2505

2019-0010

( )

1.

2.

[2019]12

3.

[2007]574

0

0.1

2020 20%

2016 6 ! 30

20 50%

506111

128.4hm^2(1926)

10

2017

10 1 44

< >

1

2015

0.2

2019 3 5

2019 3

2019 3

0.3

0.4

0.4.1

2011

2013

2009

2012-2020

2017 1055

[2016]114

Ã

0.4.2

0.6

1 GB/T18075.1-2012

1

1.1

1.1.1

1.1.1.1 2015 1 1

1.1.1.2 2017 10 1

1.1.1.3 2018 12 29

1.1.1.4 2018 10 26

1.1.1.5 2018 1 1

1.1.1.6 1997 3 1

1.1.1.7 2016 11 7

1.1.1.8 2012 7 1

1.1.1.9 2018 1 1

1.1.2

1.1.2.1 [2011] 35

1.1.2.2 2013 37

1.1.2.3 2015 17

1.1.2.4 2016 31

1.1.2.5 44

1.1.2.6 < >

1

1.1.2.7 2011 21

1.1.2.8 39 2016 8 1

1.1.2.9 2018 1 1

1.1.2.10 2018 4 27

1.1.2.11 2018 9 29

1.1.2.12 2019 1 1

1.1.2.13 2014 19

1.1.2.14 4

1.1.2.15 2012

77

1.1.2.16 2012 98

1.1.2.17 [2014]197

1.1.2.18 2009

10

1.1.2.19

[2017]53

1.1.2.20

27 2015 7 10

1.1.2.21 2012-2020 [2012] 22

1.1.2.22

2017 1055

1.1.2.23 VOCs 2013 31

2013-05-24

1.1.2.24

[2017]121

1.1.2.25 [2013]89

1.1.2.26 [2018]83

1.1.2.27

1.1.2.28

1.1.2.29 [2018]53

1.1.2.30 2010-2020

1.1.3

1.1.3.1 HJ2.1-2016

1.1.3.2 HJ 2.2-2018

1.1.3.3 HJ2.33-2018

1.1.3.4 HJ/T2.4-2009

1.1.3.5 HJ610-2016

1.1.3.6 2017 10 1

1.1.3.7 GB34330-2017

1.1.3.8 HJ169-2018

1.1.3.9 GB18218-2018

1.1.3.10 HJ 819-2017

1.1.3.11 (HJ 971-2018)

1.1.3.12 1

GB/T18075.1-2012

1.1.3.13

2016 21

1.1.3.14 2016 VOCs

2016 75

1.1.3.15

[2016]114

1.1.3.16

1.1.4

1.1.4.1

1.1.4.2

[2019]12

1.1.4.3

[2007]574

1.2

1.2.1

1.2.2

1.2.3

1.2.4 

4 Õ

1.4.4

1.5

1-1

1-1

							NO_X				COD					
			1		2	1					1	1		2	1	
		1						1						1		
			1		1							1		1		
		2	1	2	1	2	1	1	2	2	2	2	1	1	2	
					1									1		
			1	2	1	2								1	2	
				2												

1 2 3

1-1

1.5.1

SO_2 NO_2 PM_{10} $PM_{2.5}$ O_3

SO_2 NO_2

1.5.2

pH COD LAS

pH

LAS K^+ Na^+ Ca^{2+} Mg^{2+} CO_3^{2-} HCO_3^- Cl^- SO_4^{2-}

1.5.3

A

A

1.5.4

1.6

1.6.1

1.6.1.1

HJ2.2-2018

AERSCREEN

SO_2 NOx PM_{10} *Pi* i

i

HJ2.2-2018

G2 $1.00\times10^{12}m^3/a$

1-2

1-3 1-4

1-2

			/m													
			X	Y	m	(m)	(m)	( )	(h)		m/s		kg/h	(t/a)	C_0 (ug/m^3)	P_0 m^3/a
1		CO_2 G1	521745.14	3507046.91	16	15	0.3	25	3720		16.1		0.001	0.004	450	8.889E+06
2		G2	521361.13	3507433.02	9	35	8 5.7	25	3800		7.15		0.032	0.12	200	1.000E+12
													0.989	3.76	2000	1.880E+09
													0.603	2.29	450	5.089E+09
												SO_2	0.088	0.33	500	6.600E+08
												NO_x	0.412	1.56	250	6.240E+09
													0.434	1.65	2000	8.250E+08
3		G3	521440.63	3507402.34	9	20	0.9	100	3800		16.11					

												NO_x	0.309	1.17	250	4.680E+09
													0.029	0.11	200	5.500E+08

5	G5	521437.96	3507376.06	9	20	0.9	100	3800		16.7		

1-3

			mg/m^3	%	m
	G2	1	0.000595	0.30	274
	G5	1	0.000210	0.10	90
		1	0.000810	0.40	205
	G2	1	0.0184	0.92	274
	G3	1	0.00323	0.16	72
	G4	1	0.000701	0.04	62
	G5	1	0.00379	0.19	90
		1	0.0165	0.83	205
	CO_2 G1	1	0.0000951	0.02	90
	G2	1	0.0112	2.49	274
	G3	1	0.000253	0.06	72
	G4	1	0.000237	0.05	62
	G5	1	0.000224	0.05	90
	G6	1	0.000838	0.19	28
		1	0.00133	0.30	498
	G2	1	0.00164	0.33	274
	G3	1	0.000714	0.14	72
SO_2	G4	1	0.000681	0.14	62
	G5	1	0.000636	0.13	90
	G6	1	0.00241	0.48	28
		1	0.00380	0.76	498
	G2	1	0.00689	3.45	274
	G3	1	0.00301	1.50	72
NO_2	G4	1	0.00287	1.43	62
	G5	1	0.00268	1.34	90
	G6	1	0.0101	5.07	28
		1	0.0160	8.00	498

1-4

	P_{max}
	$<_{max<}10\%$
	$P_{max}<1\%$

P_{max} 8.00% 10%

1% Pmax<10%

5km

1.6.1.2

B

1.6.1.3

HJ610-2016 2

1-5

1-5

2.25km^2

500m

1.6.1.4

GB3096-2008 3

200m

1m

GB12348-2008 3

200m

1.6.1.5

HJ169-2018

1-6

				a

a

1.6.2

1.7

1.7.1

1.7.1.1 GB3095-2012

1.7.1.2 HJ2.2-2018

D.1 0.2mg/m^3

1.7.1.3

2.0mg/m^3

1.7.1.4 GB3838-2002

1.7.1.5 GB/T14848-2017

1.7.1.6 GB3096-2008 3 4a

1.7.1.7 ( )(GB36600-2018)

1-7

		mg/m^3		
	PM_{10}	0.15	mg/m^3	GB3095-2012
	$PM_{2.5}$	0.075		
	SO_2	0.15		
		1 0.50		
	NO_2	0.08		
		1 0.20		
	O_3	8 0.16		
		1 0.2		
		2.0		
		0.2		HJ2.2-2018 D.1
	pH	6~9		GB3838-2002
	COD	30	mg/L	
		1.5		
		0.05		
		0.3		
		2.0		
		/		
		1.5		
	LAS	0.3		
	pH	6.5~8.5		GB/T14848-93
		450	mg/L	
		1000		
		250		
		250		

1-7

		mg/m^3			
	N	20			
	N	0.02			
		0.2			
		0.05			
		0.05			
		0.1			
		1.0			
		0.3			
		0.05			
		1.0			
		3.0			
	LAS	0.3			
		3	4a	dB(A)	GB3096-2008 3 4a
		65	70		
		55	55		
					( )(GB36600-2018)
		60	140	mg/kg	
		65	172		
		5.7	78		
		18000	36000		
		800	2500		
		38	82		
		900	200		
		2.8	36		
		0.9	10		
		37	120		
	1,1-	9	100		
	1,2-	5	21		

1-7

		mg/m^3			
	1,1-	66	200		
	-1,2-	596	2000		
	-1,2-	54	163		
		616	2000		
	1,2-	5	47		
	1,1,1,2-	10	100		
	1,1,2,2-	6.8	50		
		53	183		
	1,1,1-	840	840		
	1,1,2-	2.8	15		
		2.8	20		
	1,2,3-				

1-7

/m^3		
151		
15		
151		
1500		
12900		
15		
151		
700		

GB16297-1996 2

.014 3

-2008 3 4

GB 12523-2011

1 2013

GB18599-2001 2013

1-8

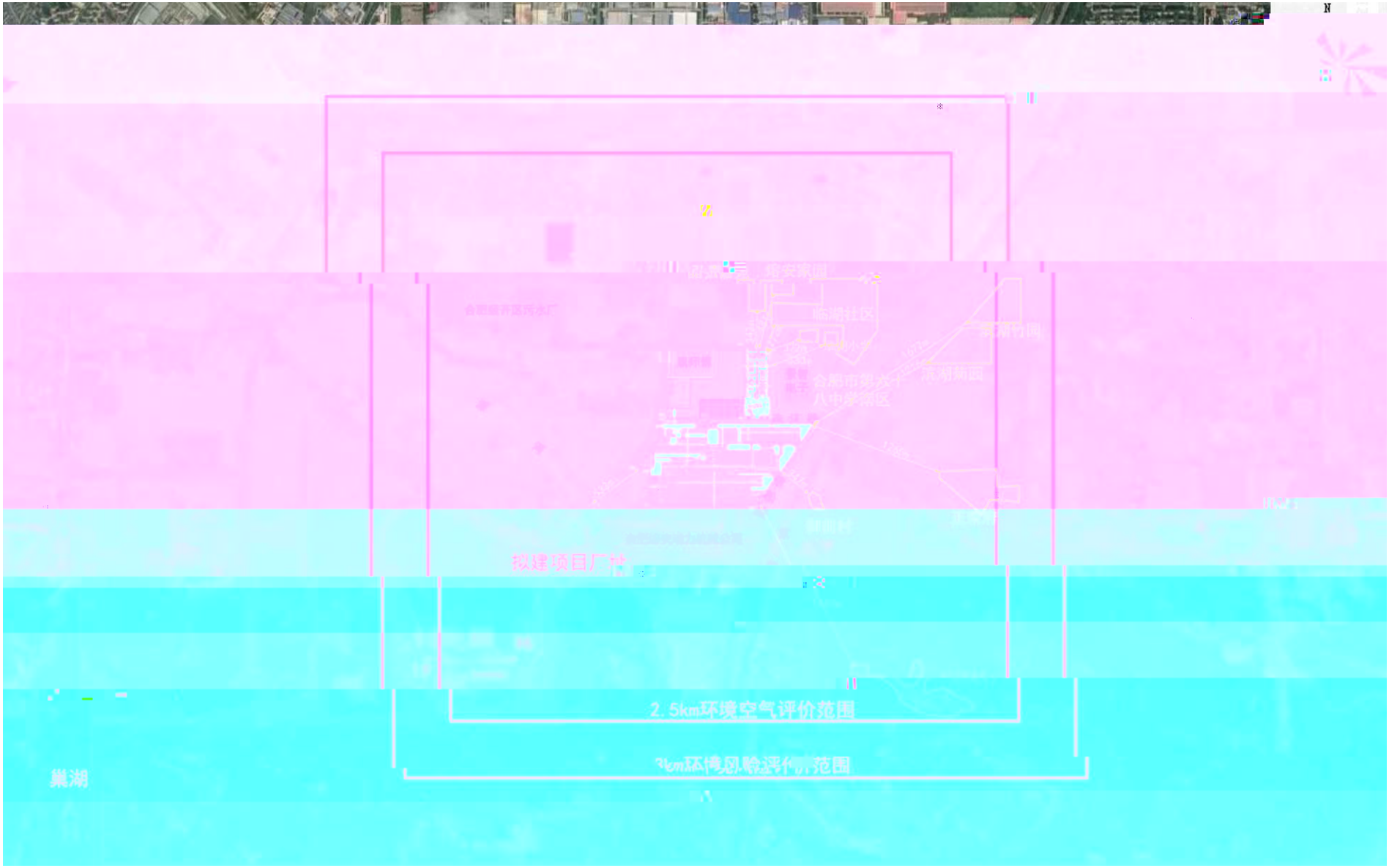
mg/m^3

1.8.2

1-9 1-1

1-9

				m	m		
		1		NNE	372	1270	72 1100
		2		NE	272	1234	5638 16914
		3		NE	530	1387	55 1116
		4		N	481	1435	700 2100
(		5		NE	342	1259	168 504
	E 11.6%)	6		SE	1450	2088	120 360
		8		E	347	1031	20 60
		9		E	1265	2120	172 516



1-1

2

2.1

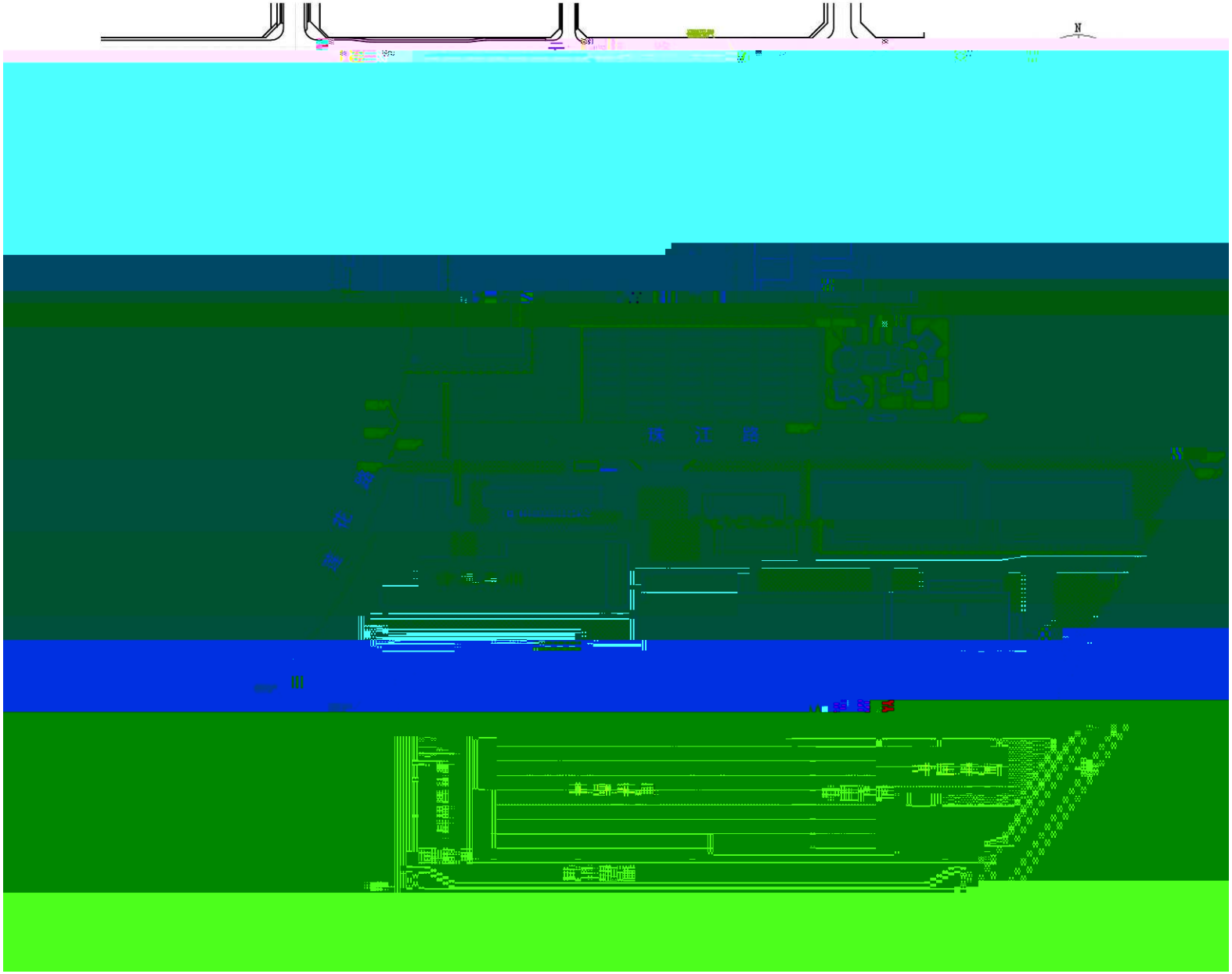
128.4hm^2(1926) 117 °13'55.93" 31 °42'10.27"

2-1

2.2

506111 295153 210958

6486.44 506111 1.3%



2-1

2.3

10 / SUV A0

A MPV A 2-1

2-1

	A0 SUV	A SUV	A MPV
			
× × mm	4135 1750 1560	4780 1825 1745	4750 1795 1717
mm	2490	2760	2760
/ mm	1515/1500	1555/1550	1525/1520
kg	1460	1870	1840
	5	5	7
	85KW	110KW	110KW
kWh	40	58	58
km	250	300	300
km/h	130	130	130
0-100km/h	12S	12S	12S
h /	8/1.5	11/1.5	11/1.5
%	30	30	30

2.4

2019 5 2020 6

2.5

3

2-2

2-2

				m^2
1			1 1 1	146400
2			1 1 1	81000
3			1	136000
4			1	13000
1			/	
2			/	2268
3			/	30095.46
4				1000
5	3		/	79680
6			/	8050
7			/	3600
8				3240
9			/	/

2-2

				m^2
1	2		/	44544
2			/	/
3			/	/
4			/	41000
5			/	185000
1	2			8900
1			/	5000
2			/	1680

2.6

2-3

2-3

1		hm^2	128.4	1926
2		m^2	628237.46	/
3		m^2	937872.46	
4		m^2	708891.87	/
5				

2-4

1		LS4-2400	1	
2		J39-1000	3	
3			1	
4			1	
5			1	
6			1	
7			4	
8			7	
			19	
1			1	
2			1	
3			1	
4			1	
5			1	
6			1	
7			1	
8			1	
9			28	
10			40	
11			3	
12			3	
13			2	

[redacted]

2-4

12			1	
13			1	
14			1	
15			1	
16			1	
17			1	
18			1	
19			1	
20			10	
21			2	
22			1	
23			1	
24		DVT	3	
25			2	
27	AUDIT		1	
28			2	
29			21	
			62	
1			10	
2			2	
3			14	
4			2	
5			5	
6			1	
7			1	
			35	
			482	

2.8

2.8.1

2-5

2-6 2-7 2-8

2-5

1		t/a	70000	
2		t/a	12	
3	CO_2	t/a	6	
4		t/a	146	NaOH LAS
5		t/a	165	H_3PO_4
6		t/a	14	Na_3PO_4
7		t/a	1028.21	8%
8		t/a	147	55% 25% 15% 5%
9		t/a	70	PVC 82% 10% 8%
10	B1	t/a	233.33	
11	B2	t/a	608.93	/
13		t/a	270	
14		t/a	56.4	
15		t/a	120	
16		t/a	139	PAC PAM
17		m^3/a	271	

18		m^3/a	150	
19		m^3/a	115	
20		m^3/a	64	
21		m^3/a	400	
22		m^3/a	800	
23		t/a	80	
24		/	10	
25		/	10	
26		/	10	
27		/	10	
28		/a	10	
29		/a	10	

2-6

	NaOH		PO_4^{3-}	LAS				
	20~32%	2~10%	0.5ppm	1~5%				
	10~15%	6%	6%					
	$Zn(H_2PO_4)_2$	$Mn(H_2PO_4)_2$	NaH_2PO_4	$NiNO_3$	H_3PO_4		$Fe(NO_3)_3$	
	10~15%	5~10%	2~5%	5~10%	5~10%			
	10%	29%	8%					
B1								
	36%	15%	49%					
B2								
	20%	15%	65%					
	58%	5%	37%					

	100%							
	15%	85%						

2-7

	m^2/	(m^2/a)			g/cm^3	(m)		(t/a)
	120	1200	95%	50%	1.10	37	2	1028.21
B1	20	200	70%	36%	1.05	28	2	233.33
B2	25	250	70%	20%	1.10	31	1	608.93
	20	200	70%	58.6%	1.20	70	60~100	409.56

2-8

	pH 14 =1 1.5	LD_{50} 500mg/kg LD_{50} 5000mg/kg
	pH 8.5 =1 1.3	8.3

8.1 LD_{50} 1990 mg/kg LD_{50} 8290 mg/kg LD_{50} 1520 mg/kg LD_{50} 1620 mg/kg LD_{50} 3250 mg/kg LD_{50} 1530 mg/kg LD_{50} N/A

pH 1 =1 1.4

	100	
B1	pH 8.5 =1 1.01 >37.78 62	LD_{50} 6019.4mg/kg LD_{50} 6298.9mg/kg
B2	pH 8.5 =1 1.01 >37.78 62	LD_{50} 10182.4mg/kg LD_{50} 9537.5mg/kg
	=1 0.98 30	LD_{50} 9404.4mg/kg LD_{50} 5516.8mg/kg

2.8.2

2-9

2-9

1		kWh/a	14489	
2		m^3/a	3.55	
3		m^3/a	579.5	
4		m^3/a	2574.99	

2.9

2-10

2-10

1		
2		
3		
4		
5		
6	ABS	
7		
8		
9		
10	ECU	
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		

2.10

2.10.1

1 35/10kV

10kV

2.10.2

1 DN250

0.20MPa

1 1

1

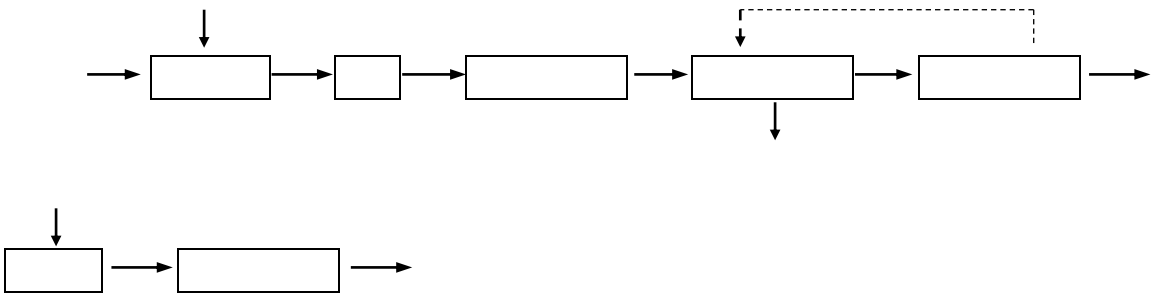
60m^3/h 300m^3/h 120m^3/h 4992m^3/h

2.10.3

2.10.4

1 20m^3/h

70% 30%



2.10.5

7

7 12

2.10.6

2.10.7

1 3 56m^3/min 1 25m^3/min

2 30m^3/min 223m^3/min

4 10m^3

2.10.8

95

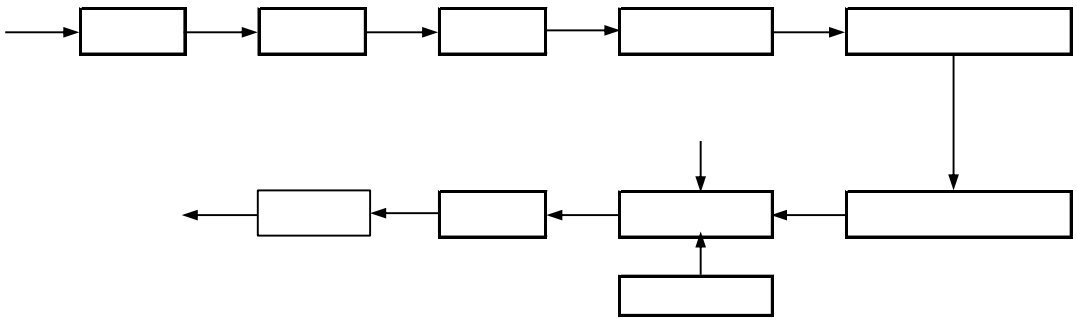
2.11

2.12

2328

3

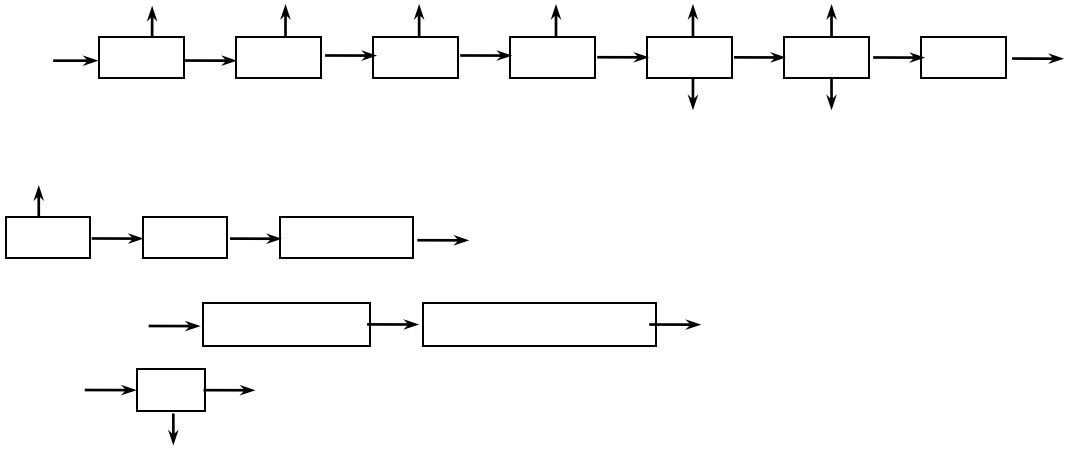
3.1



3-1

3.1.1

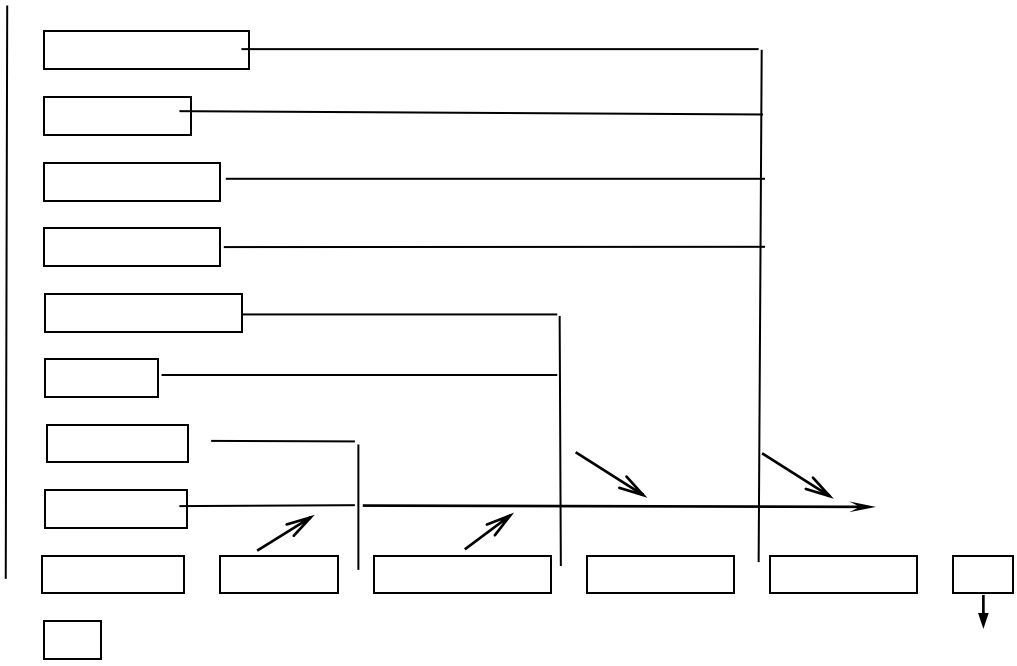
1 10



3-2

3.1.2

1 1 10



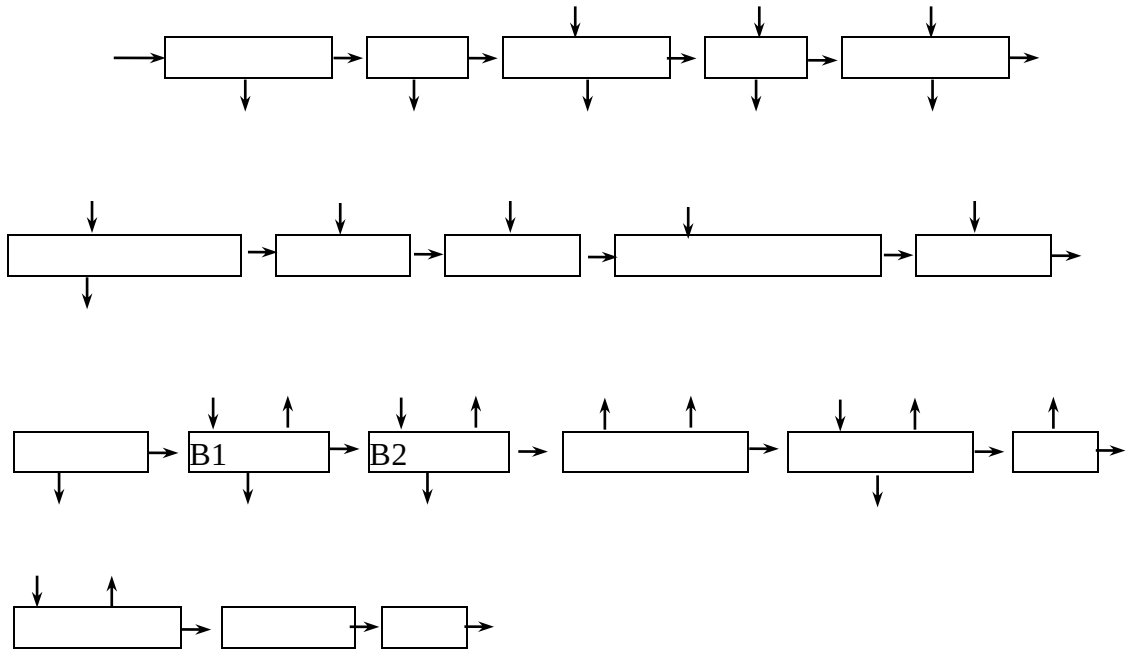
3-3

CO_2

3.1.3

1 10

PVC B1 B2



3-4

pH COD SS

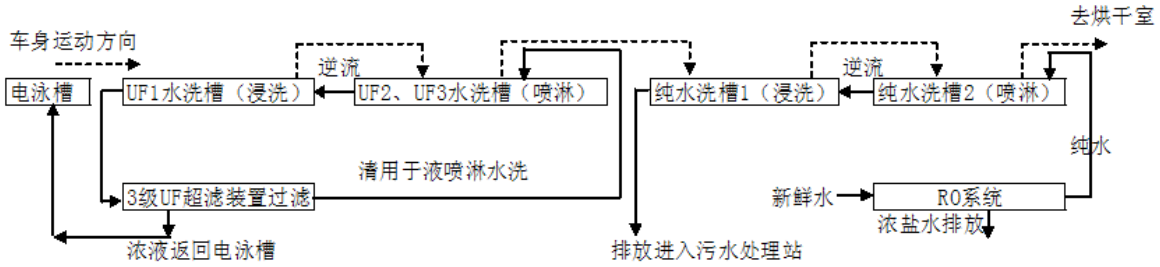
pH COD SS

Zn Ni

5 UF1 UF2 UF3

UF

3



3-5

pH COD

SS

PVC

150 15

PVC

170

SS

B1 B2 2

B1 B2

B1 B2

B1 B2

B1 UV

B2

98%

B1 B2

5

180

30 60~80 10 150

30

SO_2 NO_X

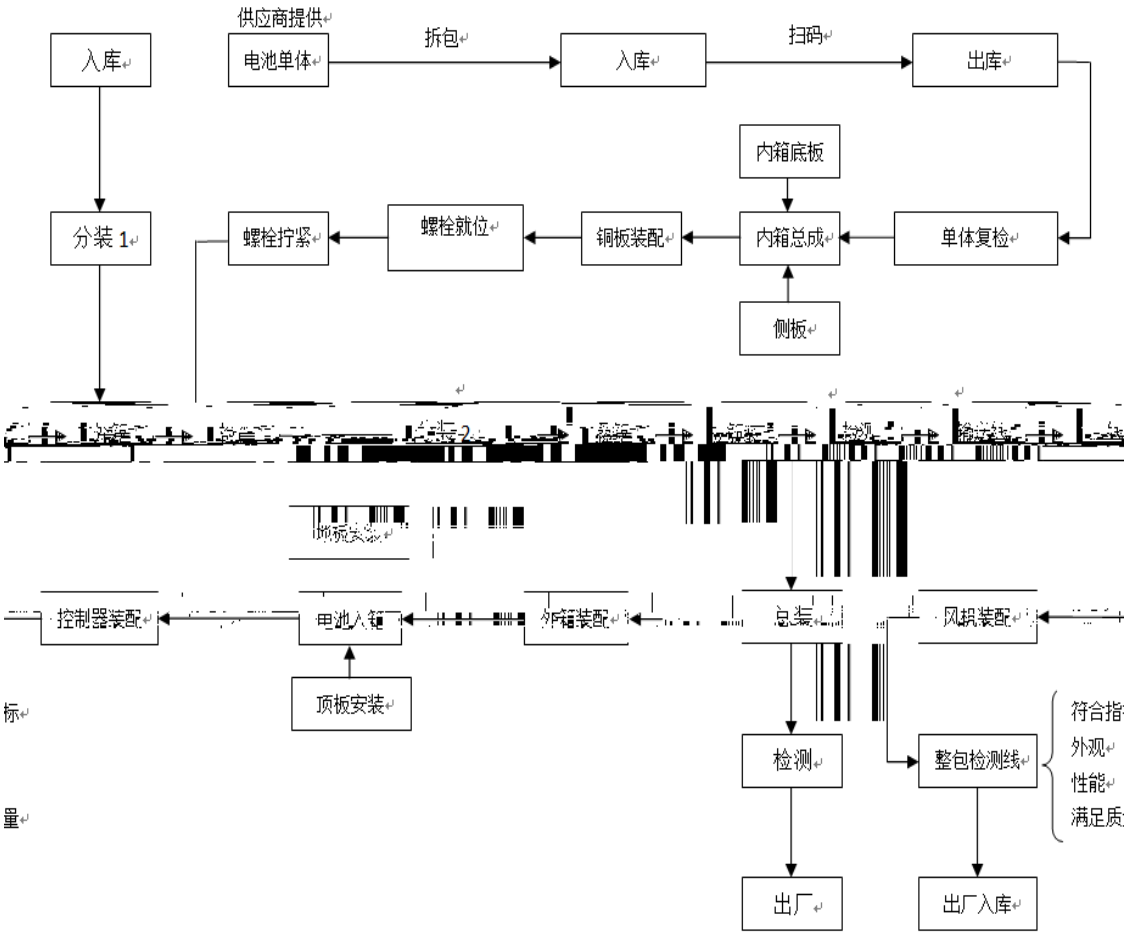
3 Ä

3.1.5

10 2 1

10

3-7



3-7

3.2

10 /

B1 233.33t/a B2 608.93t/a 270t/a B1

B2 36% 20% 58% B1 B2

5%

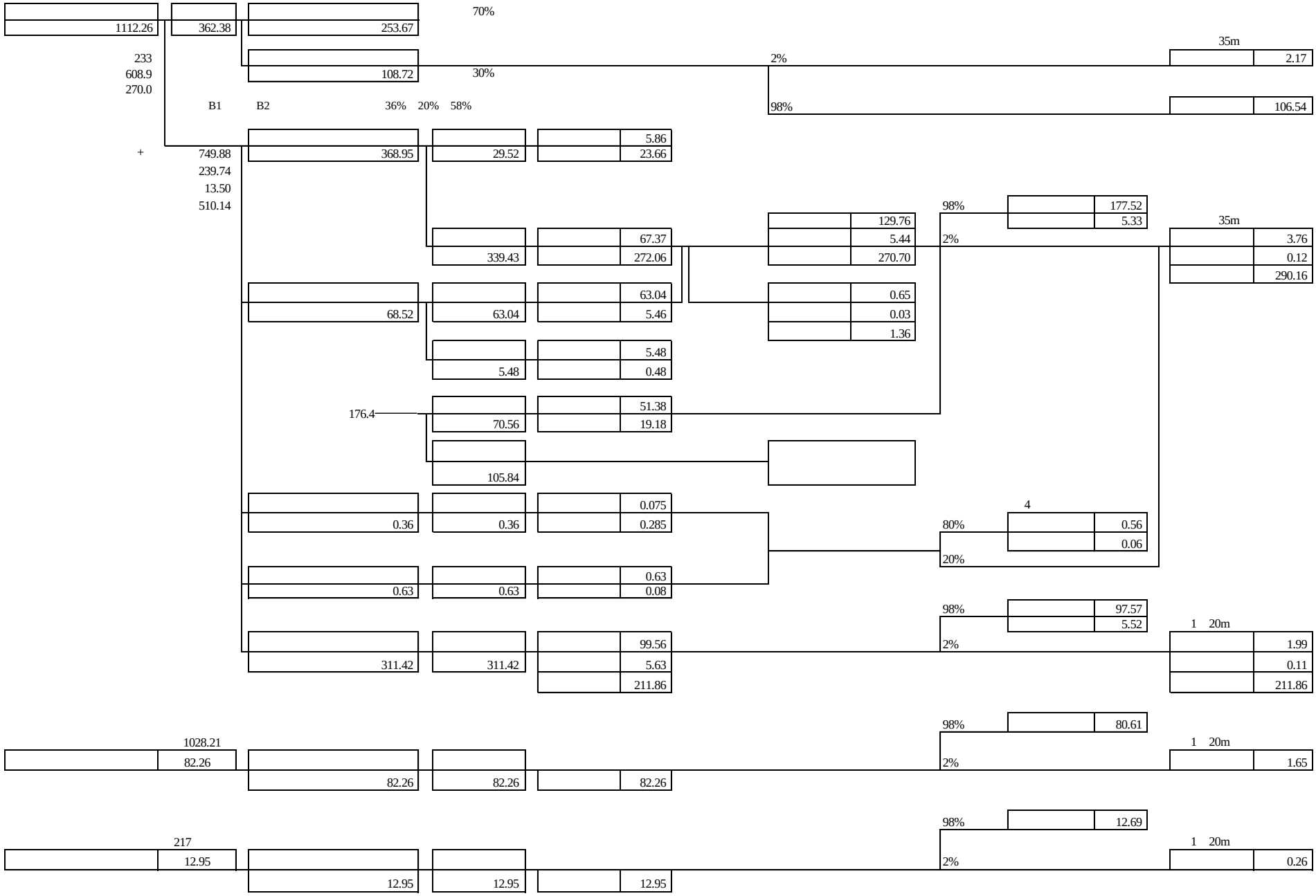
1112.26t/a 13.5t/a 510.14t/a

56.4 t/a 85% 120 t/a

1028.21t/a 82.26 t/a

217t t/a 12.95t/a

3-8


1112.26
362.38
253.67
70%
233
608.9
270.0
108.72
30%
2%
35m
2.17
B1
B2
36%
20%
58%
98%
106.54
5.86
+
749.88
368.95
29.52
23.66
239.74
13.50
510.14
98%
177.52
5.33
129.76
35m
67.37
5.44
2%
3.76
339.43
272.06
270.70
0.12
290.16
63.04
0.65
68.52
63.04
5.46
0.03
1.36
5.48
5.48
0.48
176.4
51.38
70.56
19.18
105.84
0.075
4
0.36
0.36
0.285
80%
0.56
0.06
20%
0.63
0.63
0.63
0.08
98%
97.57
5.52
1 20m
99.56
2%
1.99
311.42
311.42
5.63
0.11
211.86
98%
80.61
1028.21
1 20m
82.26
2%
1.65
82.26
82.26
82.26
98%
12.69
217
1 20m
12.95
2%
0.26
12.95
12.95
12.95
3-8
t/a

3.3

45702.64m^3/d 1775.70m^3/d

150.94m^3/d 43776.00m^3/d 96.11%

387.04m^3/d

150.94m^3/d 105.66 m^3/d

45.28m^3/d 51m^3/d

438.04m^3/d 148.26m^3/d

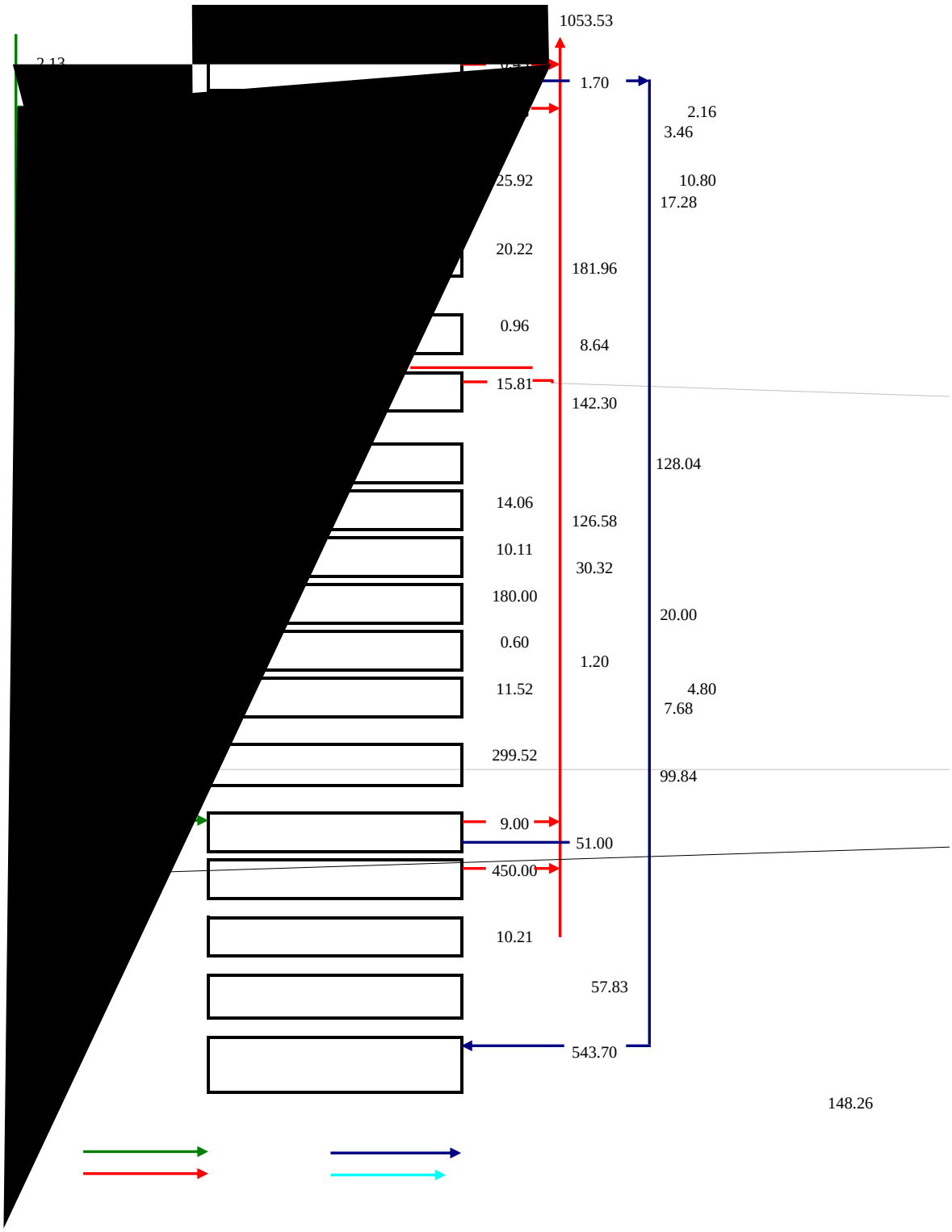
78.04m^3/d

57.83 m^3/d

3-1 3-9

3-1 m^3/d

1.1		2.13				0.43	1.70			
1.2		10.80			8.64				2.16	
			8.64	480.00		5.18				3.46
2.1		54.00			43.20				10.80	
			43.20	2400.00		25.92				17.28
3										
3.1		202.18				20.22	181.96			
3.3		9.60				0.96	8.64			
3.4			158.11			15.81	142.30			
3.5		426.79			298.75				128.04	
3.6			140.64			14.06	126.58			
3.7		40.43				10.11	30.32			
3.8		399.36		39936.00		299.52				99.84
3.9		200.00				180.00				20.00
4		1.80				0.60	1.20			
5		24.00			19.20				4.80	
			19.20	960.00		11.52				7.68
6		60.00				9.00		51.00		
7		450.00				450.00				
8		68.04				10.21		57.83		
9		1949.11	369.80	43776.00	369.79	1053.53	492.70	51.00	145.80	148.26
10		45725.11					543.70			
11				95.74%			57.83			
12		11431277.61								
13		487277.61					601.53		294.05	



3-9 **m³/d**

3.4

3.4.1

CO_2

3.4.1.1

8 CO_2 1t 7kg

Fe_2O_3 MnO_2

6t/a 0.01kg/h 0.042t/a

CO_2 CO_2

CO_2

90 1 15m

0.001kg/h 0.11mg/m^3 GB16297-1996

2 10000m^3/h

GB16297-1996 2

3.4.1.2

B1

B2

A.

1028.21t/a

8% 21.65kg/h

TNV

98% 1 20m

0.434kg/h 16.08mg/m^3 27000m^3/h

240m^3/h

2010 10 249

SO_2 0.02Skg/

m^3 S S 200mg/m^3 NOx 18.71kg/

m^3 1000m^3 0.14kg SO_2 NOx

0.034kg/h 0.096kg/h 0.449kg/h 1.24mg/m^3

3.56mg/m^3 16.63mg/m^3

GB16297-1996 2

VOCs 0.43kg/h 16.08mg/m^3

DB12/ 524-2014 2

B.

5% 8%

3.41kg/h

98%

1 20m

0.068kg/h 4.56mg/m^3 15000m^3/h 1 20m

165m^3/h SO_2 NOx

0.023kg/h 0.066kg/h 0.309kg/h 1.54mg/m^3 4.40mg/m^3 20.58mg/m^3

GB16297-1996 2

VOCs 0.068kg/h 4.56mg/m^3

DB12/ 524-2014 2

C.

B1 B2

B1 B2

B1 B2

98%

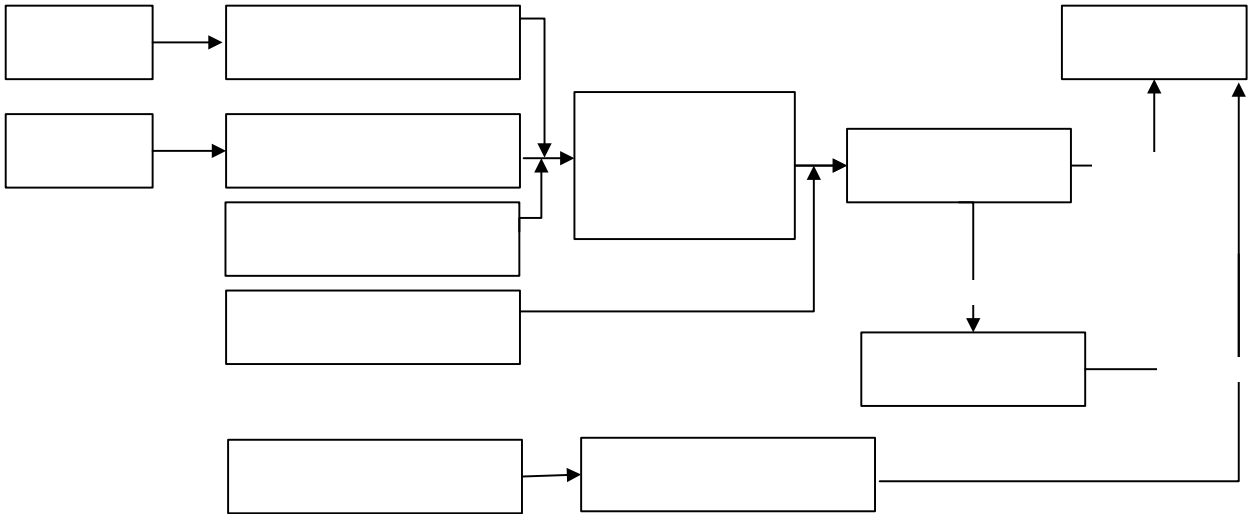
92%

1 TNV 98% TNV

220m^3/h 1 35m

4

80% 35m



35m

0.032kg/h 0.989kg/h 0.08mg/m^3 2.57mg/m^3

385000m^3/h

220m^3/h SO_2 NOx

0.031kg/h 0.088kg/h 0.412kg/h 0.08mg/m^3

0.23mg/m^3 1.07mg/m^3

GB16297-1996 2

VOCs 0.989kg/h 2.57mg/m^3

DB12/

524-2014 2

E.

98%

0.029kg/h 0.524kg/h 1.03mg/m^3 18.70mg/m^3

28000m^3/h 1 Z 20m

15mg/m^3

90 10000m^3/h

<1.5mg/m^3 GB18483-2001

0.015t/a

3.4.1.5

3 2 1 140m^3/h

SO_2 NOx 0.039kg/h 0.112kg/h 0.524kg/h

10.27mg/m^3 29.36mg/m^3 137.31mg/m^3 3815.25m^3/h 1

15m

GB13271-2014 3

3-2

3-2

		m^3/h	/		mg/^{3}m	kg/h	t/a		mg/^{3}m	kg/h	t/a	mg/^{3}m	kg/h	
1.1	CO_2	10000	1 ×15m/0.2m		1.05	0.01	0.042		0.11	0.001	0.004			
1.2														
2.1		385000	1 35m/ (8×5.7m		74.31	28.61	108.72		1.49	0.572	2.17			
					4.06	1.56	5.94		0.08	0.032	0.12			
					124.26	47.84	181.79		2.57	0.989	3.76			
					0.08	0.031	0.12		0.08	0.031	0.12			
				SO_2	0.23	0.088	0.33		0.23	0.088	0.33			
				NOx	1.07	0.412	1.56		1.07	0.412	1.56			
2.2		27000	1 ×20m/0.		801.75	21.65	82.26	1 TNV 98% 1 20m GB16297-1996 2 DB12/524-2014 2	16.08	0.434	1.65			
					1.24	0.034	0.13		1.24	0.034	0.13			
				SO_2	3.56	0.096	0.36		3.56	0.096	0.36			
				NOx	16.63	0.449	1.71		16.63	0.449	1.71			
2.3		15000	1 ×20m/0.		227.19	3.41	12.95	1 TNV 98% 1 20m GB16297-1996 2 DB12/524-2014	4.56	0.068	0.26			
					1.54	0.023	0.09		1.54	0.023	0.09			
				SO_2	4.40	0.066	0.25		4.40	0.066	0.25			
				NOx	20.58	0.309	1.17		20.58	0.309	1.17			
2.4		28000	1 ×20m/0.		52.91	1.48	5.63	1 TNV 98% 1 20m GB16297-1996 2 DB12/524-2014	1.03	0.029	0.11			
					935.71	26.20	99.56		18.70	0.524	1.99			
					1.10	0.031	0.12		1.10	0.031	0.12			
				SO_2	3.14	0.088	0.33		3.14	0.088	0.33			
				NOx	14.70	0.412	1.56		14.70	0.412	1.56			
2.5						0.056	0.21			0.056	0.21			
				SO_2		0.160	0.61			0.160	0.61			
				NOx		0.748	2.84			0.748	2.84			
2.6			408×108× ( )			0.008	0.03			0.008	0.03			
						0.163	0.65			0.163	0.65			
3		3815.2	1 ×15m/0.		10.27	0.039	0.15	1 15m GB13271-2014 3	10.27	0.039	0.15			
				SO_2	29.36	0.112	0.43		29.36	0.112	0.43			
				NOx	137.31	0.524	1.99		137.31	0.524	1.99			
4		10000			15.00	0.150	0.15		1.50	0.015	0.015			

3.4.2

3.4.2.1

3-4

					(m^3/d)	
1				6m^3/	1.20	
				0.5m^3/	0.50	
2				20m^3/	0.96	
				28m^3/3	9.33	
				15m^3/	5	
				187m^3/3	2.99	
				205m^3/6	1.64	
				4m^3/h	32	
				15m^3/h	120	
				7m^3/	1.40	
				90m^3/	8.64	
				90m^3/	8.64	
				195m^3/6	1.56	
				215m^3/6	1.72	
				15m^3/h	120	
				7m^3/	1.40	
				90m^3/	8.64	
				7m^3/	0.34	
				90m^3/3	8.64	
				290m^3/6	2.32	
		UF1		7m^3/6	0.06	
		UF2		90m^3/6	0.72	
		UF3		7m^3/6	0.06	
				330m^3/6	2.64	
				15m^3/h	120	
				7m^3/6	0.06	
				90m^3/6	0.72	
				200m^3/3	3.20	
				110m^3/3	1.76	
				195m^3/	9.36	
				2m^3/h	16	
3				60m^3/	1.2	
4			**492.70m^3/d**			
5			**51m^3/d**			
6			**294.05m^3/d**			

3-4

				(m^3/d)	
			837.75m^3/d		
			57.83 m^3/d		

3.4.2.3

1

57.83 m^3/d

29.68 m^3/d 28.15 m^3/d 1 40m^3

1 50m^3

3-5

3-5

				mg/L				t/a	
	m^3/d	m^3/a		pH	SS	COD	BOD_5		
	29.68	7420	( )	6~9	120	300	262.5		16
	28.15	7037.5	( )	6~9	175	297.5	198	38.8	
	57.83	14457.5		6~9	146.77	298.78	231.10	18.89	8.21
				/	2.12	4.32	3.34	0.27	0.12
GB8978-1996 4				6~9	400	500	300	-	100

2

1

a.

Ni

150.94m^3/d

GB8978-1996 1

15m^3/h 240m^3/d

3-10

b.

57.74m^3/d +

284.02m^3/d 341.76m^3/d

SBR + +

GB 8978-1996

4

5000m^2 3-6

3-7

3-11

3-6

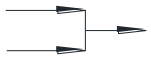
	+	15m^3/h 240m^3/d	150.94m^3/d
	+	10m^3/h 160m^3/d	57.74m^3/d
		30m^3/h 480m^3/d	341.76m^3/d
(SBR+ +)		30m^3/h 720m^3/d	543.7m^3/d

3-7

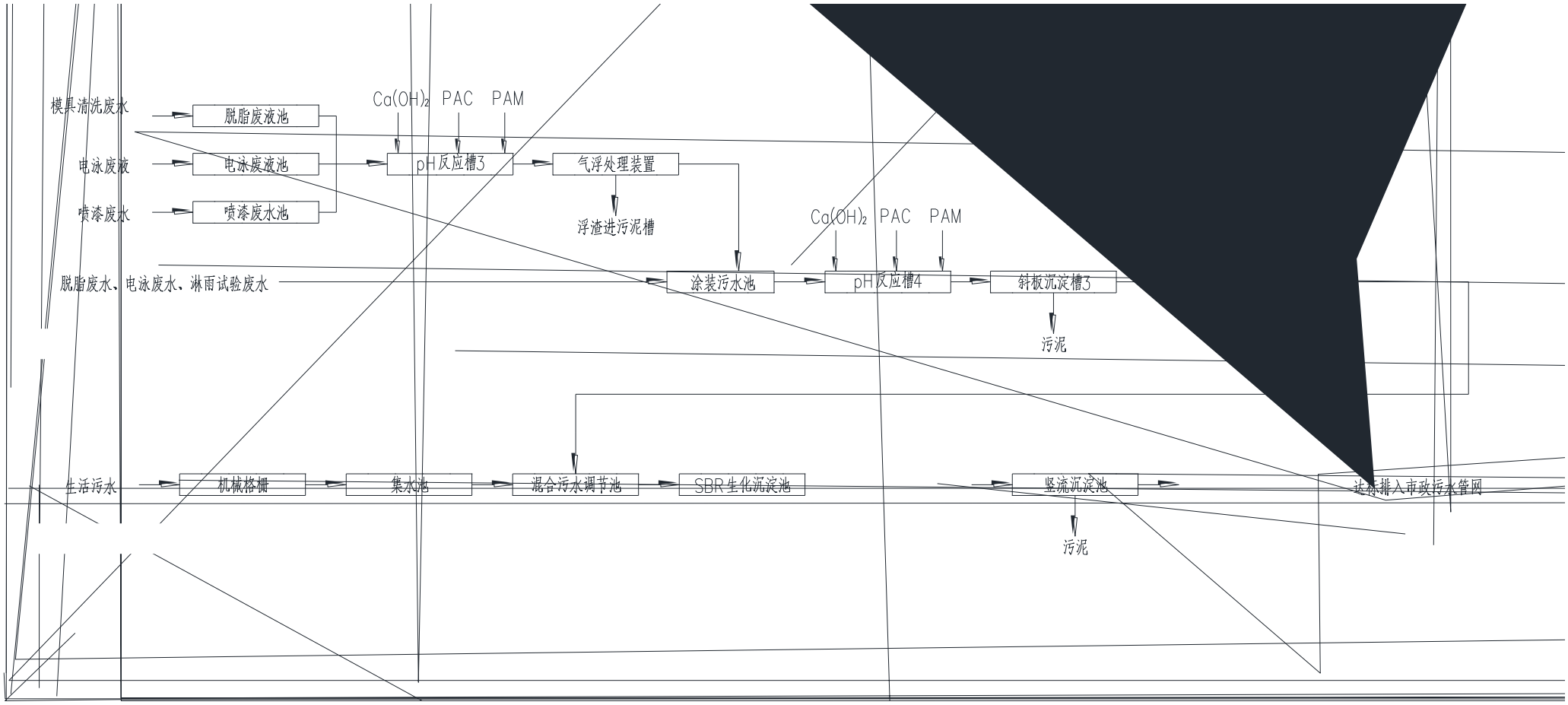
				mg/L						t/a		
	m^3/d	m^3/a		pH	SS	COD		Zn	Ni		BOD_5	
	543.7	135925			39.27	231.14	9.47	1.214	1.123	7.187	2.81	0.51

3-7

				mg/L						t/a		
	m^3/d	m^3/a		pH	SS	COD		Zn	Ni		BOD_5	
	150.94	37735		6~9	19	123		0.32	0.30	1.90		
	543.7	135925		7~9	55	299	7.17	0.09	0.08	0.53	20.64	3.75
	543.7	135925		7~9	17	150	5.73	0.09	0.08	0.05	4.13	0.75
					2.26	20.32	0.78	0.012	0.011	0.007	0.56	0.102
GB8978-1996	1	4		6~9	400	500	20	5.0	1.0	-	300	-
				6~9	200	330	-	-	-	0.5	160	15

表 

3-10


模具清洗废水
脱脂废液池
电泳废液
电泳废液池
喷漆废水
喷漆废水池
Ca(OH)2 PAC PAM
pH反应槽3
气浮处理装置
浮渣进污泥槽
脱脂废水、电泳废水、淋雨试验废水
涂装污水池
Ca(OH)2 PAC PAM
pH反应槽4
斜板沉淀槽3
污泥
生活污水
机械格栅
集水池
混合污水调节池
SBR生化沉淀池
竖流沉淀池
污泥
达标排入市政污水管网

3-11

3.4.3

75~95dB(A) 3-8

3-8 **dB(A)**

		5	90~95			70~75
			90~95			65~75
			85~90			
		6	80			< 65
		7	80~85			60~65
			80~85			60~65
		5	80~85			60~65
			85~90			65~70
			75~85			65~70

60~75dB(A)

3.4.4

12t 12t/a

4 3 500kg

6t/a

0.5t/a 15% 1.5/a 42%

0.705t/a 2.35t/a 3.06t/a

1.5t/a 42% 0.63t/a 2.1t/a

2.73t/a

106.54t/a 50%

213.08t/a

1 80g 8.0t/a

176.4t

10 10t 1t/a

131.6t/a

3t/a

GB34330-2017

120m^2

GB18597-2001

1m

3-9

3-10

3-9 **t/a**

3-10

				t/a								
1		HW08	900-217-08	12					1	T I		
2		HW49	900-041-49	11.79						T/In		
3		HW12	264-011-12	213.08						T		
4		HW17	336-064-17	8						T/C		
5		HW12	900-252-12	176.4						T		
6		HW49	900-041									

t/a

0	181949.8
106.58	2.99
0.038	0.816
106.55	2.17
368.90	8.31
11.34	0.26
0	2.32
0	10.84
0	150382.5
0	73512.5
38.88	4.38
213.41	24.64
8.69	0.78
7.180	0.007
1.202	0.012
1.112	0.011

)

						I	II	III		
1		0.53			--	0.10	a b c	a b		I
2						0.10	a b c	a b d c	a b	II
3						0.06		c		I
4					--	0.10	i c			II
5					--	0.06	c j		f	I
6					--	0.06	%	%	!	%8% I
7						0.05	UV		c	I

							I	II	III	
						0.05	c e	e	e	TNV I
8						0.06	c j		j	I
9					--	0.08	VOCs ! VOCs	VOCs ! VOCs	VOCs VOCs	+TNV 98% VOCs I
10					--	0.08	VOCs % VOCs	VOCs % VOCs	VOCs %	VOCs TNV % VOCs I
11					--	0.03	f	g		(55 5) II

3-12

						I	II	III		

h

12 -- 0.03

						I	II	III	
20		0.25	CODcr *		g/m^2	0.33	4	8	9.91 I
21			*		g/m^2	0.17	4	6	0.3 I
22			*		g/m^2	0.17	60	240	46.41 I
23			VOCs *		g/m^2	0.33	35	40	45	31.43 II
					g/m^2		60	80	/
24		0.1			--	0.05			I
25					--	0.05	GB 18599 GB 18597		I
26					--	0.05			I

						I	II	III	
27				--	0.05				I
28				--	0.05				I
29				--	0.05		GB/T 24001		I
30				--	0.05		VOCs		I
31				--	0.05				I
32				--	0.05				I
33				--	0.05				I
34				--	0.10				I
35				--	0.10				I
36				--	0.10				I

3-13

	Y 85
	Y 85
	Y =100

3-13 Y_{II}=100

3-14

4

4.1

4.1.1

~ ! # ~ #

40

1993 2000

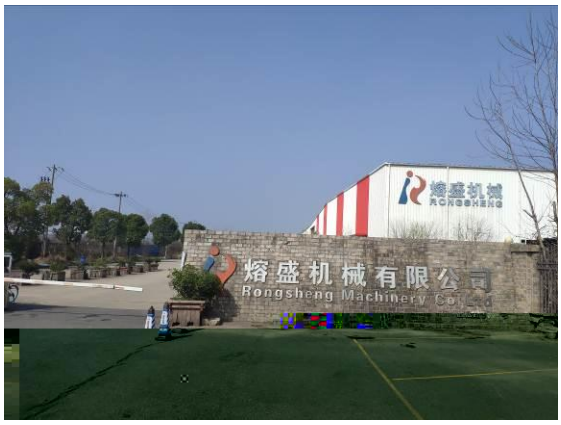
206 405 312

11km 4km

117 °13'49.19" 31 °42'11.75"

272m

4-1 4-2



4-1

4.1.2

12 45 10.4

43.4m 8.4 10.4m

5% 87.2% 7.8%

282 158

2.5 2.8kg/cm 10-15

294

3 1977

7 38

15 70


路线
青岛市海青机械
总厂合肥分厂
顺丰速运
滨湖职业
技术学院
中外运合肥
物流有限公司
紫石路
云谷路
天
都
路
海尔
合肥滨湖驾管所
建投大厦
万纬合肥经开区
物流园
本项目厂址
研发区地块
生产区地块
莲花公园
云海路
珠江路
杜冢湾
派河大道
小堰王
湾小圩
西黄张
乐平村
马湾村
孙家户
八大户
檀
香
路
赵院村
陈背塘
韩家圩
深圳路
武小郢
赵小郢
方小郢
朝西郢
田埠岗
魏嘴
时光印象
徽
州
大
道
N
NE
E
SE
S
SW
W
NW

4-2

4.1.3

85%

( )

4.1.4

16.5 995.4mm

1012.5hPa 2.8m/s

4.1.5

1

1/3

9131km^2 800km^2 30 m^3

33

8.31m 760km^2

19 m^3

3394.9km^2

267.47

60km 571km^2

1.8 m^3/a

4.1.6

30 t/d

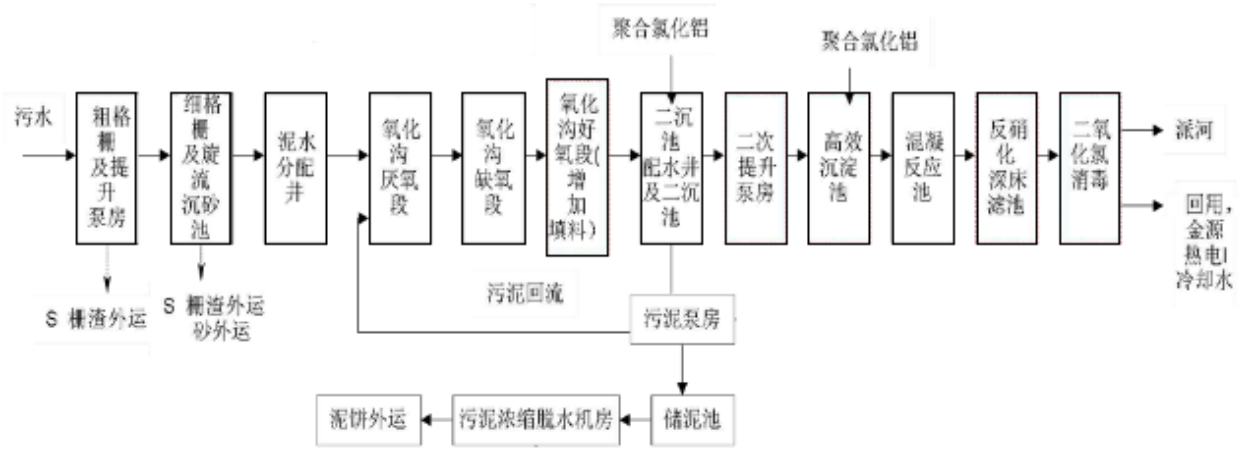
10 t/d 2007 6 10 t/d 2011

10 t/d 2016

15.6 m^2 61.33km^2 9.3 m^2

A^2/O V

GB18918-2002 A 5 t/d



4.2

3

5

5.1

5.1.1

2018 5 2017

SO_2 12 /

NO_2 52 / 0.3

CO 95 1.4 /

O_3 8 90 170 /

0.06

PM10 80 /

0.14

(PM2.5) 56 / 0.6

2017

5.1.2

(HJ2.2-2018) 5.5

3 1 6.2

1

2017

( ) (HJ663-2013) 1

SO_2 NO_2 24 98 CO

24 95 O_3 8 90

PM_{10} $PM_{2.5}$ 24 95

5-1 2017

	1	2	3	4	5	6	7	8	9	10	11	12
$PM_{2.5}$	88	64	47	47	32	40	28	25	28	40	62	65

5.2

5.2.1

2

5-3 5-1 2019 3 13 ~2019 3 19

5-3

1#			/
2#			W 4100m

5.2.2

7 4

2:00 8:00 14:00 20:00 45

5.2.3

5-4

5-4 **mg/m^3**

5.2.5

$$Pi = \frac{Ci}{Si}$$

Pi

Si mg/m^3

Ci mg/m^3

5.2.6


未命名地图
为您的地图添加说明。
经开区污水厂
上游500m
图例
地表水监测点位
环境空气监测点位
地下水监测点位
噪声监测点位
厂区外土壤监测点位
N

5-1

5-6

5-6 **mg/m³**

		mg/m³			Pi		
	20190313	ND	ND	0.538	/	/	0.269
	20190314	ND	ND	0.530	/	/	0.265
	20190315	ND	ND	0.490	/	/	0.245
	20190316	ND	ND	0.405	/	/	0.203
	20190317	ND	ND	0.443	/	/	0.222
	20190318	ND	ND	0.523	/	/	0.262
	20190319	ND	ND	0.395	/	/	0.198
	20190313	ND	ND	0.515	/	/	0.258
	20190314	ND	ND	0.455	/	/	0.228
	20190315	ND	ND	0.525	/	/	0.263
	20190316	ND	ND	0.450	/	/	0.225
	20190317	ND	ND	0.463	/	/	0.232
	20190318	ND	ND	0.470	/	/	0.235
	20190319	ND	ND	0.435	/	/	0.218

5-6 0.395~0.538mg/m³

0.198~0.269

5.3

5.3.1

5.3.1.1

2 5-7 5-1

2019 3 13 ~2019 3 15

5-7

1#		500m	
2#		500m	

5.3.1.2

pH COD NH_3-N LAS

5.3.1.3

5-8 "dCX

5-8

1	pH	pH 2002	/
2	COD	HJ 828-2017	4mg/L
3		HJ535-2009	0.025mg/L
4		HJ 637-2012	0.04mg/L
5	P	GB/T 11893-1989	0.01mg/L
6		GB/T 7484-1987	0.05mg/L
7	LAS	GB/T 7494-1987	0.05mg/L
8		32	0.007mg/L
9		HJ 776-2015	

5-9 **mg/L pH**

	1# 2#
pH	6~9
COD	30
	5
P	3
	1.5
	!
LAS	
	/
	2.0

5.3.1.5

5.3.1.6

5-10 5-11

5-10

		mg/L pH			
		20190313	20190314	20190315	
500m	pH	7.38	7.31	7.34	6~9
	COD	24	22	25	30
		1.46	1..33	1.29	5
	P	0.22	0.21	0.23	3
		0.33	0.28	0.28	1.5
		ND	ND	ND	!
	LAS	ND	ND	ND	
		ND	ND	ND	/
		ND	ND	ND	2.0
	pH	7.22	7.34	7.37	6~9
	COD	18	22	17	30

500m		1.34	1.29	1.42	5
		0.23	0.24	0.18	!
	P	0.26	0.21	0.24	/
		ND	ND	ND	1.0
	LAS	ND	ND	ND	!
		ND	ND	ND	!
		ND	ND	ND	0.05

5-11

		mg/L pH					
		20190313	20190314	20190315	20190313	20190314	20190315
500m	pH	0.190	0.155	0.170	/	/	/
	COD	0.800	0.733	0.833	/	/	/
		0.973	0.887	0.860	/	/	/
		0.733	0.700	0.767	/	/	/
	P	0.220	0.187	0.187	/	/	/
		0.800	0.733	0.833	/	/	/
	LAS	0	0	0	/	/	/
		0	0	0	/	/	/
		0	0	0	/	/	/
1500m	pH	0.110	0.170	0.185	/	/	/
	COD	0.600	0.733	0.567	/	/	/
		0.893	0.860	0.947	/	/	/
		0.767	0.800	0.600	/	/	/
	P	0.173	0.140	0.160	/	/	/
		0.600	0.733	0.567	/	/	/
		0	0	0	/	/	/

	LAS						
		0	0	0	/	/	/
		0	0	0	/	/	/

0

5-11 5-12

LAS

GB3838-2002

5.4

3

2019 3 13

5.4.1

5-13 5-1

5-13

1#			
2#	SE 2000m		
3#	SE 2600m		

5.4.2

K^+ Na^+ Ca^{2+} Mg^{2+} CO_3^{2-} HCO_3^- Cl^- SO_4^{2-} pH

LAS

25

5.4.3

5-14

5-14

1	K^+	GB/T	0.05 mg/L
2	Na^+	11904-1989	0.01 mg/L
3	Ca^{2+}	GB/T	0.02 mg/L
4	Mg^{2+}	11905-1989	0.002 mg/L
5	CO_3^{2-}	HJ84-2016	0.01mg/L
6	HCO_3^-		

5-14

7	Cl^-	F^- Cl^- NO_2^- Br^- NO_3^- PO_4^{3-}	0.007mg/L
8	SO_4^{2-}	SO_3^{2-} SO_4^{2-} HJ 84-2016	0.018mg/L
9	pH	pH 2002	/
10		HJ 535-2009	0.025mg/L
11		F^- Cl^- NO_2^- Br^- NO_3^- PO_4^{3-} SO_3^{2-} SO_4^{2-} HJ 84-2016	0.016
12		GB/T 7493-1987	0.02 mg/L
13		GB/T 7467-1987	0.004mg/L
14		EDTA GB/T 7477-1987	5 mg/L
15		GB/T 7475-1987	0.01mg/L
16		GB/T	0.03mg/L
17		11911-1989	0.01mg/L
18		32	0.007 mg/L
19		HJ 776-2015	0.02 mg/L
20		GB/T 5750.4-2006	/
21		GB/T 7494-1987	0.05 mg/L
22		GB/T 11892-1989	0.5 mg/L
23		HJ 488-2009	0.02 mg/L
24		HJ 970-2018	0.01 mg/L
25		GB/T 5750.5-2006	0.1 mg/L

5.4.3.1

GB/T14848-2017 5-15

5.4.3.2

5-15

5-15 **mg/L pH**

	1#	2#	3#	GB/T14848-2017
K^+	2.25	2.71	2.28	/
Na^+	14.9	12.4	15.3	200
Ca^{2+}	36.2	33.9	32.4	/
Mg^{2+}	7.33	5.36	7.24	/
CO_3^{2-} mmol/L	47.6	45.8	43.2	/
HCO_3^- mmol/L	41.8	37.3	40.7	/
mg/L	13.5	14.5	12.6	250
mg/L	14.6	16.8	13.4	250
pH	7.14	7.26	7.26	

1m

4 2019

3 13 5-16 5-1

5.5.2

5-16 5-17

5-16 **dB(A)**

1#	1m		3	GB3096-2008 3 65 55
2#	1m			
3#	1m			
4#	1m			

5-17 **dB(A)**

1#	1m		4a	GB3096-2008 3 65 55 4a 70 55
2#	1m		3	
3#	1m			
4#	1m			

5.5.3

5-18

5-18 **dB(A)**

2019 3 16 2019 3 17

5-18

GB3096-2008 3 4a

5.6

2019 3 14

5.6.1

3 5-19

5-19

					pH
				1	pH 45
	100m				pH
	100m				

0 0.2m 0 0.5m 0.5 1.5m 1.5 3m

5.6.2

5-20

5-20

1		GB/T22105.2-2008	0.01mg/kg
2		GB/T17141-1997	0.01mg/kg
3		HJ491-2009	5mg/kg
4		GB/T17138-1997	1mg/kg
5		GB/T22105.1-2008	0.002mg/kg
6		GB/T17141-1997	0.1mg/kg
7		HJ/T17139-1997	5.0mg/kg
8		/	0.02mg/kg
9			0.02mg/kg
10	-1,2-		0.02mg/kg

5-20

11	1,1-		0.02mg/kg
12	-1,2-		0.008mg/kg
13			0.02mg/kg
14	1,1,1-		0.02mg/kg
15			0.03mg/kg
16	1,2- +		0.01mg/kg
17			0.009mg/kg
18	1,2-		0.008mg/kg
19			0.006mg/kg
20	1,1,2-		0.02mg/kg
21			0.02mg/kg
22			0.005mg/kg
23	1,1,1,2-		0.02mg/kg
24			0.006mg/kg
25	+ -		0.009mg/kg
26	-		0.02mg/kg
27			0.02mg/kg
28	1,1,2,2-		0.02mg/kg

5.6.3

5-21

5-21 **mg/kg**

	0.5m	1.0m	2.0m	0.5m	1.0m	2.0m	0.5m	1.0m	2.0m	GB36600-2018
pH	6.82	6.78	6.78	6.74	6.77	6.73	6.82	6.81	6.77	/
	2.15	1.86	1.93	5.23	5.27	3.66	2.46	2.53	2.17	60
	0.34	0.27	0.28	0.38	0.41	0.32	0.37	0.45	0.29	65
	12.7	10.9	11.7	14.2	14.8	11.4	15.1	12.9	14.3	/
	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.7
	34.4	28.6	31.7	35.2	41.1	36.0	38.3	32.9	31.7	18000
	12.7	10.7	12.5	14.2	12.9	13.3	13.3	12.9	11.8	800
K	0.233	0.214	0.246	0.273	0.225	0.218	0.230	0.227	0.204	38
	16.1	13.2	14.5	14.2	13.7	13.4	15.6	10.2	14.7	900
	52.1	57.9	64.5	46.8	43.9	54.2	57.1	57.2	54.3	

1,1-	<0.02	9
-1,2-	<0.008	596
	<0.02	0.9
1,1,1-	<0.02	840
	<0.03	53
1,2-	<0.01	5
	<0.009	2.8
1,2-	<0.008	5
	<0.006	1200
1,1,2-	<0.02	2.8
	<0.02	53
	<.005	270
1,1,1,2-	<0.02	10
	<0.006	28
+ -	<0.009	570
-	<0.02	640
	<0.02	1290
1,1,2,2-	<0.02	6.8
1,2,3-	<0.02	0.5
1,4-	<0.008	20
1,2-	<0.02	560
	<0.003	70
2-	<0.06	2256
	<0.09	76
	<0.08	260
	<0.03	37
a	<0.004	15
a	<0.005	1.5
b	<0.005	15
k	<0.005	151
	<0.003	1293
a h	<0.005	1.5
1,2,3-cd	<0.004	15

6

6.1

6.2

85~95dB(A)

6-1

6.2.1

r

$$L_A(r)=L_A(r_0)\quad 20\lg(r/r_0)$$

$$L_A = 10\lg\left(\sum_{i=1}^{n} 10^{0.1L_{Ai}}\right)$$

$L_A(r)$ r dB(A)

$L_A(r_0)$ r_0 dB(A)

r_0 m

r m

L_A dB(A)

L_{Ai} i dB(A)

6-1 [illegible]

6-1

dB(A)

	m									(m)	
	20	40	60	80	100	150	200	400			
94	68	62	58								

[illegible] /P <</MCID 494.3ETQq30

B.

C.

6.3

6.3.1

6.3.1.1

A.

B.

C.

D.

6.3.1.2

6.3.2

6.3.2.1

150m TSP 1.5

GB 3095-2012 0.30mg/m^3 1.6

6.3.2.2

600m

6.3.3

6.3.3.1

A.

70%

B.

C.

D.

E.

F.

6.3.3.2

6.3.4

6.3.4.1

COD SS

COD BOD_5 SS

6.3.4.2

A.

B.

C.

6.4

6.5

6.5.1

7

7.1

7.1.1

7.1.1.1

(1998 ~2017)

117 18 E 31 47 N 27m

7.1.1.2

7.1.1.3

7-1

7-1

	1	2	3	4	5	6	7	8	9	10	11	12	
	3.0	5.9	10.2	16.6	22	25.6	28.6	27.7	23.7	18	11.2	5.5	16.5

7-1 16.5

7 28.6 1 3.0

7.1.1.4

7-2

7-2

	1	2	3	4	5	6	7	8	9	10	11	12	
m/s	2.5	2.7	3	3.1	2.9								

7.1.1.5

20 7-2 7-1

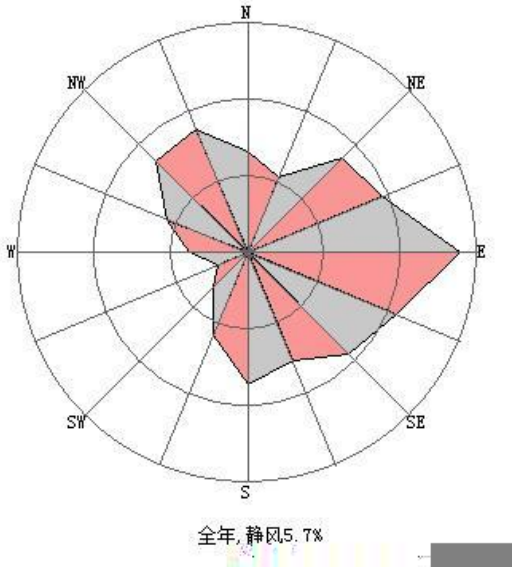
E 11.1% ESE

8.4% SE 7.7% 30%(

28.2%)

7-3 :%

	N	NNE	NE	ENE	E	ESE	SE	SSE	
	5.3	4.3	7.0	7.6	11.1	8.4	7.7	6.1	
	S	SSW	SW	WSW	W	WNW	NW	NNW	C
	6.8	4.6	2.5	1.7	3.0	4.5	6.8	7.0	5.7



7-1

AERSCREEN

7-4

7-4

/	/	
		30
/		40
/		-6

	/m	90
	/km	/
	/	/

7.1.2

7.1.2.1

CO_2

SO_2 NO_2 7-5

7-5

	g/m^3	
	200	HJ2.2-2018 D.1
	2000	DB13/1577-2012 1
SO_2	500	GB3095-2012
NO_2	200	
	450	

HJ2.2-2018

7.1.2.2

7-6

7-6

			/m													
			X	Y	m	(m)	(m)	( )	(h)		m/s		kg/h	(t/a)	C_0 (ug/m^3)	P_0 m^3/a
1		CO_2 G1	521745.14	3507046.91	16	15	0.3	25	3720		16.1		0.001	0.004	450	8.889E+06
5		G2	521361.13	3507433.02	9	35	8 5.7	25	3800		7.15		0.032	0.12	200	1.000E+12
													0.989	3.76	2000	1.880E+09
													0.603	2.29	450	5.089E+09
												SO_2	0.088	0.33	500	6.600E+08
												NO_x	0.412	1.56	250	6.240E+09
													0.434	1.65	2000	8.250E+08
6		G3	521440.63	3507402.34	9	20	0.9	100	3800		16.1 1					

												NO_x	0.309	1.17	250	4.680E+09
10		G5	521437.96	3507376.06	9	20	0.9	100	3800		16.7		0.029	0.11	200	5.500E+08
													0.524	1.99	2000	9.950E+08
													0.031	0.12	450	2.667E+08
												SO_2	0.088	0.33	500	6.600E+08
												NO_x	0.412	1.56	250	6.240E+09
11		G6	522174.03	3507975.12	14	15	0.4	150	/		11.52		0.039	0.15	450	3.333E+08
												SO_2	0.112	0.43	500	8.600E+08
												NO_x	0.524	1.99	250	7.960E+09

/m

m m m h

。

7.1.2.3

A

SO_2 NO_2 7-8

7-8

			mg/m³	%	m
	G2	1	0.000595	0.30	274
	G5	1	0.000210	0.10	90
		1	0.000810	0.40	205
	G2	1	0.0184	0.92	274
	G3	1	0.00323	0.16	72
	G4	1	0.000701	0.04	62
	G5	1	0.00379	0.19	90
		1	0.0165	0.83	205
	CO_2 G1	1	0.0000951	0.02	90
	G2	1	0.0112	2.49	274
	G3	1	0.000253	0.06	72
	G4	1	0.000237	0.05	62
	G5	1	0.000224	0.05	90
	G6	1	0.000838	0.19	28
		1	0.00133	0.30	498
SO_2	G2	1	0.00164	0.33	274
	G3	1	0.000714	0.14	72
	G4	1	0.000681	0.14	62
	G5	1	0.000636	0.13	90
	G6	1	0.00241	0.48	28
		1	0.00380	0.76	498
NO_2	G2	1	0.00689	3.45	274
	G3	1	0.00301	1.50	72

7-8

			mg/m^3	%	m
	G4	1	0.00287	1.43	62
	G5	1	0.00268	1.34	90
	G6	1	0.0101	5.07	28
		1	0.0160	8.00	498

SO_2 NO_2

0.000810mg/m^3 0.0184mg/m^3 0.0112mg/m^3 0.00380mg/m^3 0.0160mg/m^3

0.40% 0.92% 2.49% 0.76% 8.00% SO_2 NO_2

498m GB3095-2012

274m

205m

- 2018 D

205m

DB13/1577-2012 1

SO2 NO2

B

HJ2.2-2018

7-9

7-9

			mg/m^3	kg/h	(h)	t/a
1			0.08	3.04	3800	0.12
			2.57	0.47		3.76

	G2		1.57	0.13		2.29
		SO_2	0.23	0.59		0.33
		NO_x	1.07	0.54		1.56
2	G3		16.08	0.434	3800	1.65
			1.24	0.034		0.13
		SO_2	3.56	0.096		0.36
		NO_x	16.63	0.449		1.71
3	G4		4.56	0.068	3800	0.26
			1.54	0.023		0.09
		SO_2	4.40	0.066		0.25
		NO_x	20.58	0.309		1.17
4	G5		1.03	0.029	3800	0.11
			18.70	0.524		1.99
			1.10	0.031		0.12
		SO_2	3.14	0.088		0.33
		NO_x	14.70	0.412		1.56
						0.23
						7.66
						2.63
		SO_2				1.27
		NO_x				6.00
1	CO_2 G1		0.11	0.001	3720	0.004
2	G6		10.27	0.039	/	0.15
		SO_2	29.36	0.112		0.43
		NO_x	137.31	0.524		1.99
						0.154
		SO_2				0.43
		NOx				1.99
						0.23
						7.66
						2.78
		SO_2				1.70
		NO_x				7.99

7-10

7-10

						mg/m^3	t/a
1					DB12/ 524-2014 2	2	0.65
						0.2	0.03

GB16297-1996

2

7.66t/a 0.23t/a 1.70t/a 7.99t/a 2.78t/a

SO_2 NO_x 0.03t/a 0.65t/a

0.32t/a 0.91t/a 4.27t/a

SO_2 NO_x 0.26t/a 8.31t/a 3.10t/a 2.61t/a 12.26t/a

C

7-12

7-12 **mg/m³**

		mg/m³	%	
		0.000120	0.06	
		0.000245		

DB12/ 524-2014

2

0.2mg/m³

2.0mg/m³

7.1.2.5

GB/T3840-91

$$\frac{Q_c}{C_m} = \frac{1}{A}(BL^C + 0.25r^2)^{0.50} L^D$$

C_m mg/m^3

L m

Q_C kg/h

r m

S m^2 r= S/ $^{0.5}$

A B C D

470 0.021 1.85 0.84

7-13

7-13

			Q_C kg/h	m^2	C_m mg/m^3	L m	
1	408×108×16		0.008	17280	0.2	0.086	50
			0.163		2.0	0.101	50

GB/T3840-1991

100m

1 GB/T

18075.1-2012 2.7m/s 10

/ 300m

300m

7-2

7.2

7.2.1

1

57.83 m^3/d

29.68 m^3/d 28.15 m^3/d 1 40m^3

1 50m^3

2

1

Ni

GB8978-1996 1

57.74m^3/d +

284.02m^3/d 341.76m^3/d

SBR + +

GB 8978-1996

4

7.2.2

30 t/d

10 t/d 2007 6 10 t/d 2011

10 t/d 2016

15.6 m^2 61.33km^2 9.3 m^2

895.58m^3/d

30 m^3/d 0.3%

GB18918-2002 A

7.3

7.3.1

7.3.1.1

2-3m

1~4

11.3 / pH 7.7~8.3

0.9-1.5 /

40-60 70 10

2800 /

20-52 1400-2400 /

7.3.1.2

10.2~11.3m 58.8m -

4 1

100L/d 15t/d

COD SS

SS

2

895.58m^3/d

pH COD SS

7.3.2.2

1

2

50

1

-

HJ610-2016

$$\frac{C}{C_0}=\frac{1}{2}erfc\left(\frac{x-\mathrm{ut}}{2\sqrt{D_L t}}\right)+\frac{1}{2}e^{\frac{ux}{D_L}}erfc\left(\frac{x+\mathrm{ut}}{2\sqrt{D_L t}}\right)$$

x t d

C (x ,t) t x g/L

C_0 g/L

u m/d

D_L m^2/d

erfc

2

n u

D_L

1 n

- n

0.18

2 u

B K 1.5m/d

I 2

u= KI /n=0.017m/d

3 x D_L

L

10m

7-14

7-14

	k m/d	I	n	u m/d	m^2/d
	1.5	2	0.18	0.017	0.17

3

7-15

7-15

mg/L		m	m
8.26	100	6	15
	1000	31	59
	3650	85	142
	7300	155	237
69.63	100	19	24
	1000	73	90
	3650	168	201
	7300	273	315

100d 6m 15m 1000d 31m

59m 10 85m 142m 20 155m

237m 100d 19m

24m 1000d 73m 90m 10 168m

201m 20 273m 315m

08J333

1

7.4

7.4.1

75~95dB(A)

60~75dB(A) 3 3-8

7-16

700m

7-16

	(m) × ×	m			
	216×78×10	47	/	165	/
	408×108×16	/	27	/	136
	96×50×5	/	38	107	/
	60×40×6	31	/	/	/

200m

7.4.2

7.4.2.1

A_{div} A_{atm} A_{gr}

A_{bar} A_{misc}

$$L_P(r) = L_P(r_0) -(A_{div} + A_{atm} + A_{gr} + A_{bar} + A_{misc})$$

7.4.2.2

$$L_p(r)= L_p(r_0)-20\lg(r/r_0)$$

$$A_{div}=20\lg(r/r_0)$$

7.4.2.3

$$L_p(r)= L_p(r_0)-10\lg(r/r_0)$$

$$A_{div}=10\lg(r/r_0)$$

7.4.2.4

7.4.2.5

200m

22:00~6:00

7-17 **dB(A)**

1		48.3	65	
2		54.6		
3		43.5		
4		53.4		

7-17

GB 12348-2008 3

7-3

7.5

7.5.1

3-9 3-10

7.5.2

120m^2

GB18597-2001

1m

GB18597-2001

6.2 6.3.1 6.3.9 6.3.11

8

8.1

8.1.1

COD 50000mg/L

(HJ169-2018) B

8-1

		CAS	/t
1		1330-20-7	10
2		/	10

8.1.1

8-2

8-2

1						
2						

8.2

8.2.1 P

8.2.1.1 Q

Q

8-3

8-3 Q

			CAS	/t	/t	Q
1		COD	/	330	10	33

		8				
2			1330-20-7	3.24	10	0.324

8.2.1.2 M

(HJ169-2018) C C.1

M=5

M4

8.2.1.3 P

(HJ169-2018) C C.2 8-3

M4

P4

8-4 P

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

8.2.2 E

8.2.2.1 E

1-1

(HJ169-2018) D D.1 5km 81670

E1

8.2.2.2 E

E3

8.2.2.3 E

(HJ169-2018) D D.5

G3 D2

E3

8.2.3

8-5

E	P			
	P1	P3	P3	P4
E1				
E2				
E3				

8-5

8.2.4

HJ169-2018

8-6

				a

a

8.3

8.3.1

8.3.2

8-7

8-7

1		
2		0.2m

A.

8-8

8-8

B.

GB50183-2004

10^{-6} 1970 1992 22

7.75×10^{-4}

C.

53.5

14.1 16.9 5.3

25%

a.

b.

8.3.4

1

19747mg/m^3

50L 1.0g/mL 5

15

$$Gs = 5.38+4.1u \quad P_H \cdot F \cdot M^{1/2}$$

Gs g/h

u m/s

F m^2 $5m^2$

M 106

P_H mmHg

4.5mmHg 0.054kg/min

GBZ 2.1-2007 15

8-9

	mg/m^3	m	m
	3637	2	0
	GBZ 2-2002	m	
	100	50	

8.4

8.4.1

C30

1.0×10^{-10}cm/s GB18599-2001

100~150mm

200~250mm	2.0mm	300g/m^2

2

220m^3 20L/s

8.5

8.6

8.6.1

8.6.2

8.6.3

A.

B.

C.

D.

E.

a.

b.

c.

d.

e.

f.

F.

a. 120

b.

c.

d.

G.

H.

8.6.4

A.

B.

8.7

8-10

8-10

	1				
	2			1	119
	3				
	4				119
	5				119
	6				119

8.8

8-11

8-11

1			
2			2
3		220 m^3	25
4		200m^3	10

C.

9.1.3

A.

B.

C.

9.1.4

9.1.5

9.2

9.2.1

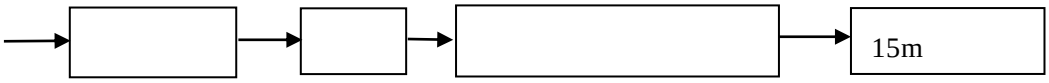
CO_2

NOx

CO_2

CO_2 CO_2

99



15m

CO_2 +

+

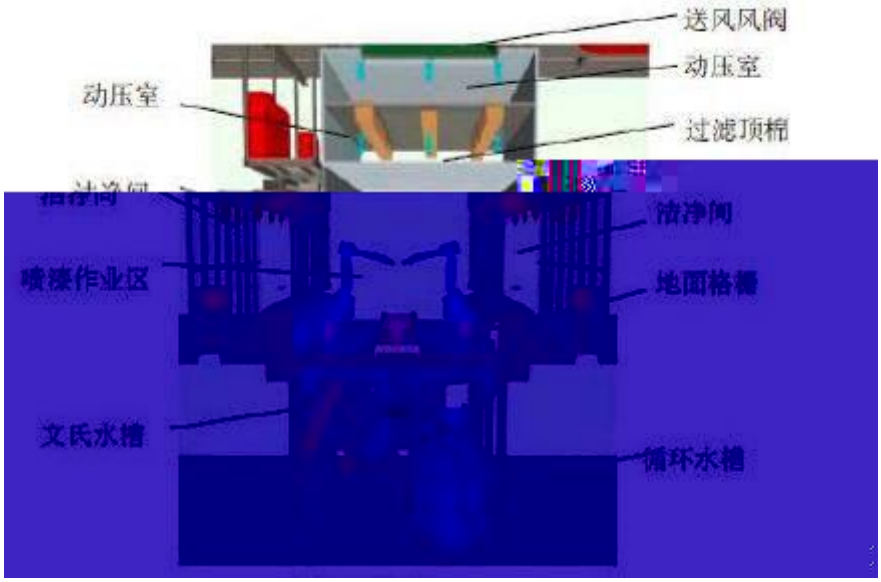
GB16297-1996

9.2.2

9.2.2.1

70% B1

B2



9-1

98%

+ 35m

A.

92%

35m

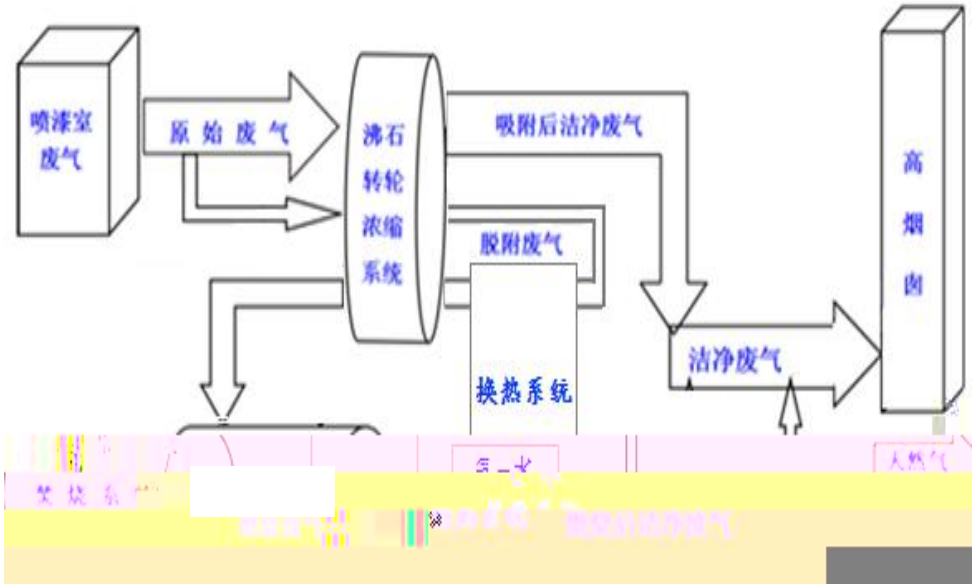
1~6

B.

98%

35m

+



2016 VOCs

GB16297-1996 2 VOCs

DB12/ 524-2014 2

9.2.2.2

1.5t/a

5 3 1 1

80% 1 35m

1 15m

80%

VOCs

DB12/ 524-2014 2

9.2.2.3

TNV

350 650 760

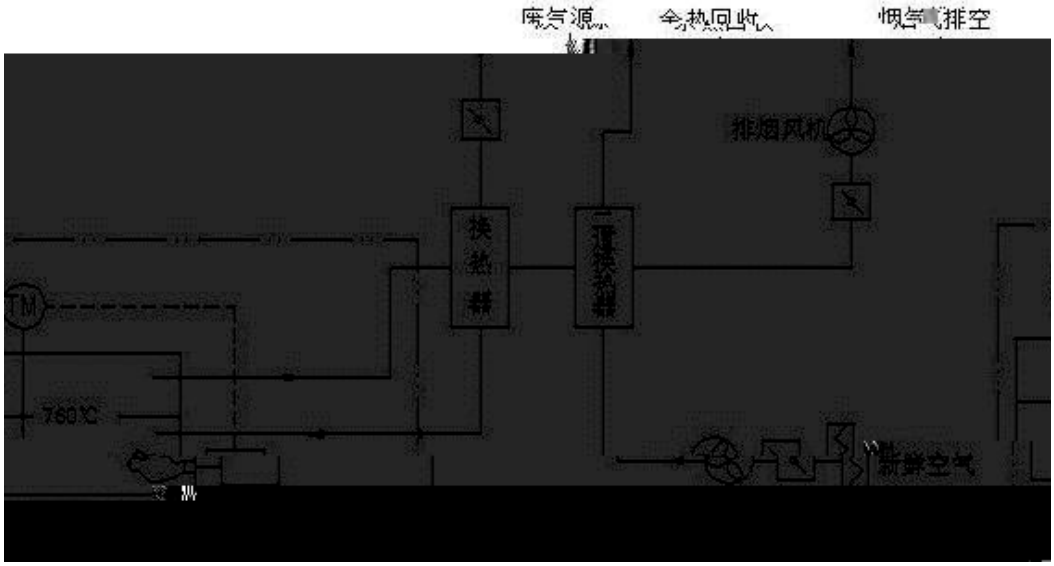
CO_2 H_2O

98%

27m

TNV

TNV



GB16297-1996	2	VOCs

9.3.2

9.3.2.1

1

A

9-2

9-2

		m^3	m^3	
1		350	205	
2		300	215	
3		450	330	
4		320	200	
5		240	90	
6		310	90	
7		726	/	

B.

a.

pH

1 pH 10~11 PAC PAM

1 Ni Zn

COD pH

1 pH 6~9 GB8978-1996

1

b.

pH 3 pH pH 8~9

PAC PAM

c.

pH 4 PAC PAM

2 SS COD pH 2

pH 6~9 pH 2

C.

SBR

SBR PAC PAM

D.

75%~80%

9.3.2.2

A.

COD

$Ca(OH)_2$

$3HPO^{2-}{}_4+5Ca^{2+}+4OH^-$ / $M_3(OH)(PO_4)_3$ 4 $_2O$

$Ni^{2+} + 2OH^-$: 4 $_2$

pH pH

Ni pH Zn

99%

B.

C.

COD SS

D.

SBR

SBR

SBR

E. 0.5mg/L

SBR

PAC PAM 90%

0.5mg/L

3

3-10 3-11 9-3

9-3

				mg/L							
			(m^3/d)	SS	COD		Zn	Ni		BOD_5	
				120.17	251.96		32.18	29.76	190.47		
1			150.94	19	123		0.32	0.30	1.90		
	PH 1			84%	51%		99%	99%	99%		

9-3

				mg/L							
			(m^3/d)	SS	COD		Zn	Ni		BOD_5	
				1095	8411	374.44					
2			57.74	164	2103	56.17					
				85%	75%	85%					
				212	1476	57.01					
4			341.76	42	369						

PH 2

H. COD

9.4

9.4.1

1

2

9-2

9-4

		+HDPE -10cm/s GB18599-2001
		GB15562.2-1995 GB18597-2001 +HDPE -10cm/s
		+ -10cm/s S8
		+HDPE 1.0×10^{-10}cm/s
		+ -10cm/s
		-7cm/s

9.4.2

1

9-2

9-5

9-5

1				pH	1 /	

9.4.3

9.4.4

9.5

75~105dB(A)

GB12348-2008 3

9.6

9.6.1

3-9 3-10

9.6.2

9.6.3

1 120m^2

240 50L 0.09m^2 3

7.2m^2 2.23t

7

0.5m

10^{-10}cm/s

14 44.6t/

GB18597-2001 HJ2025 -2012

9-6

9-6

1				120m^2		100t	14

9.7

9-7

9.8

9-7

CO_2		+15m 1 m^3/h	1	40	
		15m 3000m^3/h	1	2	2 2
		+	30	60	
		+ +40m 38.5 m^3/h	1	4500	
		+27m 7.7 m^3/h	3	280	2
		+27m 1.2 m^3/h	4	20	2
				150	
		+27m 2 m^3/h	1	5	
				30	2
				5087	
		40m^3	1	2.5	
		50m^3	1	2.5	
		15m^3/h pH 2 2 pH	1	80	
		10m^3/h pH	1	30	
		30m^3/h pH pH	1	100	GB8978-1996 4
		30m^3/h SBR	1	110	
			4	40	
			3	90	

9-7

			1	30	
			1	460	
			1	60	
			1	10	
				1005	
				35	3
				10	
				70	
				35	
	6			/	
				150	
				200	
			3	6	
				/	
				/	
				/	
		$120m^2$	1	10	
		$125000m^2$		28.44	
				6486.44	

10

10.1

10.1.1 2011 2013

2011

2013

2011 2013

10.1.2 2009

2009

2009

10.1.3

[2017]53

10

10.1.4

2017 1055

10.1.5 2012-2020

[2012]22

2012 6 28 2012-2020

2015

50 2020

200 500

2012-2020

2012-2020

10.1.6 [2014]35

2014 7 21

[2014]35

30%

[2014]35

10.1.7

3. VOCs

2

VOCs

90% 80%

B1 B2 B1 B2

98%

TNV 98%

90%

10.1.8 [2018]83

VOCs

GB16297-1996 2 VOCs

2

GB13271-2014 3

[2018]83

10.1.9

[2016]114

10-1

10-1

1			
2			
3			
4	80%	87.38% 5%	

10-1

11		300m	

12

10.2.2

10-1

2007 9 8

2007 574 10-2

10-2

1	1		
2	2		
3	3 2007		

	2010 2007 50%	70%	
4	4		

11

11.1

COD SO_2 NO_X VOCs

11.2

11-1

11-1 **t/a**

	m^3/a	181949.8	0	181949.8
		109.57	106.58	2.99
	SO_2	2.32	0	2.32
	NOx	10.84	0	10.84
	VOCs	377.21	368.90	8.31

VOCs 136.322t/a

11.4

11.4.1

73512.93m^3/a

14457.5m^3/a

(135925m^3/a)

223895m^3/a COD

150mg/L 0.75mg/L 0.05mg/L COD 24.64t/a

0.102t/a 0.007 t/a

11.5

100%

+TNV TNV

12.3

10

199 2328

12.4

12.4.1

506111 6486.44

1.3% 9-7

12.4.2

1

4 TNV 5 1

TNV

4 TNV 321.1 m^3/ 3.65 /m^3

0.7 3800h

47.67 11.92 0.56

1 750 / 1

3750

135925t/a 2 /

27.2

12-2

12-2

		/
1	1	47.67
2	4 TNV	1172
3	5	0.38
4	1	11.92
5		27.2
6		10
7		**1269.17**

12.4.3

12.4.4

12.5

13

13.1

13.1.1

13.1.2

8 3 2

2

13-1

13-1

	1 2 3 4
	1 2 3 4 5 6 ISO14001

13.1.3

1

2

3

4

5

6

7

8

13.1.4

13.1.4.1

13-2 2-1

13-3

13-2

			m^2	
			146400	
			81000	
			136000	
			13000	
			2268	
			30095.46	
			1000	
	3		79680	
			8050	
			3600	

13-2

16		t/a	139	PAC PAM
17		m^3/a	271	
18		m^3/a	150	
19		m^3/a	115	
20		m^3/a	64	
21		m^3/a	400	
22		m^3/a	800	
23		t/a	80	
24		/	10	
25		/	10	
26		/	10	
27		/	10	
28		/a	10	
29		/a	10	

13.1.4.2

13-4

13-4

mg/m

		mg/m^3 mg/L	t/a	mg/m^3 mg/L	
		7.12	0.78		20
		0.07	0.007		0.5
		0.11	0.012		5.0
		0.1	0.011		1.0
		0.93	0.102	GB8978-1996	15
	BOD_5	5.12	0.56	1	160
		8,21	0.12		100

13.1.4.3

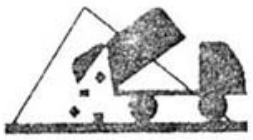
9-7

13.1.4.4

. GB15562.1.1995

13-5

13-5

1					
2					
3					

13.2

13.2.1

HJ 819-2017

14-6

13.2.2

HJ 819-2017

13-6

13-6

		CO_2		/	GB16297-1996 2 DB12/ 524-2014 2
			VOCs SO_2 NO_x	/	
			VOCs SO_2 NO_x	/	
				/	
					GB8978-1996 1
			pH COD SS	/ COD	GB8978-1996 4
			pH	1 /	GB/T14848-2017
			Leq	1 /	(GB12348-2008)3 4

13.2.3

14

14.1

128.4hm^2(1926) 506111

10

14.2

2011

2013

2009

2012-2020

2017 1055

[2016]114

14.3

14.4

14.5

14.5.1

1 90%

1 15m

B1 B2 98%

+ 92% TNV

98% 4

80% TNV

35m

TNV 98% 1 20m ,

80%

15m

1 15m

GB16297-1996 2

DB12/ 524-2014 2

GB13271-2014 3

14.5.2

GB 8978-1996 1

GB 8978-1996

4

14.5.3

GB12348-2008 3 4

14.5.4

120m^2

14.6

SO_2 NOx 2.32t/a 10.84t/a VOCs

8.31 t/a

COD 24.64t/a 0.102t/a

GB 18918-2002 A

14.7

14.7.1

2017 SO_2 CO

PM_{10} NO_2 O_3

$PM_{2.5}$

2018 10

0.395~0.538mg/m^3 0.198~0.269

14.7.2

LAS

GB3838-2002

14.7.3

GB/T14848-2017

14.7.4

GB3096-2008 3 4a

14.7.5

GB36600-2018

14.8

14.8.1

SO_2 NO_2

SO_2 NO_2

GB3095-2012

HJ2.2-2018 D.1

0.2mg/m^3

2.0mg/m^3

GB16197-1996

DB12/ 524-2014 5

300m

1 GB/T 18075.1-2012