001	0.06	0.001	0.03	0.006

4.5-27 1#

GB15618-2018 1

GB36600-2018

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

4

1 2

5

6

7

8

9

40 10

15

10

11

12

13

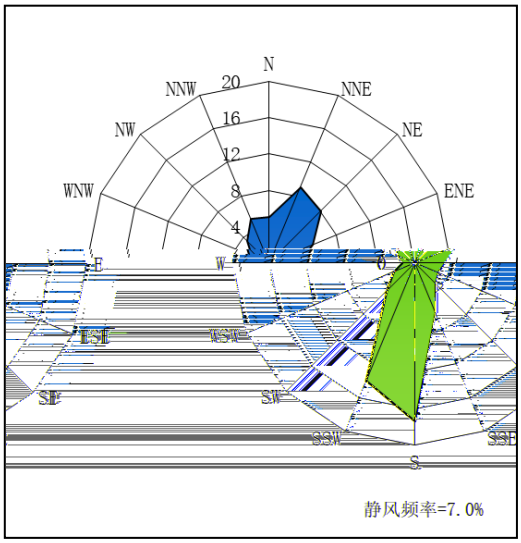
5.1.6.3

5.1.6.4

5.1.6.5

5.1.7

5.2-2 20 2001 2020



5.2-1 20 2001-2020

5.2.2

5.2-3

5.2.-4 5.2-5 5.2-2

5.2-3

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

5.2-4

			/m	/m	/m	/ m/s	/	/h		/ kg/h
	X	Y								
P1-1	116.196E	36.846N	57	30	0.80	16.59	30	8400		0.08kg/h VOCs 0.097kg/h
P1-2	116.196E	36.846N	57	30	0.80	16.59	30	8400		VOCs 0.039kg/h
P1-3	116.199E	36.846N	57	35	0.9	13.11	30	6600		kg/h VOCs kg/h kg/h
P1-4	116.199E	36.846N	57	36	0.9	13.11	30	6600		0.0675kg/h VOCs 0.097kg/h 0.0021kg/h
P1-5	116.199E	36.846N	57	38	0.15	13.3	90	6600		0.0675kg/h VOCs 0.097kg/h 0.0021kg/h
P1-6	116.200E	36.846N	57	30	0.15	13.3	90	6600		0.0252kg/h 0.0324kg/h 0.19kg/h
P1-7	116.200E	36.846N		35						VOCs 0.097kg/h 0.0021kg/h
P2-1	116.193E	36.843N	57	35	0.9	13.11	30	6600		kg/h VOCs kg/h
P2-2	116.193E	36.843N	57	36	0.9	13.11	30	6600		0.0675kg/h VOCs 0.097kg/h 0.0021kg/h
P2-3	116.193E	36.843N	57	38	0.15	13.3	90	6600		0.0675kg/h VOCs 0.097kg/h 0.0021kg/h

P2-4	116.193E	36.843N	57	30	0.15	13.3	90	6600		0.0252kg/h 0.0324kg/h 0.19kg/h
P2-5	116.193E	36.843N		35						VOCs 0.097kg/h 0.0021kg/h

4.2-4



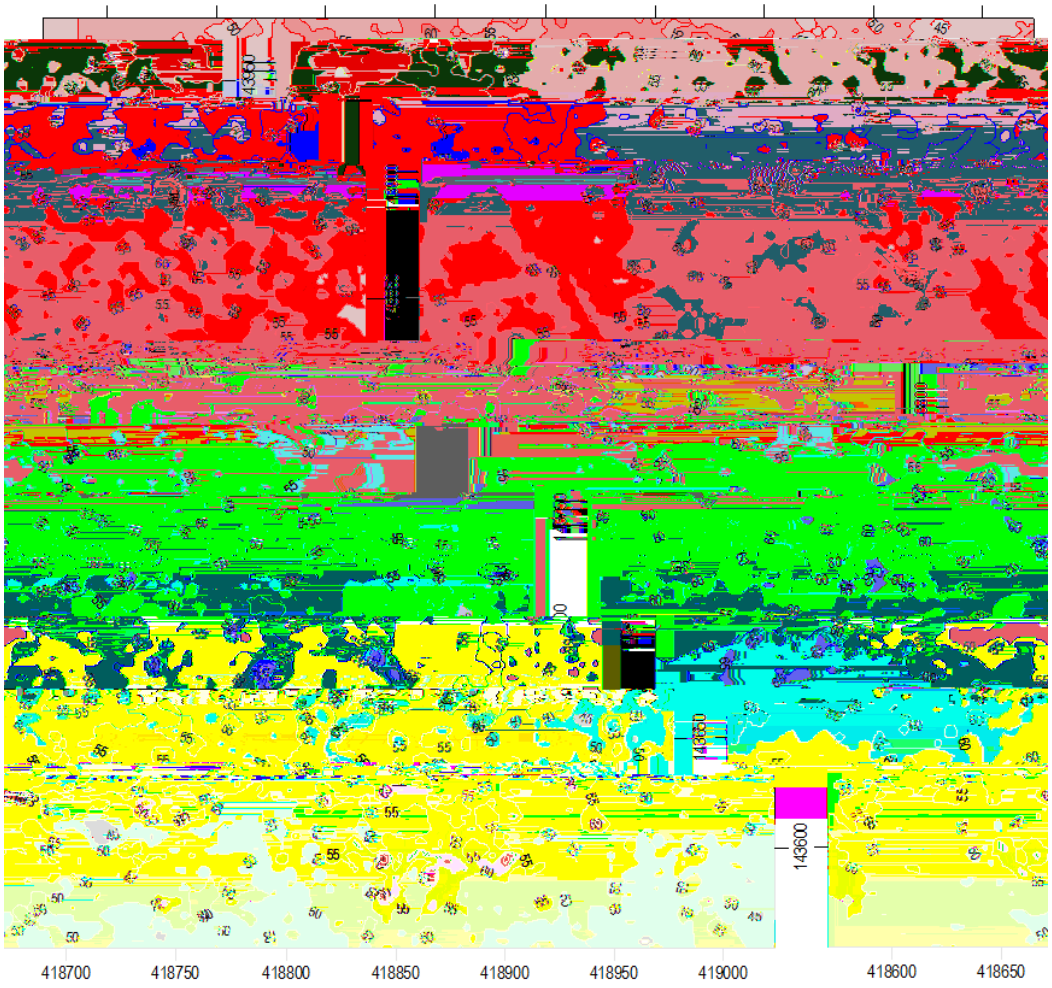
										0.108kg/h 0.01214kg/h 0.00189kg/h
DA031	116.196E	36.848N	57	15	0.35	25.33	20	7200		0.0402kg/h
DA005	116.197E	36.848N	57	26	0.4	11.06	20	2400		0.0254kg/h VOCs 0.00679kg/h 0.000111kg/h
DA007	116.197E	36.848N	57	15	0.4	14.38	20	2400		VOCs 0.049kg/h
DA008	116.197E	36.848N	57	15	0.4	9.95	20	2400		0.0169kg/h
DA025	116.196E	36.847N	57	30	0.5	4.95	30	8400		0.01kg/h VOCs 0.0105kg/h
DA024	116.196E	36.847N	57	30	0.6	7.86	30	8400		0.0191kg/h VOCs 0.0216kg/h
DA018	116.196E	36.847N	57	30	1.2	9.83	30	8400		0.0108kg/h VOCs 0.207kg/h
DA029	116.196E	36.848N	57	30	0.80	5.53	30	8400		0.0292kg/h VOCs 0.479kg/h
P6-1	116.199E	36.845N	57	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	57	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 P6-5	116.199E	36.845N	57	35	2.4	1.47	20	8400		0.259kg/h VOCs0.039kg/h 0.0009kg/h 0.001026kg/h 0.002688kg/h 0.0186kg/h 0.00621kg/h
P6-6	116.199E	36.845N	57	35	0.8	4.42	20	8400		VOCs0.0122kg/h 0.0000595kg/h 0.000113kg/h 0.00109kg/h 0.00591kg/h 0.00224kg/h
P6-7	116.200E	36.845N	57	35	0.8	4.42	20	8400		VOCs0.00925kg/h 0.0000595kg/h 0.0000578kg/h 0.00159kg/h 0.00486kg/h
P6-8	116.200E	36.845N	57	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 DA0



4.2-2

5.2.2.2

Pmax 1%

Pmax=9.47% 10% HJ2.2-2018

5.2.2.3

HJ2.2-2018 5.4.2

5km

5km 1.7-1 1.7-1

5.2.3

/

5.2.4

5.2.5

4.2-7

4.2-8 4.2-9

		AERMO	ADMS	AUSTAL200	EDMS/	CALPUF		
		C				C		
			C			C		
			C			C		
	1h		h		C		C	
		C					C	
		-					k>-	
			SO_2 NO_X					

9À NC2ÂíÁ o D9À NC2Âãd

5.3-1

5.3-2 5.3-3

5.3-1

5.3-1

1		COD_{Cr} BOD_5			T1			DW001		
2		COD_{Cr} BOD_5 SS	GB/T31962-2015 1A		T2			DW001		

4.3-2

				t/a						/ mg/L
1	DW001	116.185	36.856	0.32373					COD_{Cr}	40

2				0.64746	GB18918-2002 A COD_{Cr} NH_3-				BOD_5	10
										2.0
										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} NH_3-

26477.5m^3/a

COD_{Cr}

BOD_5 29.6mg/L 18mg/L 8.06mg/L

13mg/L 0.78t/a 0.48t/a 0.214t/a 0.34t/a

26477.5m^3/a COD_{Cr} BOD_5 0.51t/a 0.26t/a

0.007t/a 0.23t/a

5.3.4

5.3.4.1

2004

8 4 m^3/d

2007 9

8 m^3/d 4 m^3/d

1 A 2009

5 8

16km

3.4-3 3.4.2.3

5.3.4.2

8 m^3/d 2021.1-12

3.66 m^3/d 75.65m^3/d

0.17%

29.6mg/L BOD_5 18mg/L 8.06mg/L

300mg/L

BOD_5 150mg/L 20mg/L

5.3.5

26477.5m^3/a

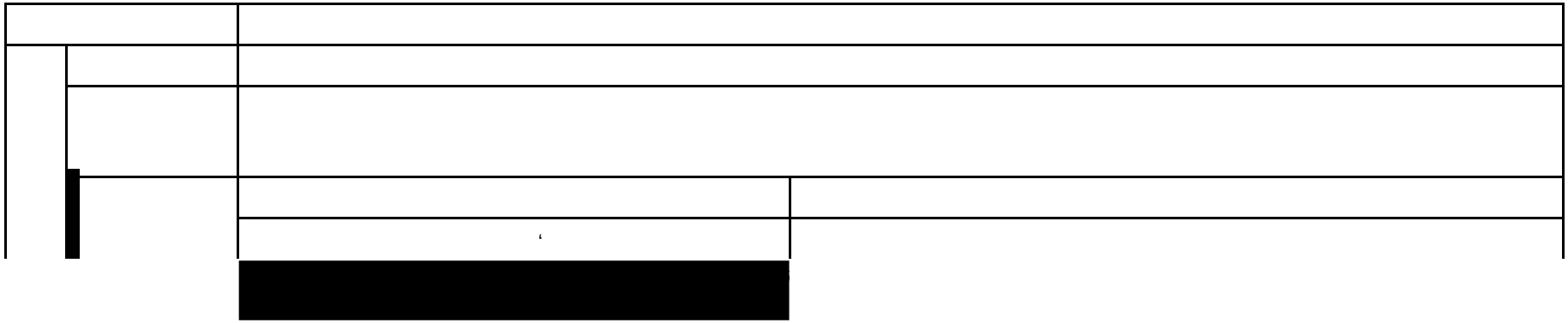
COD_{Cr} 0.51t/a NH_3-N

0.007t/a COD 40mg/L

5.3.6

5.3-4

5.3-4



			pH SS COD_{Cr} BOD_5	2
		km	km^2	
		pH SS COD_{Cr} BOD_5		
		km	km^2	

			/ t/a			/ mg/L
		CODcr	COD_{Cr} 26477.5m³/a 0.78t/a 0.214t/a 26477.5m³/a COD_{Cr} 0.51t/a 0.007t/a			COD 29.6mg/L 8.06mg/L CODcr19.4mg/L 0.253mg/L
					/ t/a	/ mg/L
		m³/s m	m³/s m	m³/s m		

				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

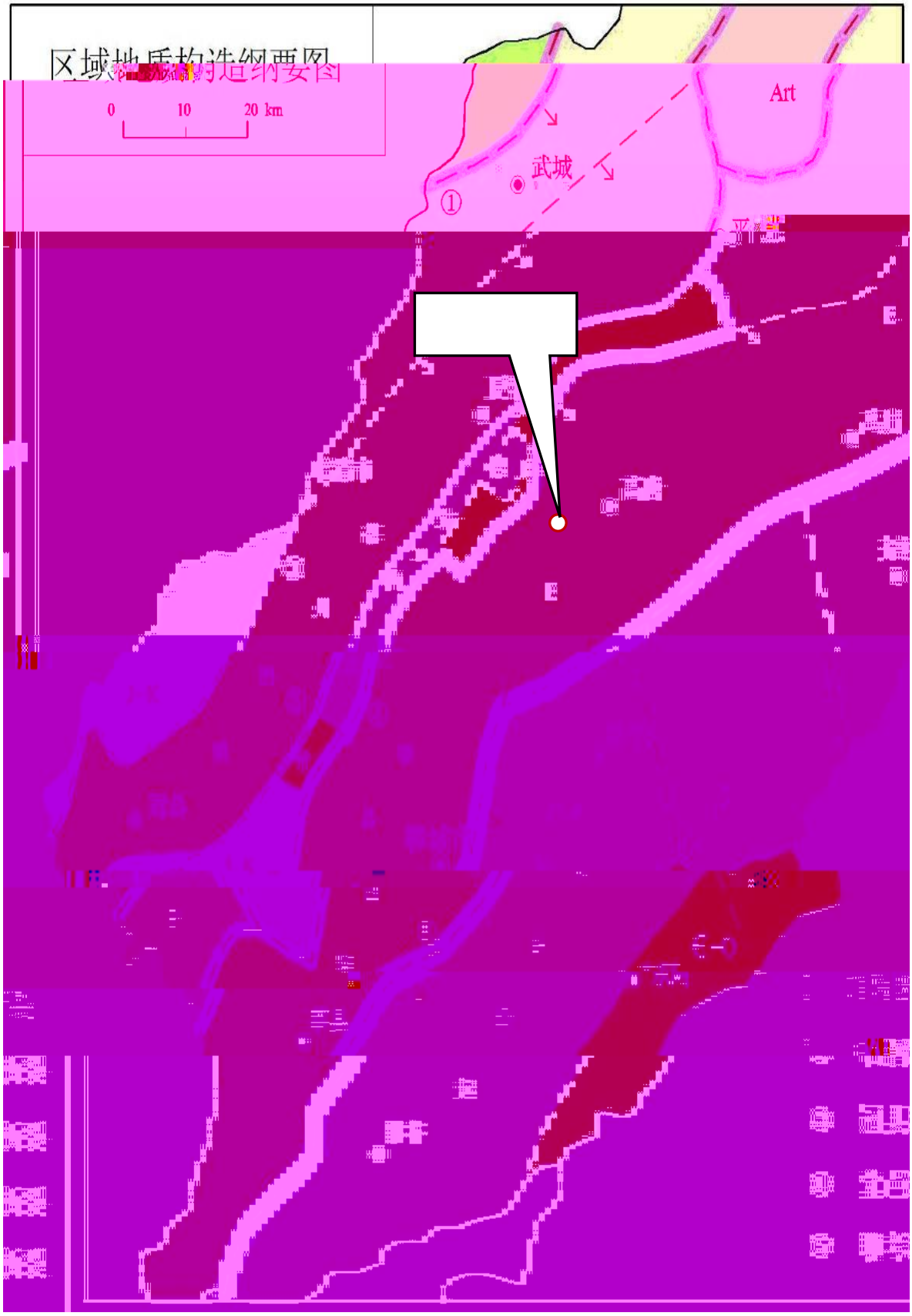
4 5

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

-17.00~-16.20m -16.67m 16.30~17.10m 16.77m

6 -

1.30~2.50m 1.78m

-18.80~-18.20m -18.44m 18.30~18.90m 18.54m

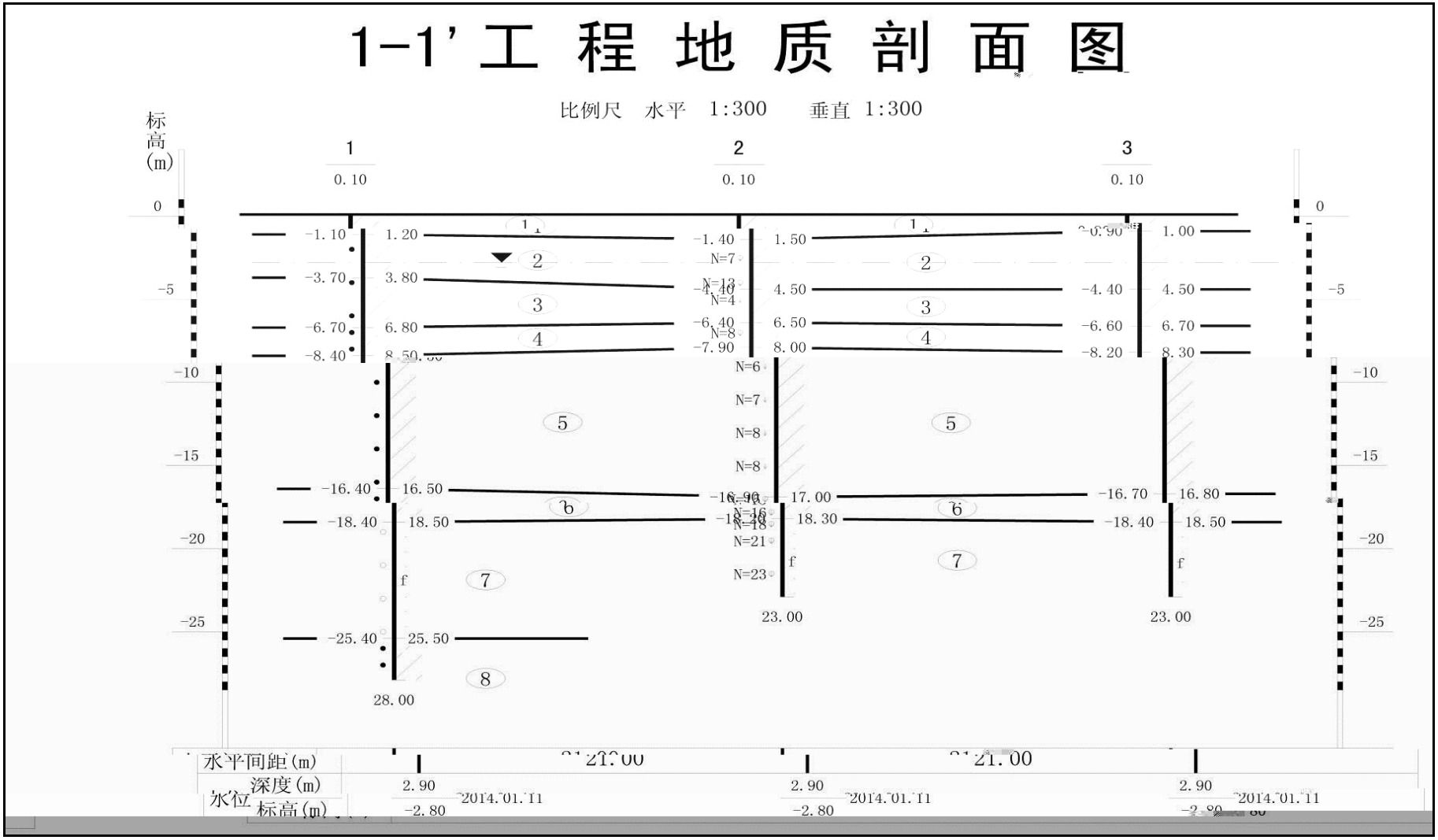
7

6.10~7.10m 6.68m -25.40~-24.70m

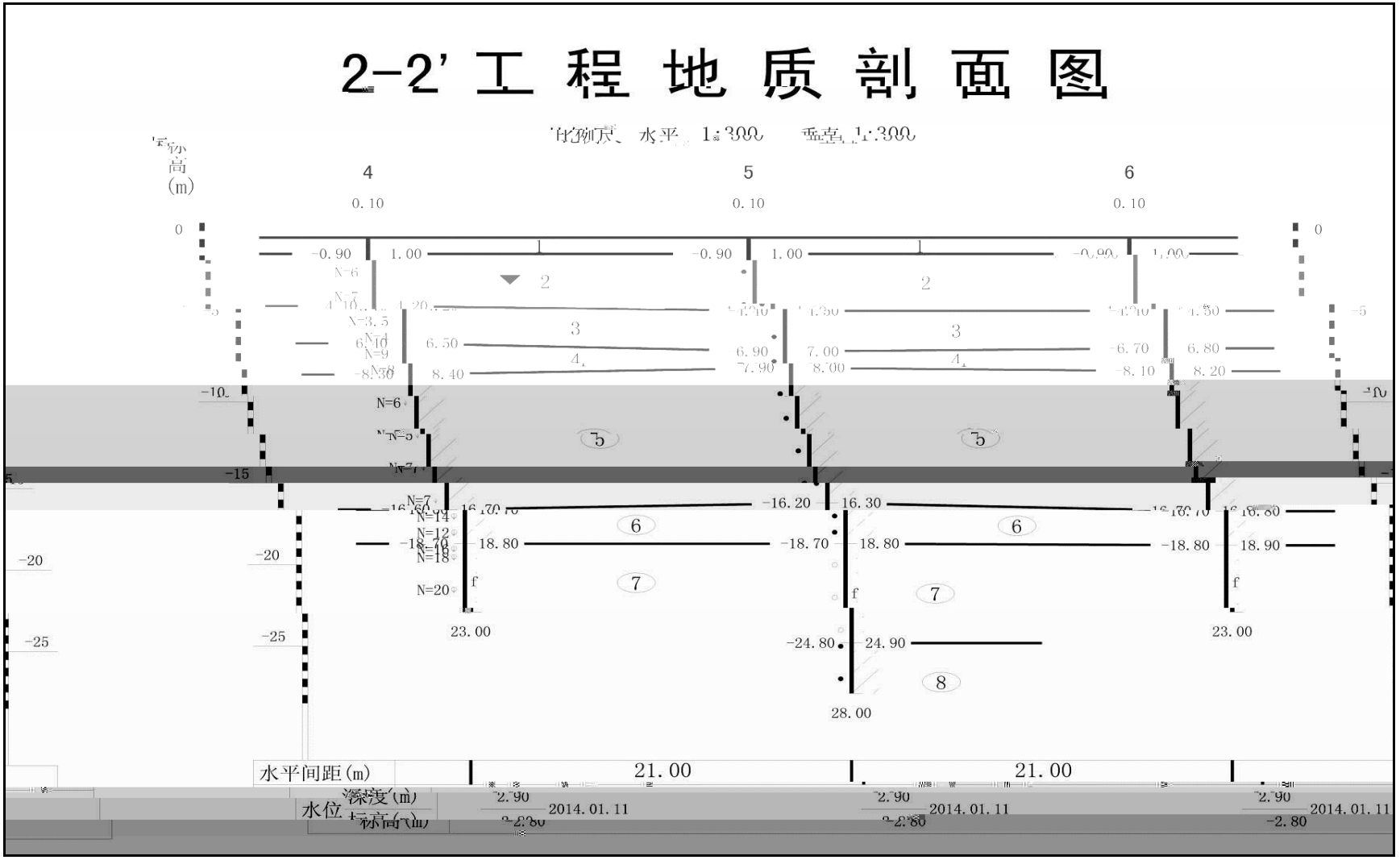
-25.08m 24.80~25.50m 25.18m

8

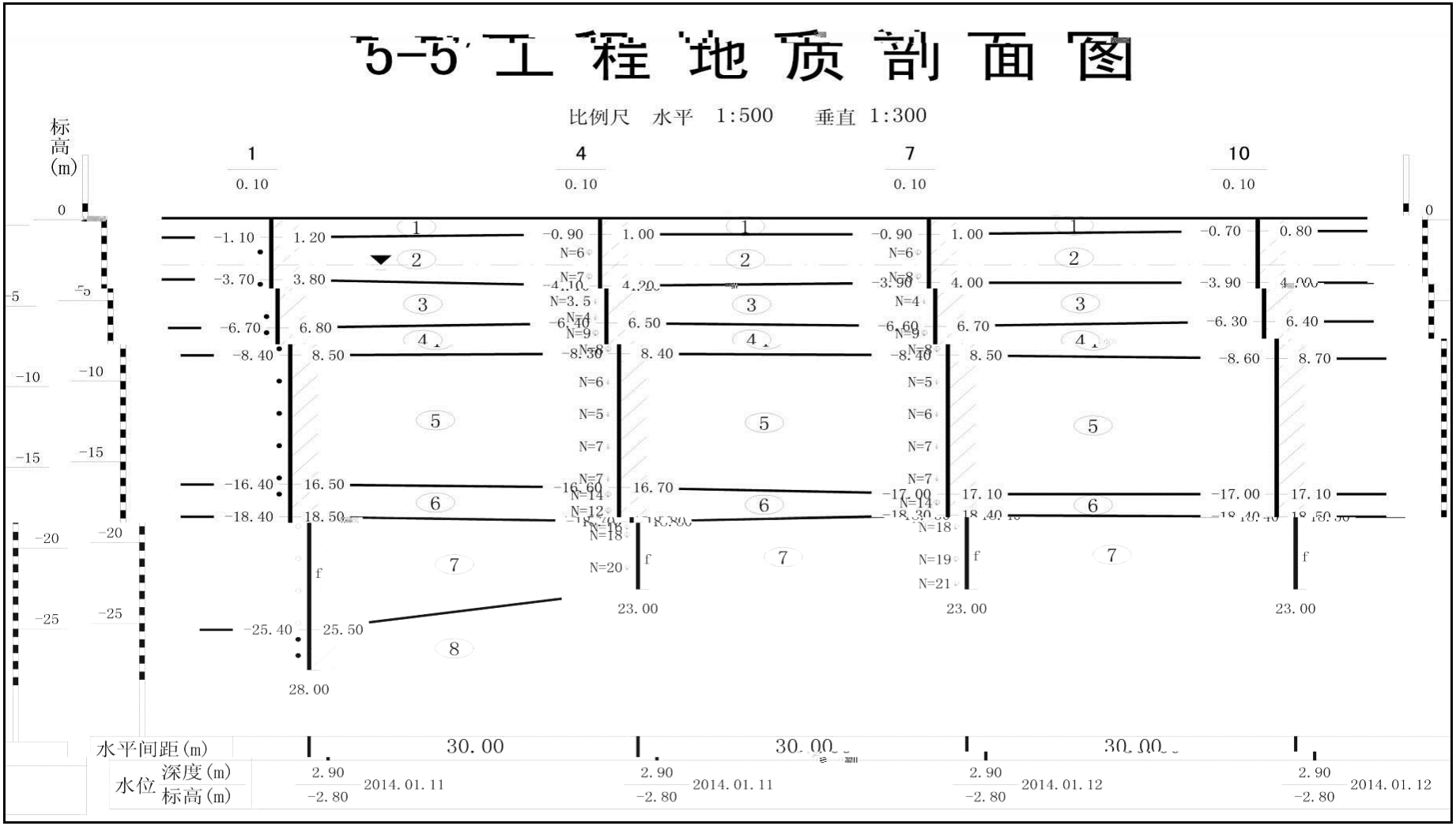
5.4-2~5.4-5


1-1’工 程 地 质 剖 面 图
比例尺 水平 1:300 垂直 1:300
标高(m)
1
2
3
0.10
0.10
0.10
0
-5
-10
-15
-20
-25
-1.10
1.20
-1.40
1.50
-0.90
1.00
-3.70
3.80
-4.40
4.50
-4.40
4.50
-6.70
6.80
-6.40
6.50
-6.60
6.70
-8.40
-7.90
8.00
-8.20
8.30
N=7
N=13
N=4
N=8
N=6
N=7
N=8
N=8
N=16
N=18
N=21
N=23
-16.40
16.50
17.00
-16.70
16.80
-18.40
18.50
18.30
-18.40
18.50
-25.40
25.50
28.00
23.00
23.00
1
2
3
4
5
6
7
8
f
水平间距(m)
深度(m)
水位
标高(m)
2.90
-2.80
2014.01.11
2.90
-2.80
2014.01.11
2.90
2014.01.11

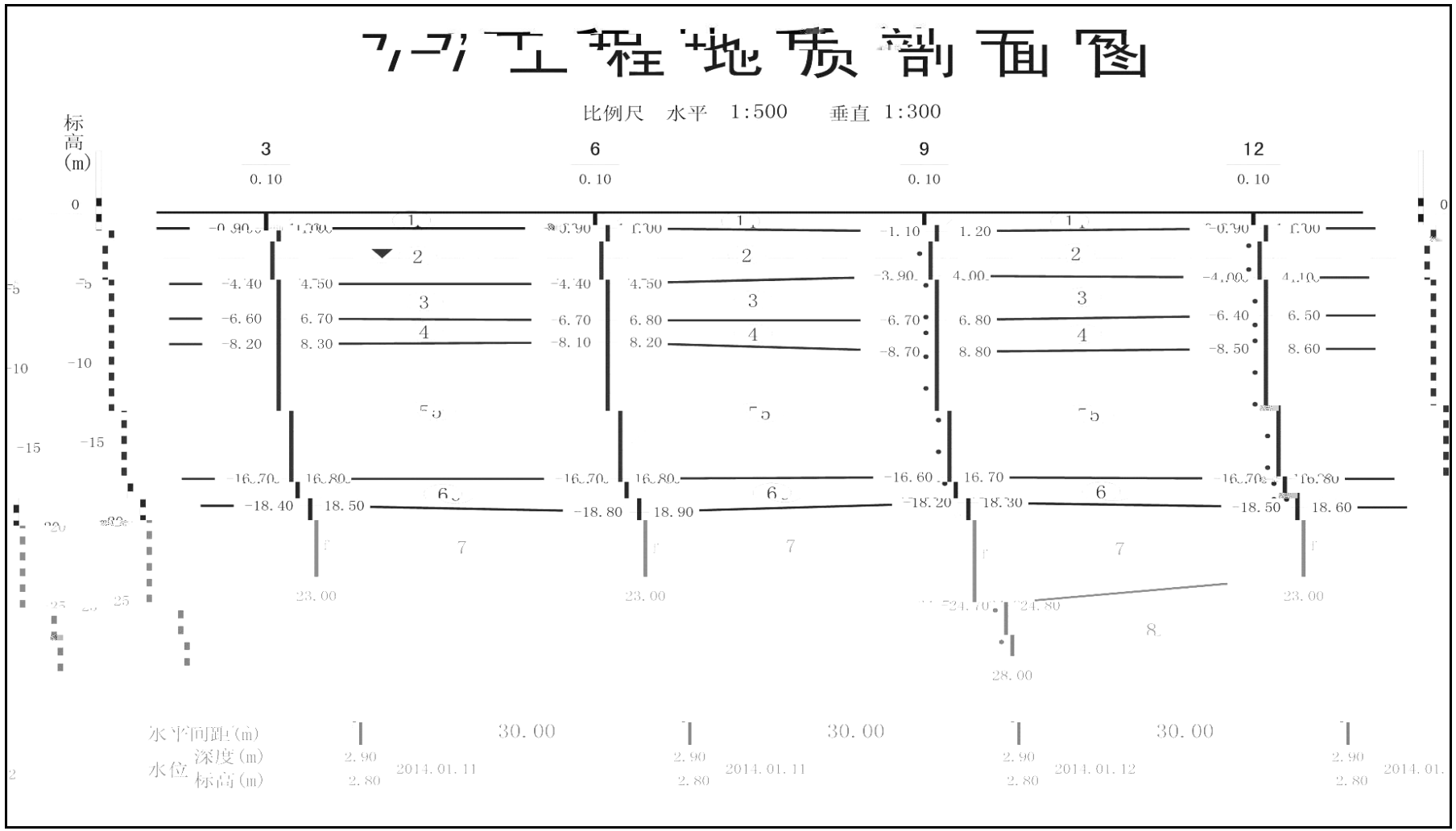
5.4-2


2-2' 工 程 地 质 剖 面 图
4
5
6
0.10
0.10
0.10
-0.90
1.00
6.50
8.40
6.90
7.00
7.90
8.00
6.70
6.80
8.10
8.20
-16.20
16.30
-18.70
18.80
-18.80
18.90
23.00
-24.80
24.90
28.00
水平间距(m)
21.00
21.00
水位
2014.01.11
2014.01.11
2014.01.11

5.4-3


5-5' 工程地质剖面图
比例尺 水平 1:500 垂直 1:300
标高(m)
1
4
7
10
水平间距(m)
30.00
水位 深度(m) 2.90 2.90 2.90 2.90
标高(m) -2.80 2014.01.11 -2.80 2014.01.11 -2.80 2014.01.12 -2.80 2014.01.12

5.4-4


工程地质剖面图
比例尺 水平 1:500 垂直 1:300
标高(m)
3
6
9
12
0.10
水平间距(m)
30.00
水位 深度(m)
标高(m)
2014.01.11
2014.01.12

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	

1

GB/T31962-2015 1A

2

5.4.4.3

100km^2

5.4-6

2.5km

5.4.4.4

1

2

3

4

6m 1.0×10^{-7}cm/s

1.5m 1.0×10^{-7}cm/s

5.4-4 **5.4-7**

5.4-4

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

C30 P8

250mm 150mm

1.0mm

2mm

100m

2

1m

$^{-7}$cm/s 2mm 2mm

$^{-10}$cm/s

1.5m 1×10^{-7}cm/s

C25 P6

100mm

P6

1.0mm 0.3%

HDPE

4.4.4.5

1

5.4-5

5.4-5

		300mm 400mmC30	P8	6.0m 1.0×10^{-7}cm/s	
		300mm3:7 200mmC30	P6		
		2500mm 350mmC30	P8		
		100 C10 20 ±0.00 C35		1.5m 1.0×10^{-7}cm/s	
		3:7 300		--	

2

5.4-5

2

5.4.4.6

1

2.2-1

5.4-6

5.4-6

1				pH	

5.4-7

	2019.12.28	
pH	7.42	6-9
mg/L	0.22	1.5
mg/L		0.002
mg/L		0.02
mg/L	1.1	20
mg/L		1.00
mg/L		0.05
mg/L	1.6	3.0
(MPN/100ml)	2	3.0
(CFU/ml)	94	100
mg/L		1.0
mg/L		0.001
mg/L		0.01
mg/L		0.05
mg/L		0.01
mg/L	0.68	1.0
mg/L		0.005
mg/L		0.3
mg/L		0.10
mg/L		1.00
mg/L		0.3
	2020.12.30	
		0.02
mg/L	435	450
mg/L	909	1000
Na^+ mg/L	155	200
K^+ mg/L		
Ca^+ mg/L		
Mg^+ mg/L		
mg/L	225	250
mg/L	1160	250
CO_3^{2-} mg/L		
HCO_3^- mg/L	351	

GB/T14848-2017

5.4.4.7

5.4.5

5.5

80~90dB(A)

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

$L_A(r)$ $L_{Aref}(r_0)$ (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

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#			58.9	19.1	24.56	58.90		-6.1	47.8	19.1	24.56	47.83		-7.17
5#			52.0		41.84	52.40	65	-12.6	44.0		41.84	46.06	55	-8.94
6#			52.7		44.15	53.27		-11.73	44.6		44.15	47.39		-7.61
7#			57.1		20.84	57.10		-7.9	46.7					

VOCs

HJ964-2018 B

5.6-1

5.6-1

5.6-1

2

49444m^2

HJ964-2018 6.2.2.1

2

3

( ) HJ964-2018

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 / pb×A×D

g/kg

Is g

g/a g/a

g/a g/a

g/a g/a g/a

g/a

Ls g 0

Rs g 0

pb kg/m^3 1377kg/m^3

A m^2 2175400m^2

2128000 m^2

D 0.2m

n a

E

Sb g/kg

S g/kg

6

n

5.6-4

5.6-4 1

	g/kg	S g/kg	g/kg	S g/kg
10	0.0002592	0.0010592	0.000105	0.012105
20	0.0005185	0.0013185	0.000211	0.012211
30	0.0007777	0.0015777	0.000316	0.012316
40	0.0010370	0.001837	0.000421	0.012421
50	0.0012962	0.0020962	0.000527	0.012527
g/kg	4mg/kg		1200mg/kg	
10	0.0002592	0.0010592	0.000105	0.012105
20	0.0005185	0.0013185	0.000211	0.012211
30	0.0007777	0.0015777	0.000316	0.012316
40	0.0010370	0.001837	0.000421	0.012421

50	0.0012962	0.0020962	0.000527	0.012527
g/kg	4mg/kg		1200mg/kg	

1

5.6-4 2

2

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] [a] [b] [k] [a h] [1,2,3-cd]			
		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] [a] [b] [k] [a h] [1,2,3-cd]			
		GB 15618			
		1000m			
		a b c a b			
		2			

5.6.2

5.6-7

5.6-7

			t/a									
S_1			773	--						282-999-99		
S_3			1110	--						282-999-99		
S_4			157	314						282-999-99		
S_5			472.6	945.2						282-999-99		
S_2			0.1	--						HW08 (900-249-08)	T I	
			4	3.5				6		282-999-99		
			0.1	0.2				4		282-999-99		
			5.3	4.2								

		--	2	3.5						HW49 (900-041-49)	T/In	
			1t/4a	2t/4a				4		HW08 (900-249-08)	T I	
			2535.1 3.1	1272.6 5.5								

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

1×10^{-7}cm/s

3 GB1556.2-1995

4

5.6.4.2

1

GB18597-2001 2013

1

2

GB18597-2001 2013

a.

b.

c.

d.

1/5

e.

f.

100mm

3

4

5

GB18597-2001 2013

5.6.5

5.7

5 130t/h 5 2 24MW

SO_2 NO_X

5.7.1.2

5.7-1

5.7-1

1		1 750m^3 2
2		1 2
3		1 2 3 4 5

4.7.1.3

2020 12 30 371526-2021-004-L

5.7.2

5.7.2.1

HJ 169-2018 B

2015 -

VOCs

16cm 1.5km

30m^3 24kg

5.7-2

5.7-2

			t/a	t/a		
			31000	885		
			0.0013	2 10^{-7}	400kg/	
		-	1/4a	1		
			70	2		
		37%	105	2.54 0.94	3.9m^3 1	
		20-25%	75	2.84	3.9m^3 1	
			1.1	0.03		
			656.04 m^3	0.024		
			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		

4.7.2.2

4.7.2.3

MSDS 4.7-3~ 4.7-9

4.7-3 MSDS

			Caprolactam

C_6H

4.7-4 - MSDS

					Diphenyl and diphenl ether		
	12.3		258				

4.7-5 MSDS

					m-Dihydroxybenzene		
	$C_6H_4(OH)_2$		110.11				
	110.7		276.8				
	LD_{50}301mg/kg( ) 3360mg/kg( ) 29mg/kg						
	( )						

4.7-6 MSDS

4.7-7 MSDS

4.7-8 MSDS

					Ammonium hydroxide Ammonia water		
	NH4OH		35.05				
					1.59kPa(20)		
	=1	0.91		(kJ/mol)			
	=1				--		
(vol%)							
	8.2						
				UN	2672	CAS NO.	1336-21-6
	82503						20
	15 15 3%						

4.7-9 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						

	( )

4.7-10 MSDS

4.7-11 MSDS

4.7-12 MSDS

					benzene		
	C_6H_6		78.11				
	5.5		80.1				
	LD50 3306 mg/kg( ) 48 mg/kg( ) LC50 31900mg/m3 7 ( )						
	( )						

4.7-13 MSDS

			92.14				
	-94.4		110.6				

4.7-14 MSDS

			106.17				
	13.3		138.4				

	=1	0.6		-82.25		
	5 15(vol%)					
	2.1					
	-					
			UN	1971	CAS NO.	74-82-8
	21007					
	( ) ( ) ( )					

4.7-16 MSDS

1			-OH

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

4.7.3

4.7.3.1

1 P

1 Q

B

Q

Q

C.1 Q

$Q=q_1/Q_1+ q_2/Q_2 \quad _n/Q_n$ C.1

q_1 q_2 q_n t

Q_1 Q_2 Q_n t

Q 1

Q 10 100

(HJ 169-2018) B

4.7-10

2 M

(HJ 169-2018)C.1

M M 20 10 M 20 5 M=5

M1 M2 M3 M4 M 4.7-11

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**

10 M4 4.7-12

P4

2 E

1

E1 E2 E3

4.7-13

4.7-13

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

E3	5km 1 500m 500 200m 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

10km

S1

G2	a
G3	
a	

G3

4.7-19

D3	×10^{-6}cm/s
D2	1.0m ×10^{-6}cm/s 1.0×10^{-6}cm/s ×10^{-4}cm/s
D1	
Mb K	

3.1

3.47×10^{-5}cm/s D2

D2 G3

4.7-9 E3

3

4.7-20

4.7-20

				(m)		
	5km 1.6-1					
	500m					1709
	5km					130041
	E					E1

4.7-22

	+			

4.7-1

4.7-25

4.7-25

1						
2						
3						

4.7.5

4.7.5.1

		1.00×10^{-8}/a
	10%	5.00×10^{-6}/ m a 1.00×10^{-6}/ m a
75mm	10%	2.00×10^{-6}/ m a 3.00×10^{-7}/ m a
150mm	10% 50mm	2.40×10^{-6}/ m a 1.00×10^{-7}/ m a
	10% 50mm	5.00×10^{-4}/a 1.00×10^{-4}/a
	10% 50mm	3.00×10^{-7}/h 3.00×10^{-8}/h
	10% 50mm	4.00×10^{-5}/h 4.00×10^{-6}/h

4.7-24

10%

4.0×10^{-5}/h

4.7.6

4.7.6.1

1

10%

50mm 50m ³

45m^3 5.0m 3.5m 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

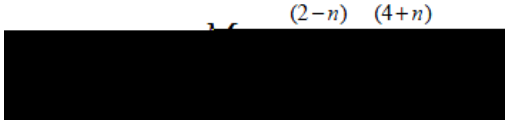
	P Pa	P_0 Pa	kg/m^3	h m	A m^2	Q_L kg/s
	101325	101325	1155	4.3	0.0000785	0.541

2

HJ/T169-2018

HJ/T169-2018 F.1.4.3

$(2-n)$ $(4+n)$



Q_3 kg/s

P Pa

R 8.314J/ mol K

T_0 298K

M 0.0365kg/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}	2012.5	1.5	81	5.07	30	0.0045

4.7.6.2

1

HJ16-2018

1

HJ/T169-2018

F 1.5m/s 25

50%

2

HJ/T169-2018 H CAS 7647-01-0 1 150mg/m ³

2 33mg/m ³

3

30min

4

HJ/T169-2018 G

AFTOX

5

4.7-30 **4.7-2**

4.7-3

4.7-4 **4.7-3**

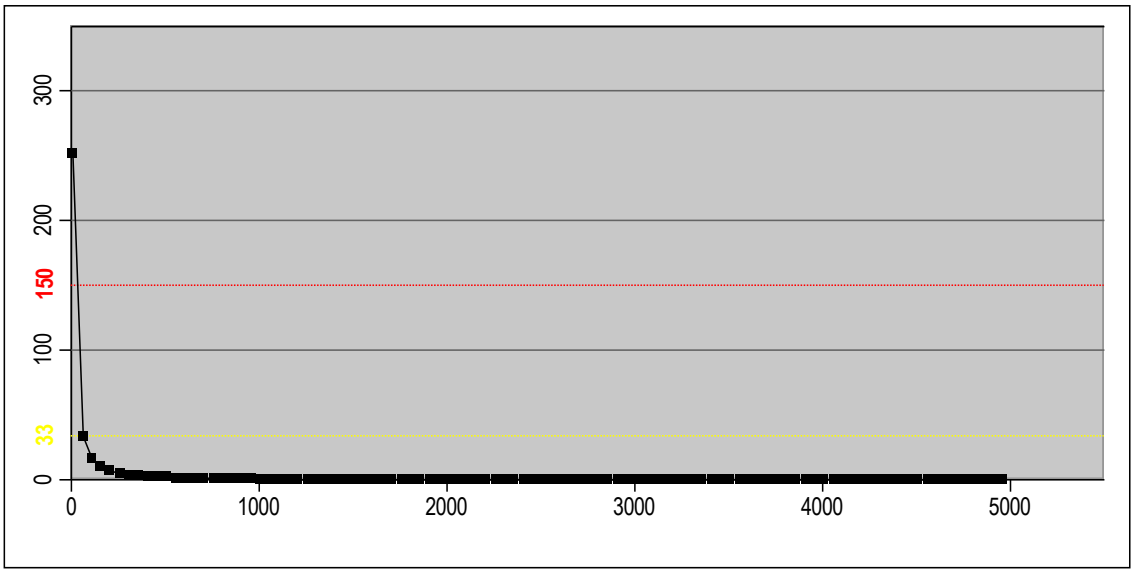
4.7-30

(m)

min

35	1710	19.0	0.251
36	1760	19.6	0.241
37	1810	20.1	0.233
38	1860	20.7	0.225
39	1910	21.2	0.217
40	1960	21.8	0.210
41	2010	22.3	0.203
42	2060	22.9	0.197
43	2110	23.4	0.191
44	2160	24.0	0.185
45	2210	24.6	0.180
46	2260	25.1	0.174
47	2310	25.7	0.170
48	2360	26.2	0.165
49	2410	26.8	0.160
50	2460	27.3	0.156
51	2510	27.9	0.152
52	2560	28.4	0.148
53	2610	29.0	0.145
54	2660	29.6	0.141
55	2710	38.1	0.138
56	2760	38.7	0.135
57	2810	40.2	0.131
58	2860	40.8	0.128
59	2910	41.3	0.126
60	2960	41.9	0.123
61	3010	42.4	0.120
62	3060	43.0	0.118
63	3110	43.6	0.115
64	3160	44.1	0.113
65	3210	45.7	0.111
66	3260	46.2	0.108
67	3310	46.8	0.106
68	3360	47.3	0.104
69	3410	47.9	0.102
70	3460	48.4	0.100
71	3510	49.0	0.098
72	3560	49.6	0.097
73	3610	51.1	0.095
74	3660	51.7	0.093
78	3710	52.2	0.092
76	3760	52.8	0.090

77	3810	53.3	0.088
78	3860	53.9	0.087
79	3910	54.4	0.086
80	3960	55.0	0.084
81	4010	56.6	0.083
82	4060	57.1	0.081
83	4110	57.7	0.080
84	4160	58.2	0.079
85	4210	58.8	0.078
86	4260	59.3	0.076
87	4310	59.9	0.075
88	4360	60.4	0.074
89	4410	61.0	0.073
90	4460	62.6	0.072
91	4510	63.1	0.071
92	4560	63.7	0.070
93	4610	64.2	0.069
94	4660	64.8	0.068
95	4710	65.3	0.067
96	4760	65.9	0.066
97	4810	66.4	0.065
98	4860	68.0	0.064
99	4910	68.6	0.064
100	4960	69.1	0.063



4.7-2

33mg/m^3 60m

150mg/m^3 10m 1min

33mg/m^3 60m 150m

2

pH

pH 6.5

pH 6 90%

pH 4

1 1000m^3

250m

3

4.7.7

4.7.7.1

1

1

2

2

1

2

3

4

5

4.7.7.2

1

V = V1+V2-V3 max+V4+V5

V1+V2-V3 max V1+V2-V3 V m^3

V1 50m^3

V2 m^3 t

Q Q 40L/S t t 2h V2 288m^3

V3 m^3 V3 121m^3

V4 m^3 V4 0m^3

V5 m^3

Q=10 q F

Q m^3

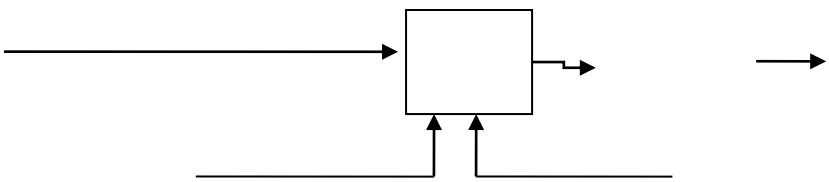
F hm^2 1.856hm^2

q: mm q=qa/n qa 508.8mm n 80d

V_5 118.04m^3

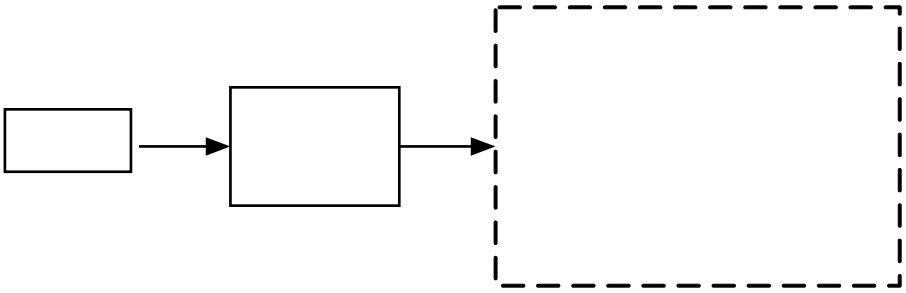
V =50+288-121+118.04=335.04m^3 1000m^3

4.7-5



4.7-5

4.7-6



4.7-6

4.7.7.3

1

2

( )

3

4

4.7.7.4

1

2

3

4

5

6

7

8

4.7.7.5

1

2

3

4.7.7.6

1

2

3

4

5

4.7-32

4.7-32

1		**4.7-7**
2		
3		/
4		
5		
6		
7		

4.7.7.7

(1)

(2)

200m 500m 1000m 1500m 2000m

TSP

15min

4.7.8

4.7.8.1

2015 9 29

371526-2015-008-L

4.7.8.2

1

2

1

4.7-31

4.7-31

	200m 500m 1000m 1500m 2000m	
	2	SO_2 NO_2 PM_{10} TSP VOCs NH_3

pH BOD_5

COD SS

2 4.7-32

4.7-32

	pH BOD_5 COD SS

2

3

3

(1)

( )

(2) 24

(3)

(4)

3

(5)

4.7.9

SO_2 NO_2

4.7-33

4.7-33

		1 Q 10				
			500m 1709			5km 130041 –
			200m			
					F2	F3
						G3
				D1	D2	
		Q	Q			Q
		M				
		P				
			E1		E2	
					E2	E3
					E2	E3
		+				
					/	
					AFTOX	
			-1			10 m
			-2			60 m

		_____ _____ h
		_____ d
		_____ _____ d
_____		

6

6.1

6.1.1

59985.77t/a COD_{Cr}

9.7t/a 0.56t/a

6.1.2

6.1.2.1

1000m^3/d + + +

2.10-7

51921.77m^3/a 148m^3/d

300m^3/d 1000m^3/d 700m^3/d

148m^3/d

GB/T31962-2015 1A

GB18918-2002 A

59985.77m^3/a COD_{Cr} 2.3t/a

0.23t/a

6.1.3

10 100000

0.01%

6.2

6.2.1

G1

38m P1

G2 16m P2

G3 + G4

+ G6

1 44m

G5 G5

26m P4

G7

26m P5

G9 17m

P6 30m P7

G10

25m P8 P9

G11 G12

1

15m

‡

GB16297-1996 2

DB37/2376-2013 2 GB14554-93 2

6

DB37/801.6-2018 1 2

GB31572-2015 5

6.2.3

300 100000

0.3%

6.3

6.3.1

80 95dB A

A

B

C

6.3.2

GB12348-2008 3

GB12348-2008 4

GB3096-2008 3

20 100000 0.02%

6.4

6.4.1

515.573t/a 146.15t/a 661.723t/a

6.4.2

6.4.2.1

2

6.4.2.2

2016

HW08 900-249-08

HW13 900-015-13

HW49 900-041-49

6.4-1

6.4-1

			t/a			
S1			0.27	--		
S2			6	--		
S3			31	--		
S4			15	--		
S5			69.943	--		
S6			142	--		
S8			206	--		
S7			0.16	--		
S9			--	60		
S10			--	65		
S11			7	3		
S13			32	10		
S12	FDY	--	2	8		

S14			5t/4a	--		
S15			10t/4a	--		
S16			0.45	0.15		

6.4.3

6.5

6.5-1

6.5-1

		38m P1		GB16297-1996 2 DB37/2376-2013 2	
		16m P2		6 DB37/801.6-2018 1	
		+	1	GB16297-1996 2	
		+	44m	DB37/2376-2013 2	

P3

1

15m

P10

		35m P15	GB14554-93 2 VOCs 6 DB37/801.6-2018 1	
		35m P16	6 DB37/801.6-2018 2 GB16297-1996 2	
		15m P17	GB14554-93 2 6 DB37/801.6-2018 2 GB16297-1996 2	
			GB16297-1996 2 GB14554-93 1 VOCs 6 DB37/801.6-2018 3	
			GB/T31962-2015 1A	GB/T31962-2015 1A

			GB12348-2008 3 4	1m L_{Aeq}(A) 65dB(A) 70dB(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

			100000
		/	380397
		/	358594
		/	21145
		/	5293
		/	15852
		%	21.1
		%	28.4
		%	15.2
			5505
			7.1
		%	47.1

15.2%

7.1　　9.0

47.1%

7.2 环保投资及效益分析

7.2.1

337　　100000　　0.337%

7.2-1

表 7.2-1　工程环保投资估算表

1			1	10		
2			5	20		
			13	135		
			3	60		

			2	30		
			2	40		
			16	15		
3				20		
4				2		
5				5		
				337		

7.2.2

7.3 社会效益分析

240

8

8.1

8.1.1

1

24

2

1

2

a

b

c

d

a

b

c

d

8.2

8.2-1

8.2-1

								t/a		
					1.59mg/m^3	GB16297-1996 2 DB37/2376-2013 2	0.0041t/a	--	26m	
					6.4mg/m^3 0.89mg/m^3 16.8mg/m^3	GB16297-1996 2	0.0588t/a 0.0084t/a 0.1571t/a	--	17m	
					5.7mg/m^3 0.86mg/m^3 10.6mg/m^3	DB37/2376-2013 2 6 DB37/801.6-2018 1	0.0479t/a 0.0076t/a 0.0865t/a	--	30m	
			+	2 2 2	4.78mg/m^3 1.39mg/m^3	GB16297-1996 2	0.0496t/a 0.0143t/a	--	25m	
			+		5.37mg/m^3 1.68mg/m^3	DB37/2376-2013 2	0.0529t/a 0.0168t/a	--	25m	

					0.043mg/m^3 0.112mg/m^3 0.068mg/m^3 0.024mg/m^3 0.038mg/m^3	2	0.0029t/a 0.0075t/a 0.0046t/a 0.0016t/a 0.0028t/a			
		VOCs			0.259mg/m^3 9.75mg/m^3 1.625mg/m^3 0.043mg/m^3 0.112mg/m^3 0.068mg/m^3 0.024mg/m^3 0.038mg/m^3		0.0174t/a 0.6552t/a 0.1092t/a 0.0029t/a 0.0075t/a 0.0046t/a 0.0016t/a 0.0028t/a	0.1092	35m	
		VOCs			0.259mg/m^3 9.75mg/m^3 1.625mg/m^3 0.043mg/m^3 0.112mg/m^3 0.068mg/m^3 0.024mg/m^3 0.038mg/m^3		0.0174t/a 0.6552t/a 0.1092t/a 0.0029t/a 0.0075t/a 0.0046t/a 0.0016t/a 0.0028t/a	0.1092	35m	
		VOCs			0.28mg/m^3 1.525mg/m^3 0.014mg/m^3 0.136mg/m^3 0.57mg/m^3	GB14554-93 2 GB16297-1996 2	0.0188t/a 0.1025t/a 0.0009t/a 0.0092t/a 0.0383t/a	0.1025	35m	

					0.168mg/m^3 0.007mg/m^3	6 DB37/801.6-2018 1 2	0.0113t/a 0.0005t/a			
		VOCs			0.266mg/m^3 1.156mg/m^3 0.007mg/m^3 0.199mg/m^3 0.446mg/m^3 0.161mg/m^3 0.007mg/m^3	GB14554-93 2 GB16297-1996 2 6 DB37/801.6-2018 1 2	0.0179t/a 0.0777t/a 0.0005t/a 0.0134/a 0.0300t/a 0.0105t/a 0.0005t/a	0.0777	35m	
			+	15m	6.39mg/m^3 0.017mg/m^3	GB14554-93 2 GB16297-1996 2 6 DB37/801.6-2018 1	0.0103t/a 0.000027t/a	--	15m	
		pH COD$_{Cr}$ NH$_3$-N			COD$_{Cr}$50mg/L 5mg/L	GB/T31962-2015 1A	COD$_{Cr}$2.3t/a 0.23t/a	--		
		pH COD$_{Cr}$ NH$_3$-N								

		pH COD_{Cr} NH_3-N SS								

				--		0	--		
				--		0	--		
				--		0	--		

L_{eq}

8.3

8.3.1

( )

8.3-1

8.3-1

		GB36600-2018 1 45		

8.3.2

8.3-2

8.3-2

1

3

8.4.2

1 96 470

2

3

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

COD

8.5.2

COD_{Cr}

COD_{Cr}

VOCs

9

9.1

9.1.1

9

2011 201

2013 21

9.1.2

9.1-1

9.1-1 “ ”

	700m SD-15-B1-03 9.1-1
	1 TSP PM_{10} $PM_{2.5}$ GB 3095-2012 HJ2.2-2018 D.1 2 GB 3838-2002 3 GB/T14848-2017

	4 (GB12348-2008)3 (GB12348-2008)4 GB3096-2008 3
	2011 2013

9.1.3

9.1-3

2008 0800213

9.2.3

100m

100m 50m

9.2.4

9.2.5

9.2.6

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10.1.2

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GB16297-1996 2

DB37/2376-2013

GB16297-1996 2

GB14554-93 2 VOCs

6 DB37/801.6-2018 1

GB31572-2015 5

GB16297-1996 2

2

GB16297-1996 2

GB14554-93 1 VOCs

6

DB37/801.6-2018 3

10.1.4.2

GB/T31962-2015 1A

173161.86t/a

173161.86t/a COD_{Cr} 8.66t/a 0.87t/a

10.1.4.3

10.1.4.4

GB12348-2008 3

GB12348-2008 4

10.1.5

10.1.5.1

1

1

26m 0.15m P5

GB16297-1996

2

DB37/2376-2013 2

17m 0.2m P6

30m 0.2m P7

GB16297-1996

2

DB37/2376-2013 2

GB16297-1996 2

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19

25m

0.2m P8 P9

GB16297-1996 2

DB37/2376-2013 2

GB16297-1996 2

2

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1 15m 0.3m P10

GB16297-1996 2

DB37/2376-2013 2

GB31572-2015 5

GB16297-1996

2 6

DB37/801.6-2018 1

GB14554-93 2

25m 0.3m P11

GB14554-93 2

GB16297-1996 2

DB37/2376-2013 2 VOCs

6

DB37/801.6-2018 1

6

DB37/801.6-2018 2

GB16297-1996 2

35m 0.8m

P12 P13 P14

GB14554-93 2

GB16297-1996 2

DB37/2376-2013 2

VOCs

6 DB37/801.6-2018 1

6 DB37/801.6-2018 2

GB16297-1996 2

35m

0.8m P15

GB14554-93 2 VOCs

6

DB37/801.6-2018 1

6 DB37/801.6-2018 2

GB16297-1996 2

35m

0.8m P16

GB14554-93 2 VOCs

6

DB37/801.6-2018 1

6 DB37/801.6-2018

2

GB16297-1996 2

15m 0.3 P17

GB14554-93 2

6

DB37/801.6-2018 2

GB16297-1996 2

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GB14554-93 1

GB16297-1996 2

VOCs

6 DB37/801.6-2018 3

10.1.5.2

10.1.5.3

515.573t/a 146.15t/a 661.723t/a

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900-015-13

900-041-49

10.1.5.4

10.1.6

10.1.6.1

PM_{10} SO_2 NO_2 CO

GB3095-2012

$PM_{2.5}$ O_3 GB3095-2012

SO_2 NO_2

GB3095-2012

NH_3 VOCs

HJ2.2-2018 D.1

CH245-71 TSP PM_{10} $PM_{2.5}$

10.1.6.2

1# SO_4^{2-} 2#

GB

3838-2002 IV

GB3838-2002

GB18918-2002 A

GB3838-2002

10.1.6.3

3

1# 3# 1# 2# 2#

GB/T14848-2017

10.1.6.4

GB12348-2008 3

GB12348-2008 4

GB3096-2008 3

10.1.7

10.1.7.1

10.1.7.2

10.1.7.3

10.1.7.4

GB12348-2008 3

GB12348-2008 4

GB3096-2008 3

10.1.7.5

10.1.8

10.1.9

COD_{Cr}

COD_{Cr}

VOCs

10.1.10

10.1.11

10.1.12

10.1.13

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10.2

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		26m P5	GB16297-1996 2 DB37/2376-2013 2
		17m P6 30m P7	GB16297-1996 2 DB37/2376-2013 2 GB16297-1996 2

		35m P15	GB14554-93 2 VOCs 6 DB37/801.6-2018 1
		35m P16	6 DB37/801.6-2018 2 GB16297-1996 2
		15m P17	GB14554-93 2 6 DB37/801.6-2018 2 GB16297-1996 2
			GB16297-1996 2 GB14554-93 1 VOCs 6 DB37/801.6-2018 3
			GB/T31962-2015 1A
			GB12348-2008 3 4

10.2.2

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