



## water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

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Reference: 21/15/P5

### MINISTER OF WATER AND SANITATION

### NATIONAL ASSEMBLY: QUESTION 107 FOR WRITTEN REPLY

A draft reply to the above mentioned question asked by Mrs A M Dreyer (DA) is attached for your consideration.

DRAFT REPLY: RECOMMENDED/ ~~NOT RECOMMENDED/ AMENDED~~

ACTING DIRECTOR-GENERAL

DATE: 13/03/2019

DRAFT REPLY: APPROVED/ ~~NOT APPROVED/ AMENDED~~

NKWINTI GE, MP  
MINISTER OF WATER AND SANITATION

DATE: 24/03/2019

## NATIONAL ASSEMBLY

### FOR WRITTEN REPLY

#### QUESTION NO 107

DATE OF PUBLICATION IN INTERNAL QUESTION PAPER: 7 FEBRUARY 2019  
(INTERNAL QUESTION PAPER NO. 1)

107. Mrs A M Dreyer (DA) to ask the Minister of Water and Sanitation:

- (1) (a) How often must his department inspect dam infrastructure with regard to (i) dam walls and (ii) spillways and (b)(i) who conducts such inspections and (ii) under what statutory provisions is the person or entity authorised;
- (2) (a) on what date was the last inspection of each dam performed by his department in Gauteng and (b) what number of dams (i) passed and (ii) failed the inspection;
- (3) with regard to dams situated within the City of Ekurhuleni, (a) what concerns and recommendations were raised in respect of each dam, (b) on what date was the City of Ekurhuleni notified about the concerns and recommendations and (c) by what date was the City of Ekurhuleni expected to rectify all defects in the dam infrastructure, including dam walls and spillways, in each case?

NW112E

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### THE MINISTER OF WATER AND SANITATION

- (1)(a) All dams classified as dams with a safety risk by the Directorate: Dam Safety Regulation (*i.e. Dam Safety Office*) and are category II and III in terms of size must be subjected to a compulsory 5 yearly dam safety evaluation by an Approved Professional Person (APP).
- (1)(b) The owner of a Category II or III dam must appoint an Approved Professional Person (APP) to conduct a dam safety evaluation at 5 years intervals. This regulatory provision is in terms of Section 118 and 119 of the National Water Act as well as Government Notice R 139 of 24 February 2012 (*i.e. Dam Safety Regulations*).
- (2) Refer to **Annexure A** for the inspection dates, number of dams that passed or failed the inspection in Gauteng.
- (3)(a) Refer to **Annexure B** for the APP recommendations.
- (3)(b) Refer to **Annexure C** for the letters of acceptance or rejection sent to the City of Ekurhuleni after receipt of the Dam Safety Evaluation report from the APP.
- (3)(c) Refer to **Annexure C**.

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No.	Name of dam	Owner Name	DSE Target Date	Date Last DSE	Number Last DSE	Condition Symbol
1	WITKLIP BOTTOM DAM	SCHOEMAN BOERDERY (PTY) LTD	2023/11/30	2018/11/07	2	E
2	VAN DYK'S DAM	EKURHULENI METROPOLITAN MUNICIPALITY	2018/07/05	2018/04/25	2	D
3	NIGEL DAM	EKURHULENI METROPOLITAN MUNICIPALITY	2023/07/04	2017/11/23	4	D
4	MIDDLE LAKE DAM	EKURHULENI METROPOLITAN MUNICIPALITY	2023/07/04	2017/12/07	4	D
5	HOMESTEAD MEER	EKURHULENI METROPOLITAN MUNICIPALITY	2023/07/04	2017/12/07	4	C
6	HIPPO DAM	LETAMO GAME FARM (PTY) LTD.	2023/02/28	2018/01/16	2	D
7	FLEURHOF DAM	CALGRO M3 HOLDINGS (PTY) LTD	2023/03/14	2017/11/02	2	B
8	LUIPAARDSVLEI DAM	RAND URANIUM (PTY) LTD.	2023/03/14	2017/11/21	4	C
9	THEUNIS BESTER DAM	WATERLAKE FARM HOME OWNER ASSOCIATION	2022/12/31	2017/10/31	3	D
10	MEYER'S HILL RESERVOIR	RAND WATER	2022/12/08	2017/10/23	2	C
11	KLIPRIVERSBERG NO 2 RESERVOIR	RAND WATER	2022/12/08	2017/10/23	3	C
12	RIETFontein WESTELIKE Vloedvertragings DAM	DEPARTMENT OF TRANSPORT	2022/12/07	2017/11/08	2	C
13	RIETFontein OOSTELIKE Vloedvertragings DAM	DEPARTMENT OF TRANSPORT	2022/12/07	2017/11/08	2	D
14	RANDJESLAAGTE RESERVOIR	JOHANNESBURG METROPOLITAN MUNICIPALITY	2022/10/30	2017/10/25	3	C
15	DOORNPoort RETURN WATER	SOUTH DEEP GOLD MINE	2022/08/24	2017/03/27	1	C
16	ADMA DAM	WONDERFontein TRUST	2022/08/23	2017/07/13	1	D
17	BON ACCORD DAM	BON ACCORD IRRIGATION BOARD	2022/01/30	2016/12/01	4	C
18	VAAL BARRAGE	RAND WATER	2022/07/04	2017/03/30	2	D
19	KRAPFontein DAM	SASOL MINING (PTY) LTD	2022/06/21	2017/01/30	3	B
20	SYFERFontein DAM	SASOL MINING (PTY) LTD	2022/06/21	2017/01/30	3	B
21	TWEEDRAAI DAM	SASOL MINING (PTY) LTD	2022/06/20	2017/01/30	3	C
22	PANFontein POND NO.7	RAND WATER	2022/05/30	2017/03/13	3	D
23	RUSTICANA DAM 2	ANDRE TONKIN FAMILY TRUST	2022/05/12	2017/03/23	1	E
24	RUSTICANA DAM	ANDRE TONKIN FAMILY TRUST	2022/05/12	2017/03/24	1	D
25	LANGERAND NO 2 RESERVOIR	RAND WATER	2022/04/12	2017/01/13	2	D
26	BENONI NO3 RESERVOIR	RAND WATER	2022/04/12	2017/02/02	2	D
27	MEREDALE NO 1 RESERVOIR	RAND WATER	2022/04/11	2017/01/24	2	D
28	BRAKPAN NO2 RESERVOIR	RAND WATER	2022/04/11	2017/02/27	2	D
29	ELANDSRAND POLLUTION CONTROL DAM	HARMONY GOLD MINING COMPANY LTD	2022/03/22	2016/12/08	3	B
30	ASTON LAKE	SCHOEMAN FARMING (PTY) LTD.	2022/02/21	2016/11/22	2	B
31	LAURENTIA DAM	LOUW GELDENHUYS INVESTMENTS (PTY) LTD	2022/01/31	2017/01/31	2	D
32	LANCASTER DAM	MINTAILS MINING S.A (PTY) LTD	2021/12/20	2016/06/01	1	D
33	MODDERFontein FACTORY DAM NO. 1	AECI LIMITED	2021/08/30	2016/07/29	5	E

34	MODDERFONTEIN FACTORY DAM NO. 4	AECI LIMITED	2021/08/30	2016/07/29	5	E
35	MODDERFONTEIN FACTORY DAM NO. 3	AECI LIMITED	2021/08/30	2016/07/29	5	E
36	RYNFELD DAM NO.1	EBOTSE GOLF AND COUNTRY ESTATE	2020/08/30	2014/08/21	4	C
37	NORTH DAM	NCP CHLORCHEM (PTY) LTD	2021/04/30	2015/12/04	4	B
38	SOUTH DAM	NCP CHLORCHEM (PTY) LTD	2021/04/30	2015/12/04	4	B
39	KUDUBE DAM (LEEUKRAAL DAM)	DEPT. OF WATER & SANITATION	2021/04/30	2016/03/30	4	E
40	EEUFEES DAM	MOGALE CITY MUNICIPALITY	2020/10/15	2015/10/14	1	D
41	DIEPKLOOF RETURN WATER DAM	ERGO MINING (PTY) LTD	2020/06/30	2014/06/30	2	
42	MOOIFONTEIN RETURN WATER DAM	ERGO MINING (PTY) LTD	2020/06/30	2014/06/30	2	
43	MAJUBA POWERSTATION ASH DUMP DAM NO.3	ESKOM-MAJUBA POWER STATION	2015/06/01	2014/01/21	1	
44	PRETORIA-BUITEKLUB DAM	PRETORIA-BUITEKLUB	2022/05/31	2014/12/01	3	B
45	VLAKFONTEIN RESERVOIR	RAND WATER	2025/04/29	2014/12/01	2	
46	HARTBESPOORT DAM	DEPT. OF WATER & SANITATION	2019/03/28	2014/03/26	4	B
47	OLIFANTSVLEI MATURATION DAM	JOHANNESBURG METROPOLITAN MUNICIPALITY		2013/09/20	2	
48	HAMBERG	JOHANNESBURG METROPOLITAN MUNICIPALITY		2013/06/28	2	
49	PETER WRIGHT	EZULWUNI MINING Co. (PTY) LTD		2013/03/07	3	
50	DOORNKOP RETURN WATER DAM	HARMONY GOLD MINING COMPANY		2013/03/14	2	
51	CINDERELLA DAM	ERGO MINING (PTY) LTD	2018/05/16	2012/01/22	3	C
52	BRAKPAN TAILINGS DAM	ERGO MINING (PTY) LTD		2013/01/17	1	B
53	RIETVLEI DAM (was A210/05)	TSHWANE METROPOLITAN MUNICIPALITY		2012/10/18	4	
54	ROODEPLAAT DAM	DEPT. OF WATER & SANITATION		2011/08/15	4	C
55	NORTHERN FARM DAM P1	JOHANNESBURG METROPOLITAN MUNICIPALITY		2012/03/13	1	
56	NORTHERN FARM DAM P2	JOHANNESBURG METROPOLITAN MUNICIPALITY		2012/03/13	1	
57	NORTHERN FARM DAM P4	JOHANNESBURG METROPOLITAN MUNICIPALITY		2012/03/13	2	
58	NORTHERN FARM DAM P5	JOHANNESBURG METROPOLITAN MUNICIPALITY		2012/03/13	2	
59	NORTHERN WORKS DAM NO.1	JOHANNESBURG METROPOLITAN MUNICIPALITY		2012/03/13	2	
60	NORTHENONNARN WORKS DAM NO.2	JOHANNESBURG METROPOLITAN MUNICIPALITY		2012/03/13	3	
61	KLIPDRIFT DAM	DEPT. OF WATER & SANITATION		2011/09/16	3	
62	EAGLE CANYON DAM NO.5	EAGLE CANYON GOLF ESTATE (PTY) LTD		2011/09/19	2	
63	GROOTVLEI P/S RES 1 (North)&2(South)	ESKOM		2010/07/26	4	
64	ZINCOR RETURN WATER DAM	Senior Manager		2010/06/04	1	
65	ROODEPOORT SPORTKOMPLEKS LAKE/MEER	JOHANNESBURG METROPOLITAN MUNICIPALITY		2011/03/03	1	
66	PRINCESS DAM	JOHANNESBURG METROPOLITAN MUNICIPALITY		2011/01/27	2	
67	GOLDEN HARVEST DAM	JOHANNESBURG METROPOLITAN MUNICIPALITY		2011/01/27	3	
68	CAMDEN RESERVOIR NO.3	DEPT. OF WATER & SANITATION		2007/10/31	2	
69	NO. 7 ANTI POLLUTION DAM	ANGLOGOLD ASHANTI LIMITED		2007/01/16	1	
70	DRIEFONTEIN 137 IS	MOONSTONE INVESTMENTS II (PTY) LTD.		2008/03/12	1	

71	RUST DE WINTER DAM	DEPT. OF WATER & SANITATION	2017/04/15	2003/01/29	2	D
72	BRAKPAN NO3 RESERVOIR	RAND WATER	2018/11/30	2008/02/01	1	
73	KNOPIESLAAGTE DAM 3	SABLE HOLDINGS LTD	2018/01/31		0	
74	DEVILLEBOIS VLOED STRUKTUUR	TSHWANE METROPOLITAN MUNICIPALITY	2017/03/31		0	
75	PRIMULA FLOOD STRUCTURE	TSHWANE METROPOLITAN MUNICIPALITY	2017/03/31	2007/05/28	1	
76	GENERAL LOUIS BOTHA DRIVE FLOOD ATTENUATION STRUCTURE	TSHWANE METROPOLITAN MUNICIPALITY	2017/03/31	2007/12/01	1	
77	HOLFFONTEIN CELL 7	ENVIROSERV WASTE MANAGEMENT PTY LTD	2016/04/29		0	
78	GROOTVLEI 453 DAM	J.J.JORDAAN FAMILIE TRUST	2017/04/28		0	
79	NORTH RIDGE RESERVOIR	RAND WATER		2018/10/26	2	
80	ZUIKERBOSCH SLUDGE DAM 1	RAND WATER	2013/09/30		0	
81	LIBANON NO 3 RESERVOIR	RAND WATER		2018/08/31	2	
82	HARTEBEESTHOEK RESERVOIR	RAND WATER		2018/10/12	2	
83	WITPOORTJIE NO 2 RESERVOIR	RAND WATER		2018/08/31	2	
84	FOREST HILL NO 2 RESERVOIR	RAND WATER		2018/06/11	2	
85	KRUGERSDORP NO4 RESERVOIR	RAND WATER	2021/12/30	2018/08/07	2	B
86	GERMISTON RESERVOIR	RAND WATER		2018/05/29	2	D
87	KLIPRIVIERSBERG NO 1 RESERVOIR	RAND WATER	2022/12/08	2018/05/29	2	C
88	PANFONTEIN SETTLING PONDS NO. 1 - 6	RAND WATER		2018/11/26	3	
89	ZUIKERBOSCH FOREBAY	RAND WATER		2018/11/26	3	
90	LETHABO POWER STATION NORTH DAM	ESKOM HOLDING LTD.		2018/11/16	5	C
91	NOOITGEDACHTSPRUIT POWER STATION DAM	TSHWANE METROPOLITAN MUNICIPALITY		2018/11/30	2	
92	BRAKFONTEIN RESERVOIR	RAND WATER		2018/10/20	2	
93	MEREDALE NO 2 RESERVOIR	RAND WATER		2018/06/21	3	
94	SASOLBURG RESERVOIR	RAND WATER		2018/06/19	2	
95	KLEINFONTEIN DAM	EKURHULENI METROPOLITAN MUNICIPALITY		2010/10/02	3	
96	BARNARDSVLEI RESERVOIR	RAND WATER	2021/12/30	2018/07/04	2	B
97	HOLFFONTEIN LEACHATE STORAGE DAM - see C212/67	ENVIROSERV WASTE MANAGEMENT PTY LTD		2015/08/28	2	B
98	RICHTER DAM (LAKE HERITAGE DAM, ALOE COVE)	CRADLE MOON LAKESIDE GAME LODGE	2019/11/30	2011/11/30	1	
99	KLIPFONTEIN NO2 RESERVOIR	RAND WATER	2019/11/30	2014/11/30	3	
100	ZEEKOGAT-NOOD DAM	CITY OF TSHWANE	2019/11/30	2013/04/17	2	
101	WILDEBEESTFONTEIN NO3 RESERVOIR	RAND WATER	2019/06/25	2014/06/25	2	
102	DOORN RANDJIES DAM	PORTLAND CEMENT CO. LTD.	2019/08/31		0	
103	DRIEFONTEIN RESERVOIR	RAND WATER	2018/11/30	2014/07/03	2	
104	FOREST HILL NO 3 RESERVOIR	RAND WATER	2018/11/30	2013/05/07	2	
105	ZONDI RESERVOIR	CITY OF JOHANNESBURG METROPOLITAN MUNICIPALITY	2018/11/30	1999/04/16	1	

106	ORLANDO POWER STATION DAM	JOHANNESBURG METROPOLITAN MUNICIPALITY	2018/07/31	2013/06/07	4	
107	KLIPSPRUIT DAM	JOHANNESBURG WATER (PTY) LTD	2018/10/31	2013/09/10	3	
108	STRUBEN DAM	TSHWANE METROPOLITAN COUNCIL	2018/03/30	2012/10/11	2	
109	OLIFANTSPRUIT-ONDERSTE DAM	SUMMER SYMPHONY 264 cc	2017/07/31	2014/09/11	2	
110	DAGGAFONTEIN TAILINGS DAM	SYMONS C.	2017/11/30	2010/05/10	1	C
111	LEUKOP-KORF DAM	DEPARTMENT OF PUBLIC WORKS	2016/11/30	2006/09/18	1	
112	LEUKOP-SKILPAD DAM	DEPARTMENT OF PUBLIC WORKS	2016/11/30	2006/09/18	1	
113	BRONBERGE RESERVOIR	RAND WATER	2017/05/31	2010/08/25	1	
114	DONALDSON DAM	WEST RAND DISTRICT MUNICIPALITY	2017/09/29	1998/09/11	1	
115	CENTURION SILT DAM	TSHWANE METROPOLITAN MUNICIPALITY	2018/07/12		0	
116	ESKOM CONVENTION CENTRE DAM	ESKOM: INFRASTRUCTURE DESIGN	2017/03/31	2010/07/02	1	
117	EMMARENTHIA DAM	JOHANNESBURG METROPOLITAN MUNICIPALITY	2018/09/18	2009/06/03	3	
118	BETHAL DAM	GOVAN MBEKI LOCAL MUNICIPALITY	2018/05/30	2004/07/13	1	
119	WESTDENE DAM	JOHANNESBURG METROPOLITAN MUNICIPALITY	2018/09/30	2009/05/27	3	C
120	RIETSPRUIT DAM 2	BOTHA J.H.	2018/12/31		0	
121	RIETSPRUIT DAM 1	BOTHA J.H.	2018/12/31		0	
122	KLEINFONTEIN 357 DAM	SAAYMAN FAMILY TRUST	2018/11/30		0	
123	KLIPFONTEIN NO1 RESERVOIR	RAND WATER	2014/03/31	2008/07/04	1	
124	BALFOUR DAM	DR PIXLEY KA SEME LOCAL MUNICIPALITY	2018/12/09	2004/11/24	1	
125	SCHUILHOEK DAM	DR PIXLEY KA SEME LOCAL MUNICIPALITY	2018/12/09	2004/11/24	1	
126	BALFOUR/SIYATHEMBA DAM	DIPALESENG MUNICIPALITY	2016/08/31		0	
127	HOLFFONTEIN LEACHATE STORAGE DAM - previously B201/33	ENVIROSERV WASTE MANAGEMENT PTY LTD	2006/09/30	2006/10/01	1	
128	GROOTVLEI POWERSTATION TERMINAL RESERVOIR 2 (South)	ESKOM		1988/01/31	1	
129	REGIONAL TAILINGS STORAGE FACILITY	SIBANYE GOLD			0	

A Score Card for the Condition of a Dam based on the "Recommendations and Findings of a Dam Safety Evaluation Report" by an Approved Professional Person (APP) has recently been proposed as defined in Table below. The proposed system assigns an A to a dam in good condition and F to a dam in an unsafe condition. The Assigning of the score card system only started late in 2014 therefore some dams will not have a Condition symbol

**Table : Dam Safety: Proposed Score Card for the Condition of a Dam**

Analysis of condition from the Recommendations and Findings of a Dam Safety Evaluation Report by an APP	
Symbol / Score	
A	Dam in good condition and routine maintenance are acceptably up to date. An evaluation interval of longer than 5 years can be recommended (if the owner request it or for farmers/ smaller municipalities.)

B	<p>Dam in reasonable condition but not complying to modern standards. Only routine maintenance and routine inspections recommended. An evaluation interval of longer than 5 years cannot be recommended.</p>
C	<p>Significant outstanding maintenance by the normal operation and maintenance staff recommended restoring dam to a functional state. Elementary monitoring systems like settlement beacons and flow monitoring included here.</p>
D	<p>Significant rehabilitation recommended to restore dam components to its original state for example repair major erosion or cavitation's, repair slope protection, reinstate crest level, refurbish outlet works or gates. Work is considered significant rehabilitation if it is outside the capacity of the normal operation and maintenance staff and the appointment of a contractor is necessary and the work should be done under guidance of an APP. Drafting of an Operation and Maintenance Manual and or Emergency Preparedness Plan and install sophisticated monitoring instruments under guidance of an APP also included here.</p>
E	<p>Upgrading recommended for example increase spillway capacity, increase freeboard, provide buttress / thicken dam to improve stability or install stress cables, install slope protection, install additional drainage or grouting or water seals to reduce leakage. A licence to alter and the services of an APP will be required.</p>
F	<p>Dam unsafe. Restrictions on operation recommended, for example water level may not exceed a specified level.</p>





No of dam	Name of dam	Owner Name	Category	DSE Target Date	Date Last DSE	Number Last DSE	Conditions symbol
C212/46	KLEINFONTEIN DAM	EKURHULENI METROPOLITAN MUNICIPALITY	2		2-Aug-17	4	
<b>RECOMMENDATIONS FOR REMEDIAL ACTIONS</b>							
<b>Short Term</b>							
1	An operation and maintenance manual, which includes an emergency preparedness plan is required.						
2	The total discharge capacity of the spillway must be increased to accommodate the maximum possible flood. This work is urgent and should be allocated a very high priority.						
3	The cleaning of the vegetation in the spillway approach channel and spillway channel is also considered urgent.						
4	The immediate removal of the screens and galvanised mesh at the spillway approach channel.						
<b>Long Term</b>							
1	Repair work be carried out in the spillway where required.						
2	The elimination of water hyacinth in the dam basin.						
3	A series of stability analyses of the mine dump to assess the potential danger of a slip failure into the dam basin.						
C221/68	VAN DYK'S DAM	EKURHULENI METROPOLITAN MUNICIPALITY	2	5-Jul-23	25-Apr-18	2	D
<b>RECOMMENDATIONS FOR REMEDIAL ACTIONS</b>							
<b>Recommendation(s) regarding maintenance work:</b>							
1	The outlet pipe must be grouted to prevent piping failure; as recommended in the previous dam safety inspection.						
2	All trees with trunk diameter of less than 100mm and shrubs must be eradicated on and within 10 metres of Van Dyk's Dam wall structure and also within the main spillway discharge channel.						
3	The reeds growing at the FSL on the upstream slope must be eradicated as far as practically possible.						
4	The embankment should be fenced to prevent cattle gaining access to the embankments.						
5	Update and implement the operation and maintenance manual to formalise the proper operation and maintenance of the dam.						
<b>Recommendation(s) regarding routine inspections and monitoring:</b>							
1	Three monthly routine inspections focussing on any signs of impending failure should be conducted. The persons in control						
<b>Recommendation(s) and motivation regarding betterment works:</b>							
1	The erosion damage to the spillway guide walls and erosion control structures should be rehabilitated.						
2	The free drainage of seepage water at the left embankment toe must be facilitated by the installation of a subsoil drain						
<b>Other recommendations:</b>							
1	A detail survey of the dam basin area should be undertaken including the relevant houses which may be inundated during						
C212/61	ALEXANDER DAM	EKURHULENI METROPOLITAN MUNICIPALITY	2	5-Jul-23	26-Apr-18	3	C
<b>RECOMMENDATIONS FOR REMEDIAL ACTIONS</b>							
<b>Recommendation(s) regarding maintenance work:</b>							
1	The outlet works at the spillway section with the excessive vegetation growth must be cut open and inspected, serviced and maintained without delay (including corrosion protection).						
2	Other trees, with trunk diameter of less than 100mm, all Black Wattle trees and shrubs must be eradicated on and within 10 metres of Alexander Dam wall structure, including the main and auxiliary spillway discharge channels and guide walls.						
3	The reeds growing at the full supply level (FSL) on the upstream slope must be eradicated as far as practically possible.						
4	All ant and termite nests must be eradicated on an ongoing basis.						
5	The toe drain manhole, including the drain pipe downstream, must be cleaned of any loose material. The manhole cover must be replaced and closed.						
6	Low points and rutting on the embankment crest must be repaired including the damage caused by the vehicles driving on the embankment crest.						
7	The operation and maintenance manual should updated and implemented to formalise the proper operation and maintenance of the dam.						
<b>Recommendation(s) regarding routine inspections and monitoring:</b>							
1	Three monthly routine inspections focussing on any signs of impending failure should be conducted. The persons in control of the dam should be instructed how to do inspections or monitoring.						
<b>Other recommendations:</b>							
1	The embankment crest should be closed to all vehicles and a gravel access road should be provided downstream of the embankment to prevent damage to the embankment by these vehicles.						

C221/63	ALBERTON DAM	EKURHULENI METROPOLITAN MUNICIPALITY	2	4-Jul-23	16-Mar-18	2	D
<b>RECOMMENDATIONS FOR REMEDIAL ACTIONS</b>							
<b>Recommendation(s) regarding maintenance work:</b>							
1	The outlet works including outlet pipe and valve should be serviced and maintained without delay (including draining of the standing water in the manhole and corrosion protection).						
2	The manholes for the toe drain and outlet pipe should be cleaned and manhole covers should be replaced where appropriate.						
3	The digging and burrowing animals must be prevented access to the dam wall as they are damaging the dam wall.						
4	The localised damage on the embankment crest and downstream slope and slope protection should be repaired.						
5	The operation and maintenance manual must be implemented to formalise the proper operation and maintenance of the dam.						
<b>Recommendation(s) regarding routine inspections and monitoring:</b>							
1	Three monthly routine inspections focussing on any signs of impending failure should be conducted. The persons in control of the dam should be instructed how to do inspections or monitoring.						
<b>Recommendation(s) and motivation regarding betterment works:</b>							
1	The extent of the seepage through the embankment and or foundation is of concern and a subsoil toe drain together with a drainage ditch installed downstream should lower the phreatic level and allow for monitoring of the seepage.						
2	The right bank auxiliary spillway discharge may impact on the animal pens downstream of the embankment and inundate the small animal farm area. The extent of the inundation and options to address possible inundation of the animal pens should be investigated. This may include the option to close off the right bank auxiliary spillway and enlarging the left bank auxiliary spillway to compensate for the loss of the right bank auxiliary spillway discharge capacity.						
<b>Other recommendations:</b>							
1	Upgrading of the culverts downstream was previously recommended (Van Bladeren and White: 2005). An investigation may be undertaken to determine options to upgrade the road crossings.						
C212/51	NIGEL DAM	EKURHULENI METROPOLITAN MUNICIPALITY	2	4-Jul-23	23-Nov-17	4	D
<b>RECOMMENDATIONS FOR REMEDIAL ACTIONS</b>							
<b>Recommendation(s) regarding maintenance work:</b>							
1	The outlet pipe and Fulton sluice gate must be serviced and maintained without delay (including corrosion protection).						
2	All trees with trunk diameter of less than 100mm and shrubs must be eradicated on and within 10 metres of Nigel Dam wall structure including the main and auxiliary spillway discharge channel.						
3	The reeds growing at the FSL on the upstream slope must be eradicated as far as practically possible.						
4	All ant and termite nests must be eradicated on an ongoing basis.						
5	Options to address the lack of handrails on the access bridge at the spillway and wet well inlet should be investigated.						
6	Update and implement the operation and maintenance manual to formalise the proper operation and maintenance of the dam.						
7	Cracks on the concrete spillway and in the guide walls should be repaired.						
<b>Recommendation(s) regarding routine inspections and monitoring:</b>							
1	Three monthly routine inspections focussing on any signs of impending failure should be conducted. The persons in control of the dam should be instructed how to do inspections or monitoring.						
<b>Recommendation(s) and motivation regarding betterment works:</b>							
1	The area of subsidence at the left flank next to the guide wall must be rehabilitated. The rehabilitation work should include a geological and geotechnical investigation and design report (including a designed drainage system and compaction specifications to prevent potential future internal erosion in this area).						
2	Low points on the main southern embankment crest must be repaired and the western embankment crest must be rehabilitated while reinstating a section of western embankment as a fuse plug type spillway at an appropriate level. The rehabilitation work for the western embankment crest should include a detail dam wall and basin survey, hydrological analysis and flood routing analysis as part of the rehabilitation design.						
C212/44	MIDDLE LAKE DAM	EKURHULENI METROPOLITAN MUNICIPALITY	2	4-Jul-23	7-Dec-17	4	D
<b>RECOMMENDATIONS FOR REMEDIAL ACTIONS</b>							
<b>Recommendation(s) regarding maintenance work:</b>							

1	All vegetation growing in the concrete joints in the spillway including the discharge channel and stilling basin must be removed.						
2	All trees, with trunk diameter of less than 100mm, and shrubs must be eradicated on and within 10 metres of Middle Lake wall structure including the main and auxiliary spillway discharge channel.						
3	The reeds growing at the FSL on the upstream slope must be eradicated as far as practically possible.						
4	Update and implement the operation and maintenance manual to formalise the proper operation and maintenance of the dam.						
<b>Recommendation(s) regarding routine inspections and monitoring:</b>							
1	Three monthly routine inspections focussing on any signs of impending failure should be conducted. The persons in control						
<b>Recommendation(s) and motivation regarding betterment works:</b>							
1	Low points on the embankment crests where not protected with amorfex blocks must be repaired and the non-overspill						
C212/45	HOMESTEAD MEER	EKURHULENI METROPOLITAN MUNICIPALITY	2	4-Jul-23	7-Dec-17	4	C
<b>RECOMMENDATIONS FOR REMEDIAL ACTIONS</b>							
<b>Recommendation(s) regarding maintenance work:</b>							
1	The standing water at the outlet pipes must be drained and the pipes must be serviced and maintained. However if no longer operational the outlet pipes must be sealed and grouted.						
2	All trees with trunk diameter of less than 100mm and shrubs must be eradicated on and within 20 metres of Homestead Lake wall structure including the auxiliary spillway discharge channel.						
3	The manholes and including the drainage pipe must be cleaned (rubbish and sediment) and monitored during routine inspections. The manhole cover must be recovered on the downstream slope and manhole no. 4 must be closed.						
4	The reeds growing at the FSL on the upstream slope must be eradicated as far as practically possible.						
5	Update and implement the operation and maintenance manual to formalise the proper operation and maintenance of the dam.						
<b>Recommendation(s) regarding routine inspections and monitoring:</b>							
1	Three monthly routine inspections focussing on any signs of impending failure should be conducted. The persons in control of the dam should be instructed how to do inspections or monitoring.						



## water & sanitation

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Enquiries: DJ Truter  
JJ Smith

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Telephone: 012 336 8894

E-mail: [damsafety@dws.gov.za](mailto:damsafety@dws.gov.za)

Reference: 12/2/C212/46

Mr Philip Nice  
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1500

E-mail: [phillip.nice@ekurhuleni.gov.za](mailto:phillip.nice@ekurhuleni.gov.za)

Dear Sir

### **KLEINFONTEIN DAM: PROGRESS WITH THE IMPLEMENTATION OF RECOMMENDATIONS OF A DAM SAFETY INSPECTION REPORT SUBMITTED IN TERMS OF THE DAM SAFETY REGULATIONS IN GOVERNMENT NOTICE R. 139 OF 24 FEBRUARY 2012**

The 2<sup>nd</sup> dam safety evaluation report for the above dam dated October 2010 has reference.

The Dam Safety Regulations require in Regulation 35(1) (d) that the owner of a dam with a safety risk must regularly report on progress with the recommendations made in the dam safety evaluation report until all recommendations have been addressed.

A compliance monitoring inspection was performed by officials of this office on 04 December 2018 to evaluate your compliance to the dam safety regulations and a copy of the report is attached for your information and further action.


The inspection concluded that very little progress have been made with most of the recommendations and that there are a number of recommendations that must still be addressed.

You are requested to assign a higher priority to the implementation of the outstanding recommendations and to comply with the requirement to regularly report on progress. The DW19E form can be used for the progress reports. Please kindly submit the completed form to the centralised Dam Safety Office, email address at [damsafety@dws.gov.za](mailto:damsafety@dws.gov.za).

Please ensure that funds are made available on your budget to implement the recommended actions. You are requested to respond before 31 January 2019 with a programme of implementation of the recommendations.

You are commended for complying with the dam safety regulations published in Government Notice R. 139 of 24 February 2012 that requires a dam safety evaluation by an Approved Professional Person to be performed every 5 years for a Category II dam. We have received your latest dam safety evaluation report done in November 2018 and it will be subjected to inspection by an official from this office.

Yours faithfully



amokapa

**DIRECTOR: DAM SAFETY REGULATION**

**DATE: 2018 -12- 11**

Copies to: Gauteng Provincial Operations, Mr L.L. Nqelenga, [NqelengaL@dws.gov.za](mailto:NqelengaL@dws.gov.za)





## water & sanitation

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ATTENTION: MR PHILLIP NICE

Dear Sir,

**VAN DYK'S DAM: SECOND DAM SAFETY EVALUATION (DSE), UPDATED OPERATION MAINTENANCE MANUAL (OMM) AND EMERGENCY PREPAREDNESS PLAN (EPP) IN TERMS OF CHAPTER 12 OF THE NATIONAL WATER ACT, 1998 (ACT 36 OF 1998), READ WITH REGULATION 27, 28 AND 35 OF THE DAM SAFETY REGULATIONS PROMULGATED IN GOVERNMENT NOTICE R. 139 OF 24 FEBRUARY 2012**

Receipt is acknowledged of the second DSE, updated OMM and EPP of the above mentioned dam dated May 2018, which was submitted by Ms H Anderson, the Approved Professional Person for the evaluation. The report has been evaluated by the DSO in accordance with the requirement of the Dam Safety Regulations published in Government Notice R.139 of 24 February 2012 and they are accepted with the comments. From the 2<sup>nd</sup> DSE report, the condition of the dam has been classified as Condition D (**Significant rehabilitation recommended**). It is noted that the dam is in a general poor maintenance condition and a few critical recommendations were made including the spillway guide walls, erosion control structures and drainage system required rehabilitation works. You are hereby requested to assign higher priority duty to implement it accordingly and ensure the dam's function and structure stability meet the SANCOLD guideline and design criteria for the category dam classified.

It is noted that an additional recommendation made with regards to the dam basin area which require a detail survey to determine the flood lines, thereafter the relevant houses may be inundated during floods can be identified. The EPP should include the inundation map and flood warning or evacuation contact list for the dam basin area, however the updated EPP did not cover this. Could you please rectify the updated EPP to address this recommendation accordingly?

There are some recommendations made in the report; you are requested to report on progress made with the implementation of the recommendations until all recommendations have been implemented. A 12-month reporting interval is suggested.

The next dam safety evaluation should be done in 5 years time from today i.e. by 5 July 2023 but a longer interval can be considered if good progress is made to implement the recommendations of this report. This Department would like to express its appreciation for your co-operation with regard to dam safety matters and wishes you success with the continued operation of the dam.

Yours faithfully



Letter signed by: Mrs R Cai  
Designation: Specialist Engineer: Dam Safety Office

Date: 5 July 2018

Copies to:

- i) Ms N Mabe, [maben@dwa.gov.za](mailto:maben@dwa.gov.za) Acting Director: Regulation, Gauteng Regional Office, Department Of Water and Sanitation, Private Bag X 995, Pretoria 0001
- ii) Ms H Anderson, the APP, [andersonhenriette@gmail.com](mailto:andersonhenriette@gmail.com)



## water & sanitation

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ATTENTION: MR PHILLIP NICE

Dear Sir,

**ALEXANDER DAM: THIRD DAM SAFETY EVALUATION (DSE), UPDATED OPERATION MAINTENANCE MANUAL (OMM) AND EMERGENCY PREPAREDNESS PLAN (EPP) IN TERMS OF CHAPTER 12 OF THE NATIONAL WATER ACT, 1998 (ACT 36 OF 1998), READ WITH REGULATION 27, 28 AND 35 OF THE DAM SAFETY REGULATIONS PROMULGATED IN GOVERNMENT NOTICE R. 139 OF 24 FEBRUARY 2012**

Receipt is acknowledged of the third DSE, updated OMM and EPP of the above mentioned dam dated May 2018, which was submitted by Ms H Anderson, the Approved Professional Person for the evaluation. The report has been evaluated by the DSO in accordance with the requirement of the Dam Safety Regulations published in Government Notice R.139 of 24 February 2012 and they are accepted. From the 3<sup>rd</sup> DSE report, the condition of the dam has been classified as Condition C (**Significant maintenance recommended**). It is noted that the dam is in a general poor maintenance condition and you are hereby requested to undertake the routine maintenance work according to the instituted OMM and maintain the dam at favourable operational and safe condition.

There are some recommendations made in the report; you are requested to report on progress made with the implementation of the recommendations until all recommendations have been implemented. A 12-month reporting interval is suggested.

The next dam safety evaluation should be done in 5 years time from today i.e. by 5 July 2023 but a longer interval can be considered if good progress is made to implement the recommendations of this report. This Department would like to express its appreciation for your co-operation with regard to dam safety matters and wishes you success with the continued operation of the dam.



Yours faithfully

A handwritten signature in black ink, appearing to read 'R Cai', written in a cursive style.

Letter signed by: Mrs R Cai

Designation: Specialist Engineer: Dam Safety Office

Date: 5 July 2018

Copies to:

- i) Ms N Mabe, [maben@dwa.gov.za](mailto:maben@dwa.gov.za) Acting Director: Regulation, Gauteng Regional Office,  
Department Of Water and Sanitation, Private Bag X 995, Pretoria 0001
- ii) Ms H Anderson, the APP, [andersonhenriette@gmail.com](mailto:andersonhenriette@gmail.com)



## water & sanitation

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ATTENTION: MR PHILLIP NICE

Dear Sir,

**ALBERTON DAM: SECOND DAM SAFETY EVALUATION (DSE), UPDATED OPERATION MAINTENANCE MANUAL (OMM) AND EMERGENCY PREPAREDNESS PLAN (EPP) IN TERMS OF CHAPTER 12 OF THE NATIONAL WATER ACT, 1998 (ACT 36 OF 1998), READ WITH REGULATION 27, 28 AND 35 OF THE DAM SAFETY REGULATIONS PROMULGATED IN GOVERNMENT NOTICE R. 139 OF 24 FEBRUARY 2012**

Receipt is acknowledged of the second DSE, updated OMM and EPP of the above mentioned dam dated May 2018, which was submitted by Ms H Anderson, the Approved Professional Person for the evaluation. The report has been evaluated by the DSO in accordance with the requirement of the Dam Safety Regulations published in Government Notice R.139 of 24 February 2012 and they are accepted. From the 4<sup>th</sup> DSE report, the condition of the dam has been classified as Condition D (**Significant rehabilitation recommended**). It is noted that the dam is in a general poor maintenance condition and some betterment works required to be done. A subsoil toe drain together with a drainage ditch should be installed downstream in order to lower the phreatic level in the embankment and to allow for monitoring of the seepage. You are hereby requested to assign higher priority duty to implement it accordingly and ensure the dam's structure stability meet the SANCOLD guideline and design criteria for the category dam classified.

There are some recommendations made in the report; you are requested to report on progress made with the implementation of the recommendations until all recommendations have been implemented. A 12-month reporting interval is suggested.

The next dam safety evaluation should be done in 5 years time from today i.e. by 5 July 2023 but a longer interval can be considered if good progress is made to implement the recommendations of this report. This Department would like to express its appreciation for your co-operation with regard to dam safety matters and wishes you success with the continued operation of the dam.

Yours faithfully



Letter signed by: Mrs R Cai

Designation: Specialist Engineer: Dam Safety Office

Date: 5 July 2018

Copies to:

- i) Ms N Mabe, [maben@dwa.gov.za](mailto:maben@dwa.gov.za) Acting Director: Regulation, Gauteng Regional Office,  
Department Of Water and Sanitation, Private Bag X 995, Pretoria 0001
- ii) Ms H Anderson, the APP, [andersonhenriette@gmail.com](mailto:andersonhenriette@gmail.com)



## water & sanitation

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ATTENTION: MR PHILLIP NICE

Dear Sir,

**NIGEL DAM: FOURTH DAM SAFETY EVALUATION (DSE), UPDATED OPERATION MAINTENANCE MANNUAL (OMM) AND EMERGENCY PREPAREDNESS PLAN (EPP) IN TERMS OF CHAPTER 12 OF THE NATIONAL WATER ACT, 1998 (ACT 36 OF 1998), READ WITH REGULATION 27, 28 AND 35 OF THE DAM SAFETY REGULATIONS PROMULGATED IN GOVERNMENT NOTICE R. 139 OF 24 FEBRUARY 2012**

Receipt is acknowledged of the fourth DSE, updated OMM and EPP of the above mentioned dam dated May 2018, which was submitted by Ms H Anderson, the Approved Professional Person for the evaluation. The report has been evaluated by the DSO in accordance with the requirement of the Dam Safety Regulations published in Government Notice R.139 of 24 February 2012 and they are accepted. From the 4<sup>th</sup> DSE report, the condition of the dam has been classified as Condition D (**Significant rehabilitation recommended**). It is noted that the dam is at very poor maintenance status and some betterment works required to be done. The area of subsidence with the sinkhole at the left flank of the main southern embankment next to the guide wall must be rehabilitated, low points on the main southern embankment crest must be repaired and the western embankment crest must be rehabilitated while reinstating a section of western embankment as a fuse plug spillway. You are hereby requested to assign higher priority duty to implement it accordingly and ensure the dam's spillway capacity and structure stability meet the SANCOLD guideline and design criteria for the category dam classified.

It is noted that the attached registration information on the dam as Appendix A in your report, it is shown the hazard potential as High which agree to our data base record. But in your report of **5.4 Checking of Registration Information**, Hazard potential is referred to **Significant** and **5.5 Evaluation of The Hazard Potential**, Hazard potential is graded to **Significant**. Could you please clarify this discrepancy accordingly? If you are disagreed the registration information with regard to the classification, please submit the motivation to reclassify the dam accordingly.

Yours faithfully



Letter signed by: Mrs R Cai  
Designation: Specialist Engineer: Dam Safety Office

Date: 5 July 2018

Copies to:

- i) Ms N Mabe, [maben@dwa.gov.za](mailto:maben@dwa.gov.za) Acting Director: Regulation, Gauteng Regional Office,  
Department Of Water and Sanitation, Private Bag X 995, Pretoria 0001
- ii) Ms H Anderson, the APP, [andersonhenriette@gmail.com](mailto:andersonhenriette@gmail.com)



## water & sanitation

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ATTENTION: MR PHILLIP NICE

Dear Sir,

**MIDDLE LAKE DAM: FOURTH DAM SAFETY EVALUATION REPORT IN TERMS OF CHAPTER 12 OF THE NATIONAL WATER ACT, 1998 (ACT 36 OF 1998), READ WITH REGULATION 35 OF THE DAM SAFETY REGULATIONS PROMULGATED IN GOVERNMENT NOTICE R. 139 OF 24 FEBRUARY 2012**

Receipt is acknowledged of the fourth dam safety evaluation report of the above mentioned dam dated April 2018, which was submitted by Ms H Anderson, the Approved Professional Person for the evaluation. The report has been evaluated by the DSO in accordance with the requirement of the Dam Safety Regulations published in Government Notice R.139 of 24 February 2012 and is accepted. From the report, the condition of the dam has been classified as Condition D (**Significant rehabilitation recommended**). It is recommended by the APP that the non-overspill crest of the left flank embankment crest should be reinstated up to the top of the guide walls (i.e. raised by 0.7 m from the lowest crest level) to accommodate the routed SEF with limited overtopping and ensure the dam safe.

You are hereby requested to assign higher priority duty to implement it accordingly and ensure the dam's spillway capacity meet the SANCOLD guideline and design criteria for the category dam classified.

There are some recommendations made in the report; you are requested to report on progress made with the implementation of the recommendations until all recommendations have been implemented. A 12-month reporting interval is suggested.



The next dam safety evaluation should be done in 5 years time from today i.e. by 4 July 2023 but a longer interval can be considered if good progress is made to implement the recommendations of this report. This Department would like to express its appreciation for your co-operation with regard to dam safety matters and wishes you success with the continued operation of the dam.

Yours faithfully



Letter signed by: Mrs R Cai  
Designation: Specialist Engineer: Dam Safety Office

Date: 4 July 2018

Copies to:

- i) Ms N Mabe, [maben@dwa.gov.za](mailto:maben@dwa.gov.za) Acting Director: Regulation, Gauteng Regional Office, Department Of Water and Sanitation, Private Bag X 995, Pretoria 0001
- ii) Ms H Anderson, the APP, [andersonhenriette@gmail.com](mailto:andersonhenriette@gmail.com)







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ATTENTION: MR PHILLIP NICE

Dear Sir,

**HOMESTEAD LAKE DAM: FOURTH DAM SAFETY EVALUATION (DSE), UPDATED OPERATION MAINTENANCE MANNUAL (OMM) AND EMERGENCY PREPAREDNESS PLAN (EPP) IN TERMS OF CHAPTER 12 OF THE NATIONAL WATER ACT, 1998 (ACT 36 OF 1998), READ WITH REGULATION 27, 28 AND 35 OF THE DAM SAFETY REGULATIONS PROMULGATED IN GOVERNMENT NOTICE R. 139 OF 24 FEBRUARY 2012**

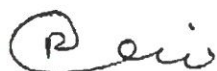
Receipt is acknowledged of the fourth DSE, updated OMM and EPP of the above mentioned dam dated May 2018, which was submitted by Ms H Anderson, the Approved Professional Person for the evaluation. The report has been evaluated by the DSO in accordance with the requirement of the Dam Safety Regulations published in Government Notice R.139 of 24 February 2012 and they are accepted. From the 4<sup>th</sup> DSE report, the condition of the dam has been classified as Condition C (**Significant maintenance recommended**). It is noted that the dam is in a general poor maintained condition. You are hereby requested to undertake the routine maintenance work according to the OMM and maintain the dam safe.

There are some recommendations made in the report; you are requested to report on progress made with the implementation of the recommendations until all recommendations have been implemented. A 12-month reporting interval is suggested.

The next dam safety evaluation should be done in 5 years time from today i.e. by 4 July 2023 but a longer interval can be considered if good progress is made to implement the recommendations of this report. This Department would like to express its appreciation for your co-operation with regard to dam safety matters and wishes you success with the continued operation of the dam.



Yours faithfully

A handwritten signature in black ink, appearing to read 'R Cai', with a large, stylized initial 'R'.

Letter signed by: Mrs R Cai  
Designation: Specialist Engineer: Dam Safety Office

Date: 4 July 2018

Copies to:

- i) Ms N Mabe, [maben@dwa.gov.za](mailto:maben@dwa.gov.za) Acting Director: Regulation, Gauteng Regional Office, Department Of Water and Sanitation, Private Bag X 995, Pretoria 0001
- ii) Ms H Anderson, the APP, [andersonhenriette@gmail.com](mailto:andersonhenriette@gmail.com)

