



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

**WATER RESOURCE INFORMATION MANAGEMENT
LIMPOPO PROVINCE**

**INTERIM REPORT: STATUS ON MONITORING &
SURFACE WATER LEVEL TRENDS
Up to 01 June 2020**

GH4339



Tzaneen Dam: Photo courtesy of Willie and Mariette Botha

**D Viljoen
09 June 2020**

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1. EXECUTIVE SUMMARY

The information presented in this report is based on the status of all the major dams in the province up to 01 June 2020.

Only 40% of the dams in Limpopo Province have less water than the corresponding period last year and 6 dams are below 40%. The average storage capacity for the province is 67.5% comparing to 63.6% the previous year.

The following dams are below 40% and gives reason for concern:

1. Middle Letaba Dam 3.2%
2. Doringdraai Dam 11.8%
3. Ebenezer Dam 16.9
4. Tzaneen Dam 19.9%
5. Modjadji Dam 11.0%
6. Tours Dam 27.7

The average storage volume of the dams in the Limpopo WMA is 400 million cubic meters (78.1%) and is 4.64 million cubic meters more than the corresponding period last year (77.2%).

The average storage volume of the dams in the Olifants River catchment is 639.8 million cubic meters (62.2%) and is 55.44 million cubic meters more than the corresponding period last year (56.7%).

The challenge in both WMAs is that there are smaller dams, which supply water to communities that still need to be monitored. Resources need to be put in place before monitoring of these dams can be considered. Water level monitoring infrastructure at these dams is non-existing or totally dilapidated, very little design, as built and survey information exists. This need to be addressed before any form of water level monitoring can be considered. The Thapane and Seshego Dams are examples of this.

Attached in the report the following information can be found:

- A summary of dam capacities in percentage and million cubic meters, pages 8, 9
- A graph indicating the comparison of dams within the provincial boundaries of Limpopo with the national storage trend, page 10.
- Individual graphs of storage trends of the major dams within the provincial boundaries of Limpopo, pages 11-33.

The SAWS indicated the following:

“The multi-model rainfall forecast for mid- and late-winter (Jun-Jul-Aug, Jul-Aug-Sep) indicate increased chances of above-normal rainfall over the South-Western and Southern parts of the country with drier than normal conditions throughout the rest of South Africa. In general, most of the country is expected to experience above-normal temperatures during winter with the exception of below-normal minimum temperatures for the north-eastern half of the country”.

2. MONITORING NETWORK

The hydrological monitoring network for the Limpopo Province consists of the following:

81 river flow gauging stations (excluding canals and pipelines)
22 dam gauging stations
16 evaporation stations

3. OVERVIEW

Drainage Region maps of the two Water Management Areas including the dams which are being monitored and used in the compilation of this report are found on pages 5-7.

A summary of dam capacities in percentage and million cubic meters is attached; see pages 8, 9.

A graph indicating the comparison of dams within the provincial boundaries of Limpopo with the national storage trend is attached, page 10.

Individual graphs of storage trends of the major dams within the provincial boundaries of Limpopo are attached, pages 11-33.

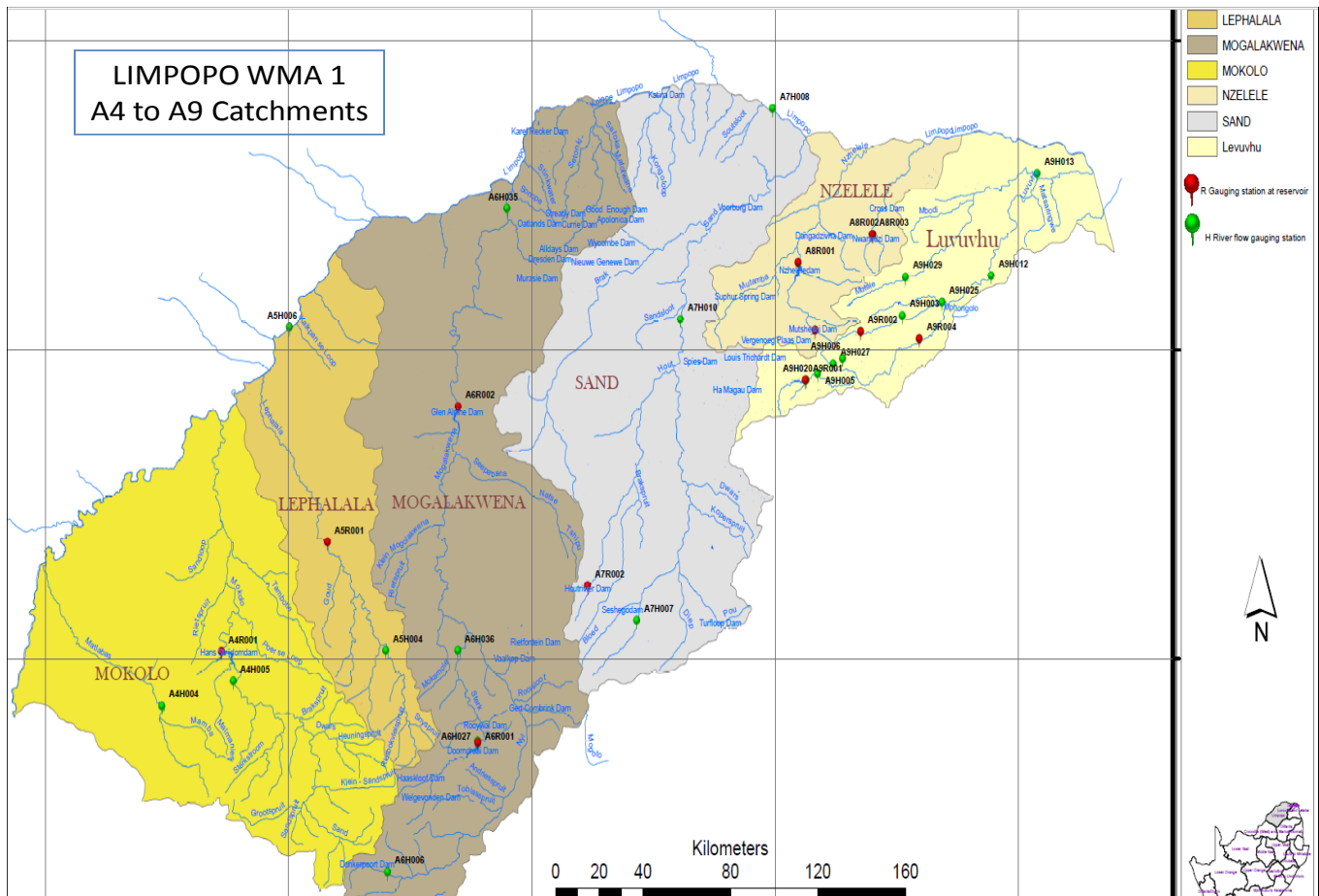
The following table indicates some river flows as at 09 June 2020:

STATION NR	RIVER	PLACE	FLows AS ON 09/06/2019 (m ³ /s)
A4H005	Mokolo	Dwaalhoek	0.01
A7H008	Limpopo	Beit Bridge	No flow
A9H012	Levuvhu	Mhinga	3.21
A9H029	Mutale	Tengwe	No flow
A9H030	Levuvhu	Nandoni Dam	0.77
B8H008	Great-Letaba	Letaba Ranch	0.4
B8H018	Great-Letaba	Engelhardt Dam (KNP)	0.42
B8H033	Klein Letaba	Tabaan	No flow
B8H046	Politsi	Turksvygbult (Outflow at Magoebaskloof Dam)	0.11
B8H050	Great Letaba	Doringhoek (Outflow at Tzaneen Dam)	1.54

Please note above-mentioned information is based on real-time data and have not been verified with physical gauge plate observations!

4. LIMPOPO WATER MANAGEMENT AREA

The WMA consists of secondary drainage areas A1 to A9, of which A4 to A9 were addressed in this report.



4.1 A4 Drainage Area (Matlabas, Mokolo Rivers)

A graph of the Mokolo Dam (A4R001) is attached as no other dam exists in the A4 hydrological monitoring network.

4.2 A5 Drainage Area (Lephalala River)

Two small dams exist in the A5 hydrological network namely the Susandale Dam (A5R001) and the Vischgat Dam (A5R002). Owing to their relatively small storage volumes of approximately 0.6 million cubic meters in total, these dams have not been included in this report.

4.3 A6 Drainage Area (Nile, Sterk, Mogalakwena and Dorps Rivers)

Graphs of the Doorndraai Dam (A6R001) and Glen Alpine Dam (A6R002) are attached as no other dams exist in the A6 hydrological monitoring network.

It must be noted that the full capacity storage of Glen Alpine Dam is only 18.889 million cubic and therefore the dam fills and empties much faster than Doorndraai Dam! The graph of Glen Alpine clearly indicates this!

4.4 A7 Drainage Area (Sand, Blood, Diep, Hout, Dwars and Brak Rivers)

Hout River Dam is the only dam equipped with gauge plates. Data capturing and real-time equipment has been installed at Hout River Dam. The dam is currently on 74.2% (4.92 million m³)

Graph is attached.

4.5 A8 Drainage Area (Nwanedzi and Nzhelele Rivers)

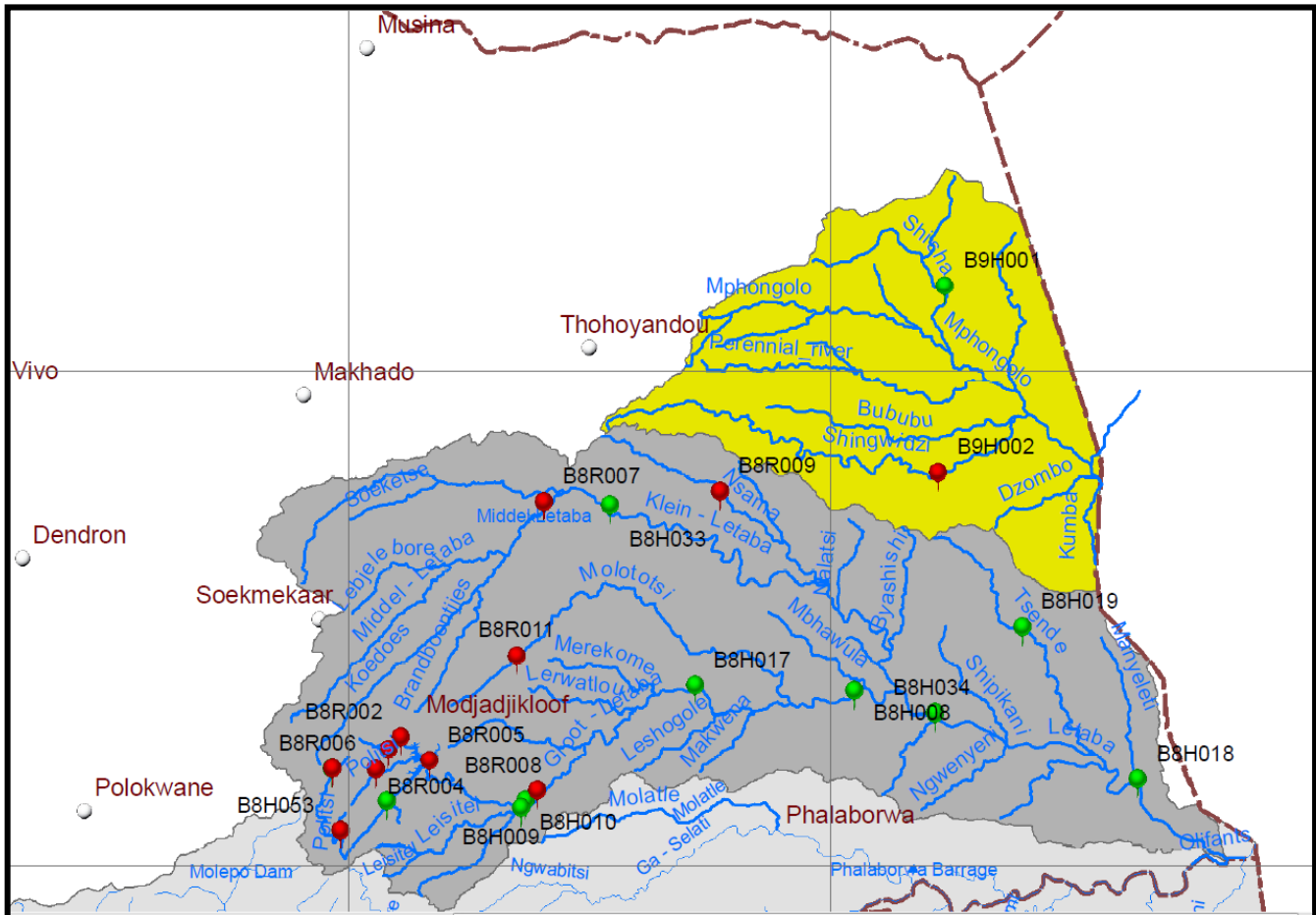
Graphs for the Nzhelele Dam (A8R001), Luphephe (A8R002), Nwanedzi (A8R003) and Mutshedzi (A8R004) Dams are attached.

4.6 A9 Drainage Area (Mutale, Luvuvhu Rivers)

Graphs for the Albasini Dam (A9R001), Vondo Dam (A9R002) and Nandoni (A9R004) Dams are attached.

5. OLIFANTS WATER MANAGEMENT AREA

The WMA consists of secondary drainage areas B1 to B9, monitoring sites in the B3 to B5 and B7 to B9 were also addressed.



5.1 B3 Drainage Area (Olifants, Elands, Bloed and Selons Rivers)

For information as well as operational matters a graph of Rust de Winter Dam (B3R001) has been included.

5.2 B4 Drainage Area (Steelpoort River)

For information as well as operational matters a graph of De Hoop Dam (B4R007) has been included.

5.3 B5 Drainage Area (Olifants River)

For information as well as operational matters the graph of Flag Boshielo Dam (B5R002) has been included in this report.

B7 Drainage Area (Klaserie and Olifants Rivers)

For information as well as operational matters the graphs of Klaserie Dam (B7R001) and Tours Dam (B7R003) have been included in this report.

5.4 B8 Drainage Area (Groot, Middle and Klein Letaba Rivers)

Graphs for Ebenezer Dam (B8R001), Magoebaskloof Dam (B8R003), Tzaneen Dam (B8R005), Dap Naude Dam, Middle-Letaba Dam (B8R007), Nsami Dam (B8R009) and Modjadji Dam (B8R011) are attached.

5.6 B9 Drainage Area (Shingwedzi, Phugwane and Mphongolo Rivers)

Only a limited part of this drainage area falls outside the Kruger National Park!

There are no existing dam monitoring stations in the hydrological network for this drainage area!

Levels of dams in Limpopo falling in the Limpopo WMA 1 (01 June 2020)

Full Supply Capacity Average for Limpopo WMA (%)	Dam	Full Supply Capacity in Millions m ³	Current Capacity in Millions m ³	Capacity in % Previous Year	Capacity in % Previous Week	Current Capacity in %
78.1	Mokolo	145.77	86.84	79.10	59.60	59.60
	Doorndraai	43.76	5.17	16.20	12.00	11.80
	Glen Alpine	18.89	16.25	7.10	87.60	86.00
	Hout River	6.63	4.91	48.50	74.90	74.20
	Nzhelele	51.23	46.17	74.40	90.80	90.10
	Luphephe	13.98	13.89	69.70	100.00	99.30
	Nwanedzi	5.14	5.07	75.10	99.40	98.60
	Mutshedzi	2.34	2.35	94.00	100.70	100.70
	Albasini	28.20	21.07	73.60	75.20	74.70
	Vondo	30.45	30.80	98.40	101.20	101.20
	Nandoni	166.11	167.49	98.60	100.60	100.80

Levels of dams in Limpopo falling in Olifants WMA 2 (01 June 2020)

Full Supply Capacity Average (%) Olifants WMA	Dam	Full Supply Capacity in Millions m ³	Current Capacity in Millions m ³	Capacity in % Previous Year	Capacity in % Previous Week	Current Capacity in %
62.2	Rust de Winter	28.19	28.19	73.10	100.00	100.00
	Tonteldoos	0.19	0.19	100.50	99.70	99.70
	Vlugkraal	0.44	0.42	94.00	95.10	93.60
	De Hoop	348.70	332.83	88.00	95.60	95.40
	Flag Boshielo	185.13	186.54	71.00	100.40	100.80
	Klaserie	5.60	5.75	100.30	103.20	102.50
	Tours	6.08	1.68	44.40	28.20	27.70
	Ebenezer	69.14	11.67	66.60	17.30	16.90
	Hans Merensky	1.23	1.23	101.60	100.80	100.80
	Magoebaskloof	4.84	4.84	100.20	100.10	100.10
	Vergelegen	0.25	0.26	98.60	101.00	101.60
	Tzaneen	156.53	31.11	16.30	20.10	19.90
	Dap Naude	1.94	1.89	98.00	98.30	97.40
	Middle-Letaba	171.93	5.49	6.60	3.30	3.20
	Thabina	3.09	2.96	98.75	98.39	95.87
	Nsami	21.87	12.66	49.40	59.00	57.90
Modjadji	7.20	1.84	17.60	26.40	25.60	

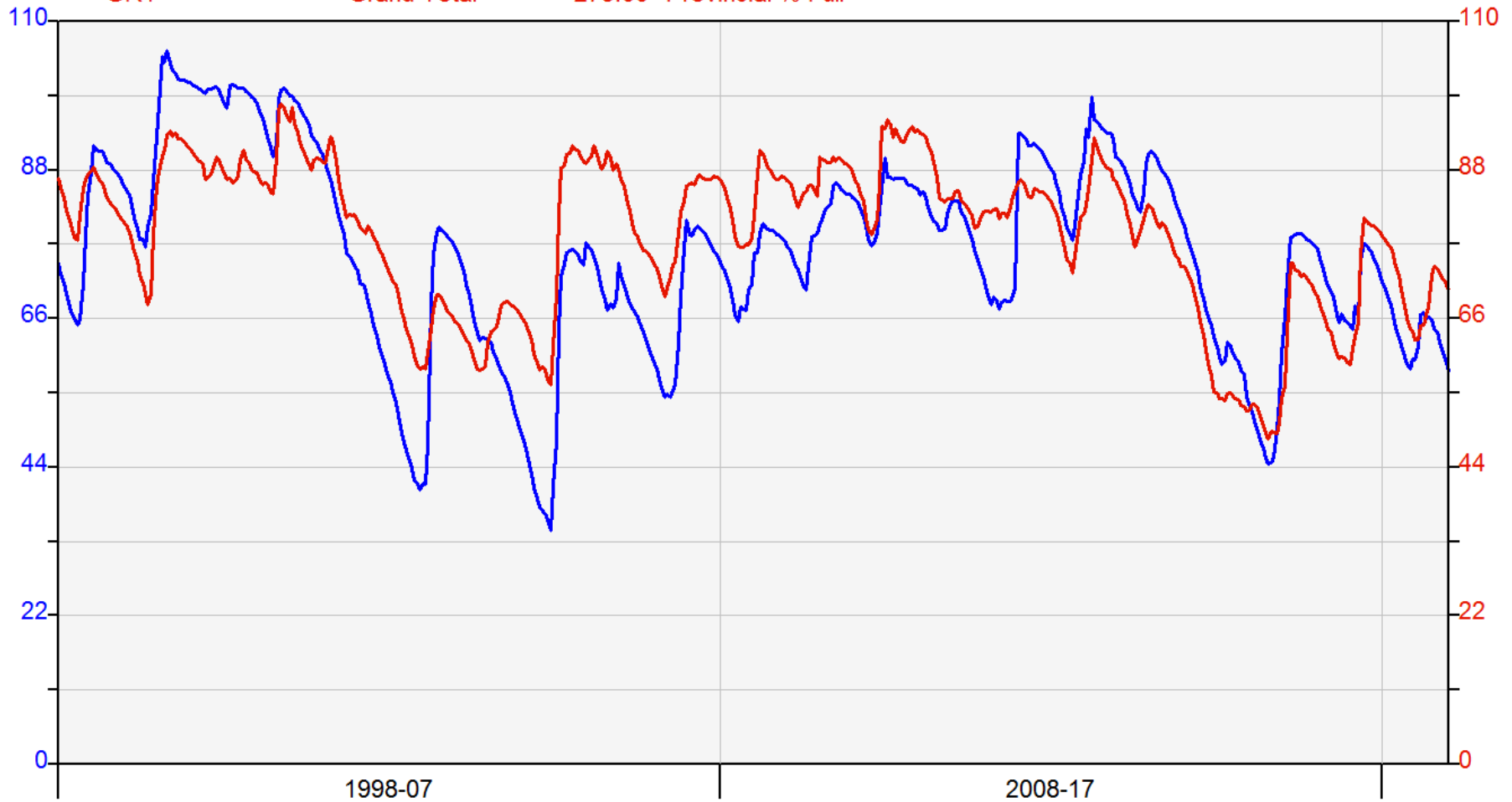
Department of Water and Sanitation

HYPLOT V133 Output 21/08/2019

Period 21 Year 01/08/1998 to 01/08/2019

1998-2019

— LP Limpopo 275.00 Provincial % Full
— GRT Grand Total 275.00 Provincial % Full



Note: Due to the upgrade of the Tzaneen Server this graph could not be updated at the time of compilation of this report!

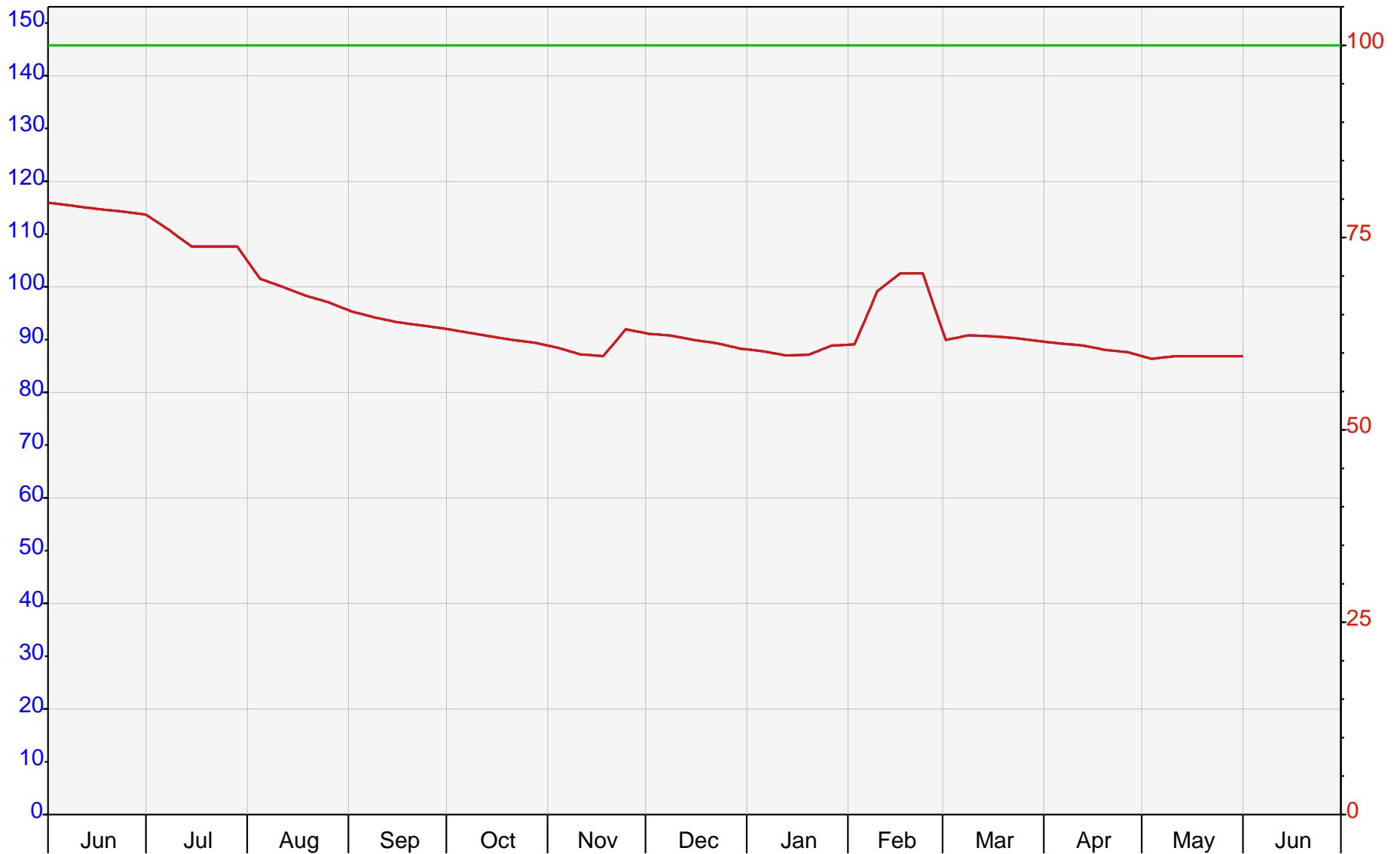
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A4R001 Mokolo Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- A4R001 Mokolo Dam 210.00% Full (nett) Weekly Reading WB
- A4R001 Mokolo Dam 210.00% Full (nett) TT



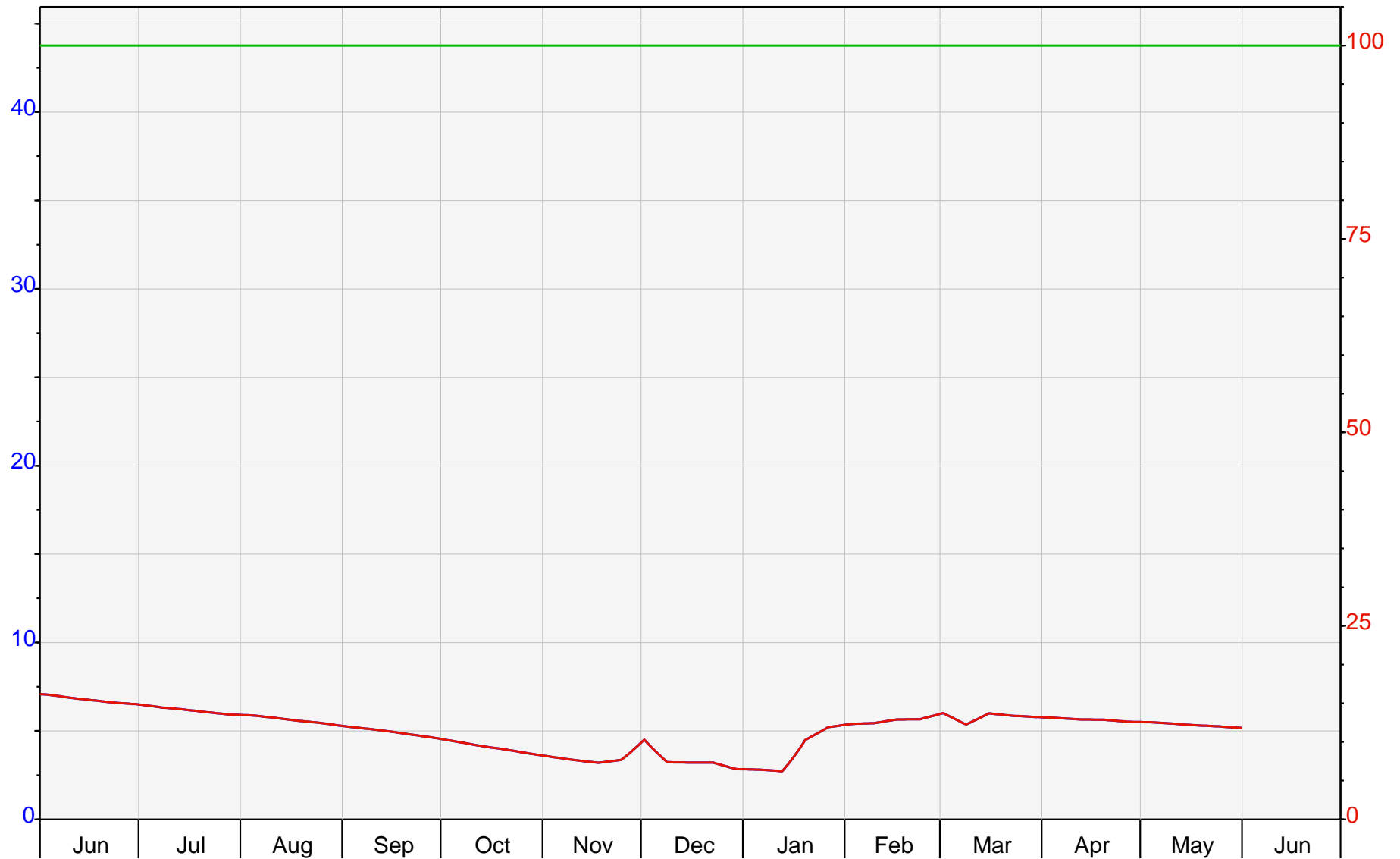
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A6R001 Doorndraai Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- A6R001 Doorndraai Dam 210.00% Full (nett) Weekly Reading WB
- A6R001 Doorndraai Dam 210.00% Full (nett) TT



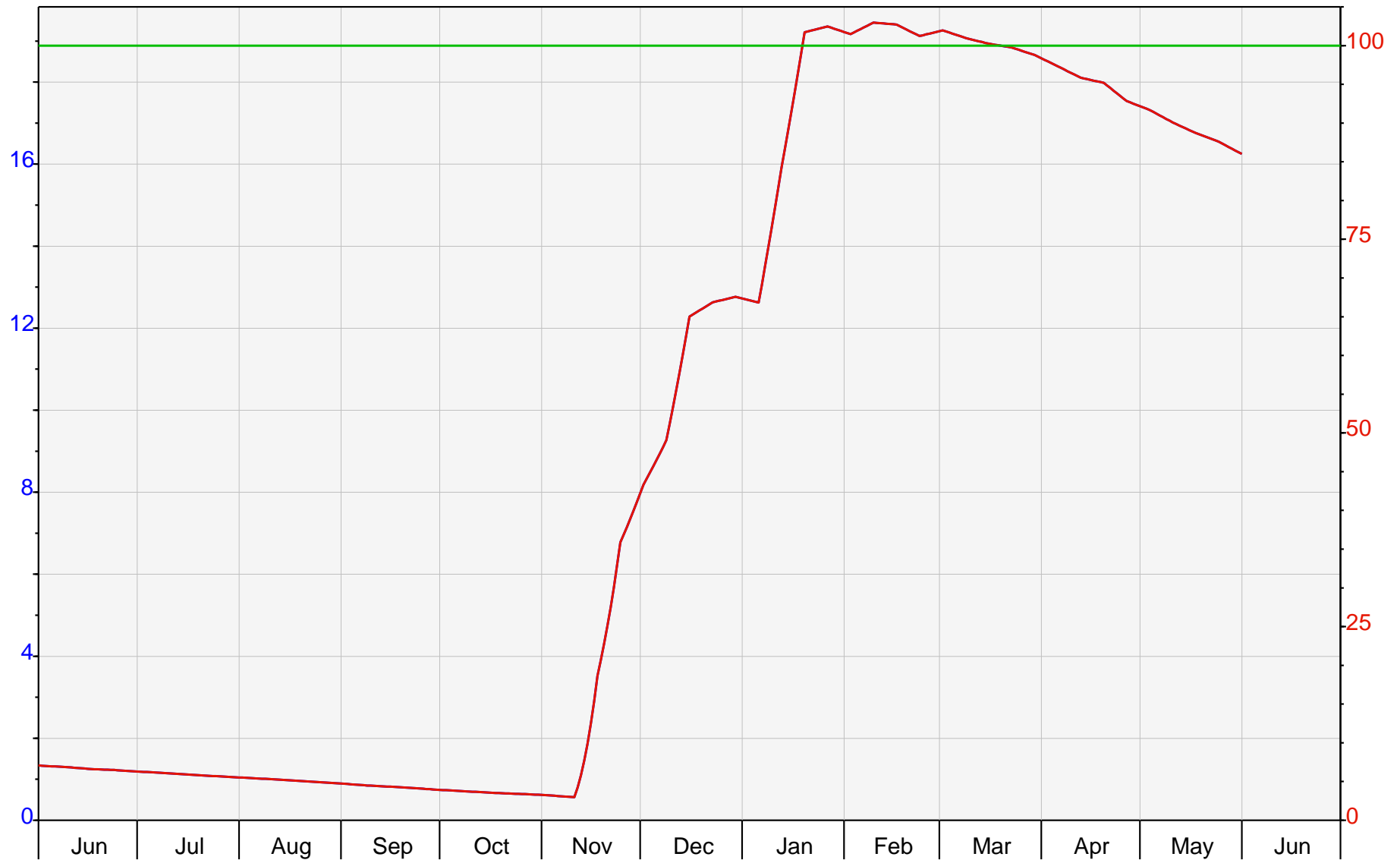
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A6R002 Glen Alpine Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- A6R002 Glen Alpine Dam 210.00% Full (nett) Weekly Reading WB
- A6R002 Glen Alpine Dam 210.00% Full (nett) TT



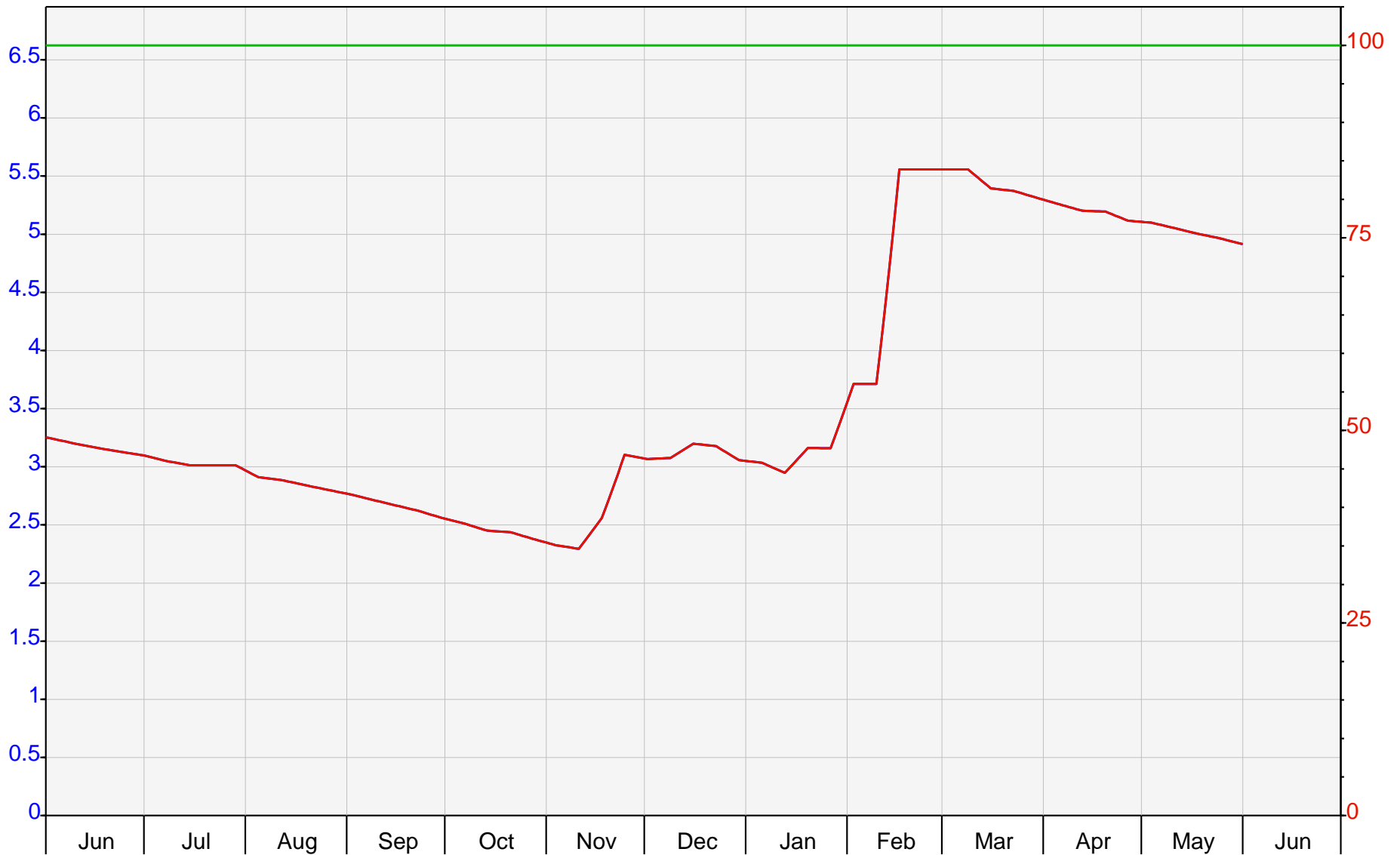
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A7R002 Houtrivier Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- A7R002 Houtrivier Dam 210.00% Full (nett) Weekly Reading WB
- A7R002 Houtrivier Dam 210.00% Full (nett) TT



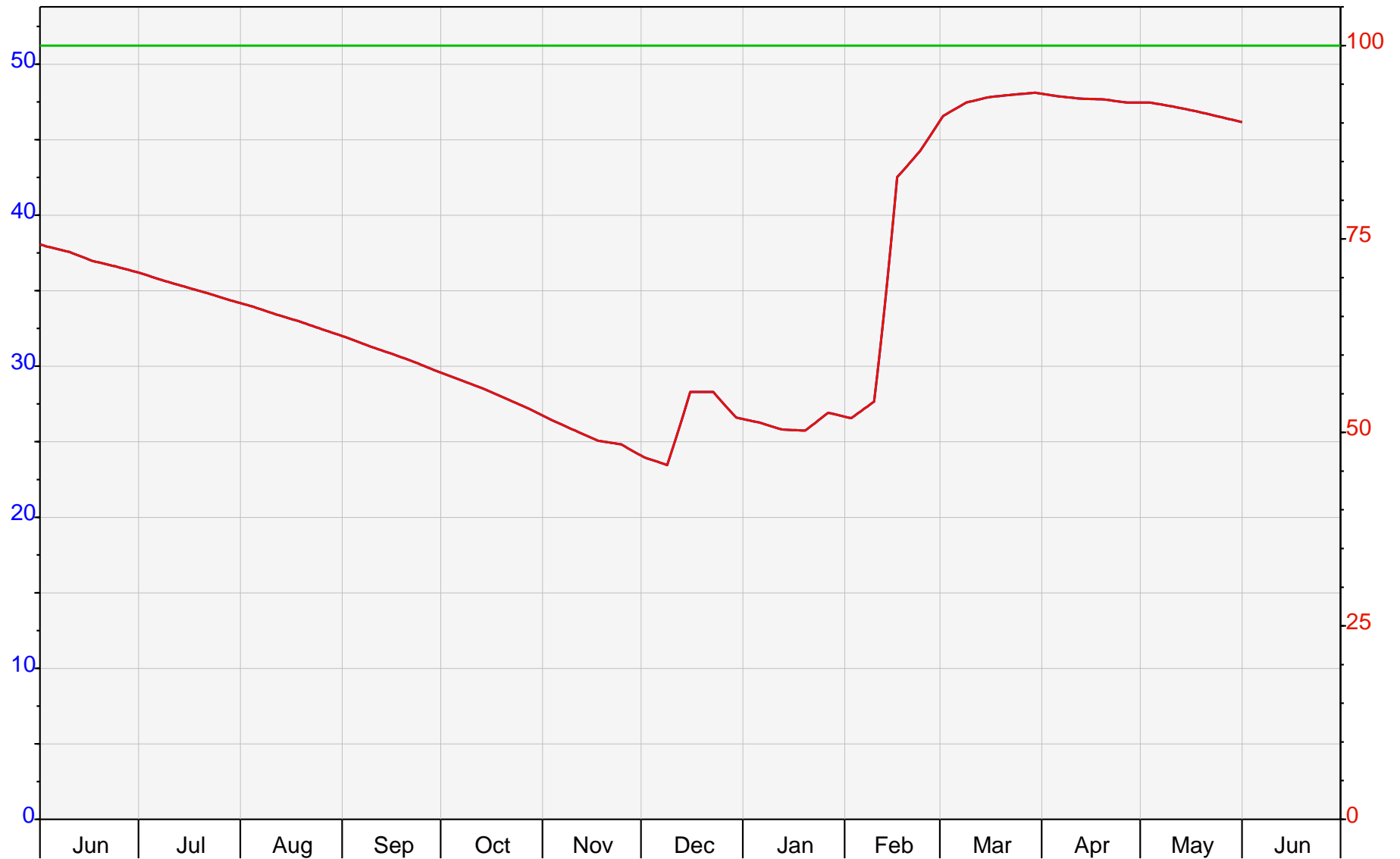
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A8R001 Nzhelele Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- A8R001 Nzhelele Dam 210.00% Full (nett) Weekly Reading WB
- A8R001 Nzhelele Dam 210.00% Full (nett) TT



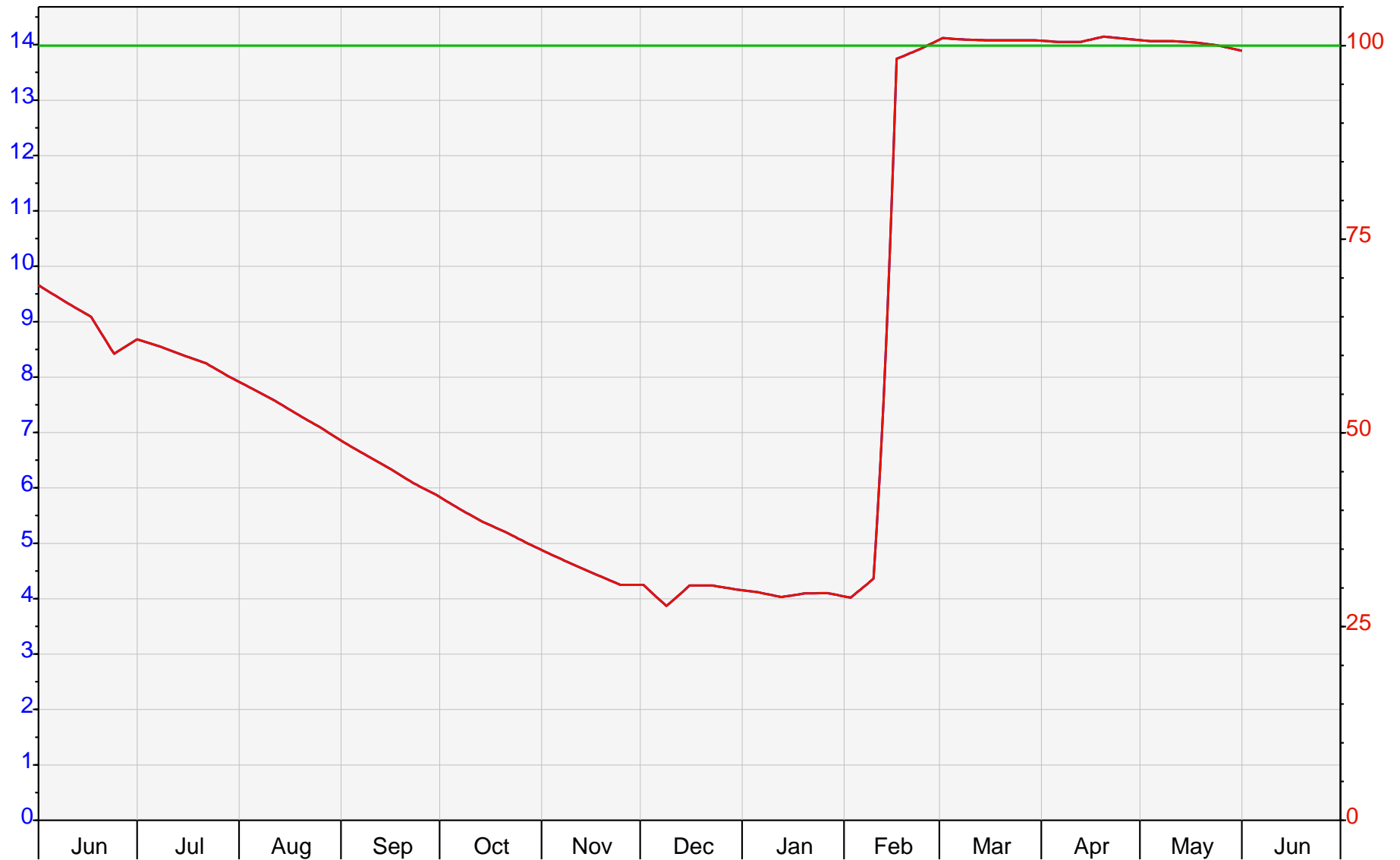
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A8R002 Luphephe Dam 198.00Res Nett Cap (MCM) Weekly Reading WB
- A8R002 Luphephe Dam 210.00% Full (nett) Weekly Reading WB
- A8R002 Luphephe Dam 210.00% Full (nett) TT



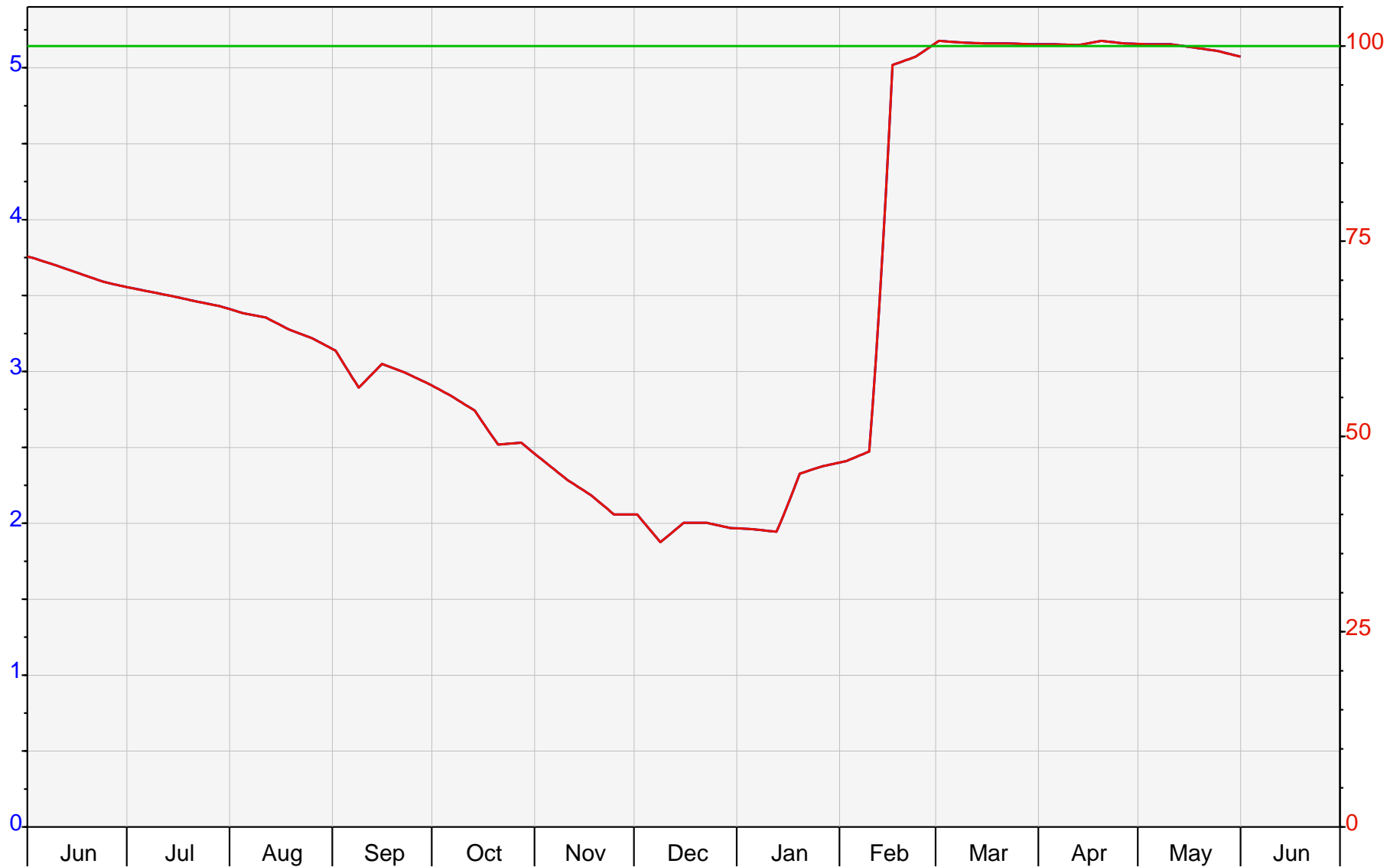
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A8R003 Nwanedzi Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- A8R003 Nwanedzi Dam 210.00% Full (nett) Weekly Reading WB
- A8R003 Nwanedzi Dam 210.00% Full (nett) TT



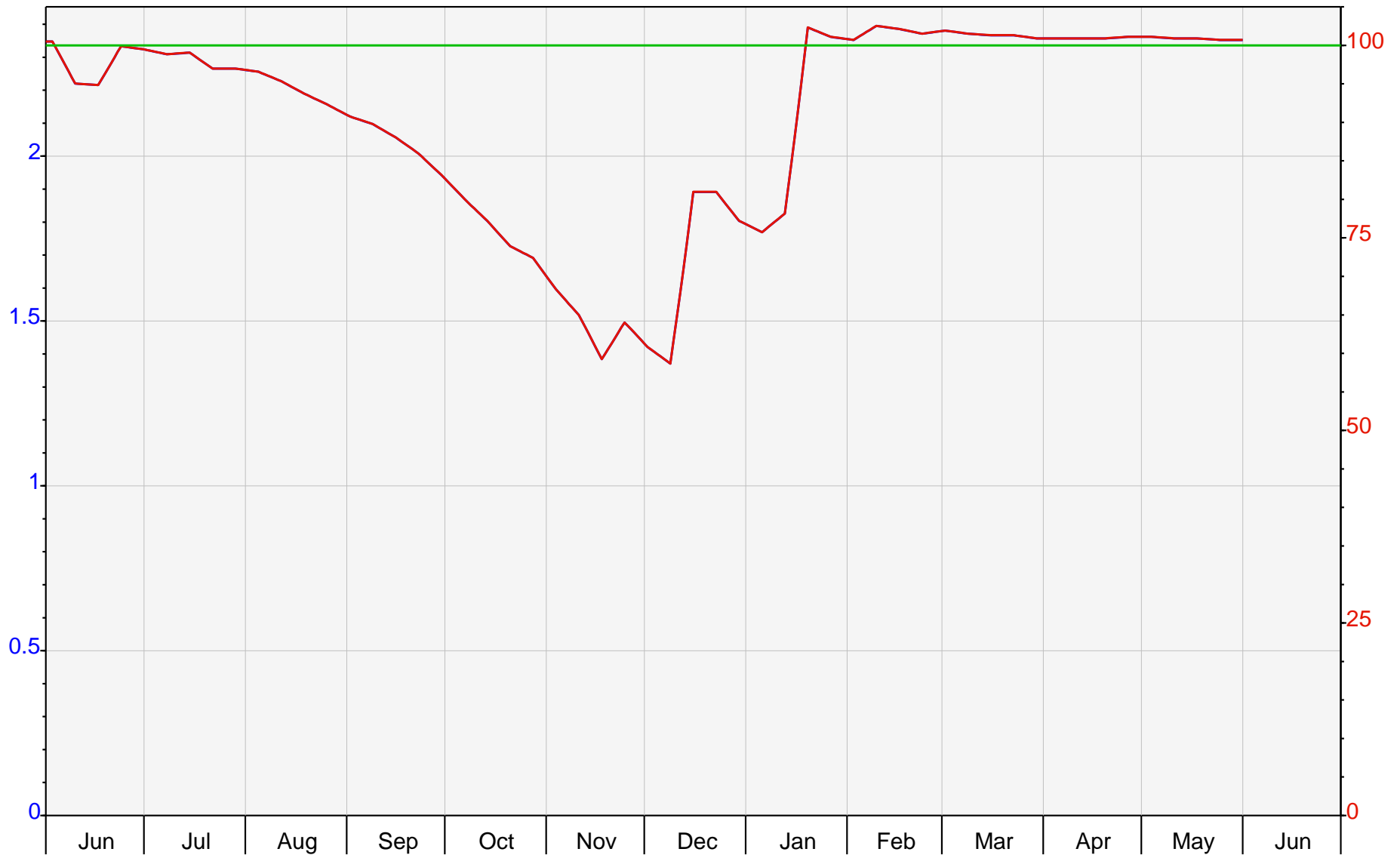
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A8R004 Mutshedzi Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- A8R004 Mutshedzi Dam 210.00% Full (nett) Weekly Reading WB
- A8R004 Mutshedzi Dam 210.00% Full (nett) TT



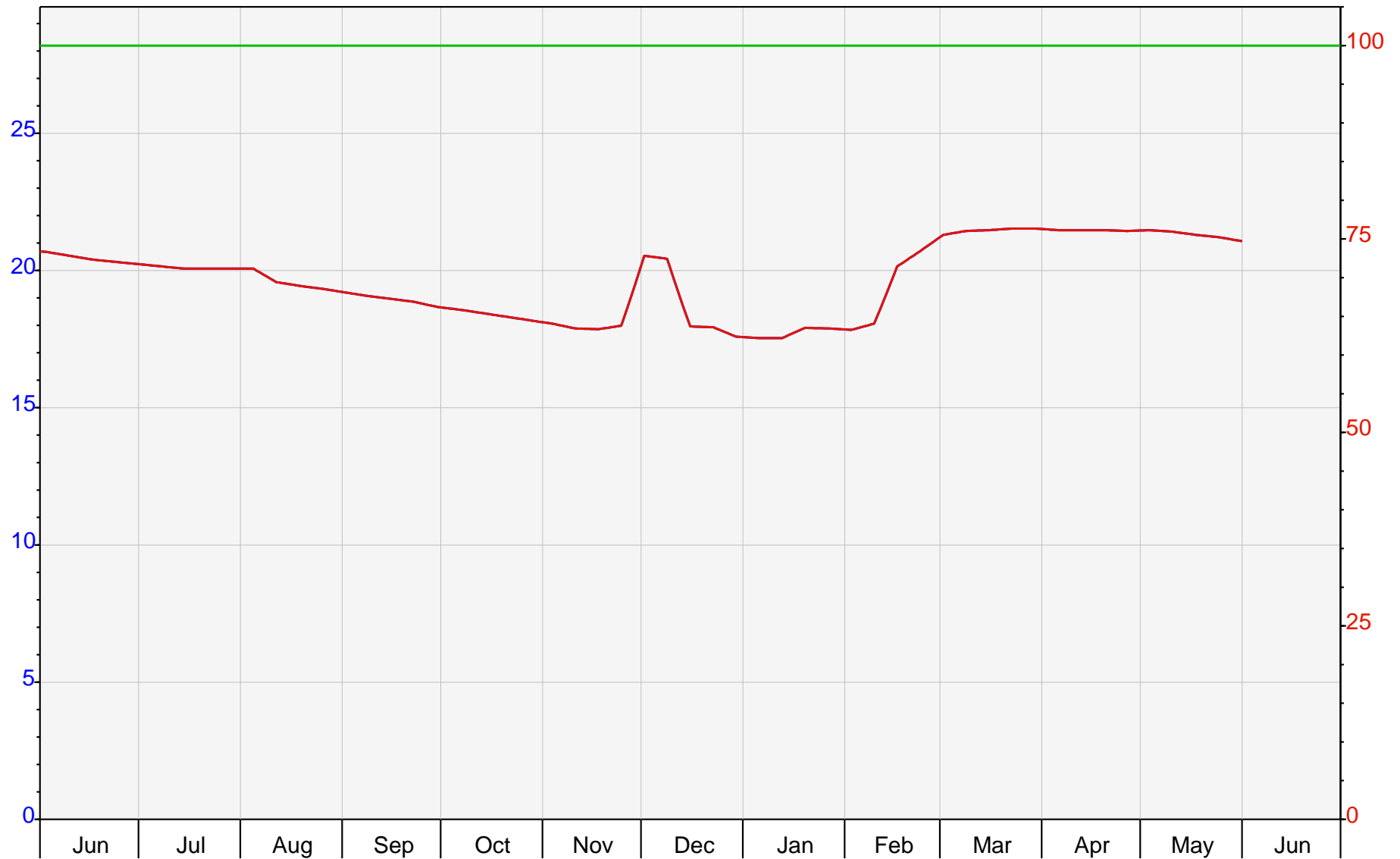
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A9R001 Albasini Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- A9R001 Albasini Dam 210.00% Full (nett) Weekly Reading WB
- A9R001 Albasini Dam 210.00% Full (nett) TT



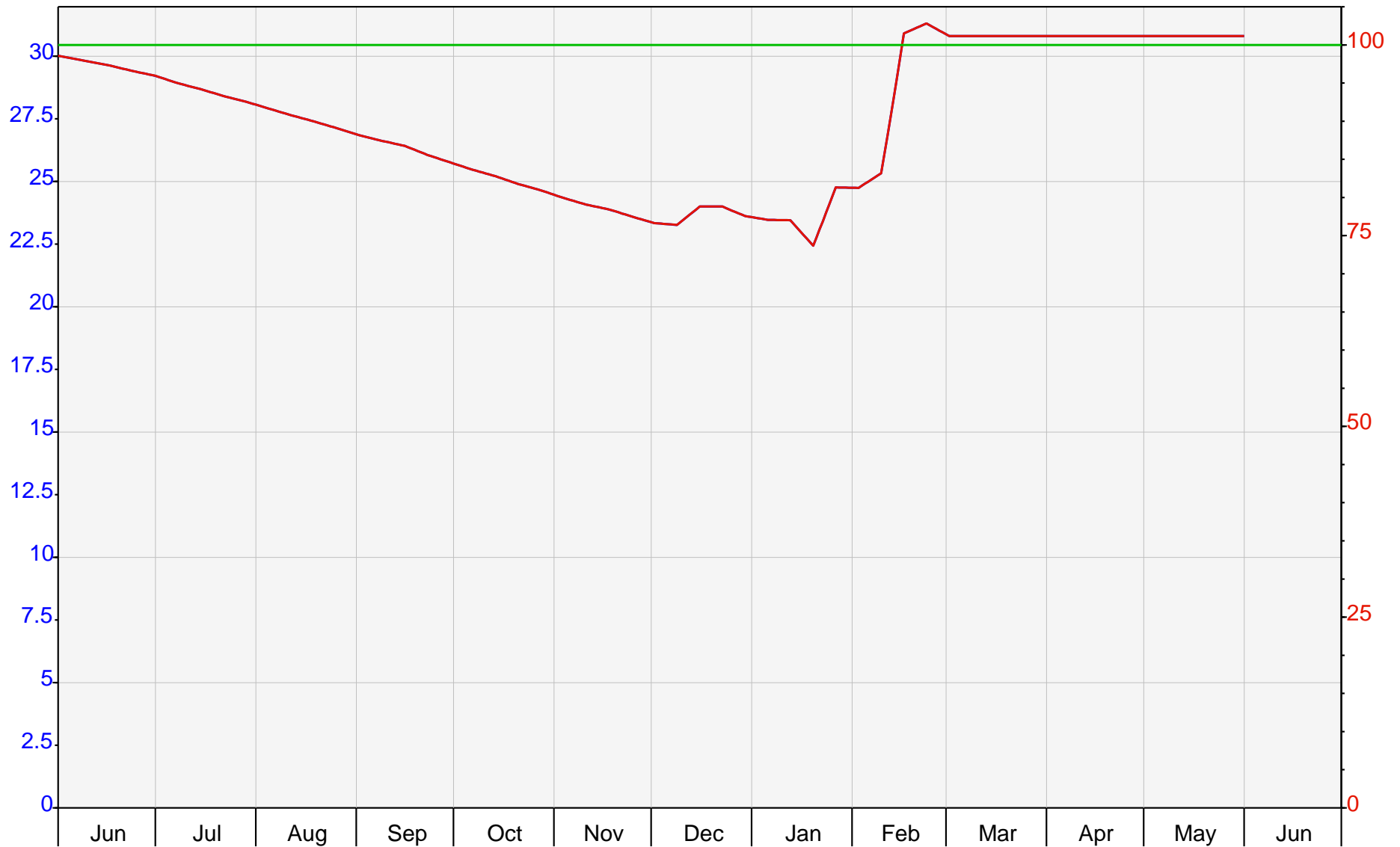
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A9R002 Vondo Dam 198.00Res Nett Cap (MCM) Weekly Reading WB
- A9R002 Vondo Dam 210.00% Full (nett) Weekly Reading WB
- A9R002 Vondo Dam 210.00% Full (nett) TT



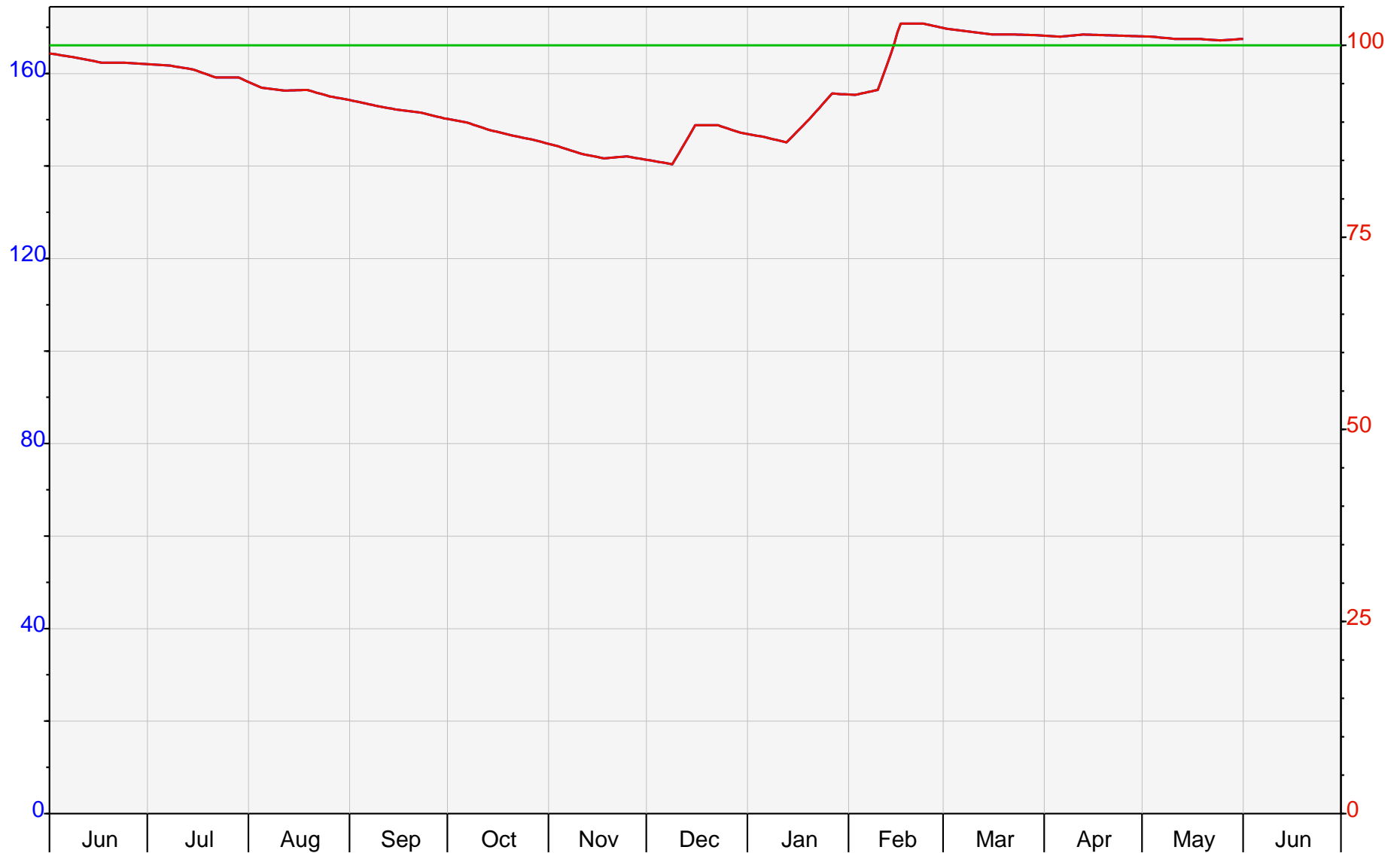
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- A9R004 Nandoni Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- A9R004 Nandoni Dam 210.00% Full (nett) Weekly Reading WB
- A9R004 Nandoni Dam 210.00% Full (nett) TT



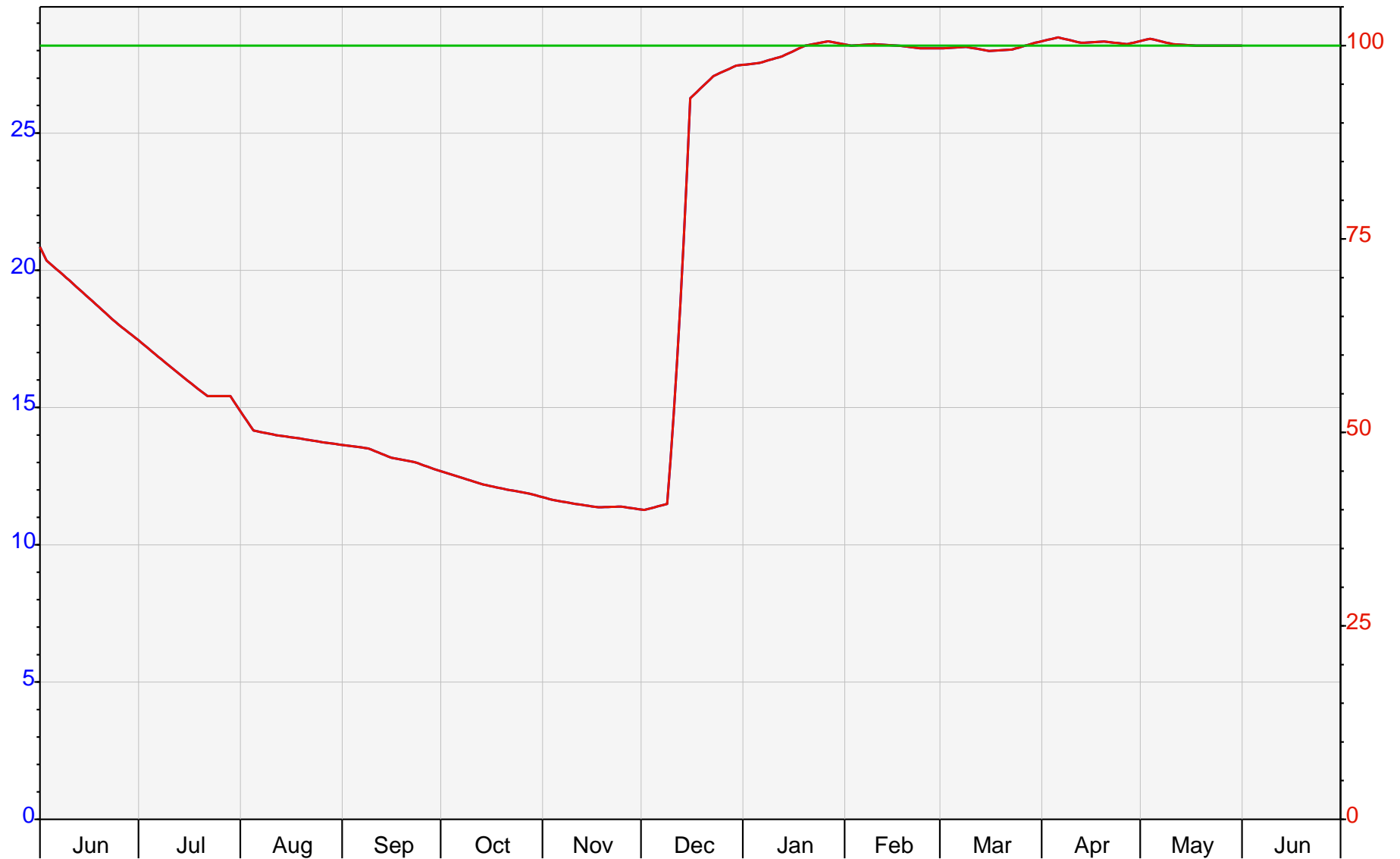
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B3R001 Rust De Winter Dam 198.00Res Nett Cap (MCM) Weekly Reading WB
- B3R001 Rust De Winter Dam 210.00% Full (nett) Weekly Reading WB
- B3R001 Rust De Winter Dam 210.00% Full (nett) TT



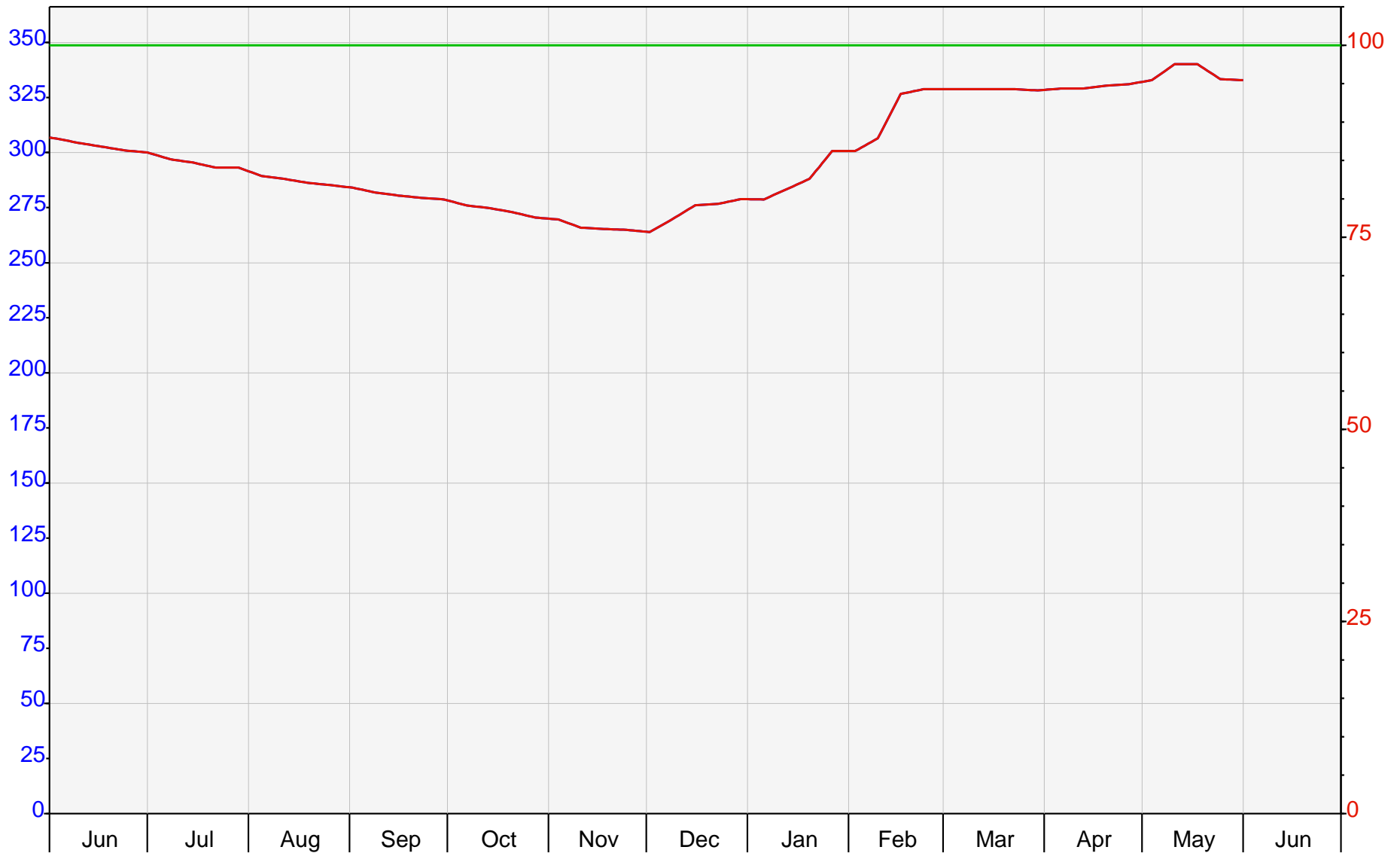
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B4R007 De Hoop Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- B4R007 De Hoop Dam 210.00% Full (nett) Weekly Reading WB
- B4R007 De Hoop Dam 210.00% Full (nett) TT



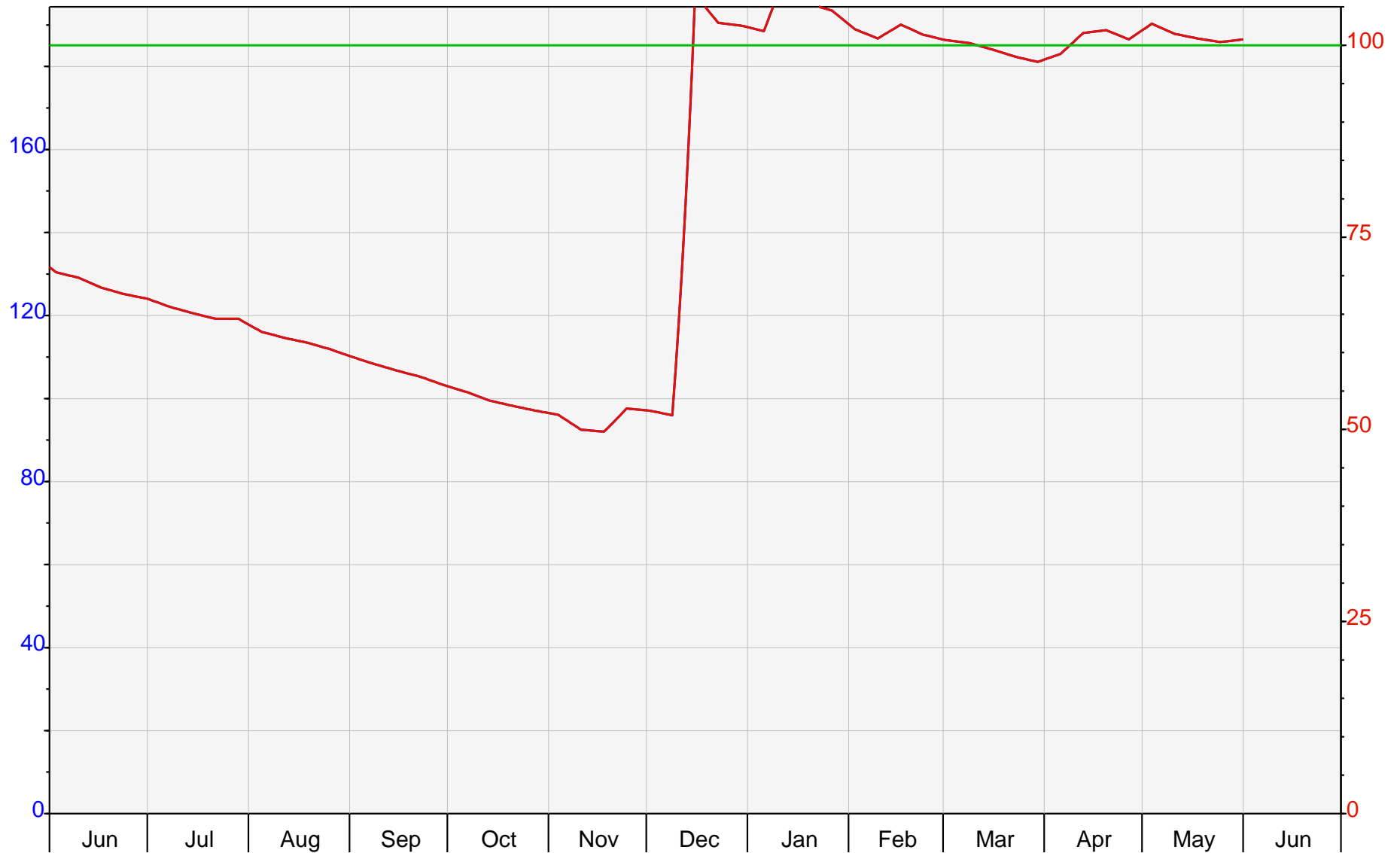
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B5R002 Flag Boshielo Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- B5R002 Flag Boshielo Dam 210.00% Full (nett) Weekly Reading WB
- B5R002 Flag Boshielo Dam 210.00% Full (nett) TT



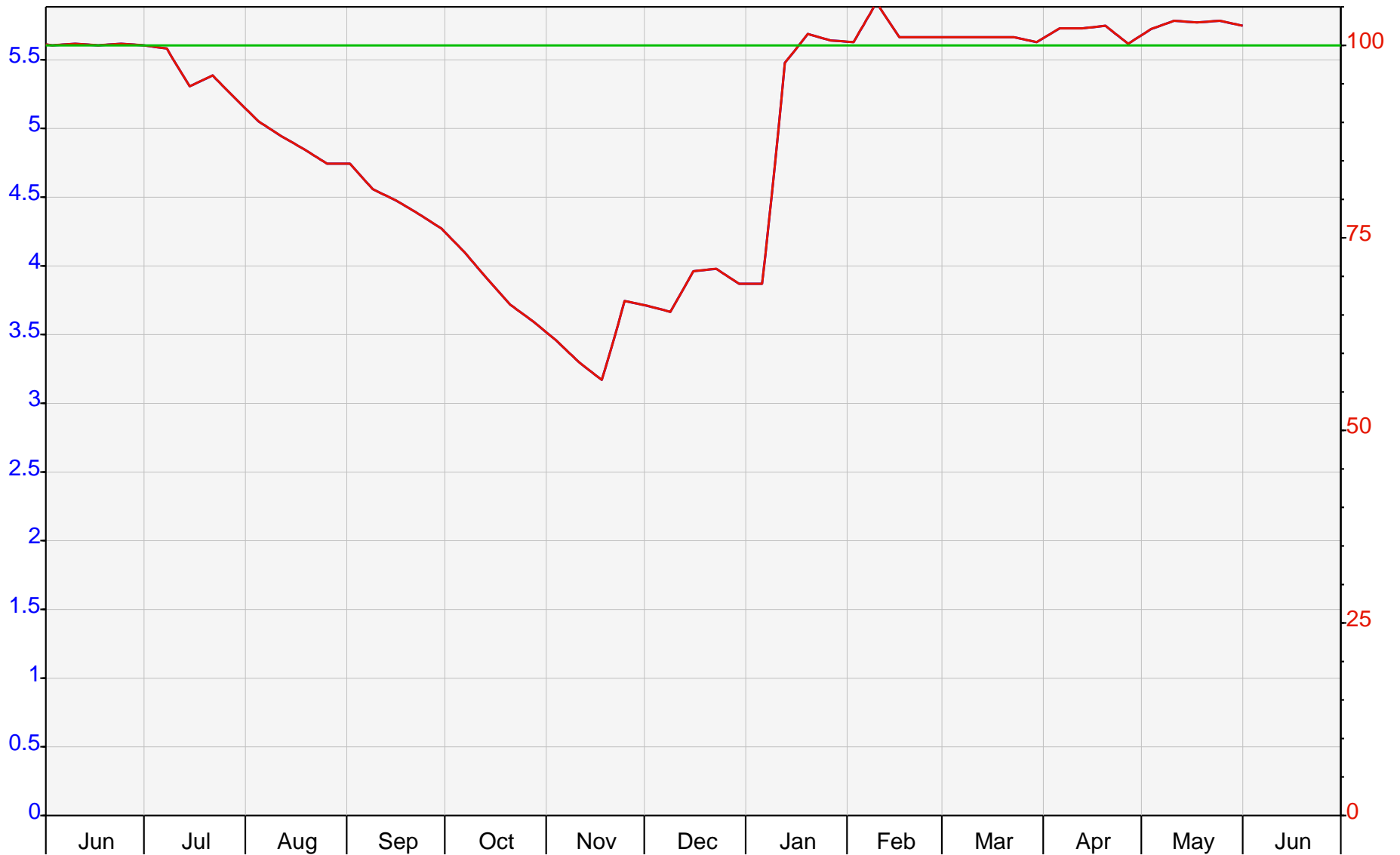
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B7R001 Klaserie Dam 198.00Res Nett Cap (MCM) Weekly Reading WB
- B7R001 Klaserie Dam 210.00% Full (nett) Weekly Reading WB
- B7R001 Klaserie Dam 210.00% Full (nett) TT



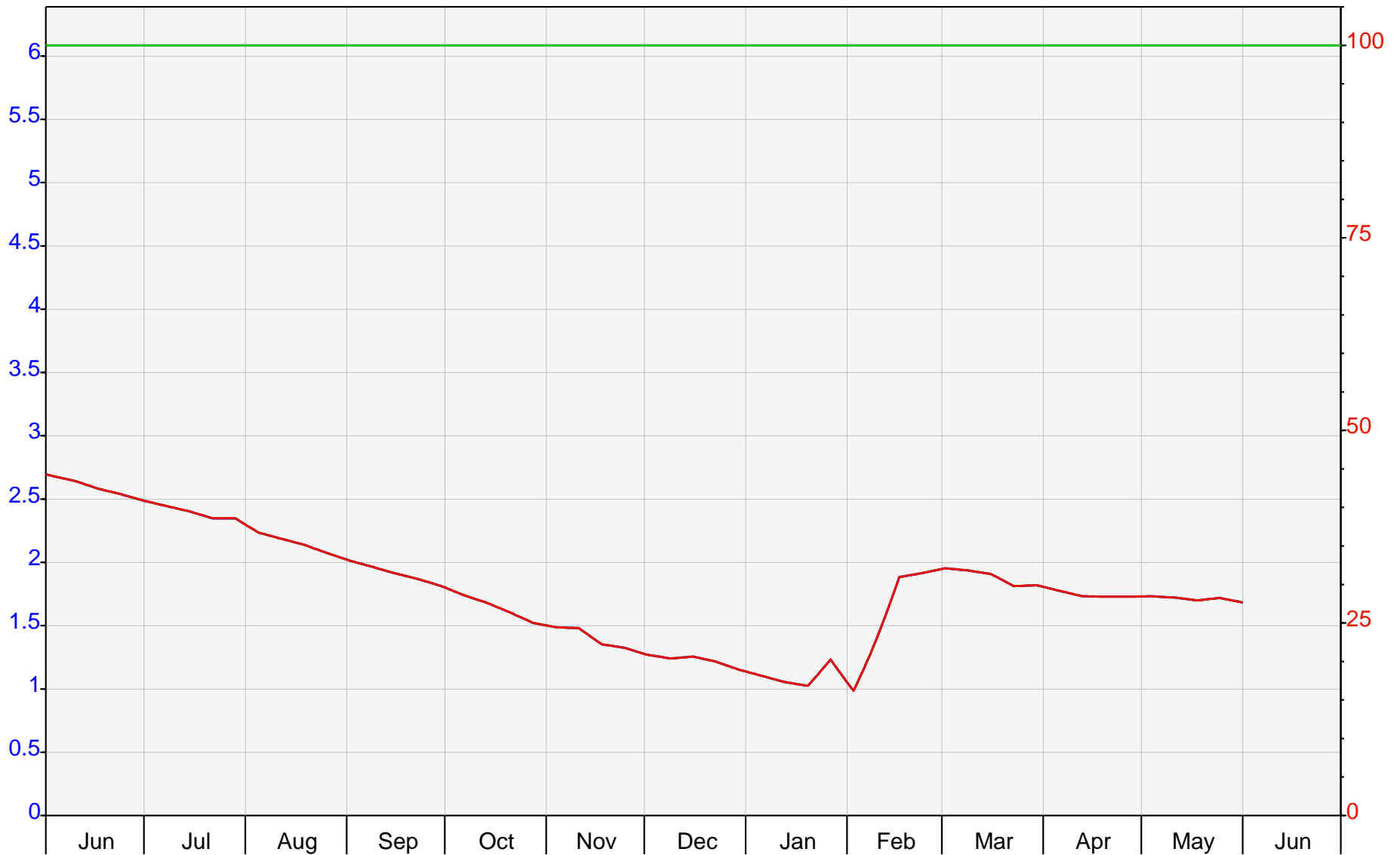
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B7R003 Tours Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- B7R003 Tours Dam 210.00% Full (nett) Weekly Reading WB
- B7R003 Tours Dam 210.00% Full (nett) TT



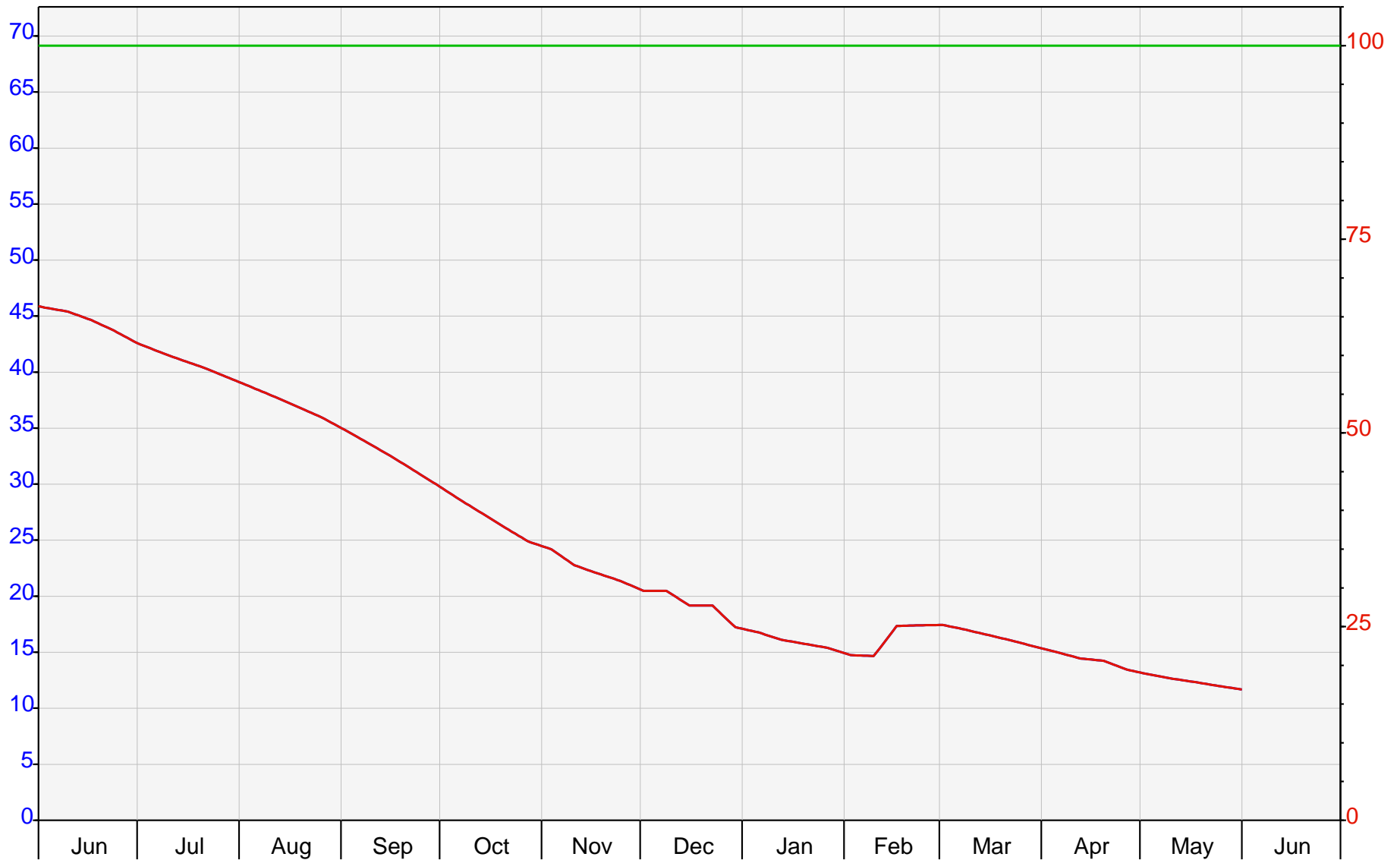
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B8R001 Ebenezer Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- B8R001 Ebenezer Dam 210.00% Full (nett) Weekly Reading WB
- B8R001 Ebenezer Dam 210.00% Full (nett) TT



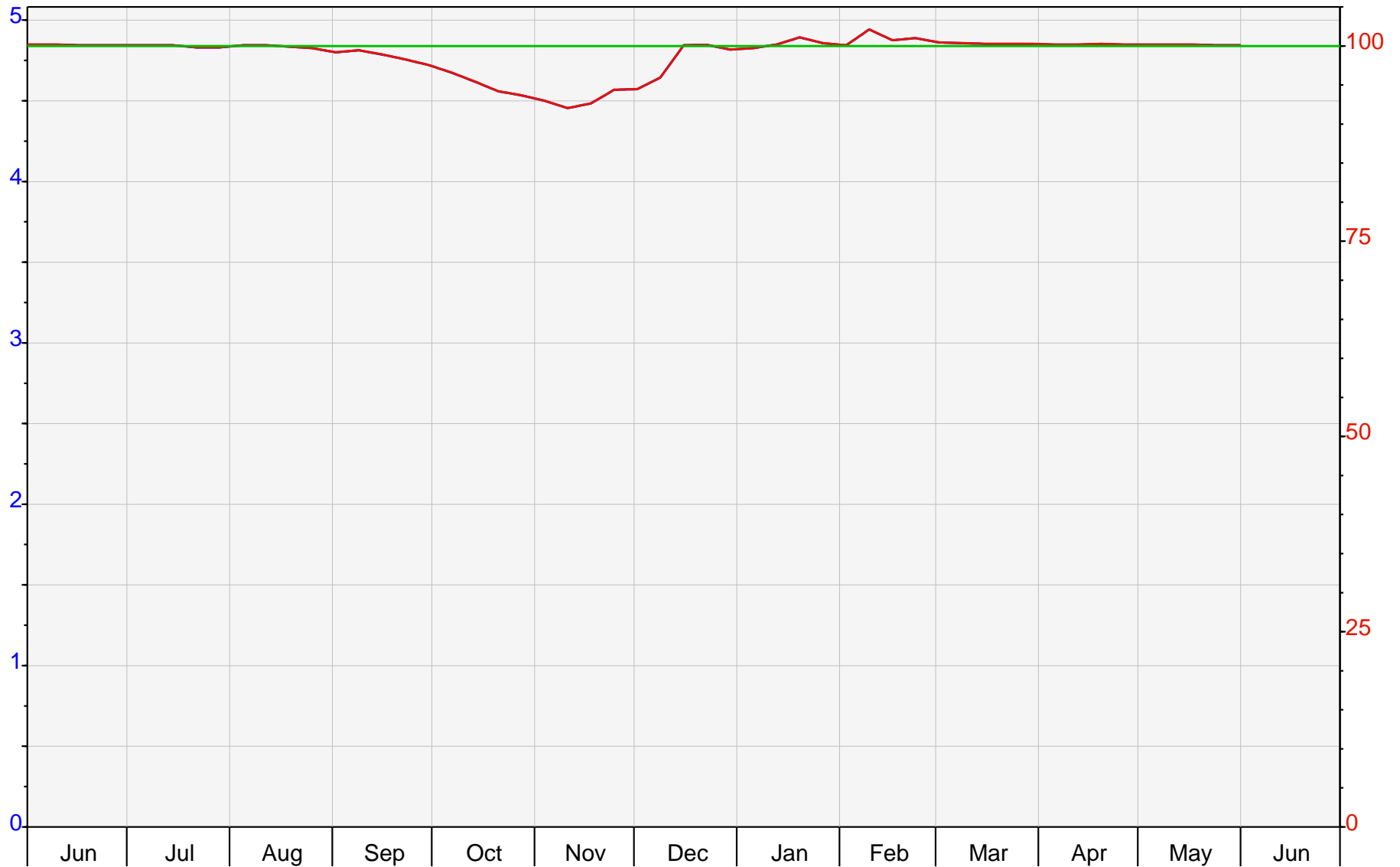
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B8R003 Magoebaskloof Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- B8R003 Magoebaskloof Dam 210.00% Full (nett) Weekly Reading WB
- B8R003 Magoebaskloof Dam 210.00% Full (nett) TT



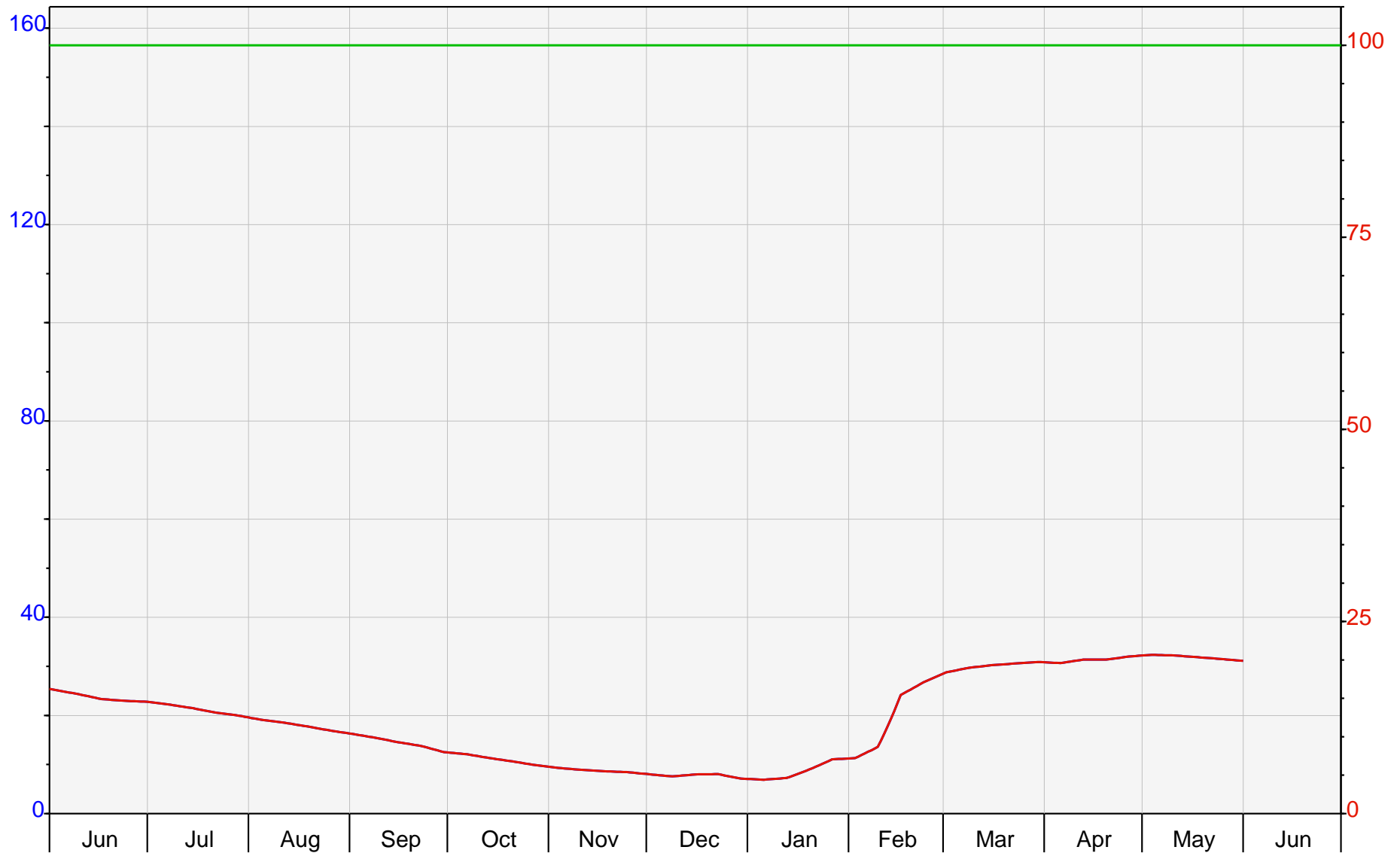
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B8R005 Tzaneen Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- B8R005 Tzaneen Dam 210.00% Full (nett) Weekly Reading WB
- B8R005 Tzaneen Dam 210.00% Full (nett) TT



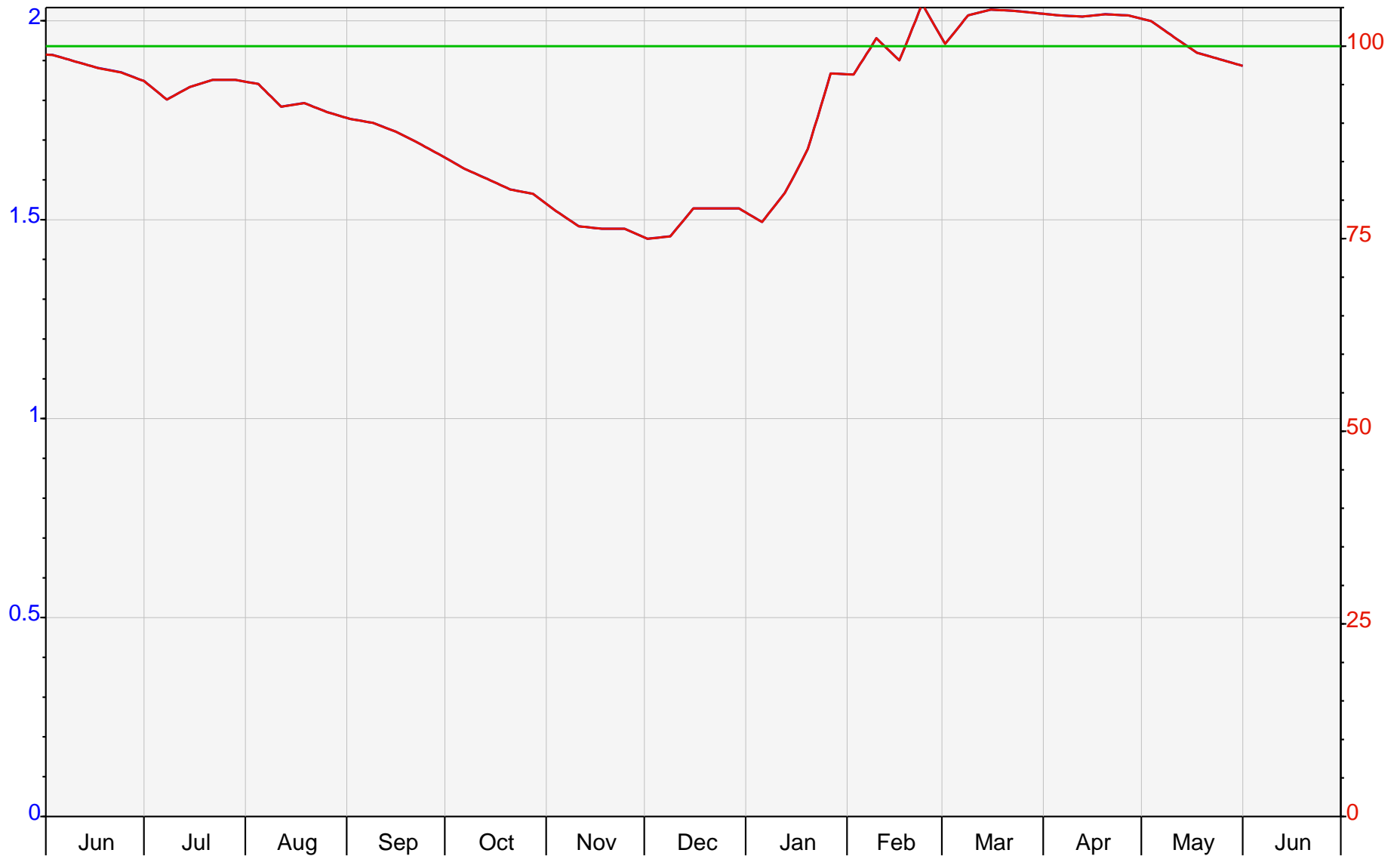
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B8R006 Dap Naude Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- B8R006 Dap Naude Dam 210.00% Full (nett) Weekly Reading WB
- B8R006 Dap Naude Dam 210.00% Full (nett) TT



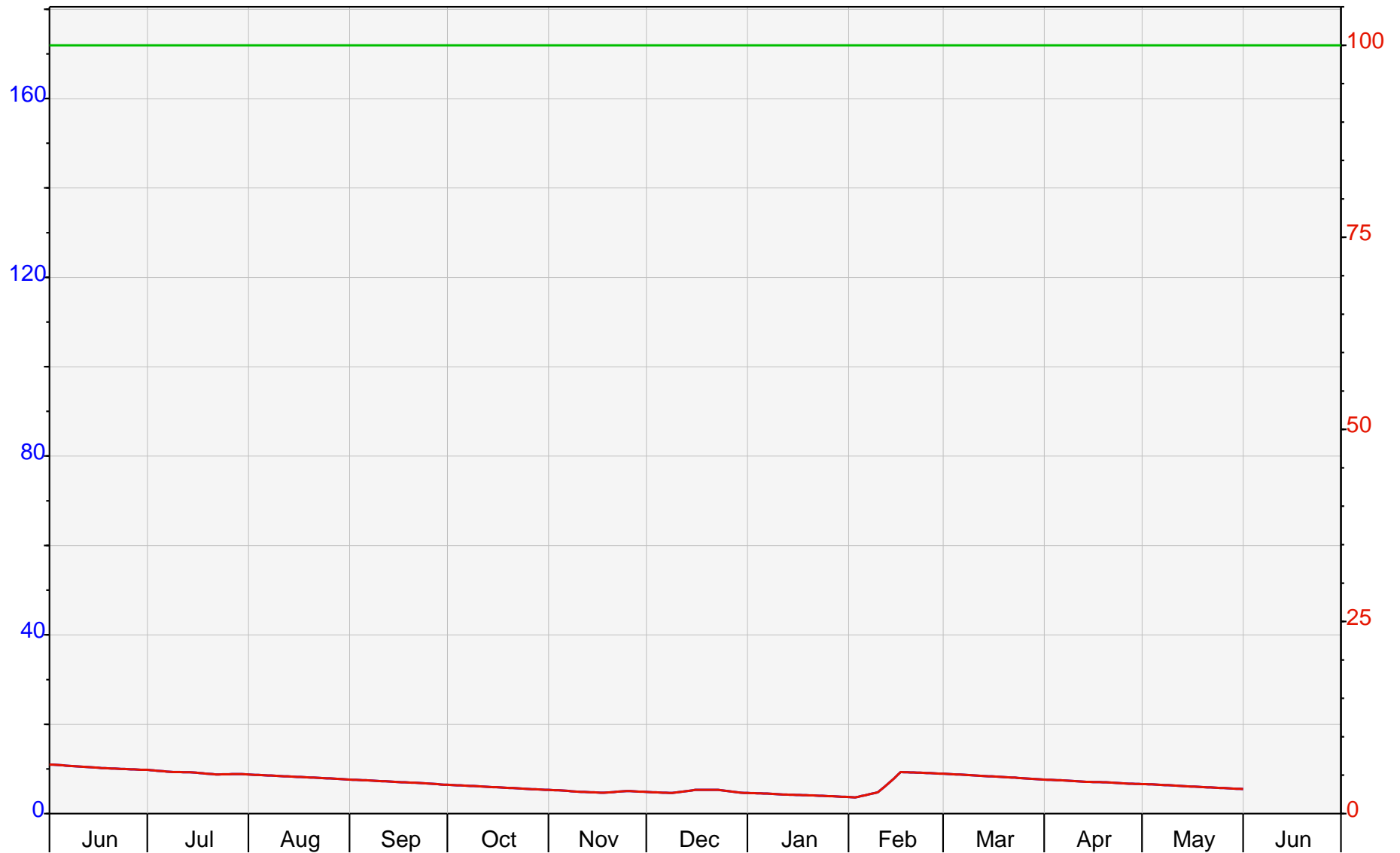
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HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B8R007 Middel-Letaba Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- B8R007 Middel-Letaba Dam 210.00% Full (nett) Weekly Reading WB
- B8R007 Middel-Letaba Dam 210.00% Full (nett) TT



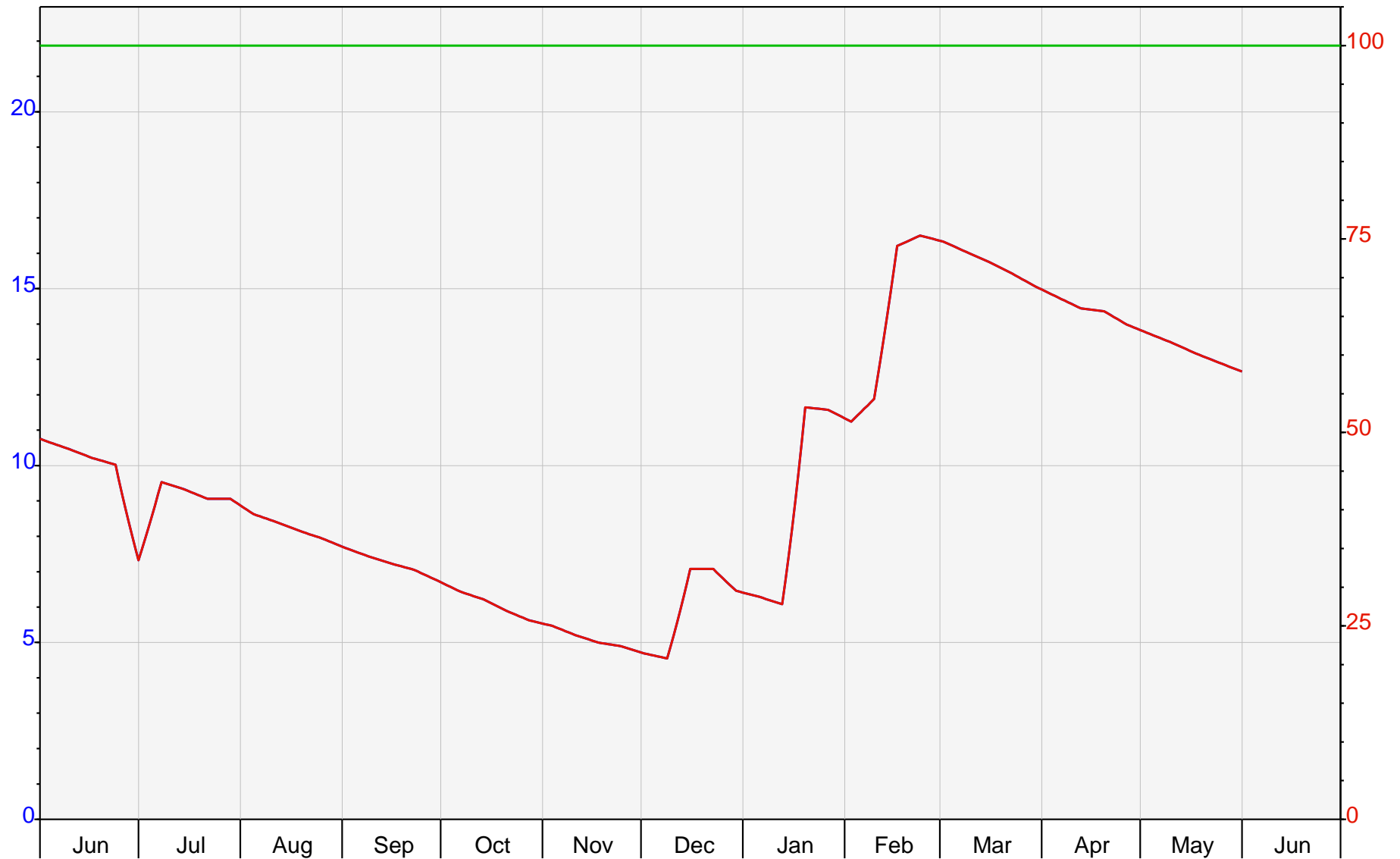
Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B8R009 Nsami Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- B8R009 Nsami Dam 210.00% Full (nett) Weekly Reading WB
- B8R009 Nsami Dam 210.00% Full (nett) TT



Department of Water and Sanitation

HYPLOT V134 Output 02/06/2020

Period 13 Month 01/06/2019 to 01/07/2020

2019-20

- B8R011 Modjadji Dam 198.00 Res Nett Cap (MCM) Weekly Reading WB
- B8R011 Modjadji Dam 210.00% Full (nett) Weekly Reading WB
- B8R011 Modjadji Dam 210.00% Full (nett) TT

