



1.1		1
1.2		3
1.3		3
2.1		3
2.2		4
2.3		4
2.4		4
3.1		5
3.1.1		5
3.1.2		5
3.1.3		7
3.2		7
3.3		9
3.4		10
3.5		11
3.5.1		11
3.5.2		11
3.6		11
3.6.1		11
3.6.2		12
3.7		13
3.8		16

4.1		19
4.1.1		19
4.1.2		19
4.1.3		20
4.1.4		21
4.2		21
4.2.1		21
4.2.2		24
4.2.3		24
4.3	“ ”	24
4.3.1		24
4.3.2	“ ”	25
4.4		27
5.1		29
5.1.1		29
5.1.2		30
5.1.3		33
5.1.4		33
5.1.5		33
5.2		34
6.1		36
6.2		39
6.3		39
6.4		40
6.5		40
6.6		41

7.1		43
7.2		43
7.3		43
7.4		44
7.5		44
8.1		45
8.2		52
9.1		59
9.2		60
9.3		69
9.4		69
9.5		72
9.6		74
9.7		78
10.1		79
10.2		80
10.2.1		80
10.2.2		80
10.2.3		80
10.3		80

1

2

3

4

5

6

7

1

[2020]79

2

3

4

5

6

7

8

9

10

11

12

13

[2019]350

14

15

2022 10 ~2023 3

16

[2023] 157

17

800mg/m^3

GB4915-2013

400mg/m³

SNCR

2015 1

[2015]31

5 2014 12

192m³/d

2015 4

[2015]101

2016 12

[2016] 201-1

6 2016 10

500t/d

2018 3 19

[2018]42

2018 10

2020 7

20

2020 8 28

[2020]79

682

[2017] 4

“

”

“ ”

2023 1 7 ~8 2 15 ~2 16 4

26 ~4 27 “

”

[2017]

4

1

2

3

1

2

3

4

5

6

7

2017 7 16

2015	1	1
2017	6	27
2018	10	26
2019	1	1
2022	6	5
2022	1	1

682

8				[2017]4				
			2017	11	20			
1			2018		9			
					2018	5	15	
2								
	HJ256-2021	2021	11	25				
1								
					2020	7		
2								
				[2020]79				
	2020	8	28					
1				HJ91.1-2019				
2					HJ493-2009			
3							2017	
1		GB/T16157-1996/XG1-2017						
4						HJ836-2017		
5						GB12348-2008		
6				GB3096-2008				
7					HJ/T166-2004			
8						HJ/T630-2011		
9								

68

E114 ° 51 ' 36.04 " N30 ° 12 ' 14.76 "

1

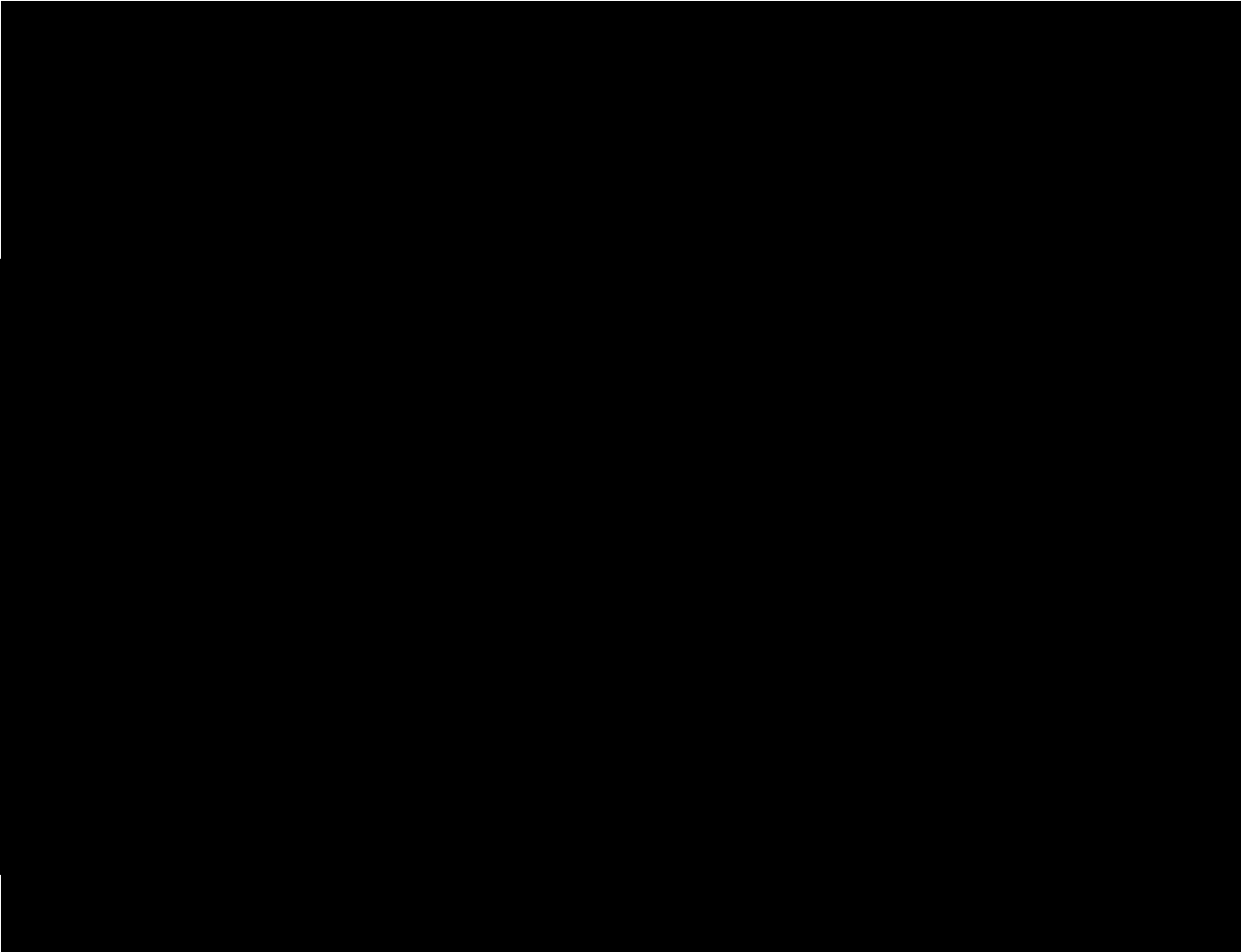
11

3-1

3-1

		E	500	42	GB3095-2012
		S	350	445	
		SW	180	274	
		SW	180	315	GB3096-2008 2
		S	720		GB3838-2002
		W	8500		GB3838-2002 III





		1		
		1	1	
		1	1	
		4500t/d		

810m² 30m× 27m×
8m

22		30m ³	1				
23		DN560×4500mm	1			3ZWLS490 ×4000mm	1
24		DN640×6000mm	1				

60%

§ J

K2

1450

20 40min

1750

1050

Й

、

110m

1150 850

350 850

350 500

1s

350

200

110m

3-6

3-6

				17m
		SO ₂ NO _x NH ₃ HCl HF H ₂ S		+ + +SNCR+ +110m
		L _{eq} dB A		

2018 6

3-7

1			<div>27m× 8m</div> <div>810m² 30m× 8m</div>	<div>1755m² 65m× 8m</div> <div>27m×</div>	50m	
2						
				17m		

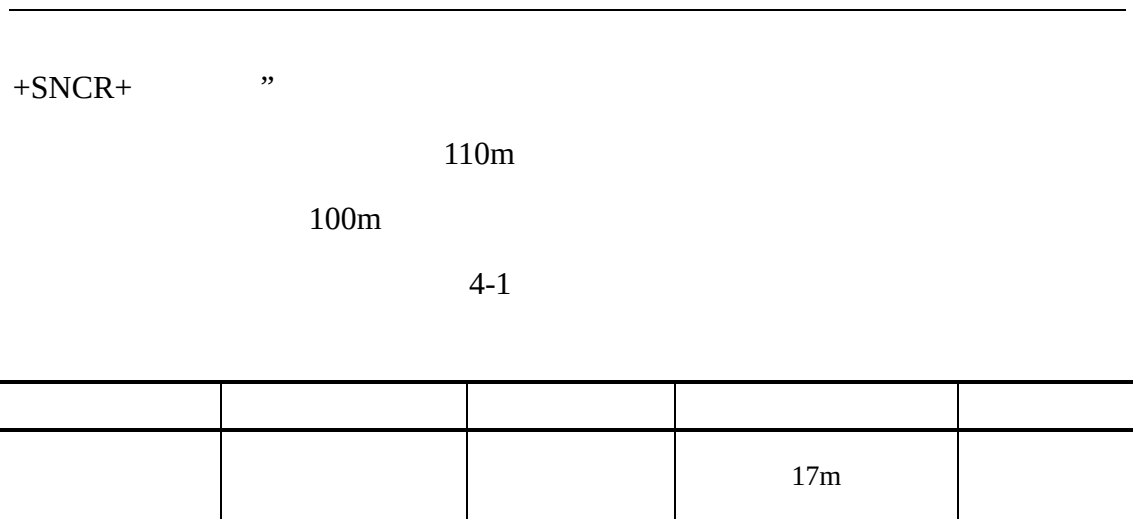
				110m	110m		
--	--	--	--	------	------	--	--

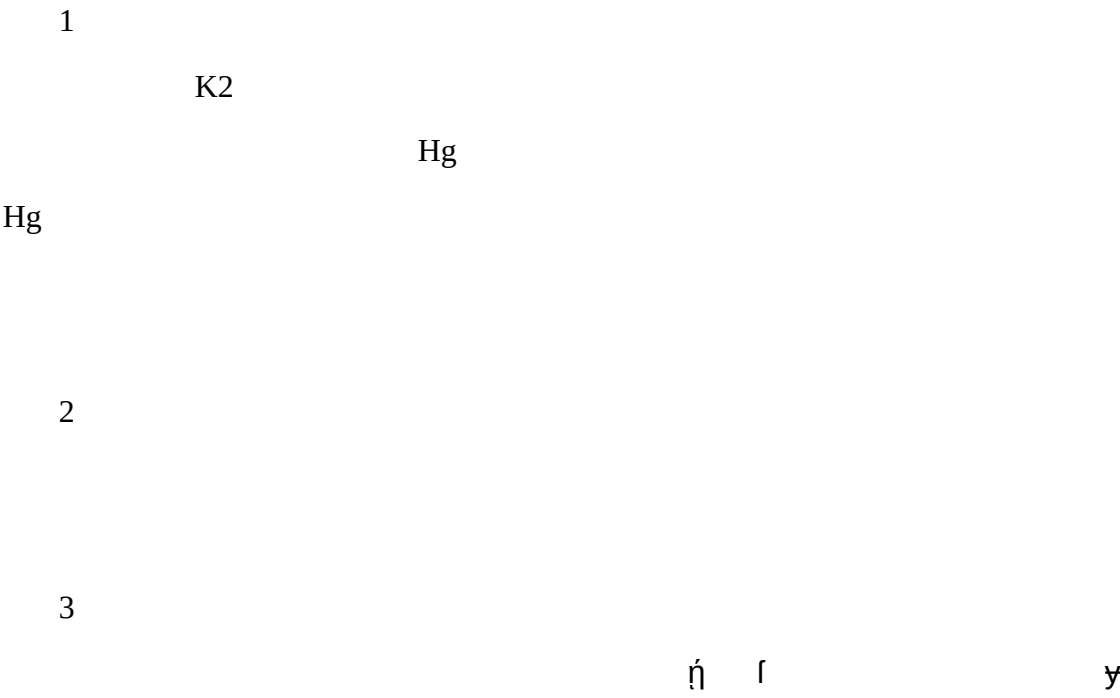
4.			
5.			

60%

4.1.2

1





		CaCO ₃	MgCO ₃	CaO	MgO	
	Cl ⁻					Cl ⁻

1-2

2

HJ610-2016

Mb≥1.5 K≤1×10⁻⁷ /

3

1			8	/
2			1	/
3			1	/
			10	/
			10	
			20	/
			10	/
			3	/
			10	/

DA061

DA001

DA061

11

HJ610-2016

Mb≥1.5 K≤1×10⁻⁷ /

“ ”

1324

200 15.1%

4-4

			+ + +SNCR+ +110m	1	0	
1				1	50	
			1	1	27	
			17m + +	1		

			100m			
2					18	
3				/	0	
				/	0	
				/	0	
4			10-7cm/s 2mm ≤	1	50	
			2mm	1		
			≤ 10-10cm/s			

			+ 100m
			17m
		/	

8

“ ”

9

10

11

NO_x SO₂

12

“ ”

13

1

2

7

SO₂ NO_x PM₁₀1h

24h

GB3095-2012

1h

24h

GB3095-2012

1h

-

HJ2.2-2018

D

2

GB3838-2002

IV

GB3838-2002

III

3

GB/T14848-2017

GB/T14848-2017

GB/T14848-2017

3

8

GB12348-2008

2

GB3096-2008

2

4

3

1

2

45

GB36600-2018

1

GB15618-2018

2

1

3

GB4915-2013

1

GB14554-93

2

GB50757-2012

SO₂ NO_x NH₃ HCl HF
Pb As Cr +
+ +SNCR+ SO₂ NO_x
NH₃ GB4915-2013 2

GB30485-2013GB4915

A

6

2

3

85~95dB A

1

2

3

4

5

6

GB12348-2008

2

4

GB3096-2008 2

4

1

2019

[2006]609

[2006]2222

2

GB30485-2013

HJ662-2013

3

HJ662-2013

GB50634-2010

2020 12

914202817534106615001P

SO₂408.375t/a NO_x1306.8t/a 181.357t/a

NO_x

2020 8 28

[2020]79

2019-420281-77-03-003167

K2

4500t/d

20

1500

100

:

1

2

“

+

+

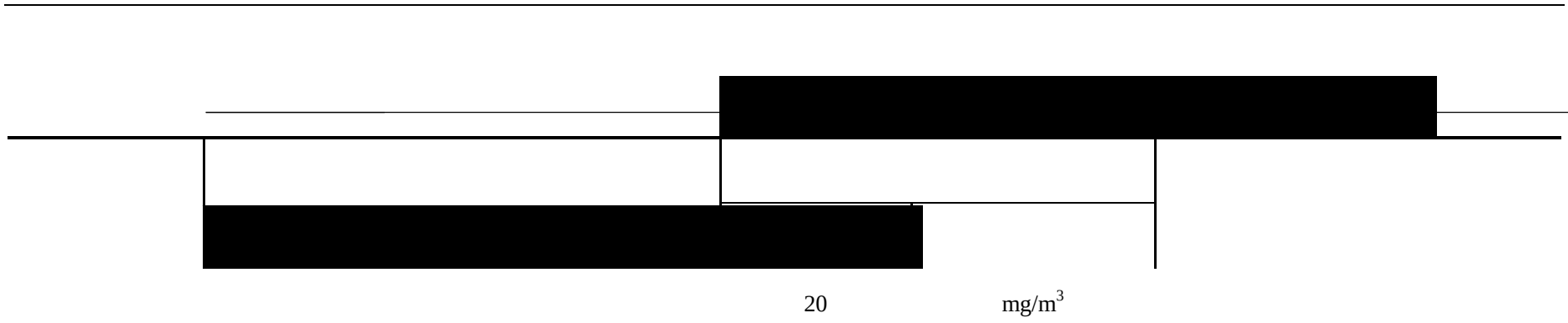
+SNCR+

”

110m

GB4915-2013

2



[Redacted text block]

[Redacted text block]

		0.5	mg/m ³	GB4915-2013 3
		1.5	mg/m ³	GB14554-93 1
		0.06	mg/m ³	
		20		

GB12348-2008

2

	24	7	$\mu\text{g}/\text{m}^3$	

		≤ 0.3
		≤ 0.10
		≤ 200
		≤ 0.002
	COD _{Mn} O ₂	≤ 3.0
	N	≤ 0.50
	N	≤ 20.0
	N	≤ 1.00
		≤ 0.05
		≤ 1.0
	CFU/100mL	≤ 3.0
		≤ 1.00
		≤ 1.00
		≤ 0.001
		≤ 0.01
		≤ 0.005
		≤ 0.05
		≤ 0.01
		≤ 0.02
		≤ 0.002
		≤ 0.05

7-1

		1	SO ₂ NO _x NH ₃ HCl HF	3 / 2
		2		
		○ 1	NH ₃ H ₂ S	3 / 2
	1#	○ 2		
	2#	○ 3		
	3#	○ 4		
TOC		TOC		9

7-2

1 ▲ 1	A	2 / 1
1 ▲ 2		
1 ▲ 3		

	● 1	pH N N	2 / 2
	● 2		

	▼ 1	pH	1
	▼ 2		

	1	TSP TVOC	4 / 2 TSP 1 / 2 4 / 2 TVOC 1 / 2
	▲ 5	A	1 2

8-1

		HJ/T57-2017	MH3300	3mg/m ³
		HJ/T57-2017	ZSX-XC-001	3mg/m ³
		GB/T 16157-1996	ES1055A ZSX-SC-037	0.1mg/m ³
		HJ533-2009	722S ZSX-SC-013	0.25mg/m ³
		HJ 549-2016	CIC-100 ZSX-SC-046	0.2mg/m ³
		HJ688-2019	CIC-100 ZSX-SC-046	0.08mg/m ³
			AFS-230E	
				3×10 ⁻³ μg/m ³
			HKTS-A-079	

		HJ657-2013	ICP-MS 1000G	0.000008mg/m ³
		HJ657-2013	OPTIMA8000 HKTS-A-043	0.8μg/m ³
				2μg/m ³
				0.9μg/m ³
				2μg/m ³
				4μg/m ³
				2μg/m ³
				0.8μg/m ³
				0.9μg/m ³
				2μg/m ³
				2μg/m ³
				0.9μg/m ³
				0.7μg/m ³
		HJ38-2017	9790 ZSX-SC-041	0.06mg/m ³
		- HJ77.2-2008	DFS IHBC-	

		GB/T15432-1995	ES1055A ZSX-SC-037	0.001mg/m ³
		HJ533-2009	722S ZSX-SC-013	0.01mg/m ³
			722S ZSX-SC-013	0.0014mg/m ³
		GB/T14675-93	OTS-550 ZSX-SC-072	/
pH	pH HJ1147-2020		SX620 pH WHHJ/YS-04-068	/
		HJ535-2009	722S ZSX-SC-013	0.025mg/L
		GB/T 5750.7-2006 1.1	25.00mL	0.05mg/L

GB
7484-87

		-		
		HJ484-2009		
		HJ694-2014	AFS-8220ZSX-SC-045	0.3µg/L

N4S

GB/T 5750.5-2006

5.2

		GB 7475-1987		0.05mg/L
		GB 7475-1987		0.05mg/L
		GB11911-89		0.03mg/L
		GB11911-89		0.01mg/L
		GB 11912-1989		0.05mg/L

		GB/T 5750.4-2006 8.1	FA2004B ZSX-SC-068	/
		/ HJ 680-2013	AFS-230E HKTS-A-079	0.002mg/kg
		12 - HJ803-2016	ICP-MS 1000G	0.04mg/kg
		GB/T17141-1997	900T HKTS-A-001	0.1mg/kg
		/ HJ680-2013	AFS-230E HKTS-A-079	0.01mg/kg
		HJ737-2015	900T HKTS-A-001	0.03mg/kg
		HJ491-2019	900T HKTS-A-001	4mg/kg
		/ HJ680-2013	AFS-230E HKTS-A-079	0.002mg/kg
		- HJ77.4-2008	DFS IHBC-SY-03	/
		HJ491-2019	900T HKTS-A-001	1mg/kg

		12 - HJ803-2016	900T HKTS-A-001	0.4mg/kg
	pH	GB6920-86	SX620 pH WHHJ/YS-04-068	/
		GB/T17141-1997	900T HKTS-A-001	0.01mg/kg
	TSP	GB/T16157-1996 8 - HJ482-2009	FA1004 WHHJ/YS-01-001 V-1100 WHHJ/YS-01-011	0.1mg/m ³ 0.007mg/m ³

			Optima8300 YHJC-JC-003-01	0.004μg/m ³
		HJ 657-2013		
			Optima8300 YHJC-JC-003-01	0.003μg/m ³
		HJ 657-2013		

3

4

5

6

7

8

8-2 8-11

	WX100-1KB	ND	ND	mg/L	
	WX200-1KB	ND	ND	mg/L	
	WX100-1KB	ND	ND	mg/L	
	WX200-1KB	ND	ND	mg/L	
	WX100-1KB	ND	ND	mg/L	
	WX200-1KB	ND	ND	mg/L	
	WX100-1KB	ND	ND	mg/L	
	WX200-1KB	ND	ND	mg/L	

	WX200-1KB	ND	ND	mg/L	
	WX100-1KB	ND	ND	mg/L	
	WX200EMC /F				

	WX101-10PX	ND	ND	mg/L	0.0%	≤10%	
	WX101-4PX			mg/L	0.0%	≤10%	
	WX201-4PX	0.05	0.05	mg/L	0.0%	≤10%	

	WX101XPX	33.6	34.2	mg/L	0.9%	≤10%	
	WX201XPX	41.0	39.8	mg/L	1.5%	≤10%	
	WX101XPX	ND	ND	mg/L	0.0%	≤10%	
	WX201XPX	ND	ND	mg/L	0.0%	≤10%	
	WX101XPX	1.1	1.1	mg/L	0.0%	≤10%	
	WX201XPX	1.1	1.0	mg/L	4.8%	≤10%	
	WX101XPX	0.122	0.125	mg/L	1.2%	≤10%	
	WX201XPX	0.107	0.110	mg/L	1.4%	≤10%	
ND							

	201936	52.2mg/L	53.0 ±2.6mg/L	
	2005134	4.46mg/L	4.46 ±0.23mg/L	
	B21080004	1.20µg/L	1.22 ±0.13µg/L	
	B21070400	0.634mg/L	0.629 ±0.028mg/L	

	1.0319	1.00	mg/L	3.2%	≤10%	
	0.486	0.50	μg/L	2.8%	≤20%	
	0.819	0.80	μg/L	2.4%	≤	

2023 1 7 8

9-1

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2023

9-2

1	m ³ /h	2023.01.07	517891	510577	519998	516155	519998	/	/
		2023.01.08	505184	512723	500181	506029	512723		
		2023.01.07	113.5	93.6	93.2	100	113.5	/	/
		2023.01.08	93.1	91.9	94.6	93	94.6		
	%	2023.01.07							

			2023.01.08	8.1	8.8	8.3	8.4	8.8		
		mg/m ³	2023.01.07	6.1	5.5	5.9	5.8	6.1	/	/
			2023.01.08	5.3	7.2	6.6	6.4	7.2		
		mg/m ³	2023.01.07	5.8	4.8	5.1	5.2	5.8		
			2023.01.08	4.5	6.5	5.7	5.6	6.5		
		kg/h	2023.01.07	3.159	2.808	3.068	3.012	3.159	/	/
			2023.01.08	2.677	3.692	3.301	3.223	3.692		

2023.01.08

85



2023.01.08

0.7

0.8

1.3

0.9

1.3

		0.1ngTEQ/m ³	2023.01.07	0.0023	0.035	0.0012	0.013	0.0023	0.1ngT EQ/m ³	
			2023.01.08	0.0035	0.013	0.0018	0.0061	0.013		

ND

GB4915-2013 2

GB30485-2013 1

2	m ³ /h	2023.04.26	8491	8298	8211	8333	8491	/	/
		2023.04.27	8103	8634	8721	8486	8721		
		2023.04.26	27.7	28.1	28.1	28.0	28.1	/	/
		2023.04.27	28.0	28.3	28.4	28.2	28.4		
	%	2023.04.26	2.6	2.6	2.6	2.6	2.6	/	/

			2023.04.27	2.8	2.8	2.8	2.8	2.8		
	m/s		2023.04.26	9.4	9.2	9.1	9.2	9.4	/	/
			2023.04.27	9.0	9.6	9.7	9.4	9.7		
		mg/m ³	2023.04.26	23.7	24.4	24.2	24.1	24.4		
			2023.04.27	24.5	23.8	24.1	24.1	24.5		
		mg/m ³	2023.04.26	/	/	/	/	/	/	/
			2023.04.27	/	/	/	/	/		
		kg/h	2023.04.26	0.201	0.202	0.199	0.201	0.202	/	/
			2023.04.27	0.199	0.205	0.210	0.205	0.210		

GB16297-1996

2

9-5

9-4



2023.01.08			1.1	58.4		12.6		101.26		
○ 1			2023.01.07	0.03	0.04	0.03	0.04	0.04		
			2023.01.08	0.04	0.05	0.05	0.04	0.05		
○ 2		1#	2023.01.07	0.04						
			mg/m ³							

○ 2	1#		2023.01.07	ND	ND	ND	ND	ND		
			2023.01.08	ND	ND	ND	ND	ND		
○ 3	2#		2023.01.07	ND	ND	ND	ND	ND		
			2023.01.08	ND	ND	ND	ND	ND		
○ 4	3#		2023.01.07	ND	ND	ND	ND	ND		
			2023.01.08	ND	ND	ND	ND	ND		
○ 1			2023.01.07	0.318	0.345	0.280	0.379	0.379		/
			2023.01.08	0.388	0.346	0.421	0.403	0.421		/
○ 2	1#	mg/m ³	2023.01.07	0.569	0.507	0.559	0.615	0.615	1	/
			2023.01.08	0.525	0.577	0.608	0.664	0.664		/
○ 3	2#		2023.01.07	0.523	0.484	0.466	0.568	0.5mg/m ³		
			2023.01.08	0.523	0.484	0.466	0.568			

		2023.01.07	0.273	0.273	0.279	0.236	0.236		
		2023.01.08	0.228	0.231	0.21	0.261	0.243		
○ 1		2023.01.07	<10	<10	<10	<10	<10		
		2023.01.08	<10	<10	<10	<10	<10		
○ 2	1#	2023.01.07	<10	<10	<10	<10	<10		
		2023.01.08	<10	<10	<10	<10	<10		
○ 3	2#	2023.01.07	<10	<10	<10	<10	<10		
		2023.01.08	<10	<10	<10	<10	<10		
○ 4	3#	2023.01.07	<10	<10	<10	<10	<10		
		2023.01.08	<10	<10	<10	<10	<10		
“ND”									

9-5

GB4915-2013 3

GB14554-93 1

9-6

		2023.01.07	ND	ND	10µg/L	
		2023.01.08	ND	ND		
		2023.01.07	ND	ND	0.005	
		2023.01.08	ND	ND		
		2023.01.07	ND	ND	0.01	
		2023.01.08	ND	ND		
		2023.01.07	ND	ND	0.02	
		2023.01.08	ND	ND		
		2023.01.07	0.1	0.1	0.3	

		2023.02.16	ND	ND		
		2023.02.15			3.0	
		2023.02.16				
		2023.02.15	0.008	0.007	0.05	
		2023.02.16	0.006	0.007		
		2023.02.15	ND	ND	1.0	
		2023.02.16	ND	ND		
		2023.02.15	ND	ND	1.0	
		2023.02.16	ND	ND		
		2023.02.15	ND	ND	0.001	
		2023.02.16				

			1.23	180	
			0.31	65	
			45.6	800	
			62	18000	
			ND	5.7	
			2.50	29	
			13.7	70	
			67.0	752	
			0.98	40ngTEQ/mg	
2023.01.07	▼ 2	pH	5.7	/	/
			22.1	60	
			0.190	38	
			2.23	180	
			1.24	65	
			49.5	800	
			141	18000	
			ND	5.7	
			2.62	29	
			14.9	70	
			82.5	752	
			0.44	40ngTEQ/mg	

9-9

○ 1	mg/m ³	2023.01.07	0.010	0.008	0.012	0.011	0.012		
		2023.01.08	0.008	0.012	0.009	0.010	0.012		
	mg/m ³	2023.01.07	0.026	0.024	0.027	0.026	0.027		
		2023.01.08	0.029	0.026	0.028	0.029	0.029		
	mg/m ³	2023.01.07	0.02						

		2023.01.08	ND	ND	ND	ND	ND		
	mg/m ³	2023.01.07	ND	ND	ND	ND	ND		
		2023.01.08	ND	ND	ND	ND	ND		
	mg/m ³	2023.01.07	0.62	0.56	0.68	0.60	0.68		
		2023.01.08	0.52	0.58	0.56	0.62	0.62		
		2023.01.08	<10	<10	<10	<10	<10		

1.“ND”

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TVOC

○ 1

		2023.01.07	ND	✕	
	mg/m ³	2023.01.08	ND		
	μg/m ³	2023.01.07	ND		

TSP

GB3095-2012

9-11

2023.01.07			3.012	310	99.56	22.51	181.357	
			7.573			56.59	408.375	
			41.995			313.82	1306.8	
2023.01.08			3.223		102.37	23.42	181.357	
			9.625			69.95	408.375	
			41.833			304.03	1306.8	
						22.97	181.357	
						63.27	408.375	
						168.39	1306.8	
1. 2023 1								
7 -8								
2. $t/a = A*B*24*10^{-3}/C$								

9-11

7.2mg/m^3 $23\text{mg}/\text{m}^3$

90mg/m³

 0.71mg/m^3

GB4915-2013

 0.8mg/m^3 $0.8\text{mg}/\text{m}^3$

0.007 $\mu\text{g}/\text{m}^3$

0.035ngTEQ/m³ TOC 1.64mg/m^3

GB30485-2013

GB16297-1996

2

GB4915-2013

3

GB14554-93

GB12348-2008

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GB3096-2008

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		4500t/d		4500t/d			
		20 t/a		20 t/a			
				[2020]79			



2022 379.13 319.9

		1500					100		%		6.67		
		1324					200		%		15.1		
		/		127		18		/			/		55
		/					/				7440h/a		
							9142028 13523528276				2023 1 7 -1 8		

1

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