环境影响报告书

Shandong Harmony Project Consulting Co., Ltd.

概　述

一、项目概况

四、环境影响评价工作过程

2014 4 29 5000

22

3 130t/h +2×B12MW

2-1 2-2

3 2 1

3

130t/h 2 1 3 130t/h

3 130t/h

3×75t/h 1 3# +1×C12MW

+1×B6MW +1×260t/h 4# +1×CC50MW

+1×240t/h 5#

1

2013 1

17 [2013]4 3 130t/h

2013 11 1

[2013]90

“ ”

2015 6

[2015]137

2016 1

[2016]3 2018 6

2

2016 1

[2016]9

2017 2 [2017]21

3 1# 2#130t/h

2017 3 1# 2#130

t/h [2017]010

2017 9 1# 2#130t/h

[2017]180

	3 130t/h SCR -	[2013]4 2013 1 17	2 130t/h 1 1 [2016]3 2016 1 1 130t/h 2018 2018 6
	SCR SNCR	[2015]137 2015 6 23	
	2 × B12MW	[2016]9 2016 1	[2017]21 2017 2
1# 2#130t/h	1 SNCR SCR 2 3	[2017]010 2017 3	[2017]180 2017 9

3×130t/h 37.5t/d

60% =6% 94%

N7723

41800m^2

3×130t/h

2-2 2-3

2-4 2-5

		3×130t/h 2 1	
		2×B12MW	
		2 5.29MPa/485 0.98MPa/200	
		1 150t/h → → → → → → →	
		1000m^3 1 ,350m^3	
		60m 72m , 6m 20	
		100m^3	

		20m³ 20m³	
		60m³	
		120m 3.0m	
		3 + 99.9%	
		3 - 1 95%	
		SNCR-SCR 60%	
			--
			--
			--
			--
			--
			--
		1600m 110KV 10KV 10KV	--
			--
			--

			3×130t/h 2 1 + 2×B12MW
1		t/h	2×130
2		h	7200
3		m²	41800
4	61%	t/a	12750
5		t/a	341

			130t/h
1			YG130/9.80-M

2020

	h			t
	1#130t/h	2#130t/h	3#130t/h	
2020.6	281	614	720	10961.27
2020.7	0	744	744	19551.84
2020.8	449	744	327	16877.59
2020.9	720	720	0	17079.9
2020.10	720	399	353	17545.22
2020.11	720	0	720	17903.95
2020.12	744	0	744	18875.36
2021.1	257	496	744	18047.86
2021.2	136	672	543	15783.65
2021.3	744	744	0	5194.43
2021.4	720	306	424	21880.45
2021.5	376	376	744	17685.92
	8788	8182	7799	197387.4

1

S308

2

1 4320m^2 6m 20

+

3

3

1

10000 m^3/d

“ + + ”

91370300164326963R001P 2020 6 9 ,

2

10000m^3/d

“ A^2/O+ + + + + ”

9137030507967914XW001Z

2020 9 8 ,

2021 9

1		C_{ar}	%	6.48	12.84
2		H_{ar}	%	0.93	1.16
3		O_{ar}	%	5.38	7.95
4		N_{ar}	%	0.14	1.18
5		S_{ar}	%	0.05	0.30
6		A_{ar}	%	25.08	16.45
7		M_{ar}	%	61.92	60.12
8		M_t	%	2.25	3.39
9		V_{daf}	%	84.06	70.14

91370300164326963R001P

020 6 9 , 10000t/a

9137030507967914XW001Z

2020 9 8 , 2687.1t/a

12687.1t/a

2020 6 2021 5

12771t

=6% 94%

2-11

	$Q_{net.ar}$ MJ/kg	t/h	t/d	t/a		
	0.99	0.7	16.72	12359		

Gÿ

0# 1 60m^3

90% 250 85%

20%

90

0.66t/h 70m^3 3

2-12

	t/h	t/d	t/a
3×130t/h 2 1	0.2	4.86	1458

267t

2-13

	t/h	t/d	t/a
3×130t/h 2 1	0.037	0.89	267

3

2-14

t/h	a	t/3a
3×130t/h 2 1	3	25

1

1 150t/h “ + ”

→ → → → → →

75% 99.1m³/h

2

1

12m³/h

3

4m³/h

4

- 18.3m³/h

5

0.5m³/h

6

15.0m³/h

7

7.5m³/h

8

4

2

9

140 4200m³/a 0.58m³/h

% L

65%

=6% 94%

—

120m

2-4 2-15

		SO_2 NO_x HCl + + + + CO	G_1	SO_2 NO_x HCl + + + + CO	SNCR- SCR ≥ 80% + - + ≥ 97% ≥ 99.98% 850 3m/s 2	1 120m 3.0m
			—			

—

			W_1	——		
			W_2	pH		
			W_3		—	
			W_4		—	
			W_5	SS		
			W_6	SS	—	
			W_7	pH		
			W_8		——	
			W_9	COD		
			S_1			
			S_2			
			S_3			
			S_4			
			S_5			
			S_6		HJ 888—2018	
			S_7		HW08 900-217-08	
			S_8			

1

99%

SO_2 $Ca(OH)_2$

SO_2

$75mg/Nm^3$

2

10% wt FGD

3

3# $108m^2$

3

FGD

NO_x SNCR-SCR

SNCR-SCR ≥ 80%

99.8% -

50%

≥80% 99.98% 5mg/m^3

1000m^3 1 350m^3 1

1

2021 8 5 6

HCl + + + + + + + +

76% 85%

SO_2 NO_X 2020 10 2021 9

2-16

		8 5			8 6			
	mg/m^3	0.0135	0.0115	0.0107	0.0113	0.0126	0.0104	0.0117
	mg/m^3	0.0165	0.0134	0.0142	0.0141	0.0151	0.0131	0.0144
	kg/h	4.17×10^{-3}	3.05×10^{-3}	3.01×10^{-3}	4.44×10^{-3}	4.06×10^{-3}	4.09×10^{-3}	3.80×10^{-3}
	mg/m^3	0.43	0.29	0.34	0.36	0.22	0.45	0.35
	mg/m^3	0.52	0.34	0.45	0.45	0.26	0.57	0.43
	kg/h	0.13	0.08	0.10	0.14	0.07	0.18	0.12
	mg/m^3	ND	ND	ND	ND	ND	ND	———
	mg/m^3	/	/	/	/	/	/	———
	kg/h	/	/	/	/	/	/	———
	μg/m^3	0.061	0.086	0.047	0.065	0.043	0.184	0.081
	μg/m^3	0.074	0.100	0.062	0.081	0.052	0.232	0.100
	kg/h	1.9×10^{-5}	2.3×10^{-5}	1.3×10^{-5}	2.6×10^{-5}	1.4×10^{-5}	7.2×10^{-5}	2.8×10^{-5}
	μg/m^3	0.470	0.355	0.503	0.681	0.690	0.683	0.564
	μg/m^3	0.573	0.413	0.668	0.851	0.828	0.861	0.699
	kg/h	1.45×10^{-4}	9.40×10^{-5}	1.42×10^{-4}	2.68×10^{-4}	2.23×10^{-4}	2.69×10^{-4}	1.90×10^{-4}
	μg/m^3	0.51	0.40	0.55	0.71	0.71	0.68	0.59
	μg/m^3	0.62	0.47	0.73	0.89	0.85	0.86	0.74
	kg/h	1.6×10^{-4}	1.1×10^{-4}	1.5×10^{-4}	2.8×10^{-4}	2.3×10^{-4}	2.7×10^{-4}	2.0×10^{-4}
	μg/m^3	7.4	7.2	5.9	7.7	6.0	7.1	6.9
	μg/m^3	9.0	8.4	7.8	9.6	7.2	8.9	8.5
	kg/h	2.3×10^{-3}	1.9×10^{-3}	1.7×10^{-3}	3.0×10^{-3}	1.9×10^{-3}	2.8×10^{-3}	2.3×10^{-3}

		8 5			8 6			
	μg/m³	0.6	0.7	0.8	0.8	0.8	1.6	0.9

		8 5			8 6			
%		8.7	8.1	9.7	9.0	8.5	9.1	8.9
%		7.36	7.51	7.25	7.06	7.13	6.94	7.20
m/s		2.2	1.9	2.0	2.8	2.3	2.8	2.3
		49.5	49.1	48.8	49.3	48.7	48.7	49.0
/ (m)		120/8.03		(%)		6		———
		“ ND ”						———

DB37/664-2019 2 0.03 mg/m³

HJ2301-2017 SNCR-SCR 3.8mg/m³

HCl + + + + + + + +

GB18485-2014 4 HCl 60mg/m³ 0.1mg/m³

1.0mg/m³

2020 10 2021 9

2-17

		(mg/m³)		(mg/m³)		(mg/m³)
2020-10	0.14 32.6	16.2	2.21 44.9	23.1	0.209 15.4	0.99
2020-11	0.0321 27	7.77	5.41 37.7	13.7	0.0012 4.97	1.55
2020-12	0 29.9	4.26	3.95 44.1	10.8	0.001 4.69	1.61
2021-1	0 24.3	5.24	0 46.3	14.6	0 4.58	1.94
2021-2	0 21.6	4.84	0 48.8	13.4	0.0098 4.56	1.25
2021-3	0 19.2	5.66	0.0195 34.6	8.69	0.001 4.93	1.97
2021-4	1.49 21.4	9.94	1.35 40.7	19.4	0.0014 4.95	2.44
2021-5	0 21.6	9.37	4.78 46.6	20.3	0.0012 4.88	3
2021-6	0.28 16.9	6.38	5 37	19.3	0.238 4.81	2.5
2021-7	0.954 27.1	7.71	5.47 46	15.9	0.214 4.97	2.03
2021-8	0.0337 32.1	11.7	0 46.3	16.9	0.103 4.46	1.33
2021-9	2.12 31.7	10	2.54 44.3	14.9	0.213 3.16	1.03
	35		50		5	

SO_2 NOx

DB37/664-2019 2 SO_2 35mg/m³ NOx 50mg/m³ 5mg/m³

1

(t/a)	(t/a)	(t/a)
27.5	55.1	6.72

27.5t/a 55.1t/a

6.72t/a

	kg/h	
t/a	0.15	1.19

2

750t/a 106t/a

0.1‰

0.011t/a

2021 8 3 4

[ ] 2021 0261 2021 8 6 9

[ ] 2021 0264

2-19 2-5

			kPa	RH		m/s	
08.06	10:26	31.4	99.8	58.2		1.1	
	13:25	32.0	99.8	54.3		1.2	
	15:10	33.8	99.6	47.1		1.0	
08.09	09:57	27.6	100.0	62.7		1.2	
	11:23	28.8	99.9	54.2		1.0	
	14:05	30.8	99.9	51.7		1.1	

			mg/m³	mg/m³
	8 6		0.234	0.18
	8 6		0.251	0.12
	8 6		0.384	0.11
3#	8 6		0.317	0.17
	8 6		0.200	0.15
	8 6		0.385	0.13
4#	8 6		0.250	0.15
	8 6		0.434	0.18
	8 9		0.301	0.10
	8 9		0.301	0.13
1#	8 9		0.150	0.09
	8 9		0.251	/
	8 9		0.334	0.12
2#				

	2×130t/h
	6.72
SO_2	27.5

3.6m^3/h

1.8m^3/h pH SO_4^{2-} F^- COD

80% 3360m^3/a

0.47m^3/h

2-22

	m^3/h			m^3/h		
	3		——	3		
	4.7	--		4.7	--	
	3.6	--		3.6	--	
	10	—		10	—	
	1.8			1.8	——	
	0.5			0.5	——	
	0.47			0.47	——	
	5		--	--		5
	19.8		--	--		19.8
	48.87	—	--	24.07	—	24.8

24.8m^3/h 202368m^3/a

2

1

“ + + ”

10000m^3/d

(GB/T31962-2015)A

10000m^3/d

é

1#		2021.1.11	58.9	49.2
2#			55.3	45.7
3#			56.2	47.4

GB12348-2008 2

		t/a		
		45000		
		30000		
		15000		
	SCR	25/3a	HW50 772-007-50	
		3t/6a		
		6t/5a		
		20t/5a		
		6t/3a	HW08 900-214-08	
		2.2t/3 5a		HJ298-2019 GB5085.7-2019
		21		

	(t/a)	6.72
	SO_2(t/a)	27.5
	NO_x(t/a)	55.1
	t/a	1.19
	kg/a	38.78
	kg/a	0.28
	kg/a	1.94
	kg/a	2.01
	kg/a	23.12
	kg/a	3.06
	kg/a	12.04
	kg/a	3.47
	kg/a	4.85
	kg/a	74.32
	kg/a	89.76
	(t/a)	0.011
	(m^3/a)	202368
	COD(t/a)	101.18
	(t/a)	9.1
	(t/a)	45000
	(t/a)	30000
	(t/a)	15000
		25/3a
		3t/6a
		6t/5a
		20t/5a
		6t/3a
		2.2t/3 5a

.

+ -

+SNCR-SCR 120m

HCl 50% 99.2%

2-28

SO_2	49.5kg/h	175mg/m^3	35mg/m^3	
	16.4kg/h	60mg/m^3	10mg/m^3	
NO_x	27.6kg/h	100mg/m^3	100mg/m^3	
HCl	1.35kg/h	4.5mg/m^3	60mg/m^3	

(DB37/664-2019) 2 $SO_2$35mg/m^3 NO_x50mg/m^3 5.0mg/m^3

2017 6 21

2020 6 9 9137030549380556X4001P

SO_2 118.39t/a NOx 169.13t/a 16.913t/a

2-29

		6.72	16.913	
		27.5	118.39	
		55.1	169.13	
	COD_{Cr}	1.40	——	——
		0.19	——	——

3250815.68m^3/a

COD 1625.408t/a 146.287t/a COD 500mg/L 45mg/L COD1825t/a

164.25t/a

1 3 130t/h

+2×B12MW

2 SO_2 NOx

DB37/664-2019 2 HCl + + + + + + + + GB18485-2014

4 -

HJ562-2010

3

4 27.5t/a 55.1t/a

6.72t/a

36 ° 37 ′ 51 ″ 37 ° 00 ′ 30 ″

118 ° 06 ′ 27 ″ 118 ° 29 ′ 30 ″

8km

15km 22km

3000 4000

22

3000m NE

NW

1

124.4km

“

”

205

59.6

875.5mm 5.85

m^3 3.50 m^3 2.73 m^3

3-1

2

55

11

4

81.27% 62.26%

24.38% 75.63%

0.10g

2020 1 21 “ 2020 2 ” (SO_2)20 / (NO_2)39 / (PM_{10})110 / ($PM_{2.5}$)58 / PM_{10} $PM_{2.5}$ (GB3095-2012)

2021 8 12 21

HJ2.2-2018 D

2021 8 3 8 5

500m 2000m

GB3838-2002

302

302

GB3838-2002

2021 7 28

3

(GB/T 14848-2017)

GB12348-2008 2

2021 8 19

1# 4#

GB36600-2018 5# 6#

GB15618-2018

2020 1 21 “ 2020 2 ” (SO_2)20 / (NO_2)39 / (PM_{10})110 / ($PM_{2.5}$)58 / PM_{10} $PM_{2.5}$ (GB3095-2012)

PM_{10} $PM_{2.5}$

SSE 15.6km

2019 1 4-1

SO_2	μg/m³		21	60	35%	
		98%	50	150	33%	

NO

HJ2.2-2018

2

4-1 4-2

1		NE	300m	
2		NW	530m	

4-3

	VOCs	7 4 02 08 14 20

2021 8 12 21 7

8 14 15 20

4-4

	HJ 533-2009	0.01mg/m^3	ZR-3500 GHLH/FY/076) 722N (GHLH/FY/029)
	2003 / /	0.001mg/m^3	ZR-3500 GHLH/FY/076) 722N (GHLH/FY/029)
	HJ 604-2017 -	0.07mg/m^3	GC1120
	GB/T 14675-1993	10( )	560W

4-5 4-6

4-7

			kPa	RH		m/s	
08.06	10:26	31.4	99.8	58.2		1.1	
	13:25	32.0	99.8	54.3		1.2	
	15:10	33.8	99.6	47.1		1.0	
08.09	09:57	27.6	100.0	62.7		1.2	
	11:23	28.8	99.9	54.2		1.0	
	14:05	30.8	99.9	51.7		1.1	
08.12	02:08	25.2	100.5	75.3		1.2	
	07:46	25.5	100.5	79.2		1.0	
	13:59	29.7	99.9	52.5		1.3	
	19:58	26.5	100.2	50.9		1.2	
08.13	01:57	24.9	100.4	82.6		1.4	
	07:57	25.9	100.2	72.0		1.1	
	13:59	30.3	99.6	52.5		1.5	
	19:58	28.9	99.7	53.8		1.4	
08.16	01:52	21.9	100.7	79.6		1.0	
	07:52	25.8	100.3	74.5		0.9	
	13:59	32.3	99.9	50.8		1.0	
	19:58	27.3	100.2	59.8		1.2	
08:17	01:59	22.8	100.8	66.7		0.8	
	07:54	26.2	100.3	80.2		1.1	
	13:59	30.4	100.0	57.9		0.9	
	19:55	27.1	100.5	62.7		0.8	
08.18	01:56	18.7	101.2	82.9		1.1	
	07:49	26.2	100.8	73.9		0.8	
	13:58	30.3	99.8	51.5		1.2	
	19:58	28.0	100.5	63.4		1.3	
08.19	01:44	20.8	101.2	87.9		1.0	
	07:58	25.8	100.4	69.9		0.9	
	13:58	29.8	100.0	51.4		1.3	
	19:59	27.0	100.6	88.7		1.4	
08.21	01:55	21.8	100.0	89.9		1.5	
	07:49	24.7	100.1	78.6		1.3	
	13:58	31.5	99.6	54.3		1.5	
	19:58	27.0	100.5	64.7		1.2	

		mg/m³				mg/m³								mg/m³			
		2:00	8:00	14:00	20:00	2:00	8:00	14:00	20:00	2:00	8:00	14:00	20:00	2:00	8:00	14:00	20:00
1#	8.12	0.11	0.08	0.06	0.05	0.001	0.002	0.002	0.002	11	11	11	12	0.89	0.9	0.98	0.84
	8.13	0.06	0.05	0.08	0.1	0.003	0.005	0.002	0.003	12	12	10	12	1.02	0.96	1.01	1
	8.16	0.08	0.11	0.06	0.15	0.004	0.005	0.005	0.005	12	11	11	12	1.05	1.02	1.02	0.92
	8.17	0.12	0.09	0.12	0.07	0.005	0.005	0.006	0.006	11	12	12	12	1.01	1.06	1	0.96
	8.18	0.07	0.06	0.07	0.05	0.003	0.003	0.003	0.003	12	12	12	12	1	0.88	0.96	0.81
	8.19	0.05	0.07	0.06	0.07	0.006	0.005	0.006	0.006	12	11	12	12	0.8	0.99	0.92	0.96
	8.21	0.08	0.12	0.07	0.12	0.004	0.004	0.005	0.005	12	12	12	12	1.02	1	1.01	1.02
2#	8.12	0.07	0.06	0.13	0.11	0.002	0.004	0.004	0.004	11	12	12	11	0.81	0.91	0.88	0.86
	8.13	0.05	0.06	0.04	0.05	0.007	0.005	0.006	0.004	11	12	12	12	0.96	1.03	1.04	1.02
	8.16	0.05	0.12	0.08	0.09	0.005	0.004	0.003	0.005	12	12	12	11	1.02	0.94	1	1.02
	8.17	0.08	0.08	0.09	0.06	0.005	0.005	0.005	0.005	10	11	12	11	0.9	1.1	1	0.99
	8.18	0.08	0.06	0.07	0.06	0.005	0.006	0.004	0.004	11	12	12	12	0.86	1.01	0.88	0.79
	8.19	0.07	0.07	0.07	0.08	0.005	0.006	0.005	0.006	12	12	12	11	0.86	0.9	0.9	0.98
	8.21	0.14	0.1	0.08	0.07	0.005	0.006	0.005	0.005	11	12	12	12	1.02	0.89	0.92	0.94

1#		28	0.05 0.15
		28	0.001 0.006
		28	10 12
		28	0.80 1.06
2#		28	0.04 0.14
		28	0.002 0.007
		28	10 12
		28	0.79 1.10

1

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

C_i— i mg/m^3

C_{0i}— i mg/m^3

Pi— i

4-8

		1h mg/m^3	
1		0.20	HJ2.2-2018 D
2		0.01	
3		2.0	

2

4-9

			(%)	
1#		0.25 0.75	0	--
		0.1 0.6	0	--
		0.4 0.53	0	--
2#		0.2 0.7	0	--

		0.2 0.7	0	--
		0.395 0.55	0	--

HJ2.2-2018 D

2021

		13960 15000m³/hTO COD COD	2021
		VOCs 4613 VOCs	2021 6
			2021

+X å

		20 / 1 3 1 3 5 3 8 “ ”	
		1 “ ” 660 2 1	
		1. 617 2. “ 6 ”	
		“ ” 10 “ ”	
		“ ” 12	
		1 β “ 8 100% ”“ 6 100% ” 2 “ ” VOCs 3 β PM_{10} 4 5 6 “ ”	
			2021

		6 2021—2025 2030 2060	“ ”
	“ ” “ ” “ 20 ”		“ ”
		2021 2	2021

2

4-11 4-2

1#		500m	

2#		2000m	

pH COD BOD_5

SS

6h

2021 8 3 8 5

3

pH	HJ 1147-2020 pH	/	HTYH-100N GHLH/FY/134
	GB/T 7489-1987	0.2mg/L	/
	GB/T 11892-1989	0.5mg/L	/
	GB/T 11901-1989	5mg/L	FA2004 (GHLH/FY/034)
	HJ 828-2017	4mg/L	/
	HJ 505-2009 BOD_5	0.5mg/L	JPB-607A (GHLH/FY/028)
	HJ 535-2009	0.025mg/L	722N (GHLH/FY/029)
	HJ 636-2012	0.05mg/L	UV2004 (GHLH/FY/036)
	GB/T 11893-1989	0.01mg/L	722N (GHLH/FY/029)
	HJ/T 51-1999	10mg/L	FA2004 (GHLH/FY/034)
	GB/T 11896-1989	10mg/L	/

	GB/T 11899-1989	10mg/L	FA2004 (GHLH/FY/034)
	GB/T 7484-1987	0.05mg/L	PXSJ-226 (GHLH/FY/030)
	HJ 484-2009 2 -	0.004mg/L	722N (GHLH/FY/029)
	HJ 503-2009 4-	0.0003mg/L	722N (GHLH/FY/029)
	HJ 970-2018	0.01mg/L	UV2004 (GHLH/FY/036)
	GB/T 7494-1987	0.05mg/L	722N (GHLH/FY/029)
	GB/T 16489-1996	0.005mg/L	722N (GHLH/FY/029)
	GB/T 7475-1987	0.05mg/L	GGX-800 (GHLH/FY/002)
	GB/T 7475-1987	0.05mg/L	GGX-800 (GHLH/FY/002)
	HJ 694-2014	0.4μg/L	AFS-230E (GHLH/FY/001)
	HJ 694-2014	0.3μg/L	AFS-230E (GHLH/FY/001)
	HJ 694-2014	0.04μg/L	AFS-230E (GHLH/FY/001)
	GB/T 7475-1987	1μg/L	GGX-800 (GHLH/FY/002)
	GB/T 7467-1987	0.004mg/L	722N (GHLH/FY/029)
	GB/T 7466-1987 -	0.004mg/L	722N (GHLH/FY/029)
	GB/T 7475-1987	10μg/L	GGX-800 (GHLH/FY/002)
	GB/T 11912-1989	0.05mg/L	GGX-800 (GHLH/FY/002)
	HJ 700-2014 65	0.02μg/L	NexION 350X (GHLH/FY/149)
	HJ 700-2014 65	0.03μg/L	NexION 350X (GHLH/FY/149)
	HJ 694-2014	0.2μg/L	AFS-230E (GHLH/FY/001)
N	HJ/T 346-2007	0.08mg/L	UV2004 (GHLH/FY/036)

	HJ/T 347.2-2018	20MPN/L	SHP-150 (GHLH/FY/041)
			SPX-150B (GHLH/FY/144)
	GB/T 11911-1989 GB/T 11911	0.03mg/L	GGX-800 (GHLH/FY/002)

	1#		500m	2#		2000m
	8 3	8 4	8 5	8 3	8 4	8 5
mg/L	ND	ND	ND	ND	ND	ND
mg/L	0.018	0.021	0.024	0.019	0.023	0.026
μg/L	79	21	14	28	23	20
mg/L	ND	ND	ND	ND	ND	ND
μg/L	ND	ND	ND	ND	ND	ND
μg/L	0.66	0.60	0.58	0.81	0.76	0.84
μg/L	0.8	0.7	0.6	1.8	0.8	0.8
N mg/L	2.32	1.12	0.90	2.13	0.80	0.82
MPN/L	9.2×10^3	3.5×10^3	5.4×10^3	3.5×10^3	5.4×10^3	5.4×10^3
mg/L	0.07	0.07	0.08	0.06	0.06	0.06
mg/L	0.03	0.02	0.02	0.03	0.01	
“ ND ”						

	1#		500m	2#		2000m
	8 3	8 4	8 5	8 3	8 4	8 5
pH	0.45	0.50	0.55	0.40	0.50	0.50
	0.30	0.26	0.31	0.26	0.22	0.28

2020-07	28.6	0.718	9.15	8.95	0.188
2020-08	30.9	0.519	8.68	8.94	0.111
2020-09	30.7	0.362	8.52	7.97	0.0277
2020-10	24.6	0.384	7.55	7.84	0.0895
2020-11	22.4	0.614	8.07	8.13	0.102
2020-12	21	0.619	7.62	8.28	0.135
	≤ 40	≤ 2.0	≤ 15	--	≤ 0.4

		pH						
		--	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2019-01	5.96	7.89	22.9	1.48	7.36	8.14	14	0.37
2019-02	7.18	8.26	29.9	0.673	9.4	12.2	12.4	0.295
2019-03	13	8.13	31.7	0.522	8.7	10.9	10.3	0.133
2019-04	16.6	7.78	28.5	0.565	9.28	7.14	7.05	0.17
2019-05	20.9	7.78	34.2	0.529	8.89	6.2	6.25	0.192
2019-06	20.4	8.19	38.1	0.426	10.3	6.49	5.31	0.292
2019-07	26.2	8.2	32.6	0.573	9.44	5.71	5.54	0.298
2019-08	25.1	7.49	31.2	0.856	9.24	7.02	6.14	0.295
2019-09	22.6	7.81	25.2	0.294	7.61	6.03	7.4	0.201
2019-10	18.9	7.92	21.1	0.216	6.78	6.02	8.03	0.155
2019-11	14.8	8.05	26.9	0.268	7.84	7.31	9.18	0.197
2019-12	8.85	8.36	33	0.617	9.46	12.1	10.2	0.2
	--	6 9	≤ 40	≤ 2.0	≤ 15	≥ 2	--	≤ 0.4

302

302

GB3838-2002

2020 **[2020]24**

2020 [2020]24

2020

1 V COD

IV 21

50% 30%

100% 33. 3%

1.

3

2. 5 “ ”

46

3. 2020 9

“ ” 4

4. 53

2020 85%

2021

“ ”

3

≤1.0mg/L

6

4-19 4-3

			(m)	
1#		SE	880	

2#

			(GHLH/FY/002)
	GB/T 11911-1989	0.01mg/L	GGX-800 (GHLH/FY/002)
	HJ 700-2014 65	0.08μg/L	NexION 350X (GHLH/FY/149)
	HJ 700-2014 65	0.67μg/L	NexION 350X (GHLH/FY/149)
	HJ 700-2014 65	1.15μg/L	NexION 350X (GHLH/FY/149)
	HJ 503-2009 4-	0.0003mg/L	722N (GHLH/FY/029)
	GB/T 5750.4-2006 (10.1)	0.050mg/L	722N (GHLH/FY/029)
	GB/T 5750.7-2006 (1.1)	0.05mg/L	/
	HJ 535-2009	0.025mg/L	722N (GHLH/FY/029)
	GB/T 16489-1996	0.005mg/L	722N (GHLH/FY/029)
	GB/T 5750.12-2006 (2.1)	2MPN/100mL	SHP-150 (GHLH/FY/041)
	GB/T 5750.12-2006 (1.1)	/	SPX-150B (GHLH/FY/144)
N	HJ/T 346-2007	0.08mg/L	UV2004 (GHLH/FY/036)
N	GB/T 5750.5-2006 (10.1)	0.001mg/L	722N (GHLH/FY/029)
	GB/T 5750.5-2006 (4.1) -	0.002mg/L	722N (GHLH/FY/029)
	GB/T 7484-1987	0.05mg/L	PXSJ-226 (GHLH/FY/030)
	HJ 694-2014	0.04μg/L	AFS-230E (GHLH/FY/001)
	HJ 694-2014	0.3μg/L	AFS-230E (GHLH/FY/001)
	HJ 694-2014	0.4μg/L	AFS-230E (GHLH/FY/001)
	HJ 700-2014 65	0.05μg/L	NexION 350X (GHLH/FY/149)
	GB/T 5750.6-2006	0.004mg/L	722N

	(10.1)		(GHLH/FY/029)
	HJ 700-2014 65	0.09μg/L	NexION 350X (GHLH/FY/149)
	HJ 700-2014 65	0.06μg/L	NexION 350X (GHLH/FY/149)
	HJ 700-2014 65	0.02μg/L	NexION 350X (GHLH/FY/149)
	HJ 700-2014 65	0.03μg/L	NexION 350X (GHLH/FY/149)
	HJ 694-2014	0.2μg/L	AFS-230E (GHLH/FY/001)

4-21 4-22

	1#	2#	3#
pH	7.44	7.13	7.30
mg/L	282	430	299
mg/L	300	510	305
mg/L	33	40	50
mg/L	62	150	47
mg/L	ND	ND	ND
mg/L	ND	ND	ND
μg/L	0.35	ND	ND
μg/L	2.39	2.51	2.17
μg/L	19.6	12.7	56.5
mg/L	ND	ND	ND
mg/L	ND	ND	ND
mg/L	0.37	0.52	0.85
mg/L	0.048	0.054	0.038
mg/L	ND	ND	ND
MPN/100mL	2	ND	2
CFU	80	40	76
N mg/L	3.15	3.35	3.62
N mg/L	0.001	0.001	ND
mg/L	ND	ND	ND

mg/L	0.38	0.20	0.56
μg/L	0.09	0.10	ND
μg/L	0.7	0.7	0.9
μg/L	ND	ND	ND
μg/L	ND	ND	ND
mg/L	ND	ND	ND
μg/L	0.10	ND	ND
μg/L	0.70	0.98	0.78
μg/L	ND	ND	ND
μg/L	0.23	0.30	0.25
μg/L	ND	ND	ND
	14.1	14.3	13.9
	“ ND ”		

		(m)	m	m	m		
	7 28	75	30	22	8	N36.93430 ° E118.24167 °	14.1
	7 28	80	32	28	4		

2 pH

$$P_{pH}=\frac{7.0-pH}{7.0-pH_{sd}}$$ pHi ≤ 7.0

$$P_{pH}=\frac{pH-7.0}{pH_{su}-7.0}$$ pHi ≥ 7.0

P_{pH} —pH

pH —pH

pH_{su} — pH

pH_{sd} — pH

1

4-23

	/		
	1#	2#	3#
pH	0.22	0.06	0.15
	0.63	0.96	0.66
	0.40	0.65	0.45
	0.13	0.16	0.20
	0.25	0.60	0.19
	0.00	ND	ND
	0.002	0.003	0.002
	0.10	0.06	0.28
	0.12	0.17	0.28
	0.10	0.11	0.08
	0.67	ND	0.67
	0.8	0.4	0.76
N	0.16	0.17	0.18
N	0.001	0.001	ND
	0.38	0.2	0.56
	0.09	0.1	ND
	0.07	0.07	0.09
	0.035	0.049	0.039
	0.0046	0.006	0.005

(GB/T14848-2017)

2021

4-24 4-4

1#	1m	
2#	1m	
3#	1m	
4#	1m	

L_{eq}

2021 1 11

GB12348-2008

4-25

≦u : ㄟ ˆɯɯ' ㄴ \Ò& ºlll ㄴ &Ù& ㄟ ɀ Ëɀɀ / ~

P—— dB(A)

L_{eq}—— A dB(A)

L_b—— dB(A)

GB12348-2008 2

4-26

1#	58.9	60	-1.1		49.2	50	-0.8	
2#	58.7	60	-1.3		49.3	50	-0.7	
3#	55.3	60	-4.7		45.7	50	-4.3	
4#	56.2	60	-3.8		47.4	50	-2.6	

GB12348-2008 2

3 1

2 4-5 4-27

1#		0 0.5m 0.5 1.5m 1.5 3m	45 +	
2#		0 0.5m 0.5 1.5m 1.5 3m		
3#		0 0.5m 0.5 1.5m 1.5 3m		

4#		0 0.2m	45 +	
5#	200m	0 0.2m	pH 45 +	
6#	200m	0 0.2m	pH	

45

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] 45

GB36600-2018

4-28

pH	HJ 962-2018 pH	/	PHS-3E (GHLH/FY/027)
	HJ 889-2017 -	0.8 $cmol^+/kg$	722N (GHLH/FY/029)
	HJ 746-2015	/	HTYH-100N GHLH/FY/134
	LY/T 1218-1999	/	/
	NY/T 1121.4-2006 4	/	JA3003 (GHLH/FY/035)
	LY/T 1215-1999 -	/	JA3003 (GHLH/FY/035)
C_{10}-C_{40}	HJ 1021-2019 C10-C40	6 mg/kg	7820A (GHLH/FY/018)
	HJ 680-2013 /	0.01 mg/kg	AFS-230E (GHLH/FY/001)

	GB/T 17141-1997	0.01 mg/kg	AA-6880 (GHLH/FY/019)
	HJ 1082-2019 -	0.5 mg/kg	GGX-800 (GHLH/FY/002)
	HJ 491-2019	1 mg/kg	GGX-800 (GHLH/FY/002)
	HJ 491-2019	10 mg/kg	GGX-800 (GHLH/FY/002)
	HJ 680-2013 /	0.002 mg/kg	AFS-230E (GHLH/FY/001)
	HJ 491-2019	3 mg/kg	GGX-800 (GHLH/FY/002)
	HJ 491-2019	4 mg/kg	GGX-800 (GHLH/FY/002)
	HJ 491-2019	1 mg/kg	GGX-800 (GHLH/FY/002)
	HJ 680-2013 /	0.01 mg/kg	AFS-230E (GHLH/FY/001)
	HJ 803-2016 12 -	0.04 mg/kg	NexION 350X (GHLH/FY/149)
	HJ 605-2011 / -	1.3 μg/kg	7890B-5977B (GHLH/FY/016)
	HJ 605-2011 / -	1.1 μg/kg	7890B-5977B (GHLH/FY/016)
	HJ 605-2011 / -	1.0 μg/kg	7890B-5977B (GHLH/FY/016)
1,1-	HJ 605-2011 / -	1.2 μg/kg	7890B-5977B (GHLH/FY/016)
1,2-	HJ 605-2011 / -	1.3 μg/kg	7890B-5977B (GHLH/FY/016)
1,1-	HJ 605-2011 / -	1.0 μg/kg	7890B-5977B (GHLH/FY/016)
-1,2-	HJ 605-2011 / -	1.3 μg/kg	7890B-5977B (GHLH/FY/016)
-1,2-	HJ 605-2011 / -	1.4 μg/kg	7890B-5977B (GHLH/FY/016)
	HJ 605-2011 / -	1.5 μg/kg	7890B-5977B (GHLH/FY/016)
1,2-	HJ 605-2011	1.1	7890B-5977B

	/ -	μg/kg	(GHLH/FY/016)
1,1,1,2-	HJ 605-2011 / -	1.2 μg/kg	7890B-5977B (GHLH/FY/016)
1,1,2,2-	HJ 605-2011 / -	1.2 μg/kg	7890B-5977B (GHLH/FY/016)
	HJ 605-2011 / -	1.4 μg/kg	7890B-5977B (GHLH/FY/016)
1,1,1-	HJ 605-2011		

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	8 19				
	1#			4#	5# 200m
	0 0.5m	0.5 1.5m	1.5 3.0m	0 0.2m	0 0.2m
mg/kg	0.275	0.237	0.461	0.206	0.114
mg/kg	37	33	31	28	23
mg/kg	0.60	1.13	0.66	0.82	0.67
mg/kg	14.6	15.7	15.0	14.4	10.9
mg/kg	/	/	/	/	42
mg/kg	/	/	/	/	16
μg/kg	ND	ND	ND	ND	ND
μg/kg	ND	ND	ND	ND	ND
μg/kg	4.4	4.1	1.4	1.3	ND
1,1- μg/kg	ND	ND	ND	ND	ND
1,2- μg/kg	ND	ND	ND	ND	ND
1,1- μg/kg	ND	ND	ND	ND	ND
-1,2- μg/kg	ND	ND	ND	ND	ND
-1,2- μg/kg	ND	ND	ND	ND	ND
μg/kg	ND	ND	ND	ND	ND
1,2- μg/kg	ND	ND	ND	ND	ND
1,1,1,2- μg/kg	ND	ND	ND	ND	ND
1,1,2,2- μg/kg	ND	ND	ND	ND	ND
μg/kg	7.2	7.7	4.9	2.3	4.2
1,1,1- μg/kg	ND	ND	ND	ND	ND
1,1,2- μg/kg	ND	ND	ND	ND	ND
μg/kg	ND	ND	ND	ND	ND
1,2,3- μg/kg	ND	ND	ND	ND	ND
μg/kg	2.2	ND	ND	ND	ND
μg/kg	ND	ND	ND	ND	ND
μg/kg	ND	ND	ND	ND	ND
1,2- μg/kg	2.2	ND	ND	ND	ND
1,4- μg/kg	2.9	ND	ND	ND	ND
μg/kg	ND	ND	ND	ND	ND
μg/kg	ND	ND	ND	ND	ND
μg/kg	ND	ND	ND	ND	ND
+ μg/kg	2.3	ND	ND	ND	ND

	8 19				
	1#			4#	5# 200m
	0 0.5m	0.5 1.5m	1.5 3.0m	0 0.2m	0 0.2m
μg/kg	ND	ND	ND	ND	ND
mg/kg	ND	ND	ND	ND	ND
mg/kg	ND	ND	ND	ND	ND

	8 19						
	2#			3#			6# 200m
	0 0.5m	0.5 1.5m	1.5 3.0m	0 0.5m	0.5 1.5m	1.5 3.0m	0 0.2m
mg/kg	25	19	11	25	15	12	16
mg/kg	0.660	0.160	0.307	0.152	0.134	0.156	0.160
mg/kg	27	34	28	35	28	27	26
mg/kg	0.75	0.95	0.81	0.74	0.75	0.73	0.49
mg/kg	14.1	18.1	11.9	14.5	14.1	13.5	8.00
mg/kg	/	/	/	/	/	/	86
mg/kg	/	/	/	/	/	/	14
	1. “ ND ”			2. “ / ”			

	1#		
	2021 8 19		
	118.24312 °		
	36.94778 °		
m	0 0.5	0.5 1.5	1.5 3.0

	(%)	0	0	0
	pH	8.21	8.31	8.41
	cmol/kg(+)	12.7	11.0	10.1
	mV	499	478	495
	cm/s	0.18	0.26	0.21
	kg/m^3	1.61	1.46	1.56
	%	43.6	60.6	50.3

		1#		2021 8 19
		118.24312 °		36.94778 °
m		0 0.2	0.5 1.5	1.5 3.0
	(%)	0	0	0
		2#		2021 8 19
		118.23949 °		36.94487

	5#			2021 8 19
	118.24198 °			36.94506 °
m	0~0.2			
%	5			
	6#			2021 8 19
	118.23686 °			36.95118 °
m	0~0.2			
%	10			

4-31

C_{10}-C_{40} mg/kg	12			—	—	0	0
mg/kg	12	5.79	14.1	8.71	2.41	100%	0
mg/kg	12	0.03	0.12	0.06	0.03	100%	0
mg/kg	12			—	—	0	0
mg/kg	12	2	17	9	3.82	100%	0
mg/kg	12	11	37	21	7.30	100%	0
mg/kg	12	0.114	0.66	0.25	0.16	100%	0
mg/kg	12	23	37	30	4.20	100%	0
mg/kg	12	0.49	1.13	0.76	0.16	100%	0
mg/kg	12	8	18.1	13.7	2.54	100%	0
mg/kg	2	42	86	64	31.11	100%	0
mg/kg	2	14	16	15	1.41	100%	0
μg/kg	5			—	—	0	0
μg/kg	5			—	—	0	0
μg/kg	5		4.4	2.8	1.68	80%	0
1,1- μg/kg	5			—	—	0	0
1,2- μg/kg	5			—	—	0	0
1,1- μg/kg	5			—	—	0	0
-1,2- μg/kg	5			—	—	0	0
-1,2- μg/kg	5			—	—	0	0
μg/kg	5			—	—	0	0

1,2-	μg/kg	5			—	—	0	0
1,1,1,2-	μg/kg	5			—	—	0	0
1,1,2,2-	μg/kg	5			—	—	0	0
	μg/kg	5	2.3	7.7	4.4	2.22	100%	0
1,1,1-	μg/kg	5						

	65	1,2,3-	0.5
	38		0.43
	60		4
	18000		270
	800	1,2-	560
	900	1,4-	20
	5.7		28
	2.8		1290
	0.9		1200
	37	+	570
1,1-	9		640
1,2-	5		76
1,1-	66		260
1,2-	596	2-	2256
1,2-	54	[a]	15
	616	[a]	1.5
1,2-	5	[b]	15
1,1,1,2-	10	[k]	151
1,1,2,2-	6.8		1293
	53	[a,h]	1.5
1,1,1-	840	[1,2,3-cd]	15
1,1,2-	2.8		70
	2.8		4500
	180		70

4-33

	1#			2#			3#			4#	5# 200m	6# 200m
	0 0.5m	0.5 1.5m	1.5 3.0m	0 0.5m	0.5 1.5m	1.5 3.0m	0 0.5m	0.5 1.5m	1.5 3.0m	0 0.2m	0 0.2m	0 0.2m
	0.121	0.235	0.155	0.121	0.198	0.105	0.134	0.166	0.161	0.128	0.29	0.23
	0.001	0.002	0.002	0.000	0.001	0.000	0.001	0.001	0.001	0.002	0.07	0.07
	0.0006	0.0003	0.0007	0.0009	0.0005	0.0004	0.0007	0.0005	0.0001	0.0006	0.09	0.06
	0.046	0.030	0.034	0.031	0.024	0.014	0.031	0.019	0.015	0.024	0.11	0.09
	0.007	0.006	0.012	0.017	0.004	0.008	0.004	0.004	0.004	0.005	0.03	0.05
	0.041	0.037	0.034	0.030	0.038	0.031	0.039	0.031	0.030	0.031	0.12	0.14
	0.206	0.183	0.172	0.150	0.189	0.156	0.194	0.156	0.150	0.156	——	——
	0.209	0.224	0.214	0.201	0.259	0.170	0.207	0.201	0.193	0.206	——	——
	——	——	——	——	——	——	——	——	——	——	0.14	0.29
	——	——	——	——	——	——	——	——	——	——	0.06	0.06
	0.00012	0.00011	0.00004	——	——	——	——	——	——	0.00004	——	——
	0.00014	0.00015	0.00009	——	——	——	——	——	——	0.00004	——	——
	0.00512	——	——	——	——	——	——	——	——	——	——	——
1,2-	0.000004	——	——	——	——	——	——	——	——	——	——	——
1,4-	0.000145	——	——	——	——	——	——	——	——	——	——	——
+	0.000004	——	——	——	——	——	——	——	——	——	——	——
[a]	0.000007	——	——	——	——	——	——	——	——	——	——	——

1# 4#

GB36600-2018

5# 6#

GB15618-2018

A

P_i i “ ” i

10% $D_{10\%}$ P_i

$$P_i = \frac{C_i}{C_{0i}} \times 100\%$$

P_i— i %

C_i— i 1h μg/m³

C_{0i}— i μg/m³

AERSCREEN 5-2

		μg/m³	m	$D_{10\%}$ m	mg/m³	P_i
P1	SO_2	6.40	1060		0.5	1.28
	NO_2	19.4			0.2	9.72
	PM_{10}	0.481			0.45	0.11
	HCl	1.21			0.05	2.42
	NH_3	1.11			0.20	0.55
		0.0008			0.003	0.03

1% P_{NO2}=9.72 10%

“ 5.3.3.2

” 5.3.3.2

—— HJ2.2-2018 “ 5.4 ”

5km

HJ2.2-2018 7.1.2

5-3

		X	Y																
											SO_2	NO_X	PM_{10}			HCl			
	Name	P_X	P_Y	H_0	Hs	Ds	Qs	Ts	Hr	Cond	Q_{SO2}	Q_{NO2}	Q	Q	Q	Q_{HCl}	Q	Q	Q
		m	m	m	m	m	Nm^3/h	K	h		kg/h	kg/h	kg/h	ng/h	g/h	kg/h	kg/h	g/h	g/h
	2×130t/h	0	0	0	120	3.0	421230	328	7200		4.92	14.94	0.37	0.1	1.01	0.93	0.85	0.69	0.094

8.1.2

$50mg/m^3$

SO_2 35mg/m^3 NO_X 100mg/m^3 10 mg/m^3 HCl

		□		√		□	
		=50km□		5 50km□		=5 km√	
	SO_2+NO_x	≥ 2000t/a□	500 ~ 2000t/a□			500 t/a√	
		(SO_2 NO_x PM_{10}) (HCl)				$PM_{2.5}$□ $PM_{2.5}$√	
		√	□	D √		√	
		□		√		□	
		2018					
		√		□		√	
		□		√			
		√	□			□	
		AERMOD □	ADMS □	AUSTAL2000 □	EDMS/AEDT □	CALPUFF □	□	□
		≥ 50km□		5 50km □		= 5 km □	
						$PM_{2.5}$ □ $PM_{2.5}$ □	
		$C_{本项目}$ ≤100%□				$C_{本项目}$ 100% □	
			$C_{本项目}$ ≤10%□			$C_{本项目}$ 10% □	
			$C_{本项目}$ ≤30%			$C_{本项目}$ 30% □	
	1h	h	$C_{非正常}$ ≤100%			$C_{非正常}$ 100%□	
		$C_{叠加}$ □				$C_{叠加}$ □	
		k ≤-20% □				k -20% □	
		SO_2 NO_x HCl		√ √		□	
		HCl H_2S NH_3		1 2		□	
		√ □					
		m					
		SO_2: 27.5 t/a	NO_x: 55.1 t/a	: 6.72 t/a		VOC_s: t/a	
“ □ ” “ √ ” “ ”							

HJ610-2016

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152 ”

2

[2013]24

10.6km

30m

200m

50m

6-1

“ ”

HJ610-2016

6km^2

——— HJ 610-2016

3 6km^2

25.40-25.58m 0.18m

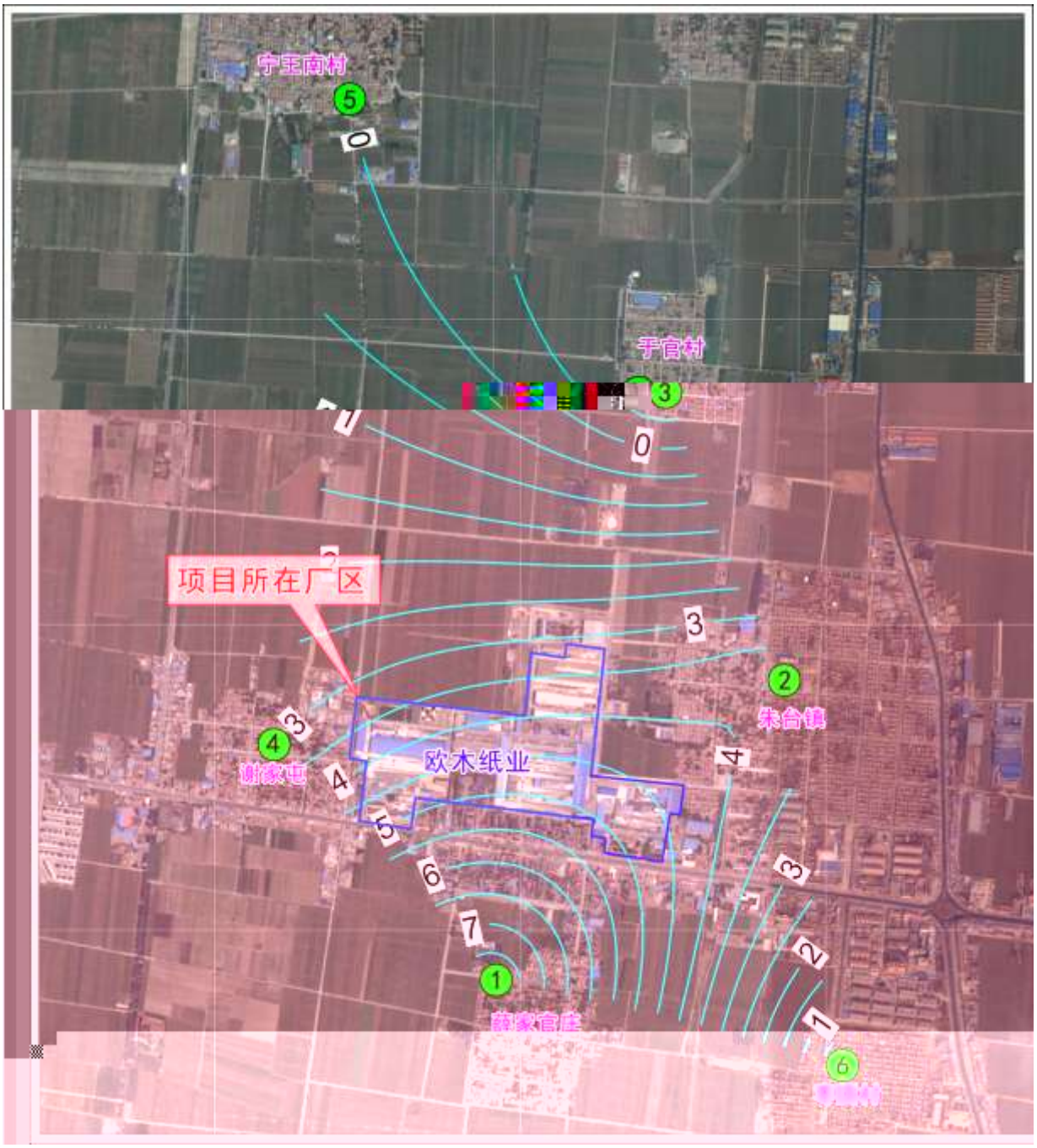
250 22

55 90m 30 80m

2021 7 28

6-19 6-2

ö#•&ï ƒ	?ø#• U	Ë$' (m)	#- =Q ´ m µ	"j ƒ $' ´ m µ	"j ƒ ´ m µ	5 4â Ü † =	"j$_ ´ µ
;Ñ ì Î º	7 > 28	75	30	22	8	N36.93430 ° E118.24167 °	14.1
g &K}	7 > 28	80	32	28	4	N36.94718 ° E118.24398 °	14.3
Ä Î ‡	7 > 28	50	30	31	-1	N36.95781 ° E118.23095 °	13.9
BX ì ¥	7 > 28	90	30	27	3	N36.94258 ° E118.22630 °	15.4
·)Á • ‡	7 > 28	90	28	28	0	N36.96055 ° E118.21868 °	14.6
Ù # ‡	7 > 28	80	30	30	0	N36.93235 ° E118.25784 °	15.2



1 Q_4^{pd} :

1.0 1.20m 1.03m 24.20 24.55m 24.45m 1.00 1.20m 1.03m

2 Q_4^{al+pl} : -

1.90 2.20m 2.10m 22.10 22.55m
22.35m 3.00 3.30m 3.13m
3 Q_3^{al+pl} 1-3
10-20% 3.70-4.50m
4.09m 18.01-18.49m 18.26m 7.00m-7.50m 7.22m
4 Q_3^{al+pl} 3-5
10%
5.60-6.10m 5.75m 12.26-12.71m 12.51m 12.80-13.20m 12.98m
5 Q_3^{al+pl} 3-8
15% 8.70-9.20m
8.98m 3.38-3.79m 3.53m 21.70-22.20m 21.95m
6 Q_3^{al+pl} 2-3
20% 3.70-4.10m 3.85m
-0.56-0.15m -0.31m 25.60-26.00m 25.78m
7 Q_3^{al+pl} 2-3
20% 6.20-6.30m
6.25m -6.68-6.55m -6.62m 32.00m-32.10m 32.05m
8 Q_3^{al+pl}
40.00m 8.00m

5-3 5-4

钻 孔 柱 状 图

孔号	13	经	X=4090764.015m	钻孔直径	130mm	稳定水位	
孔口标高	25.42m	标	Y=520877.397m	初见水位		测量日期	

地质时代	层号	层底标高(m)	层底深度(m)	分层厚度(m)	柱状图 1:200	岩性描述	标贯中点深度(m)	标贯实测击数
Q_4^{pd}	1	24.42	1.00	1.00		耕土：灰黑色，松散，粘性土为主，混少量砖瓦碎屑及植物根系等。		
Q_4^{al+pl}	2	22.32	3.10	2.10		粉质粘土：灰黄色-黄褐色，可塑，含少量铁锰氧化物及豆状姜石，干强度中等，韧性中等，稍有光滑。	1.70 2.70	5.0 5.0
Q_3^{al+pl}	3	18.22	7.20	4.10		粉质粘土：褐黄色，硬塑，含少量铁锰氧化物锈斑，多量姜石，姜石直径1-3厘米，含量约10-20%，夹薄层粉土，干强度中等，韧性中等，稍有光滑。	4.70 6.70	11.0 12.0
Q_3^{al+pl}	4	12.52	12.90	5.70		粉土：黄色，密实，稍湿，含少量铁锰氧化物锈斑，少量姜石，姜石直径3-5厘米，含量约10%，夹薄层粉质粘土，干强度低，韧性低，无光泽反应，无摇震反应。	8.70 10.70 12.70	18.0 14.0 19.0
						粉土：黄色，密实，稍湿，含少量铁锰氧化物锈斑，少量姜石，姜石直径3-8厘米，含量约15%，干强度低，韧性低，无光泽反应，无摇震反应。		
Q_3^{al+pl}	5	3.42	22.00	9.10				
Q_3^{al+pl}	6	-0.38	25.80	3.80		粉质粘土：褐黄色，硬塑，含少量铁锰氧化物结核，多量姜石，姜石直径2-3厘米，含量约20%，干强度中等，韧性中等，稍有光滑。		
Q_3^{al+pl}	7	-6.68	32.10	6.30		粉质粘土：褐黄色，硬塑，含少量铁锰氧化物结核，多量姜石，姜石直径2-3厘米，含量约20%左右，干强度中等，韧性中等，稍有光滑，无摇震反应。		
Q_3^{al+pl}	8	-14.58	40.00	7.90		粉质粘土：棕黄色，硬塑，含多量铁锰氧化物结核，混少量姜石，中等干强度，中等韧性，稍有光滑。		

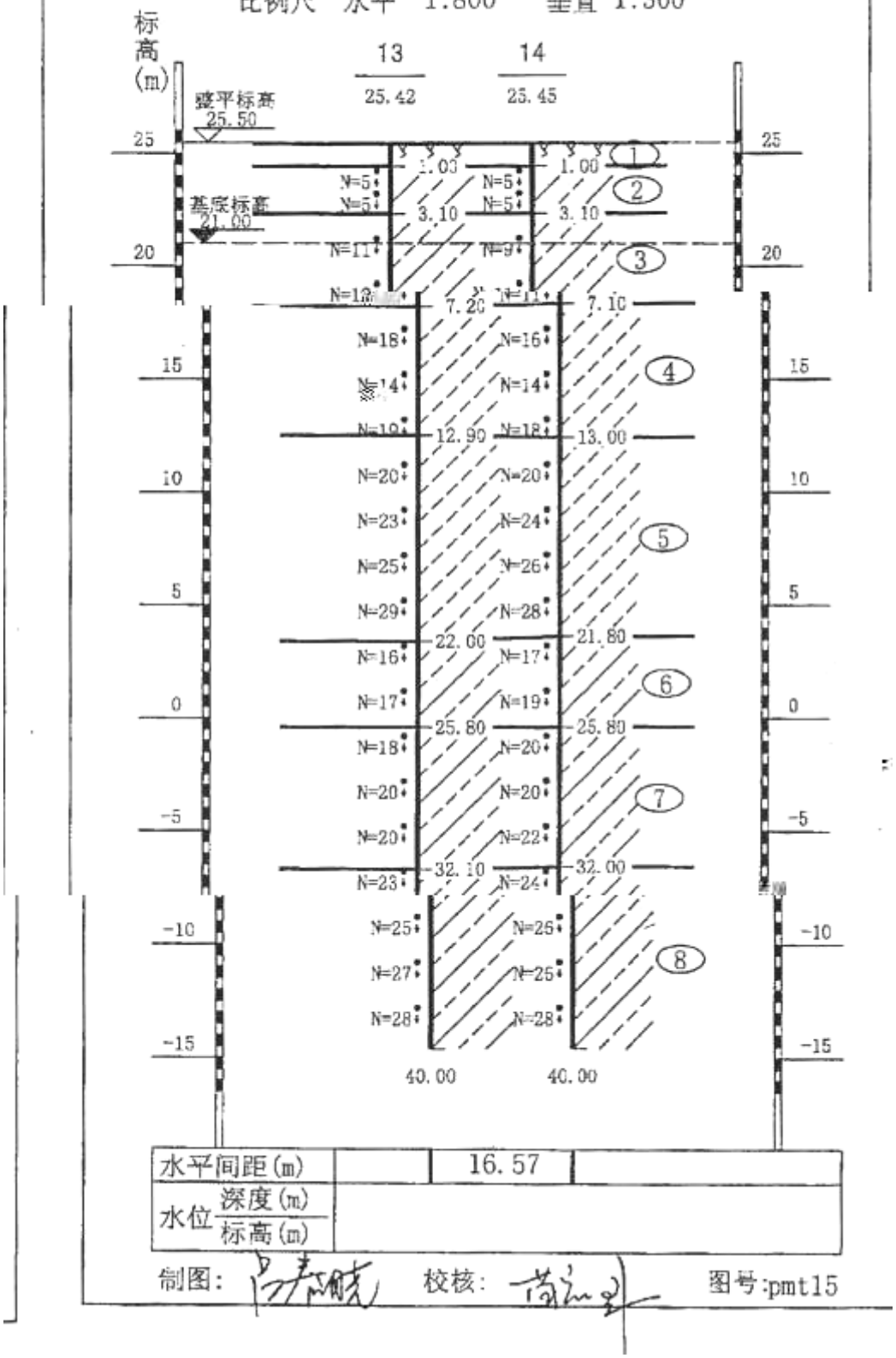
淄博市岩土城乡勘察测绘院　制图：　校核：　图号：
外业日期：2012.12.07

附注

工程名称:淄博欧木热力工程改造项目主厂房及烟囱

15-15'工程地质剖面图

比例尺 水平 1:800 垂直 1:300



水平间距(m)		16.57	
水位 深度(m) / 标高(m)			

制图: 校核: 图号:pmt15

“ ”

10^{-7}cm/s 10^{-7}cm/s

5-3 5-4

1				1×10^{-7}cm/s
2				
3				
4			150mm	1×10^{-7}cm/s
5				
6				
7		/	3cm	

1

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3

4

HJ610-2016 HJ/T164-2004

(HJ610-2016)

(HJ/T164-2004) 1

, 6-26

5-5

	36 ° 56 ′ 53 ″ N 118 ° 14 ′ 30 ″ E		pH K^+ Na^+ Ca^{2+} Mg^{2+} CO_3^{2-} HCO_3^-	1

HJ2.4-2009 “ 5 5.2

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GB3096-2008 2

(GB12348-2008)2

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O LŸAú --$,º

[2012]77 [2012]98

HJ 169-2018

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3 130t/h

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370305-2019-063-L

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0# 31%

32% 6-1

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			t	m m m
		60m³	48	
31%		20m³	16	
32%		20m³	16	

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GB18597-2001

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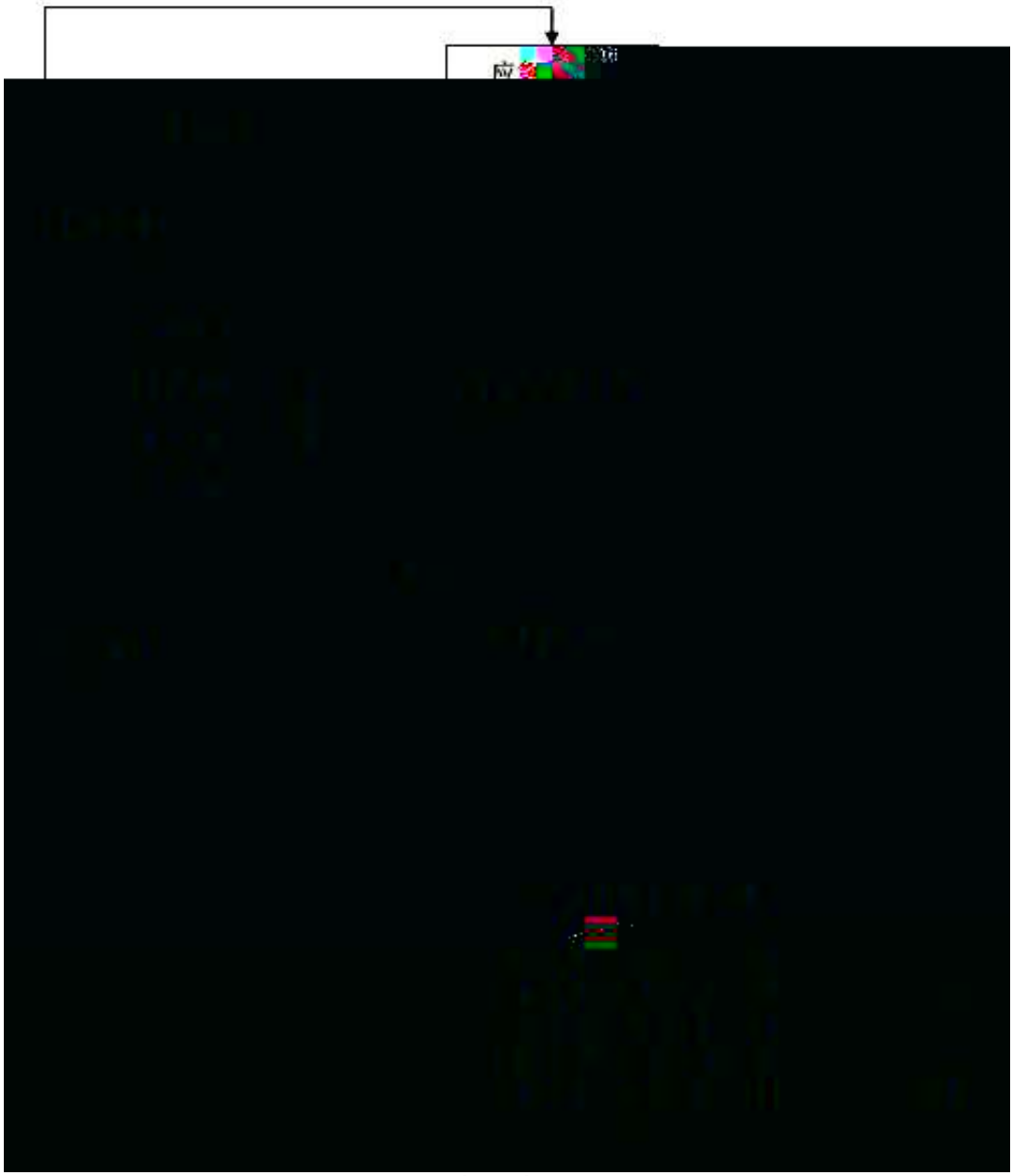

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		e ¸A÷ D † Ï	\ ¸ - ‰ L$NÎ	¬ û ë

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	9 1 2 3 4 5 6 7			
3.	10			
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È N -$	)æ(î	%73 28*,º § é eLÆ Ù,º ¡ Ï	LÆ Ù 4Ý a	"ñ*< UL†	= #
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B

SO_2 NO_X HCl

8 Q 6-5

>ž r .¤ Ð>ž ´ µ

	CAS			q_n/Q_n
	/	48	2500	0.019
31%	7647-01-0	16	7.5	1.79
Q	--	--	--	1.809

M	5

4 P

Q 10 M4 6-8

P4

>ž §LŸ(ŸC^ 8° 315 §LŸ]1•4Ý Z ã ´ µ

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

5

]"J)å ¹

D D.1

E1 E2 E3

6-9

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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

[f>ž"j)å ¹

V 24h

F3

10km

S3 D D.2

E3

\ f A"j)å ¹

G3

D2

D D.5 E3

HJ169-2018 D

6-10

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			m		
1		W	10	670	1760
2		NNE	1920	407	1095
3		N	790	691	1981
4		E	230	1830	4884
5		S	340	895	2508
6		SE	990	330	857
7		SSW	1740	760	1949
8		SSW	2540	1319	3173
9		SW	1560	348	1224
10		W	1670	835	2242
11		NW	2570	159	410
12		NNW	1900	1380	3979
13		ENE	2790	197	620
14		E	2560	152	501
15		SSE	2210	108	398
16		N	70	--	--
17		N	1390	--	--
18			--	--	--

6-11

6-12

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E	P			
	P1	P2	P3	P4
E1	+			
E2				
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+				

6-12

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	+			
				a
a A				

6-9 6-12 6-13

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	E1	P4		
	E3			
	E3			

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5km

HJ2.3-2018

3km

HJ610-2016 6km²

1-9 1-1 6-2

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1		
2		
4		
5		SO_2 NO_2 CO
6	/	CO

6-16

>ž *"ï*< L]C^

						Diesel fuel
						-18
		282 338		0.87 0.9		
		45 120		300 330		

	， ，
	LD50:7500 mg/kg LD50:5ml/kg ( ) 500mg ， LD_{50} LC_{50} MAC TWA
	( )

6-17

>ž - G®*< L]C^ Ê [à ó

						Hydrogen chloride
		HCl		36.46		-114.2
		20%		=1)1.20 (=1)1.26		30.66kPa/

		( )
		15 2% 10 2% 2-4%

6-18

>ž "X"] LJÖ*< L]C^

	sodium hydroxideçaustic soda		
	NaOH	40	CAS 1310-73-2
	318.4	1390	1 2.12
	1 1.59	KPa 0.13 739	
	LD_{50}:40mg/kg LD_{50}:500mg/kg 0.02%		

	LC_{50}2069mg/m^3 4 ( ) 0.047 0.053mg/L 4 8 / 30 0.11mg/L 3 6 (TCL_0) 150ppm(24 1 22) ( ) (TCL_0) 125ppm(24 7 18) ( )

150m

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3

(GB/T6441-1986)

GB/T13861-2009

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2000 7 2

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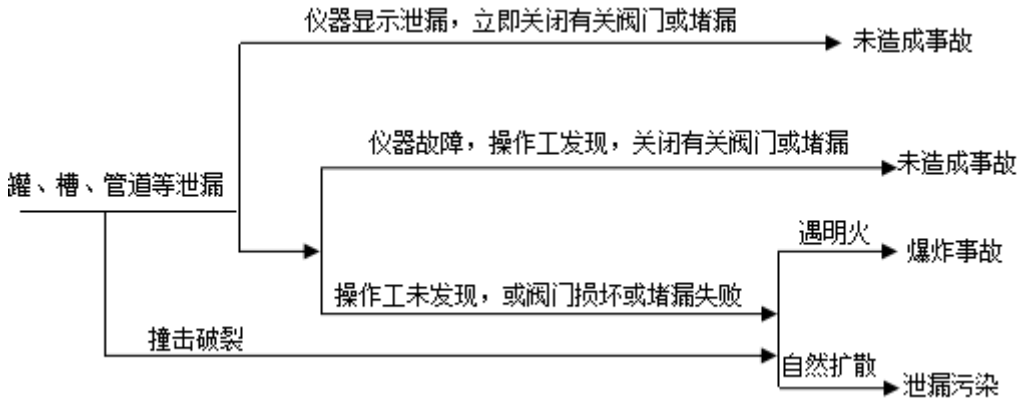
2004 8 12 8 1# (
50 30%)
8 13
1# 8 8 10
9
10
10 10



4 Þ5†1×F‰315 Á , Gp E 4

N¯-$O LŸ { Á û ˜Aô Ð

HJ169-2018 E

6-22

>ž Á { ¸)½ .¤ Ð>ž

/ / /	10mm 10min	-4/a -6/a 5 -6/a
	10mm 10min	-4/a -6/a -6/a
	10mm 10min	-4/a 1.25 -8/a

		1.25 10^{-8}/a
		1.00 10^{-8}/a
75mm	10%	5.00 10^{-6}/ m a 1.00 10^{-6}/ m a
75mm 150mm	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}/ m a 1.00 10^{-4}/ m a
	10% 50mm	3.00 10^{-7}/ m a 3.00 10^{-8}/ m a
	10% 50mm	4.00 10^{-5}/ m a 4.00 10^{-6}/ m a
TNO Guidelines for Quantitative Reference Manual Bevi Risk Assessments * International Association of Oil & Gas Producers Risk Assessment Data Directory(2010,3)		

6-23

>ž 6] % Á {Aô Đ

	HCl		5.0 10^{-6}/

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CO

?" ? é(ŸC^ ^ f>ž"j)å ¹ c,º F 01 Ÿ ™

6-31

>ž O LŸ Á { f>ž"j"— †>ž

		pH

		pH COD

pH

COD

5000m^3

2km

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pH COD

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]"J)å ¹O LŸ Á {Lh99 à ó

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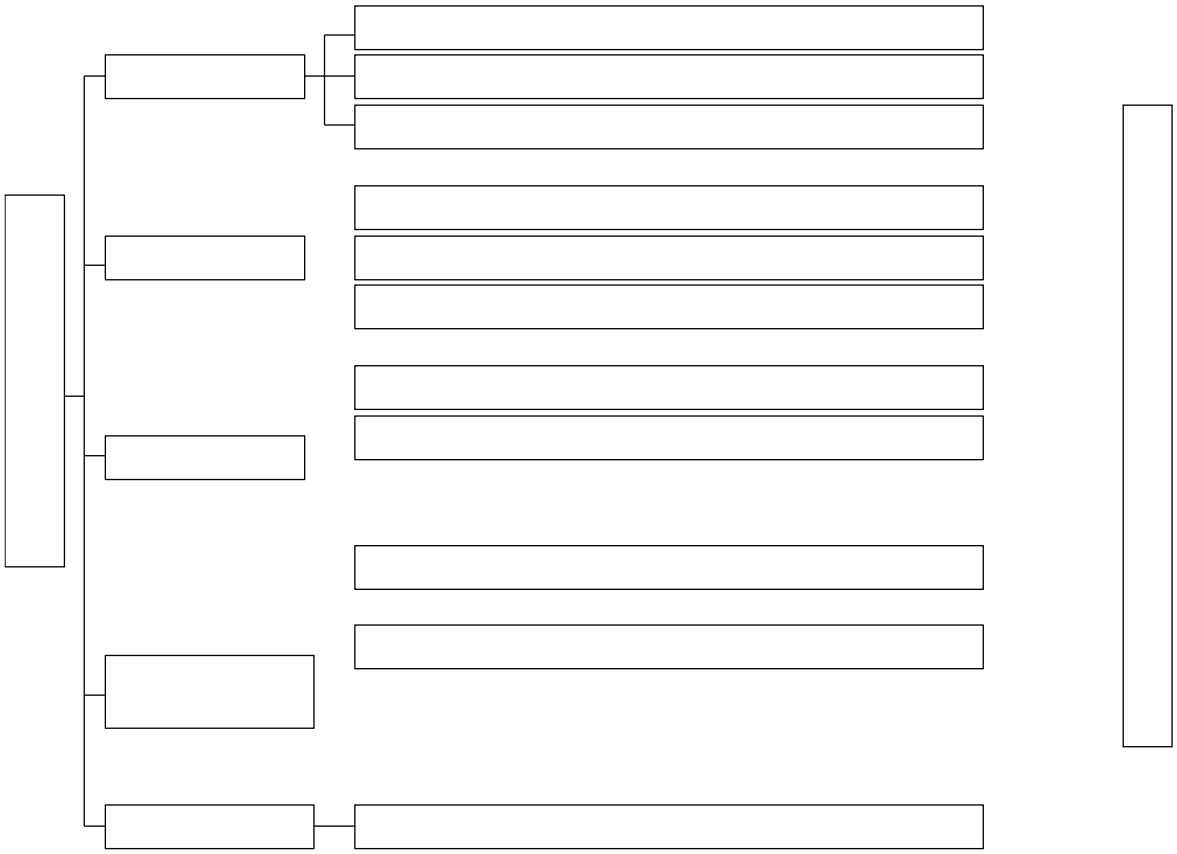

4]"J)å ¹O LŸLh99 à ó ‰31 | ì 4

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6-32

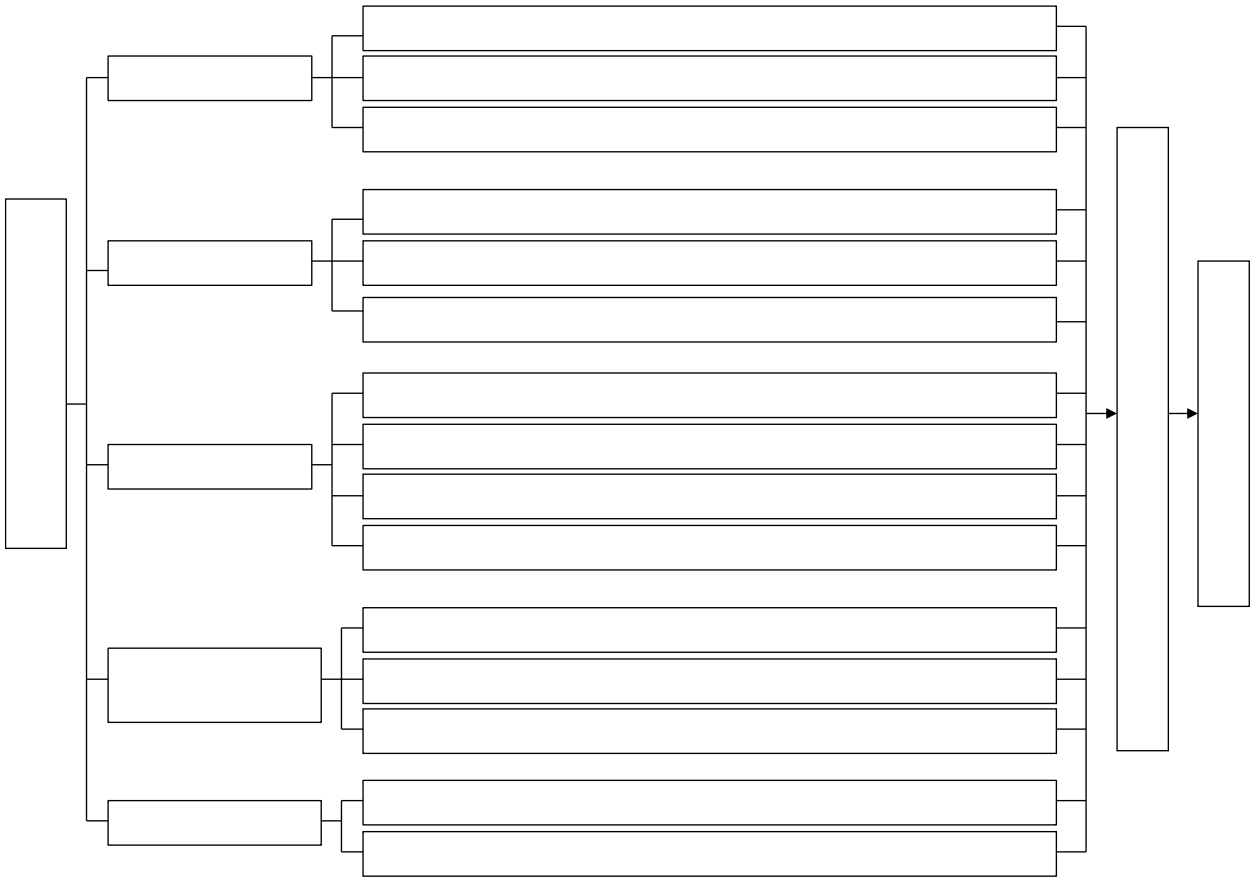
>ž N¯-$]"J)å ¹O LŸLh99 à ó 6?þ>ž

		DCS DCS
		ABC

4

5min

10min



4 "j)å ¹O LŸLh99 à ó ‰31 | ì 4

2

5000m^3

6-8

$(V_1+V_2-V_3)_{max}$ $V_1+V_2-V_3$

V_1 V_2

V_3 V_4

V_5

V_1 1 $20m^3$

, $V_1=0$

V_2 60L/s 1h 1

$216m^3$ $V_2=216m^3$

V_3 $V_3=0$

V_4 $V_4=0$

V5 m^3

$V_5=10$Ēq

q mm 6.14mm

F ha

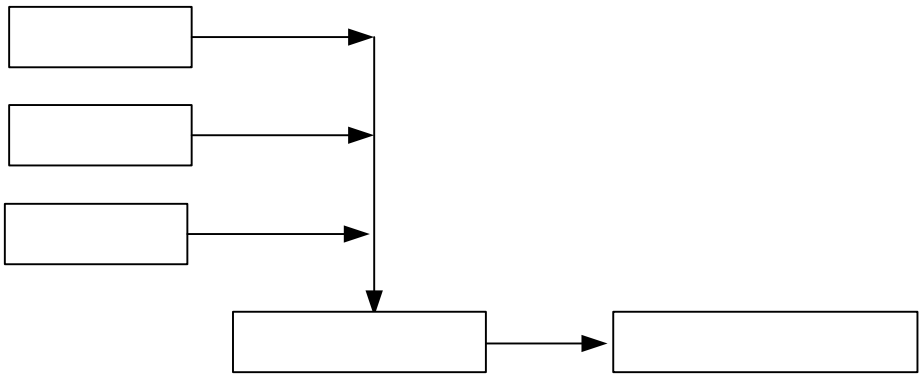
0.031ha V5=1.95m^3

$V = (V_1+V_2-V_3)_{max}+V_4+ V = (0+216+0)_{max}+0+1.95=217.95m^3$

$217.95m^3$/

$5000m^3$

6-9



4 N¯-$Á { È"j Ý l1×4õ 4

f A"jO LŸLh99 à ó

1

2

GB/T50934-2013

HJ610-2016

6m 1.0 10^{-7}cm/s

)å ¹O LŸ$Æ- Ý Ê [- #•31 5

1

(1)

CO 15 1

6-33

>ž]"J)å ¹- #• ï ~ 6?þ>ž

		500m 3	1
		2	CO 2
			3 CO

(2)

	24

)æ ?O LŸLh Ý à ó Ó Ž %>,]

)å ¹O LŸ ËCz)å PÂ l

p 6Š Þ p l

6-37

>ž bN¯-$Gý ,ºO LŸLh99 à ó 6?þ>ž

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Nº ~ <4Ý-. Ê — , Ê :*< ï ~

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110 120

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5min

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SO_2 NO_x HCl

Q

1.029

2

E1 E3

E3

3

	M	M1	M2	M3	M4 5
	P	P1	P2	P3	P4 5
		E1 5	E2		E3
		E1	E2		E3 5
		E1	E2		E3 5
			5		
			5		
		5		5	
		5		/	5
		5	5		5
		5			
		SLAB	AFTOX 5		
		-1 m			
		-2 m			
		-- -- h			
		d			
		-- -- d			
	1. 2. 3. 4. 5. [2008]80 6. 7. 8.				

)å„ Úàó ‹ %>]AðA÷

\N©- Y+X #ô Š 2 d#ô j a ' Ë 9L€ œ ("'# ê' N©-)à 9 K5&¹ ê' !W X4è J"'"d 4*6 j ¼#Ö "+O(™0 °"'"d 4*6 ² "'# È Í ^)à 9K5&¹G} ‡,´"ë*6 Ú í Ä

> b 0AGý " Lh"æ àó6?þ>

0; =0		*Aî µ é
K5&¹ ' "D "ë*6	' !	0 × Q 120m Ã µ ´ 3.0m ,´' ! È ¹>õ ' "D X4ï- #{3+5
	' "DL" H	3 ‡ ü Ô 94× 3>»L" H3+5 +$¯ ?+eL" H ÈL" H x)· = ? ¾ 99.9%
	' "D 7a.›	3 ‡.#& .# -.#7¿$¯# 7a.› 3+5 Ã ü „ ü Ú)ß Ä!ÿ&¹G} 1 ‡ ÅÈ =Aî5ž ñD 3+5 È7a.› x)· = ? ¾ 95% :
	' "D7a.•	SNCR -SCR 6„ 8 7a.• Ä x)· = ? ¾ 80% Å
Ï"d"ë*6	#ƒ"d ¼] ¼ >,´G¨.á Ï"d G 6 +X ¾7a.›3+5 >•"d Ã ü ‰G 6 F Â!W X4è J"'"d 4*6 j ×7a .› Ï"d4ÿ] ¼ Ã "¹#ð > +X ¾& $S ü$¯ ÃFƒD ç#B1y ×K5&¹ Â"'"d +X ¾7a.›3+5 × Ú)ß Â "'"dF ý$GF?3+5 4*6 Ä +O#k"'"d Í ^!W X4è J 9L€ œ (0 ƒ F"'"d 4*6Aî 7 4*6Eî 7 > +X ¾ ² j5/ F ¼FƒD ç #B	
* Ï	Aî 1 × é0 6 [j 1000m³,´& Ã È 1 × 500m²,´$S È 1 × • ` 80m²7a.›.#7¿ ² ^L$ ×	
	¡ Ï Ã Í ^ !W X4è J ¡ Ï Ã	
š "ë*6	Í ^)à 9Aî í ÖF9+X1V 8 š L€ l?±"r ,´ ~ šN#Aî 7 È XK5&¹)0ª Â Ã ¹ ˜L0 Â"- >õ 9 #¸ ˜ ÈNþ j • Aî#¸ ˜	
œ H"ë*6	˜ 1L Ø"' ÃEÃ"'3+5 È Ø"' ÃEÃ"'3+5 Aî5ž çM.$¯ ?L" H>õ5ž È.d.¾ ¬ Ã Ï"' Ã& Ã Ã .#& .#2¹ Aî5žL" H ˜ × f œ H	

]"J")å àó%>]AðA÷

\N©- Y+X)à 9K5&¹ ê' "'# È Í ^)à 9K5&¹G} ‡,´' "D"ë*6 Ú í Ö

G÷+X ~"^'ó' ° _ ÈG} ‡ *Aî SNCR-SCR 7a.• 8ª Ä AîAÑ7a.• x)· 1 80% ÅÃ.#& -.#7¿ 7a.›3+5 ÄAîAÑ7a.› x)· 1 98%Å 3>»L" H ˜ Ä AîAÑL" H x)· 1 99.8% Å+$¯ ?+eL" H ÄL" H x)· 50% ÅÈ5, 8L" H x)· 99.98% Ä

)'— É&›+e ²"' Lb"ë >| ° _ 7 ‡ ÊÄ HJ2301-2017 Å],´' "D"' Lb"ë ° _ ÈN©- G÷ ,´ Ï"D"ë*6 Ú í] È w j Ø9€,´ @'Ï ° _ È .ž Ï"D0c ÊEî 7 Â n Ä

HJ2053-2018] Ø9€,´ Ú)ß#q F ºCµ ~ Â n ° _D 4ï Ö

6.2.1.3 循环流化床锅炉的超低排放一般工艺流程如图 2~图 3。

图 2 超低排放工艺流程 2（循环流化床锅炉）

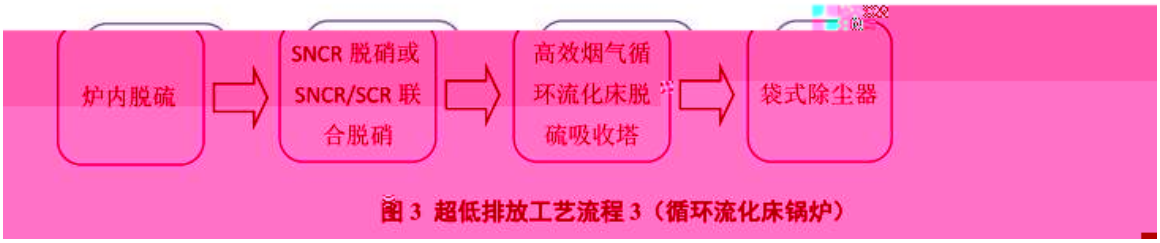


图 3 超低排放工艺流程 3（循环流化床锅炉）

> bNfl-$ D c ⁋9 ,” à)å#w L ÆC» ¨ t ¶ eD%4ı1\ >]

F Ï r	HJ2053-2018] Ú)ß#q F ºK5&¹?±"r	\N©-	1V 8 W

2 ÃÎ W#v#â"•Q Ö ÃÎ W h f „-$ ´ È9 Y ¾ &K¯' "D >#v#â#â%$ {L$ Õ@ $' 8 &L$,

Q 7a.› x)· ×

3 Ã Î W"W F0ª"DGÿ Q 7a.› x)· Ä

Añ $0₂ Â n#ƒ ÖEî 7,´ k?± Ú í Ö

7) ËCW é Ë,´.# & @ -F >| 6 À È Ca0 [Gÿ Ú85% È þ6< Añ7- 1V 8AîAÑ?±"rÄ

8)'ó'"F >|.› - 6 À È9AîAÑ?±"r,´JÉ.› ™ D" •.ž Ê.#& 2¹,´+XGÿ ú.#& #v#â,´

Ú)ßGÿ Ä

9 fAÒ7a.›3+5 ,´F >|?ô1 f Ö È¦)F >| ê ˆF >| ° _)AÝ È¯ 'Ï ¹ ¶@ 7a.›

8ª È ¦ U l —>|F >|?ô1 f Ö Ä

:)7a.›3+5 F >| Ê O,´5$ ¼ « È)à uLÌ ú &@ ã È .ž 7a.›3+5 ,´!“ hF

>| Ä

; \ 0;7a.›3+5 G÷ DCS 8 Ø × f3+5 ÄFJE÷- ?ö * ,´ $0₂#ƒ Ö È+a }O¸/ ýO¸3+

5 • × f¦).#& 2¹,´5 ÉGÿF >|F2 ƒB38² È Añ7a.›3+5 * $0₂Eî 7 Â n Ä

FJE÷G÷ .#& -.#7¿$¯# 7a.› È \ 0; X7a.›3+5 !“ hF >|,´ õ å ; È $0₂ Â n#ƒ Ö7-

O% CãÉ&›+e ² W"D"' (™ Â n 7 ö ÊÄ DB37/664-2019 Å>˜ 2 7 ö È' "D7a.›>õ5žF9 .#

& -.#7¿$¯# 7a.› ° _ : 8*6 Ä

FJE÷K5&¹ X4ï- #{ ž . È)à(æ X7a.›3+5 !“ hF >|,´ õ å ; ÈK5&¹' "D $0₂ Â n#ƒ

Ö7- O% Cã É&›+e ² W"D"' (™ Â n 7 ö ÊÄ DB37/664-2019 Å>˜ 2 7 ö Ä $0₂ Ö35mg/m³Å

’ NLh"æ /1 ‹5 # ¶ e %>]

\ N©- Í ˆ)à 9 K5&¹L” H"ë*6 Ú í Ö 3>»L” H ˜ +$¯ ?+eL” H+.#& -.#7¿# 7a.› • <L”

H

1 Ã 3>»L” H ˜ L” H W7-

X!“ hF >|,´ ‘ & ; È7- Añ ? ¾ 20mg/m³È 1 ä PCµ4ö2¹ H ¼GýH Ž,´ …Lö x - È

L” H x Ì - Ä

2 Ã$¯ ?M‰+eL” H ˜,´L” H W7-

$¯ ?+eL” H ˜ _ 0/ý+X • 4*6 [$¯"D ƒ,´Q »M‰+eL” HAî 7 È k?±+X •L” ë [$¯"D ƒ

],´ H Ã G¨M.Ã"d%$ Ã'D$æ7ÆÃ8 £ ÃPM$_{2.5}$1y 9 ã(™CX È _"ë*6 W"D2¹ H"' ,´*6 #Aî 7 Ä

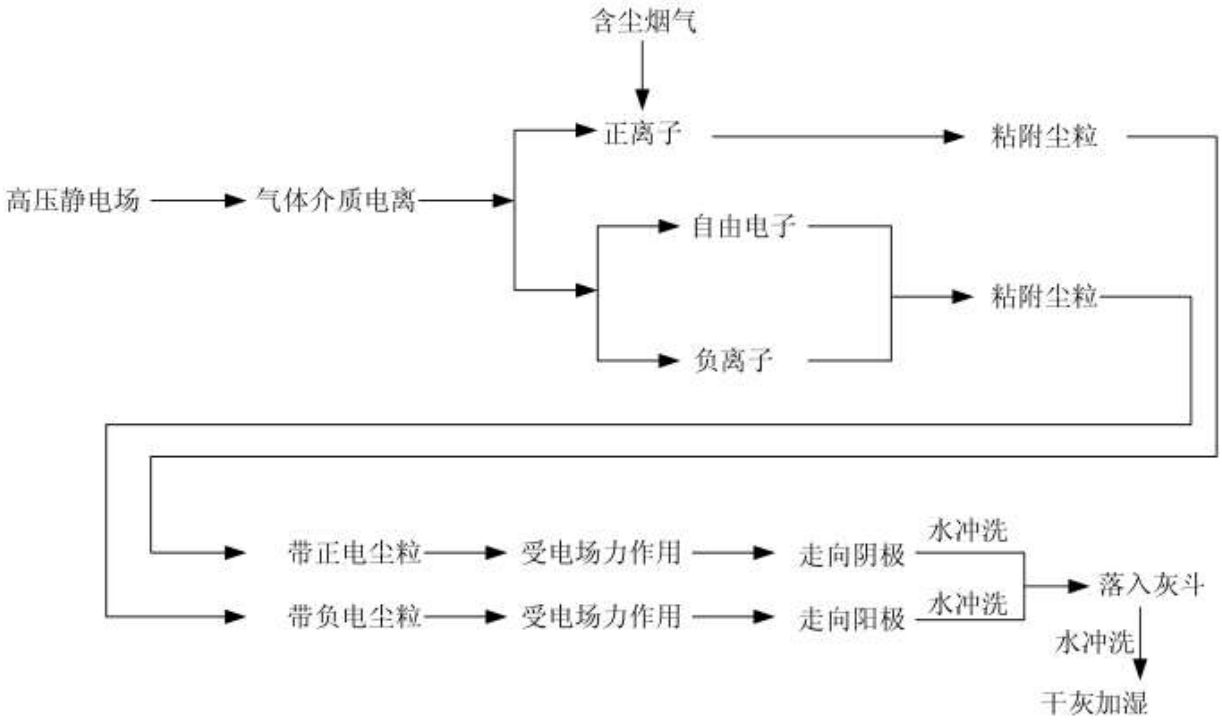
$¯ ?+eL” H ˜ ¼ > ¢ ?+eL” H ˜,´ f H Ï*6-(< ÈG- _M•Q » +e …n+e ¯ Ç2¹ H9§+e È9§

+e >,´2¹ H X+e j Ë,´ Œ+X ; `Eî `Lö H ¯ /1Ñ Ä ¢ ?+e f H ˜ k?± 4*6 ["d ¸ ~,´ ¢"D

ƒ È$¯ ?+eL” H ˜ k?± 4*6 ["dE³Q s8#O¡ ¼,´$¯ "D ƒ Ä X)Lö H ¯ /1Ñ : …Lö `,´2¹ H$5 L” é ? : ¢ ?+eL” H ˜ 08\G÷+X j à _ ƒ F # $5& 1y é ?$5L”+e ± :,´0 & È6<$¯ ?+e L” H ˜ IG÷+X Ê O â#G,´ é ? È ¯2¹ HL¿-p â g#â,´#q Ø6<$5L” Ä

$¯ ?+eL” H ˜G÷+X#â ƒ â gLö H ±>˜ M’ •F >|$5& È 9 x fLö Þ4ö NÇ2Â(™Ä2¹ H Ã G¨M. Ã"D$æ7& Å ÃGýH ŽHäg ÃAs ÃSe ÃPb ÃCr Å Ã 9 j"‘ (™ Ä J)ß 8ã&óÃ ¼ ¦9! Å1y Ä ¯+X$¯ ?+eL” H ˜ > [$¯' "D],´' H Â n Eî 10mg/m³ +J8# 5mg/m³ ; È f H W7- >2¹ H(© W £ ÈF2+X ¾ [$¯' "D,´ 4*6 ÈF2+X X+e ² ÃJÒ ²$¯# 7a.› { > [H' "D,´ 4*6 : Ä

$¯ ?M‰+eL” H ˜ Œ Ï*6 . ú5 ´/j ? .?ñ . 7-1 . 7-2 Ä



4 $µEM +kL N Õ<

4 $µEM +kL N 5 ”/p E 4

$¯ ?M‰+eL” H ˜ ° _ X - µ F " WGÿ Ä+X È ° _ @'Ï ÈAî 7 M• WQ È)ß x Ì0± * Ä

É'"+e8²7- ÿ Â w4× > iFP>| ØAÑ B Ä 2014-2020 ¤ ÅÊ'ó'"+e ²8²7- ÿ Â k?± ò63 ° _] Ø9€ Î í$¯ ?M‰+eL” H Ö$¯ ?M‰+eL” H 62¹ HNÇ2ÂFJE÷+e j Ë Œ+X hLt `Lö H ± : È FJE÷ ç"d 6 ± ¯ :,´2¹ H â g `& Ç] Â * Ä < & È ç `' Fƒ ],´"dM. 7- …9ç Þ ?' H ø7-L}+eLk)· È Y ¾ Þ H A ± ¯0+ Ø ÄFJ hAî5ž X7a.›3+5 >1 ÈL” H x)· Eî ` 70% 80% È 9 xL” ë $PM_{2.5}$4öNÇ2Â(™ ¼.#7¿M Þ#â%$ Ä

5, : pF È \N©- G÷+X 3>»L” H ˜ ¼$¯ ?M‰+eL” H ˜ ÈL” H x)· = ~ ¾ 99.96% ×7a.› >õ5ž § 9 50%,´L” H x)· È Añ kL” H)·Eî ` 99.98% : _ 8*6 >|,´ Ä

FJE÷K5&¹ X4ï- #{ ž . È \ 0; XL” H3+5 !“ hF >|,´ õ å ; È ' H#ƒ Ö 7- O% CãÉ&›+e ² W"D"' (™ Â n 7 ö ÊÄ DB37/664-2019 Å>˜ 2 7 ö Ä ' H Ö5mg/m^3 Å Ä

Lh"æ /1 ‹5 # ¶ e %>]

\ N©- Í ^)à 9K5&¹G} ‡,´' "D7a.• Ú í ÖG÷+X ~"^'ó' ÃSNCR-SCR 7a.• 8ª ÈAîAÑ 7a.• x)· 1 80% Ä

= 8℉?

7a.• ° _ k?± 5 ÖF9 W Ü FF Ï Ä SCR Å7a.• ÃF9 WMŽ Ü FF Ï Ä SNCR Å7a.• ¼ 6„ 87a.•1y2« » È 9/ý7a.• 8ª" E³?ñ ;>˜ Ä

> 7g. 8º" E„

¿ '	N© -	° _ é x		
		SCR	SNCR/SCR 6„+X	SNCR
1	F Ï r	NH_3 F o3P	o3P F NH_3	o3P F NH_3
2	ý Ä$Y Ö	300	}!å Ö 870 >!å Ö 300	870
3	Ü F r	¯+X Ü F r	>!å Ð>õ AGÿ SCR Ü F r	= ¯+X Ü F r
4	7a.• x)·	50% 90%	55% 85%	Ú)ß#q F ºK5&¹ Ö60% 80%
5	NH_3 F3Fh	? ¾ 2.5mg/m^3	? ¾ 3.8mg/m^3	? ¾ 8.0mg/m^3
6	)0ª"DN´ ' ˜ ¡ ý	SO_2/SO_3"W F)·E³Q È6< NH_3 > SO_3 C ' @ NH_4HSO_4 FP @ e Ž F7€<°	SO_2/SO_3"W F)·E³ SCR ~ È FP @ e Ž F7€<°,´ j JE³ SCR ~	= J Ü F r ,8$ SO_2/SO_3 ,´"W F ÈFP @ e Ž F7€<° ,´ j J j 965 0 ~
7	3+5 » Ë • a	E³ W	E³ ?	~"Ñ 9 • a
8	• `0ªL$	W ÄM0 Î Ð W » Ü F r ý Ä ˜ ¼ Ë"X F o3P3+ 5 Å	E³ ? Ä 6 Ü F r5ž ¾ n G ' Fƒ µ F Î Ð 0 ? » Ü F r ý Ä ˜ Å	? ÄK5&¹ M0 Î Ð Ü F r ý Ä ˜ Å
9	ÅCt @ \	Q	E³Q	E³ ~
10	F >| @ \	Q	E³Q	~
11	¯+X J5	¸ J	E³ A	E³ J

\ N©- K5&¹ j Ú)ß#q F ºK5&¹ È i žAîAÑ … }Ct É È-1"' ˜ * NO_x #ƒ Ö × f X 100mg/m^3 ; Ä i ž É&›+e ²"' Lb"ë >| ° _ 7 ‡ ÊÄ HJ2301-2017 ÅÖ Ú)ß#q F ºK5&¹G÷ +XSNCR 7a.• ° _,´7a.• x)· j 60% 80% ÈSNCR-SCR 6„ 87a.• ° _,´7a.• x)· j 55% 85% È NO_x Â n#ƒ Ö =Q ¾ 50mg/m^3 Ä

= 6 >7g. Õ<

SNCR-SCR 6„ 87a .• ° _ _ 6 SNCR ¼SCR 4ô 8 Ä+X ÈÆ ½&¹7Ë :G ,´Q $Y j Ä 850 1150 ÅG÷+XSNCR ° _7aL"G 6 NO_x È ½ X&¹ FG÷+XSCR ° _F 0!•7aL"' "D],´ NO_x Ä SNCR-SCR 6„ 87a.•3+5 08\+aF Ï r Ø ˆ3+5 ÃF Ï r ç 43+5 Ã ý Ä ˜3+5 ú- #{ × f 3+5 4ô @ Ä6„ 87a.• 8ª W u ÿ A ¶ Ü F r,´+XGÿ È¦ D" … 0,´ SNCR 3+5 Q ¶7a.• x)· Ä

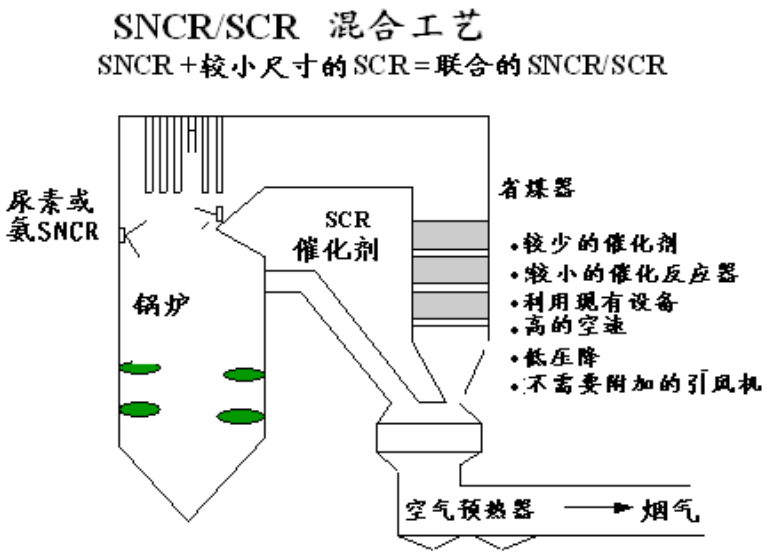
"X7a.•,´ k?± ý Ä ² ; Ö

$$4NH_3 + 4NO + O_2 \rightarrow 4N_2 + 6H_2O$$

$2NO_2 + 4NH_3+O_2 \quad 3N_2 + 6H_2O$

þ-1"' ˜ * •,´' ' "DF • `7a.• ý Ä ˜ È X Ü F r >"X"D ú0ª"D,´$' 8"D ƒ +O ý

Ä È 6' "D],´ NO_xEœ F @Ñ₂ Â • W"D Ä SNCR-SCR 6„ 8 7a.• 8ª#q0;/j ? .?ñ . 7-3 Ä



4 6 >7g. 8℃#w0A 4

\N©- G÷+X ~"^'ó' +SNCR-SCR 7a.• È FJE÷K5&¹ X4ï- #{ ž . È \ 0; X7a.•3+ 5 !“ hF >|,´ õ å ; È NOx #ƒ Ö7- O% CãÉ&›+e ² W"D"‘ (™ Â n 7 ö ÊÄ DB37/664-2019 Å >˜ 2 7 ö Ä NOx Ö50mg/m³ Å Ä

" Ýl àó

\N©- G÷+X.#& -.#7¿$¯# 7a.› È÷a ¾"_ F"R C$æ ¾"d È7a.›E÷0; HCl ,´ ëL” x)·E³Q È \!Q)ßAô < g2« " ¦ N©- 7a L” x)· È 9 95%AÑ Ä i žAÑ1Ç ÈN©- HCl Â n % Cã É+O#k ³ n'J' "‘ × f 7 ö Ê ÄGB18485-2014 Å>˜ 4 7 ö Ä 60mg/mÅ

´ w9"' Ýl àó

Ýl Ý÷U# Ü

¼ q9! 7,´ _5 ´ ¼ WCXG- ¸-(l,´ 5 [G J <2«(™ F 2 ´ ƒ,´ T W2« 9 j F 8(™ È ˜0 6 [J"_ ¼9 ¦ -) - ¼ q9! Ä1°0 PCDDs Å ¼ J"_ ¼9 ¦ { ³ Ä1°0 PCDFs Å Ä ¼ q 9!,´ ' @ ‘ & 9 Ö Ä 1 ÅF2 Ì,´$Y Ö È 200- ×Ä 2 Å }P¡ ƒ(™CX È k?± _ [9)ß,´ 9 j (™ × Ä3 Å"_,´ ^ X × Ä 4 ÅK ÃJñ1yH Ž Ü F r Ä \ 0; 'ó É k?± _ 'ó"' +$¯"'# È $¯"'# "_ [Gÿ E³ ~ Ã D ê' Gÿ ¸ A Ä"'# CXGÿ ê' " j 0.05% Å È) Ï"D"‘ (™ ¡ ý ¸ ? × < & È G÷+X,´#q F ºK5&¹ ¦) (©,´&¹7ËAîAÑ ¼&¹ Â5 ´ × f&¹ µ,´'ó' $Y Ö X 850 950 Ã ' "D Œ+‰ &L$ = A ¾3 0 È"W"D#ƒ Ö = A ¾6% È℅ Cã 9 T × f# ?±"rÄ × f&¹$Y X 850 950 # È' "D Œ+‰ &L$ = A ¾ 2 0 È"W"D#ƒ Ö = A ¾6% ÅÈ § 9) ¼ q9!2« Á f+O @,´

Œ+X Ä

L N315 / ´ w9',” æL

X"'# 'J'] È J PCDD/Fs _Lt-p X& H :,´ È X"D-( ],´ PCDD/Fs ,´Gÿ ¸ A Ä !” ÈL” H ° _7- ëL”& H],´ ¼ q9! Ä

7g. 315 / ´ w9',” æL

i ž-(£.D0¦AîAÑCt É ÈF9 W Ü FF Ï Ä SCR Å3+5 08\ _+X • ëL” NO_x È < &F /ý é# • +X • ëL” PCDD/Fs ú ¦ 9 j(™ ÈFJE÷ Ü F"W FL}@ ×+O,´ ¼ q9! Ä !”!Q7a .• ¬ ëL” ¼ q9!,´ SCR Ü F rF9+X = 8 »JÂ * Ü F r È X!”E÷0;] PCDD/Fs ,´ ëL” x)·7- Eî ` 98%-99.9% Ä

k?±,´ ý Ä é0; ? Ö

$C_{12}HnCl_8nO_2 + (9 + 0.5\ n)\ O_2 \Rightarrow 12CO_2 + (n-4)H_2O + (8-n)HCl$

$C_{12}HnCl_8nO + (9.5 + 0.5\ n)\ O_2 \Rightarrow 12CO_2 + (n-4)H_2O + (8-n)HCl$

SCR ° _5 8L” H ° _ ¯ Â n"D ƒ],´ PCDD/Fs Eî ` 0 ~,´ k Â nGÿ Ä 280t/h K5 &¹ ¸ AîAÑëL”)· Eî ` 85% : Ä

K;&¿'ø' EÝ0A,” ´ w9' Ýl

)à 9 0; K5&¹ j Ú)ß#q F ºK5&¹ ÈG÷+X+a&¹7Ë Ã ûNþ 6/ë ˜ úF É ˜4ô @,´'ó' 3+5 È XK5&¹F >| & È ¦&¹7Ë µ ˆ X WGÿQ $Y Ú)ß (™ É ÈFJE÷ ûNþ 6/ë ˜,´ ÐFO Ã ûEœ Ã 6/ë > +aF É ˜ ½!QF &¹7Ë È þ6< × fK5&¹&¹7Ë,´'ó' È&¹7Ë'ó' G÷+X 9 T ü"W Ï I Ö • a _ Q $Y Ö ÈQ Ø ÈK¯ &L$ È WÑþGÿ Ä&¹7Ë * $Y Ö W ¾ È AñQ $Y ÖF Z ' & È#q F º \DÛ a _ j&ø Ø,´ P' PCXE÷0; È8 DÛ § 7Q Ø,´ ' & È Añ ¶'J' &L$ W ¾ 3 0 ,´K¯ &L$ ' & È • Añ,´ u 6,´ Ø Ä&¹7Ë * 0ª"DE÷Gÿ3+ 1.4 1.5 È Añ ³ n X ü"W(æ 1 ; « Å'J' Ä

< & È ƒ' "D$Y ÖL} j 300- ,´ & I È jLb!' X!”Q $Y ; 6@ ¶,´ ¼ q9!Gý à 8 @ ÈK5&¹ nG 35ž ¶-1'" ˜ È Q -1'" ˜' ˜#qFO ÈL} ~ K5&¹,´5 "d$Y Ö È ¯' "DFJE÷-1 '" ˜ &L$? ¾ 1S È$Y Ö þ 4ÿE÷-1'" ˜ >Eî ÈEî ` U ç ¤,´?±"r È ÿ A' "D$Y Ö j 300 500 ,´ Œ+‰ &L$ È ÿ A ¼ q9! ½ 8 @Gÿ È þ6< Á f ¼ q9!,´ ×+O Ä

JßK K 1 H H " Ýl àó

GýH Ž,´ Â n ã ¾GýH Ž2« » ¼'ó' $Y Ö Ä XQ ,´'ó' $Y Ö ; È WG 6H Ž:è È ƒ' "D ç ¤ & È X& HNÇ2Â>˜M' Ä'ó É'ó' >,´GýH Ž'" (™ s3P 1 Ã"W F 11y ' ? ˆ

X ÈQ $Y U F •' "D],´GýH Ž(™CX ÈL¿-p' "D$Y ÖL} ~ ÈG 6O¡ ¼$Y ÖE³Q ,´ s3P 1 GýH Ž È J Eî `O¡ ¼6< 5 @ w 0,´ ?2Â(æ(™ F 5 ¾' "D],´' H : ×O¡ ¼$Y ÖE³ ~ ,´GýH Ž s3P Ä Hg 1y Å # u 6 5 È vL" H& >˜M',´ Ü F Œ+X È J ¯ ¦ ' @O¡ ¼$Y ÖE³ Q DE³ C 5 ,´"W F(™ F"_ F (™ È F hLt Œ +X CLt-p X' H>˜M' Ä ý "D 1 ˆ X,´GýH Ž(™CX È • 9G 6 J>Û hLt ¾' H : Ä

)à 9K5&¹' "D"ë*6 Ú í j SNCR/SNCR-SCR6„ 87a.• ++e>» = 8L" H ˜ +.#& -.#7¿$¯# 7a .› +$¯ ?+eL" H ÈKy ÃJú ÃKA Ã.g ÃJõ ÃK ÃJä ÃK ÃK` ÃK} ëL" x)· ¸ 95% Ä"Ž 90% ÅÈ 4ÿAÑ1Ç È N©- ' "D ] Ky+Jú ú ¦ F 8(™ ÃKA+.g +Jõ+K +Jä+K +K`+K} ú ¦ F 8(™ Â n#ƒ Ö w% CãÉ+O#k ³ n'J' "' × f 7 ö ÊÄ GB18485-2014 Å>˜4?±"r È"Ž,´#ƒ Ö % Cã É&› +e ² W"D"' (™ Â n 7 ö ÊÄ DB37/664-2019 Å 7 ö?±"r Ä

Q ' ' ¨ t

jL} ~ SO_2 Ã' H Ã NO_x Â n) `M',´"' È \ 0; Í ˆ)à 9Q Ö 120m …1,' ! È Q ' "D ™ "7- Ë È ÿ ?) ˜Eé)ß ³,´ ¡ ý Ä

' "JF 5#- # 315

)à 9 0; ">õ' "DF 5 - #{3+5 È k?±- #{ SO_2 Ã' H Ã NO_x 1y' "D"' Â n õ å Ä' "DF 5 - #{>õ5ž1V 8 É&›+e ²' "D Â nF 5 - #{ ° _?ô93 Ê (HJ/T75-2001),´?±"r Ä

4œ4ý¨ t Ýl àó

\ N©- Y+X"'# ["d)· 65% È = C × H × \N©- 4ô4÷ Â n Ï"D k?± j"'# ú ˆ ØE÷ 0; ×+O,´ ¦8 È ¦]"'# Ø ˆL$ _ ² j ¦8 "D ƒ,´ k?± ×+O$À Ä J¸) ¦8 ×+O)ß8² È G÷ ,´"' "ë*6 Ú í ² ; Ö

Ä1 Å"'# Ø ˆ ¹>õ 1L W8Ÿ - D ï ¾ 0 £,´ Ø ùL È E–E¶FJE÷ & 6L £L Ä(™ É wG÷+X 1L é ?EÃF1È Añ"'# Ø ˆ

Ä2 Å fAÒ U l,´ ý Œ?ô0; È ý Œ ê ˆ4ÿ ‰6â)AÝ > : Ç È U l 9 ý Œ?ô0; ý Œ Ä

4ÿG÷ :F "ë*6 Ú í > È ²+|#ƒ Ö w7-Eî ` É ¦8 "' (™ Â n 7 ö ÊÄ GB14554-93 Å>˜ 1 ¼4× 7 ö?±"r Ä

"j")å àó%>]AðA÷

0 b ÕO

Í ž 42« Ï"'"d,´"dCX(©&é ÈG÷ ° _ : >| Ã4ÿ#~ : 8*6,´"ë*6 Ú í > +X ¾+O × Ä 9'— 0"d J+X È8²4Ö+X"d ,´ Ï I È H F+X"d é x È Î í5 1©,´"d Ñ1Ñ*6 È 0 WL€ Ö ` ÿ A F Â"dGÿ Ä

› àó

N©- = à Î Ï"d ×+O ÈN©- Ï"d ×+O Ã 4*6 ú Â n w >)à 9 0; 08$ Ä \N©- ×+O,´ #ƒ"d ¼] ¼ >,´G¨.á Ï"dG 6 +X ¾7a.›3+5 >•"d Ã ü ‰G 6 F Â!W X4è J"'"d 4*6 j × 7a.› Ï"d4ÿ] ¼ Ã"¹#ð > +X ¾& $S ü$¯ ÃFƒD ç#B1y ×K5&¹ Â"'"d +X ¾7a.›3+5 × Ú)ß Â"'"dF ý$GF?3+5 4*6 Ä+O#k"'"d Í ˆ!W X4è J 9L€ œ (0 ƒ F"'"d 4*6Aî 7 4*6Eî 7 > +X ¾ ² j5/ F ¼FƒD ç#B Ä

!W X4è J?¯ ² j"'"d 4*61 Ï"d4ÿ 4*6 % Cã É"'"d Â • þKw ;"dFƒ"dCX 7 ö Ê ÄGB/T31962-2015Å>˜ 1] A 1y4× 7 ö > È Â • j #ô Š a #Ö ”+O(™0 ° 9L€ œ ("'"d 4*6 ²$! Ö 4*6 È 4*6Eî 7 > Â •U€R± Â#§1Ñ4ï È 04ø F Â ?$5 "ã Ä

Nfl-$ Õj Ó !] ^ 4î P Õj :*<Aôó” %>]

#ô Š 2 d#ô j a ' Ë 9L€ œ (F Â Ï"d Í ˆ #ô Š!W X(©/ý4è J 9L€ œ ("'"d 4*61 4*6 Ä

#ô Š!W X(©/ý4è J 9L€ œ ("'"d 4*61 G÷+X 04×"¹#ð+3ž + ¼4×"¹#ð 8ª ÈAîAÑ 4*6?ô Q j 10000m³/d È k?± 4*6!W X4è J ¼ a ' Ë ,´+O × Ï"d È *"d"dCXEî ` É"'"d Â • þKw ;"dFƒ"dCX 7 ö Ê (GB/T31962-2015)A 1y4× 7 ö > Â •#ô Š a #Ö ”+O(™0 ° 9L€ œ (10000m³/d "'"d 4*6 ²$! Ö 4*6 Ä

\N©- = Î Ð Ï"d Â nGÿ Ã"dCX F ¸ ? È = ¡ ý #ô Š!W X(©/ý4è J 9L€ œ ("'"d 4 *6 j 4*6 7- Ë Ä

i žF z ¤ X4ï- #{ ž È #ô Š!W X(©/ý4è J 9L€ œ ("'"d 4*61 Â"d% Cã É"'"d Â • þKw ;"dFƒ"dCX 7 ö ÊÄ GB/T31962-2015 Å>˜ 1] A 1y4× 7 ö Ä

\N©- F Â Ï"d Í ^ #ô Š!W X(©/ý4è J 9L€ œ ("'"d 4*61 4*6 >| Ä

#ô Š!W X(©/ý4è J 9L€ œ ("'"d 4*61 4*6 8ª ú X4ï- #{ ž ÈB ?ñ 2.2.8.2 Ï "d ú ¦"' Lb"ë Ú í Ä

Nfl-$ ÕjF p " "j :*< , %>]

#ô Š a #Ö "+O(™0 ° 9L€ œ (¾ 2013 ¤ ÅCt *Aî ¶ 10000m³/d "'"d 4*6 0; Ä £ a Kw"'"d 4*6 ² ÅÈ 0; • ` M'0 13728m² ÈAîAÑ4*6 d#ô j a Kw ,´+O × Ï"d ¼+Œk"' "d È)à(æ Õ f!W X4è J+O × Ã+O#k"'"d Ä"'"d 4*6 8ªG÷+X A²/0+ Õ@ "W F$' +.2% +#¸" + Ü F"W F 8ª È AîAÑ *"d% Cã É#q "d"' (™5, 8 Â n 7 ö 1\ 3 G 6 Ö ?$5"ã#q Ê ÄDB37/3416.3-2018 ÅGý&é Ô j L€ l?±"r Ä COD O 50mg/L ÈNH_3-N O 5mg/L ÅÈ < &% Cã #ô Š 2 ê"A o Ì £ ¾ É#ô Š 2 ƒ - ?$5"ã#q ú"²"ã"d"' Lb"ë k Š H Œ H é x Ê,´ FJ. Ä#ô o Î ‡ [2019]23 ' Å?±"r Ä COD O 40mg/L ÈNH_3-N O 2mg/LÅ Eî 7 Ï"dG 6 +X È ¦ ‰4ÿ1ÑFƒ A L"w U€R± Â#§1Ñ4ï Ä

i žF z ¤ X4ï- #{ ž È a #Ö "+O(™0 ° 9L€ œ (Â n"dCX% Cã É þKw"'"d 4*6 ²"' (™ Â n 7 ö ÊÄ GB8918-2002 Å O4× A 7 ö?±"r È COD ¼"X"^ < &% Cã#ô Š 2 ê"A o Ì £ ¾ #ô Š 2:m Î É"d"' Lb"ë>| ØAÑ B Ê Î í é x,´FJ. Ä#ô o Ò 2016 Ó12 ' Å ?±"r Ã#ô Š 2+O 1)ß ³ q 9 Ä ?ô B?±"r ÄCOD40mg/L Ã"X"^ 2mg/LÅ

\N©- = Î Ð Ï"d Â nGÿ Ã"dCX F ¸ ? È = ¡ ý !W X4è J"'"d 4*6 j F Â"d"dCX ú "dGÿ È) a #Ö "+O(™0 ° 9L€ œ ("'"d 4*6 ² Ï"d 4*6 ¡ ý ¸ ? Ä

a #Ö "+O(™0 ° 9L€ œ ("'"d 4*6 ² "'"d 4*6 8ª ú X4ï- #{ ž ÈB ?ñ 2.2.8.2 Ï"d ú ¦"' Lb"ë Ú í Ä

f A"jLh$M àó

\N©- "'# ê' w Y+X)à 9K5&¹ ú ¦ œ+XAî 7 È)à 9 0;) ` ;"d 7- ×+O ¡ ý,´ 9 k ² o j ÃC^'" j p ÃC^& $S j p Ã Ú)ß"d3+5 Ã F"dE–L$ ú Ï"d fLö Â n3+5 1y Ä i ž' Ë œ ( Ë,´Ct É È)à 9 0;,´ k ² o j Ã Ú)ß"d"• Ã +X"d"• Ã5€ j ú $ `1y w " 9-(Ä?ô93F >| ¶Lb$G Ä

\N©- X 1L '" j µ à * "'# ² ^ j È 9Gý&é"' Lb"ë jG÷ Lb$G r Ú í È ¦Lb$G W7- = ~ ¾ 6.0m Ê$GF?3+ j 1.0 h 10^{-7}cm/s ,´2È O r È }-$ Õ"' ` ;"d r Ä

&")å àó%>]AðA÷

\ N©- +O ×>õ5ž Í ^)à 9Aî í È = à Î+O ×Aî í È = Î Ð j4ôF >| &L$ Ä

' Ë œ ()à(æ "G÷ ¶ 03+ GL} š Ú í ÿ ?N©-) ˜ $)ß ³,´ ¡ ý Ö

1 Ã)F >| š E³ W D # × f ×+O š ,´Aî 7 È 6 ¦ ¹ n X 1L ² o F Ô µ È ² = 7-Eî ` 7 ö?±"r ÈG÷ 9 x,´LÄ L} š Ú í È ² XK5&¹)0ª Â"- ÃK5&¹ oF1Nþ j Ã 0!Q Nþ j Ã"W FNþ j1y 4 Ð>õ#¸ ˜ È L} ~"D#q š Ä K5&¹)0ª Â"- #¸ ˜,´#¸ Gÿ = ? ¾30dB(A) Ä

2 Ã.¾'" j1yQ š Aî 7 ÈG÷ *.pLÄ _ ¦ ¹>õLÄN#5™ Ä

3 Ã p 9Eœ Ø j àG } Ð>õ ÿ _ *6» >õ5ž È ÿE« _ Ø EC§,´ š ÄK5&¹ o µ,´.¾'" jAî 5ž ÿ _ Å × È L} ~.¾'" jF >| š ,´ A FEÀ 4 Ä 4/ý#%,´F Ã * wG÷+X ÿ _EŸ Õ d È ÿ A#%,´ _ Ø ¼ š 4ÿ1ÑFƒ P Ý Ä

4 Ã H FK5&¹ o1y:è"-1ÑFƒAîAÑ È"-"d1ÑFƒAîAÑ Š ` 8*6 35ž È#qFƒNª+u È ¦63<•Lb _ Ú í Ä 8*6F9 4 _ : æ » ? ÈL} ~"D#q ¼ _ Ø š Ä

5 Ã k ² oL 0ÇF9+XLÄ W7- -,´ € É È ÿ A ² o µ š ý ý 4 F65 š A F P Ý Ä) š ¡ ýE³ W,´E–L$ ÈAî l* ?L$ F × f Ô È) l* ÔG÷ LÄ Ú í Ä) 4/ý#%2« G÷+XL} š Ú í È#% o0Ç gF9+X öL ¼LÄ W7-8Ÿ -,´ € É Ä

: š × f ° _ _ h?ô ° _ È @'Ï M• Ä

1Ñ*6 : f Ê U l,´1Ñ*6?ô0; È 5 Œ J1Ñ*6 Ã Œ J)ß ³1Ñ*6 Ã • ç1Ñ*6 Ã6| J ›+O ‰ 6â1y 03+ G Ú í Ä

i ž a ' Ë œ (²+| š)à(æ- #{ ž È 4 ²+| š % Cã É J 1 J ²+|)ß ³ š Â n 7 ö Ê Ä GB12348-2008 Å2 2« 7 ö Ä

0 Ɠ")å àó%>]AðA÷

N©- ê' "'# ÈK5&¹& $S Ã7a.›.#7¿ ×+OGÿ +O F × ¦ ³ * ƒ Ï(™ ×+OGÿ >)à 9 0; 08$ Ä K5&¹& $S ú7a.›.#7¿ F ^+X ¾ * €+O × È ¡L™ Ï(™ ˆ 9CtCX … }F >| 45ž È N©- * Ï w Ç ` Õ ´ 45ž Ä

\N©- & Ã Ã$S Ã7a.›.#7¿ ² ˆL$1y w Í ˆ)à 9 0; È)à 9& Ã Ã$S Ã 7a.›.#7¿ ² ˆL$,´ *Aî% Cã É 08\ J * ƒ Ï(™C^ ˆ Ã 45ž j"' × f 7 ö ÊÄ GBl8599-2001 Å ú ¦ i … 7 ö ?±"r ÃÉ 08\ J * ƒ Ï(™C^ ˆ ¼ › û"' × f 7 ö ÊÄ GB 18599-2020 Å?±"r Ä #ô Š 2 d#ô j a ' Ë 9L€ œ (¡L™ Ï(™ 6 Í ˆ !W X4è J)à 9 ¡ ÏL$ ² ˆ × !W X4è J ¡ Ï L$ U l 9'— É ¡L™ Ï(™C^ ˆ"' × f 7 ö Ê Ä GB18597-2001 Å ú ¦ i … 7 ö?±"rF >| * Aî Ä

8

8.1

i ž - æ Ã ¡ L-1 ¼#ô Š 2-(£?±"r È k?± × f"' (™ j Ö ¼"W F.› Ã"^"W F(™ Ã' 2¹ H Ã COD Ã"X"^ Ã VOC Ä

8.2

#ô Š 2 d#ô j a ' Ë 9L€ œ (¾2017 ¤ 6 8 21 Ç #ô Š 2 +O 1)ß ³ pN± ,´ Â "'Aè Añ È ¾2020 ¤ 6 8 9 +cB' &5 ÈAè Añ5F ' 91370305493805 56X400 Ä#ô Š 2 d#ô j a ' Ë 9L€ œ (W"DAè Â n kGÿ j SO Ö118.39t /a ÈNOx Ö169.13t/a ÈNÇ2Â(™ Ö 16.913t/ a Ä

)à 9 0; 4 k?± Â n "' (™Aè Â nGÿEî 7 õ å?ñ>˜ 8-2 Ä

8-1 t/a

k?± Â n	"' (™	"F >| 0; Â nGÿ	Â"'Aè Añ	Eî 7 õ å
Ï"D	NÇ2Â(™	6.72	16.913	Eî 7
	¼"W F.›	27.5	118.39	Eî 7
	"^"W F(™	55.1	169.13	Eî 7
Ï"d	ŒOD	1.40 Ä µ × Å	ü ü	ü ü
	"X"^	0.19 Ä µ × Å	ü ü	ü ü

+a!" ?ñ È)à 9 0; k?± Â n "' (™ Â nGÿ% Cã Â"'Aè AñAè Â nGÿ?±"r Ä

)à 9 0; Ï"d Â • #ô Š!W X(©/ý4è J 9L€ œ ("'"'d 4*6 j 4*6 È i ž #ô Š!W X(©/ý4è J 9L€ œ ( )à 9 Â •#Ö "'"'"d ²,´ Ï"dGÿ j 3250815.68m³/ a È!W X4è J F • #ô Š a #Ö " +O(™0 °9L€ œ (,´ COD ¼"X"^Gÿ 6 [j 1625.408t/a Ã146.287t/a ÄCOD 500mg/LÃ"X"^ 45mg/LAÑ1Ç Å È% COD W X4è J Â"'Aè AñAè Â n kGÿ?±"r ÄCOD 825t/a Ä µ × Å È"X"^ 164.25t/a Ä µ × Å Å Ä

9

9.1

9.1.1

20

9-1

9-1

			( )
1			18
2			2
			20

20

91. 2

9-2

1		
2		

92

10)å„1*< D- # A×H

10.1 ¢ .)å„1*< p ”Aœ5⁄

3

1

10.2)å„ Ú6 CY ´ 1 ×

10.2.1 q5 *< ´+U Ý¥ q5 *< · q 0A > µ”6 CY

1

2

3

4 “ ”

5

10.2.2)å ICY 0A >,”6 CY

1

2

3

4

5 “ ”

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7

8

9

10

11

10.2.3)å„- # 1 ,”6 CY

1

2

3

4

5

6

7

8

10.2.4 :G L ,”6 CY

1

2

3

4

5

10.2.5 ¨" ?œ99 L1*<

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2

3

v 6 ┼ .ŕ P ₂ .ŕ P

> 10-1 = ," (ì NØ¤B* D

15562.1-1995 GB15562.2-1995

10.2.6 ?œ99Gým Gým ' &

120m

> 10-2)æ? 150m ¨"J1 Gým Gým ' &?œ99 L < ˇ

		DB37/T 3535-2019	

1 30m 4

[2013]138

10.3 " (¨ t$; 1*<?•"x

10-3

> 10-3 0Nfl-$ 0A » ï4œ F>

		3 × 130t/h 2 1	
		2 × B12MW	
		2 5.29MPa/485 0.98MPa/200	
		1 150t/h → → → → → → →	
		1000m³ 1 ,350m³	
		60m 72m , 6m 20	
		100m³	
		20m³ 20m³	
		60m³	
		120m 3.0m	
		3 + 99.9%	
		3 - 1 95%	
		SNCR-SCR 60%	
			--

			--
			--
			--
			--
			--
		1600m 110KV 10KV 10KV	--
			--
			--

10-4

> 10-4 bNfl-$ q?• Õ#¾M ß º 6?þ>

1		58148.9t/a
2		1488t/a 65%

10.4)å„- # A×H

10.4.1 -# l Ü

HJ820-2017 HJ1039-2019

10-6 10-8

> 10-6 O L ˚ [)å„- # ï ~

		500m 3	1 CO 2 3 CO	
			pH COD	

> 10-7)å„C^H D D‘- # ï ~

		1	pH	
		5 1		

> 10-8 " $˘-# ï ~

		SO_2				
		NO_x				
		HCl				
			(DB37/T			
	150m		3535-2019)		1	
					1	
			4		4	
		+ + + +	2			
		+ + +				
	15m					
					HJ/T55-2000	
		NH_3	HJ/T55-2000		1	
			10m		1	
			1 4		4	

		pH	1	HJ/T91	
		COD	1		

10.4.2 0Nfl-$G =,”- # Aô=

10-9

> 10-9 7 PM6G =,”- # Aô= 6?þ>

		/
1		1
2		2
3		1
4		1
5		1
6		1
7	pH	2
8		3
9		1
10		1
11		1
12		
13		1
14		1
15	COD	1

10

31 [2013]81

2014 4 29 5000

22

3 130t/h +2×B12MW

3

2 1 37.5/d 431t/a

3×130t/h 2 1

=6% 99.4%

2019

15.

20.

1

+SNCR-SCR+ + - +

120m

SO_2 NOx

DB37/664-2019 2 HCl + + + + + + + +

GB18485-2014 4

- HJ562-2010

2

65%

GB14554-93 1 NH_3

(DB37/664-2019)

GB/T31962-2015 1 A

(GB12348-2008) 2

6.72t/a 27.5t/a 55.1t/a

3250815.68m^3/a

COD 1625.408t/a 146.287t/a COD 500mg/L

45mg/L COD1825t/a

164.25t/a

2020 1 21 Æ

GB12348-2008 2

2021 8 19

GB36600-2018 1 2

GB15618-2018

100%

GB12348-2008 2

1

65%

2

GB12348-2008 2

3

4

5

1

2