

0010

水土保持监测总结报告

水保监测（川）字第 0010 号



雅西高速冕宁县收费站扩建及连接线改建工程

水土保持监测总结报告

责任页

四川嘉源生态发展有限责任公司

姓名

职务

联系电话

地址

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2020

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102°12'32.68"} 102°13'1.89" 28°33'4.34"} 28°33'28.94" 1580}

2500m K212+752.91 1.041kmu

0.731km 0.31km u

1 1 1 1 u

u

t t u

6248.64m³t 500m²t 25.2m³t

1.205km 20m 8m

60km/h u 64m/1

5.7% 4 60mu

2 2 4 6 1

1 1 1

1 u 11636.8m³ 205mu

9992.86

2020 3 2021 10 20 u

3 t t u

15.14 m³

15.14 m³ u

—

1580} 2500m

u 920mu

u

7-9

1092.7mm

2088h

300d

69%

955.5Pa

1.80m/s

N NW

1875mmu

u

u

u

t

u

t

t

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35%u

1399t/km²·a

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500t/km²v a

679.1t/km²v au

À\$Wd

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2021 7

u

2022 12

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< SL277-2002 tŠ

< GB/T51240-

2018 t Š

<

[2018]887

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<

[2020]160

u

2023 2

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t

	1.041km		t	/15756850555
				7817.10
				20
				/028-87318332
	1.		2.	t t t
	3	t	4.	t
	5.	t		679.1t/ km ² ·a
		8.32hm ²		500t/ km ² ·a
		1035.65		500t/ km ² ·a
	5520m ³	1141m	971m	3
	1.08hm ²	165m	1675m ²	597m
	9080m ²	675m	6	674m
		6500m ² u		5520m ³
				0.68hm ²
	97	97.94	1.90hm ²	5.73hm ²
	1.0	1.12		7.67hm ²
	89	99.32		0.00hm ²
	95	99.50		1.90hm ²
	96	97.94		1.94hm ²
	22	24.77		2.45 m ³
				2.47 m ³

				t		t	
		u					
		99.73%		99.47%		1.10	
		99.24%		99.50%		57.94%	
				97%t	1.0t	89%t	95%t 96% 22%u
		u					
	1t						
	u						
	2t						
	u						
	3t					u	
				t			u

1	1
1.1	1
1.2	7
1.3	10
2	21
2.1	21
2.2		21 □

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1.1

1.1.1

G5

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102°12'32.68"} 102°13'1.89" 28°33'4.34"} 28°33'28.94"

1580} 2500m

K212+752.91

t

G108

6.8km

9km

u

t

t

u

6248.64m³t

500m²t

25.2m³t

1.205km

20m

8m

60km/h u

64m/1

5.7%

4

60mu

2 2

4 6

1

1

1

1

1 u

11636.8m³

205mu

7817.10

2020 3

2021 10

20 u

7.67hm²u

9.42 m³

0.83 m³

0.55 m³

6.95 m³

0.55 m³

2.47 m³

0.83 m³

AK0+420

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1.1.2

1.1.2.1

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5299m

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1330mu

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2013

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1.1.2.3

t

Q^{4me}

1.0}

10m u

t t Q_p

t u

u

5} 30cm }

1.1.2.4

u

u

35°C -5°C 16.2°C 5-10

11 4 u 6-10 7-9

1092.7mmu u 2088h

300d u 69% 955.5Pa

1.80m/s N NW 1875mmu

1-1u

1-1

		Á	16.20
		Á	35
		Á	-5
	10Á	Á	4867
		mm	1092.7
	50 1h	mm	150.0
	50 24h	mm	165.0
		m/s	

t t
 u 334 73 t
 1 t 172 u
 1800~2700m
 t t t t t
 2700~3500m t t t
 t 3500m t
 4200m u
 369036hm² 153354hm² 1874hm²
 132392hm² 5301hm² 15617909m³u
 t t
 t t t u 1800m
 1800m 2800m 2800m 3700m
 3700m 54.6% u
 t t t t t
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 t u t t u
 35%u

1.1.2.8

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2021 8

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1.3.1.1

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1-3u

1-3

		hm ²
1		2.85
2		0.09
3		0.67
4		4.06

1.3.1.2

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1.3.2**1.3.2.1**

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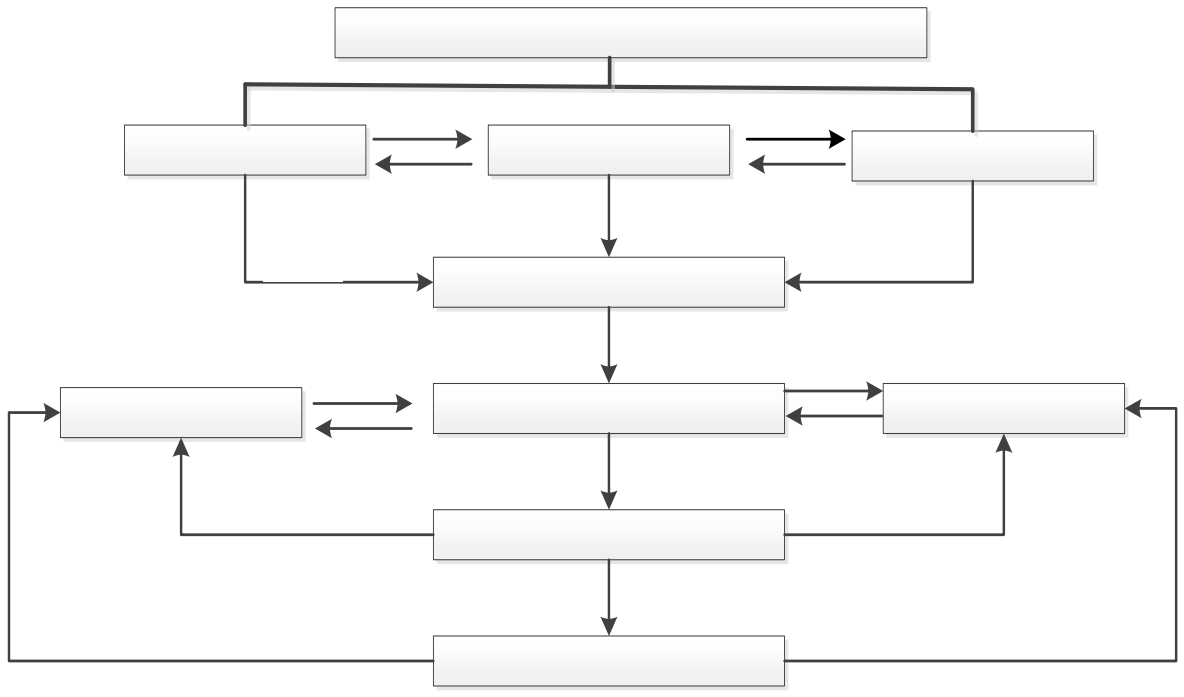
2

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1-4t 1-1u

1-4

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3		/



1-1

1.3.2.2

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1-5

2u

1-5

1#				t
2#				t
3#				t t t
4#				t

1.3.4

1-6u

1-6

1			2
2			2
3	GPS		3
4	2m		4
5	50m		4
6	4m		4
7	0.6cm		27
8			8
9			
10			4
11			4
12			2
13			1

1.3.5

Š

GB/T51240-2018

u

u

1.3.5.1

t

t

u

1

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u

2

u

10m×10m

t 1m×1m

u

t

t

u

100m²t

25m²t

1m²

u

3

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t

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4

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GB/T15774-

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1.3.5.2

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b. u

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c. u

d. t

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e. u t

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Σ "

u

f. t t u

g. e

$$D = \frac{f}{f}$$

D—— t %
 f_d—— m²
 f_e—— m²u
 20% C u

$$= \frac{f}{F}$$

C—— t %
 F—— hm²
 f—— t hm²u
 20%u t
 1-7 u

1-7

		%
SOC		76~100
COP		51~75
COP		26~50
COP		6~25
SP		1~5
SOI		<1
Un		

20m×20mt 5m×5mt

2m×2mu u

1.3.5.3

t t

u

1.3.5.4 t

u

1.3.6

1 Š
<
2 Š
< 2018 2 ~2022 4
3 Š
<u

2

2.1

u t
 t u
 u
 u u
 t t
 u Š <
 u t
 u

2.2

t t t t t
 l u
 t t t t t t
 t t t
 u

2-1 t

		t	1 /	t
			1 /	t
		GPS t	1	
		t	1 /	t
			6 1 /	t
			1 /	t t
		t	1 /	t t
			1 /	

			t		t
				1 /	1 /

2.3

u

t t t

t t t t t t

u

2-2u

2-2

		t	1 / t
			6 1 / t
			1 / t
		t	1 / t t
		t	1 / t
		t	1 /
			t
			t

2.4

2.4.1

t t

t u t t t

t u

2.4.2

t t t t t

u

1 t t u

2 t t t t

u u

3 t t t t

t pH t u

4 t u

5 t u

6 u

7 u

2.4.3

t

u 5~9 u

t

u t t t

F2.4-1} F2.4-3

$V=S \cdot H \quad 3 \quad F2.4-1$

$V=S \cdot H \quad F2.4-2$

$V=H \cdot (S_1+S_2+ S_1 \cdot S_2)^{1/2} \quad 3 \quad F2.4-3$

V—— cm³

S_{1t} S_{2t} S—— cm²

H—— cmu

u

u

u

—— 5%

u

F2.4-4

$$G = G_1 G_2 \cdot V_2 V_1 \quad \text{F2.4-4}$$

$$R_x \quad G / \quad G_0 \quad G \quad \text{F2.4-5}$$

G —									
			g						
G_1 —					g				
G_2 —			g						
V_1 —						ml			
V_2 —				ml					
R_x —									
G_0 —				gu					
	u								
					t	t		t	t

u

u

$$W = \rho \left[ZS / \cos \alpha \times 10^{-3} + \sum_{i=1}^n \frac{1}{3} (s_{i1} + s_{i2} + s_{i3}) L \right]$$

W —									
			t						
ρ —				t/m ³					
Z —			mm						
S —					m ²				
α —									
s_{i1} s_{i2} s_{i3} —		i			t	t			m ²
L —	i				mu				

3

3.1

3.1.1

3.1.1.1

Š < 8.32hm² 3-
lu

3-1 Š <		hm ²	
1		3.36	3.36
2		0.09	0.09
3		4.87	4.87
		8.32	8.32

3.1.1.2

t
t 7.67hm²
3-2u

3-2		hm ²	
1		2.85	2.85
2		0.09	0.09
3		0.67	0.67
4		4.06	4.06
		7.67	7.67

3.1.1.3

Š <
t
u 7.67hm²
0.65hm²u
1
2.85hm² Š
< 0.51hm²u t t
t

0.084km 1.125km < 1.041km
 Š 0.44hm²

u

2.85hm²u

2

0.09hm² u

3

Š <

t

K0+420

0.67hm²

4

2 2

4 6 1 1 1

1 1

2.27hm² 1.79hm² 0.81hm²

Š < u

u

3-3u

3-3			hm ²				+t -		
	3.36	/	3.36	2.85	/	2.85	-0.51	/	-0.51
	0.09	/	0.09	0.09	/	0.09	0.00	/	0.00
	0.00	/	/	0.67	/	0.67	+0.67	/	+0.67
	4.87	/	4.87	4.06	/	4.06	-0.81	/	-0.81
	8.32	/	8.32	7.67	/	7.67	-0.65	/	-0.65

3.1.2

2020 3

2021 7

u

t t t

t t t

3-4u

3-4

			hm ²	t/km ² ·a
1			0.37	1200
			0.32	500
			0.31	800
			1.85	450
			2.85	591.0
2			0.09	800
			0.09	800.0
3			0.67	800
			0.67	800.0
4			1.03	1200
			1.39	500
			0.71	800
			0.93	450
			4.06	718.6
			7.67	679.1

3-4

679.1t/km²·au

3.1.3

t

t

t

7.67hm²

0.65hm²u

2020 3

2021 10

3-5u

3-5

			hm ²
1		2020	1.24
		2021	2.85
			2.85
2		2020	0.09
		2021	0.09

			hm ²
			0.09
3		2020	0.67
		2021	0.67
			0.67
4		2020	0.00
		2021	4.06
			4.06
			7.67

3.2

Š < t t t t u u

3.3

3.3.1

Š < 15.14 m³ 0.62
 m³ 15.14 m³ 0.62 m³
 u

3.3.2

t 1
 AK0+420 0.67hm²
 100m 2.47
 m³ 3.7mu
 u

3-6

		m	m ³	hm ²
1	AK0+420	3.7	2.47	0.67
			2.47	0.67

3.3.3

< Š u

AK0+420

u

2021 12 14

3 u

3.4**3.4.1****3.4.1.1**

Š < 0.62 m³ 2.08hm²
 30cm 0.62 m³u
 t t
 3-7u

3-7Š

<

	m ³	m ³
	2786	2786
	30	30
	3416	3416
	6232	6232

3.4.1.2

Š < 14.52 m³ 14.52
 m³ u
 t t
 3-8u

3-8Š <																
		m ³			m ³			m ³			m ³			m ³		
		10400	32589	42989	10091	79978	90069		631	59218	59849		940	11829	12769	0
1			5955	5955										5955	5955	0
2			5874	5874										5874	5874	0
3		8298	19359	27657	7358	76755	84113			57396	57396		940		940	0
4		2102	1401	3504	2733	3223	5956		631	1822	2453					0
		340		340	340		340									0
		30877	70980	101857	31186	23591	54777		2638	6660	9298		2329	54049	56378	0
1		2015		2015									2015		2015	0
2		314		314									314		314	0
3		26388	69540	95928	26388	15491	41879							54049	54049	0
4		2160	1440	3600	4798	8100	12898		2638	6660	9298					0
		41617	103569	145186	41617	103569	145186		3269	65878	69147		3269	65878	69147	0

3.4.2

3.4.2.1

Š

5520m³ 5520m³

u

3-9

	m ³	m ³
	1155	1010
	10	10
	1670	1340
	2685	2685
	5520	5520

3.4.2.2

8.87 m³

0.83 m³ 6.40 m³ 2.47 m³

0.83 m³ AK0+420 u 3-10u

3-10

	m ³	m ³	m ³	m ³	m ³
	1.13	0.23	0.00	0.00	0.90
	0.04	0.00	0.00	0.00	0.04
	7.70	6.17	0.00	0.00	1.53
	8.87	6.40	0.00	0.00	2.47

Š

<

Š

<

AK0+420

1.53 m³

u

4

4.1

4.1.1

Š	<	t	t
u	4-1u		
4-1Š	<		
		m	842
		m	842
			1
		m ³	2786
		m ³	2786
		m ³	30
		m ³	30
		m	219
		m	219
			3
		m ³	3416
		m ³	3416

4.1.2

2020	3	2021	10	20
u				4-2u
4-2				
		m	586	2020 7 ~9
		m	586	2020 7 ~9
			2	2020 8
		m ³	1155	2020 3 ~5
		m ³	1010	2021 1 ~2
		m ³	10	2020 5
		m ³	10	2020 9
		m	385	2021 9
		m	385	2021 4 ~5
			1	2021 4

		m ³	2685	2021	3
		m ³	2865	2022	3
		m	170	2020	4
		m	165	2020	4 ~5
		m ³	1670	2020	4
		m ³	1340	2021	9

4.1.3

u

2020 3

2021 10

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<

u

u

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<

u

4-3u

4-3

					±
		m	842	586	-256
		m	842	586	-256
			1	2	+1
		m ³	2786	1155	-1631
		m ³	2786	1010	-1776
		m ³	30	10	-20
		m ³	30	10	-20
		m	219	385	+166
		m	219	385	+166
			3	1	-2
		m ³	3416	2685	-731
		m ³	3416	2865	-551
		m	175	170	-5
		m	170	165	-5
		m ³	2010	1670	-340
		m ³	2010	1340	-670

4.2

4.2.1

uŠ

<

4-4u

4-4Š

<

		m ²	539
		m	846
		hm ²	0.01
		m ²	372
		m	219
		hm ²	1.08

4.2.2

4-5u

4-5

		m ²	245	2021	2	~3
		m	382	2021	2	~3
		hm ²	0.01	2020	9	
		m ²	1430	2021	4	~5
		m	215	2022	5	
		hm ²	1.08	2022	4	~2022 6
		m ²	6714	2021	9	~10 2022 4

4-6u

4-6

		40
		44
		43
		15
		21
	m ²	642
	m ²	695
	m ²	499
	m ²	507

4.2.3

u

4-7u

4-7

					±
		m ²	539	245	-294
		m	846	382	-464
		hm ²	0.01	0.01	~ 0.00
		m ²	372	1430	+1058
		m	219	215	-4
		hm ²	1.08	1.08	~ 0.00
		m ²	6714	6714	~ 0.00

u

u

2022 12

Š

〈 GB50434-2018 2.0.6

4-8u

4-8

	hm ²	* hm ²
	0.05	0.05
	0.01	0.01
	1.21	1.19
	0.67	0.65
	1.94	1.90

* Š 〈 GB50434-2018 2.0.6

t 0.2 0.2

0.4 0.4 u u

4.3

4.3.1

		t	
		4-9u	
4-9Š		<	
		m	334
			3
		m	351
		m ²	4095
		m ²	44
		m	410
			4
		m	430
		m ²	4782

4.3.2

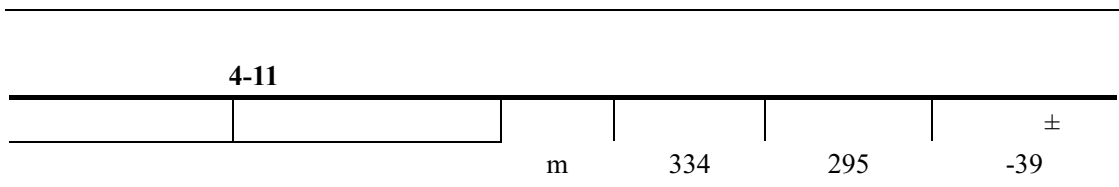
		u		4-10u	
4-10					
		m	295	2020	4 ~6
			3	2020	4 ~5
		m	264	2020	6 ~9
		m ²	4350	2020	4 ~12
		m ²	130	2020	5 ~6
		m	380	2021	4 ~5
			3	2021	4 ~5
		m	410	2021	3 ~4
		m ²	4600	2021	4 ~2022 4
		m ²	6500	2022	4

4.3.3

t

u

u



5

5.1

5-1u

5-1		5-1u
	hm ²	hm ²
	2.85	0.05
	0.09	0.01
	4.06	1.21
	0.67	0.67
	7.67	1.94

2020 3

2021 10

20 u

7.67hm²1.94hm²u

5 } 9

85%

u

u

u

5.2

5.2.1

5.2.1.1

u t t

u

t

6934t/km²·a

t

u

5-2

	(hm ²)	(t/km ² ·a)
	2.85	6800
	0.09	6800
	4.06	6500
	0.67	10150
	7.67	6934

5.2.1.2

7.67hm²1.94hm²

u

446.9t/km²·au

5-3

		(hm ²)	(t/km ² ·a)
		0.02	450
		0.03	400
		0.05	420.0
		0.01	450
		0.01	450.0
		0.04	450
		0.09	400
		1.08	450
		1.21	446.3
		0.67	450
		0.67	450.0
		1.94	446.9

5.2.2

2020 3 2021 10

2020 3 2021 10

2021 10

2022 12 u

5-

4u

5-4

		a	hm ²	(t/km ² ·a)	t
2020		0.8	1.24	6800	67.5
		0.8	0.09	6800	4.9
		0.8	0.67	10150	54.4
					126.8
2021		0.8	2.85	6800	155.0
		0.8	0.09	6800	4.9
		0.8	4.06	6500	211.1
		0.8	0.67	10150	54.4
					425.4
2021		0.2	0.05	420	0.0
		0.2	0.01	450	0.0
		0.2	1.21	446	1.1
		0.2	0.67	450	0.6
					1.7
2022		1.0	0.05	420	0.2
		1.0	0.01	450	0.0
		0.3	1.21	446	1.6
		1.0	0.67	450	3.0
					4.8
				552.2	
				6.5	
				558.7	

558.7t

552.2t

6.5tu

u

u

5.3

u

6**6.1**

$0.67\text{hm}^2\text{u}$
 7.67hm^2
 6.99hm^2

Š
<

u

6-1u

6-1

%	97
	1.0
%	89
%	95
%	96
%	22

u

u

u

6.2

7.67hm^2
 7.67hm^2

$t \quad t \quad t$
 7.63hm^2

97.94%
Š
<
97%

u

6-2u

6-2**hm²**

								%
	2.85	2.85	2.80	0.05	0.05	0.00	0.05	100
	0.09	0.09	0.08	0.01	0.01	0.00	0.01	100
	4.06	4.06	2.85	1.21	1.19	0.00	1.19	98.35
	0.67	0.67	0.00	0.67	0.65	0.00	0.65	97.01

	7.67	7.67	5.73	1.94	1.90	0.00	1.90	97.94
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6.3

500t/km²·a 5

446.9t/km²·a

1.12 Š < 1.0u

6-3u

6-3

	(hm ²)	t/km ² ·a	t/km ² ·a	
	2.85	420.0	500	1.19
	0.09	450.0	500	1.11
	4.06	446.3	500	1.12
	0.67	450.0	500	1.11
	7.67	446.9	500	1.12

6.4

2.95 m³ 2022 9

2.93 m³u 99.32% Š <

89%u

0.55 m³ 0.55 m³ 99.50%

95% u

6-4

	m ³
+	2.95
	2.93
	99.32%
	0.55
	0.55
	99.50%

6.5

1

1.94hm² 2022 12 1.94hm²

1.90hm²

97.94%

97%

u

6-5u

6-5

	hm ²	hm ²	hm ²	hm ²	hm ²	%
	2.85	2.80	0.05	0.00	0.00	100
	0.09	0.08	0.01	0.01	0.00	100
	4.06	2.85	1.21	1.19	0.02	98.35
	0.67	0.00	0.67	0.65	0.02	97.01
	7.67	5.73	1.94	1.90	0.04	97.94

1

2022 12

2

t

0.2

0.2

0.4

0.4 u

u

2

2022 12

1.90hm²

24.77%

22%

u

6-6u

6-6

	hm ²	hm ²	%
	2.85	0.05	1.75
	0.09	0.01	11.11
	4.06	1.19	29.31
	0.67	0.65	97.01
	7.67	1.90	24.77

1

2022 12

2

t

0.2

0.2

0.4

0.4 u

u

7

Š

[2020]161

u

2021 7

4

2022 12

7-1

95.2

„

.u

7-1

2021	3	90	
2021	4	94	
2022	1	94	
2022	2	98	
2022	3	98	
2022	4	98	
		95.2	

8

8.1

Š

<

97%

1.0

89%

95%

96%

22%u

7.67hm²

u

Š

<

2021 7

2021

8

u

u

t

u

97.94%t

1.12t

99.32t

99.50%t

97.94%t

24.77%

8-1u

8-1

%	97	97.94	
	1.0	1.12	
%	89	99.32	
%	95	99.50	

%	96	97.94	
%	22	24.77	

8.2

1

u

2

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u

8.4

1 u
2 t u
3 Š u
< [2020]161 „ .u
4

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u