DEPARTMENT OF WATER AFFAIRS AND FORESTRY
LIMPOPO PROVINCE
WATER RESOURCE INFORMATION

STATUS ON MONITORING & SURFACE WATER LEVEL TRENDS MAY 2009 to OCTOBER 2009

D VILJOEN
NOVEMBER 2009

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LIST OF GRAPHS

1. EXECUTIVE SUMMARY

The majority of dams used in this report have more water than during the corresponding period last year.
In the Luvuvhu / Letaba Water Management Area the Middle Letaba Dam is at a critical stage of 4% and the Nsami Dam is empty. The Albasini Dam with a storage level of only 23.7% also gives reason for concern. In the Limpopo WMA the Nzhelele, Nwanedi and Luphephe Dams are currently at lower levels than the previous year for the same period. The dams are currently on storage levels of 44.4%, 22.5% and 53.3% respectively. The average storage volume for the Limpopo WMA is 225.9 million cubic meters (80.5%) and is 3.3 million cubic meters more than the corresponding period last year (79.3%). The average storage volume for the Luvuvhu / Letaba WMA is 379.8 million cubic meters (58.2%) and is 50.9 million cubic meters more than the corresponding period last year (50.4%). Take note that these figures are derived from the attached WMA graphs, which also indicates which major dams were used for volume determination.
The challenge in both of the WMAs is the fact that there are smaller dams, which supply water to communities that still need to be monitored. Owing to the lack of data these dams could not be included. Infrastructure at these dams are also a major concern and will have to be put in place before any form of water level monitoring can be considered.
Gauge plates have been installed at some of the smaller dams, but there are no observers to relay gauge plate readings to the Tzaneen Office. Hout River Dam has been equipped with near real-time data acquisitioning equipment.
The information presented in this report is based on the status of all the major dams in the province up to the end of October 2009.

2. MONITORING NETWORK

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

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

It is important to take cognizance of the fact that the hydrological gauging stations in the Crocodile-West and Olifants Water Management Areas (shared boundaries) are being managed by the hydrological offices of Gauteng and Mpumalanga respectively.
For the purpose of this report and owing to the strategic location and importance of certain dams in the Olifants and Nkomati Water Management Areas, information regarding their status is also attached.

3. OVERVIEW

No river flow gauging stations were used in this report as their importance will only play a roll when inflow stream requirements have to be met or during big flood events.

Take note that that the following dams have been included under the provincial boundary of the Limpopo Province: Nandoni, Flag Boshielo, Klaserie, Rust De Winter, Tonteldoos, Tours, Vlugkraal and Warmbad. This results in the full supply storage capacity increasing from 767.6 million cubic meters to 1166.6 million cubic meters.

To give an indication of what the percentage of normal rainfall was for the period July 2009 up to September 2009, see attached map (page 11). For information purposes a graph depicting provincial rainfall for the current hydrological year is attached (page 12). Rainfall forecasts up to the end of March 2010 are also attached see page 13. This information was obtained from the South African Weather Service.

The National dam storage graph (page 14) has been attached to the report for additional information. The Limpopo Province dam storage graph (page 15) as well as the graphs of the two WMAs (page 16-17), indicates the current situation clearly.
This information was obtained from Mr Elias Nel from Hydrological services, National Office.

For information purposes a graph indicating the comparison of water storage percentage for the different WMA's is attached on page 18. This information is also depicted in tabular format with the relevant storage volumes for each WMA, see page 19.

The purpose for attaching graphs of individual dams is to give a broader picture of water storage and status in the sub drainage catchments.

4. LIMPOPO WATER MANAGEMENT AREA

The catchment consists of secondary drainage areas A4, A5, A6, A7 and A8.

4.1 A4 Drainage Area (Matlabas, Mokolo Rivers)

The Mokolo Dam (A4R001) was used as no other dam exists in the A4 hydrological monitoring network. The dam storage is at a storage level of 100.4% (145.95 x $10^6 m^3$) and 7.3 % higher than the previous year, which means that the storage volume is 10.61 million cubic meters more than the corresponding period last year. See attached graph!

4.2 A5 Drainage Area (Lephalala River)

Two small dams exists 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)

The Doorndraai Dam (A6R001) and Glen Alpine Dam (A6R002) were used as no other dams exist in the A6 hydrological monitoring network. The Doorndraai Dam is at a storage level of 90.4% (39.56 x $10^6 m^3$) and 6% higher than the previous year, which means that the storage volume is 2.63 million cubic meters more than the corresponding period last year. See attached graph!
Glen Alpine Dam is at a storage level of 50.9% (9.6 x $10^6 m^3$) and 11.8% higher than the previous year, which means that the storage volume is 2.22 million cubic meters more than the corresponding period last year. See attached graph!
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!
Take note that the full supply capacity (18.889 x $10^6 m^3$) as supplied in the National Weekly Dam Status report, was used for calculation purposes!

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

There are no existing dam monitoring stations in the hydrological network for this drainage area!
The Tzaneen Area Office in conjunction with the Hydrometry office is currently busy with the installation of gauge plates at dams in both of the Water Management Areas. Hout River Dam has been equipped with gauge plates, but a futile exercise at Mashashane Dam just iterated the point that gauge plates should be installed once water levels are below lowest outlet levels! Data capturing and real-time equipment has been installed at Hout River Dam.
Seshego and Rietfontein Dams will be investigated, but due to high water levels and the lack of infrastructure, the installation of gauge plates remains a huge challenge. According to preliminary investigations it seems obvious that the installation of gauge plates will only be feasible when water levels at these dams are on or below lowest outlet levels!

4.5 A8 Drainage Area (Nwanedzi and Nzhelele Rivers)

The Nzhelele Dam (A8R001), Luphephe (A8R002), Nwanedzi (A8R003) and Mutshedzi (A8R004) Dams were used as indicators!
The Nzhelele Dam is at a storage level of 44.4% (22.75 x $10^6 m^3$) and 12.5% lower than the previous year, which means that the storage volume is 6.4 million cubic meters less than the corresponding period last year. See attached graph!

Luphephe and Nwanedzi Dams are at storage levels of 22.5% and 53.3% respectively. Their combined storage is at 5.88 x $10^6 m^3$. The combined storage for the corresponding period the previous year was 14.45 x $10^6 m^3$. (76% of storage volume) See attached graphs!

Mutshedzi Dam, is at a storage level of 91.4% (2.136 x $10^6 m^3$) and 34.9% higher than the previous year, which means that the storage volume is 0.82 million cubic meters more than the corresponding period last year.

5. LUVUVHU / LETABA WATER MANAGEMENT AREA

The catchment consists of secondary drainage areas A9, B8 and B9.

5.1 A9 Drainage Area (Mutale, Luvuvhu Rivers)

The Albasini Dam (A9R001), Vondo Dam (A9R002) and Nandoni (A9R004) Dams were used as monitoring points in this report.

Albasini Dam is at a storage level of 23.7% (6.69 x $10^6 m^3$) and 5.8% lower than the previous year, which means that the storage volume is 1.63 million cubic meters less than the corresponding period last year. See attached graph!

Vondo Dam is at a storage level of 84.6% (25.76 x $10^6 m^3$) and 7.1% higher than the previous year, which means that the storage volume is 2.16 million cubic meters more than the corresponding period last year. See attached graph!

Nandoni Dam is at a storage level of 94.2% (156.44 x $10^6 m^3$) and 0.4% higher than the previous year, which means that the storage volume is 0.63 million cubic meters more than the corresponding period last year. See attached graph!

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

The Ebenezer Dam (B8R001), Magoebaskloof Dam (B8R003), Tzaneen Dam (B8R005), Middle-Letaba Dam (B8R007) and Modjadji Dam (B8R011), were used as monitoring points in this report. The Dap Naudé Dam (B8R006), Hans Merensky Dam (B8R002) and Nsami Dam (B8R009) are also being monitored, but were not included in this report!

Thapane Dam has been investigated but due to high water levels and the lack of infrastructure, the installation of gauge plates remains a huge challenge. According to preliminary investigations it seems obvious that the installation of gauge plates will only be feasible when the water level at this dam is on or below lowest outlet level!

The Ebenezer Dam is at a storage level of 80.1% (55.39x $10^6 m^3$) and 20.4% higher than the previous year, which means that the storage volume is 14.12 million cubic meters more than the corresponding period last year. See attached graph!

Magoebaskloof Dam is at a storage level of 100.2% (4.85 x $10^6 m^3$) and 0.1% higher than the previous year, which means that the storage volume is 0.01 million cubic meters more than the corresponding period last year. See attached graph! Take note that the full supply capacity (4.84 x $10^6 m^3$) as supplied in the National Weekly Dam Status report, was used for calculation purposes!

Tzaneen Dam is at a storage level of 77.1% (120.62 x $10^6 m^3$) and 28.7% higher than the previous year, which means that the storage volume is 44.86 million cubic meters more than the corresponding period last year. See attached graph! Take note that the full supply capacity (156.53 x $10^6 m^3$) as supplied in the National Weekly Dam Status report, was used for calculation purposes!

Middle-Letaba Dam is at a storage level of 4% (6.87 x $10^6 m^3$) and 2.3% lower than the previous year, which means that the storage volume is 3.97 million cubic meters less than the corresponding period last year. See attached graph!

The Modjadji Dam is at a storage level of 71.9% (5.16 x $10^6 m^3$) and 2.3% higher than the previous year, which means that the storage volume is 0.16 million cubic meters more than the corresponding period last year.

5.3 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!

6. OLIFANTS WATER MANAGEMENT AREA

Monitoring points in the B3, B5, B6 and, B7 sub drainage areas were also included in this report owing to their strategic location and importance to operational matters in the Limpopo Province.

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

For information as well as operational matters the status of Rust de Winter Dam (B3R001) and Loskop Dam (B3R002) has been included in this report.

Rust de Winter Dam is at a storage level of 100.5% (28.3 x $10^6 m^3$) and 0.5% higher than the previous year, which means that the storage volume is 0.15 million cubic meters more than the corresponding period last year. See attached graph!

Loskop Dam is at a storage level of 95.1% (343.76 x $10^6 m^3$) and 7.8% higher than the previous year, which means that the storage volume is 28.16 million cubic meters more than the corresponding period last year. See attached graph!

6.2 B5 Drainage Area (Olifants River)

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

Flag Boshielo Dam is at a storage level of 94.1% (174.16 x $10^6 m^3$) and 0.3% higher than the previous year, which means that the storage volume is 0.51 million cubic meters more than the corresponding period last year. See attached graph!

6.3 B6 Drainage Area (Blyde and Ohrigstad Rivers)

For information as well as operational matters the status of Ohrigstad Dam (B6R001) and Blyde Rivierspoort Dam (B6R003) has been included in this report.

Ohrigstad Dam is at a storage level of 59.5% (7.99 x $10^6 m^3$) and 49.9% higher than the previous year, which means that the storage volume is 6.71 million cubic meters more than the corresponding period last year. See attached graph!
Take note that the full supply capacity (13.448 x $10^6 m^3$) as supplied in the National Weekly Dam Status report, was used for calculation purposes!

Blyde Dam is at a storage level of 80.6% (43.82 x $10^6 m^3$) and 15.7% higher than the previous year, which means that the storage volume is 8.533 million cubic meters more than the corresponding period last year. See attached graph!

Take note that the full supply capacity (54.369 x $10^6 m^3$) as supplied in the National Weekly Dam Status report, was used for calculation purposes!

6.4 B7 Drainage Area (Klaserie and Olifants Rivers)

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

Klaserie Dam is at a storage level of 89.6% (5.02 x $10^6 m^3$) and 36.5% higher than the previous year, which means that the storage volume is 2.04 million cubic meters more than the corresponding period last year. See attached graph!

Tours Dam is at a storage level of 86.0% (5.23 x $10^6 m^3$) and 9.2% higher than the previous year, which means that the storage volume is 0.56 million cubic meters more than the corresponding period last year. See attached graph!

Take note that the full supply capacities (5.604 x $10^6 m^3$ and 6.084 x $10^6 m^3$) Klaserie and Tours Dams respectively, as supplied in the National Weekly Dam Status report, were used for calculation purposes!

7. NKOMATI WATER MANAGEMENT AREA

7.1 X2 Drainage Area (Crocodile River)

For information as well as operational matters the status of Kwena Dam (X2R005) has been included in this report.

Kwena Dam is at a storage level of 86.6% (137.67 x $10^6 m^3$) and 15.3% higher than the previous year, which means that the storage volume is 24.38 million cubic meters more than the corresponding period last year. See attached graph!

7.2 X3 Drainage Area (Mariti River)

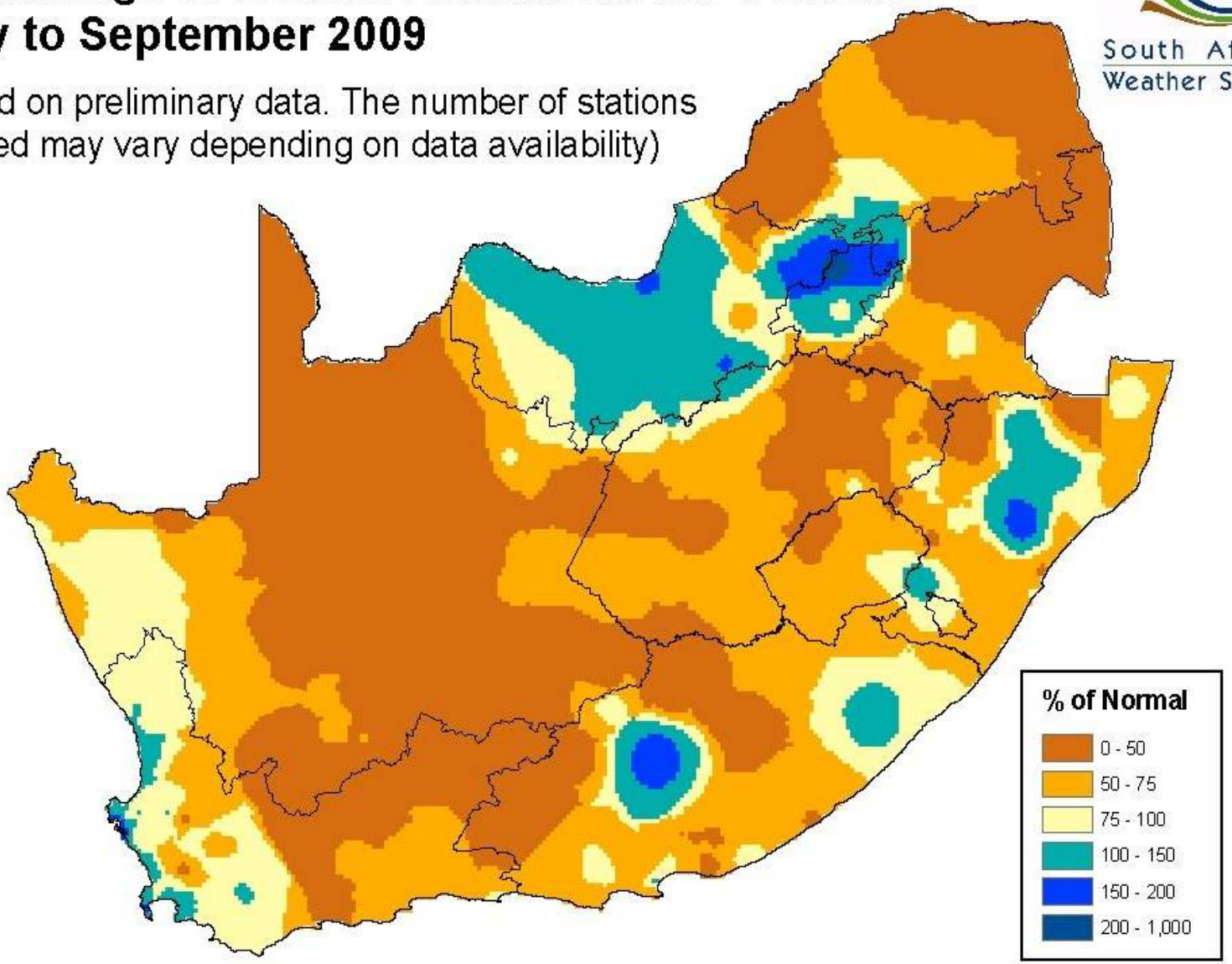
For information as well as operational matters the status of Inyaka Dam (X3R002) has been included in this report.

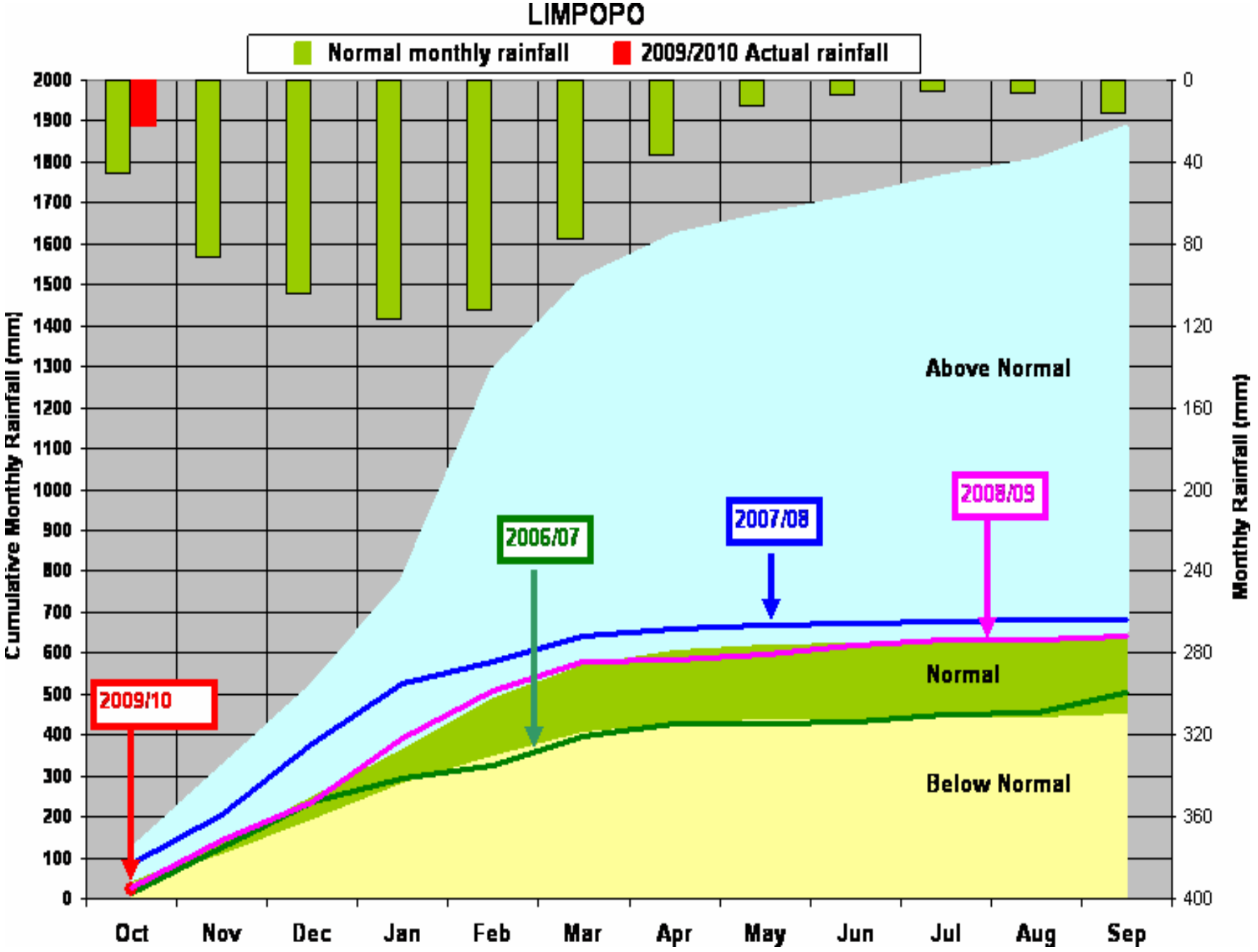
Inyaka Dam is at a storage level of 99.9% (123.58 x $10^6 m^3$) and 4% higher than the previous year, which means that the storage volume is 4.99 million cubic meters more than the corresponding period last year. See attached graph!

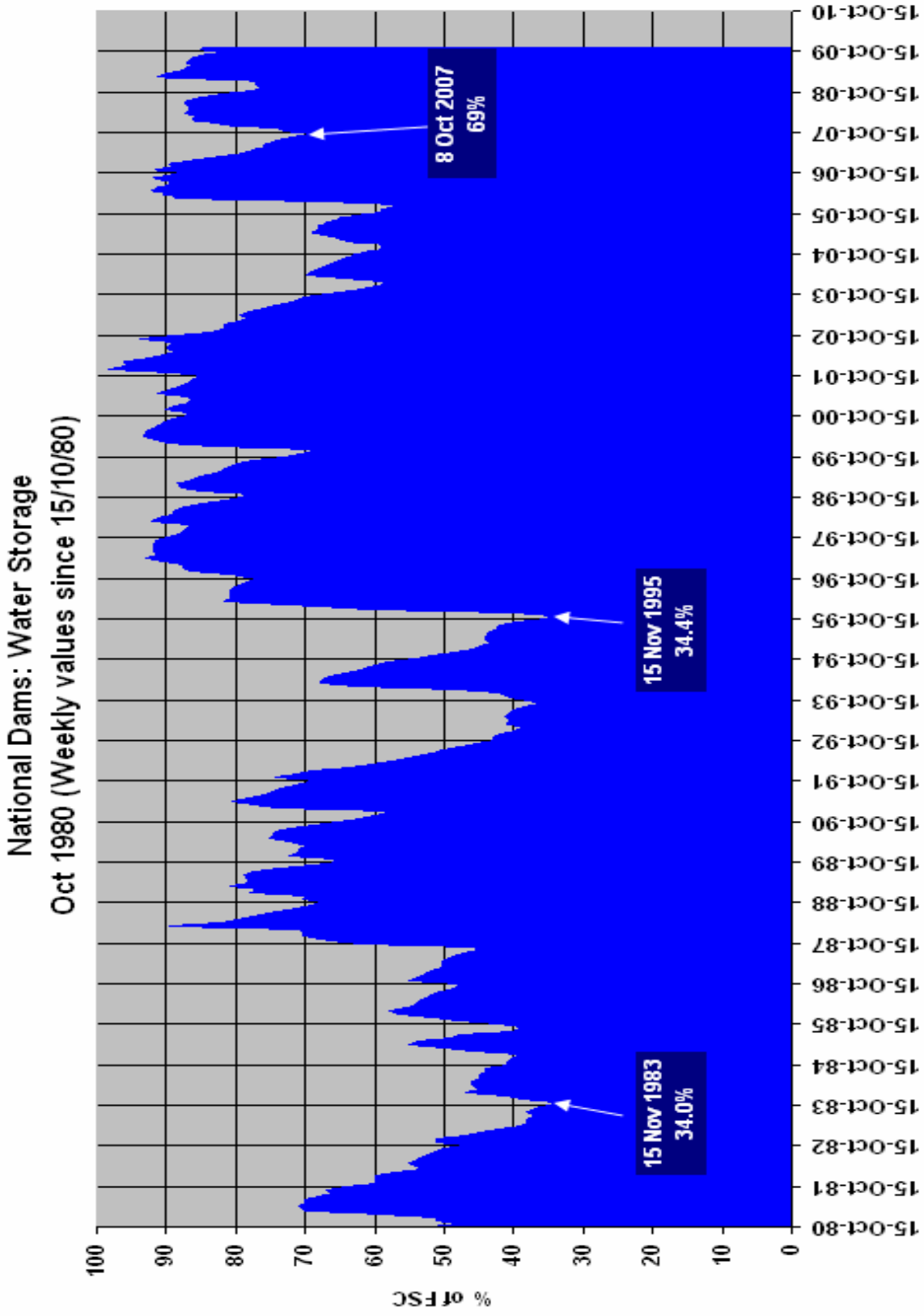
Percentage of Normal Rainfall for the Season July to September 2009

(based on preliminary data. The number of stations used may vary depending on data availability)

South African Weather Service




LIMPOPO
Normal monthly rainfall
2009/2010 Actual rainfall
Cumulative Monthly Rainfall (mm)
Monthly Rainfall (mm)
Above Normal
Normal
Below Normal
2006/07
2007/08
2008/09
2009/10
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep


National Dams: Water Storage
Oct 1980 (Weekly values since 15/10/80)
8 Oct 2007
69%
15 Nov 1995
34.4%
15 Nov 1983
34.0%
% of FSC
Period
100
90
80
70
60
50
40
30
20
10
0
15-Oct-80
15-Oct-81
15-Oct-82
15-Oct-83
15-Oct-84
15-Oct-85
15-Oct-86
15-Oct-87
15-Oct-88
15-Oct-89
15-Oct-90
15-Oct-91
15-Oct-92
15-Oct-93
15-Oct-94
15-Oct-95
15-Oct-96
15-Oct-97
15-Oct-98
15-Oct-99
15-Oct-00
15-Oct-01
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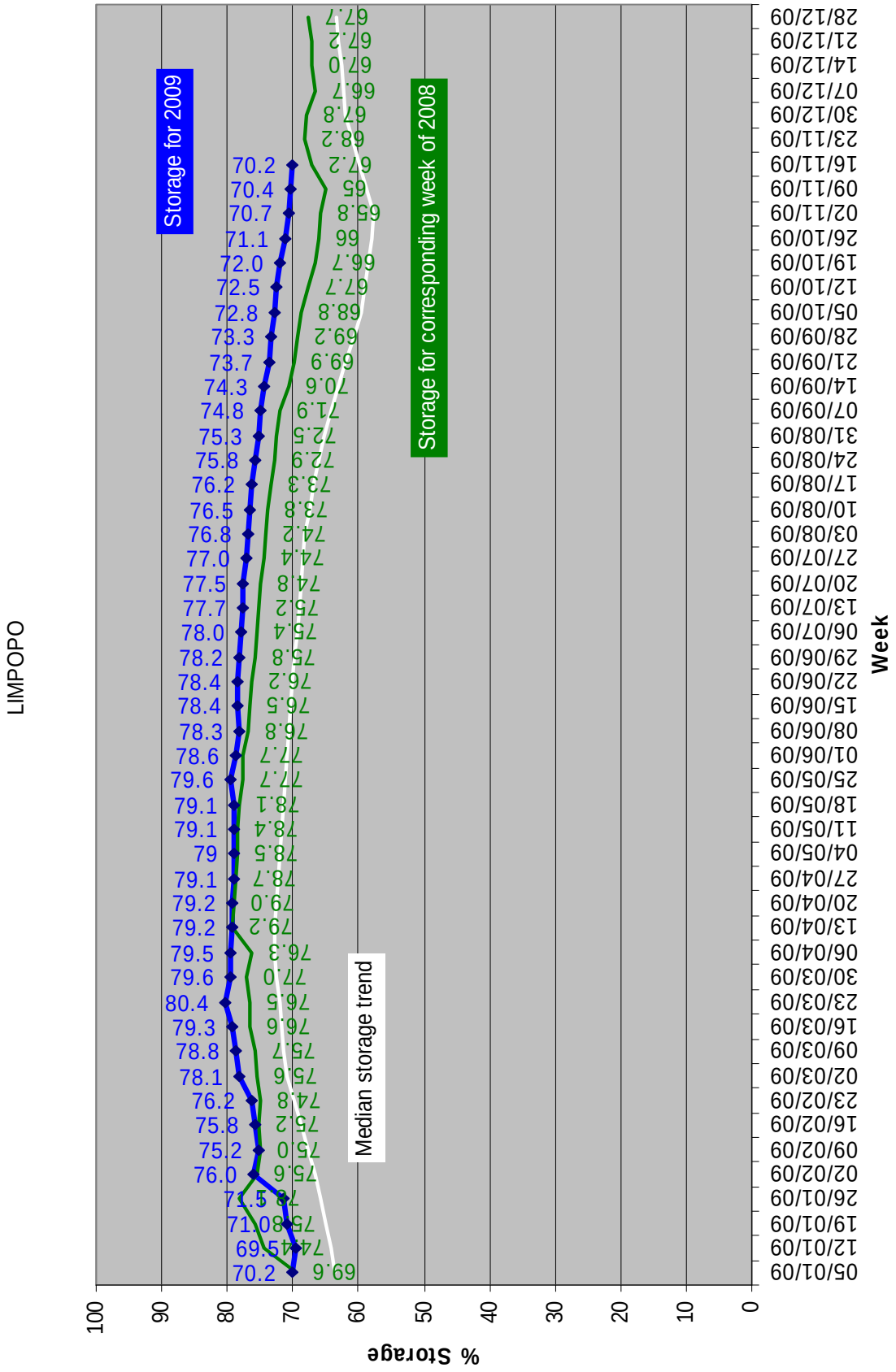
15-Oct-07
15-Oct-08
15-Oct-09
15-Oct-10


LIMPOPO
Storage for 2009
Storage for corresponding week of 2008
Median storage trend
% Storage
Week
100
90
80
70
60
50
40
30
20
10
0
05/01/09
12/01/09
19/01/09
26/01/09
02/02/09
09/02/09
16/02/09
23/02/09
02/03/09
09/03/09
16/03/09
23/03/09
30/03/09
06/04/09
13/04/09
20/04/09
27/04/09
04/05/09
11/05/09
18/05/09
25/05/09
01/06/09
08/06/09
15/06/09
22/06/09
29/06/09
06/07/09
13/07/09
20/07/09
27/07/09
03/08/09
10/08/09
17/08/09
24/08/09
31/08/09
07/09/09
14/09/09
21/09/09
28/09/09
05/10/09
12/10/09
19/10/09
26/10/09
02/11/09
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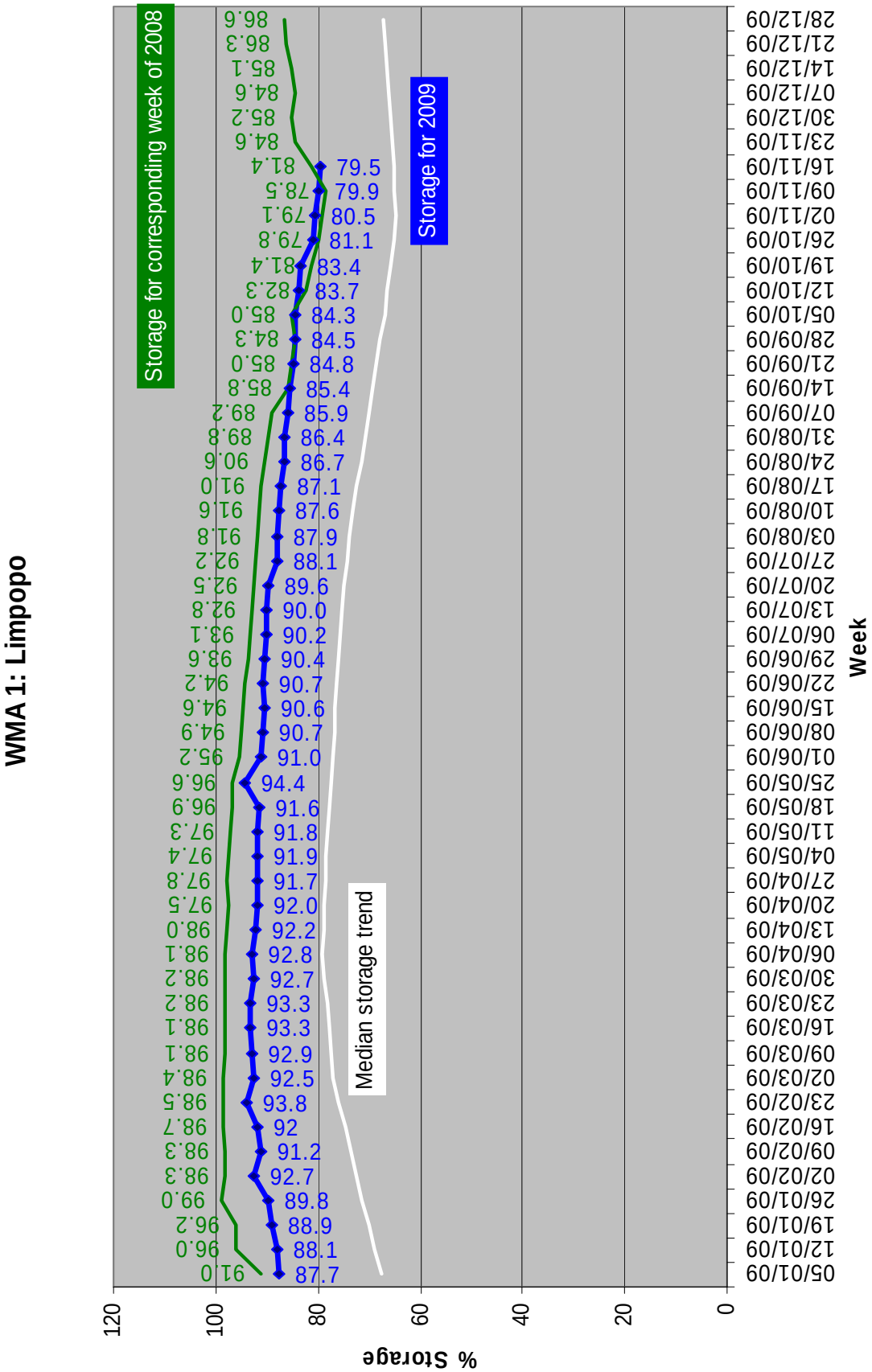
23/11/09
30/12/09
07/12/09
14/12/09
21/12/09
28/12/09


WMA 1: Limpopo
Storage for corresponding week of 2008
Storage for 2009
Median storage trend
% Storage
Week
120
100
80
60
40
20
0
05/01/09
12/01/09
19/01/09
26/01/09
02/02/09
09/02/09
16/02/09
23/02/09
02/03/09
09/03/09
16/03/09
23/03/09
30/03/09
06/04/09
13/04/09
20/04/09
27/04/09
04/05/09
11/05/09
18/05/09
25/05/09
01/06/09
08/06/09
15/06/09
22/06/09
29/06/09
06/07/09
13/07/09
20/07/09
27/07/09
03/08/09
10/08/09
17/08/09
24/08/09
31/08/09
07/09/09
14/09/09
21/09/09
28/09/09
05/10/09
12/10/09
19/10/09
26/10/09
02/11/09
09/11/09
16/11/09
23/11/09
30/12/09
07/12/09
14/12/09
21/12/09
28/12/09
91.0
96.0
96.2
99.0
98.3
98.3
98.7
98.5
98.4
98.1
98.1
98.2
98.2
98.1
98.0
97.5
97.8
97.4
97.3
96.9
96.6
95.2
94.9
94.6
94.2
93.6
93.1
92.8
92.5
92.2
91.8
91.6
89.2
85.8
85.0
84.3
82.3
81.4
79.1
78.5
81.4
84.6
85.2
84.6
85.1
86.3
86.6
87.7
88.1
88.9
89.8
92.7
91.2
92
92.5
93.8
92.9
93.3
93.3
92.7
92.8
92.2
92.0
91.7
91.9
91.8
94.4
91.0
90.7
90.6
90.4
90.2
90.0
89.6
88.1
87.9
87.6
87.1
86.7
86.4
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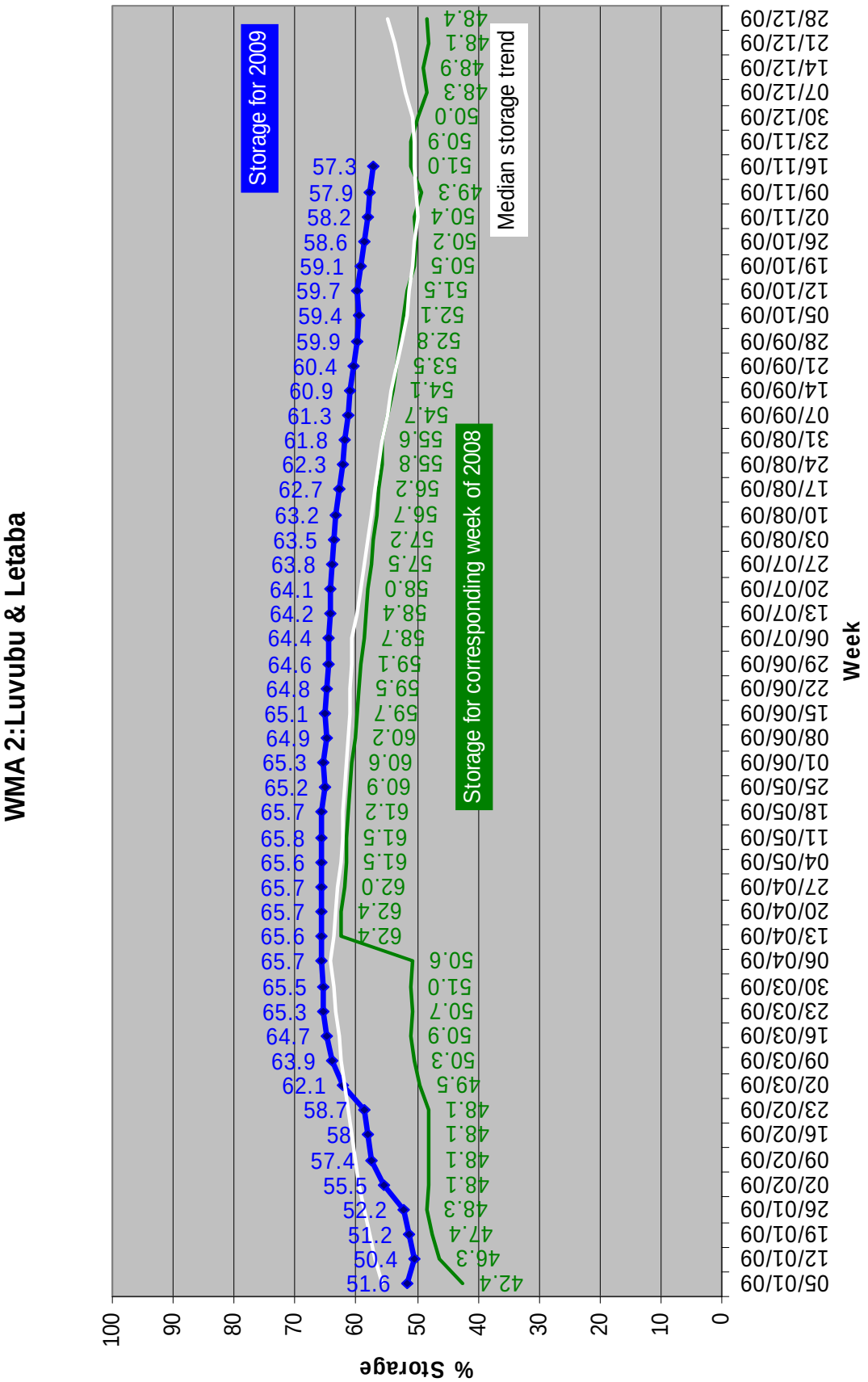
83.7
83.4
81.1
80.5
79.9
79.5


WMA 2:Luvubu & Letaba
Storage for 2009
Median storage trend
Storage for corresponding week of 2008
% Storage
Week
100
90
80
70
60
50
40
30
20
10
0
05/01/09
12/01/09
19/01/09
26/01/09
02/02/09
09/02/09
16/02/09
23/02/09
02/03/09
09/03/09
16/03/09
23/03/09
30/03/09
06/04/09
13/04/09
20/04/09
27/04/09
04/05/09
11/05/09
18/05/09
25/05/09
01/06/09
08/06/09
15/06/09
22/06/09
29/06/09
06/07/09
13/07/09
20/07/09
27/07/09
03/08/09
10/08/09
17/08/09
24/08/09
31/08/09
07/09/09
14/09/09
21/09/09
28/09/09
05/10/09
12/10/09
19/10/09
26/10/09
02/11/09
09/11/09
16/11/09
23/11/09
30/12/09
07/12/09
14/12/09
21/12/09
28/12/09
51.6
50.4
51.2
52.2
55.5
57.4
58
58.7
62.1
63.9
64.7
65.3
65.5
65.7
65.6
65.7
65.7
65.6
65.8
65.5
65.2
65.3
64.9
65.1
64.8
64.6
64.4
64.2
64.1
63.8
63.5
63.2
62.7
62.3
61.8
61.3
60.9
60.4
59.9
59.4
59.7
59.1
58.6
58.2
57.9
57.3
42.4
46.3
47.4
48.3
48.1
48.1
48.1
48.1
49.5
50.3
50.9
50.7
51.0
50.6
62.4
62.4
62.0
61.5
61.5
61.5
61.2
60.9
60.6
60.2
59.7
59.5
59.1
58.7
58.4
58.0
57.5
57.2
56.7
56.2
55.8
55.6
54.7
54.1
53.5
52.8
52.1
51.5
50.5
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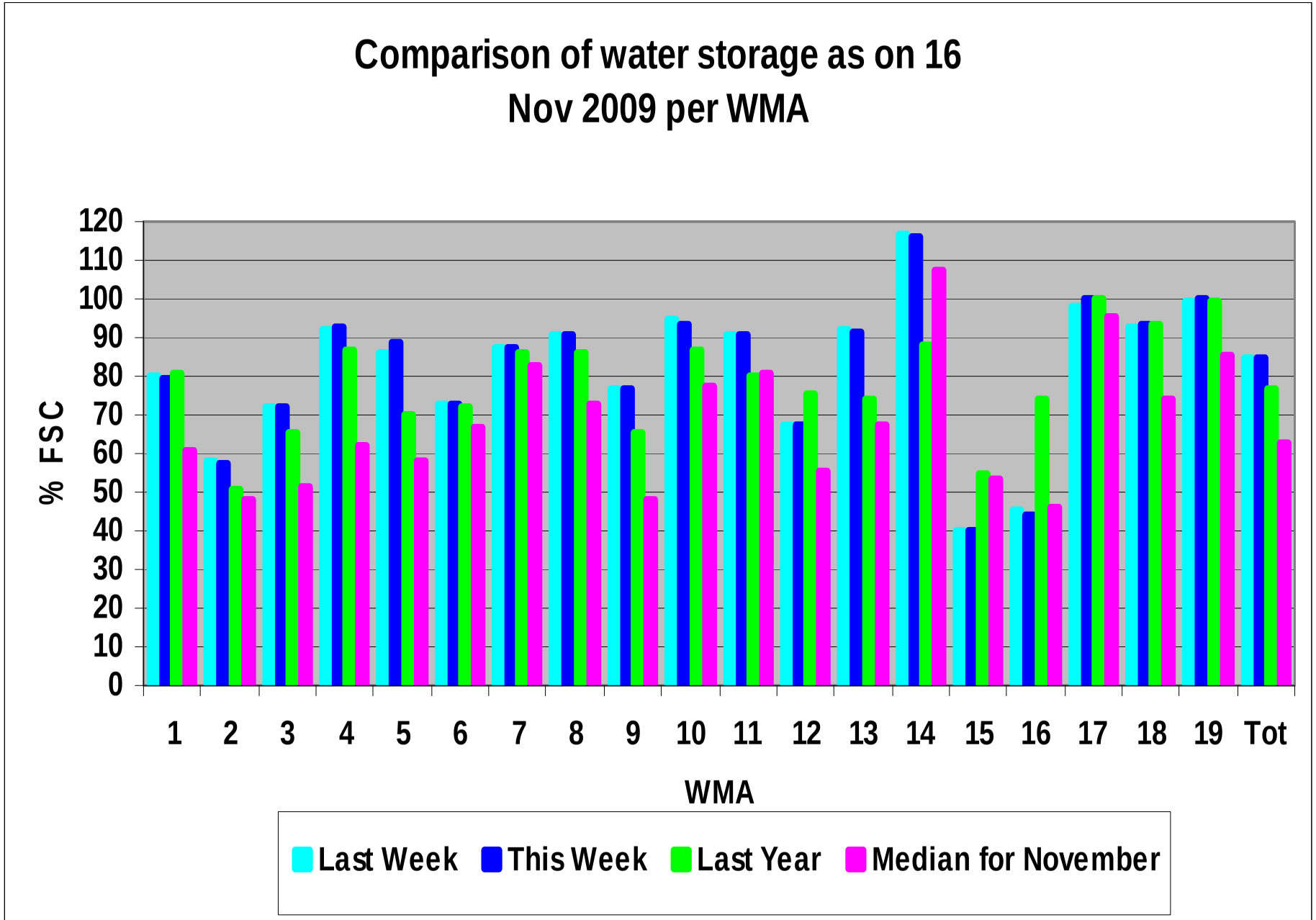
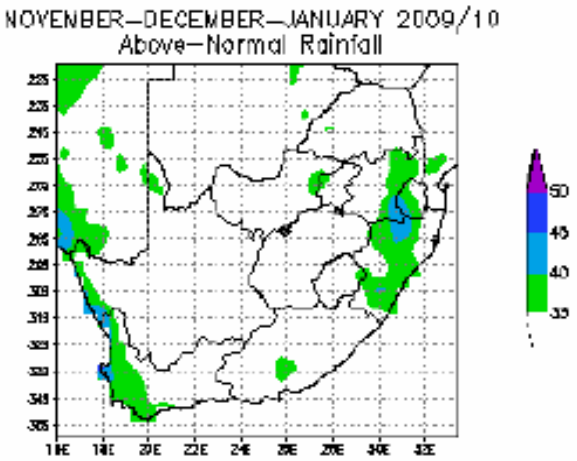
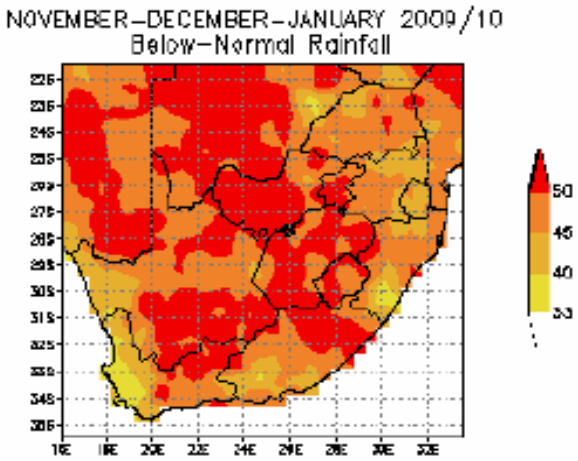
51.0
50.9
50.0
48.3
48.9
48.1
48.4


Comparison of water storage as on 16 Nov 2009 per WMA
% FSC
120
110
100
90
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Tot
WMA
Last Week
This Week
Last Year
Median for November

WMA Storage Summary

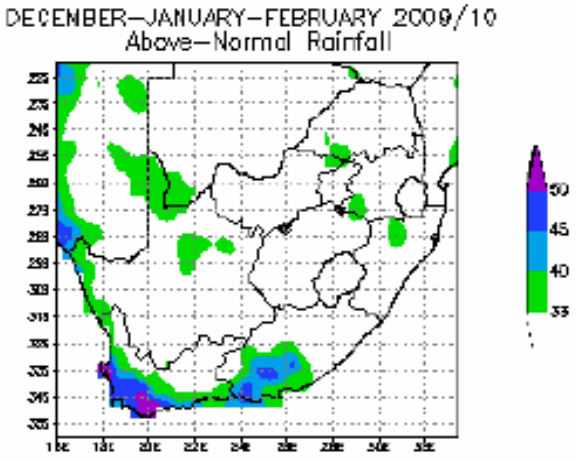
	WMA	Last Week	This Week	16-Nov-09	Last Year	Median
		%Full	%Full	% Rise	%Full	November
1	Limpopo	79.9	79.5	-0.4	81	60.65
2	Luvuvhu/Letaba	57.9	57.3	-0.6	50.8	48.15
3	Crocodile (West) Marico	72.1	72.3	0.2	65.2	51.5
4	Olifants	91.7	92.7	1.0	86.8	62.25
5	Inkomati	86	88.7	2.7	69.7	57.75
6	Usutu/Mhlatuze	72.7	72.8	0.1	71.7	66.9
7	Thukela	87.4	87.3	-0.1	86.2	82.8
8	Upper Vaal	91	90.9	-0.1	86.1	72.35
9	Middle Vaal	76.4	76.6	0.2	65.5	47.85
10	Lower Vaal	94.7	93.4	-1.3	86.4	77.5
11	Mvoti/Umzimkulu	90.5	90.6	0.1	80	80.65
12	Mzimvubu/Keiskamma	67.1	67.2	0.1	75.3	55.45
13	Upper Orange	91.8	91.1	-0.7	74.3	67.65
14	Lower Orange	116.7	115.8	-0.9	87.7	107.6
15	Fish/Tsitsikamma	39.9	39.9	0.0	54.4	53.25
16	Gouritz	45.4	44.2	-1.2	74.1	45.75
17	Olifants/Doorn	97.7	99.9	2.2	100.3	95.5
18	Breede	92.9	93.4	0.5	93.6	74.05
19	Berg	99.2	99.7	0.5	99.6	85.35
GRAND TOTAL		84.9	84.8	-0.1	76.5	62.8

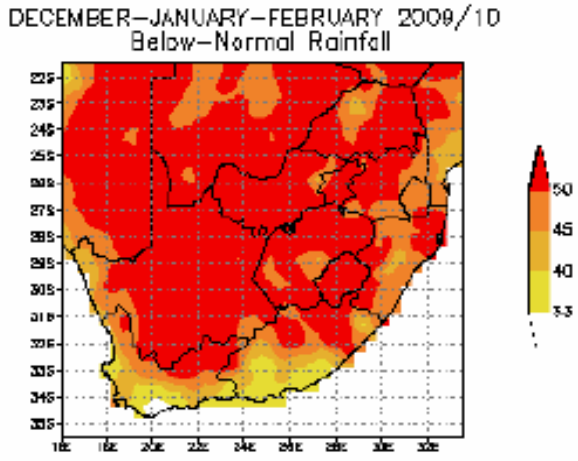




November-December-January

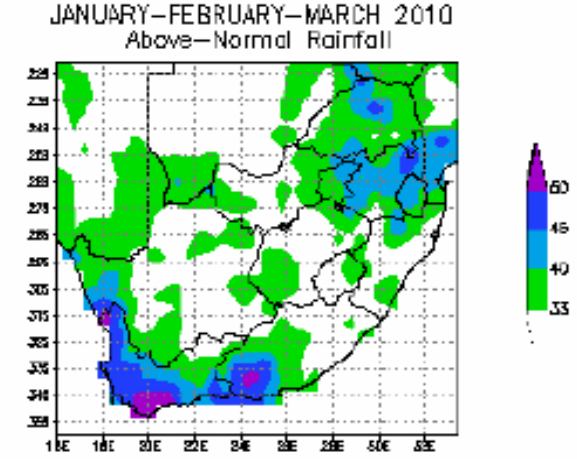
El Niño related drought conditions are expected to occur over the larger part of South Africa and its neighbouring countries.

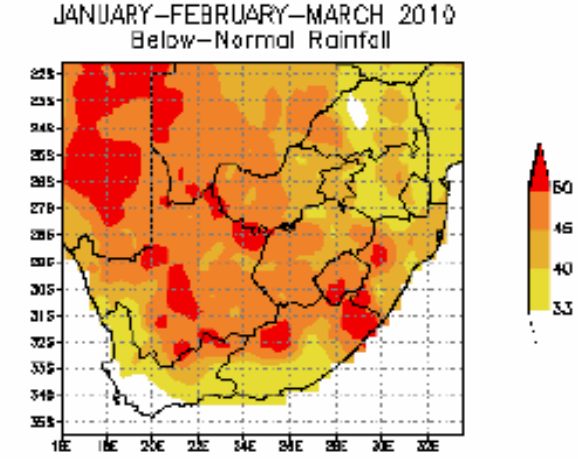


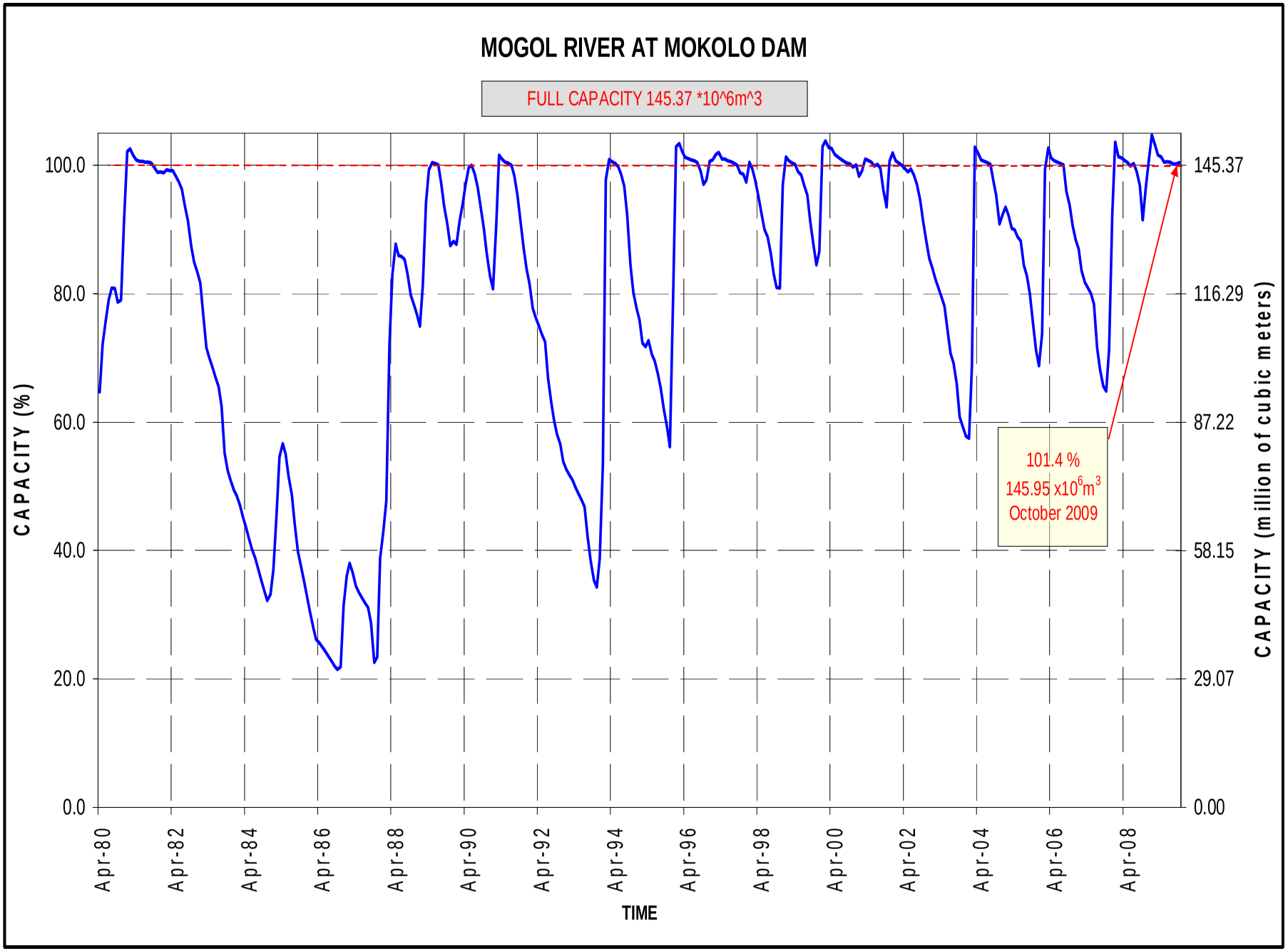


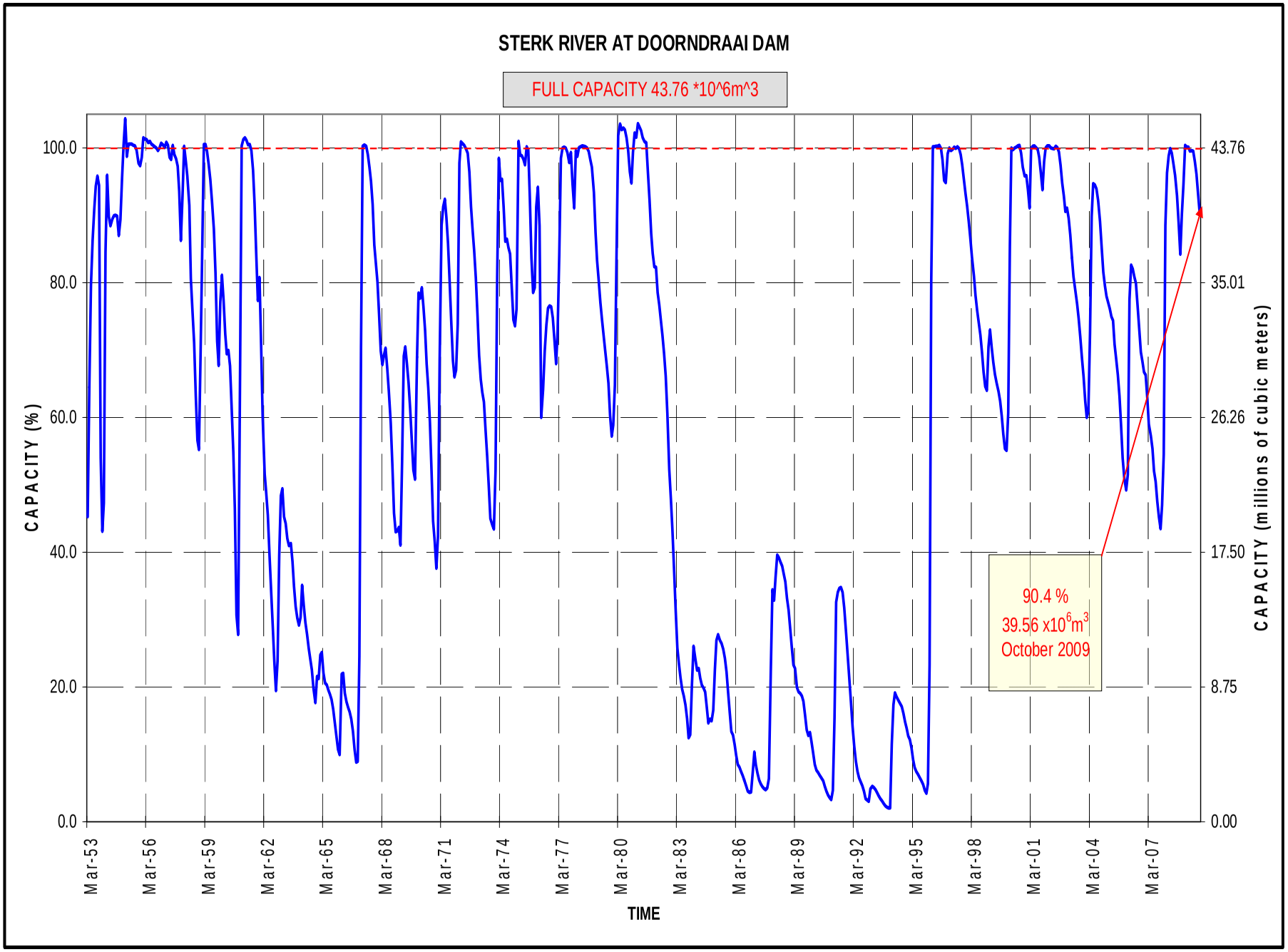
December-January-February

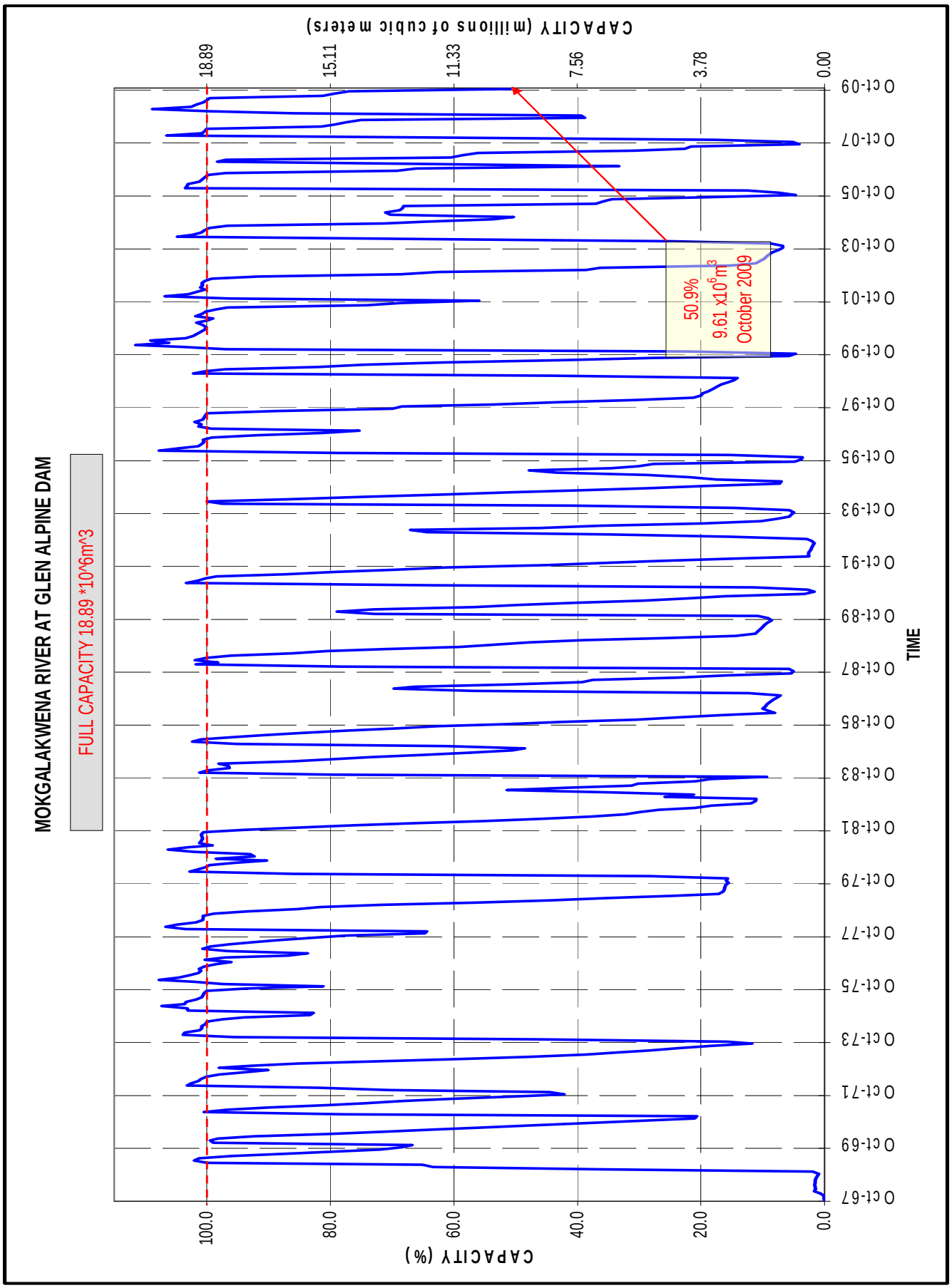
Enhanced probabilities for below-normal rainfall totals to occur are forecast over the summer rainfall regions, and enhanced probabilities for above-normal rainfall totals over parts of the south-western and Eastern Cape.

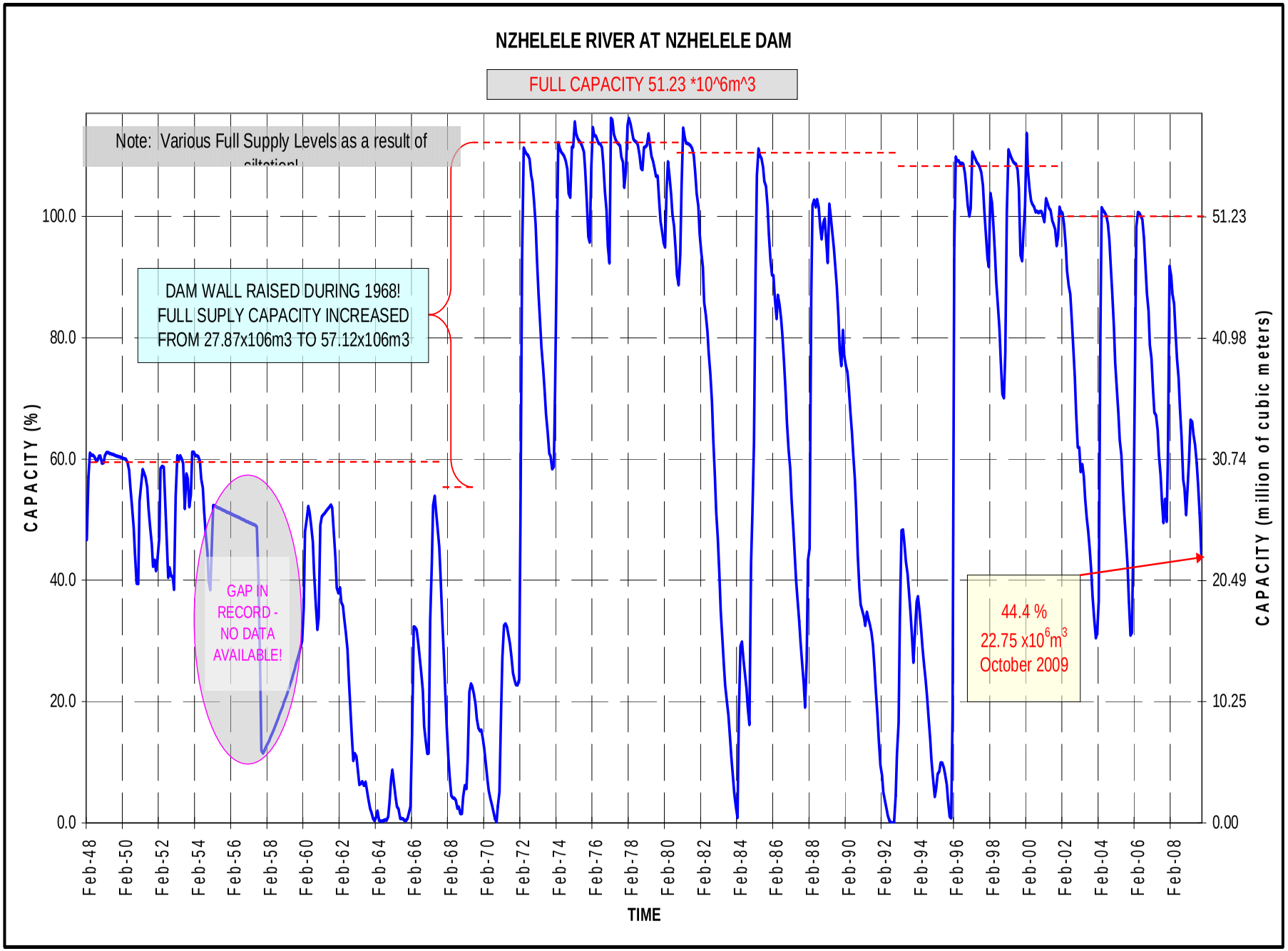


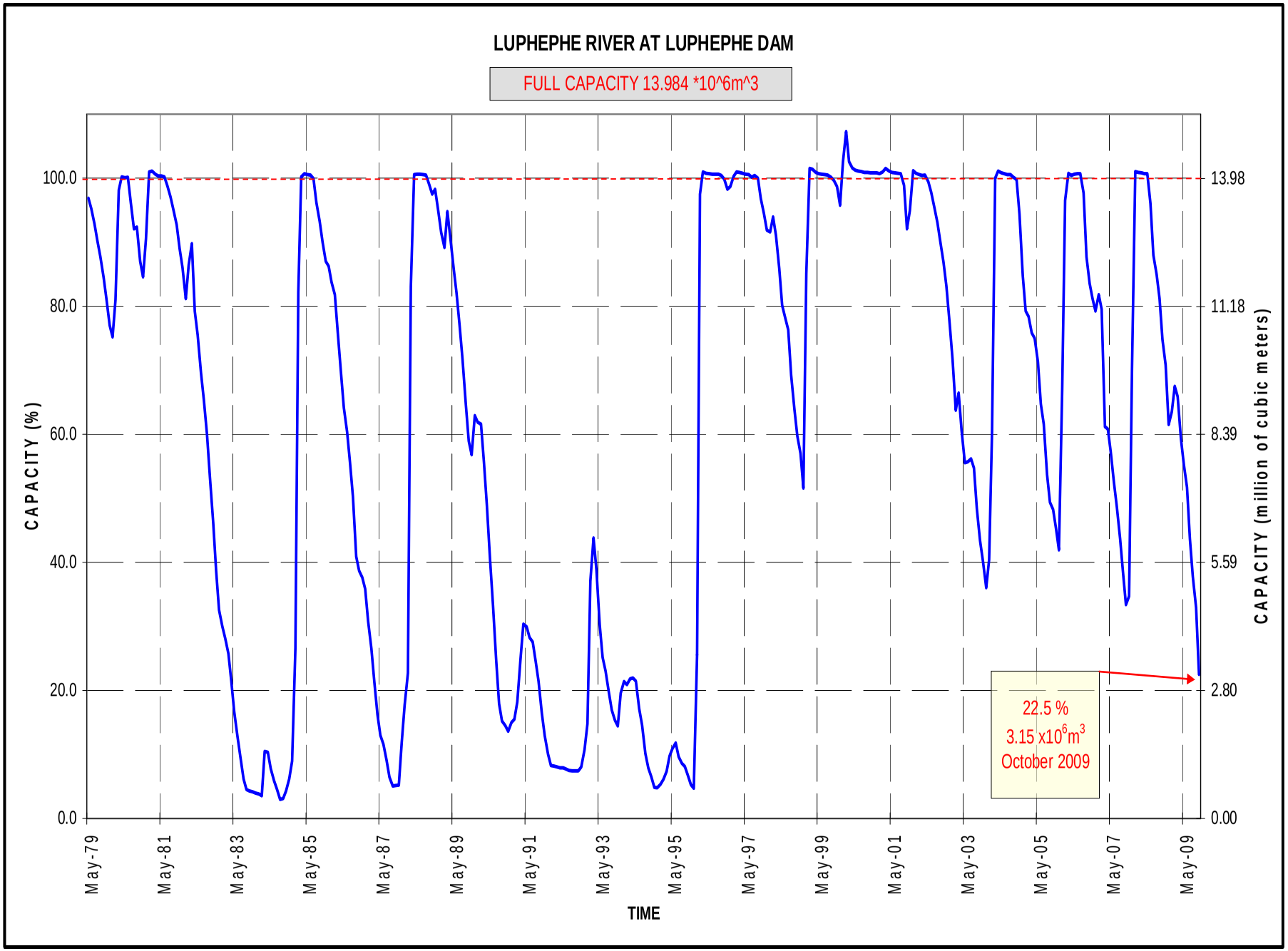


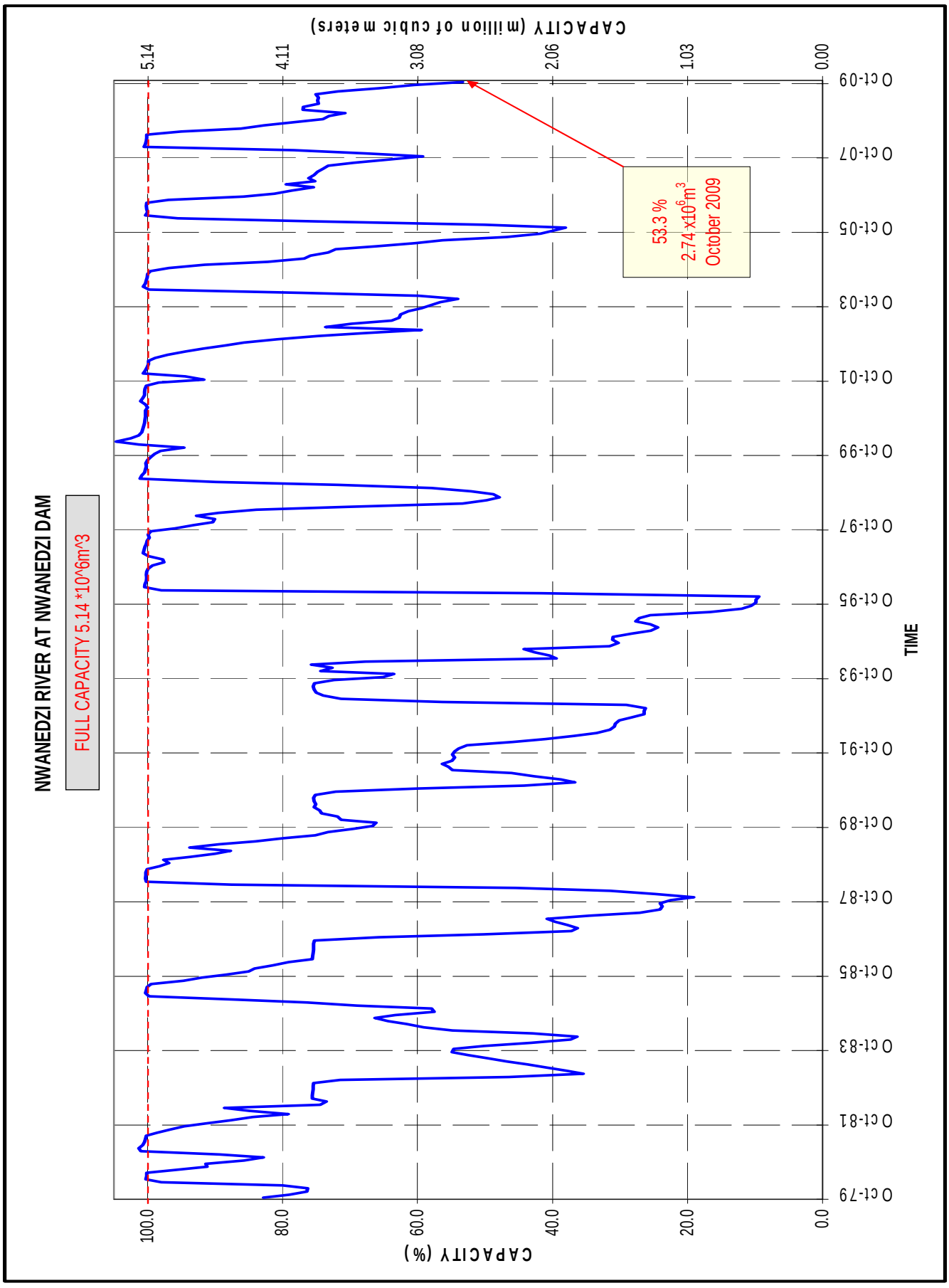

MOGOL RIVER AT MOKOLO DAM
FULL CAPACITY 145.37 *10^6m^3
CAPACITY (%)
100.0
80.0
60.0
40.0
20.0
0.0
145.37
116.29
87.22
58.15
29.07
0.00
CAPACITY (million of cubic meters)
101.4 %
145.95 x10^6m^3
October 2009
Apr-80
Apr-82
Apr-84
Apr-86
Apr-88
Apr-90
Apr-92
Apr-94
Apr-96
Apr-98
Apr-00
Apr-02
Apr-04
Apr-06
Apr-08
TIME

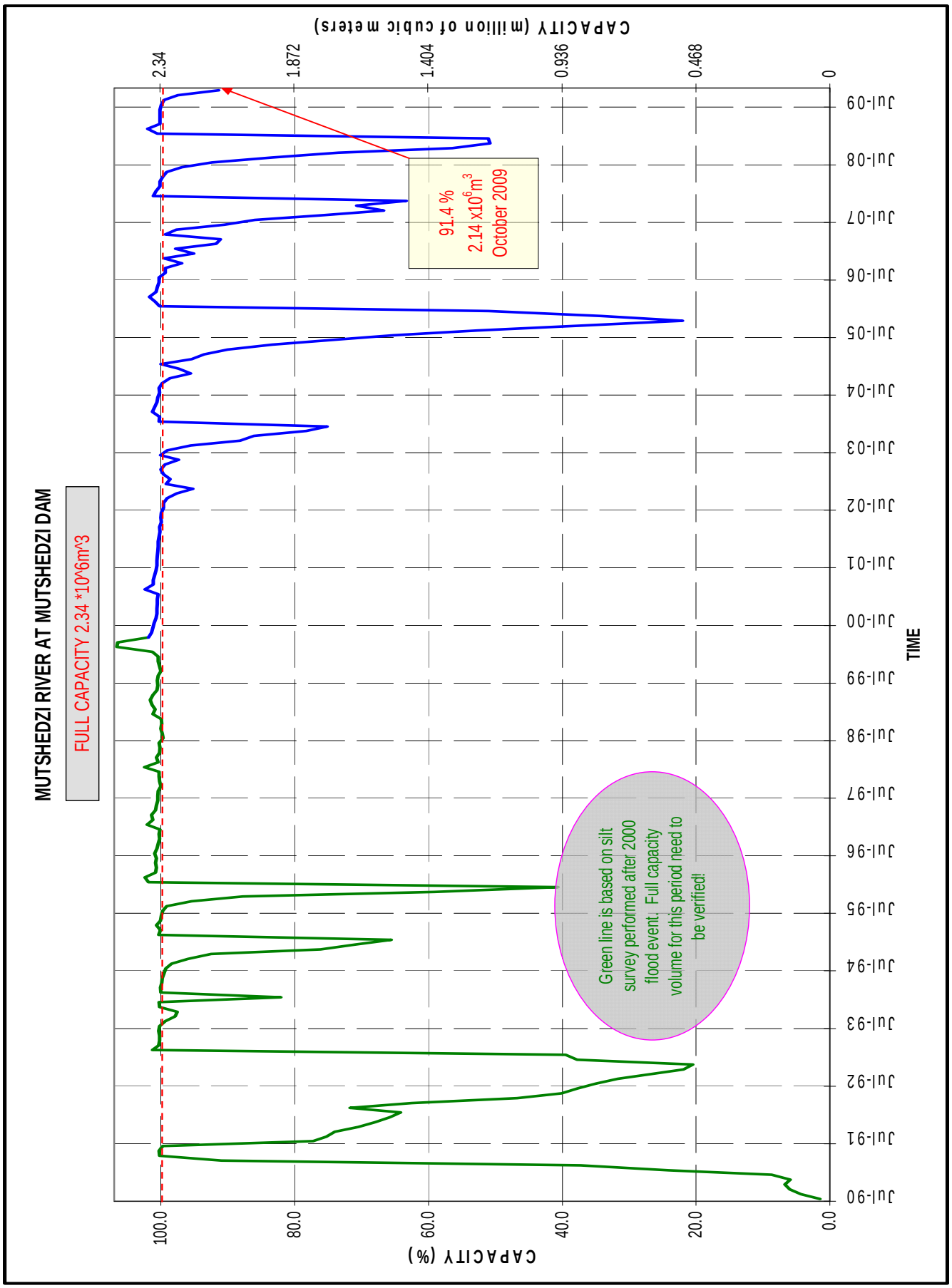

STERK RIVER AT DOORNDRAAI DAM
FULL CAPACITY 43.76 *10^6m^3
CAPACITY (%)
CAPACITY (millions of cubic meters)
100.0
80.0
60.0
40.0
20.0
0.0
43.76
35.01
26.26
17.50
8.75
0.00
Mar-53
Mar-56
Mar-59
Mar-62
Mar-65
Mar-68
Mar-71
Mar-74
Mar-77
Mar-80
Mar-83
Mar-86
Mar-89
Mar-92
Mar-95
Mar-98
Mar-01
Mar-04
Mar-07
TIME
90.4 %
39.56 x10^6m^3
October 2009

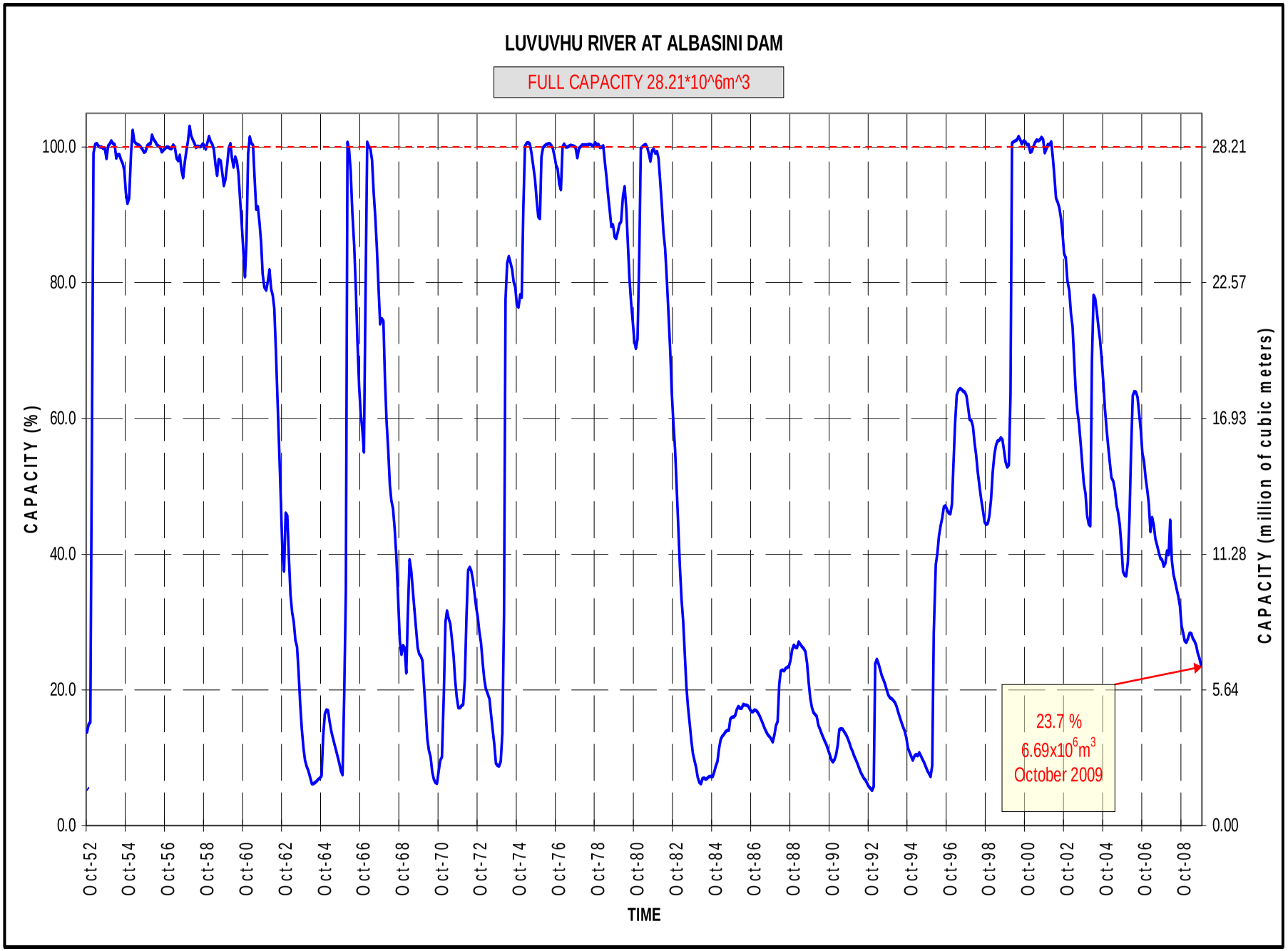

MOKGALAKWENA RIVER AT GLEN ALPINE DAM
FULL CAPACITY 18.89 *10^6m^3
CAPACITY (millions of cubic meters)
18.89
15.11
11.33
7.56
3.78
0.00
CAPACITY (%)
100.0
80.0
60.0
40.0
20.0
0.0
TIME
Oct-09
Oct-07
Oct-05
Oct-03
Oct-01
Oct-99
Oct-97
Oct-95
Oct-93
Oct-91
Oct-89
Oct-87
Oct-85
Oct-83
Oct-81
Oct-79
Oct-77
Oct-75
Oct-73
Oct-71
Oct-69
Oct-67
50.9%
9.61 x10^6m^3
October 2009

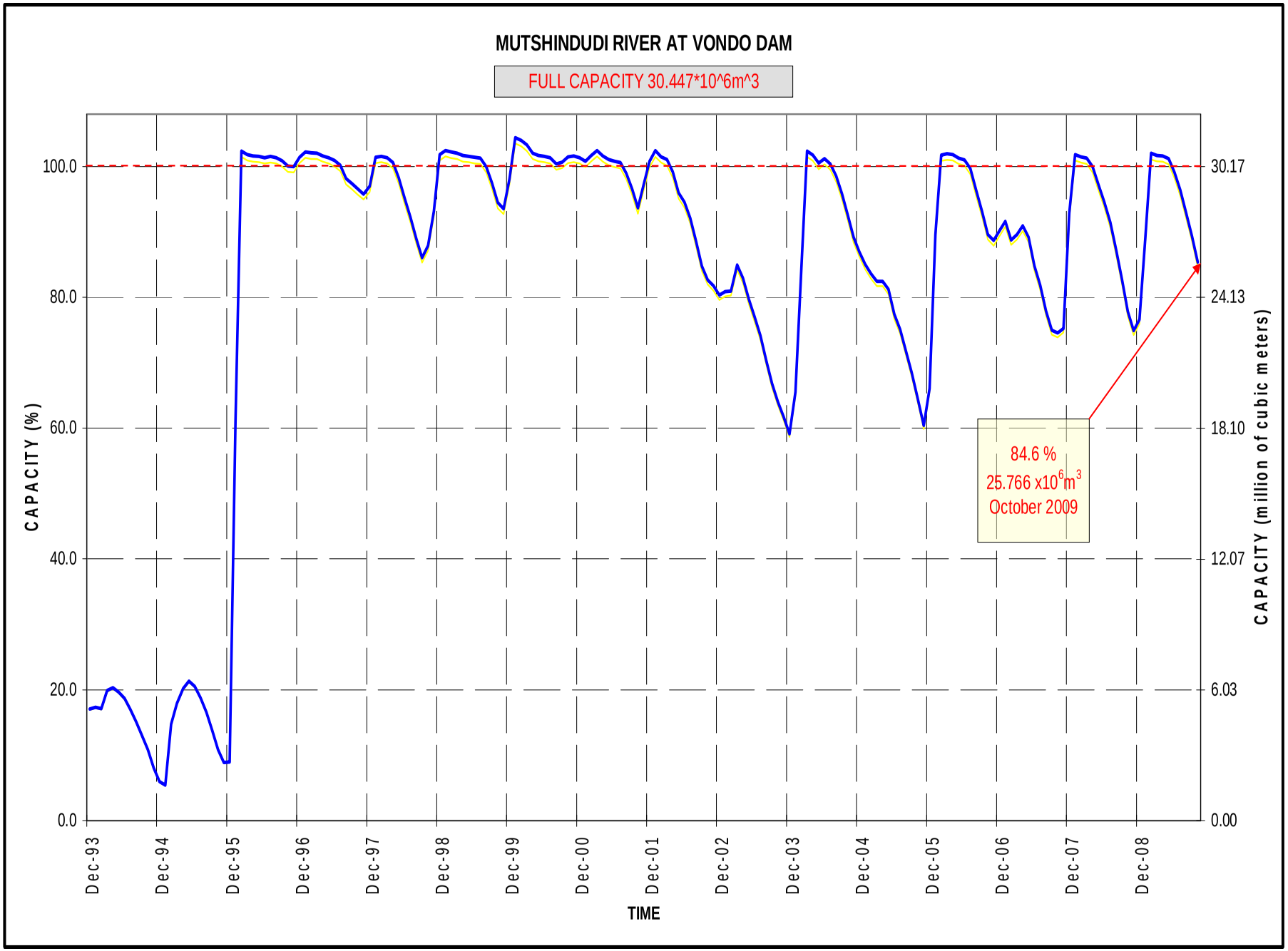

NZHELELE RIVER AT NZHELELE DAM
FULL CAPACITY 51.23 *10^6m^3
Note: Various Full Supply Levels as a result of
DAM WALL RAISED DURING 1968!
FULL SUPLY CAPACITY INCREASED
FROM 27.87x106m3 TO 57.12x106m3
GAP IN RECORD - NO DATA AVAILABLE!
44.4 %
22.75 x10^6m^3
October 2009
CAPACITY (%)
CAPACITY (million of cubic meters)
TIME
100.0
80.0
60.0
40.0
20.0
0.0
51.23
40.98
30.74
20.49
10.25
0.00
Feb-48
Feb-50
Feb-52
Feb-54
Feb-56
Feb-58
Feb-60
Feb-62
Feb-64
Feb-66
Feb-68
Feb-70
Feb-72
Feb-74
Feb-76
Feb-78
Feb-80
Feb-82
Feb-84
Feb-86
Feb-88
Feb-90
Feb-92
Feb-94
Feb-96
Feb-98
Feb-00
Feb-02
Feb-04
Feb-06
Feb-08

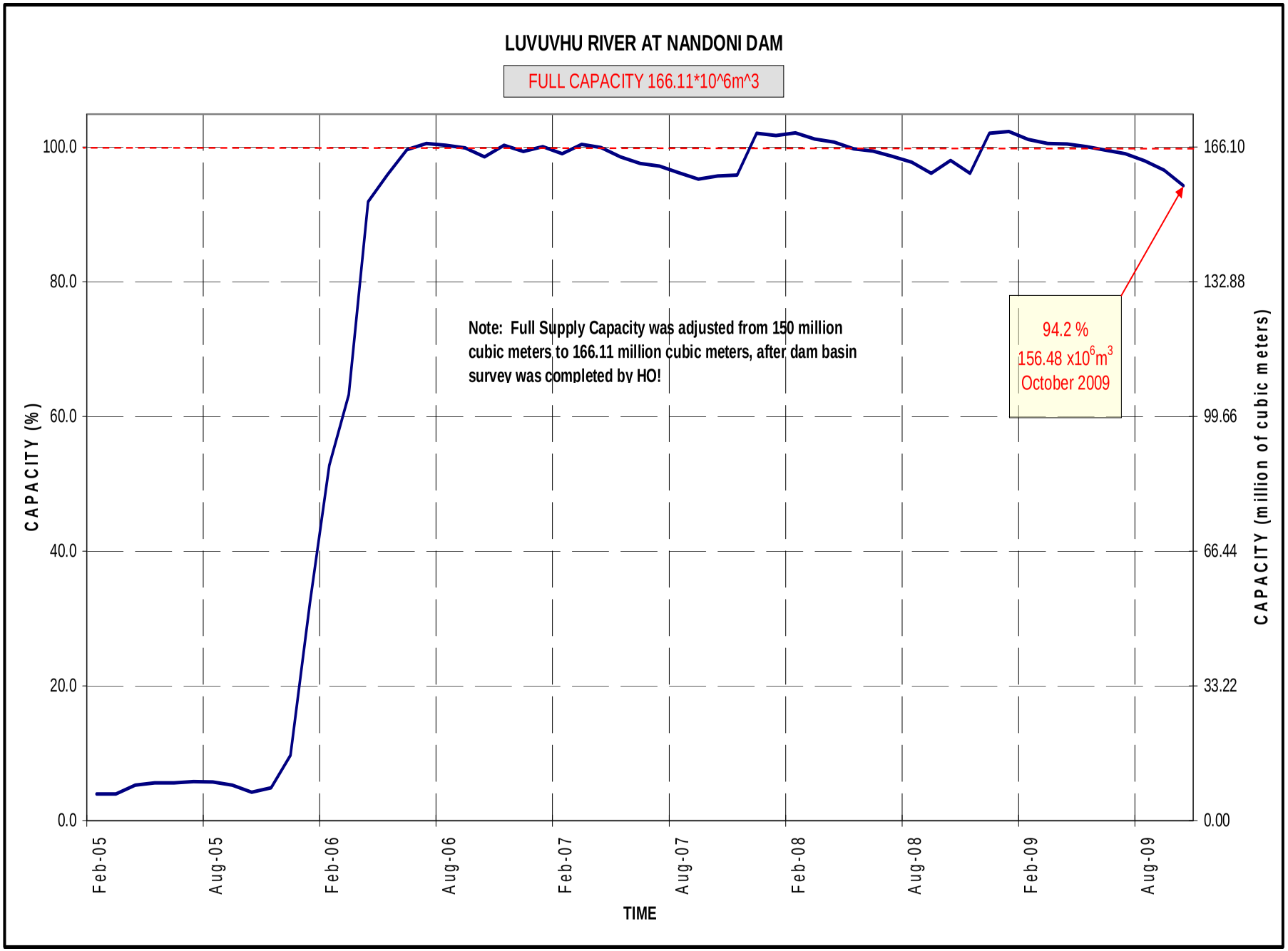

LUPHEPHE RIVER AT LUPHEPHE DAM
FULL CAPACITY 13.984 *10^6m^3
CAPACITY (%)
CAPACITY (million of cubic meters)
100.0
80.0
60.0
40.0
20.0
0.0
13.98
11.18
8.39
5.59
2.80
0.00
May-79
May-81
May-83
May-85
May-87
May-89
May-91
May-93
May-95
May-97
May-99
May-01
May-03
May-05
May-07
May-09
TIME
22.5 %
3.15 x10^6m^3
October 2009

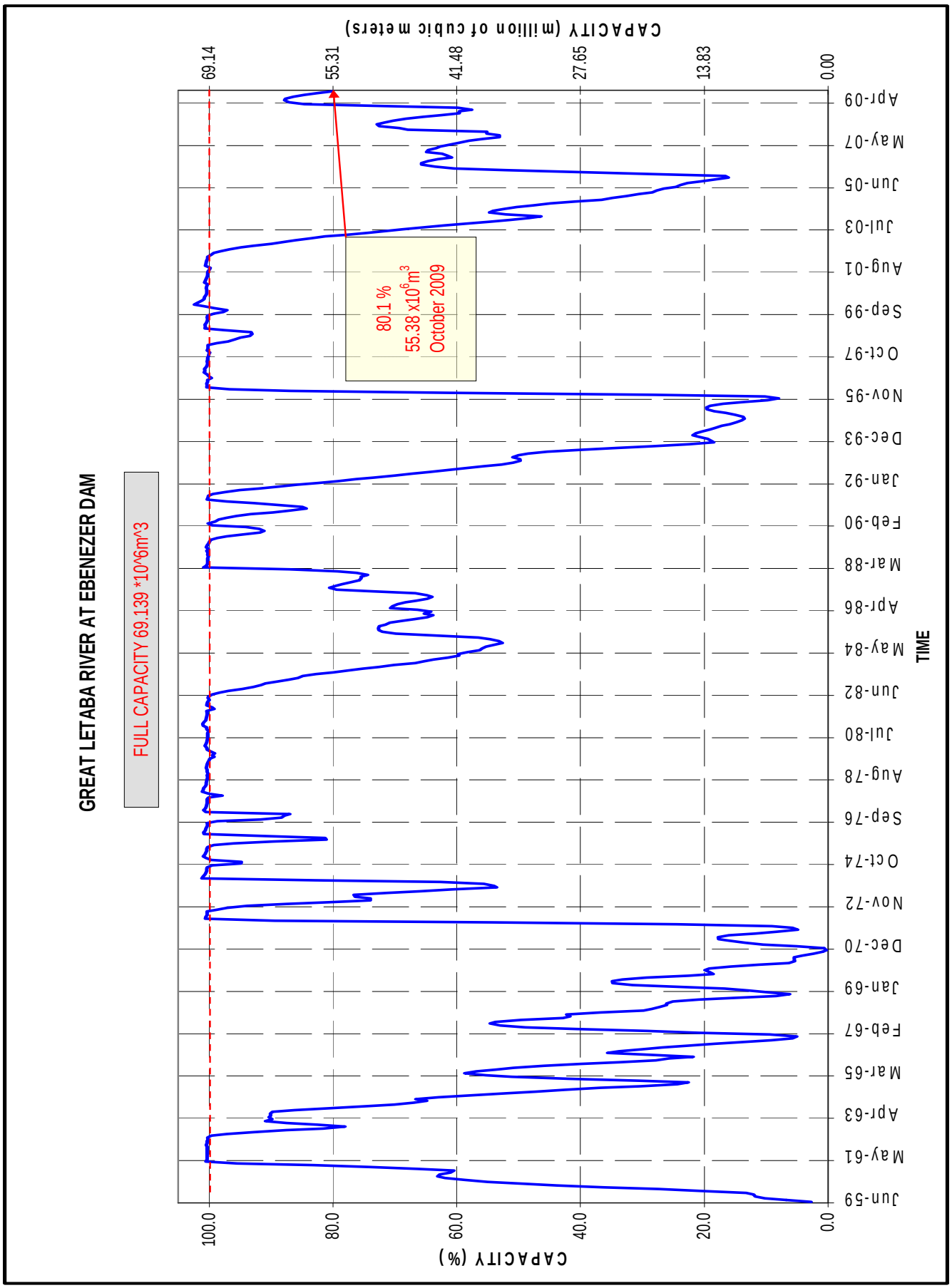

NWANEDZI RIVER AT NWANEDZI DAM
FULL CAPACITY 5.14 *10^6m^3
CAPACITY (million of cubic meters)
5.14
4.11
3.08
2.06
1.03
0.00
CAPACITY (%)
100.0
80.0
60.0
40.0
20.0
0.0
TIME
Oct-79
Oct-81
Oct-83
Oct-85
Oct-87
Oct-89
Oct-91
Oct-93
Oct-95
Oct-97
Oct-99
Oct-01
Oct-03
Oct-05
Oct-07
Oct-09
53.3 %
2.74 x10^6m^3
October 2009

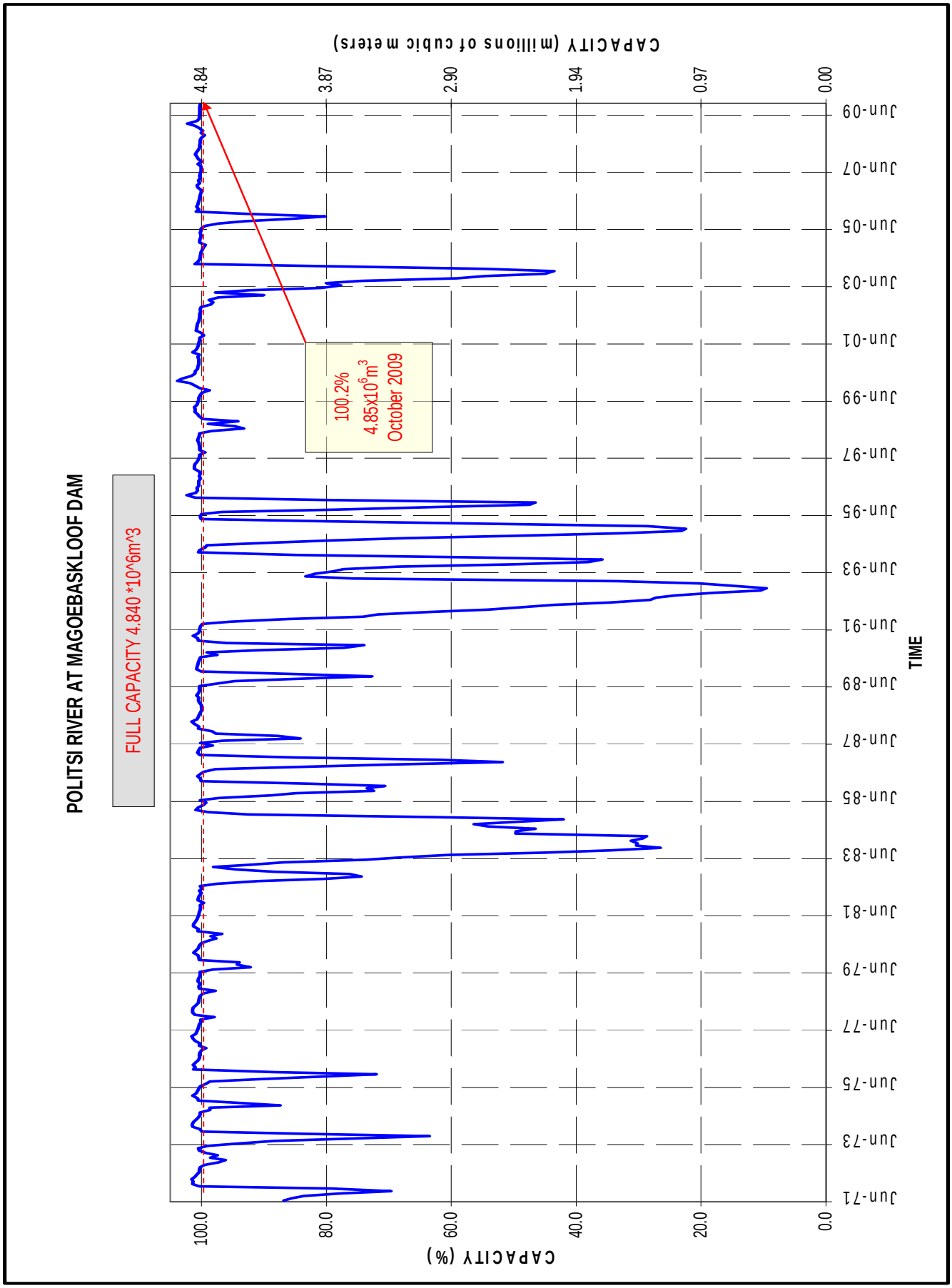

MUTSHEDZI RIVER AT MUTSHEDZI DAM
FULL CAPACITY 2.34 *10^6m^3
CAPACITY (million of cubic meters)
2.34
1.872
1.404
0.936
0.468
0
91.4 %
2.14 x10^6m^3
October 2009
CAPACITY (%)
100.0
80.0
60.0
40.0
20.0
0.0
Green line is based on silt survey performed after 2000 flood event. Full capacity volume for this period need to be verified!
TIME
Jul-90
Jul-91
Jul-92
Jul-93
Jul-94
Jul-95
Jul-96
Jul-97
Jul-98
Jul-99
Jul-00
Jul-01
Jul-02
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09

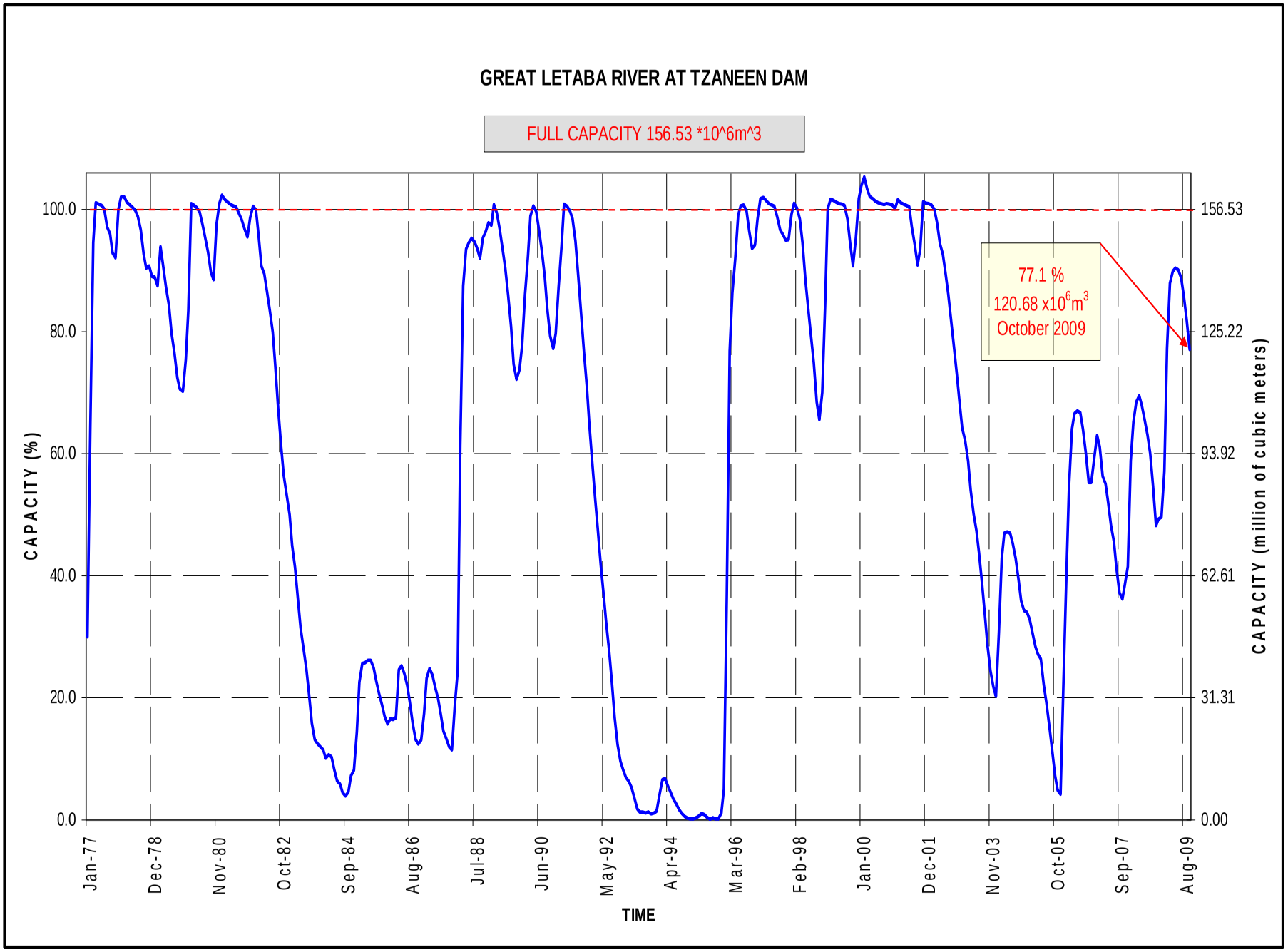

LUVUVHU RIVER AT ALBASINI DAM
FULL CAPACITY 28.21*10^6m^3
CAPACITY (%)
CAPACITY (million of cubic meters)
100.0
80.0
60.0
40.0
20.0
0.0
28.21
22.57
16.93
11.28
5.64
0.00
Oct-52
Oct-54
Oct-56
Oct-58
Oct-60
Oct-62
Oct-64
Oct-66
Oct-68
Oct-70
Oct-72
Oct-74
Oct-76
Oct-78
Oct-80
Oct-82
Oct-84
Oct-86
Oct-88
Oct-90
Oct-92
Oct-94
Oct-96
Oct-98
Oct-00
Oct-02
Oct-04
Oct-06
Oct-08
TIME
23.7 %
6.69x10^6m^3
October 2009

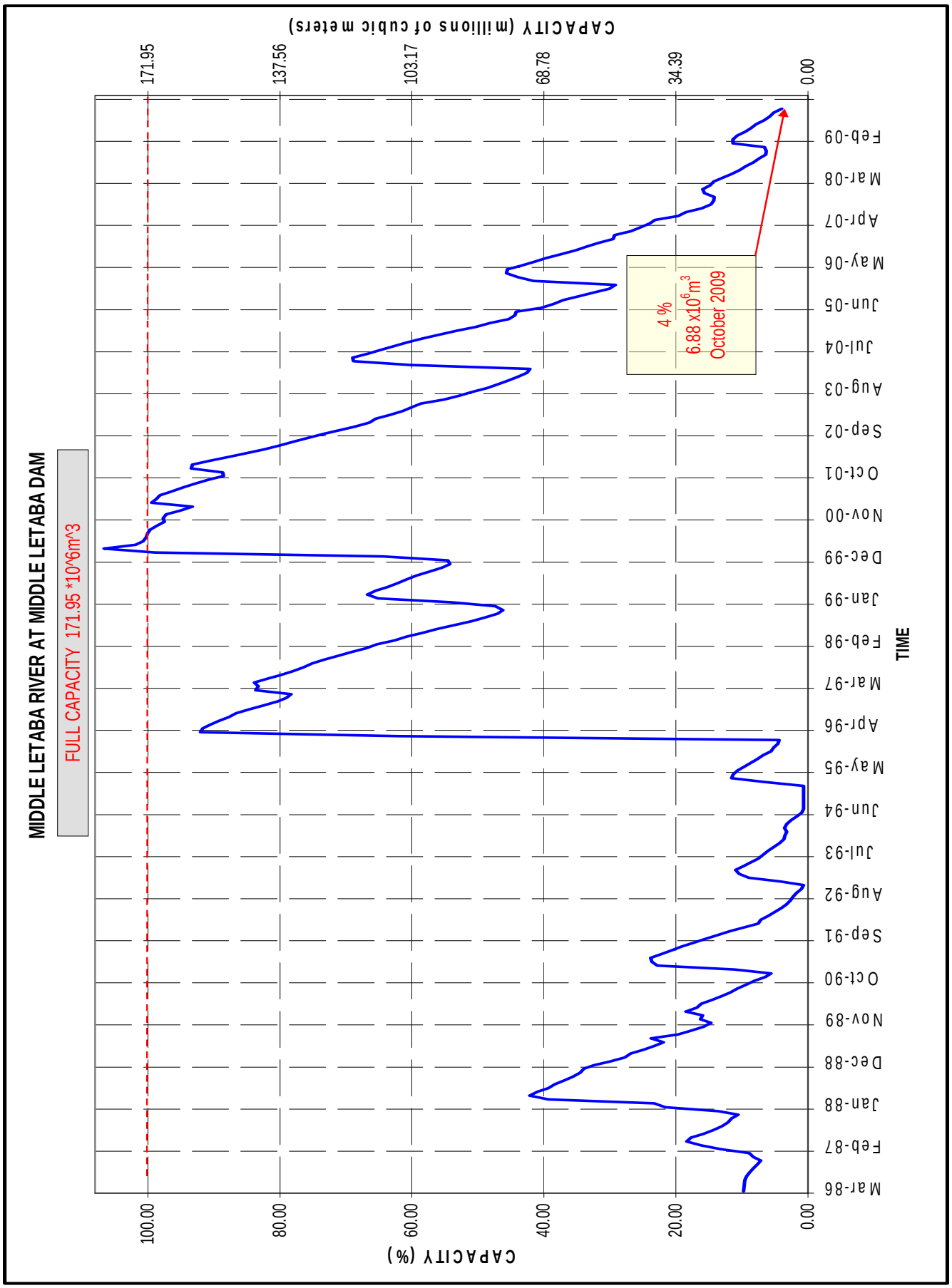

MUTSHINDUDI RIVER AT VONDO DAM
FULL CAPACITY 30.447*10^6m^3
CAPACITY (%)
CAPACITY (million of cubic meters)
100.0
80.0
60.0
40.0
20.0
0.0
30.17
24.13
18.10
12.07
6.03
0.00
84.6 %
25.766 x10^6m^3
October 2009
Dec-93
Dec-94
Dec-95
Dec-96
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
TIME

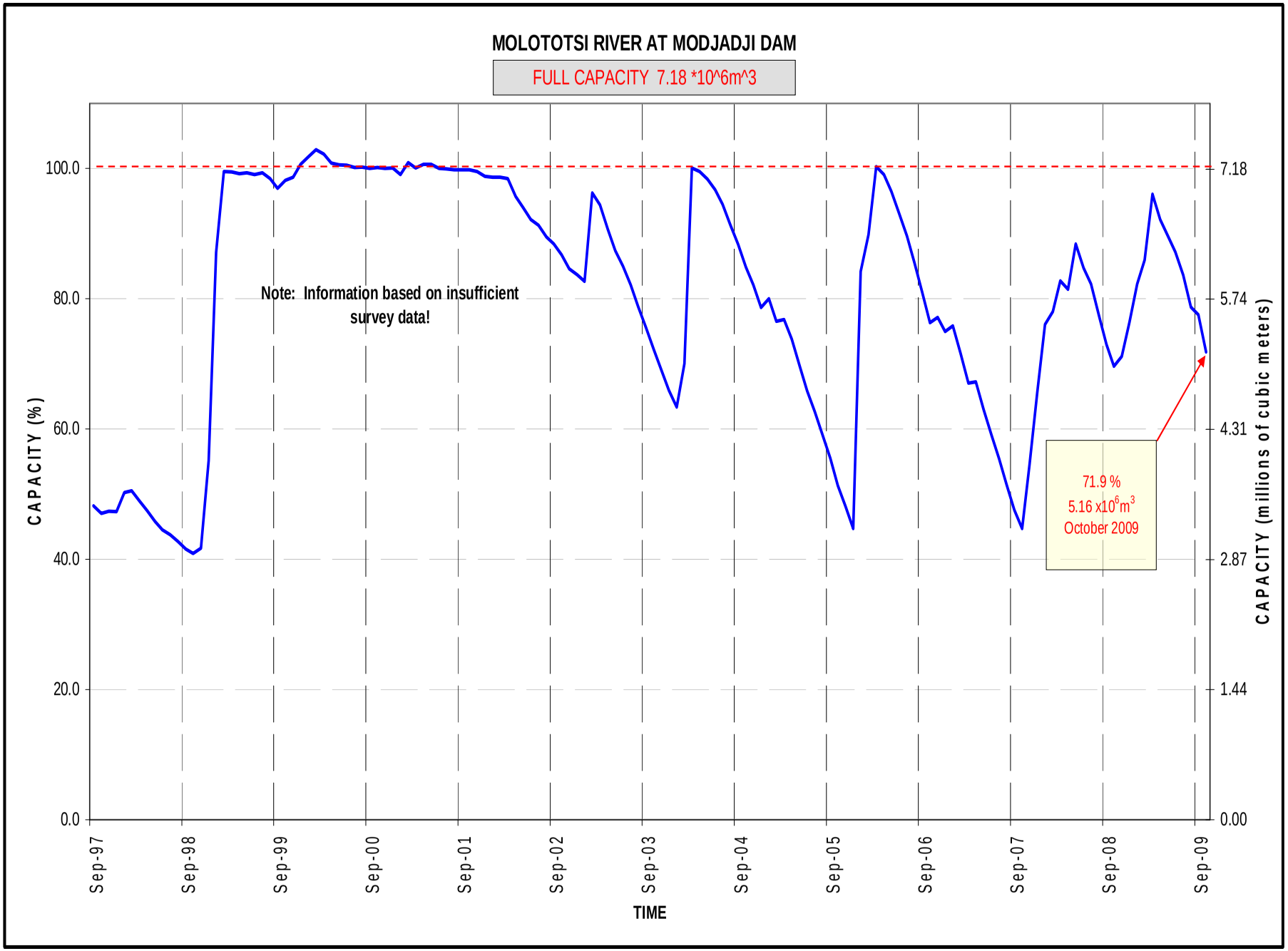

LUVUVHU RIVER AT NANDONI DAM
FULL CAPACITY 166.11*10^6m^3
100.0
80.0
60.0
40.0
20.0
0.0
CAPACITY (%)
166.10
132.88
99.66
66.44
33.22
0.00
CAPACITY (million of cubic meters)
Note: Full Supply Capacity was adjusted from 150 million cubic meters to 166.11 million cubic meters, after dam basin survey was completed by HO!
94.2 %
156.48 x10^6m^3
October 2009
Feb-05
Aug-05
Feb-06
Aug-06
Feb-07
Aug-07
Feb-08
Aug-08
Feb-09
Aug-09
TIME

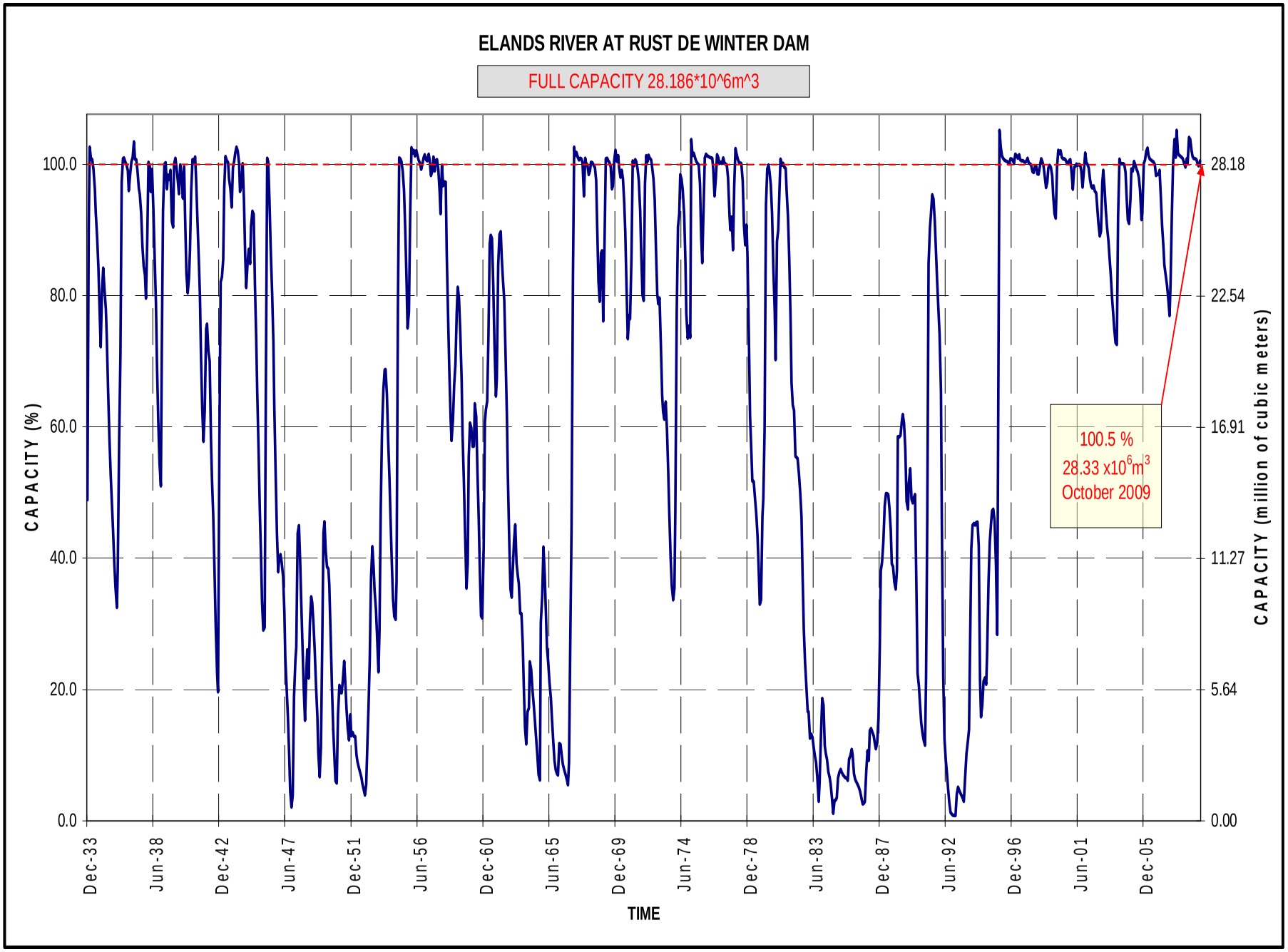

GREAT LETABA RIVER AT EBENEZER DAM
FULL CAPACITY 69.139 *10^6m^3
80.1 %
55.38 x10^6m^3
October 2009
CAPACITY (million of cubic meters)
69.14
55.31
41.48
27.65
13.83
0.00
CAPACITY (%)
100.0
80.0
60.0
40.0
20.0
0.0
TIME
Jun-59
May-61
Apr-63
Mar-65
Feb-67
Jan-69
Dec-70
Nov-72
Oct-74
Sep-76
Aug-78
Jul-80
Jun-82
May-84
Apr-86
Mar-88
Feb-90
Jan-92
Dec-93
Nov-95
Oct-97
Sep-99
Aug-01
Jul-03
Jun-05
May-07
Apr-09

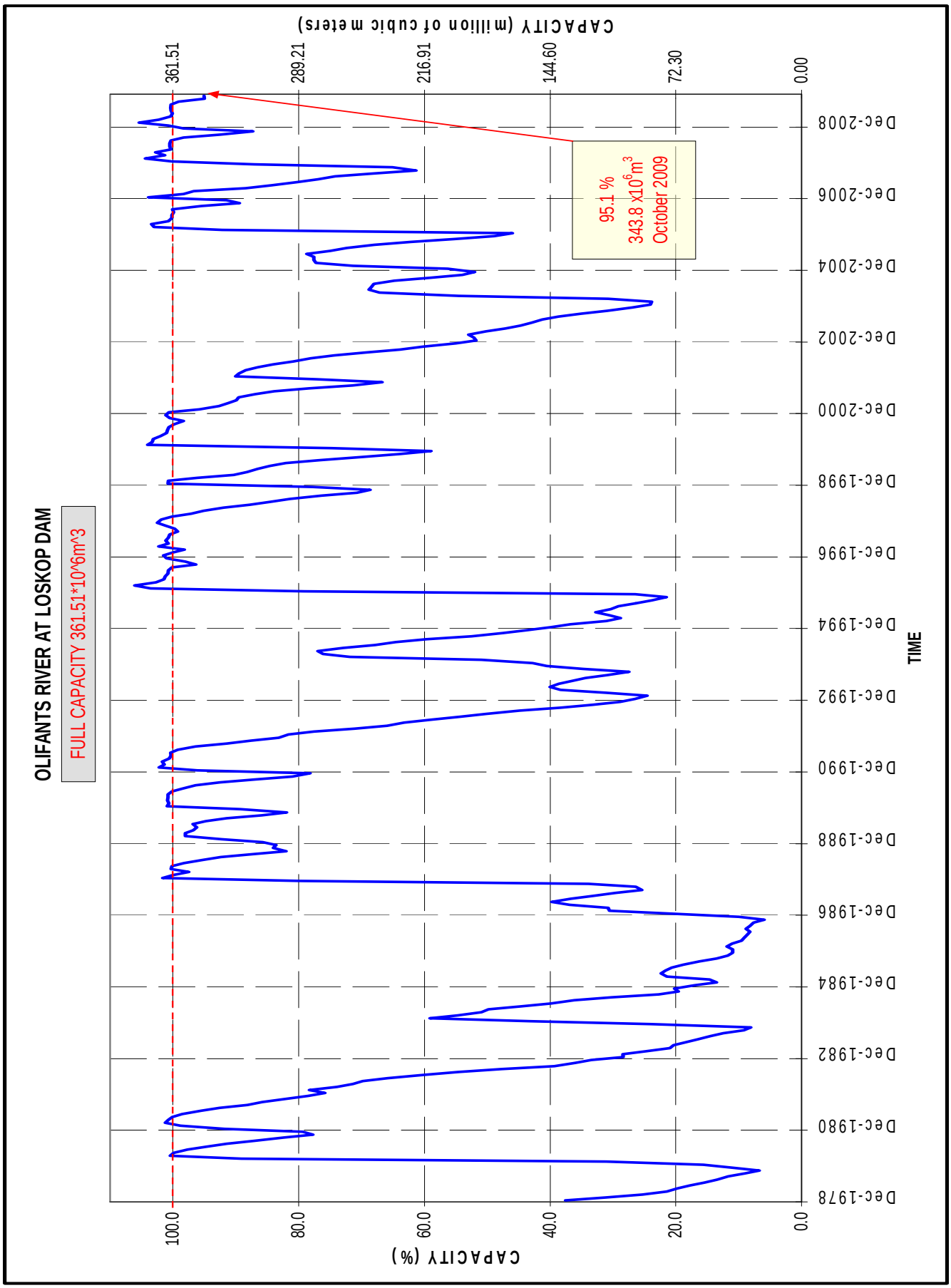

POLITSI RIVER AT MAGOEBASKLOOF DAM
FULL CAPACITY 4.840 *10^6m^3
100.2%
4.85x10^6m^3
October 2009
CAPACITY (%)
CAPACITY (millions of cubic meters)
TIME
100.0
80.0
60.0
40.0
20.0
0.0
4.84
3.87
2.90
1.94
0.97
0.00
Jun-71
Jun-73
Jun-75
Jun-77
Jun-79
Jun-81
Jun-83
Jun-85
Jun-87
Jun-89
Jun-91
Jun-93
Jun-95
Jun-97
Jun-99
Jun-01
Jun-03
Jun-05
Jun-07
Jun-09

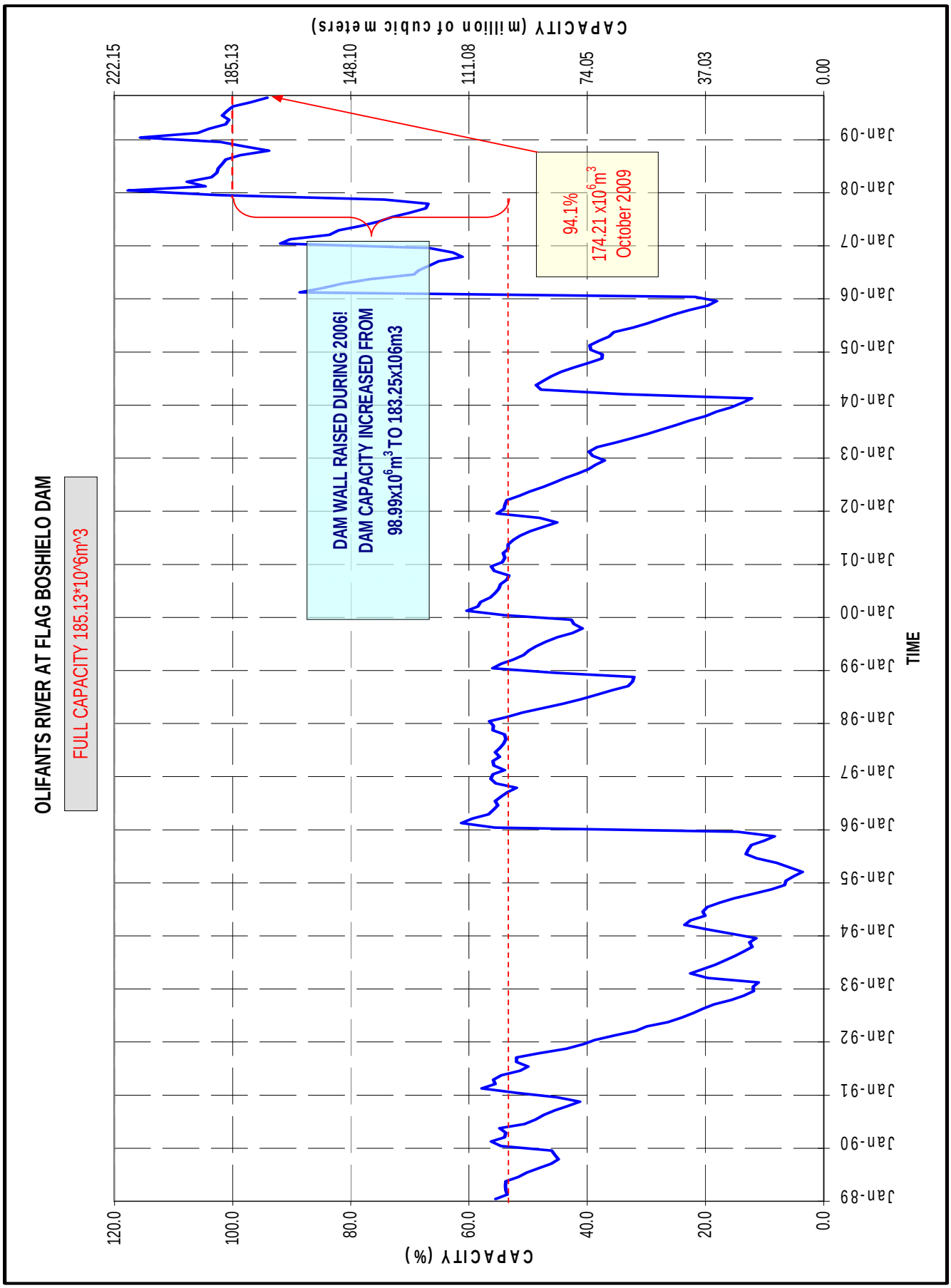

GREAT LETABA RIVER AT TZANEEN DAM
FULL CAPACITY 156.53 *10^6m^3
77.1 %
120.68 x10^6m^3
October 2009
CAPACITY (%)
CAPACITY (million of cubic meters)
TIME
100.0
80.0
60.0
40.0
20.0
0.0
156.53
125.22
93.92
62.61
31.31
0.00
Jan-77
Dec-78
Nov-80
Oct-82
Sep-84
Aug-86
Jul-88
Jun-90
May-92
Apr-94
Mar-96
Feb-98
Jan-00
Dec-01
Nov-03
Oct-05
Sep-07
Aug-09

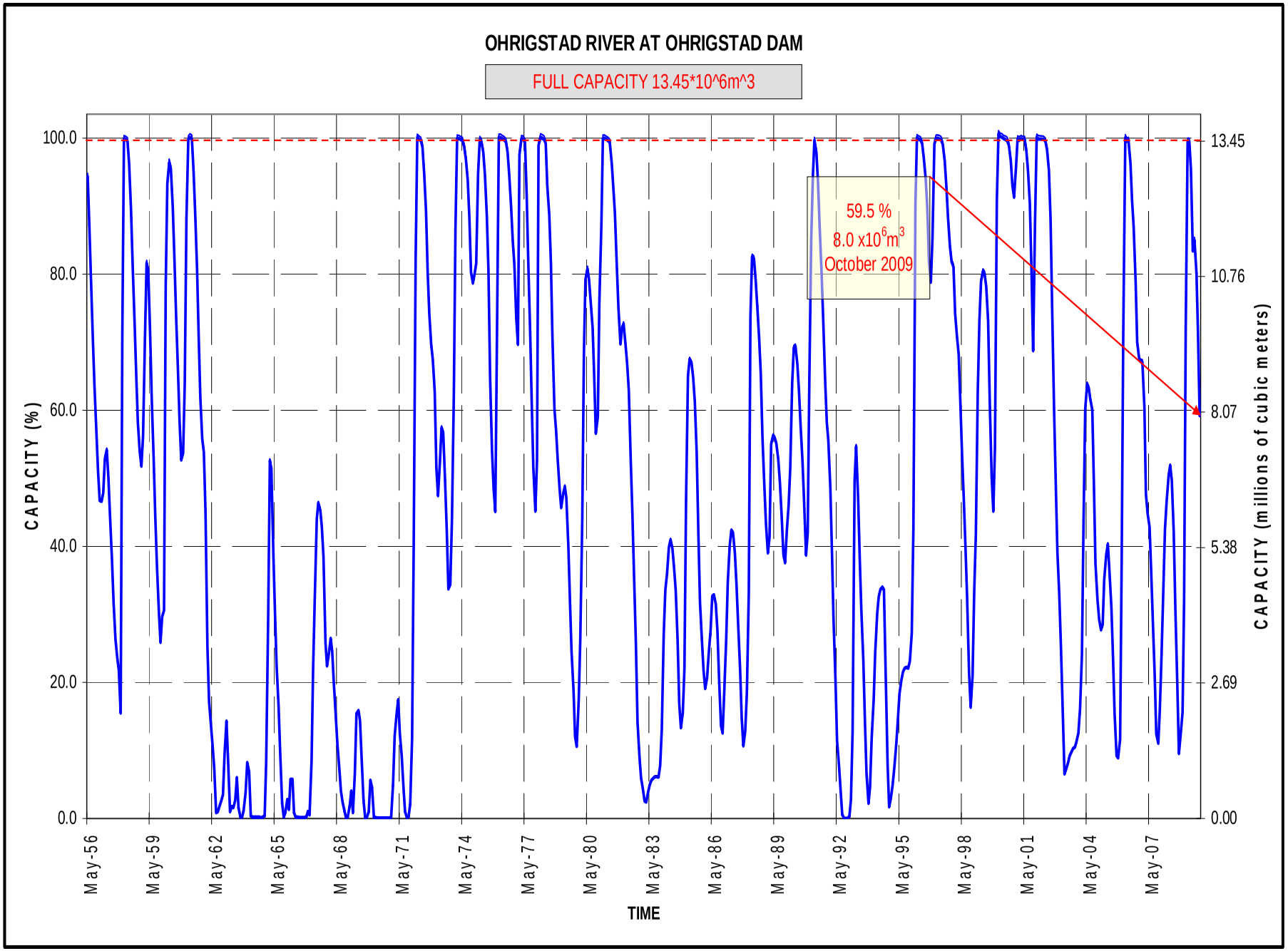

MIDDLE LETABA RIVER AT MIDDLE LETABA DAM
FULL CAPACITY 171.95 *10^6m^3
CAPACITY (%)
CAPACITY (millions of cubic meters)
TIME
100.00
80.00
60.00
40.00
20.00
0.00
171.95
137.56
103.17
68.78
34.39
0.00
Mar-86
Feb-87
Jan-88
Dec-88
Nov-89
Oct-90
Sep-91
Aug-92
Jul-93
Jun-94
May-95
Apr-96
Mar-97
Feb-98
Jan-99
Dec-99
Nov-00
Oct-01
Sep-02
Aug-03
Jul-04
Jun-05
May-06
Apr-07
Mar-08
Feb-09
4 %
6.88 x10^6 m^3
October 2009

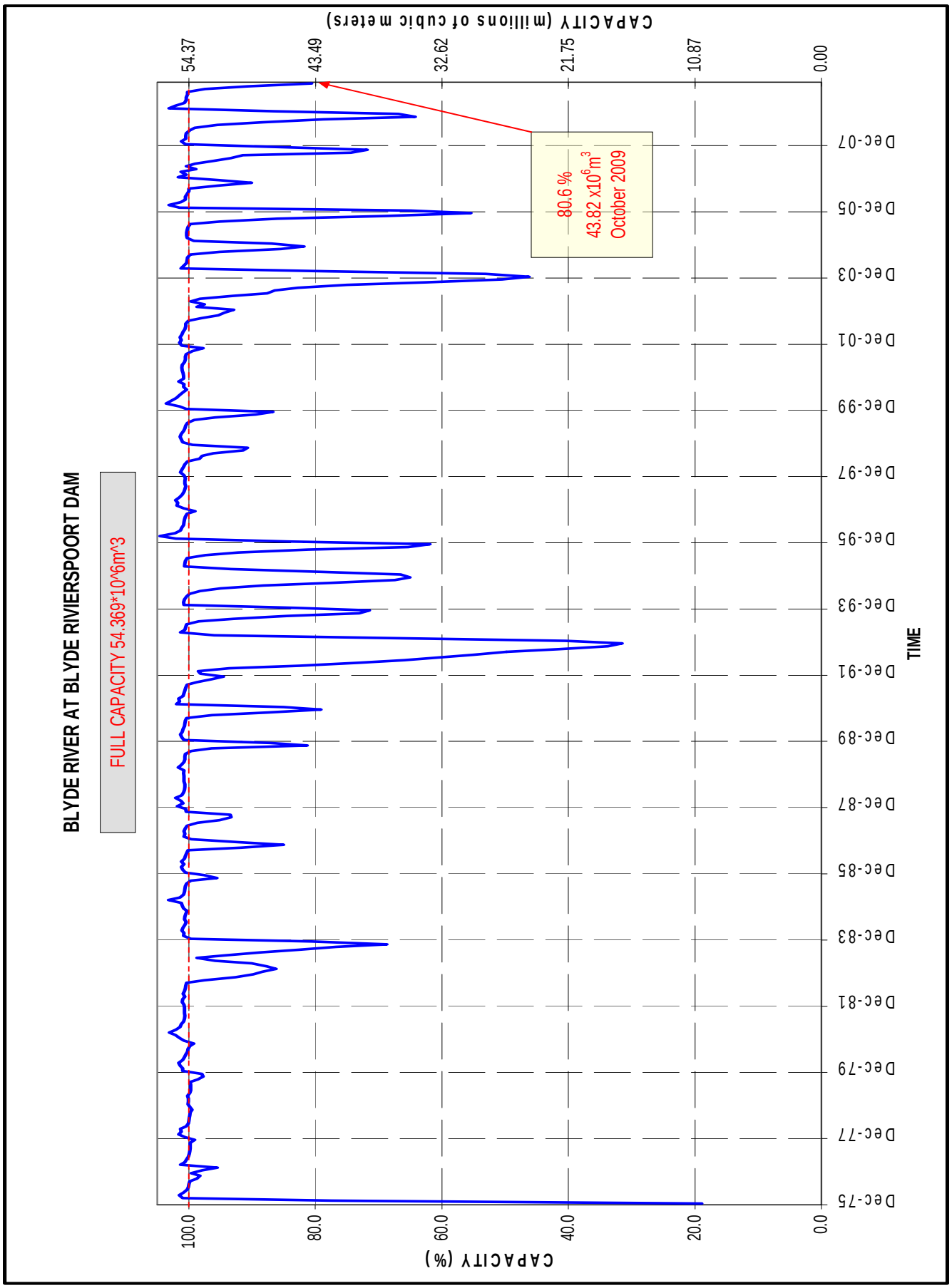

MOLOTOTSI RIVER AT MODJADJI DAM
FULL CAPACITY 7.18 *10^6m^3
Note: Information based on insufficient survey data!
71.9 %
5.16 x10^6 m^3
October 2009
CAPACITY (%)
CAPACITY (millions of cubic meters)
TIME
100.0
80.0
60.0
40.0
20.0
0.0
7.18
5.74
4.31
2.87
1.44
0.00
Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09

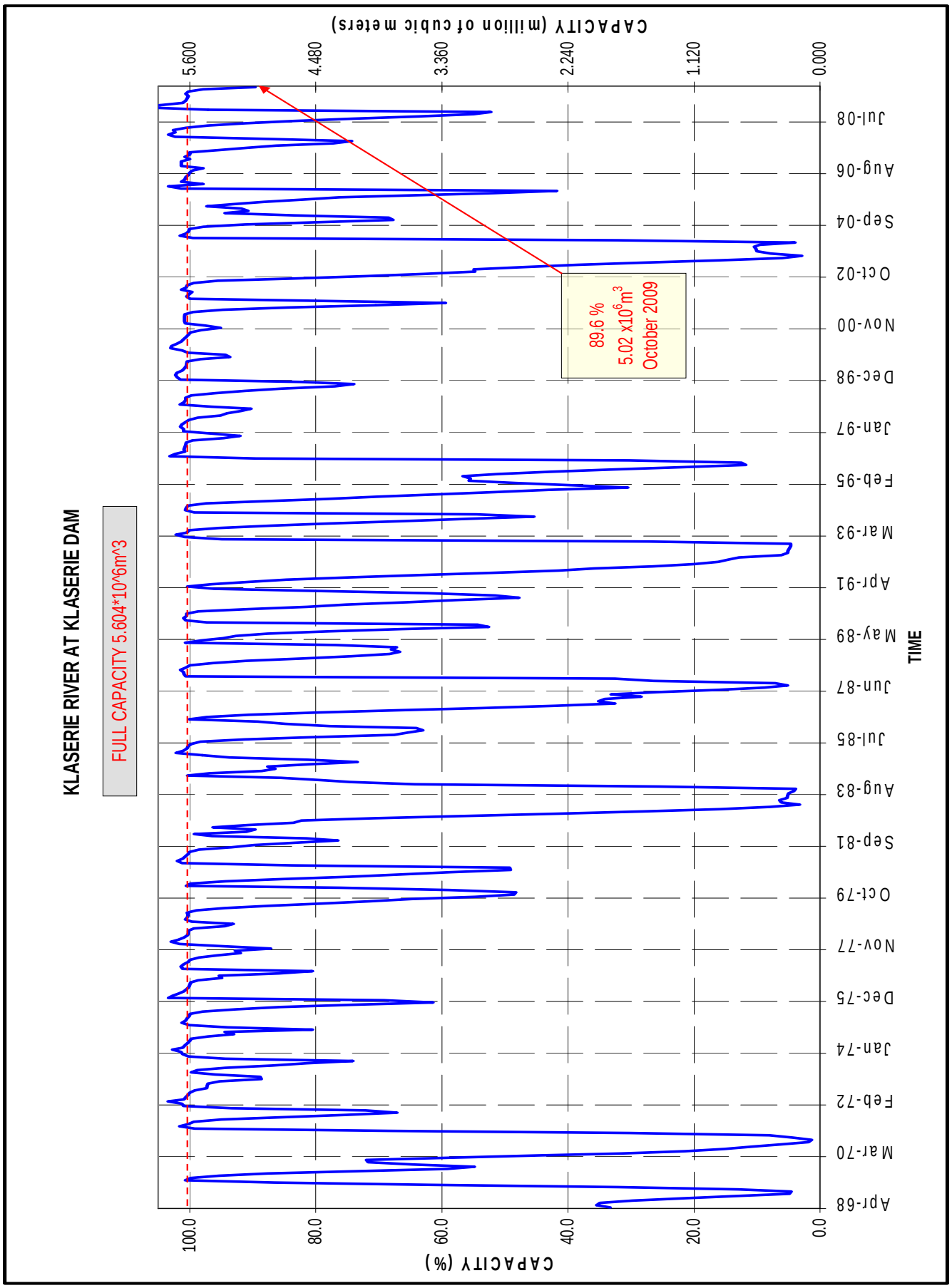

ELANDS RIVER AT RUST DE WINTER DAM
FULL CAPACITY 28.186*10^6m^3
CAPACITY (%)
100.0
80.0
60.0
40.0
20.0
0.0
28.18
22.54
16.91
11.27
5.64
0.00
CAPACITY (million of cubic meters)
100.5 %
28.33 x10^6m^3
October 2009
Dec-33
Jun-38
Dec-42
Jun-47
Dec-51
Jun-56
Dec-60
Jun-65
Dec-69
Jun-74
Dec-78
Jun-83
Dec-87
Jun-92
Dec-96
Jun-01
Dec-05
TIME

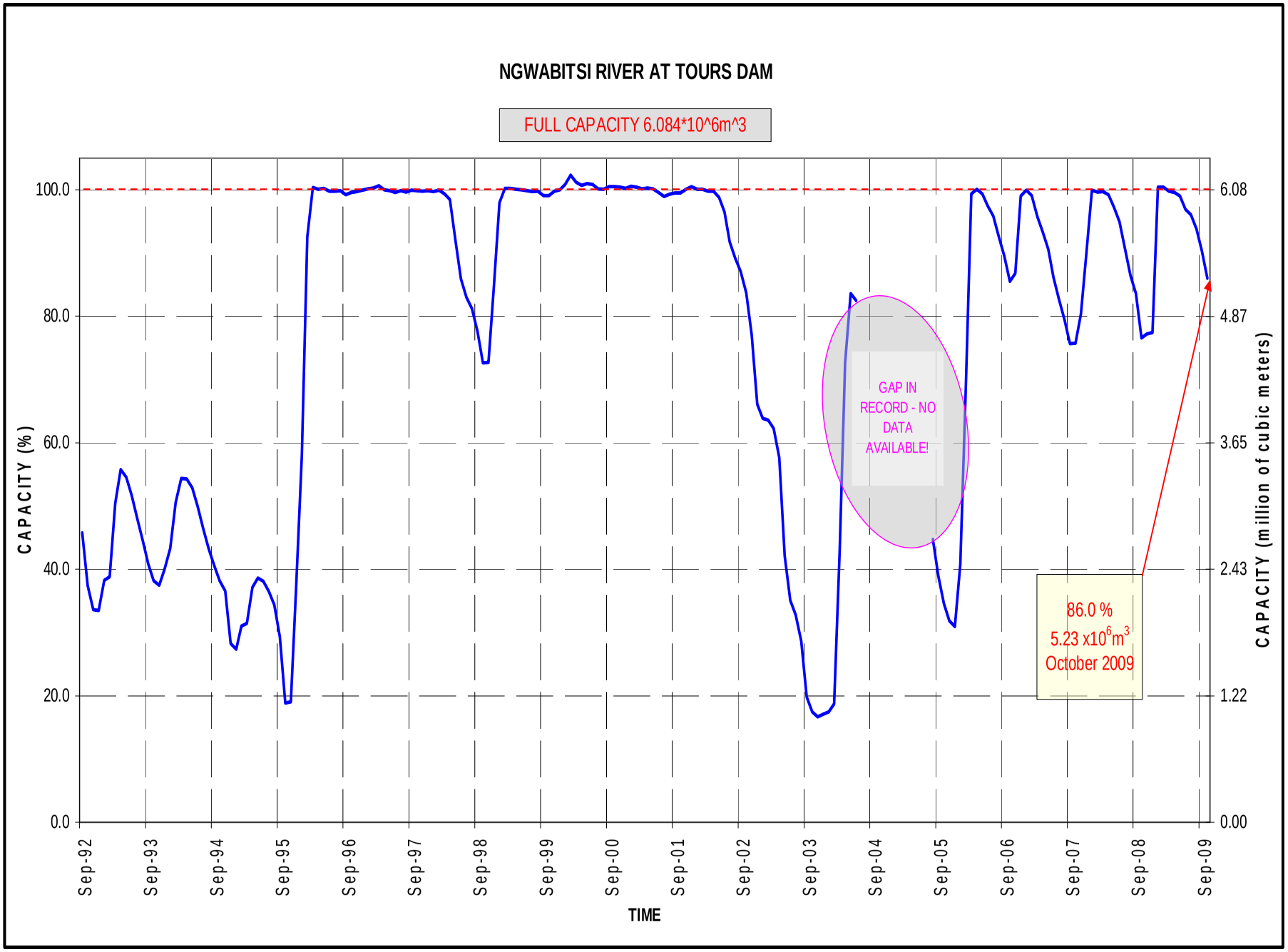

OLIFANTS RIVER AT LOSKOP DAM
FULL CAPACITY 361.51*10^6m^3
95.1 %
343.8 x10^6m^3
October 2009
CAPACITY (%)
CAPACITY (million of cubic meters)
TIME
100.0
80.0
60.0
40.0
20.0
0.0
361.51
289.21
216.91
144.60
72.30
0.00
Dec-2008
Dec-2006
Dec-2004
Dec-2002
Dec-2000
Dec-1998
Dec-1996
Dec-1994
Dec-1992
Dec-1990
Dec-1988
Dec-1986
Dec-1984
Dec-1982
Dec-1980
Dec-1978

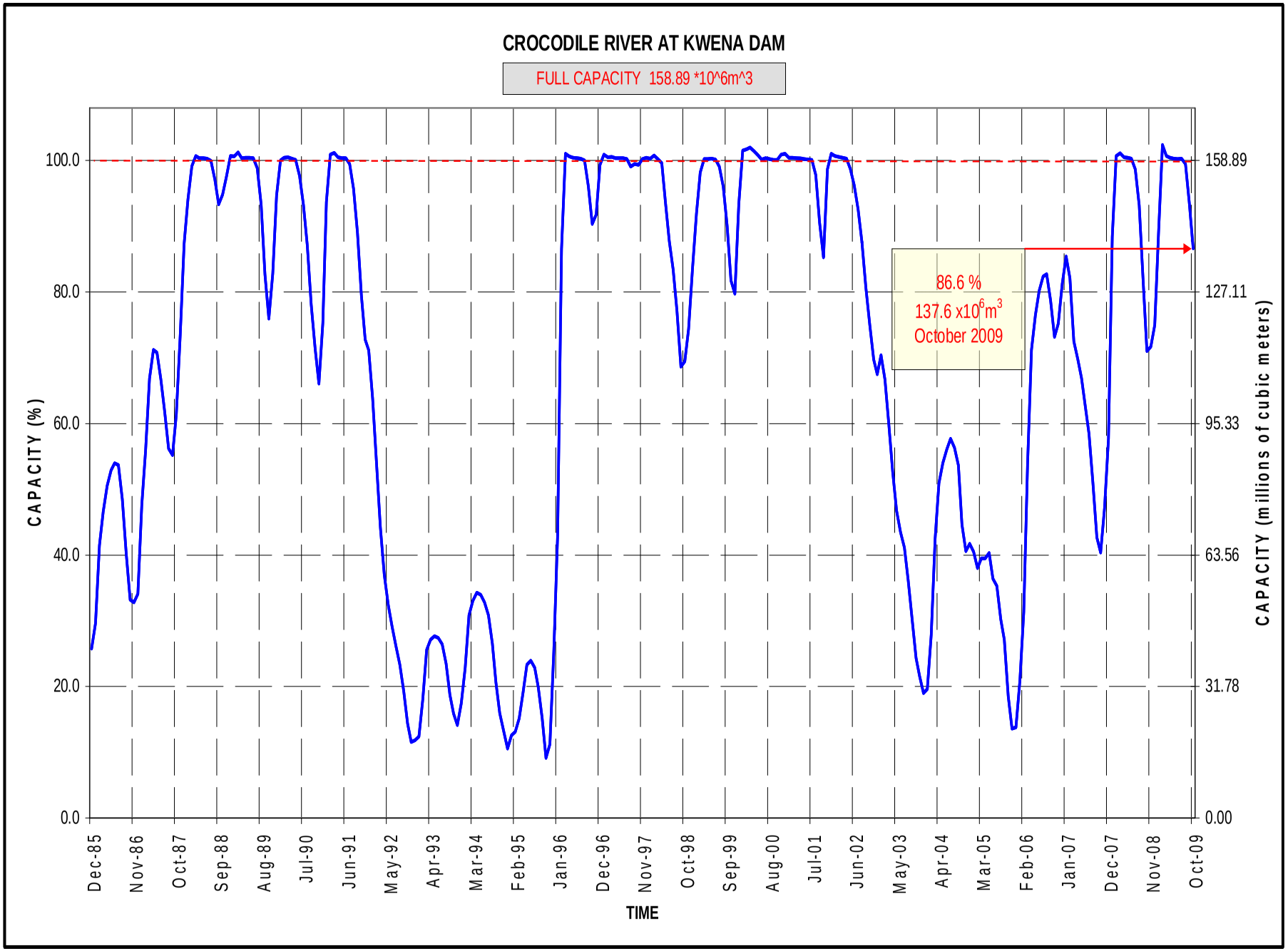

OLIFANTS RIVER AT FLAG BOSHIELO DAM
FULL CAPACITY 185.13*10^6m^3
DAM WALL RAISED DURING 2006!
DAM CAPACITY INCREASED FROM
98.99x10^6m^3 TO 183.25x106m3
94.1%
174.21 x10^6m^3
October 2009
CAPACITY (%)
CAPACITY (million of cubic meters)
TIME
120.0
100.0
80.0
60.0
40.0
20.0
0.0
222.15
185.13
148.10
111.08
74.05
37.03
0.00
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09

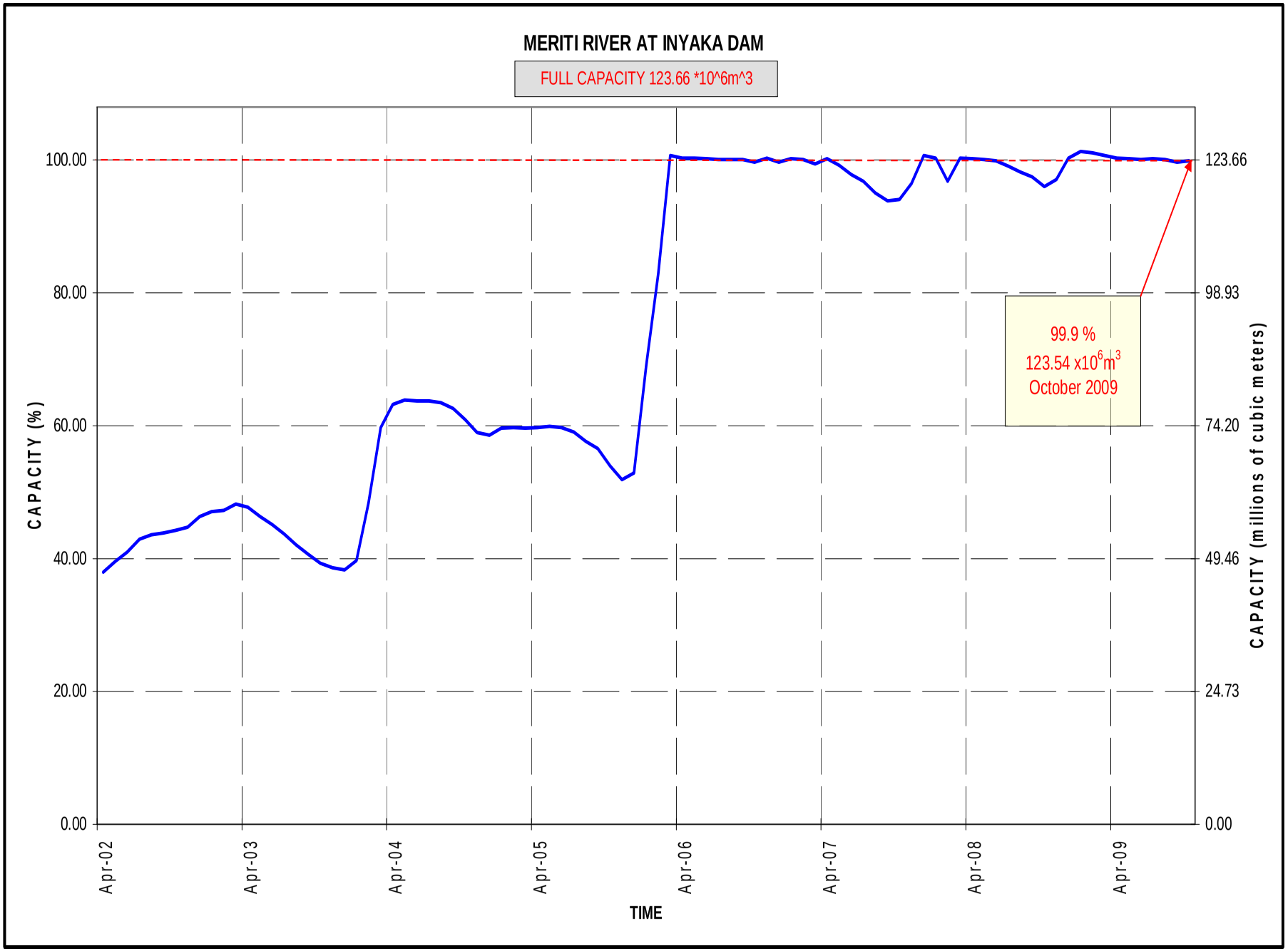

OHRIGSTAD RIVER AT OHRIGSTAD DAM
FULL CAPACITY 13.45*10^6m^3
59.5 %
8.0 x10^6m^3
October 2009
CAPACITY (%)
CAPACITY (millions of cubic meters)
TIME
100.0
80.0
60.0
40.0
20.0
0.0
13.45
10.76
8.07
5.38
2.69
0.00
May-56
May-59
May-62
May-65
May-68
May-71
May-74
May-77
May-80
May-83
May-86
May-89
May-92
May-95
May-98
May-01
May-04
May-07


BLYDE RIVER AT BLYDE RIVIERSPOORT DAM
FULL CAPACITY 54.369*10^6m^3
CAPACITY (%)
100.0
80.0
60.0
40.0
20.0
0.0
CAPACITY (millions of cubic meters)
54.37
43.49
32.62
21.75
10.87
0.00
80.6 %
43.82 x10^6m^3
October 2009
TIME
Dec-75
Dec-77
Dec-79
Dec-81
Dec-83
Dec-85
Dec-87
Dec-89
Dec-91
Dec-93
Dec-95
Dec-97
Dec-99
Dec-01
Dec-03
Dec-05
Dec-07


KLASERIE RIVER AT KLASERIE DAM
FULL CAPACITY 5.604*10^6m^3
CAPACITY (million of cubic meters)
5.600
4.480
3.360
2.240
1.120
0.000
CAPACITY (%)
100.0
80.0
60.0
40.0
20.0
0.0
89.6 %
5.02 x10^6m^3
October 2009
TIME
Apr-68
Mar-70
Feb-72
Jan-74
Dec-75
Nov-77
Oct-79
Sep-81
Aug-83
Jul-85
Jun-87
May-89
Apr-91
Mar-93
Feb-95
Jan-97
Dec-98
Nov-00
Oct-02
Sep-04
Aug-06
Jul-08


NGWABITSI RIVER AT TOURS DAM
FULL CAPACITY 6.084*10^6m^3
CAPACITY (%)
CAPACITY (million of cubic meters)
TIME
100.0
80.0
60.0
40.0
20.0
0.0
6.08
4.87
3.65
2.43
1.22
0.00
Sep-92
Sep-93
Sep-94
Sep-95
Sep-96
Sep-97
Sep-98
Sep-99
Sep-00
Sep-01
Sep-02
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
GAP IN RECORD - NO DATA AVAILABLE!
86.0 %
5.23 x10^6m^3
October 2009


CROCODILE RIVER AT KWENA DAM
FULL CAPACITY 158.89 *10^6m^3
86.6 %
137.6 x10^6m^3
October 2009
CAPACITY (%)
CAPACITY (millions of cubic meters)
TIME
100.0
80.0
60.0
40.0
20.0
0.0
158.89
127.11
95.33
63.56
31.78
0.00
Dec-85
Nov-86
Oct-87
Sep-88
Aug-89
Jul-90
Jun-91
May-92
Apr-93
Mar-94
Feb-95
Jan-96
Dec-96
Nov-97
Oct-98
Sep-99
Aug-00
Jul-01
Jun-02
May-03
Apr-04
Mar-05
Feb-06
Jan-07
Dec-07
Nov-08
Oct-09


MERITI RIVER AT INYAKA DAM
FULL CAPACITY 123.66 *10^6m^3
100.00
80.00
60.00
40.00
20.00
0.00
CAPACITY (%)
123.66
98.93
74.20
49.46
24.73
0.00
CAPACITY (millions of cubic meters)
99.9 %
123.54 x10^6 m^3
October 2009
Apr-02
Apr-03
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
TIME