..... 2

..... 2

..... 3

..... 3

..... 5

..... 5

..... 6

..... 8

..... 9

.....11

.....11

..... 12

..... 13

..... 13

..... 14

..... 16

..... 16

..... 18

..... 21

..... 22

..... 25

..... 25

2003

2015

2309.47m 185m 181m

4.0m 126.73m

40m 40.5m

2015

1.32mm 3.86mm -0.35mm 4.27mm

3.65mm 28.05mm 2.0mm

-

0.04mm 14.10mm 29.07mm

26.90mm

2015 41.24L/min

400L/min

70 kW 34.38m

6000m^3 12.4m

1.395MPa

150MPa 6.0mm

50MPa -13.24MPa 1.71MPa

105.30m

31.00m 32.60m

87.30m 311.30m 231.30m

80.00m -

0.75mm 2.08mm 16.65mm

2015 2015 12 31

2957 136580.02h 312

14707.78h 33 617.17h

133 1764.93h

94m 57m

6 5 1621m

185m 280m

34m 5m 170m

2015 0.3mm

1.40L/min

6.40mm

4.72mm 384.20L/min

333.11L/min 0.5mm

8hí

96.23mm 216.49mm

70m

1821.4L/min 1657.4L/min

2015 12

2015

2 5 7 11 1 4 8 9 12 3 6 1 2

0.5 2014-2015 1-2

1 2 2015

3-5 3 4 1 5 1.5

2015 6-8 6 7 8 7 3.7

6.3 2015 9-11 9 3 10 11 9

2015 12 6

2015 3777 m^3 4510 m^3 1877 1990 16.3 4000 m^3 2003 2014 5.6% 12000m^3/ 39000m^3/s 7 1 8 4200m^3/s 2 19

2015 1 4 3~4 12 1 5 11 1~4 7 8

19900m^3/s 17200m^3/s 33.7% 39.0%

2-1 2-1

2015 17.3 17.2 0.1 39.3 2015 7 30 -0.9 2015 12 17 1042.8mm 1132.3mm 1

15.5m/s 7 2015 5 11 5

61 6 15 7 3

	m^3/s	1877 1990 m^3/s	%	2003 2014 m^3/s	%
1	5780	4350	32.9	4860	18.9
2	5350	4000	33.8	4350	23.0
3	6330	4500	40.7	5090	24.4
4	8860	6720	31.8	7000	26.6
5	8850	12000	-26.3	10500	-15.7
6	16700	18600	-10.2	16300	2.5
7	19900	30000	-33.7	27500	-27.6
8	17200	28200	-39.0	23400	-26.5
9	23500	26600	-11.7	23300	0.9
10	15900	19800	-19.7		

6

6 19

1

2014 9 15 ~2015 6 10 189

291 m^3 5777m^3/s 11 24

1~4 6065m^3/s

39.33m 40.63m

2

2015 5 4 ~5 13

160.4m 155.65m

0.48m 6320m^3/s

5 2 5 18 70.1 m^3

91.4 m^3 21.3 m^3 4

16 ~5 19 ~ 129 m^3

146.6 m^3 17.6 m^3

3

2015 6 7 ~10 6 25 ~7 2

6530m^3/s

3140m^3/s 21.6

3.6 14800m^3/s

1930m^3/s 22.5

2.1

4

2015 6 1

6 2 7 30 10 12

10000m^3/s 8000m^3/s 7000m^3/s

2015 30000m³/s

3 39000m³/s

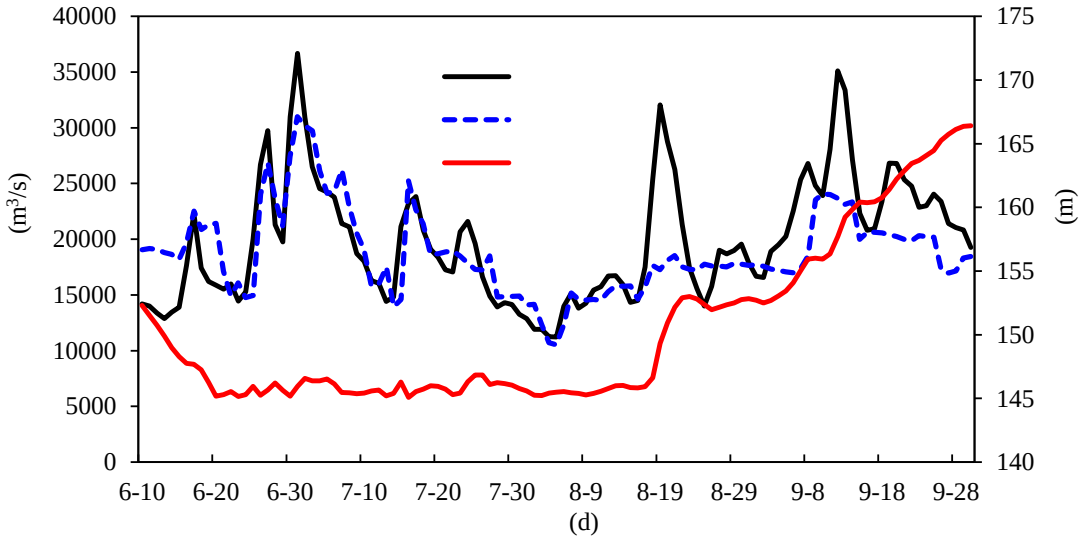
2 2006 1877

29500m³/s 2015 6 10 9 10

75.42 m³

2-2 2015 3

	m³/s		m³/s	m³
1	39000	7 1 8	31000	7.24
2	36000	8 19 8	18000	41.45
3	36500	9 12 14	24000	26.73



2-2 2015

35000m^3/s

35000m^3/s 5 30000m^3/s 3 25000m^3/s

12

2015 9 10 0 175m

156.01m 10 28 9 175m

6 175m

1 9

8 39%

8 8

19 36000 m^3/s

18000m^3/s 152.83m

9 10 0 156.01m

9 12 14 36500m^3/s

9 166.41m

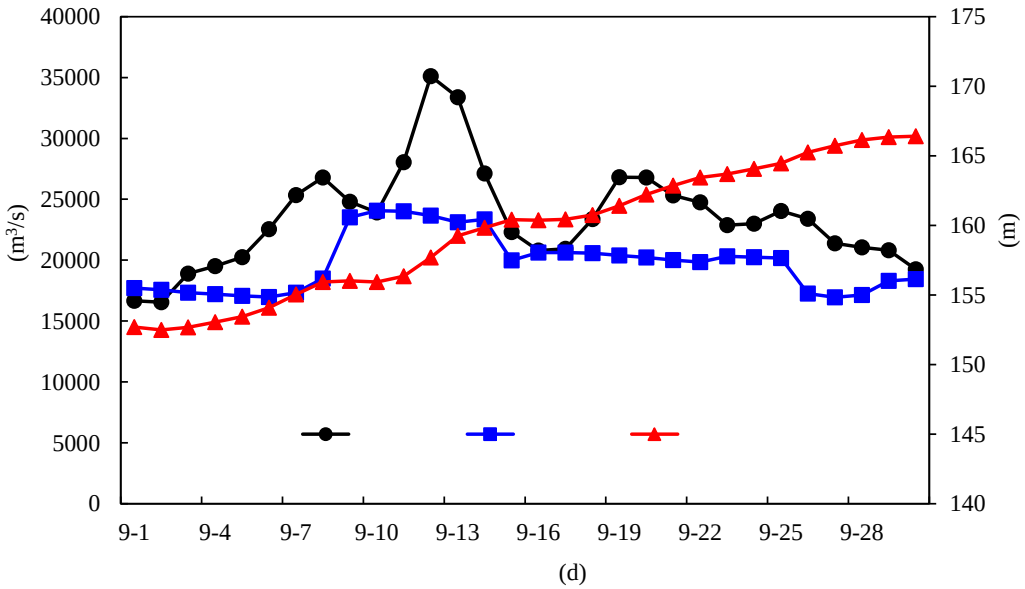
10.4m 77.3 m^3 175m 8.59m

81.1 m^3 9 24500m^3/s

20400m^3/s 17000m^3/s 9 10000m^3/s

9

2-3



2-3 9

2 10

10 9

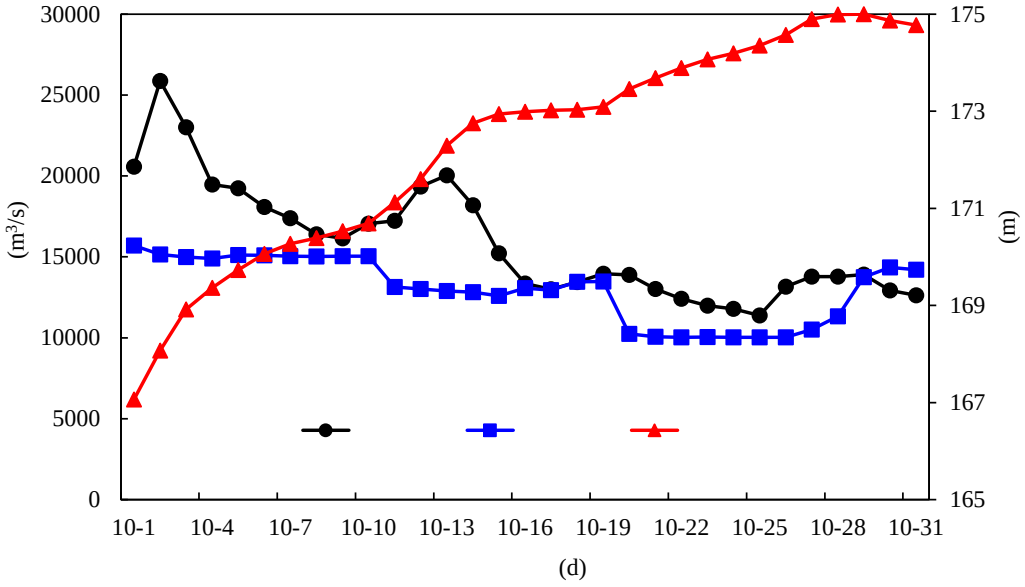
10 28 9 175m 10

8.59m 81.1 m^3 10

13000m^3/s 10000m^3/s 10

8000m^3/s 10

2-4



2-4 10

2015

3867.88h 8252.07h

95.82% 4912.8h

8278.28h 94.5%

2015 6 30 34 34

78.50h 2000 kW 102.5h

2015

2014-2015 26 3
C 16 D 7 2 1
6 30
ALSTOM
3 VGS

2015-2016 2 C 19 C
4 D 9 210
4 3 16
2 1 ALSTOM

2015 3777 m^3 4510 m^3
1877 1990 16.3

2015 kW ћ 4.29 m^3 0.02

100% 870.07 kW ћ 4.91 kW ћ
16.3%
1.4%
2015 310 770
kW

1
2015 12 31 3424

2015 10734 4.4
47.6 11057 t 6408
t 1143 t 2003 6 18
2015 94.3% 84.1%
900h 11.6 68.2
1133.9 8.6 t 12

2015 17045 t
3874t 10898 t 0.64

		7	7
		70.82	61.61
		6	6
		41.06	35.75
		0	0
		0	0
		1	0
		476	0.00
		7	10
		41.43	52
		0	0
		0.00	0.00
		629.31	149.36

2015 100%

0.16% 0.3%

2015

2015 PLC

2015

100

4

8 24

,

2015 2 24

10 800

20 850t

16

2015

5-1 2015 5

		2010 8		2015 160 m^3 GB18918-2002 B 81.1% 75.1%	
		1997		1500t	

2015

2015

185m

2015

3000

2015

1 2

4a

2003 2015 1.72

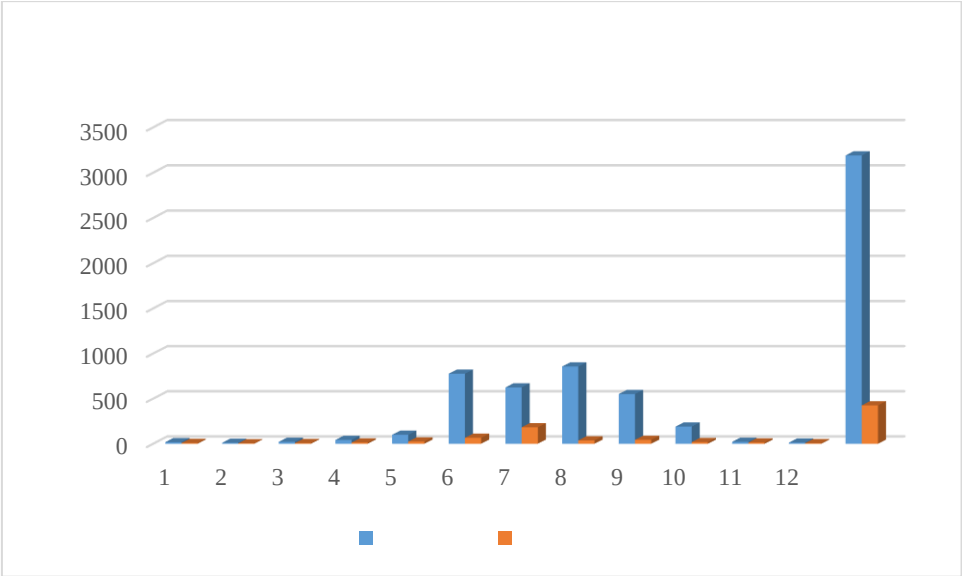
t 1.64 t 68% 2015

0.320 t 1956 2014 92%

12km

2015 0.043 t 2015

0.037 t 2015 5-1

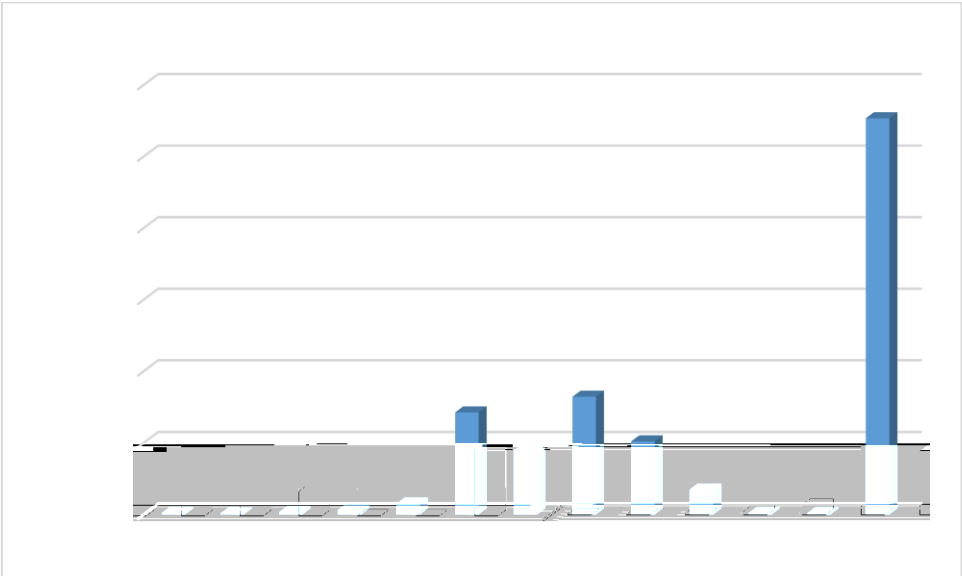


2003 6

2015 12 16.034 t 1.28 t

40% 24.2% 2015 0.278

t 13.3% 2015 5-2



175m

660km 173.4km

26.3% 486.5km

73.7%

2003 3 2015 10

14.521 m^3 0.536

m^3 15.057 m^3

2015 1718.0 m^3

1697.0 m^3 21.0 m^3

5-2 m^3

	-	-	-		-	-	-		
2014.10 -2015.10	-0.032	-0.014	-0.124	-0.170	-0.080	0.019	0.059	-0.002	-0.172
2003.03 -2015.10	-0.268	-0.126	-0.142	-0.536	0.401	8.988	5.668	15.057	14.521

175m

60km

2003 5 ~2015 12

1637.7 m^3

2015 183.1 m^3 224.8

m^3 41.7 m^3

2003 3 2015 10

15.1km 175m 1.617 m^3

33.4m 64.0m

108m

2015

69%

2015

2015

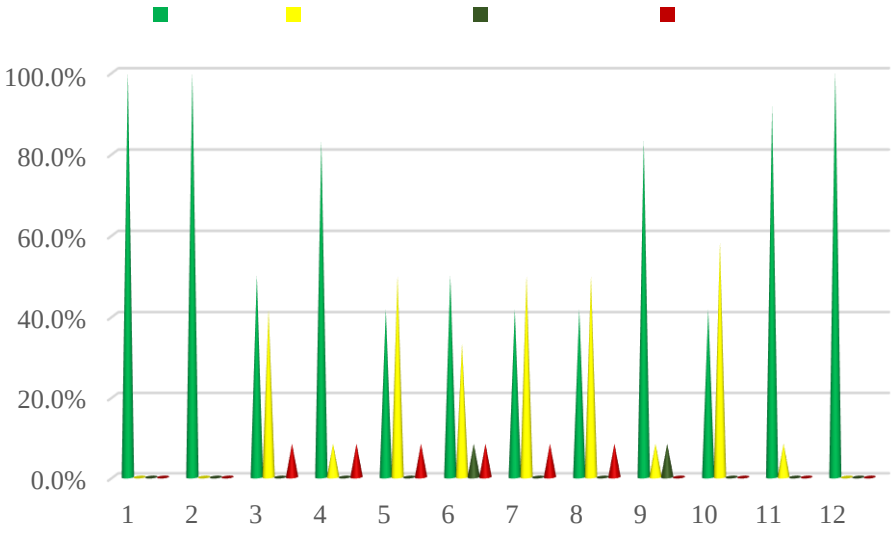
2015

2015	0.0%	69%	26%	1%	4%

2015 3 11

8.3% 58.3% 5 7 8 10

58.3% 1 2 12



1

2015 6 4

4 5

175.3m 173m

4-6 9

8 9 -

2

2015

- - -

2015

1

2015 10

2012

2

2014 2015

PIT T

1800

3

2015

4

2013 2014

2015

2015

2015 9

30

DNA

6

2014

2015

23 25000 6100

12

15000 1 2014

- -

7

2015 4

3000 2013

2800 30-40cm 1-2kg 2011

200 100-120cm 7-10kg

2015 5

16

23 2015

105

2015

2.3

1984 2015

57