

DEPARTMENT OF WATER AND SANITATION

NOTICE 562 OF 2019

**NATIONAL WATER ACT, 1998
(ACT NO.36 OF 1998)****DETERMINATION OF WATER RESOURCE CLASSES AND RESOURCE QUALITY
OBJECTIVES FOR MOKOLO, MATLABAS, CROCODILE (WEST) AND MARICO
CATCHMENTS**

I, Gugile Nkwinti, Minister of Water and Sanitation, hereby, in terms of section 13(1) of the National Water Act, 1998 (Act No. 36 of 1998) determine the classes of water resources and the resource quality objectives, as set out in the Schedule.



MR GUGILE NKWINTI
MINISTER OF WATER AND SANITATION
DATE: 22/02/2019

SCHEDULE

DETERMINATION OF WATER RESOURCE CLASSES AND RESOURCE QUALITY OBJECTIVES FOR MOKOLO, MATLABAS, CROCODILE (WEST) AND MARICO CATCHMENTS

1. DEFINITIONS

In this Schedule any word to which a meaning has been assigned in the National Water Act shall bear the meaning so assigned and, unless the context otherwise indicates -

“Class I” means the configuration of Ecological Categories of the water resources within a catchment that results in an overall condition of that water resource which is minimally altered from its predevelopment condition;

“Class II” means the configuration of Ecological Categories of the water resources within a catchment that results in an overall condition of that water resource which is moderately altered from its predevelopment condition;

“Class III” means the configuration of Ecological Categories of the water resources within a catchment that results in an overall condition of that water resource which is significantly altered from its predevelopment condition;

“Ecological Category” means the ecological condition to a water resource that reflects the ecological condition of that water resource in terms of the deviation of its biophysical components from the natural reference condition;

“Ecological Water Requirement” means the flow patterns (the magnitude, timing and duration thereof) and the water quality needed to maintain a riverine ecosystem in a particular condition and refers to both the quantity and quality components of a riverine ecosystem;

“Integrated Unit of Analysis” means an integrated unit of analysis that represents a homogenous catchment area of similar impacts and a broad scale unit for assessing the socio-economic implications of different catchment configuration scenarios and to report on the ecological conditions at a sub-catchment scale;

“National Water Act” means the National Water Act, 1998 (Act No. 36 of 1998);

“Percentile” means the non-exceedance probability, that is, at the 95th percentile 95 percent of values must be less than the value, and at the 50th percentile 50 percent of values must be less than the value;

“Present Ecological State” means the current health or integrity of various biological attributes of the resource, compared to the natural or close to natural reference conditions;

“Recommended Ecological Category” means a category indicating the ecological management target for a water resource based on its ecoclassification that should be attained.

“Resource Quality Objectives” means the Resource Quality Objectives that are both descriptive statements and numerical values for the biological, physical and chemical attributes of the significant water resources throughout the catchments. They are narrative and qualitative statements that describe the overall objectives for the Resource unit;

“Resource Unit” means a stretch of a river, an individual wetland or cluster of wetlands, an estuary, or a dam that is sufficiently ecologically distinct to warrant its own specification of an ecological water requirement or resource quality objective and that its geographic boundaries are clearly delineated. A Resource Unit is the basic unit of a water resource to which Resource Quality Objectives will apply;

“Water Resource Class” means the representation of the attributes required of different water resources by the water resource custodian (the Department of Water and Sanitation).

2. DESCRIPTION OF THE WATER RESOURCE

The water resource classes and resource quality objectives are determined for all or part of every significant water resource as set out below:

Water Management Area:	Limpopo North West
Drainage Region:	A10, A21 to A24, A31, A32, A41 and A42 Tertiary Drainage Region
River(s):	Mokolo, Matlabas, Crocodile (West) and Marico river systems
Water Management Area:	Vaal Water Management Area
Drainage Region:	D41A Quaternary Drainage Region
River(s):	Molopo River system

3. DETERMINATION OF WATER RESOURCE CLASSES IN TERMS OF SECTION 13(1)(a) OF THE NATIONAL WATER ACT, 1998

- i. The water resource classes for Mokolo, Matlabas, Crocodile (West) and Marico catchments are listed in Table 1 according to the overall class per integrated unit of analysis (IUA), indicated in Figure 1.
- ii. IUAs are classified in terms of their extent of permissible utilisation and protection as either Class I: indicating high environmental protection and minimal utilisation; Class II indicating moderate protection and moderate utilisation; and Class III indicating sustainable minimal protection and high utilisation.
- iii. Table 1 provides the IUA, its water resource class and its respective catchment configuration. The catchment configuration consists of a number of biophysical nodes representing river reaches or resource units (RUs). The ecological category to be maintained for each RU in the IUA is provided.

4. DETERMINATION OF RESOURCE QUALITY OBJECTIVES IN TERMS OF SECTION 13(1)(b) OF THE NATIONAL WATER ACT, 1998

- i. Resource Quality Objectives (RQOs) are defined for each prioritised RU for every IUA in terms of water quantity, habitat and biota, and water quality.
- ii. Figure 2 represents the RU boundaries of the Crocodile (West), Marico, Mokolo and Matlabas catchments.
- iii. Table 2 to Table 20 provide the RQOs for RIVERS AND DAMS in priority RUs.

- iv. Table 21 represents the RQOs for PRIORITY WETLAND CLUSTERS AND SYSTEMS in selected Resource Units.
- v. Table 22 to Table 32 represent Regional and RU specific RQOs for GROUNDWATER in priority RUs.
- vi. RQOs will apply from the date of publication of this Notice in the Government Gazette, unless otherwise specified by the Minister.

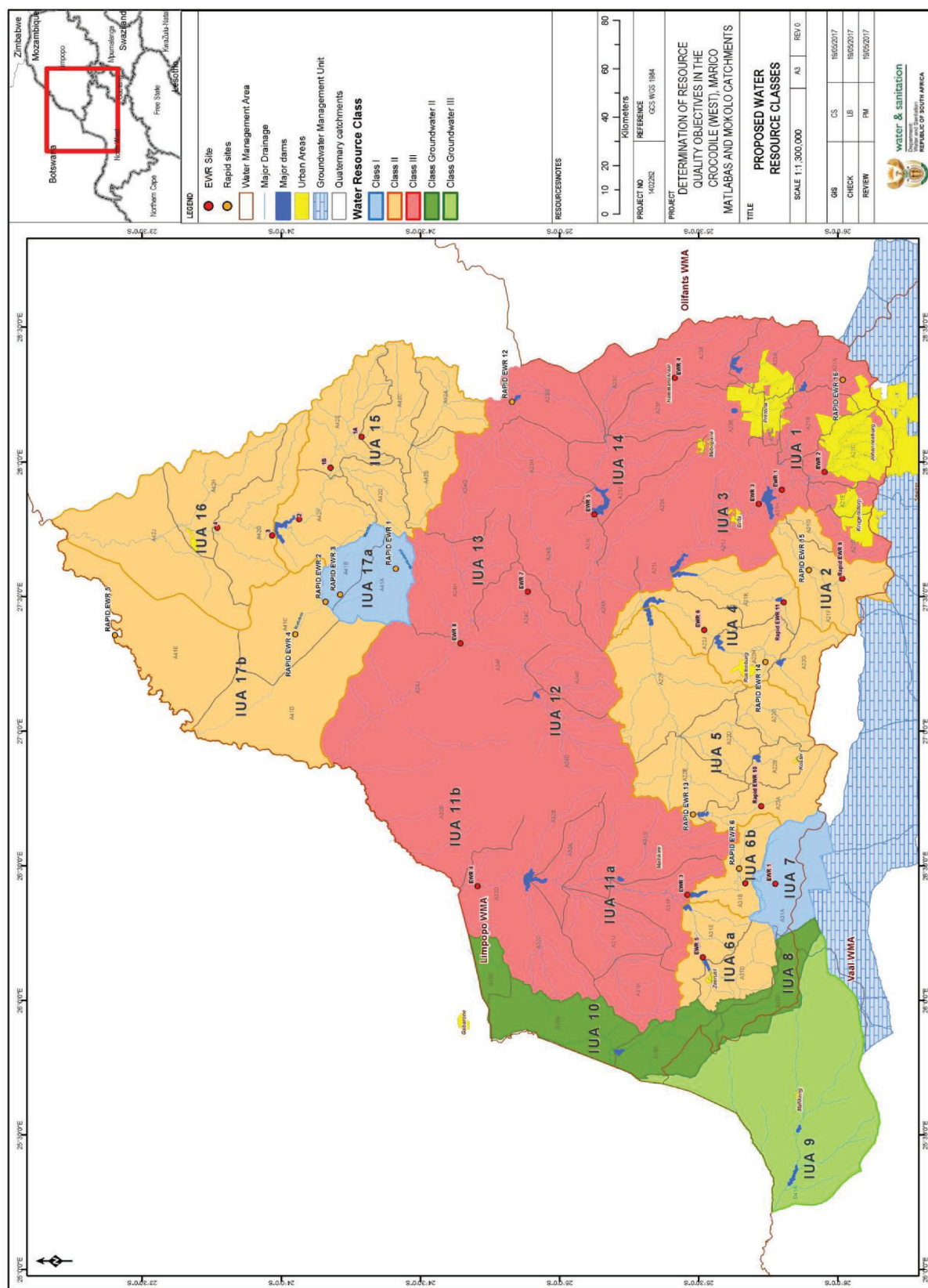


Figure 1: Water Resource Classes for the Crocodile (West), Marico, Mokolo and Matlabas catchments

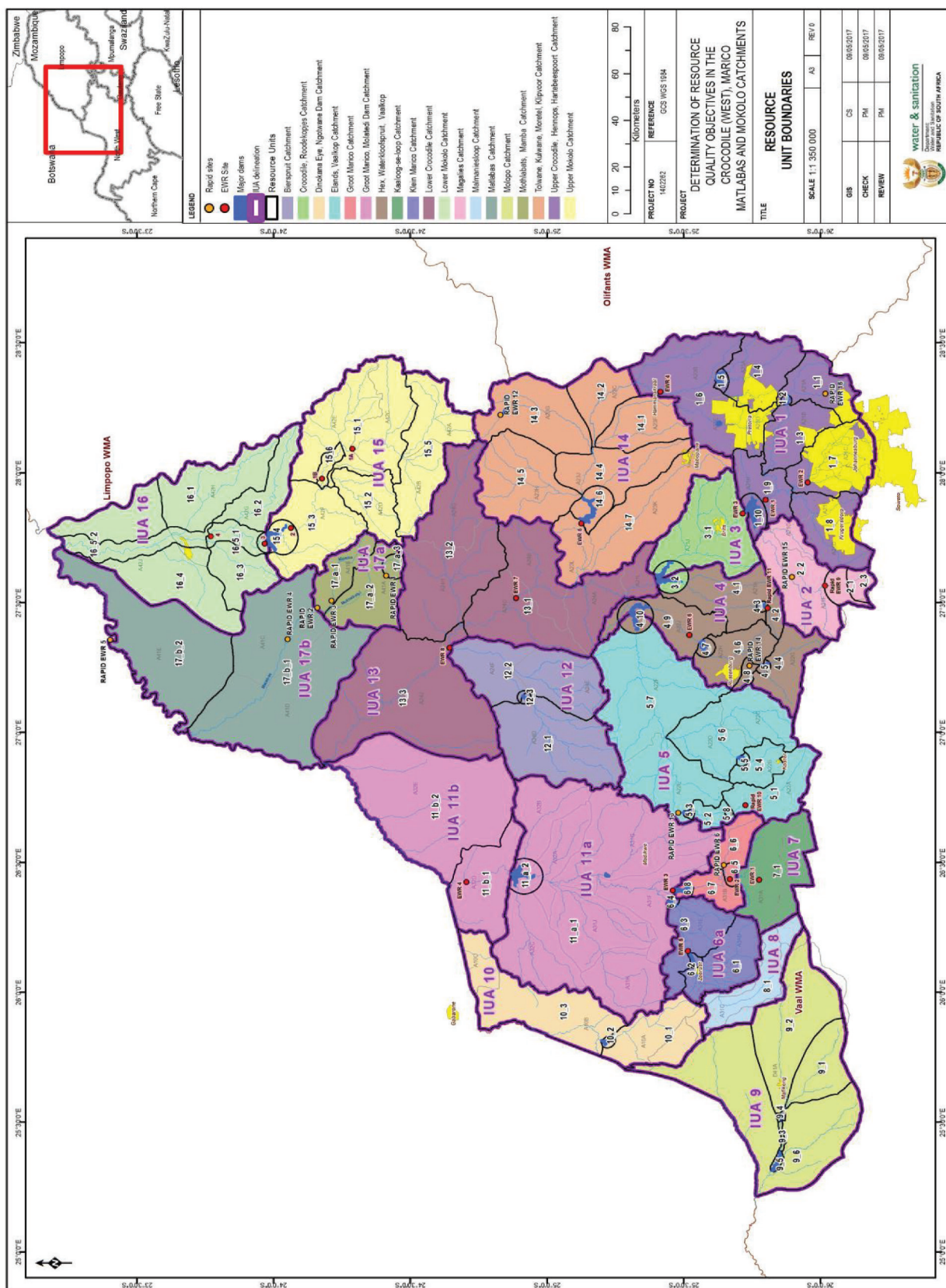


Figure 2: Resource Units of the Crocodile (West), Marico, Mokolo and Matlabas catchments

Table 1: Summary of Water Resource Classes per Integrated Unit of Analysis and Ecological Categories – Crocodile (West), Marico, Mokolo and Matlabas catchments

IUA	Water Resource Class	Node Name	Quaternary Catchment	Resource Unit	River Name	Ecological Category to be maintained	Mean Annual Runoff (million m ³ /a)	EWI as % of natural Mean annual runoff
1 Upper Crocodile/ Hennops/ Hartbeespoort	III	CROC Rapid EWR_16	A21A	1_1	Rietvlei (source)	C	4.788	27.83
		HN1	A21A	1_1	Hennops River upstream Rietvlei Dam	C	11.66	27.83
		HN2	A21B	1_3	Sesmylspruit with its' tributaries to confluence with Hennops	D	-	-
		HN3	A21C	1_7	Modderfonteinpruit to confluence with Jukskei	D	-	-
		HN4	A21C	1_7	Klein Jukskei at confluence with Jukskei	D	-	-
		EWI site CROC_EWR2	A21C	1_7	Jukskei River	D	139.9	29.19
		HN6	A21D	1_8	Bloubaanspruit and tributaries (outlet of quaternary/confluence with Crocodile)	D	-	-
		HN8	A21H	1_9	Swartspruit to Hartbeespoort Dam	D	-	-
		EWI CROC_EWR1	A21H	1_9	Crocodile River from Jukskei confluence to inflow Hartbeespoort Dam	D	231.05	24.07
		HN11	A23A	1_4	Upper Pienaars River, Edendalespruit and Moretele Rivers to Rooideplaat Dam	D	-	-
		EWI site CROC_EWR4	A23B	1_6	Pienaars from Rooideplaat Dam to outlet of quaternary catchment (outlet of IUA1)	C	28.2	30.81
		HN13	A23B	1_6	Boekenhoutspruit to confluence with Pienaars	C	-	-
		HN14	A23D	1_6	Skinner'spruit (source) to confluence with Apies	D	-	-
		HN15	A23D, E	1_6	Apies (source) to Bon Accord Dam, below the dam at outlet of IUA1	D	-	-
2 Magalies	II	CROC Rapid EWR9	A21F	2_1	Magalies below Maloney's Eye	B	14.68	45.93
		CROC Rapid EWR15	A21G	2_2	Magalies, Klein Magalies, Bloubank	C/D	21.89	21.18
3 Crocodile/ Rooidekopjes	III	HN18	A21G, F	2_2	Skeerpoort at outlet of IUA2	C/D	-	-
		HN19	A21J	3_1	Rosespruit at confluence with Crocodile	C/D	-	-
4 Hex/ Waterkloof- spruit/ Vaalkop	II	EWI site CROC_EWR3	A21J	3_1	Crocodile from Hartbeespoort Dam to upstream Rooidekopjes Dam	C/D	143.3	25.02
		CROC Rapid EWR11	A21K	4_2	Upper reaches of Sterkstroom (source) to inflow Buffelspoort Dam	C	13.95	28.21
		HN22	A21K	4_1	Sterkstroom from Buffelskloof Dam to Rooidekopjes Dam	C	-	-

IUA	Water Resource Class	Node Name	Quaternary Catchment	Resource Unit	River Name	Ecological Category to be maintained	Mean Annual Runoff (million m³/a)	EWR as % of natural Mean annual runoff
5 Elands/ Vaalkop	II	HN23	A22G	4_4	Upper Hex (source) to Olifantsnek Dam, Rooikloofspruit	C	-	-
		CROC Rapid_EWR14	A22H	4_8	Waterkloofspruit to confluence with Hex	B/C	5.469	28.27
		HN25	A22H	4_6	Hex from Olifantsnek Dam to Bospoort Dam, Sandspruit	D	12.11	15.26
		EWR site CROC_EWR6	A22J	4_9	Hex from Bospoort Dam to inflow Vaalkop Dam	D	26.9	14.96
		CROC Rapid_EWR10	A22A	5_1	Upper reaches of Elands (source) to Swarttruggens Dam	B/C	10.1	30.48
6b Groot Marico	II	HN29	A22A	5_2	Elands from Swarttruggens Dam to Lindleyspoort Dam	C	12.87	23.99
		HN30	A22B	5_4	Upper Koster (source) to Koster Dam	C	2.54	22.77
		HN31	A22C, A22D	5_6	Selons River, Koedoespruit, Dwaarspruit, lower Koster River	C	-	-
		CROC Rapid_EWR13	A22E, A22F	5_7	Elands from Lindleyspoort Dam to Vaalkop Dam	C	18.77	21.90
		MAR Rapid_EWR6	A31B	6_6	Polkadraaispruit to confluence with Marico	B	9.87	49.27
6a Klein Marico	II	EWR Site MAR_EWR2	A31B	6_5	Groot Marico main stem upstream to Polkadraaispruit confluence	B	42.08	50.26
		HN63	A31B	6_7	Groot Marico from Polkadraaispruit confluence to Marico Bosveld Dam	B	56.92	50.61
		HN64	A31D	6_1	Malmadiesloop to confluence with Klein Marico	C/D	-	-
		HN35	A31D	6_1	Klein Marico and tributaries upstream of Zeerust	C/D	-	-
		HN65	A31E	6_1	Klein Marico from Zeerust to Klein Maricopoort Dam	C/D	16.25	14.26
7 Kaalooq-se-Loop	I	EWR Site MAR_EWR5	A31E	6_3	Klein Marico from Klein Maricopoort Dam to Krommelenboog Dam	C	16.25	11.70
		EWR site MAR_EWR1	A31A	7_1	Marico Eye, Kaalooq-se-Loop, Bokkraal-se-Loop, Ribbokfontein-se-Loop, Rietspruit (southern eye), Kullisfontein, Syferfontein, Bronkhorstfontein	B	10.539	76.32
		HN38	A31A	7_1	Vanstraatenvlei and tributaries at confluence with Kaalooq-se-Loop, outlet of IUA7	B	-	-
		-	A31C	8_1	Dolomite water area	B	-	-
		HN66	D41A	9_3	Molopo River main stem only from Modimola Dam to Disaneng Dam	D	-	-

IUA	Water Resource Class	Node Name	Quaternary Catchment	Resource Unit	River Name	Ecological Category to be maintained	Mean Annual Runoff (million m ³ /a)	EWR as % of natural Mean annual runoff
10 Dinokana Eye/Notwane Dam		HN67	D41A	9_2	Molopo headwaters to inflow Setumo (Modimola) dam (dolomite water area)	D	-	-
		HN39	D41A	9_6	Molopo at outlet of IUA9	D	-	-
		HN68	A10A	10_1	Notwane from Dinokana to Notwane Dam	D	-	-
11a Groot Marico/ Molatedi Dam	III*	EWR Site MAR_EWR3	A31F, A31G, A32A	11a_1	Marico Groot Marico from outflow Marico Bosveld Dam to Molatedi Dam, all tributaries	C/D	65.083	23.62
11b Groot Marico/ seasonal tributaries	III	EWR Site MAR_EWR4	A32D, E	11b_1	Marico from Molatedi Dam to confluence with Limpopo, Rasweu, Maselaje rivers; outlet of IUA11b	C	153.25	7.96
12 Bierspruit	III	-	A24D	12_1	Wilgespruit, Bofule, Kolobeng, Magoditshane, Molhaba	C		
		HN42	A24E, F	12_2	Bierspruit to confluence with Crocodile River; Brakspruit, Phufane, Sefathane, Lesobeng, lower reach Bofule; outlet of IUA12.	D	-	-
		HN43	A24G, A24H	13_2	Sand to confluence with Crocodile	B	26.56	27.04
13 Lower Crocodile	III	EWR Sites CROC_EWR7	A21L, A24A-C, A24H	13_1	Crocodile River outflow Roodekopjes Dam to upstream Sand River confluence, Sleepfonteinpruit, Klipspruit tributaries	D	463.4	13.9
		EWR Site CROC_EWR8	A24J	13_3	Lower Crocodile from Bierspruit confluence to confluence with Limpopo, outlet of IUA13	D	565.16	7.48
		Rapid_EWR12	A23G	14_3	Plat River	C/D	4.864	23.08
14 Tolwane/ Kulwane/ Moretele/ Klipvoor	III	-	A23F	14_1	Apies River, Tshwane tributary	D		
		-	A23C	14_2	Pienaars River from Boekenshout confluence to Apies River confluence	C		
			A23J	14_4	Moretele (Pienaars) River from Plat River confluence to Klipvoor Dam, Kutswane to Klipvoor Dam	C		
		EWR Site CROC_EWR5	A23J, A23L	14_7	Moretele (Pienaars) to confluence with Crocodile, outlet of IUA14	D	113.0	11.82
		HN49	A23K	14_7	Tolwane to confluence with Moretele	C/D	-	-
15	II	HN50	A42A	15_5	Sand (source) to confluence with Grootpruit	C	-	-

IUA	Water Resource Class	Node Name	Quaternary Catchment	Resource Unit	River Name	Ecological Category to be maintained	Mean Annual Runoff (million m ³ /a)	EWR as % of natural Mean annual runoff
Upper Mokolo		HN51	A42B	15_5	Grootspuit (source) to confluence with Sand	D	27.8	21.73
		EWR Site MOK_EWR1a	A42C	15_1	Mokolo to confluence with Dwars	C/D	84.84	16.79
		EWR Site MOK_EWR1b	A42E	15_6	Mokolo to confluence with Sterkstroom	B/C	135.03	13.6
		HN54	A42D	15_2	Sterkstroom (source) to confluence with Mokolo,	B	43.45	52.63
		EWR Site MOK_EWR2	A42F	15_4	Mokolo River in A42F to inflow Mokolo Dam,	B/C	196.2	11.7
16 Lower Mokolo	II	EWR Site MOK_EWR3	A42G	15_4	Mokolo Dam to upper portion of A42G (10km downstream of dam)	B/C	213.99	8.65
		-	A42H (eastern portion)	16_1	Tamboitie River	B		
		-	A42G	16_2	Poer-se-Loop	B		
		-	A42J and remaining of A42H	16_4	Sandloop	C		
		EWR Site MOK_EWR4	A42G	16_5_1	Mokolo main stem - Mokolo from below EWR3 to the Tamboitie confluence	C	253.3	12.3
17a Mothlabatsi/ Mamba	I	HN58	A42H, A42J	16_5_2	Mokolo main stem - from Tamboitie confluence to Limpopo	C	-	-
		HN59	A41A	17a_3	Headwaters Mothlabatsi (Matlabas-Zyn-Kloof, peatlands)	A	5.23	57.07
		MAT Rapid_EWR3	A41B	17a_1	Mamba to confluence with Mothlabatsi	B/C	9.54	35.49
		MAT Rapid_EWR2	A41B	17a_2	Matlabas/Mothlabatsi confluence (outlet of IUA)	B/C	32.80	33.23
		MAT Rapid_EWR4	A41C	17b_1	Matlabas	B	35.58	33.42
17b Matlabas	II	HN62	A41C, D	17b_1	Matlabas to confluence with Limpopo, outlet of IUA17b	B	-	-

*Groundwater Zone

Table 2: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 1: UPPER CROCODILE/HENNOPS/HARTEBEEESPOORT

IU	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
A	III	Upper Hennops and Rietvlei Rivers (inflow into Rietvlei Dam) (A21A)	1_1	D	Quantity	Low flows	EWB maintenance low and drought flows: Hennops River at A2H090 in A21A NIMAR = 11.66x10⁶m³ REC=C category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows - specifically required after confluence of Rietvlei and Hennops Rivers Maintenance flows and drought flows Monitoring of Hennops River with surveys of biota at A2H090)	Maintenance Low flows (m ³ /s)	Drought Low flows (m ³ /s)
									Oct	0.041
									Nov	0.054
									Dec	0.056
									Jan	0.078
									Feb	0.100
									Mar	0.087
									Apr	0.072
									May	0.065
									Jun	0.064
									Jul	0.059
									Aug	0.054
									Sep	0.048
									≤ 0.060 milligrams/litre (mg/l) (50 th percentile)	
						Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and ensure the prescribed ecological category is met. Application of the concentration limits must be undertaken in conjunction with a nutrient load balance for the catchment.	Orthophosphate (PO₄⁻) as Phosphorus Nitrate (NO₃⁻) & Nitrite (NO₂⁻) as Nitrogen	≤ 3.0 milligrams/litre (50 th percentile)	
									≤ 55 milliSiemens/metre (mS/m) (95 th percentile) Hennops above confluence with Rietvlei	
					Quality	Salts	Instream salinity must be maintained or improved upon to support the aquatic ecosystem and the water quality requirements of the water users.	Electrical conductivity (EC)	≤ 70 milliSiemens/metre (mS/m) (95 th percentile) below confluence	
									≤ 80 milligrams/litre (mg/l) 95 th percentile	
									≤ 70 milligrams/litre (mg/l) (95 th percentile)	
									130 counts/100 millilitres (ml) (95 th percentile)	
									6.5 (5 th percentile) and 9.0 (95 th percentile)	
					Pathogens	System Variables	The presence of pathogens should pose a low risk to human health. pH must be maintained at present state. A baseline assessment to determine the present state instream turbidity is required. Dissolved oxygen levels must be improved to support the aquatic	<i>Escherichia coli</i> (<i>E. coli</i>) pH range Turbidity	A 10% variation from background concentration is allowed.	
									6-7 milligrams/litre (mg/l)	

IU A	Class	River	Resource Unit	Ecological Category	Component	Sub- component	Narrative RQO	Indicator	Numerical Limit RQO
							ecosystem.		
							The concentrations of toxins should not be toxic to aquatic organisms and a threat to human health. (Pesticides to be confirmed)	Ammonia as N	≤ 0.0725 milligrams/litre (mg/l) (95th percentile)
								Aluminium (Al)	≤ 0.105 milligrams/litre (mg/l) (95th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95th percentile)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)
								Lead (Pb) hard	≤ 0.0095 milligrams/litre (mg/l) (95th percentile)
								Copper (Cu) hard	≤ 0.0073 milligrams/litre (mg/l) (95th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)
								Atrazine	≤ 0.078 milligrams/litre (mg/l)
								Mancozeb	0.009 milligrams/litre (mg/l)
								Glyphosate	0.7 milligrams/litre (mg/l)
								Endosulfan	0.13 micrograms/litre (ug/l)
								Oil and grease	2.5 mg/l
								Hormone driven Pharmaceuticals	17β-oestradiol: ≤ 0.001 mg/l
								Index of Habitat Integrity, Rapid Habitat Assessment Method and Model Method and Model (RHAMM)	Instream Habitat Integrity ecological category = C ≥ 62%
					Habitat	Instream	Sufficient velocity depth for flow sensitive species must be attained.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model Method and Model (RHAMM)	Instream Habitat Integrity ecological category = C ≥ 62%
						Riparian habitat	Alien invasive control should be implemented. Riparian vegetation should be maintained at a C ecological category.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI ecological category = C ≥ 62% Riparian IHI = C ≥ 62%
						Fish	Fish community should be maintained at a C ecological category. Flow velocity linked to seasonal requirements needed for <i>BMAR, AURA</i> and <i>CPRE</i>	Fish Response Assessment Index (FRAI). Seasonality must be noted.	Fish ecology category = C FRAI ≥ 62%
					Biota	Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a moderately modified condition or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5).	MIRAI C ecological category ≥ 62% SASS ≥ 80 ASPT ≥ 4.8
						Semi-aquatic biota	The suitability of this stretch of river to serve as a habitat and migration corridor for aquatic bird	Aquatic birds/Indicator mammal species	Determine representative bird species (types and population numbers to serve as indicators).

IU	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
A							and mammal populations must be maintained through proper habitat management.		There is a need to set a numerical limits for density of animals/birds based on the available/collected data.
					Quantity	Dam levels	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained.	Minimum operating level required in dam	Operation rules as applicable. Minimum level to sustain aquatic ecosystem (15-18%).
					Quality	Nutrients	Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system or better.	Orthophosphate	$\leq 0.025 \text{ mg/l}$ 50th percentile
							Concentration of total phosphorous must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Total phosphorous	$\leq 0.130 \text{ mg/l}$ 50th percentile
							Concentration of total Ammonia as N must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Total Ammonia as N	$\leq 0.0725 \text{ mg/L N}$ 95th percentile
							Concentration of total nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system or better.	Nitrite & Nitrate	$\leq 1.00 \text{ mg/L N}$ 95th percentile
							The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	$\leq 70 \text{ mS/m}$ 95th percentile
					Salts		The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Sulphate	$\leq 80 \text{ mg/l}$ 95th percentile
							The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Sodium	$\leq 70 \text{ mg/l}$ 95th percentile

IU	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
A							health and the water quality requirements of the downstream users.		
							Pathogens should be maintained at levels safe for human use.	<i>Escherichia coli</i>	≤ 130 counts/100 millilitres (ml) (95 th percentile)
							The water must be acceptable for recreation use.	pH	6.5 – 9.0 (95 th percentile)
							Increased clarity with reading ≥ 0.4 m	Turbidity	Minimum 95 th percentile
						System Variables	Moderate change	Temperature	No more than 2 °C increasing change in both minimum and maximum
							The oxygen levels in the system must maintain the ecological system.	Dissolved Oxygen	≥ 7.0 mg/L O ₂ (95 th percentile)
						Toxics	The dam must be managed to minimize the development of toxic cyanobacterial blooms	Cyanobacteria	Cyanobacterial dominance with Chl a concentration higher than 30µg/l must be kept at less than 20% of the time.
							The river water should not be toxic to aquatic organisms or be a threat to human health.	Pesticides	Cyanide: ≤ 110 µg/l Endosulfan: ≤ 20 µg/l Atrazine: ≤ 100 µg/l (95 th percentile)
							The impoundment water should not be a threat to animal or human sustainability.	Hormone driven Pharmaceuticals	17β-oestradiol: ≤ 1 µg/l
					Quality	Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and ensure the prescribed ecological category and the water quality requirements of the water users are met.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.125 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 3.0 milligrams/litre (50 th percentile)
						Salts Pathogens	Instream salinity must be improved to meet the recommended ecological category and the water quality requirements of the water users. Land based impacts and wastewater discharges must be controlled and managed to protect the resource.	Electrical conductivity (EC)	≤ 85 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate	≤ 70 milligrams/litre (95 th percentile)
								Sodium	≤ 70 milligrams/litre (mg/l) (95 th percentile)
					System Variables	Toxics	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i>	130 counts/100 millilitres (95 th percentile)
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	pH range 7.5 (5 th percentile) - 9.2 (95 th percentile)
							A baseline assessment to determine the present state	Turbidity	A 10% variation from background concentration is allowed.

IU	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
A							instream turbidity is required.		
							Dissolved oxygen levels must be improved to support the aquatic ecosystem.	Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
							The concentrations of toxins should not be toxic to aquatic organisms and a threat to human health	Ammonia as N	≤ 0.1 milligrams/litre (mg/l) 95th percentile
								Aluminium (Al)	≤ 0.150 milligrams/litre (mg/l) (95th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95th percentile)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)
								Lead (Pb) hard	≤ 0.013 milligrams/litre (mg/l) (95th percentile)
								Copper (Cu) hard	≤ 0.0075 milligrams/litre (mg/l) (95th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)
								Atrazine	≤ 0.078 milligrams/litre (mg/l)
								Mancozeb	0.009 milligrams/litre (mg/l)
								Glyphosate	0.7 milligrams/litre (mg/l)
								Endosulfan	0.13 micrograms/litre (ug/l)
					Habitat	Instream	Habitat diversity should be maintained in a D Ecological Category or improved upon. Velocity depth for flow sensitive species (<i>AURA</i> and <i>CPRE</i>) and taxa is required.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model Method and Model (RHAMM)	Instream Habitat Integrity category ≥ D ≥ 42%
						Riparian habitat	Alien invasive control required. Riparian vegetation should be improved from an E ecological category to a D category.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI ecology category = D ≥ 42% Riparian IHI = D ≥ 42%
					Biota	Fish	Fish community should be improved from the current E ecological category to a D category. Flow velocity linked to seasonal requirements needed for <i>BMAT</i> and <i>BMAT</i> .	Fish Response Assessment Index (FRAI)	FRAI should be conducted annually to monitor against the prescribed D ecological category. FRAI ≥ 42%
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 55 ASPT ≥ 4.2
					Quality	Nutrients	Instream concentration of nutrients must be improved to sustain	Orthophosphate (PO ₄) as Phosphorus	≤ 0.125 milligrams/litre (mg/l) (50 th percentile)

IU A	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
	Edendalespruit and Moretele Rivers to Roodeplaat (A23A)						aquatic ecosystem health and ensure the prescribed ecological category and the water quality requirements of the water users are met. Control of nutrients required to improve instream water quality status.	Dissolved Inorganic Nitrogen (DIN) as Nitrogen	≤1.25 milligrams/litre (mg/l) (50 th percentile)
							Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 1.0 milligrams/litre (50 th percentile)	
						Salts	Instream salinity must be maintained to support the aquatic ecosystem and the water quality requirements of the water users.	Electrical conductivity (EC)	≤ 65 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate (SO ₄)	≤ 50 milligrams/litre (mg/l) (95 th percentile)
								Chloride (Cl)	≤ 50 milligrams/litre (mg/l) (95 th percentile)
						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i>	130 counts/100 millilitres (95 th percentile)
								pH range	6.5 (5 th percentile) and 9.0 (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements. A baseline assessment to determine the present state instream turbidity is required. Dissolved oxygen levels must be improved to support the aquatic ecosystem.	Turbidity	A 10% variation from background concentration is allowed.
								Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
								Ammonia as N	≤ 0.0725 milligrams/litre (mg/l) (95 th percentile)
						Toxics	The concentrations of toxins should not be toxic to aquatic organisms and a threat to human health. (Dissolved)	Aluminium (Al)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)
								Lead (Pb) hard	≤ 0.007 milligrams/litre (mg/l) (95 th percentile)
								Copper (Cu) hard	≤ 0.0075 milligrams/litre (mg/l) (95 th percentile)
					Nickel (Ni)			≤ 0.07 milligrams/litre (mg/l) (95 th percentile)	
					Fluoride (F)			≤ 2.54 milligrams/litre (mg/l) (95 th percentile)	
					Benzene			≤0.01 milligrams/litre (mg/l) (95 th percentile)	
					Toluene			≤0.7 milligrams/litre (mg/l) (95 th percentile)	
					Hormone driven Pharmaceuticals			17β-oestradiol: ≤ 0.001 mg/l	
Habitat	Habitat availability for fish and macroinvertebrates must be	Index of Habitat Integrity, Rapid Habitat	Instream Habitat Integrity ecological category = D ≥ 42%						

IU	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
A		Roodeplaat Dam	1_5				maintained, to sustain biotope diversity. Marginal vegetation required to support <i>BANO</i> .	Assessment Method and Model (RHAMM)	(A2HART-KAMEE and A2PIEN-BAVIA)
						Riparian habitat	Alien invasive control required. Riparian vegetation should be improved from E ecological category to a D category.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI ecological category = D ≥ 42% Riparian IHI = D ≥ 42% (A2HART-KAMEE and A2PIEN-BAVIA)
						Diatoms	Diatom assemblage must be maintained within a largely modified condition or improved upon.	Specific Pollution Index	Diatom ecological category = D ≥ 42% (for both REMP sites A2HART-KAMEE and A2PIEN-BAVIA)
				Biota		Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5).	MIRAI ecological category = D ≥ 42% REMP Site At A2PIEN-BAVIA: SASS ≥ 60 ASPT ≥ 3.8 REMP Site A2HART-KAMEE: SASS ≥ 60 ASPT ≥ 3.8
						Dam levels	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
					Quality	Nutrients	Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic state. Hyacinth growth must be managed. Management strategy to address load in sediments required.	Orthophosphate	≤ 0.025 mg/l 50th percentile
							Concentration of total phosphorus must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be	Total phosphorous	≤ 0.130 mg/l 50th percentile

IU A	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
			1_6		Quantity		maintained as a eutrophic system.		
							Concentration of nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Nitrite & Nitrate	≤ 1.00 mg/ℓ N 95th percentile
							The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	≤ 55 mS/m 95th percentile
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Sulphate	≤ 80 mg/ℓ 95th percentile
							The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Sodium	≤ 70 mg/ℓ 95th percentile
							Pathogens should be maintained at levels safe for human use.	<i>Escherichia coli</i>	≤ 130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	The water must be acceptable for recreational use.	pH	6.5 – 9.0 95th percentile
							Increased clarity with reading ≥0.4 m	Turbidity	Minimum 95th percentile
							Moderate change	Temperature	No more than 2 °C increasing change in both minimum and maximum
						Toxics	The oxygen levels in the system must maintain the ecological system.	Dissolved Oxygen	≥ 7.0 mg/L O ₂ 95th percentile
							The dam must be managed to minimize the development of toxic cyanobacterial blooms	Cyanobacteria	Cyanobacterial dominance with Chl a concentration higher than 30µg/ℓ must be kept at less than 20% of the time.
							The impoundment water should not be a threat to animal or human sustainability.	Hormone driven Pharmaceuticals	17β-oestradiol: ≤ 1 µg/ℓ
						Upper reaches_ Apies, Skinner-spruit and Pienaars River outflow from Roodeplaat Dam (A23B.		Quantity	Low flows
Oct	0.104	0.063							
Nov	0.136	0.081							
Dec	0.146	0.086							
						Jan	0.211	0.122	

IU	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
A		A23D, A23E)					drought flows must be attained so that the environmental flows requirements are met to support a healthy condition for the ecosystem and users.		Feb 0.242 0.140 Mar 0.208 0.119 Apr 0.174 0.102 May 0.144 0.085 Jun 0.133 0.080 Jul 0.120 0.072 Aug 0.111 0.067 Sep 0.103 0.063 Oct 0.104 0.063 Nov 0.136 0.081
							EWB high flows: Pienaars River at CROC_EWR4 in A23B NIMAR = 28.20x10⁶ m³ REC=C category The high flows must be attained so that the environmental flows requirements are met to support a healthy condition for the ecosystem	Floods (See Appendix A for detail on flood requirements) Intermediate EWR site 4 on Pienaars River (monitoring at A2H006)	High flows (m³/s) Oct 0 Nov 0.210 Dec 0.339 Jan 0.203 Feb 0.56 Mar 0.203 Apr 0 May 0 Jun 0 Jul 0 Aug 0 Sep 0
					Quality	Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and ensure the prescribed ecological category is met. Concentrations should not be allowed to deteriorate.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.5 milligrams/litre (mg/l) (50th percentile) Apies ≤ 0.09 milligrams/litre (mg/l) (50th percentile) Pienaars ≤ 0.05 milligrams/litre (mg/l) (50th percentile) Skidderspruit
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 3.0 milligrams/litre (50th percentile) Skidderspruit and Apies ≤ 1.0 milligrams/litre (mg/l) (50th percentile) Pienaars
								Electrical conductivity (EC)	≤ 55 millSiemens/metre (mS/m) (95th percentile) Pienaars River ≤ 70 millSiemens/metre (mS/m) (95th percentile) Apies River
								Sulphate (SO ₄)	≤ 70 milligrams/litre (95 th percentile)
								Sodium (Na)	≤ 50 milligrams/litre (95 th percentile)
						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (95 th percentile)

IU A	Class	River	Resource Unit	Ecological Category	Component	Sub- component	Narrative RQO	Indicator	Numerical Limit RQO
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 9.0 (95 th percentile)
						System Variables	A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
							Dissolved oxygen levels must be improved to support the aquatic ecosystem.	Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
						Toxics	The concentrations of toxins must not be at a level that is toxic to aquatic organisms and a threat to human health	Atrazine	≤ 0.078 milligrams/litre (mg/l)
								Mancozeb	0.009 milligrams/litre (mg/l)
								Glyphosate	0.7 milligrams/litre (mg/l)
								Endosulfan	0.13 micrograms/litre (ug/l)
					Habitat	Instream	Habitat availability for fish and macroinvertebrates must be maintained, to sustain biotope diversity, especially maintaining marginal vegetation to support fish species <i>MBRE</i> and <i>BANO</i> .	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity ecological category = C ≥ 62%
						Riparian habitat	Alien invasive control required. Riparian vegetation should be maintained at an ecological category of C.	Index of Habitat Integrity, Vegetation Response Assessment Index (VEGRAI)	VEGRAI ecological category = C ≥ 62%
							Fish community should be improved from the current E ecological category to a D category.	Fish Response Assessment Index (FRAI)	Fish ecology category = D FRAI ≥ 42% (Apies/Skinnerspruit Rivers)
					Biota	Fish	An assessment of the fish community should be conducted annually to monitor against present state C ecological category. Maintain the species diversity present. Flow should be maintained to accommodate species <i>LCYL</i> , <i>LMOL</i> and <i>BMAR</i> .	Fish Response Assessment Index (FRAI)	Fish ecology category = C FRAI ≥ 62% (Pienaars River at REMP site A2PIEN-DINOK (d/s EWR 4))
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5);	MIRAI EC = D ≥ 42% SASS ≥ 50 ASPT ≥ 3.4 (Apies and Skinner at REMP site A2APIE-BOSCH (A23D & A23E))
							Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System	MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.0 (REMP site A2PIEN-DINOK (d/s

IU A	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO				
		Jukskei, Klein Jukskei, Modderfonteins pruit (A21C)	1_7			Diatoms	Plenaars downstream of Roodeplaat Dam to Boekenhoutspuit confluence (A23B): Diatom assemblage must be maintained within a largely modified condition or improved upon.	Version 5 (SASS5).	EW R 4)				
							Quantity	Diatom maintenance low and drought flows: Jukskei River at CROC_EWR2 in A21C PMAR = 139.9x10 ⁶ m ³ REC=D category	Specific Pollution Index	Diatom EC = D ≥ 42%			
											Low flows	Base Flows Maintenance flows and drought flows Intermediate EWR site 2 on Jukskei River (monitoring at A2H023/A2H044)	—
					Oct	0.725							0.725
					Nov	0.775		0.775					
					Dec	0.770		0.770					
					Jan	0.814		0.814					
					Feb	0.936		0.936					
					Mar	0.845		0.845					
					Apr	0.839		0.839					
					May	0.795	0.795						
					Jun	0.815	0.815						
Jul	0.785	0.785											
Aug	0.774	0.774											
Sep	0.762	0.762											
Quality	Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and ensure the prescribed ecological category and the water quality requirements of the water users are met. Nutrient management required to improve current state and ensure sustainability of the system.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.5 milligrams/litre (mg/l) (50 th percentile) (interim numeric limit) ≤ 0.125 milligrams/litre (mg/l) (50 th percentile) (long term numeric limit)	≤ 4.0 milligrams/litre (50 th percentile)								
				Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen		≤ 65 milliSiemens/metre (mS/m) (95 th percentile) ≤ 70 milligrams/litre (mg/l) (95 th percentile) ≤ 70 milligrams/litre (mg/l) (95 th percentile) ≤ 60 milligrams/litre (mg/l) (95 th percentile)							
							Electrical conductivity (EC)	≤ 65 milliSiemens/metre (mS/m) (95 th percentile)					
Salts	Instream salinity must be maintained to support the aquatic ecosystem and the water quality requirements of the water users.	Sulphate (SO ₄)	≤ 70 milligrams/litre (mg/l) (95 th percentile)										
				Sodium (Na)	≤ 70 milligrams/litre (mg/l) (95 th percentile)								
						Chloride	≤ 60 milligrams/litre (mg/l) (95 th percentile)						
	Pathogens	The presence of pathogens should pose a low risk to human health.	Escherichia coli (E.coli)	130 counts/100 millilitres (95 th percentile)									

IU	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
A						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 9.0 (95 th percentile)
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
							Dissolved oxygen levels must be improved to support the aquatic ecosystem.	Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
						Toxics	The concentrations of toxins should not be toxic to aquatic organisms and a threat to human health	Ammonia as N	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)
								Aluminium (Al)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Iron (Fe)	≤ 0.3 milligrams/litre (mg/l) (95 th percentile)
								Lead (Pb) hard	≤ 0.013 milligrams/litre (mg/l) (95 th percentile)
								Copper (Cu) hard	≤ 0.0075 milligrams/litre (mg/l) (95 th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95 th percentile)
								Atrazine	≤ 0.078 milligrams/litre (mg/l)
								Mancozeb	0.009 milligrams/litre (mg/l)
								Glyphosate	0.7 milligrams/litre (mg/l)
								Endosulfan	0.13 micrograms/litre (ug/l)
					Habitat	Instream	Habitat diversity should be improved from an E ecological category to a D category. Ecological integrity of system must improve.	Index of Habitat Integrity	Instream Habitat Integrity EC = D ≥ 42%
						Riparian habitat	Riparian vegetation must be maintained at a C ecological category. Control of alien invasive vegetation required.	Vegetation Response Assessment Index	VEGRAI EC = C ≥ 62%
				Biota		Fish	Fish community should be improved from the current E ecological category to a D category. Ensure presence of species <i>BMAR</i> and <i>BMOT</i> (flow dependent species). Flow depth must be present to support habitat availability for <i>TSPA</i> , <i>CGAR</i> , <i>BANO</i> , <i>BMAR</i> and <i>BMOT</i>	Fish Assessment (FRAI)	Fish ecology category = D FRAI ≥ 42%
								Macroinvertebrate	MIRAI ecological category = D ≥

IU	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
A		Upper reaches of the Crocodile River and Bloubaan spruit (A21D, A21E)	1_8		Quality	macroinvertebrates	must be maintained within a D ecological category or improved upon.	Response Assessment Index and the South African Scoring System Version 5 (SASS5).	42% SASS ≥ 50 ASPT ≥ 3.8 (EWR2, A2JUKS-DIENR)
						Diatoms	Diatom assemblage must be maintained within a D ecological category or improved upon.	Specific Pollution Index	Diatom EC ≥ 42% A2JUKS-DIENR
						Nutrients	Instream concentration of nutrients must be maintained to sustain aquatic ecosystem health and to ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.125 milligrams/litre (mg/l) (50 th percentile)
						Salts	Instream salinity must be maintained at present state quality. Control impacts and future development.	Nitrate (NO ₃) & Nitrite (NO ₂) as Nitrogen	≤ 1.0 milligrams/litre (50 th percentile)
							Salinity levels are significantly high. Instream salinity must be improved to maintain the aquatic ecosystem in a sustainable state and support the water quality requirements of the water users	Electrical conductivity (EC)	Crocodile upstream Bloubaan spruit confluence: ≤ 45 milliSiemens/metre (mS/m) (95 th percentile)
									Bloubaan spruit: ≤ 85 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate (SO ₄)	Crocodile upstream Bloubaan spruit confluence: ≤ 40 milligrams/litre (mg/l) (95 th percentile)
									Bloubaan spruit: ≤ 200 milligrams/litre (mg/l) (95 th percentile)
						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (E.coli)	130 counts/100 millilitres (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
						Toxics	The concentrations of toxins must be maintained at levels that are not toxic to aquatic organisms and a threat to human health.	Cyanide	≤ 0.110 milligrams/litre (95 th percentile)
								Uranium (U) (238)	≤ 0.03 milligrams/litre (95 th percentile)
								Arsenic (As)	≤ 0.130 milligrams/litre (95 th percentile)
								Gross α	0.42 Bq/litres
								Gross β	0.42 Bq/litres
								Aluminium (Al)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Iron (Fe)	≤ 0.3 milligrams/litre (mg/l) (95 th percentile)
								Lead (Pb) hard	≤ 0.0095 milligrams/litre (mg/l) (95 th percentile)

IU A	Class	River	Resource Unit	Ecological Category	Component	Sub- component	Narrative RQO	Indicator	Numerical Limit RQO	
		Crocodile River from Jukskei confluence to Hartbeespoort Dam (A21H)	1_9					Copper (Cu) hard	≤ 0.0075 milligrams/litre (mg/l) (95th percentile)	
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)	
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95th percentile)	
						Instream	Habitat diversity must be improved to maintain a D ecological category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = D ≥ 42%	
					Habitat	Riparian habitat	Riparian vegetation should be maintained at D ecological category. Marginal vegetation must be improved. Alien invasive control and rehabilitation of marginal zone is required. Limited habitat is available. Rehabilitation of riparian zone required to support semi-aquatic species (birdlife).	Index of Habitat Integrity, Vegetation Response Assessment Index (VEGRAI)	VEGRAI EC = D ≥ 42%	
						Fish	The fish community should be managed to the prescribed ecological category D ecological category or improved upon. Habitat requirements for <i>BMOT</i> (vegetation) and substrate and flow for <i>CPRE</i> must be met	Fish Assessment Index (FRAI)	Ecological category = D FRAI ≥ 42%	
					Biota	Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5).	MIRAI ecological category = D ≥ 42% SASS ≥ 60 ASPT ≥ 4.0 (A2CROC-ELAND)	
						Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and ensure the prescribed ecological category and the water quality requirements of the water users are met. Nutrient management required to improve current state and ensure sustainability of the system.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.20 milligrams/litre (mg/l) (50 th percentile)	
					Quality	Salts	Instream salinity must be maintained to support the aquatic ecosystem and the water quality requirements of the water users.	Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 2.0 milligrams/litre (50 th percentile)	
								Electrical (EC)	≤ 75 milliSiemens/metre (mS/m) (95 th percentile)	
								Sodium	≤ 60 milligrams/litre (mg/l) (95 th percentile)	
								Chloride	≤ 60 milligrams/litre (mg/l) (95 th percentile)	
								Sulphate	≤ 75 milligrams/litre (mg/l) (95 th percentile)	

IU	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
A						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
						Toxics	The concentrations of toxins must be maintained at levels that are not toxic to aquatic organisms and a threat to human health.	Cyanide	≤ 0.110 milligrams/litre (95 th percentile)
								Uranium (U) (238)	≤ 0.03 milligrams/litre (95 th percentile)
								Gross α	0.42 Bq/litres
								Gross β	0.42 Bq/litres
								Aluminium (Al)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)
								Lead (Pb) hard	≤ 0.013 milligrams/litre (mg/l) (95 th percentile)
								Copper (Cu) hard	≤ 0.0075 milligrams/litre (mg/l) (95 th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95 th percentile)
								Cobalt (Co)	≤ 0.05 milligrams/litre (mg/l) (95 th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95 th percentile)
					Habitat	Instream	No further degradation of the instream habitat should occur. Habitat diversity should be improved from an E ecological category to a D category.	Index of Habitat Integrity, Geomorphic Assessment Index	Instream Habitat Integrity EC = D ≥ 42%
						Riparian habitat	Conserve, maintain, rehabilitate and add artificial functional systems in shoreline and riparian zone. Alien invasive control required. Riparian vegetation should be maintained at an ecological category D or improved upon.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = D ≥ 42%
					Biota	Fish	Fish community should be maintained at a D ecological category or improved upon. Habitat and water quality	Fish Assessment (FRAI)	Fish ecology category = D FRAI ≥ 42%

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IU A	Class	River	Resource Unit	Ecological Category	Component	Sub- component	Narrative RQO	Indicator	Numerical Limit RQO
							improvement required for <i>CFLA</i> and flow should be adequate for flow dependant spp. <i>BMAR</i> , <i>BPOL</i> , <i>CPR</i>		
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a largely modified condition or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 50 ASPT ≥ 3.8 (at EWR1 = A2CROC-HARTB)
						Semi aquatic biota	The suitability of this stretch of river to serve as a habitat and migration corridor for aquatic bird and mammal populations must be maintained through proper habitat management.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
						Diatoms	Diatom assemblage must be maintained within a largely modified condition or improved upon.	Specific Pollution Index	Diatom EC = D ≥ 42% (at EWR1 = A2CROC-HARTB)
					Quantity	Dam levels	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
							Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic state.	Orthophosphate	≤ 0.050 mg/l 95 th percentile
					Quality	Nutrients	Concentration of total phosphorous must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system. Concentration of total Ammonia as N must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Total phosphorous	≤ 0.130 mg/l 50 th percentile
		Hartbeespoort Dam	1_10					Total Ammonia	≤ 0.100 mg/L N 95 th percentile

IU A	Class	River	Resource Unit	Ecological Category	Component	Sub- component	Narrative RQO	Indicator	Numerical Limit RQO
							Concentration of nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Nitrite & Nitrate	≤ 3.00 mg/L N 95th percentile
						Aesthetic quality	The aesthetic quality of the dam must be managed to support recreational use and tourism.	Litter, debris, algae, aquatic weeds	To be determined
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	≤ 85 mS/m 95th percentile
							The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Sulphate	≤ 100 mg/L 95th percentile
							The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Chloride	≤ 50 mg/l 95th percentile
						Pathogens	Pathogens should be maintained at levels safe for human use.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	The water must be acceptable for recreation use.	pH	6.5 – 9.0 95th percentile
							Increased clarity	Turbidity	≥ 0.4 m 5th percentile
							Moderate change	Temperature	No more than 2 °C increasing change in both minimum and maximum
							The oxygen levels in the system must maintain the ecological system.	Dissolved Oxygen	≥ 7.0 mg/L O ₂ 95th percentile
						Toxics	The dam must be managed to minimize the development of toxic cyanobacterial blooms	Cyanobacteria	Cyanobacterial dominance with Chl a concentration higher than 30µg/l must be kept at less than 20% of the time.
							The impoundment water should not be toxic to aquatic organisms or be a threat to human health.	Pesticides	Cyanide: ≤ 110 µg/l Endosulfan: ≤ 20 µg/l Atrazine: ≤ 100 µg/l 95th percentile
							The impoundment water should not be a threat to animal or human sustainability.	Hormone Pharmaceuticals	17β-oestradiol: ≤ 1 µg/l

Table 3: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 2: MAGALIES

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO			
										Maintenance Low flows (m³/s)		Drought flows (m³/s)
2: MAGALIES	II	Maloneys Eye (A21F)	2_1	C	Quantity	Low flows	EWB maintenance low and drought flows: Magalies River at CROC_EWR9 in A21F NIMAR = 14.68x10⁶m³ REC=B category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows		Oct	0.211	
								Maintenance flows and drought flows		Nov	0.216	0.216
										Dec	0.211	0.211
										Jan	0.212	0.212
										Feb	0.224	0.224
										Mar	0.206	0.206
										Apr	0.212	0.212
										May	0.208	0.208
										Jun	0.214	0.214
										Jul	0.210	0.210
										Aug	0.211	0.211
										Sep	0.217	0.217
					Quality	Nutrients	Instream concentration of nutrients must be maintained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus		≤ 0.020 milligrams/litre (mg/l) (50 th percentile)		
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen		≤ 0.5 milligrams/litre (50 th percentile)		
								Electrical Conductivity		≤ 30 milliSiemens/metre (mS/m) (95 th percentile)		
								Sulphate		≤ 10 milligrams/litre (95 th percentile)		
								Sodium		≤ 10 milligrams/litre (95 th percentile)		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
								Chloride	≤ 10 milligrams/litre (95 th percentile)
						Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.0 (95 th percentile)
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
						Instream	Habitat diversity and suitability should be maintained at prescribed B ecological category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82% (Rapid EWR 9)
						Riparian habitat	Riparian vegetation should be maintained at prescribed B ecological category.	Vegetation Response Assessment Index Index of Habitat Integrity	VEGRAI EC = B ≥ 82% (Rapid EWR 9)
							The fish community should be managed to the prescribed B ecological category. Ensure presence of species <i>Yellow fish (BPOL)</i> , <i>AURA</i> , <i>CPRE</i> , <i>BMOT</i>	Fish Response Assessment Index (FRAI)	Fish ecology category = B FRAI ≥ 82% Collect at least 10 species in 20min survey effort In 20min sample effort a minimum of 50+ CPRE and 5 BMOT (Rapid EWR site 9 = REMP site A2MAGA-MALON)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a largely natural condition or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System, Version 5 (SASS5).	MIRAI EC = B ≥ 82% SASS ≥ 200 ASPT ≥ 6.5 (Rapid EWR site 9 = REMP site A2MAGA-MALON)	
						Semi aquatic biota	The suitability of this stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.	
					Quantity	Low flows	EWR maintenance low and drought flows: Magalies River at CROC_EWR15 in A21F NMAR = 21.899x10 ⁶ m ³ REC=C/D category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows Maintenance flows and drought flows (Rapid site CROC_EWR 15 on Magalies River Monitoring of discharge during biological surveys	Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)
				Oct					0.042	0.015
				Nov					0.044	0.016
				Dec					0.052	0.019
				Jan					0.100	0.035
				Feb					0.163	0.031
				Mar					0.151	0.045
				Apr					0.111	0.039
				May					0.080	0.028
				Jun					0.066	0.023
					Jul	0.057	0.020			
					Aug	0.051	0.018			
						Sep	0.045	0.016		
		Magalies River, Klein Magalies, Bloubank, Skeerpoort Rivers (A21F)	2_2		Quality	Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.090 milligrams/litre (mg/l) (50 th percentile)	
				Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen				≤ 1.0 milligrams/litre (50 th percentile)		
				Electrical Conductivity (EC)				≤ 40 milliSiemens/metre (mS/m) (95 th percentile)		
						Salts	Instream salinity must be maintained at current status to ensure protection of the water resource.	Sulphate	≤ 15 milligrams/litre (95 th percentile)	

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
								Sodium	≤ 10 milligrams/litre (95 th percentile)
								Chloride	≤ 15 milligrams/litre (95 th percentile)
						Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
							Dissolved oxygen levels must be attained to support the aquatic ecosystem.	Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
						Toxics	The concentrations of toxins must be maintained at levels that are not toxic to aquatic organisms and a threat to human health	Ammonia as N	≤ 0.072 milligrams/litre (mg/l) (95 th percentile)
								Aluminium (Al)	≤ 0.062 milligrams/litre (mg/l) (95 th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)
								Lead (Pb) hard	≤ 0.006 milligrams/litre (mg/l) (95 th percentile)
								Copper (Cu) hard	≤ 0.0073 milligrams/litre (mg/l) (95 th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95 th percentile)
								Atrazine	≤ 0.078 milligrams/litre (mg/l)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
								Mancozeb	0.009 milligrams/litre (mg/l)
								Glyphosate	0.7 milligrams/litre (mg/l)
								Endosulfan	0.13 micrograms/litre (ug/l)
							Habitat diversity must be maintained at the C/D ecological category. Good marginal vegetation and low silt load in riffles must be maintained.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C/D ≥ 58%
							Riparian vegetation should be maintained at the C/D ecological category. Alien invasive control must be undertaken and protection of riparian zone must improve. Encroachment must be managed. Exotic invasive plant species must be controlled.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C/D ≥ 58%
							Fish community should be maintained at the prescribed C/D ecological category. Ensure presence of indicator species. Flow should be maintained to accommodate species.	Fish Response Assessment Index (FRAI).	Fish ecology category = C/D FRAI ≥ 58% Collect at least 8 spp. in a 20min sample effort. Indicator species Yellow fish (BPO), AURA, CPRE, BMOT (Lower Skeerpoort site A2SKEE-R560B – proposed new; Magalies Rapid EWR 15 – reach A21F-01168)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Aquatic macroinvertebrates	Upper Skeerpoort (A2SKEE-UITKO): Macroinvertebrate assemblage must be maintained within a largely natural condition or improved upon (B ecological category). Lower Skeerpoort (A2SKEE-R560B): and Magalies River (CROC_EWR 15): Macroinvertebrate assemblage must be maintained within a moderately modified condition or improved upon (C ecological category).	Macroinvertebrate Response Assessment Index and the South African Scoring System, Version 5 (SASS5).	Upper Skeerpoort site: A2SKEE-UITKO; MIRAI EC = B $\geq$ 82% SASS $\geq$ 200 ASPT $\geq$ 6.5 Lower Skeerpoort A2SKEE-R560B proposed new site and Magalies River Rapid EWR 15 – reach A21F-01168; MIRAI EC = C $\geq$ 62% SASS $\geq$ 150 ASPT $\geq$ 6.0
						Semi aquatic biota	The suitability of this stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
						Diatoms	Diatom assemblage must be maintained within a moderately modified condition or improved upon.	Specific Pollution Index	Diatom EC = C $\geq$ 62%
					Quantity	Low flows	Refer to Groundwater RQOs	Base Flows	Groundwater driven system (dolomites) Steenkoppies compartment over abstraction. Stress index should not be <65%
						Nutrients	Instream concentration of nutrients must be maintained to sustain aquatic ecosystem health.	Orthophosphate (PO ₄) as Phosphorus Nitrate (NO ₃) & Nitrite (NO ₂) as Nitrogen	$\leq$ 0.010 milligrams/litre (mg/l) (50 th percentile) $\leq$ 0.05 milligrams/litre (50 th percentile)
					Quality	Salts	Instream salinity must be maintained at current status to ensure protection of resource.	Electrical Conductivity (EC)	$\leq$ 20 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate	$\leq$ 10 milligrams/litre (95 th percentile)
								Sodium	$\leq$ 10 milligrams/litre (95 th percentile)
								Chloride	$\leq$ 10 milligrams/litre (95 th percentile)

Table 4: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 3: CROCODILE / ROODEKOPJES

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
									—	Maintenance Low flows (m³/s)	Drought flows (m³/s)
3: CROCODILE/ROODEKOPJES	III	Crocodile River from outflow Hartebeespoort Dam to inflow Roodekopjes Dam, Rosespruit, Ramogatlwa and Kareespruit (A21J)	3_1	C/D	Quantity	Low flows	EWR maintenance low and drought flows: Crocodile River at CROC_EWR3 in A21J NIMAR = 143.3x10 ⁶ m³ REC=C/D category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows Maintenance flows and drought flows (Intermediate EWR site on Crocodile River Monitoring at A2H083)			
										Oct	1.425
										Nov	1.591
										Dec	1.690
										Jan	1.993
										Feb	2.276
										Mar	2.290
										Apr	2.022
										May	1.870
										Jun	1.765
										Jul	1.679
										Aug	1.564
										Sep	1.441
										High flows (m³/s)	
										Oct	0
										Nov	1.717
										Dec	2.942
										Jan	0
										Feb	6.191
										Mar	1.668
										Apr	0
										May	0
										Jun	0
										Jul	0
										Aug	0
										Sep	1.729
					Quality	Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.050 milligrams/litre (mg/l) (50 th percentile)		
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 1.0 milligrams/litre (50 th percentile)		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
								Electrical Conductivity (EC)	≤ 75 milliSiemens/metre (mS/m) (95 th percentile)
						Salts	Instream salinity must be maintained at current status to ensure protection of resource and sustainability of the resource.	Sulphate	≤ 90 milligrams/litre (95 th percentile)
								Sodium	≤ 60 milligrams/litre (95 th percentile)
								Chloride	≤ 70 milligrams/litre (95 th percentile)
						Pathogens		<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
								Turbidity	A 10% variation from background concentration is allowed.
								Dissolved oxygen	≥ 6 milligrams/litre (mg/l)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
								Ammonia as N	≤ 0.0725 milligrams/litre (mg/l) (95th percentile)
								Aluminium (Al)	≤ 0.105 milligrams/litre (mg/l) (95th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95th percentile)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)
								Lead (Pb) hard	≤ 0.005 milligrams/litre (mg/l) (95th percentile)
								Copper (Cu) hard	≤ 0.0073 milligrams/litre (mg/l) (95th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)
								Atrazine	≤ 0.078 milligrams/litre (mg/l)
								Mancozeb	0.009 milligrams/litre (mg/l)
								Glyphosate	0.7 milligrams/litre (mg/l)
								Endosulfan	0.13 micrograms/litre (ug/l)
								Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM), Geomorphic Assessment Index	Instream Habitat Integrity EC = C/D ≥ 58%
								Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C/D ≥ 58%. Prohibit any further development into riparian zone.

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Fish	Fish community should be improved from a D ecological category to a C/D category. Regulated seasonality required to accommodate flow sensitive fish species.	Fish Response Assessment Index (FRAI)	Fish ecology category = C/D FRAI ≥ 58%
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	Indicator species in (Crocodile River): AJOH, and flow dependant BMAR, CPRE MIRAI EC = D ≥ 42% SASS ≥ 60 ASPT ≥ 4.0
					Biota	Semi aquatic biota	The suitability of this stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management. Riparian zone habitat must be improved.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
						Diatoms	Diatom assemblage must be maintained within a D ecological category or improved upon.	Specific Pollution Index	Diatom EC = D ≥ 42%
					Quantity	Dam levels	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
		Roodekopjes Dam (A21J)	3_2		Quality	Nutrients	Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Orthophosphate	≤ 0.050 mg/l 95 th percentile

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							Concentration of total phosphorous must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Total phosphorous	$\leq 0.130 \text{ mg/l}$ 50th percentile
							Concentration of nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Nitrite & Nitrate	$\leq 0.70 \text{ mg/L N}$ 95th percentile
							The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	$\leq 70 \text{ mS/m}$ 95th percentile
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Sulphate	$\leq 85 \text{ mg/L}$ 95th percentile
							The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Sodium	$\leq 70 \text{ mg/l}$ 95th percentile
						Pathogens	Pathogens should be maintained at levels safe for human use.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95th percentile)
							The water must be acceptable for recreational use.	pH	6.5 – 9.0 95th percentile
						System Variables	Increased clarity	Turbidity	$\geq 0.4 \text{ m}$ 5th percentile
							Moderate change	Temperature	No more than 2 °C increasing change in both minimum and maximum

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							The oxygen levels in the system must maintain the ecological system.	Dissolved Oxygen	≥ 7.0 mg/L O ₂ 95 th percentile
						Toxics	The dam must be managed to minimize the development of toxic cyanobacterial blooms	Cyanobacteria	Cyanobacterial dominance with Chl <i>a</i> concentration higher than 30µg/l must be kept at less than 20% of the time.

Table 5: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 4: HEX / WATERKLOOFSPRUIT / VAALKOP

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
4: HEX/WATERKLOOFSPRUIT/VAALKOP	II	Sterkstroom from outflow Buffelspoort Dam to inflow to Roodekopjes Dam, Maretwane, Tshukutwe - Quaternary catchment A21K middle and lower catchment below dam	4_1	C	Quality	Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.050 milligrams/litre (mg/l) (50 th percentile)
						Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)
						Pathogens	The presence of pathogens should pose no risk to human health.	Electrical Conductivity (EC)	≤ 70 milliSiemens/metre (mS/m) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	Sulphate	≤ 70 milligrams/litre (95 th percentile)
								<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						Toxics	A baseline assessment to determine the present state instream turbidity is required.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
								Turbidity	A 10% variation from background concentration is allowed.
								Ammonia as N	≤ 0.0725 milligrams/litre (mg/l) (95 th percentile)
							The concentrations of toxins must be maintained at levels that are not toxic to aquatic organisms and a threat to human health	Aluminium (Al)	≤ 0.062 milligrams/litre (mg/l) (95 th percentile)
								Chromium (IV)	≤ 0.0675 milligrams/litre (mg/l) (95 th percentile)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95th percentile)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)
								Lead (Pb) hard	≤ 0.005 milligrams/litre (mg/l) (95th percentile)
								Copper (Cu) hard	≤ 0.0073 milligrams/litre (mg/l) (95th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)
								Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM), Geomorphic Assessment Index	Instream Habitat Integrity E = C ≥ 62%
					Habitat	Instream	Habitat diversity should be maintained in an ecological category C. The integrity of the habitat, water quality and flow conditions must be maintained.		
						Riparian habitat	Vegetation control must be maintained in a C ecological category. Alien infestation control must be implemented.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C ≥ 62%
						Fish	The fish community must be maintained in a C/D ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Assessment Index (FRAI).	Fish ecology category = C/D FRAI ≥ 58% Collect 6 species in 20min sampling effort. Indicator species <i>BMOT</i> (site A2STER-MAMOG)
					Biota	Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 70 ASPT ≥ 4.2
						Diatoms	Diatom assemblage must be maintained within a largely modified condition or improved upon	Specific Pollution Index	Diatom EC = D ≥ 42%

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO			
							EWR maintenance low and drought flows: Sterkstroom at CROC_EWR11 in A21K NMAR = 14.0x10 ⁶ m ³ REC=C category	Base Flows		Maintenance Low flows (m³/s)	Drought flows (m³/s)	
							Adequate protection of instream flows required (must be maintained to support biota). Management of land based activities required.	Maintenance flows and drought flows	Oct	0.078	0.033	
									Nov	0.083	0.035	
									Dec	0.086	0.036	
									Jan	0.094	0.039	
									Feb	0.113	0.047	
									Mar	0.104	0.043	
									Apr	0.101	0.042	
					Quantity	Low Flows		Rapid EWR site 11 on Sterkstroom (monitoring at A2H053)	Ma	0.09	0.038	
									y	0.09	0.038	
									Jun	0.09	0.038	
									Jul	0.085	0.036	
									Aug	0.082	0.035	
									Sep	0.082	0.035	
					Quality	Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.010 milligrams/litre (mg/l) (50 th percentile)			
			4_2					Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)			
						Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Electrical Conductivity (EC)	≤ 55 milliSiemens/metre (mS/m) (95 th percentile)			
								Sulphate	≤ 70 milligrams/litre (95 th percentile)			
					Habitat	Instream	Habitat diversity should be maintained within a B/C ecological category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B/C ≥ 78%			

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Riparian habitat	Riparian vegetation should be maintained within a B/C ecological category. Alien infestation must be controlled and managed.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = B/C ≥ 78%
					Biota	Fish	The fish community must be maintained in a C ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Assessment Index (FRAI)	Fish ecology category = C FRAI ≥ 62% Collect 6 species in 20min sampling effort Indicator species – flow sensitive species, <i>AURA</i> , <i>BMOT</i> (Sterkstroom at CROC_EWR11 in A21K)
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 100 ASPT ≥ 5.7 (Sterkstroom at CROC_EWR11 in A21K)
					Quantity	Dam levels	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
					Quality	Nutrients	Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Orthophosphate	≤ 0.015 mg/l 50th percentile
							Concentration of nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Nitrite & Nitrate	≤ 0.50 mg/L N 95th percentile
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	≤ 55 mS/m 95th percentile

Buffelspoort Dam
(A21K)

4_3

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Pathogens	Pathogens should be maintained at levels safe for human use.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	The water must be acceptable for recreational use.	pH	6.5 – 9.0 95 th percentile
						Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.015 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)
								Electrical Conductivity	≤ 55 milliSiemens/metre (mS/m) (95 th percentile)
						Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Sodium	≤ 70 milligrams/litre (95 th percentile)
								Chloride	≤ 40 milligrams/litre (95 th percentile)
						Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						Instream	Habitat diversity should be maintained within a C ecological category. Flow must be adequate to support species and taxa and habitat.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C ≥ 62%
						Riparian habitat	Riparian vegetation should be maintained within a C ecological category. Alien infestation must be controlled and managed.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C ≥ 62%
						Fish	An assessment of the fish community should be conducted annually to monitor against the prescribed C ecological category.	Fish Response Assessment Index (FRAI)	Fish ecology category = C FRAI ≥ 62% Collect at least 20 BMOT in 20min sampling effort.
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	Macroinvertebrate EC = C ≥ 62% SASS ≥ 140 ASPT ≥ 5.8

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
					Quantity	Dam level	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).		
		Olifantsnek Dam (A22G)	4_5		Quality	Nutrients	Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Orthophosphate	≤ 0.015 mg/l 50th percentile		
							Concentration of nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Nitrite& Nitrate	≤ 0.50 mg/L N 95th percentile		
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	≤ 55 mS/m 95th percentile		
						Pathogens	Pathogens should be maintained at levels safe for human use.	Escherichia coli (E.coli)	130 counts/100 millilitres (ml) (95 th percentile)		
					Quantity		EWB maintenance low and drought flows:	Base flows Maintenance flows and drought flows (Node on Hex River downstream Olifantsnek Dam. Monitoring at new W-component of the dam)	Maintenance Low flows (m³/s)	Drought flows (m³/s)	
							Hex River (at new W-component) in A22H NMAR = 12.11x10 ⁶ m ³ REC=D category		Oct	0.013	0.011
									Nov	0.014	0.012
									Dec	0.015	0.013
									Jan	0.019	0.016
									Feb	0.028	0.023
									Mar	0.026	0.022
									Apr	0.020	0.017
									May	0.017	0.015
									Jun	0.017	0.014
							Jul	0.015	0.013		
		Hex river from Olifantsnek Dam, to inflow Bospoort Dam, Sandspruit (A22H)	4_6			Low Flows	The maintenance low flows and drought flows must be attained so that the environmental flows requirements are met to support a healthy condition for the ecosystem and users.				

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
									Aug	Sep	
								Orthophosphate (PO_4^{3-}) as Phosphorus	≤ 0.014	≤ 0.012	
								Nitrate (NO_3^-) & Nitrite (NO_2^-) as Nitrogen	≤ 0.014	≤ 0.012	
								Electrical Conductivity	≤ 0.125 milligrams/litre (mg/l) (50 th percentile)		
								Sulphate	≤ 1.0 milligrams/litre (50 th percentile)		
								Chloride	≤ 85 milliSiemens/metre (mS/m) (95 th percentile)		
								<i>Escherichia coli</i> (<i>E.coli</i>)	≤ 120 milligrams/litre (95 th percentile)		
								pH range	≤ 120 milligrams/litre (95 th percentile)		
								Turbidity	130 counts/100 millilitres (ml) (95 th percentile)		
								Ammonia as N	6.5 (5 th percentile) and 8.5 (95 th percentile)		
								Aluminium (Al)	A 10% variation from background concentration is allowed.		
								Manganese (Mn)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)		
								Iron (Fe)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)		
								Lead (Pb) hard	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)		
									≤ 0.3 milligrams/litre (mg/l) (95 th percentile)		
									≤ 0.0095 milligrams/litre (mg/l) (95 th percentile)		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
								Copper (Cu) hard	≤0.0073 milligrams/litre (mg/l) (95th percentile)
								Nickel (Ni)	≤0.07 milligrams/litre (mg/l) (95th percentile)
								Atrazine	≤0.078 milligrams/litre (mg/l)
								Mancozeb	0.009 milligrams/litre (mg/l)
								Glyphosate	0.7 milligrams/litre (mg/l)
								Endosulfan	0.13 micrograms/litre (ug/l)
					Habitat	Instream	Habitat diversity should be improved from a D ecological category to a C category to support the overall ecological integrity of the system.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C ≥ 62%
						Riparian habitat	Riparian vegetation should be maintained at a D ecological category.	Index of Habitat Integrity	VEGRAI EC = D ≥ 42%
						Fish	Fish community should be maintained at a D ecological category or improved upon. Flow should be adequate for flow dependant species.	Fish Response Assessment Index (FRAI)	Fish ecology category = D FRAI ≥ 42%
					Biota	Semi aquatic biota	The suitability of this stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management. Riparian zone habitat must be improved.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 70 ASPT ≥ 4.2 (SiteA2HEX-PAARD)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Orthophosphate	≤ 0.5 mg/l 50th percentile
						Nutrients	Concentration of total phosphorous must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Total phosphorous	≤ 0.130 mg/l 50th percentile
							Concentration of nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Nitrite & Nitrate	≤ 1.00 mg/L N 95th percentile
					Quality	Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	≤ 85 mS/m 95th percentile
		Bospoort Dam (A22H)	4_7				The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Sodium	≤ 100 mg/l 95th percentile
						Pathogens	Pathogens should be maintained at levels safe for human use.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95th percentile)
						System Variables	The water must be acceptable for recreational use.	pH	6.5 – 9.0 95th percentile
							Increased clarity with reading.	Turbidity	≥ 0.4 m 5th percentile

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
					Habitat	Instream	Habitat diversity should be maintained in the B ecological category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82%
						Riparian habitat	Riparian vegetation should be maintained at a B ecological category.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = B ≥ 82%
					Biota	Fish	Fish community should be maintained at a B/C ecological category. Area above the waterfall must be protected due to presence of TSPA upstream of waterfall. FRAI should be conducted to monitor against current category	Fish Response Assessment Index (FRAI)	Fish ecology category = B/C FRAI ≥ 78% Sample 20 BMOT in 20min sample effort
						Semi-Aquatic species	The suitability of this stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management. Riparian zone habitat must be improved.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 150 ASPT ≥ 6.0

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO			
							EWR maintenance low and drought flows: Hex River at CROC_EWR6 in A22J NMAR = 26.9x10 ³ m ³ REC=D category	Base flows Maintenance flows and drought flows Intermediate EWR site 6 on Hex River (monitoring at A2H094)		Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)	
					Quantity	Low Flows	The maintenance low flows and drought flows must be attained to support a healthy condition for the ecosystem and users.			Oct	0.024	0.015
										Nov	0.026	0.023
										Dec	0.035	0.022
										Jan	0.052	0.022
									Feb	0.093	0.070	
									Mar	0.084	0.067	
									Apr	0.055	0.054	
									May	0.039	0.039	
									Jun	0.035	0.035	
									Jul	0.030	0.030	
									Aug	0.028	0.028	
									Sep	0.025	0.023	
							Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and the water quality requirements of the water users are met. Nutrient management required to ensure sustainability of the system. Water quality must be improved to improve present ecological state from E to D ecological category.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.050 milligrams/litre (mg/l) (50 th percentile)			
		Hex River outflow Bospoort Dam to inflow Vaalkop Dam (A22J)	4_9			Nutrients		Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 2.0 milligrams/litre (50 th percentile)			
					Quality	Salts	Salinity levels are significantly high. Instream salinity must be improved to support the aquatic ecosystem and the water quality requirements of the water users. Water quality must be improved to improve present ecological state from E to D ecological category.	Electrical Conductivity	≤ 85 milliSiemens/metre (mS/m) (95 th percentile)			
								Sulphate	≤ 120 milligrams/litre (95 th percentile)			
								Chloride	≤ 120 milligrams/litre (95 th percentile)			
						Pathogens	The presence of pathogens should pose no risk to human health.	Escherichia coli (E.coli)	130 counts/100 millilitres (ml) (95 th percentile)			
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)			
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.			

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							The concentrations of toxins must be maintained at levels that are not toxic to aquatic organisms and a threat to human health	Ammonia	≤ 0.007 milligrams/litre (mg/l) (95th percentile)
								Aluminium (Al)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95th percentile)
								Iron (Fe)	≤ 0.3 milligrams/litre (mg/l) (95th percentile)
								Lead (Pb) hard	≤ 0.0095 milligrams/litre (mg/l) (95th percentile)
								Copper (Cu) hard	≤ 0.0073 milligrams/litre (mg/l) (95th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)
					Habitat	Instream	Habitat diversity should be maintained within a D ecological category or improved upon. Habitat diversity for flow and marginal vegetation sensitive species and taxa must be attained.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model	Instream Habitat Integrity EC = D ≥ 42%
						Riparian habitat	Riparian vegetation should be maintained at a C ecological category or better condition. Habitat protection required. Developments into riparian zone must be controlled.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C ≥ 62%
					Biota	Fish	An assessment of the fish community should be conducted annually to monitor against the prescribed D ecological category.	Fish Response Assessment Index (FRAI)	Fish ecology category = D FRAI ≥ 42%
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 70 ASPT ≥ 4.2 REMP site A2HEXR-ROOIW
						Diatoms	Diatom assemblage must be maintained within a D ecological category or improved upon	Specific Pollution Index	Diatom EC = D ≥ 42%

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Quantity	Dam level	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
							Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Orthophosphate	≤ 0.05 mg/l 50 th percentile
						Nutrients	Concentration of total phosphorous must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Total phosphorous	≤ 0.055 mg/l 50 th percentile
			4_10				Concentration of nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Nitrite & Nitrate	≤ 0.70 mg/L N 95 th percentile
		Vaalkop Dam and lower reach of Elands before confluence with Crocodile (A22J)			Quality		The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	≤ 55 mS/m 95 th percentile
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Sulphate,	≤ 100 mg/l 95 th percentile
							The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Chloride	≤ 100 mg/l 95 th percentile
						Pathogens	Pathogens should be maintained at levels safe for human use.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						System Variables	The water must be acceptable for recreational use.	pH	6.5 – 9.0 95th percentile
							Increased clarity	Turbidity	≥0.4 m 5th percentile
							Moderate change	Temperature	No more than 2 °C increasing change in both minimum and maximum
							The oxygen levels in the system must maintain the ecological system.	Dissolved Oxygen	≥ 7.0 mg/L O ₂ 95th percentile
						Toxics	The dam must be managed to minimize the development of toxic cyanobacterial blooms	Cyanobacteria	Cyanobacterial dominate with Chl <i>a</i> concentration higher than 30µg/l must be kept at less than 20% of the time.
					Habitat	Dam Habitat	To manage the water resource for maintenance of aquatic ecosystem diversity (instream, biotic and semi-aquatic species, riparian zones). Conserve, maintain, rehabilitate and establish artificial shoreline and riparian zones. The natural riparian zone should be preserved as far as possible to ensure necessary habitat.	Riparian vegetation Health	70% riparian vegetation cover
							The fish diversity and quantities must be maintained.	Fish diversity and quantity	The fish population must be monitored through health assessment studies. Suitable abundances should be determined. Target fish stocks should be determined.
						Periphyton/ Phytoplankton	The Chl <i>a</i> concentrations must be maintained in a mesotrophic state.	Chl <i>a</i>	11-20µg/l 50th percentile

Table 6: Resource Quality Objectives for RIVERS in priority Resource Units in the Integrated Unit of Analysis 5: ELANDS / VAALKOP

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
ELANDS/VAALKOP	II	Upper reaches of Elands to Swartruggens Dam A22A south eastern portion	5_1	C	Quantity	Low flows	EWR maintenance and drought flows: Elands River at CROC_EWR10 in A22A NMAR = 10.1x10 ⁶ m ³ REC=B/C category The maintenance low	Base Flows	Maintenance flows (m ³ /s)
								Maintenance flows and drought flows.	Low flows (m ³ /s)
								Rapid EWR site 10 on Elands River (monitoring during	Oct 0.038
									Nov 0.045
									Dec 0.050
									Jan 0.070
									Feb 0.094

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
							flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	biological surveys)	Mar	0.091
									Apr	0.073
									May	0.056
									Jun	0.051
									Jul	0.046
									Aug	0.042
									Sep	0.039
							Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.025 milligrams/litre (mg/l) (50 th percentile)	
						Nutrients		Nitrate (NO ₃) & Nitrite (NO ₂) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)	
							Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Electrical Conductivity	≤ 55 milliSiemens/metre (mS/m) (95 th percentile)	
						Salts		Sulphate	≤ 30 milligrams/litre (95 th percentile)	
							The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)	
						Pathogens		pH range	6.5 (5 th percentile) and 9.0 (95 th percentile)	
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.			
							A baseline assessment to determine the present state instream turbidity is required. Limits must be defined to control the impacts of slate mining on the resource.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.	
							Dissolved oxygen levels must be improved to support the aquatic ecosystem.	Dissolved oxygen	6-7 milligrams/litre (mg/l)	

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO																											
						Instream	Habitat diversity should be maintained for C ecological category. Habitat diversity for flow and marginal vegetation sensitive species must be maintained.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C ≥ 62%																											
					Habitat	Riparian habitat	Riparian vegetation should be maintained at a C ecological category. Protection of riparian habitat is required. Developments into riparian zone must be controlled and managed.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C ≥ 62%																											
						Fish	The fish community must be maintained in a C ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Assessment Index (FRAI)	Fish ecological category = C FRAI ≥ 62% Sample 20 BMOT in 20min sample effort																											
					Biota	Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C category ecological condition or improved upon.	Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 155 ASPT ≥ 5.5																											
						Diatoms	Diatom assemblage must be maintained within a C ecological category or improved upon	Specific Pollution Index	Diatom EC ≥ 62%																											
							EWR maintenance low and drought flows: Elands River at A2H107 in A22A NMAR = 12.87x10 ⁶ m ³ REC=C category The maintenance low flows and drought flows must be attained to support the aquatic	Base Flows Maintenance flows and drought flows Monitoring of Elands River at A2H107	<table><tr><td></td><td>Maintenance flows (m³/s)</td><td>Drought flows (m³/s)</td></tr><tr><td>Oct</td><td>0.030</td><td>0.016</td></tr><tr><td>Nov</td><td>0.037</td><td>0.014</td></tr><tr><td>Dec</td><td>0.044</td><td>0.013</td></tr><tr><td>Jan</td><td>0.063</td><td>0.028</td></tr><tr><td>Feb</td><td>0.083</td><td>0.009</td></tr><tr><td>Mar</td><td>0.081</td><td>0.018</td></tr><tr><td>Apr</td><td>0.064</td><td>0.016</td></tr><tr><td>May</td><td>0.047</td><td>0.018</td></tr></table>		Maintenance flows (m ³ /s)	Drought flows (m ³ /s)	Oct	0.030	0.016	Nov	0.037	0.014	Dec	0.044	0.013	Jan	0.063	0.028	Feb	0.083	0.009	Mar	0.081	0.018	Apr	0.064	0.016	May	0.047	0.018
	Maintenance flows (m ³ /s)	Drought flows (m ³ /s)																																		
Oct	0.030	0.016																																		
Nov	0.037	0.014																																		
Dec	0.044	0.013																																		
Jan	0.063	0.028																																		
Feb	0.083	0.009																																		
Mar	0.081	0.018																																		
Apr	0.064	0.016																																		
May	0.047	0.018																																		
		Elands downstream Swartruggens Dam to Lindleyspoort Dam (A22A)	5_2		Quantity	Low flows																														

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO			
							ecosystem and the downstream users.		Jun	0.042	0.019	
									Jul	0.036	0.018	
									Aug	0.033	0.018	
									Sep	0.030	0.016	
						Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met. Control of wastewater treatment works discharges is required.	Orthophosphate (PO_4^{3-}) as Phosphorus	≤ 0.050 milligrams/litre (mg/l) (50 th percentile)			
								Nitrate (NO_3^-) & Nitrite (NO_2^-) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)			
								Electrical Conductivity	≤ 55 milliSiemens/metre (mS/m) (95 th percentile)			
						Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met. Control of land based impacts and WWTW discharges is required.	Sulphate	≤ 80 milligrams/litre (95 th percentile)			
								Chloride	≤ 40 milligrams/litre (95 th percentile)			
								Sodium	≤ 70 milligrams/litre (95 th percentile)			
						Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)			
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 9.0 (95 th percentile)			
						System Variables	A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.			
							Dissolved oxygen levels must be improved to support the aquatic ecosystem.	Dissolved oxygen	6-7 milligrams/litre (mg/l)			

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Habitat	Instream	Habitat diversity should be maintained for C ecological category or improved upon.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C ≥ 62%
						Riparian habitat	Riparian vegetation should be maintained at C ecological category or better condition.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C ≥ 62%
					Biota	Semi aquatic biota	The suitability of this stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C category ecological condition or improved upon.	Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	Macroinvertebrate EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.3
						Diatoms	Diatom assemblage must be maintained within a C/D ecological category or improved upon	Specific Pollution Index	Diatom EC ≥ 58%
					Quantity	Dam level	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
		Lindleyspoort Dam (A22A)	5_3						

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
		Upper Koster River to Koster Dam (A22B)	5_4		Quality	Nutrients	Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Orthophosphates,	$\leq 0.015 \text{ mg/l}$ 50 th percentile
							Concentration of total phosphorous must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Total phosphorous	$\leq 0.055 \text{ mg/l}$ 50 th percentile
							Concentration of nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Nitrite & Nitrate	$\leq 0.70 \text{ mg/L N}$ 95 th percentile
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	$\leq 55 \text{ mS/m}$ 95 th percentile
						Pathogens	Pathogens should be maintained at levels safe for human use.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	The water must be acceptable for recreational use.	pH	6.5 – 9.0 95 th percentile
							Increased clarity	Turbidity	$\geq 0.4 \text{ m}$ 5 th percentile
					Quantity	Low flows	EWR maintenance low and drought flows: Koster River at A2H036 in A22B	Base Flows	
								Maintenance flows and drought flows	
									Oct 0.006
									Drought flows (m ³ /s) 0.002

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
							NIMAR = 2.54x10 ⁻³ m ³ REC=C category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Monitoring of Koster River at A2H036	Nov	0.004	0.002
									Dec	0.006	0.001
									Jan	0.009	0.004
									Feb	0.020	0.005
									Mar	0.032	0.006
									Apr	0.031	0.007
									May	0.018	0.006
									Jun	0.015	0.006
									Jul	0.012	0.005
									Aug	0.010	0.004
									Sep	0.008	0.003
							Instream concentration of nutrients must be maintained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.025 milligrams/litre (mg/l) (50 th percentile)		
						Nutrients		Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.05 milligrams/litre (50 th percentile)		
							Instream salinity must be maintained at current status to ensure protection of good ecological integrity or resource.	Electrical Conductivity	≤ 30 milliSiemens/metre (mS/m) (95 th percentile)		
						Salts		Sodium	≤ 20 milligrams/litre (95 th percentile)		
								Sulphate	≤ 20 milligrams/litre (95 th percentile)		
					Quality			Chloride	≤ 20 milligrams/litre (95 th percentile)		
						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)		
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.0 (5 th percentile) and 8.5 (95 th percentile)		
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							Dissolved oxygen levels must be improved to support the aquatic ecosystem.	Dissolved oxygen	6-7 milligrams/litre (mg/l)
						Toxics	The concentrations of toxins must not be toxic to aquatic organisms and a threat to human health.	Hormone driven Pharmaceuticals	17 β -oestradiol: ≤ 0.001 mg/l
						Fish	Fish community should be maintained at the prescribed C ecological category. Flow should be adequate to support representative species.	Fish Response Assessment Index (FRAI).	Fish ecology category = C FRAI $\geq 62\%$ Sample 20 BMOT in 20min sample effort
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C category ecological condition or improved upon.	Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = C $\geq 62\%$ SASS ≥ 70 ASPT ≥ 4.2
						Nutrients	Instream concentration of nutrients must be maintained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ³⁻) as Phosphorus	≤ 0.050 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)
						Salts	Instream concentration of salinity must be maintained to preserve present state and to sustain aquatic ecosystem health in the prescribed ecological category is met.	Electrical Conductivity	≤ 30 milliSiemens/metre (mS/m) (95 th percentile)
								Sodium	≤ 20 milligrams/litre (95 th percentile)
								Sulphate	≤ 20 milligrams/litre (95 th percentile)
						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (E. coli)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.0 (5 th percentile) and 8.5 (95 th percentile)
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO					
		Elands River outflow Lindleyspoort Dam to inflow Vaalkop Dam, Brakkloofspruit, Roospruit, Sandspruit Mankwe, Leragane, Molapongwamongana (A22E, A22F)	5_7		Quantity			Chloride	≤ 20 milligrams/litre (95 th percentile)	Maintenance Low flows (m³/s)	Drought flows (m³/s)			
										0.038	0.011			
										Nov	0.048	0.014		
										Dec	0.057	0.016		
										Jan	0.081	0.023		
										Feb	0.107	0.012		
										Mar	0.105	0.027		
										Apr	0.082	0.023		
										May	0.06	0.017		
										Jun	0.054	0.016		
										Jul	0.047	0.014		
										Aug	0.042	0.012		
										Sep	0.038	0.011		
								Nutrients	Nutrient levels are high and must be reduced to meet the requirements of the aquatic ecosystem. Concentrations must be reduced to meet the prescribed C ecological category.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 2.0 milligrams/litre (50 th percentile)			
								Quality	Salts	Salinity levels are significantly high. Instream salinity must be improved to support the aquatic ecosystem and the water quality requirements of the water users. Water quality must be improved to a C ecological category.	Electrical Conductivity	≤ 85 milliSiemens/metre (mS/m) (95 th percentile)		
					Pathogens		The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)					
					System Variables		pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.0 (5 th percentile) and 9.0 (95 th percentile)					

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.
							The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Aluminium (Al)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95th percentile)
						Toxics		Iron (Fe)	≤ 0.3 milligrams/litre (mg/l) (95th percentile)
								Lead (Pb) hard	≤ 0.0095 milligrams/litre (mg/l) (95th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95th percentile)
					Habitat	Instream	Habitat diversity should be maintained in a C ecological category or better. Important to maintain marginal vegetation and in-stream substrate (flow depth classes) for fish and macroinvertebrate diversity.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model, Geomorphic Assessment Index	Instream Habitat Integrity EC = C ≥ 62%
						Riparian habitat	Riparian vegetation should be maintained at a C ecological category. Alien vegetation control is required. Riparian zone development must be limited.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C ≥ 70%
					Biota	Fish	The fish community must be maintained in a D ecological category or better. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Assessment Index (FRAI).	Fish ecology category = D FRAI ≥ 42% Sample minimum of 4 species per 20min sample effort

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C category ecological condition or improved upon.	Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 110 ASPT ≥ 4.5
						Diatoms	Diatom assemblage must be maintained within a C ecological category or improved upon.	Specific Pollution Index	Diatom EC ≥ 62%
						Semi-aquatic biota	The suitability of this stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.

Table 7: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 6a: KLEIN MARICO / KROMELLEMBOOG

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
6a: KLEIN MARICO/KROMELLEMBOOG	II	Upper Klein Marico to inflow, Klein Maricoport Dam, Rhenosterspruit, Malmansiesloop, Kareespruit (A31D)	6_1	B/C	Quantity	Low flows	EWR maintenance low and drought flows: Klein Marico River just upstream of Klein Maricoport Dam in A31D NIMAR = 16.25x10 ⁶ m ³ REC=C/D category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows Maintenance flows and drought flows Monitoring of Klein Marico River with biological surveys	Maintenance Low flows (m ³ /s) Drought flows (m ³ /s)	Oct 0.038 0.035 Nov 0.039 0.036 Dec 0.039 0.036 Jan 0.041 0.038 Feb 0.048 0.045 Mar 0.044 0.040 Apr 0.045 0.041 May 0.042 0.039 Jun 0.043 0.039 Jul 0.041 0.038 Aug 0.040 0.037 Sep 0.041 0.037
					Quality	Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure	Orthophosphate (PO ₄) as Phosphorus	≤ 0.050 milligrams/litre (mg/l) (50 th percentile)	

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							the prescribed ecological category is met.	Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)
							Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Electrical Conductivity	≤ 55 milliSiemens/metre (mS/m) (95 th percentile)
						Salts		Sulphate	≤ 80 milligrams/litre (95 th percentile)
								Chloride	≤ 40 milligrams/litre (95 th percentile)
								Sodium	≤ 70 milligrams/litre (95 th percentile)
						Pathogens		<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements. A baseline assessment to determine the present state instream turbidity is required.	pH range	6.0 (5 th percentile) and 9.0 (95 th percentile)
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.
							Habitat diversity should be maintained in a C/D ecological category. Maintain marginal vegetation and in-stream substrate (velocity depth classes) for fish and macroinvertebrate diversity.	Fluoride	≤ 2.5 milligrams/litre (95 th percentile)
						Instream		Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C/D ≥ 58%
						Riparian habitat	Riparian vegetation should be improved from a D ecological category to a C/D ecological category. Alien vegetation control must be implemented. Riparian zone development must be limited and controlled.	Vegetation Response Assessment Index	VEGRAI EC = C/D ≥ 58%

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Quantity	Dam level	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
						Nutrients	Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Orthophosphates	$\leq 0.025 \text{ mg/l}$ 50 th percentile
							Concentration of total phosphorous must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Total phosphorous	$\leq 0.050 \text{ mg/l}$ 50 th percentile
		Klein Maricopoort Dam (A31D)	6_2		Quality		Concentration of nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Nitrite & Nitrate	$\leq 0.70 \text{ mg/L N}$ 95 th percentile
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	$\leq 65 \text{ mS/m}$ 95 th percentile
								Chloride	$\leq 40 \text{ mg/l}$ 95 th percentile
						Pathogens	Pathogens should be maintained at levels safe for human use.	<i>Escherichia coli</i>	$\leq 10 \text{ counts/100}\mu\text{l}$ 95 th percentile
						System Variables	The water must be acceptable for recreational use.	pH	6.5 – 9.0 95 th percentile
								Turbidity	$\geq 0.4 \text{ m}$ 5 th percentile

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.050 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.7 milligrams/litre (50 th percentile)
						Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Electrical Conductivity	≤ 65 milliSiemens/metre (mS/m) (95 th percentile)
					Quality	Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (E. coli)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 9.0 (95 th percentile)
			6_3				Sedimentation must be controlled through management of land use practices. A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.
		Klein Marico downstream Klein Maricopoort Dam to Kromellenboog Dam, Wijgeboomspruit (A31E)				Instream	Habitat diversity should be maintained in a C ecological category or better condition. Maintain marginal vegetation and in-stream substrate (velocity depth classes) for fish and macroinvertebrate diversity.	Index of Habitat Integrity	Instream Habitat Integrity EC = C ≥ 62%
					Habitat	Riparian habitat	Riparian vegetation should be maintained in a C ecological category or better condition.	Vegetation Response Assessment Index	VEGRAI EC = C ≥ 62%
					Biota	Fish	Fish community must be maintained within a C ecological condition or improved upon.	Fish Response Assessment Index (FRAI)	Fish ecological category = C FRAI ≥ 62% Collect 5 species in 20min sampling effort

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological condition or improved upon.	Macroinvertebrate Response Index, and the South African Scoring System Version 5 (SASS5).	Macroinvertebrate EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 5.0

Table 8: Resource Quality Objectives for RIVERS in priority Resource Units in the Integrated Unit of Analysis 6b: GROOT MARICO / MARICO BOSVELD DAM

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
6b: GROOT MARICO/MARICO BOSVELD DAM	II	Groot Marico main stem upstream to Polkadraaispruit confluence (A31B)	6_5	B	Quantity	Low flows	EWR maintenance low and drought flows: Groot Marico River at MAR_EWR2 in A31B NIMAR = 42.08x10 ⁶ m ³ REC=B category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows		Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)
									Oct	0.510	0.268
									Nov	0.540	0.283
									Dec	0.560	0.291
								Maintenance flows and drought flows	Jan	0.620	0.319
									Feb	0.710	0.364
									Mar	0.637	0.327
									Apr	0.628	0.324
									May	0.584	0.302
									Jun	0.588	0.305
					Monitoring of Groot Marico River at planned new weir close to EWR2	Jul	0.557	0.290			
						Aug	0.547	0.285			
						Sep	0.546	0.285			
					Quality	Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.020 milligrams/litre (mg/l) (50 th percentile)		
									Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)	
						Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Electrical Conductivity	≤ 30 milliSiemens/metre (mS/m) (95 th percentile)		
								Sulphate	≤ 10 milligrams/litre (95 th percentile)		
Chloride	≤ 10 milligrams/litre (95 th percentile)										
Sodium	≤ 10 milligrams/litre (95 th percentile)										
Pathogens	The presence of pathogens should pose a low risk to human health.	Escherichia coli (E. coli)	130 counts/100 millilitres (ml) (95 th percentile)								

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.8 (95 th percentile)
						System Variables	A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.
							Dissolved oxygen levels must be improved to support the aquatic ecosystem.	Dissolved oxygen	≥ 7 milligrams/litre (mg/l)
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Aluminium (Al)	≤ 0.062 milligrams/litre (mg/l) (95 th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)
								Lead (Pb) hard	≤ 0.0057 milligrams/litre (mg/l) (95 th percentile)
								Copper (Cu) hard	≤ 0.0048 milligrams/litre (mg/l) (95 th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95 th percentile)
								Cobalt (Co)	≤ 0.05 milligrams/litre (mg/l) (95 th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95 th percentile)
					Habitat	Instream	Habitat diversity must be maintained in a B ecological category or better condition. Maintain marginal vegetation and instream substrate (velocity depth classes) for fish and macroinvertebrate diversity.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82%
						Riparian habitat	Riparian vegetation must be maintained in a B ecological category or better condition.	Vegetation Response Assessment Index	VEGRAI EC = B ≥ 82%

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Fish	The fish community must be maintained in a B ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category. Habitat and flow must be adequate for flow dependent species.	Fish Response Assessment Index (FRAI).	Fish ecology category = B FRAI ≥ 82% Sample 20 BMOT, 30 CPRE and 15 AURA in 20min sample effort.
					Biota	Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within current state at the A/B ecological category.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = A/B ≥ 88% SASS ≥ 220 ASPT ≥ 6.5 (Site EWR 2 = A3GMAR-KOEDO)
						Diatoms	Diatom assemblage must be maintained within a largely natural to natural condition.	Specific Pollution Index	Diatom EC ≥ 88%
					Quantity	Low flows	EWR maintenance low and drought flows: Polkadraaispruit at MAR_EWR6 in A31B NMAR = $9.866 \times 10^6 \text{ m}^3$ REC=B category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows Maintenance flows and drought flows Monitoring of discharge of the Polkadraaispruit during biological surveys	Maintenance Low flows (m^3/s) Drought flows (m^3/s) Oct 0.088 0.000 Nov 0.099 0.003 Dec 0.113 0.003 Jan 0.138 0.024 Feb 0.157 0.010 Mar 0.130 0.007 Apr 0.118 0.005 May 0.104 0.003 Jun 0.105 0.002 Jul 0.098 0.000 Aug 0.095 0.000 Sep 0.095 0.000
		Polkadraaispruit (A31B)	6_6			Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO_4) as Phosphorus Nitrate (NO_3^-) & Nitrite (NO_2^-) as Nitrogen	≤ 0.020 milligrams/litre (mg/l) (50 th percentile) ≤ 0.5 milligrams/litre (50 th percentile)
					Quality	Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Electrical Conductivity Sulphate Chloride Sodium	≤ 30 milliSiemens/metre (mS/m) (95 th percentile) ≤ 10 milligrams/litre (95 th percentile) ≤ 10 milligrams/litre (95 th percentile) ≤ 10 milligrams/litre (95 th percentile)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (E. coli)	130 counts/100 millilitres (ml) (95 th percentile)
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.8 (95 th percentile)
						System Variables	A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.
							Dissolved oxygen levels must be improved to support the aquatic ecosystem.	Dissolved oxygen	≥ 7 milligrams/litre (mg/l)
					Habitat	Instream	Habitat diversity must be improved from a B/C ecological category to a B category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82%
						Riparian habitat	Riparian vegetation should be improved from a B/C ecological category to a B ecological category. Protection of riparian habitat is required.	Vegetation Response Assessment Index	VEGRAI EC = B ≥ 82%
						Fish	The fish community must be maintained in a B/C ecological category or better condition. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Assessment Index (FRAI)	Fish ecology category = B/C FRAI ≥ 78%
					Biota	Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within current state at the B/C ecological category.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = B/C ≥ 78% SASS ≥ 155 ASPT ≥ 6.0
					Quantity	Low flows	EWR maintenance low and drought flows: Groot Marico River at N4 road bridge in A31B NMAR = 56.92x10 ⁶ m ³ REC=B category	Base Flows Maintenance flows and drought flows. Monitoring of discharge of Groot	Maintenance Low flows (m ³ /s) Drought flows (m ³ /s) Oct 0.649 0.345 Nov 0.704 0.372 Dec 0.762 0.398 Jan 0.890 0.458
		Groot Marico from Polkadraaispruit confluence to N4 bridge (A31B)	6.7						

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
							The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Marico River during biological surveys	Feb	1.030	0.513
									Mar	0.908	0.466
									Apr	0.864	0.447
									May	0.783	0.408
									Jun	0.779	0.407
									Jul	0.730	0.383
									Aug	0.709	0.373
									Sep	0.701	0.370
							Instream concentration of nutrients as specified must be improved to sustain aquatic ecosystem health in the prescribed ecological category and to support downstream users. Wastewater discharges must be controlled to protect the ecological integrity of the system.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.025 milligrams/litre (mg/l) (50 th percentile)		
						Nutrients		Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.7 milligrams/litre (50 th percentile)		
							Instream salinity levels as must be improved to sustain aquatic ecosystem health in the prescribed ecological category and to support downstream users. Wastewater discharges and land use impacts must be controlled to protect the ecological integrity of the system.	Electrical Conductivity	≤ 55 milliSiemens/metre (mS/m) (95 th percentile)		
						Salts		Sulphate	≤ 50 milligrams/litre (95 th percentile)		
								Chloride	≤ 40 milligrams/litre (95 th percentile)		
								Sodium	≤ 50 milligrams/litre (95 th percentile)		
					Quality	Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (E. coli)	130 counts/100 millilitres (ml) (95 th percentile)		
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)		
						System Variables	A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.		
							Dissolved oxygen levels must be improved to support the aquatic ecosystem.	Dissolved oxygen	≥ 7 milligrams/litre (mg/l)		
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Aluminium (Al)	≤ 0.062 milligrams/litre (mg/l) (95 th percentile)		
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)
								Lead (Pb) hard	≤ 0.0057 milligrams/litre (mg/l) (95th percentile)
								Copper (Cu) hard	≤ 0.0048 milligrams/litre (mg/l) (95th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)
								Cobalt (Co)	≤ 0.05 milligrams/litre (mg/l) (95th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95th percentile)
								Index of Habitat Integrity, Rapid Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C ≥ 62%
					Habitat	Instream	Habitat diversity should be improved from a D ecological category to a C ecological category.		
						Riparian habitat	Riparian vegetation should be improved from a D ecological category to a C ecological category.	Vegetation Response Assessment Index	VEGRAI EC = C ≥ 62%
					Biota	Fish	The fish community must be maintained in a C/D ecological category or better condition. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Assessment Response Index (FRAI)	Fish ecology category = C/D FRAI ≥ 58% Indicator species <i>certain BMOT, AURA, CPRE, AMOS</i>
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within current state at a B ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = B ≥ 82% SASS ≥ 210 ASPT ≥ 6.2 (Site A3GMAR-WONDE)
						Diatoms	Diatom assemblage must be maintained within a natural to largely natural condition.	Specific Pollution Index	Diatom EC = A/B ≥ 88% (Site A3GMAR-WONDE)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Quantity	Dam level	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
					Quality	Nutrients	Concentration of orthophosphate must be maintained to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Orthophosphates	$\leq 0.015 \text{ mg/l}$ 50th percentile
							Concentration of total phosphorous must be maintained to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Total phosphorous	$\leq 0.025 \text{ mg/l}$ 50th percentile
							Concentration of nitrate & nitrite must be maintained to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Nitrite & Nitrate	$\leq 0.70 \text{ mg/l}$ N 95th percentile
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	$\leq 35 \text{ mS/m}$ 95th percentile
						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (E.coli)	130 counts/100 millilitres (ml) (95th percentile)
						System Variables	The water must be acceptable for recreational use.	pH	6.5 – 9.0 95th percentile

Table 9: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 7: KAALOOOG-SE-LOOP

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
7: KAALOOG-SE-LOOP	I	Marico Eye, Kaaloog-se-Loop, Bokkraal se Loop Rietspruit Ribbokfontein-se-Loop Rietfontein Bronkhorstfontein Zyferfontein (Kuilfontein) Syferfontein (A31A)	7_1	B	Quantity	Low flows	EWR maintenance low and drought flows: Kaaloog-se-Loop at MAR_EWR1 in A31A NMAR = 10.539x10 ⁶ m ³ REC=B category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base flows Maintenance flows and drought flows. Monitoring of discharge at EWR site during biological surveys and downstream at the new planned weir.		Maintenance Low flows (m³/s)	Drought flows (m³/s)
									Oct	0.244	0.159
									Nov	0.252	0.164
									Dec	0.245	0.160
									Jan	0.250	0.162
									Feb	0.280	0.182
									Mar	0.254	0.165
									Apr	0.262	0.170
									May	0.253	0.164
									Jun	0.261	0.170
									Jul	0.252	0.164
									Aug	0.252	0.163
									Sep	0.257	0.167
							≤ 50 milliSiemens/metre (mS/m) (95 th percentile)				
								Electrical Conductivity			
								Index of Habitat Integrity, Rapid Habitat Assessment Method and Model		Instream Habitat Integrity EC = B ≥ 25%	
			Vegetation Response Assessment Index		VEGRAI EC = B ≥ 82%						

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Biota	Fish	The fish community must be maintained in a B ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Assessment Index (FRAI).	Fish ecology category = B FRAI ≥ 82%
						Aquatic invertebrates	Macroinvertebrate assemblage must be maintained within the current state at a A/B ecological category.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = A/B ≥ 88% SASS ≥ 220 ASPT ≥ 6.4 (Site A3KAAL-RIETS)
						Diatoms	Diatom assemblage must be maintained within a largely natural to natural condition.	Specific Pollution Index	Diatom EC ≥ 88%

Table 10: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 8: MALMANIESLOOP

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
8: MALMANIESLOOP	III	Malmanies-loop (A31C)	8_1	-	Quality	Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and to maintain the water quality present ecological state.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.025 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)
						Salts	Instream salinity must be maintained to support the aquatic ecosystem and maintain the water quality present ecological state.	Electrical Conductivity	≤ 55 milliSiemens/metre (mS/m) (95 th percentile)
						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and use requirements of water users.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.
					Habitat	Wetland Vegetation	Refer to wetland RQOs, habitat is part of the wetland system.		
					Biota	Fish	The fish community must be maintained in a C ecological category or better condition. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category. Control and remove alien invasive fish species MSAL. Prevent spreading of the alien species.	Fish Response Assessment Index (FRAI)	Fish ecology category = C FRAI ≥ 62% Sample 10 <i>BMOT</i> in 20min sample effort

Table 11: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 9: MOLOPO

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
9: MOLOPO	II	Bodibe eye D41A (Pofonteinspruit and Lothakane tributary catchment area)	9_1	C			Refer to Groundwater RQOs		
		Molopo Eye, Grootfontein Eye, Molopo headwaters to inflow Setumo/Modimola Dam D41A	9_2		Quantity	Flows	Groundwater related (Molopo and Grootfontein Eye)		
					Quality	Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.025 milligrams/litre (mg/l) (50 th percentile)
						Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and to support downstream users. Improvement in salinity concentrations is required.	Nitrate (NO ₃) & Nitrite (NO ₂) as Nitrogen	≤ 0.7 milligrams/litre (50 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and use requirements of water users.	Electrical Conductivity	≤ 75 milliSiemens/metre (mS/m) (95 th percentile)
							A baseline assessment to determine the present state instream turbidity is required.	pH range	6.5 (5 th percentile) and 8.8 (95 th percentile)
								Turbidity	A 10% variation from background concentration is allowed. Limits must be

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
									determined.
					Habitat	Instream Wetland Vegetation	Refer to wetland RQOs, habitat is part of the wetland system.		
					Biota	Fish Aquatic macroinvertebrates	Fish community should be improved from an E ecological category to a D category. Macroinvertebrate assemblage must be maintained within a D ecological category (largely modified condition) or improved upon.	Fish Response Assessment Index (FRAI). Macroinvertebrate Response Assessment Index, and the South African System Scoring Version 5 (SASS5).	Fish ecology category = D FRAI $\geq 42\%$ Sample 3 species, including <i>BBR</i> in 20min survey. Sample 15 <i>PPH</i> in 20min MIRAI EC = D $\geq 42\%$ SASS ≥ 80 ASPT ≥ 4.0
		Molopo River main stem from Modimola Dam to Disaneng Dam D41A (main stem)	9_3		Habitat	Instream	Habitat diversity must be improved from an E ecological category to a D category. Improve runoff water into the system to improve to D ecological category. Control siltation and organic material.	Index of Habitat Integrity	Instream Habitat Integrity EC = D $\geq 42\%$
						Riparian habitat	Riparian vegetation must be improved from an E ecological category to a D category. Alien invasive species must be controlled. Riparian zone must be rehabilitated.	Vegetation Response Assessment Index	VEGRAI EC = D $\geq 42\%$
					Quantity	Dam level	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
		Modimola (Setumo) Dam (D41A)	9_4		Quality	Nutrients	Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system. Improvement required from hypertrophic state.	Orthophosphates	$\leq 0.050 \text{ mg/l}$ 50 th percentile
							Concentration of total phosphorous must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Total phosphorous	$\leq 0.055 \text{ mg/l}$ 50 th percentile
							Concentration nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a	Nitrite & Nitrate	$\leq 0.70 \text{ mg/l}$ N 95th percentile

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							eutrophic system.		
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	≤ 85 mS/m 95th percentile
						Pathogens	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Chloride	≤ 100 mg/l 95th percentile
							The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (E. coli)	130 counts/100 millilitres (ml) (95th percentile)
							The water must be acceptable for recreational use.	pH	6.5 – 9.0 95th percentile
							Increased clarity with reading ≥ 0.4 m	Turbidity	Minimum 95th percentile
							Moderate change	Temperature	No more than 2 °C increasing change in both minimum and maximum
							The oxygen levels in the system must maintain the ecological system.	Dissolved Oxygen	≥ 7.0 mg/L O ₂ 95th percentile
						Toxics	The dam must be managed within a eutrophic state to minimize the development of toxic cyanobacterial blooms	Cyanobacteria	Cyanobacterial dominance with Chl a concentration higher than 30µg/l must be kept at less than 20% of the time.
					Quantity	Dam levels	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained.	Minimum operating level required in dam	Operation rules as applicable.
							Concentration of orthophosphate must be maintained to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Orthophosphates	≤ 0.010 mg/l 50th percentile
					Quality		Concentration of total phosphorous must be maintained to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Total phosphorous	≤ 0.025 mg/l 50th percentile
							Concentration of nitrate & nitrite must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Nitrite & Nitrate	≤ 0.70 mg/l N 95th percentile
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water	Electrical Conductivity	≤ 75 mS/m 95th percentile

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							quality requirements of the downstream users.		
						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (E. coli)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	The water must be acceptable for recreational use.	pH	6.5 – 9.0 95 th percentile

Table 12: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 11a: GROOT MARICO / MOLATEDI DAM

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
11a: GROOT MARICO / MOLATEDI DAM	III	Groot Marico from outflow Marico Bosveld Dam to Molatedi Dam, All tributaries (A31G, A31H, A31F, A31J, A32A, A32B, A32C)	11a_1	C/D	Quantity	Low flows	EWB maintenance low and drought flows: Groot Marico River at MAR_EWR3 in A31F NIMAR = 65.0839x10⁶m³ REC=C/D category The maintenance low flows and drought flows must be attained to support the ecological requirement and downstream users.	Base Flows Maintenance flows and drought flows. Monitoring of Groot Marico River at A3H029			
									Maintenance Low flows (m ³ /s)		
										Oct	0.248
										Nov	0.262
										Dec	0.266
										Jan	0.284
										Feb	0.318
										Mar	0.281
										Apr	0.278
										May	0.262
										Jun	0.268
										Jul	0.258
										Aug	0.256
										Sep	0.260
					Quality	Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.090 milligrams/litre (mg/l) (50 th percentile)		
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.7 milligrams/litre (50 th percentile)		
								Electrical Conductivity	≤ 55 milliSiemens/metre (95 th percentile)		
								Sulphate	≤ 50 milligrams/litre (95 th percentile)		
								Chloride	≤ 40 milligrams/litre (95 th percentile)		
								Sodium	≤ 50 milligrams/litre (95 th percentile)		
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.8 (95 th percentile)		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.
					Habitat	Instream	Habitat diversity should be maintained in a C/D ecological category. Runoff resulting in organic pollution and bacterial pollution of the resource must be managed.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C/D ≥ 58%
						Riparian habitat	Riparian vegetation should be maintained in a C/D ecological category. Alien invasive vegetation must be controlled and development into the riparian zone must be limited.	Vegetation Response Assessment Index	VEGRAI EC = C/D ≥ 58%
						Fish	The fish community must be maintained in a D ecological category or improved upon. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Index Assessment (FRAI)	Fish ecology category = D FRAI ≥ 42% Collect 10+ species in 20min sampling effort
					Biota	Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.5
						Diatoms	Diatom assemblage must be maintained within a natural to largely natural condition.	Specific Pollution Index	Diatom EC = A/B ≥ 88%
						Semi-Aquatic Biota	The suitability of this stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management. Riparian zone habitat must be improved.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Quantity	Dam level	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
							Concentration of orthophosphate must be maintained to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Orthophosphates	≤ 0.015 mg/l 50th percentile
							Concentration of total phosphorous must be maintained to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Total phosphorous	≤ 0.055 mg/l 50th percentile
					Quality	Nutrients	Concentration of nitrate & nitrite must be maintained to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a mesotrophic system.	Nitrite & Nitrate	≤ 0.70 mg/l N 95th percentile
		Molatedi Dam (A32A, A32B, A32C)	11a_2			Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	≤ 55 mS/m 95th percentile
							The water must be acceptable for recreational use.	pH	6.5 – 9.0 95th percentile
						System Variables	The oxygen levels in the system must maintain the ecological system.	Dissolved Oxygen	≥ 7.0 mg/l O2 95th percentile

Table 13: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 11b: GROOT MARICO / SEASONAL TRIBUTARIES

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
11b: GROOT MARICO / SEASONAL TRIBUTARIES	III	Groot Marico, Rasweu, Maselaje (A32D)	11b_1	C	Quantity	Low flows	EWR maintenance low and drought flows: Groot Marico River at MAR_EWR4 in A32D NIMAR = 153.25x10⁶m³ REC=C category The maintenance low flows and drought flows must be attained so that the environmental flows requirements are met to support a healthy condition for the ecosystem and users.	Base Flows Maintenance flows and drought flows Monitoring of Groot Marico River at A3H007	Maintenance High flows (m ³ /s)	Drought flows (m ³ /s)
									Oct	0.173
									Nov	0.185
									Dec	0.191
									Jan	0.209
									Feb	0.242
					Quality	Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO₄) as Phosphorus Nitrate (NO₃⁻) & Nitrite (NO₂⁻) as Nitrogen	≤ 0.090 milligrams/litre (mg/l) (50 th percentile)	
									≤ 0.7 milligrams/litre (50 th percentile)	
									≤ 55 milliSiemens/metre (mS/m) (95 th percentile)	
									Instream Habitat Integrity EC = C ≥ 62%	
					Habitat	Instream	Habitat diversity should be maintained within a C ecological category. A natural flow pattern must be maintained. Improve instream habitat and velocity/depth for aquatic biota diversity. Connectivity to downstream to (11b_2) must be achieved.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Riparian habitat	Riparian vegetation should be maintained within a C ecological category. Impacts including grazing/trampling of riparian zone must be controlled. Management of siltation required.	Index of Habitat Integrity	VEGRAI EC = C ≥ 62%
					Biota	Fish	The fish community must be maintained in a C/D ecological category or better. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category. Fishways must be built for migratory species as currently there is no connectivity over numerous weirs.	Fish Assessment (FRAI) Response Index	Fish ecology category = C/D FRAI ≥ 58% Sample 8+ species per sample survey Indicator species: <i>BMAR</i> , <i>LMOL</i> , <i>SZAM</i>
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 4.8
						Diatoms	Diatom assemblage must be maintained within a moderately modified condition or improved upon.	Specific Pollution Index	Diatom EC ≥ 62%
					Wetland RQOs applicable				
		Elandsiaagtespruit, Lengope la Kgamananyane, Lenkwane (A32E)	11b_2						

Table 14: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 12: BIERSPRUIT

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
12: BIERSPRUIT	III		12_1	D	Quality	Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus Nitrate (NO ₃) & Nitrite (NO ₂) as Nitrogen	≤ 0.090 milligrams/litre (mg/l) (50 th percentile) ≤ 0.7 milligrams/litre (50 th percentile)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
		Wilgespruit, Bofule, Kolobeng, Magoditshane, Motlhabe (A24D)				Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Electrical Conductivity	≤ 55 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate	≤ 80 milligrams/litre (95 th percentile)
								Chloride	≤ 40 milligrams/litre (95 th percentile)
								Sodium	≤ 70 milligrams/litre (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.0 (5 th percentile) and 8.5 (95 th percentile)
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.
								Aluminium (Al)	≤ 0.105 milligrams/litre (mg/l) (95 th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)
								Lead (Pb) hard	≤ 0.0095 milligrams/litre (mg/l) (95 th percentile)
								Copper (Cu) hard	≤ 0.0073 milligrams/litre (mg/l) (95 th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95 th percentile)
								Cobalt (Co)	≤ 0.05 milligrams/litre (mg/l) (95 th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95 th percentile)
						Pathogens	The presence of pathogens should pose a low risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
		Bierspruit outflow Bierspruit Dam to confluence with the Crocodile River, Brakspruit, Phuthane, Sefathane, Lesobeng (A24E, A24F)	12_2		Habitat	Instream	Habitat diversity should be improved from a D ecological category to a C ecological category. Maintain natural flow regime. Improve instream habitat and velocity/depth for fish diversity.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C ≥ 62%
						Riparian habitat	Riparian vegetation should be improved from a D ecological category to a C ecological category. Improve riparian zone. Remove alien vegetation.	Vegetation Response Assessment Index	VEGRAI EC = C ≥ 62%
					Biota	Fish	Fish community should be improved from a D ecological category to a C/D category. Maintain natural flow regime. Improve instream habitat and velocity/depth for fish diversity.	Fish Response Assessment Index (FRAI)	Fish ecology category = C/D FRAI ≥ 58% Sample at least 10+ species in 20min effort Indicator species: AJOH, LCYL, BMAR, MBRE
						Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and ensure the prescribed ecological category is met. Concentrations should not be allowed to deteriorate.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.125 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 1.0 milligrams/litre (50 th percentile)
					Quality	Salts	Instream salinity must be maintained at acceptable levels to support a healthy aquatic ecosystem and the water quality requirements of water users. Concentrations should not be allowed to deteriorate.	Electrical conductivity (EC)	≤ 85 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate (SO ₄)	≤ 100 milligrams/litre (95 th percentile)
								Sodium (Na)	≤ 100 milligrams/litre (95 th percentile)
								Chloride (Cl)	≤ 100 milligrams/litre (95 th percentile)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.0 (5 th percentile) and 8.5 (95 th percentile)
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.
							The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Aluminium (Al)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Iron (Fe)	≤ 0.3 milligrams/litre (mg/l) (95 th percentile)
								Lead (Pb) hard	≤ 0.0095 milligrams/litre (mg/l) (95 th percentile)
								Copper (Cu) hard	≤ 0.0073 milligrams/litre (mg/l) (95 th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95 th percentile)
								Cobalt (Co)	≤ 0.05 milligrams/litre (mg/l) (95 th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95 th percentile)
								<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
					Habitat	Instream	Habitat diversity should be maintained within a D ecological category. Maintain natural flow regime. Improve instream habitat and velocity/depth for fish and macroinvertebrate diversity.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = D ≥ 42%

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Riparian habitat	Riparian vegetation should be maintained within a D ecological category. Development into the riparian zone must be controlled and limited. Siltation impacts must be managed.	Vegetation Response Assessment Index	VEGRAI EC = D $\geq$ 42%
					Biota	Fish	Fish community should be maintained within a D ecological category or improved upon. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Assessment Index (FRAI)	Fish ecology category = D FRAI $\geq$ 42% Collect 4+ species in 20min sampling effort.

Table 15: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 13: LOWER CROCODILE

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
13: LOWER CROCODILE	III	Crocodile outflow Roodekopjes Dam to Sand river confluence, Sleepfontein-spruit, Klipspruit tributaries (A21L, A24A, A24B, A24C)	13_1	C/D	Quantity	Low flows	EWB maintenance low and drought flows: Crocodile River at CROC_EWR7 in A24C NIMAR = $463.4 \times 10^6 \text{ m}^3$ REC=D category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows Maintenance flows and drought flows. Monitoring of Crocodile River at A2H132		Maintenance Low flows (m^3/s) Oct 1.134 Nov 1.362 Dec 1.481 Jan 1.938 Feb 2.638 Mar 2.481 Apr 2.118 May 1.745 Jun 1.574 Jul 1.389 Aug 1.262 Sep 1.172 Drought flows (m^3/s) Oct 1.134 Nov 1.362 Dec 1.481 Jan 1.938 Feb 2.488 Mar 2.481 Apr 2.118 May 1.745 Jun 1.574 Jul 1.389 Aug 1.262 Sep 1.172
						High flows	EWB high flows: Crocodile River at CROC_EWR7 in A24C NIMAR = $463.4 \times 10^6 \text{ m}^3$ REC=D category High flows must be attained as specified to support aquatic ecosystem requirements.	Floods High flow also specified as individual flood requirements in terms of size and duration (See Appendix A) Monitoring of Crocodile River at A2H132		High flows (m^3/s) Oct 0 Nov 0.790 Dec 1.529 Jan 0 Feb 1.270 Mar 0 Apr 0.790 May 0 Jun 0 Jul 0 Aug 0 Sep 0

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Quality	Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and ensure the prescribed ecological category is met. Concentrations should not be allowed to deteriorate.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.060 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 1.0 milligrams/litre (50 th percentile)
						Salts	Instream salinity must be maintained at the levels specified to support a healthy aquatic ecosystem and the water quality requirements of water users. Concentrations should not be allowed to deteriorate.	Electrical conductivity (EC)	≤ 85 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate (SO ₄)	≤ 100 milligrams/litre (95 th percentile)
								Sodium (Na)	≤ 80 milligrams/litre (95 th percentile)
								Chloride (Cl)	≤ 80 milligrams/litre (95 th percentile)
						Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (E.coli)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
							Dissolved oxygen levels must be attained to support the aquatic ecosystem.	Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
						Toxics	The concentrations of toxicants must pose no risk to aquatic	Atrazine	≤ 0.078 milligrams/litre (mg/l)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							organisms and to human health.	Metolachlor	≤ 0.30 milligrams/litre (mg/l)
								Aluminium (Al)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95th percentile)
								Iron (Fe)	≤ 0.3 milligrams/litre (mg/l) (95th percentile)
								Lead (Pb) hard	≤ 0.0095 milligrams/litre (mg/l) (95th percentile)
								Copper (Cu) hard	≤ 0.0073 milligrams/litre (mg/l) (95th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)
								Cobalt (Co)	≤ 0.05 milligrams/litre (mg/l) (95th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95th percentile)
								Aluminium (Al)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)
								Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = D ≥ 42%
								Vegetation Response Assessment Index	VEGRAI EC = D ≥ 42%

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO																																							
					Biota	Fish	Fish community should be maintained within a D ecological category or better condition. Flow velocity/depth must be adequate for flow sensitive species <i>CPRE</i> and <i>LMOL</i> and habitat sensitive species – <i>AJOH</i> .	Fish Response Assessment Index (FRAI)	Fish ecology category = D FRAI ≥ 42% Sample 6+ species per sample effort Indicator species <i>Sensitive fish</i> species. <i>Course substrate</i> , <i>CPRE</i> , <i>LMOL</i>																																							
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)	MIRAI EC = D ≥ 42% SASS ≥ 60 ASPT ≥ 4.5 (Site A2CROC-KOEDO)																																							
		Sand River to confluence with Crocodile River (A24G, A24H)	13_2		Quantity	Lows flows	EWB maintenance low and drought flows: Sand River upstream of Sondags River confluence at S24.6289, E27.6223 in A24H NMAR = 26.56x10 ⁶ m ³ REC=B category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base flows Maintenance flows and drought flows. Monitoring of discharge of the Sand River during biological surveys	<table><tr><td></td><td>Maintenance Low flows (m³/s)</td><td>Drought flows (m³/s)</td></tr><tr><td>Oct</td><td>0.085</td><td>0.042</td></tr><tr><td>Nov</td><td>0.104</td><td>0.024</td></tr><tr><td>Dec</td><td>0.120</td><td>0.021</td></tr><tr><td>Jan</td><td>0.196</td><td>0.063</td></tr><tr><td>Feb</td><td>0.263</td><td>0.105</td></tr><tr><td>Mar</td><td>0.199</td><td>0.055</td></tr><tr><td>Apr</td><td>0.158</td><td>0.071</td></tr><tr><td>May</td><td>0.127</td><td>0.059</td></tr><tr><td>Jun</td><td>0.119</td><td>0.056</td></tr><tr><td>Jul</td><td>0.108</td><td>0.051</td></tr><tr><td>Aug</td><td>0.098</td><td>0.047</td></tr><tr><td>Sep</td><td>0.089</td><td>0.044</td></tr></table>		Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)	Oct	0.085	0.042	Nov	0.104	0.024	Dec	0.120	0.021	Jan	0.196	0.063	Feb	0.263	0.105	Mar	0.199	0.055	Apr	0.158	0.071	May	0.127	0.059	Jun	0.119	0.056	Jul	0.108	0.051	Aug	0.098	0.047	Sep	0.089	0.044
	Maintenance Low flows (m ³ /s)								Drought flows (m ³ /s)																																							
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Feb	0.263	0.105																																														
Mar	0.199	0.055																																														
Apr	0.158	0.071																																														
May	0.127	0.059																																														
Jun	0.119	0.056																																														
Jul	0.108	0.051																																														
Aug	0.098	0.047																																														
Sep	0.089	0.044																																														
						High flows	EWB high flows: Sand River Monitoring of discharge of the Sand River during biological surveys at S24.6289, E27.6223 in A24H NMAR = 26.56x10 ⁶ m ³ REC=B category High flows must be attained to ensure freshets for fish communities.	Freshets for fish High flow also specified as individual flood requirements in terms of size and duration (see Appendix A)	<table><tr><td></td><td colspan="2">High flows (m³/s)</td></tr><tr><td>Oct</td><td colspan="2">0.009</td></tr><tr><td>Nov</td><td colspan="2">0.056</td></tr><tr><td>Dec</td><td colspan="2">0.090</td></tr><tr><td>Jan</td><td colspan="2">0.181</td></tr><tr><td>Feb</td><td colspan="2">0.500</td></tr><tr><td>Mar</td><td colspan="2">0.181</td></tr><tr><td>Apr</td><td colspan="2">0.093</td></tr><tr><td>May</td><td colspan="2">0</td></tr><tr><td>Jun</td><td colspan="2">0</td></tr><tr><td>Jul</td><td colspan="2">0</td></tr><tr><td>Aug</td><td colspan="2">0</td></tr><tr><td>Sep</td><td colspan="2">0</td></tr></table>		High flows (m ³ /s)		Oct	0.009		Nov	0.056		Dec	0.090		Jan	0.181		Feb	0.500		Mar	0.181		Apr	0.093		May	0		Jun	0		Jul	0		Aug	0		Sep	0	
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IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Quality	Nutrients Salts	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met. Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.020 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)
								Electrical Conductivity	≤ 30 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate	≤ 20 milligrams/litre (95 th percentile)
								Chloride	≤ 20 milligrams/litre (95 th percentile)
					Habitat	Instream	Habitat diversity should be maintained within a B ecological category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82%
						Riparian habitat	Riparian vegetation should be maintained within a B ecological category or better condition.	Vegetation Response Assessment Index	VEGRAI EC = B ≥ 82%
					Biota	Fish	The fish community must be maintained in a B ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category. Habitat and flow must be adequate for seasonal/flow dependent species, CPAR.	Fish Response Assessment Index (FRAI)	Fish ecology category = B FRAI ≥ 82%
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 100 ASPT ≥ 5.5 (Site A2SUND-WATER)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
		Lower Crocodile from Bierspruit to the Botswana border (Limpopo River) (A24J)	13_3		Quantity	Low flows	EWR maintenance low and drought flows: Crocodile River at A2H128 in A24J NMAR = 565.16x10 ⁶ m ³ REC=C/D category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows Maintenance flows and drought flows. Monitoring of Crocodile River at A2H128		Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)
									Oct	1.246	1.057
									Nov	1.454	1.228
									Dec	1.536	1.294
									Jan	1.932	1.616
									Feb	2.488	2.074
									Mar	2.128	1.776
									Apr	1.791	1.503
									May	1.548	1.303
									Jun	1.524	1.285
									Jul	1.425	1.203
									Aug	1.345	1.138
									Sep	1.287	1.091
										High flows (m ³ /s)	
						Oct	0				
						Nov	0.395				
						Dec	2.829				
						Jan	0				
						Feb	0.423				
						Mar	0				
						Apr	0				
						May	0				
						Jun	0				
						Jul	0				
						Aug	0				
						Sep	0				
							≤ 0.06 milligrams/litre (mg/l) (50 th percentile)				
		≤ 1.0 milligrams/litre (50 th percentile)									
		≤ 85 milliSiemens/metre (95 th percentile)									
		≤ 100 milligrams/litre (95 th percentile)									
		≤ 80 milligrams/litre (95 th percentile)									
		≤ 100 milligrams/litre (95 th percentile)									
		130 counts/100 millilitres (ml) (95 th percentile)									

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
						System Variables	A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
							Dissolved oxygen levels must be attained to support the aquatic ecosystem.	Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health	Atrazine	≤ 0.078 milligrams/litre (mg/l)
								Mancozeb	0.009 milligrams/litre (mg/l)
						Instream	Habitat diversity should be improved from D ecological category to C/D ecological category. Maintain good low flows to sustain habitat for substrate and habitat sensitive species and taxa.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C/D ≥ 58%
					Habitat	Riparian habitat	Indigenous vegetation must be protected (unique <i>Acacia galpinii</i> (Monkey thorn). Riparian vegetation should be improved from D ecological category to C/D ecological category.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C/D ≥ 58%
						Fish	Fish community should be maintained within a D ecological category. Flow velocity/depth must be maintained for CPAR, MACU and LMOL, and habitat sensitive species – MMAC, BAWN.	Fish Response Assessment Index (FRAI)	Fish ecology category = D FRAI ≥ 42% Sample 6+ species per sample effort
					Biota	Semi-aquatic biota	The suitability of this stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management. Maintain good riparian cover for otters.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Aquatic invertebrates	Macroinvertebrate assemblage must be maintained within a C/D ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)	MIRAI EC = C/D ≥ 58% SASS ≥ 120 ASPT ≥ 5.0
						Diatoms	Diatom assemblage must be maintained within a largely modified condition or improved upon.	Specific Pollution Index	Diatom EC ≥ 42%

Table 16: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 14: TOLWANE / KULWANE / MORETELE / KLIPVOOR

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
14: TOLWANE / KULWANE / MORETELE / KLIPVOOR	III	Apies River, Tshwane tributary (A23F)	14_1	D	Quantity	Flows	A management strategy to manage the excess water present (return flows) in the system must be developed. Suitable management options must be assessed. The benefits of reducing the flow must be determined.	Low flows	To be determined once the management strategy is developed
						Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ⁻) as Phosphorus Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.5 milligrams/litre (mg/l) (50 th percentile) ≤ 3.0 milligrams/litre (50 th percentile)
					Quality	Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Electrical conductivity (EC)	≤ 80 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate (SO ₄)	≤ 70 milligrams/litre (95 th percentile)
								Chloride (Cl)	≤ 75 milligrams/litre (95 th percentile)
								Sodium (Na)	≤ 80 milligrams/litre (95 th percentile)
						Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
							Dissolved oxygen levels must be attained to support the aquatic ecosystem.	Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
							The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Atrazine	≤ 0.078 milligrams/litre (mg/l)
								Mancozeb	0.009 milligrams/litre (mg/l)
								Glyphosate	0.7 milligrams/litre (mg/l)
								Endosulfan	0.13 micrograms/litre (ug/l)
								Chromium (VI)	≤ 0.2 milligrams/litre (mg/l) (95th percentile)
						Toxics		Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)
								Lead (Pb) hard	≤ 0.0013 milligrams/litre (mg/l) (95th percentile)
								Cobalt (Cb)	≤ 0.05 milligrams/litre (mg/l) (95th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95th percentile)
						Instream	Habitat diversity should be improved to a D ecological category. Maintain good low flows to sustain habitat for substrate sensitive species (<i>BMAR</i> , <i>BUN</i>) and taxa.	Index of Habitat Integrity	Instream Habitat Integrity EC = D ≥ 42% (site below confluence of Apies and Tshwane)
					Habitat	Riparian habitat	Riparian vegetation should be maintained within a D ecological category or better condition. Maintain riparian zone in cultivated (subsistence) areas.	Vegetation Response Assessment Index	VEGRAI EC = D ≥ 42%
					Quantity	Flows	A management strategy to manage the excess water present (return flows) in the system must be developed. Suitable management options must be assessed. The benefits of reducing the flow must be determined.	Low flows	To be determined once the management strategy is developed
					Quality	Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.090 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.7 milligrams/litre (50 th percentile)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Electrical Conductivity	≤ 55 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate	≤ 50 milligrams/litre (95 th percentile)
								Chloride	≤ 50 milligrams/litre (95 th percentile)
								Sodium	≤ 70 milligrams/litre (95 th percentile)
					Pathogens	The presence of pathogens should pose no risk to human health.	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
								pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
					System Variables	A baseline assessment to determine the present state instream turbidity is required.	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	Turbidity	A 10% variation from background concentration is allowed.
								Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
					Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.		Atrazine	≤ 0.078 milligrams/litre (mg/l)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)
								Lead (Pb) hard	≤ 0.0095 milligrams/litre (mg/l) (95 th percentile)
								Copper (Cu) hard	≤ 0.00735 milligrams/litre (mg/l) (95 th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95 th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95 th percentile)
					Habitat	Instream	Habitat diversity should be maintained within a C ecological category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C ≥ 62%
						Riparian habitat	Riparian vegetation should be maintained within a C ecological category. Remediation of riparian zone along Boekenshout required. Sand mining must be controlled.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C ≥ 62%

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Biota	Fish	The fish community must be maintained in a C ecological category or better. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category. Flow velocity/depth must be maintained for fish species – CPAR and LMOL and habitat sensitive species – AKAT that are likely to be present in the wetlands.	Fish Response Assessment Index (FRAI)	Fish ecology category = C FRAI $\geq 62\%$ Sample 10 CPAR and 10 LMOL in 20min effort
						Semi-Aquatic Biota	Habitat in Moretele Floodplain must be maintained. The stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management. Maintain good riparian cover for otters. Maintain riparian zone as important bird habitat.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
					Quantity	Low flows	EWI maintenance low and drought flows: Plat River at A2H064 in A23G $NMAR = 9.64 \times 10^6 m^3$ $REC = C/D$ category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows Maintenance flows and drought flows Monitoring of Plat River at A2H064	Maintenance flows (m³/s) Drought flows (m³/s) Oct 0.021 0.012 Nov 0.023 0.012 Dec 0.023 0.013 Jan 0.025 0.014 Feb 0.030 0.016 Mar 0.027 0.015 Apr 0.027 0.014 May 0.025 0.013 Jun 0.025 0.014 Jul 0.024 0.013 Aug 0.024 0.013 Sep 0.023 0.012
		Plat River (A23G)	14_3		Habitat	Instream	Habitat diversity should be improved from a D ecological category to a C/D category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C/D $\geq 58\%$
						Riparian habitat	Riparian vegetation should be improved from a D ecological category to a C/D category.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C/D $\geq 58\%$
					Biota	Fish	Fish community should be improved from a D ecological category to a C/D category. Maintain flow velocity/depth for fish species LCYL and LMOL and habitat sensitive species, MBRE and BBR. Isolated populations of CTHE in upper reaches of river must also be maintained.	Fish Response Assessment Index (FRAI) Fish Response Index (FRI)	Fish ecology category = C/D FRAI $\geq 58\%$ Sample 2 or 3 CTHE and 10 LMOL in 20min effort (Site A2PLAT-KOMAN)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 6.0 (Site A2PLAT-KOMAN)
					Quantity	Flows	A management strategy to manage the excess water present (return flows) in the system must be developed. Suitable management options must be assessed. The benefits of reducing the flow must be determined.	Low flows	To be determined once the management strategy is developed
						Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.5 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 3.0 milligrams/litre (50 th percentile)
								Electrical Conductivity	≤ 85 millSiemens/metre (mS/m) (95 th percentile)
						Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Sulphate (SO ₄)	≤ 70 milligrams/litre (95 th percentile)
								Chloride (Cl)	≤ 75 milligrams/litre (95 th percentile)
								Sodium (Na)	≤ 80 milligrams/litre (95 th percentile)
					Quality	Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
						System Variables	A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
							Dissolved oxygen levels must be attained to support the aquatic ecosystem.	Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
					Quantity	Dam level	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						Nutrients	Concentration of orthophosphate must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Orthophosphate	≤ 0.05 mg/l 50th percentile
							Concentration of total phosphorous must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Total phosphorous	≤ 0.130 mg/l 50th percentile
							Concentration of total Ammonia as N must be improved to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as a eutrophic system.	Total Ammonia	≤ 0.072 mg/l N 95th percentile
					Quality	Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	≤ 75 mS/m 95th percentile
						System Variables	The water must be acceptable for recreational use.	pH	6.5 – 9.0 95th percentile
							Increased clarity	Turbidity	≥ 0.4 m 5th percentile
							Moderate change	Temperature	No more than 2 °C increasing change in both minimum and maximum
							The oxygen levels in the system must maintain the ecological system.	Dissolved Oxygen	≥ 7.0 mg/l O ₂ 95th percentile
						Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 millilitres (ml) (95th percentile)
						Toxics	The dam must be managed to minimize the development of toxic cyanobacterial blooms	Cyanobacteria	Cyanobacterial dominate with Chl a concentration higher than 30µg/l must be kept at less than 20% of the time.
							The river water should not be toxic to aquatic organisms or be a threat to human health.	Pesticides	Cyanide: ≤ 110 µg/l Endosulfan: ≤ 20 µg/l Atrazine: ≤ 100 µg/l 95th percentile

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO													
14_7	Moretele River from Klipvoor Dam to Crocodile River , Tolwane (A23K, A23L)	Quantity	Low Flows	EWI maintenance low and drought flows: Moretele/ Pienaars River at CROC_EWR5 in A23J NIMAR = 113.0x10 ⁶ m ³ REC=D category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base flows				Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)												
						Oct	0.162	0.159														
						Nov	0.210	0.206														
						Dec	0.230	0.226														
						Jan	0.303	0.298														
						Feb	0.356	0.351														
						Mar	0.309	0.304														
						Apr	0.260	0.256														
						May	0.220	0.216														
						Jun	0.208	0.205														
			Jul	0.188	0.185																	
			Aug	0.174	0.171																	
			Sep	0.160	0.158																	
			Nutrients	Instream concentration of nutrients must be improved to sustain aquatic ecosystem health and ensure the prescribed ecological category is met. Nutrient concentrations must be reduced.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.060 milligrams/litre (mg/l) (50 th percentile)																
						Salts	Instream salinity must be maintained to support the aquatic ecosystem and sustain present ecological state. No further deterioration should occur. Land based activities and WWTW discharges must be controlled.	Electrical Conductivity	≤ 1.0 milligrams/litre (50 th percentile)													
									Pathogens	The presence of pathogens should pose no risk to human health. Microbial pollution must be minimised.	pH range	≤ 75 milliSiemens/metre (mS/m) (95 th percentile)										
												System Variables	A baseline assessment to determine the present state instream turbidity is required. Dissolved oxygen levels must be attained to support the aquatic ecosystem.	Turbidity	≤ 60 milligrams/litre (95 th percentile)							
															Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Dissolved oxygen	≤ 70 milligrams/litre (95 th percentile)				
																		Atrazine	Metolachlor	≤ 100 milligrams/litre (95 th percentile)		
																				Mancozeb	130 counts/100 millilitres (ml) (95 th percentile)	
6.5 (5 th percentile) and 8.5 (95 th percentile)																						
A 10% variation from background concentration is allowed.																						
≥ 6 milligrams/litre (mg/l)																						
≤ 0.078 milligrams/litre (mg/l)																						
≤ 0.30 milligrams/litre (mg/l)																						
0.009 milligrams/litre (mg/l)																						

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Habitat	Instream	Habitat diversity should be improved from a D ecological category to a C category. Maintain good low flows to sustain habitat for substrate and habitat sensitive species and taxa.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C $\geq 62\%$
						Riparian habitat	Riparian vegetation should be improved from a D ecological category to a C category. Sand mining in riparian zone must be limited.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C $\geq 62\%$
						Fish	The fish community must be maintained in a C/D ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category. Maintain flow velocity/depth species <i>LMOL</i> , <i>LCYL</i> and <i>CPAR</i> and habitat sensitive species, <i>MBRE</i> .	Fish Response Assessment Index (FRAI)	Fish ecology category = C/D FRAI $\geq 58\%$ Sample 10+ species per sample effort Sample 20 <i>BMAR</i> in 20min effort
					Biota	Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D ecological category or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = C $\geq 62\%$ SASS ≥ 100 ASPT ≥ 5.0 (REMP site A2PIEN – BUFVE or EWR5)
						Semi aquatic biota	The river reach to serve as a habitat for aquatic bird populations must be maintained through proper habitat management. Maintain the riparian zone to provide suitable habitats.	Aquatic birds Indicator species	A baseline assessment should be conducted to determine the aquatic bird species along the river reach. There is a need to set a numerical RQO for density of birds based on the available/collected data.
						Diatoms	Diatom assemblage must be maintained within a largely modified condition or improved upon.	Specific Pollution Index	Diatom EC = D $\geq 42\%$

Table 17: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 15: UPPER MOKOLO

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
15: UPPER MOKOLO	II	Moloko River, Klein Sand, Sondagsloop, Heuningspruit, Dwars, Jim se loop tributaries (A42C, A42E)	15_1	B/C	Quantity	Low flows	EWR maintenance low and drought flows: Mokolo River at MOK_EWR1a in A42C NMAR = 84.84x10 ⁶ m ³ PES=C/D category The maintenance low flows and	Base Flows		Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)
								Maintenance flows and drought flows.			
								Monitoring of Mokolo River at A4H002			

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
							drought flows must be attained to support the aquatic ecosystem and the downstream users.		Apr	0.500
									May	0.350
									Jun	0.270
									Jul	0.230
									Aug	0.180
									Sep	0.100
							Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.025 milligrams/litre (mg/l) (50 th percentile) Monitoring data – regional	
						Nutrients	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Nitrate (NO ₃) & Nitrite (NO ₂) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)	
						Salts		Electrical Conductivity	≤ 30 milliSiemens/metre (mS/m) (95 th percentile)	
						Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)	
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.0 (95 th percentile)	
						System Variables	A baseline assessment to determine the present state instream turbidity is required. Limits must be defined to control the impacts of slate mining on the resource.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.	
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Atrazine	≤ 0.078 milligrams/litre (mg/l)	
								Bromoxynil	≤ 0.010 milligrams/litre (mg/l)	
						Instream	Habitat condition should be improved from a C/D ecological to a B/C category. Good low flows must be maintained to sustain habitat for substrate and habitat sensitive species. Return flows and abstraction in resource unit must be monitored and controlled to protect the instream habitat.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B/C ≥ 78%	
						Riparian habitat	Riparian vegetation must be improved from C/D to a C	Index of Habitat Integrity, Vegetation Response	VEGRAI EC = C ≥ 62%	

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							category. Riparian zones must remain in cultivated areas. Cultivation must be managed to prevent loss of riparian zone.	Assessment Index	
						Fish	Fish community should be improved from a C/D ecological category to a C category. Flow velocity/depth must be maintained for species, <i>LMOL</i> , <i>BIMAR</i> and <i>CPRE</i> and habitat sensitive species, <i>BRAD</i> , <i>BVIV</i> .	Fish Response Assessment Index (FRAI)	Fish ecology category = C FRAI ≥ 62% Sample 15+ species per sample effort Sample 25 <i>CPRE</i> and 15 <i>AURA</i> in 20min effort (Site EWR1a Dwars)
						Semi-aquatic biota	This river reach must be maintained to serve as a habitat for aquatic bird and mammal populations through proper habitat management.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
					Biota	Aquatic macroinvertebrates	Macromacroinvertebrates assemblage must be maintained within a C ecological category condition or improved upon.	Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	Sites: EWR 1a = A4MOKO-VAALW MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.5 A4SAND-TOPBR: MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 6.0 Site DWARS 1a = Rapid EWR site: MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.5
						Diatoms	Diatom assemblage must be maintained within B ecological category or better condition.	Specific Pollution Index	Diatom EC ≥ 82%
						Low flows	EWR maintenance low and drought flows: Sterkstroom in A42D NIMAR = 43.43x10 ⁶ m ³ REC=B category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows Maintenance flows and drought flows. Monitoring of Sterkstroom at A4H008	Maintenance Low flows (m ³ /s) Drought flows (m ³ /s) Oct 0.382 0.060 Nov 0.517 0.110 Dec 0.972 0.130 Jan 1.778 0.210 Feb 2.842 0.070 Mar 2.996 0.110 Apr 2.529 0.020 May 1.908 0.020 Jun 1.390 0.050
		Sterkstroom, Frikkie se Loop (A42D)	15_2		Quantity				

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
									Jul	1.090	0.110
									Aug	0.758	0.080
									Sep	0.426	0.060
							Instream concentration of nutrients as specified maintained to protect the aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.015 milligrams/litre (mg/l) (50 th percentile)		
						Nutrients	Instream salinity levels as specified must be maintained to protect the aquatic ecosystem health and ensure the prescribed ecological category is met.	Nitrate (NO ₃) & Nitrite (NO ₂) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)		
					Quality	Salts	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	Electrical Conductivity	≤ 20 milliSiemens/metre (mS/m) (95 th percentile)		
						System Variables	A baseline assessment to determine the present state instream turbidity is required.	pH range	6.5 (5 th percentile) and 8.0 (95 th percentile)		
							Habitat diversity should be maintained within a B/C ecological category. Maintain low flows to sustain habitat for substrate and habitat sensitive species and taxa.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.		
					Habitat	Instream	Riparian vegetation should be maintained within a B/C ecological category or better condition.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC B/C ≥ 78%		
						Riparian habitat	The fish community must be maintained in a B/C ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Vegetation Response Assessment Index	VEGRAI EC = B/C ≥ 78%		
					Biota	Fish	Maintain flow velocity/depth for species: <i>LMOL</i> , <i>BMAR</i> , <i>AURA</i> and <i>CPRE</i> and habitat sensitive species – <i>CTHE</i> . Presence of new species: <i>B. waterbergensis</i> must be confirmed.	Fish Response Assessment Index (FRAI)	Fish ecology category = B/C FRAI ≥ 78% Sample 9+ species per sample effort Sample 10 <i>AJOH</i> and 2 <i>CTHE</i> in 20min effort		
						Semi-aquatic biota	This river reach must be maintained to serve as a habitat for aquatic bird and mammal populations through proper habitat management.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO					
							Macroinvertebrate assemblage must be maintained within a B ecological category or improved upon. .	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5)	animals/birds based on the available/collected data.					
						Aquatic macroinvertebrates	EWR maintenance low and drought flows: Mokolo River at MOK_EWR2 in A42F NMAR = 195.69x10 ⁶ m ³ PES=B/C category	Macroinvertebrate	Macroinvertebrates EC ≥ 82% (Site A4STER-WELGE)					
					Quantity	Low flows	The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Base Flows Maintenance flows and drought flows. Monitoring of Mokolo River at A4H005	Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)				
												Oct	0.230	0.008
												Nov	0.240	0.110
												Dec	0.370	0.146
												Jan	0.602	0.201
												Feb	1.064	0.318
												Mar	0.953	0.285
												Apr	0.808	0.252
												May	0.627	0.207
												Jun	0.512	0.181
								Jul	0.400	0.120				
								Aug	0.320	0.008				
								Sep	0.230	0.005				
								≤ 0.025 milligrams/litre (mg/l) (50 th percentile)						
						Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.5 milligrams/litre (50 th percentile)					
							Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen						
						Salts		Electrical Conductivity	≤ 30 milliSiemens/metre (mS/m) (95 th percentile)					
					Quality	Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)					
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.0 (95 th percentile)					
						System Variables	A baseline assessment to determine the present state instream turbidity is required. Limits must be defined to control the impacts of slate mining on the resource.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.					
						Toxics	The concentrations of toxicants must pose no risk to aquatic	Metolachlor	≤0.30 milligrams/litre (mg/l)					

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO										
							organisms and to human health.												
						Instream	Habitat diversity should be improved from B/C ecological category to a B category. Return flows into habitat must be controlled.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82%										
					Habitat	Riparian habitat	Riparian vegetation should be improved from B/C ecological category to a B category. Maintain riparian zone in cultivated areas, and control cultivation onto riparian zone.	Vegetation Response Assessment Index	VEGRAI EC = B ≥ 82%										
						Fish	The fish community must be maintained in a C ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category. Maintain flow velocity/depth species <i>CPRE</i> and habitat sensitive species, <i>MMAC</i> and <i>AJOH</i> .	Fish Response Assessment Index (FRAI)	Fish ecology category = C FRAI ≥ 62% Sample 10+ species per sample effort Sample 10 <i>AJOH</i> in 20min effort										
					Biota	Semi-aquatic biota	This river reach must be maintained to serve as a habitat for aquatic bird and mammal populations through proper habitat management.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.										
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 6.0 (Site MOK_EWR2)										
						Diatoms	Diatom assemblage must be maintained within a largely natural condition or improved upon.	Specific Pollution Index	Diatom EC ≥ 82%										
					Quantity	Low flows	EWR maintenance low and drought flows: Mokolo River at MOK_EWR3 in A42G NMAR = 215.995x10 ⁶ m ³ PES=B/C category	Base Flows Maintenance flows and drought flows. Monitoring of Mokolo River at A4H010	<table><tr><td>Maintenance flows (m³/s)</td><td>Drought flows (m³/s)</td></tr><tr><td>Oct 0.383</td><td>0.005</td></tr><tr><td>Nov 0.399</td><td>0.005</td></tr><tr><td>Dec 0.406</td><td>0.005</td></tr><tr><td>Jan 0.444</td><td>0.015</td></tr></table>	Maintenance flows (m³/s)	Drought flows (m³/s)	Oct 0.383	0.005	Nov 0.399	0.005	Dec 0.406	0.005	Jan 0.444	0.015
Maintenance flows (m³/s)	Drought flows (m³/s)																		
Oct 0.383	0.005																		
Nov 0.399	0.005																		
Dec 0.406	0.005																		
Jan 0.444	0.015																		
		Mokolo Dam to upper portion of A42G (10km downstream of dam)	15_4																

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
							The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.		Feb	0.559
									Mar	0.504
									Apr	0.493
									May	0.450
									Jun	0.441
									Jul	0.413
									Aug	0.399
									Sep	0.396
								Floods		
							EWR maintenance high flows: Mokolo River at MOK_EWR3 in A42G NMAR = 215.995x10 ⁶ m ³ PES=B/C category	High flow also specified as individual flood requirements in terms of size and duration.	As per operating rule in Reserve template, section 3.	
						High flows	High flows must be attained as specified to support aquatic ecosystem requirements.	Monitoring of Mokolo River at A4H010		
						Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.010 milligrams/litre (mg/l) (50 th percentile)	
								Nitrate (NO ₃) & Nitrite (NO ₂) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)	
						Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Electrical Conductivity	≤ 30 milliSiemens/metre (mS/m) (95 th percentile)	
					Quality	Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 millilitres (ml) (95 th percentile)	
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.0 (95 th percentile)	
						System Variables	A baseline assessment to determine the present state instream turbidity is required. Limits must be defined to control the impacts of slate mining on the resource.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.	
					Habitat	Instream	Habitat diversity should be improved from a B/C ecological category to a B category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82%	
						Riparian habitat	Riparian vegetation should be maintained within the B/C	Index of Habitat Integrity, Vegetation Response	VEGRAI EC = B/C ≥ 78%	

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							ecological category. Maintain riparian zone with regard to <i>Syzgium cordatum</i>	Assessment Index.	
						Fish	Fish community should be maintained within the B/C ecological category. Maintain flow velocity/depth for species CPRE.	Fish Response Assessment Index (FRAI)	Fish ecology category = B/C FRAI ≥ 78%
					Biota	Semi-aquatic biota	This river reach must be maintained to serve as a habitat for aquatic bird and mammal populations through proper habitat management.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 6.0
					Quantity	Dam level	The dam must be managed to protect ecosystem function as well as downstream users. Develop and update operational rules for the dam to sustain optimum dam levels in order to ensure that aquatic ecosystem diversity is maintained. Dam releases are required to meet downstream flows for ecological flow requirements.	Minimum operating level required in dam	Operation rules as applicable. Minimal level to sustain aquatic ecosystem (15-18%).
					Quality	Nutrients	Concentration of orthophosphate must be maintained to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as an oligotrophic system.	Orthophosphates	≤ 0.010 mg/l 50th percentile
							Concentration of total phosphorous must be maintained to sustain ecosystem health and the water quality requirements of water users. The dam must be maintained as an oligotrophic system.	Total phosphorous	≤ 0.025 mg/l 50th percentile
		Mokolo Dam	15_4				Concentration of nitrate & nitrite must be maintained to sustain ecosystem health and the water quality requirements of water	Nitrite & Nitrate	≤ 0.50 mg/l N 95th percentile

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							users. The dam must be maintained as an oligotrophic system.		
						Salts	The salinity in the dam must be maintained to support ecosystem health and the water quality requirements of the downstream users.	Electrical Conductivity	≤ 20 mS/m 95th percentile
						Pathogens	The presence of pathogens should pose no risk to human health.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 millilitres (ml) (95th percentile)
						System Variables	The water must be acceptable for recreational use.	pH	6.5 – 9.0 95th percentile
							Increased clarity with reading	Turbidity	≥ 0.4 m 5th percentile
					Quantity	Low flows	EWB maintenance low and drought flows: Grootspuit in A42B NMAR = 27.8 x 10⁶m³ REC= D category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users	Baseflows Maintenance flows and drought flows. Monitoring of discharge during biological surveys.	Maintenance flows (m³/s) Drought flows (m³/s) Oct 0.271 0.136 Nov 0.269 0.135 Dec 0.291 0.148 Jan 0.345 0.180 Feb 0.401 0.213 Mar 0.384 0.203 Apr 0.338 0.160 May 0.320 0.120 Jun 0.311 0.160 Jul 0.304 0.156 Aug 0.299 0.152 Sep 0.286 0.145
		Grootspuit and Sandspruit tributaries (Mokolo headwater catchment) (A42A, A42B)	15_5			Nutrients	Instream concentration of nutrients as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO ₄) as Phosphorus	≤ 0.05 milligrams/litre (mg/l) (50th percentile)
					Quality	Salts	Instream salinity levels as specified must be attained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Nitrate (NO ₃) & Nitrite (NO ₂) as Nitrogen	≤ 0.7 milligrams/litre (50th percentile)
						System Variables	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	Electrical Conductivity	≤ 55 milliSiemens/metre (mS/m) (95th percentile)
							A baseline assessment to determine the present state instream turbidity is required. Limits must be defined to control	pH range	6.5 (5th percentile) and 8.0 (95th percentile)
								Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
							the impacts of slate mining on the resource.		
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Atrazine	≤0.078 milligrams/litre (mg/l)
						Instream	Habitat diversity should be maintained within a C ecological category. Connectivity for migratory species must be maintained.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C ≥ 62%
					Habitat	Riparian habitat	Riparian vegetation should be maintained in a C ecological category.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = C ≥ 70%
						Fish	Fish community should be maintained within the C ecological category. Maintain flow velocity/depth for species <i>CPRE</i> , <i>AURA</i> , <i>LCYL</i> and habitat sensitive species <i>MMAC</i> and <i>AJOH</i> .	Fish Response Assessment Index (FRAI)	Fish ecology category = C FRAI ≥ 62% Sample 10+ species per sample effort
					Biota	Semi-aquatic biota	This river reach must be maintained to serve as a habitat and migration corridor for aquatic bird populations through proper habitat management. Manage riparian zone – remove alien vegetation, rehabilitate with indigenous species.	Aquatic birds species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a D category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5)	MIRAI EC = D ≥ 42% SASS ≥ 80 ASPT ≥ 5.5 (site A4GROO-GROOT)
							EWR maintenance low and drought flows: Mokolo River at MOK_EWR1b in A42E NMAR = 135.03x10 ⁶ m ³ PES=B/C category	Base Flows Maintenance flows and drought flows.	Drought flows (m ³ /s) Maintenance flows (m ³ /s) Low flows (m ³ /s)
			15_6		Quantity	Low flows	The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users	Monitoring of discharge of Mokolo River during biological surveys	Oct 0.120 0.005 Nov 0.120 0.005 Dec 0.320 0.020 Jan 0.700 0.050 Feb 1.400 0.080 Mar 1.150 0.065 Apr 0.850 0.050 May 0.600 0.040 Jun 0.450 0.020
		Mokolo River from Dwaars River to confluence with Sterkstroom, Klein Vaalwaterspruit (A42E)							

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
									Jul	0.320
									Aug	0.250
								Orthophosphate (PO ₄) as Phosphorus	≤ 0.020 milligrams/litre (mg/l) (50 th percentile)	0.015
						Nutrients	Instream concentration of nutrients as specified must be maintained to protect the aquatic ecosystem health and ensure the prescribed ecological category is met.	Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.5 milligrams/litre (50 th percentile)	0.010
						Salts	Instream concentration of salinity must be maintained to protect present ecological state and the aquatic ecosystem health.	Electrical Conductivity	≤ 30 millSiemens/metre (95 th percentile)	
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.0 (95 th percentile)	
						System Variables	A baseline assessment to determine the present state instream turbidity is required. Limits must be defined to control the impacts of slate mining on the resource.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.	
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Atrazine	≤ 0.078 milligrams/litre (mg/l)	
						Instream	Habitat diversity should improve from a B/C ecological category to a B category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82%	
						Riparian habitat	Riparian vegetation should be maintained within a B/C ecological category or better condition.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = B/C ≥ 78%	
						Fish	Fish community should be maintained within a B/C ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Assessment Index (FRAI)	Fish ecology category = B/C FRAI ≥ 78%	
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within B/C ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System 5 (SASS5)	MIRAI EC = B/C ≥ 78% SASS ≥ 140 ASPT ≥ 6.0 (MOK_EWR1b in A42E)	

Table 18: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 16: LOWER MOKOLO

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
16: LOWER MOKOLO	II	Tambotie River A42H (major portion-eastern)	16_1	B/C	Biota	Habitat	Habitat diversity should be maintained in a B ecological category.	Index of Habitat Integrity	Instream Habitat Integrity EC = B $\geq$ 82%
						Riparian habitat	Riparian vegetation should be maintained within B ecological category. Maintain state of riparian zone.	Index of Habitat Integrity	VEGRAI EC = B $\geq$ 82%
						Fish	Fish community should be maintained within a B ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category. Maintain flow velocity/depth for species <i>CPRE</i> , <i>CPAR</i> , <i>LCYL</i> , <i>LRUD</i> and habitat sensitive species <i>MIMAC</i> and <i>AJOH</i> .	Fish Response Assessment Index (FRAI)	Fish ecology category = B FRAI $\geq$ 82% Sample 20+ species per sample effort Sample 5 <i>BBR</i> and 3 <i>PCAT</i> in 20min effort
		Poer-se-Loop (upper catchment) (A42G)	16_2		Habitat	Instream	Habitat diversity must be maintained in a B ecological category. Monitor abstraction and flow regime.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B $\geq$ 82%
						Riparian habitat	Riparian vegetation must be maintained within B ecological category. Maintain state of riparian zone.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = B $\geq$ 82%

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Biota	Fish	Fish community should be maintained within a B ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category. Maintain flow velocity/depth for flow dependent and habitat sensitive species. (upper catchment)	Fish Response Assessment Index (FRAI)	Fish ecology category B FRAI $\geq 82\%$ Sample 25+ species per sample effort Sample 5 BBR/ and 3 PCAT in 20min effort
						Nutrients	Instream concentration of nutrients must be maintained to sustain aquatic ecosystem health and ensure the prescribed ecological category is met.	Orthophosphate (PO_4) as Phosphorus	≤ 0.05 milligrams/litre (mg/l) (50 th percentile)
								Nitrate (NO_3) & Nitrite (NO_2) as Nitrogen	≤ 0.1 milligrams/litre (50 th percentile)
						Salts	Instream concentration of salinity must be maintained to protect present ecological state and the aquatic ecosystem health.	Electrical Conductivity	≤ 55 millisiemens/metre (mS/m) (95 th percentile)
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
						System Variables	A baseline assessment to determine the present state instream turbidity is required. Limits must be defined to control the impacts of slate mining on the resource.	Turbidity	A 10% variation from background concentration is allowed. Limits must be determined.
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Atrazine	≤ 0.078 milligrams/litre (mg/l)
								Aluminium (Al)	≤ 0.062 milligrams/litre (mg/l) (95 th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO				
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95th percentile)				
								Lead (Pb) hard	≤ 0.0057 milligrams/litre (mg/l) (95th percentile)				
								Copper (Cu) hard	≤ 0.0048 milligrams/litre (mg/l) (95th percentile)				
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)				
								Cobalt (Co)	≤ 0.05 milligrams/litre (mg/l) (95th percentile)				
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95th percentile)				
								Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82%				
						Habitat	Instream	Habitat diversity should be maintained in a B ecological category.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = B ≥ 82%			
											Riparian habitat		
							Mokolo main stem to Tambolie confluence below (bedrock reach (sand deposit to, wider portion of river)	16_5_1	Quantity	Low flows	EWR maintenance low and drought flows: Mokolo River at MOK_EWR4 in A42G NMAR = 253.5x10 ⁶ m ³ PES=C category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)
												Oct	0
												Nov	0
A42G along main stem river							Dec	0					
							Jan	0					
							Feb	0					
							Mar	0					
							Apr	0					
							May	0					
							Jun	0					
							Jul	0					
							Aug	0					
							Sep	0					

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
						High flows	EWR high flows: Mokolo River at A42G NMAR = 253.5x10⁶ m³ REC=C category High flows must be met as specified to support aquatic ecosystem requirements.	Floods Monitoring of Mokolo River at A4H013	
						Nutrients	Instream concentration of nutrients must be maintained to sustain aquatic ecosystem health, and maintain ecological status.	Orthophosphate (PO₄⁻³) as Phosphorus Nitrate (NO₃⁻) & Nitrite (NO₂⁻) as Nitrogen	≤ 0.02 milligrams/litre (mg/l) (50th percentile) ≤ 0.05 milligrams/litre (50th percentile)
						Salts	Instream concentration of salinity must be maintained to protect present ecological state and the aquatic ecosystem health.	Electrical Conductivity Sulphate Sodium	≤ 30 milliSiemens/metre (mS/m) (95th percentile) ≤ 20 milligrams/litre (95th percentile) ≤ 20 milligrams/litre (95th percentile)
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
						System Variables	A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
							Dissolved oxygen levels must be attained to support the aquatic ecosystem.	Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Atrazine	≤ 0.078 milligrams/litre (mg/l)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Habitat	Instream	Habitat diversity must be improved from a B/C ecological category to a B category. Monitor abstraction and flow regime.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82%
						Riparian habitat	Riparian vegetation must be improved from a C ecological category to a B/C category. Ensure undergrowth maintained to allow for recruitment of <i>Xanthocercis zambesiaca</i> during VEGRAI assessments. Maintain riparian zone	Index of Habitat Integrity, Vegetation Response Assessment Index.	VEGRAI EC = B/C ≥ 80%
						Fish	Fish community must be improved from a C ecological category to a B category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category. Maintain flow velocity/depth for flow dependent and habitat sensitive species.	Fish Response Assessment Index (FRAI)	Fish ecology category = B/C FRAI ≥ 78% Sample 25+ species per sample effort Sample 5 BBR/ and 3 PCAT in 20min effort
						Semi-Aquatic biota	The suitability of this stretch of river to serve as a habitat for aquatic bird and mammal populations must be maintained through proper habitat management	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
					Biota	Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5)	MIRAI macroinvertebrates EC = C ≥ 62% SASS ≥ 80 ASPT ≥ 5.2
						Low flows	Maintain flows in river to support wetland requirements at in A42J	Base Flows	Wetland requirements for the flood plain – Monitor flows at new weir (was A4H014)
						Nutrients	Instream concentration of nutrients must be maintained to sustain	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.01 milligrams/litre (mg/l) (50 th percentile)

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
		Mokolo main stem from Tambolie confluence to Limpopo A42H, A42J along main stem river	16_5_2				aquatic ecosystem health, and maintain ecological status.	Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.05 milligrams/litre (50 th percentile)
						Salts	Instream concentration of salinity must be maintained to protect present ecological state and the aquatic ecosystem health.	Electrical Conductivity	≤ 30 milliSiemens/metre (mS/m) (95 th percentile)
								Sulphate	≤ 20 milligrams/litre (95 th percentile)
								Sodium	≤ 20 milligrams/litre (95 th percentile)
							pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements.	pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)
						System Variables	A baseline assessment to determine the present state instream turbidity is required.	Turbidity	A 10% variation from background concentration is allowed.
							Dissolved oxygen levels must be attained to support the aquatic ecosystem.	Dissolved oxygen	≥ 6 milligrams/litre (mg/l)
								Aluminium (Al)	≤ 0.062 milligrams/litre (mg/l) (95 th percentile)
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)
								Lead (Pb) hard	≤ 0.0057 milligrams/litre (mg/l) (95 th percentile)
								Copper (Cu) hard	≤ 0.0048 milligrams/litre (mg/l) (95 th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95 th percentile)
								Cobalt (Co)	≤ 0.05 milligrams/litre (mg/l) (95 th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95 th percentile)
								Atrazine	≤ 0.078 milligrams/litre (mg/l)
						Toxics	The concentrations of toxicants must pose no risk to aquatic organisms and to human health.		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
					Habitat	Instream	Habitat diversity must be improved from a D ecological category to a C/D category. Monitor abstraction and flow regime to upstream areas (16_5_1).	Index of Habitat Integrity, Rapid Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = C/D ≥ 58%
						Riparian habitat	Riparian vegetation must be improved from a D ecological category to a C/D category. Ensure undergrowth maintained to allow for recruitment of <i>Xanthocercis zambeziaca</i> during VEGRAI assessment.	Index of Habitat Integrity, Vegetation Response Assessment Index.	VEGRAI EC = C/D ≥ 58%
					Biota	Fish	Fish community must be improved from a D ecological category to a C/D category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Assessment Index (FRAI)	Fish ecology category = C/D FRAI ≥ 58% Sample 12+ species per sample effort
						Semi-aquatic biota	This river reach must be maintained to serve as a habitat for aquatic bird and mammal populations through proper habitat management. Maintain riparian zone.	Aquatic birds/indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.

Table 19: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 17a: MOTHLABATSI / MAMBA

IUA		Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO			
17a: MOTHLABATSI / MAMBA	I	Mamba River (A41B)	17a_1	B/C	Quantity	Low flows	Low flows	EWR maintenance low and drought flows: Mamba River at MAT_EWR3 in A41B NMAR = 9.54x10 ⁶ m ³ REC=B/C category	Base Flows		Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)	

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO		
							The maintenance low flows and drought flows must be attained to support the aquatic ecosystem and the downstream users.	biological surveys	Mar	0.129	0.011
									Apr	0.090	0.011
									May	0.058	0.004
									Jun	0.045	0.011
									Jul	0.039	0.011
									Aug	0.035	0.011
									Sep	0.030	0.007
							Instream concentration of nutrients as specified maintained to protect the aquatic ecosystem health and the ecological integrity of the system.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.015 milligrams/litre (mg/l) (50 th percentile)		
					Quality	Nutrients		Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.25 milligrams/litre (50 th percentile)		
						Salts	Instream salinity levels as specified must be maintained to protect the aquatic ecosystem health and ecological integrity of the system.	Electrical Conductivity	≤ 20 milliSiemens/metre (mS/m) (95 th percentile)		
						Instream	Habitat diversity must be maintained in a B/C ecological category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC= B/C ≥ 78%		
					Habitat	Riparian habitat	Riparian vegetation must be maintained in a B/C ecological category. Ensure no development into riparian zone.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = B/C ≥ 78%		
						Fish	Fish community must be maintained within a C ecological category. Maintain low flow regime to accommodate flow velocity and depth classes for flow dependent species.	Fish Response Assessment Index (FRAI).	Fish ecology category = C FRAI ≥ 62% Sample 7+ species per sample effort. Sample 8 AURA and 2 CTHE during sampling effort		
					Biota	Semi-aquatic biota	This river reach must be maintained to serve as a habitat and migration corridor for aquatic bird populations through proper habitat management. Protected riparian zone – no encroachment into riparian.	Aquatic birds species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.		
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or	Macroinvertebrate Response Assessment Index and the South African Scoring System	MIRAI EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 5.5		

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
							improved upon.	Version 5 (SASS5)		
					Quantity	Low flows	EWB maintenance low and drought flows: Matlabas at MAT_EWR2 in A41C NIMAR = 32.80x10⁶m³ REC=B/C category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem.	Base Flows Maintenance flows and drought flows. Monitoring of discharge of Matlabas River at A4H004	Maintenance Low flows (m³/s) Drought flows (m³/s)	Oct 0.153 0.007 Nov 0.178 0.012 Dec 0.220 0.080 Jan 0.280 0.101 Feb 0.373 0.095 Mar 0.330 0.116 Apr 0.265 0.077 May 0.208 0.071 Jun 0.193 0.070 Jul 0.179 0.065 Aug 0.168 0.034 Sep 0.154 0.008
					Quality	Nutrients	Instream concentration of nutrients as specified maintained to protect the aquatic ecosystem health and the ecological integrity of the system.	Orthophosphate (PO ₄ ⁻) as Phosphorus	≤ 0.015 milligrams/litre (mg/l) (50 th percentile)	
						Salts	Instream salinity levels as specified must be maintained to protect the aquatic ecosystem health and ecological integrity of the system.	Nitrate (NO₃⁻) & Nitrite (NO₂⁻) as Nitrogen	≤ 0.25 milligrams/litre (50 th percentile)	
					Habitat	Instream	Habitat diversity must be improved from a C ecological category to a B/C category.	Electrical Conductivity	≤ 20 milliSiemens/metre (mS/m) (95 th percentile)	
						Riparian habitat	Riparian vegetation must be maintained in a C ecological category.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B/C ≥ 78%	
					Biota	Fish	Fish community must be maintained within a C ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Index of Habitat Integrity, Vegetation Response Assessment Index.	VEGRAI EC = C ≥ 62%	
							Fish community must be maintained within a C ecological category. An assessment of the fish community should be conducted annually to monitor against the prescribed ecological category.	Fish Response Assessment Index (FRAI)	Fish ecology category = C FRAI ≥ 62%	
						Semi-aquatic biota	This river reach must be maintained to serve as a habitat for aquatic bird and mammal populations	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river	

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
							through proper habitat management. Maintain riparian zone.		reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.	
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 140 ASPT ≥ 5.5	
					Quantity	Low flows	EWR maintenance low and drought flows: Matlabas Zyn Kloof at MAT_EWR1 in A41A NMAR = 5.23x10 ⁶ m ³ REC=A category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem	Base Flows Maintenance flows and drought flows. Monitoring of discharge of Matlabas Zyn Kloof during biological surveys	Maintenance Low flows (m³/s)	Drought flows (m³/s)
				Oct					0.053	0.022
				Nov					0.057	0.027
				Dec					0.063	0.030
				Jan					0.075	0.037
				Feb					0.094	0.041
				Mar					0.086	0.037
				Apr					0.076	0.031
				May					0.065	0.030
				Jun					0.065	0.033
					Jul	0.061	0.032			
					Aug	0.060	0.031			
					Sep	0.056	0.030			
							Instream Habitat Integrity must be improved from a B ecological category to an A category.	Index of Habitat Integrity	Instream Habitat Integrity EC = A ≥ 90%	
						Riparian habitat	Riparian vegetation must be maintained in a B ecological category.	Index of Habitat Integrity, Vegetation Response Assessment Index.	VEGRAI EC = B ≥ 82%	
					Biota	Fish	Fish community must be maintained within a B ecological category. Maintain low flow regime to accommodate flow velocity and depth classes for flow dependent species.	Fish Response Assessment Index (FRAI).	Fish ecology category = B FRAI ≥ 82% Sample 5+ species per sample effort. Sample 8 AURA during sampling effort	

Table 20: Resource Quality Objectives for RIVERS AND DAMS in priority Resource Units in the Integrated Unit of Analysis 17b: MATLABAS / LIMPOPO

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO	
17b: MATLABAS	II	Matlabas (A41D, A41C)	17b_1	B/C	Quantity	Low flows	EWB maintenance low and drought flows: Matlabas at MAT_EWR4 in A41C NMAR = 35.58x10⁶m³ REC=B category The maintenance low flows and drought flows must be attained to support the aquatic ecosystem	Base Flows	Maintenance Low flows (m ³ /s)	Drought flows (m ³ /s)
									Oct	0.151
									Nov	0.178
									Dec	0.225
									Jan	0.285
									Feb	0.398
									Mar	0.339
									Apr	0.266
									May	0.208
									Jun	0.192
									Jul	0.178
									Aug	0.166
									Sep	0.151
								Orthophosphate (PO ₄) as Phosphorus	≤ 0.050 milligrams/litre (mg/l) (50 th percentile)	
						Nutrients	Instream concentration of nutrients must be maintained to sustain aquatic ecosystem health, and maintain ecological status. Instream concentration of salinity must be maintained to protect present ecological state and the aquatic ecosystem health.	Nitrate (NO ₃ ⁻) & Nitrite (NO ₂ ⁻) as Nitrogen	≤ 0.07 milligrams/litre (50 th percentile)	
								Electrical Conductivity	≤ 40 milliSiemens/metre (mS/m) (95 th percentile)	
					Quality	Salts		Sulphate	≤ 20 milligrams/litre (50 th percentile)	
								pH range	6.5 (5 th percentile) and 8.5 (95 th percentile)	
						System Variables Toxics	pH range must be maintained within limits specified to support the aquatic ecosystem and water user requirements. A baseline assessment to determine the present state instream turbidity is required. Dissolved oxygen levels must be attained to support the aquatic ecosystem. The concentrations of toxicants must pose no risk to aquatic organisms and to human health.	Turbidity	A 10% variation from background concentration is allowed.	
								Dissolved oxygen	≥ 6 milligrams/litre (mg/l)	
								Aluminium (Al)	≤ 0.062 milligrams/litre (mg/l) (95 th percentile)	
								Manganese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95 th percentile)	
								Iron (Fe)	≤ 0.1 milligrams/litre (mg/l) (95 th percentile)	

IUA	Class	River	Resource Unit	Ecological Category	Component	Sub-component	Narrative RQO	Indicator	Numerical Limit RQO
								Lead (Pb) hard	≤ 0.0057 milligrams/litre (mg/l) (95th percentile)
								Copper (Cu) hard	≤ 0.0048 milligrams/litre (mg/l) (95th percentile)
								Nickel (Ni)	≤ 0.07 milligrams/litre (mg/l) (95th percentile)
								Cobalt (Co)	≤ 0.05 milligrams/litre (mg/l) (95th percentile)
								Zinc (Zn)	≤ 0.002 milligrams/litre (mg/l) (95th percentile)
						Instream	Habitat diversity must be maintained in a B ecological category. Protect instream integrity by controlling land based impacts. Connectivity to Limpopo River must be maintained.	Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM)	Instream Habitat Integrity EC = B ≥ 82%
						Riparian habitat	Riparian vegetation must be maintained in a B ecological category.	Index of Habitat Integrity, Vegetation Response Assessment Index	VEGRAI EC = B ≥ 82%
						Fish	Fish community must be maintained within a B ecological category. Maintain flow velocity and depth class protection for sensitive species (flow sensitive: <i>LMOL</i> , <i>BIMB</i> and habitat sensitive: <i>PCA7</i>)	Fish Response Assessment Index (FRAI)	Fish ecology category = B FRAI ≥ 82% Sample 13+ species during sample effort
						Semi-aquatic biota	This river reach must be maintained to serve as a habitat for aquatic bird and mammal populations through proper habitat management. Maintain riparian zone.	Aquatic birds/Indicator mammal species	A baseline assessment should be conducted to determine the aquatic bird community and representative mammal species along the river reach. There is a need to set a numerical RQO for density of animals/birds based on the available/collected data.
						Aquatic macroinvertebrates	Macroinvertebrate assemblage must be maintained within a C ecological category or improved upon.	Macroinvertebrate Response Assessment Index and the South African Scoring System Version 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.0

Table 21: Resource Quality Objectives for PRIORITY WETLAND CLUSTERS AND SYSTEMS in selected Resource Units in the Mokolo, Matlabas, Crocodile (West) and Marico WMA

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
1: UPPER CROCODILE / HENNOPS / HARTBEEPSPOORT	1_1	Bronkhorstfontein Pan Complex (Depression/Pan)	Quantity	Pan wetted perimeter as measured from desktop mapping in relation to antecedent rainfall.	Water quantity impacts must be managed so as not to undermine the ecological value of these pan systems. In particular, abstraction or artificial water inputs should be limited in the pans so that the depth and duration of inundation is maintained within the normal range for high, average and low rainfall years.	Compile an accurate desktop basemap for the systems prior to the start of monitoring using the most recent available remote imagery and determine the wetted perimeter in relation to antecedent rainfall for selected pans. Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there have been any measurable changes in the relationship between wetted perimeter and antecedent rainfall in the pans selected.
			Quality	pH, Electrical Conductivity, TDS, Total Alkalinity as CaCO ₃ , Sodium, Calcium, Magnesium, Sulphate, Iron, Chloride, Potassium, Magnesium, Manganese, Aluminium, Phosphorous, Silica, Fluoride, Ammonia and Nitrate.	Water quality impacts to the pan systems must be restricted to ensure that the water and sediment chemistry remain within the baseline range (anion and cation concentration to pan volume relationship) for this particular water chemistry pan type.	For selected pans, sample every 3 to 5 years.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all the pans units in the wetland complex	Area based weighted Average PES category of C/D must be maintained.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
	1_1 1_2	Rietvlei Wetland Complex Channelled and Unchannelled valley bottom (peatland	Quantity	Permanent saturation.	Permanent saturation is required to maintain the peat. The flows should also be such that they do not pose a threat to the unchannelled structure/geomorphology of the wetland system.	During the habitat assessment determine whether the system is saturated and peat is still present.
			Habitat	Desktop PES Category (based on a semi-quantitative score for the wetland. The extent and distribution of peat and populations of peat forming plants species in the wetland.	Wetland vegetation and geomorphology must be maintained to protect the unchannelled character of the system. Viable populations of peat forming plant species must be maintained.	Compile an accurate desktop basemap for the system prior to the start of monitoring using the most recent available remote imagery and determine/estimate and map the extent of peat and peat forming plant species in the system. Undertake a desktop PES assessment and determine the area based weighted average score for the wetland

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
	1_3	Glen Austin Pan (Depression / Pan)			Area based weighted Average PES category of B although the likely best attainable state Category is B/C. Peat distribution and extent should remain at least unchanged/stable or be increasing.	complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. During the habitat assessment determine/estimate whether the extent of peat in the system has changed. Estimate the extent of peat forming plant species. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Quantity	Pan wetted perimeter as measured from desktop mapping in relation to antecedent rainfall.	Water quantity impacts must be managed so as not to undermine the ecological value of the pan. In particular, abstraction or artificial water inputs should be limited in the pans so that the depth and duration of inundation is maintained within the normal range for high, average and low rainfall years.	Compile an accurate desktop basemap for the pan prior to the start of monitoring using the most recent available remote imagery and determine the wetted perimeter in relation to antecedent rainfall for the pan. Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there have been any measurable changes in the relationship between wetted perimeter and antecedent rainfall in the pan.
			Quality	pH, Electrical Conductivity, TDS, Total Alkalinity as CaCO ₃ , Sodium, Calcium, Magnesium, Sulphate, Iron, Chloride, Potassium, Magnesium, Manganese, Aluminium, Phosphorous, Silica, Fluoride Ammonia, Nitrate and Fluoride.	Water quality impacts to the pan systems must be restricted to ensure that the water and sediment chemistry remain within an acceptable normal range (anion and cation concentration to pan volume relationship) for this particular water chemistry pan type.	Sample every 3 to 5 years.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the pan – see the method of Kotze, 2016a and 2016b).	Area based weighted Average PES category of C/D although the likely BAS Category is D.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Biota	Breeding population of Giant Bullfrogs.	Maintain a viable breeding population of Giant Bullfrogs in the pan.	Verify from monitoring records and recorded sightings of adult bullfrogs and recorded breeding events. Report on this every 3 to 5 years.
			Quantity	Permanent saturation.	Permanent saturation is required to maintain the peat. The flows should also be such that they do not pose a threat to the unchannelled structure/geomorphology of sections of the wetland system.	Determine whether the system is saturated and peat is still present.
	1_4	Colbyn Valley Wetland Channelled and Unchannelled valley bottom (peatland)				

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
4: HEX / WATERKLOOFSPRUIT / VAALKOP	4_6	Waterkloofspruit Wetland Unchannelled bottom valley	Habitat	Desktop PES Category (based on a semi-quantitative score for the wetland). The extent and distribution of peat and populations of peat forming plants species in the wetland.	Wetland vegetation and geomorphology must be maintained to protect the system and overall biodiversity must be maintained including viable populations of peat forming plant species. Area based weighted Average PES category of B/C although the likely BAS Category is C. Peat distribution and extent should remain at least unchanged/stable or be increasing.	Compile an accurate desktop basemap for the system prior to the start of monitoring using the most recent available remote imagery and determine/estimate and map the extent of peat and peat forming plant species in the system. Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. During the habitat assessment determine/estimate whether the extent of peat in the system has changed. Estimate the extent of peat forming plant species. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
				Permanent saturation.	Permanent saturation is required to maintain the peat. The flows should also be such that they do not pose a threat to the unchannelled structure/geomorphology of the wetland system.	During the habitat assessment determine whether the system is saturated and peat is still present.
5: ELANDS / VAALKOP	5_1	Koster Pan Complex Depressions / Pans	Quantity	Desktop PES Category (based on a semi-quantitative score for the wetland). The extent and distribution of peat and populations of peat forming plants species in the wetland.	Wetland vegetation and geomorphology must be maintained to protect the unchannelled character of the system and overall biodiversity must be maintained including viable populations of peat forming plant species. Area based weighted Average PES category of A although the likely BAS Category is A/B. Peat distribution and extent should remain at least unchanged/stable or be increasing.	Compile an accurate desktop basemap for the system prior to the start of monitoring using the most recent available remote imagery and determine/estimate and map the extent of peat and peat forming plant species in the system. Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. During the habitat assessment determine/estimate whether the extent of peat in the system has changed. Estimate the extent of peat forming plant species. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
				Pan wetted perimeter as measured from desktop mapping in relation to antecedent rainfall.	Water quantity impacts must be managed so as not to undermine the ecological value of these pan systems. In particular, abstraction or artificial water inputs should be limited in the pans so that the	Compile an accurate desktop basemap for the systems prior to the start of monitoring using the most recent available remote imagery and determine the wetted perimeter in relation to antecedent rainfall for selected pans.

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
6a: KLEIN MARICO / KROMELLEMBROOG 8: MALMANIESLOOP					depth and duration of inundation is maintained within the normal range for high, average and low rainfall years.	Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there have been any measurable changes in the relationship between wetted perimeter and antecedent rainfall in the pans selected.
			Quality	pH, Electrical Conductivity, TDS, Total Alkalinity as CaCO ₃ , Sodium, Calcium, Magnesium, Sulphate, Iron, Chloride, Potassium, Magnesium, Manganese, Aluminium, Phosphorous, Silica, Fluoride Ammonia, Nitrate and Fluoride.	Water quality impacts to the pan systems must be restricted to ensure that the water and sediment chemistry remain within an acceptable normal range (anion and cation concentration to pan volume relationship) for this particular water chemistry pan type.	For selected pans, sample every 3 to 5 years.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all the pans units in the wetland complex).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
	6.1 8.1	Buffelshoek Wetland Complex Channelled and Unchannelled valley bottom	Quantity	Groundwater indicators apply (see groundwater indicators RU 6.1 and 8.1). Surface flow indicators need to be determined.	A constant baseflow must be maintained to ensure that the system remains perennial. Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply (see groundwater numerical limits). Undertake a preliminary wetland Reserve for the system and determine the ecological flow requirements of the wetland. Use these to set the numerical criteria for the water quantity component of the RQO's.
			Quality	River and groundwater indicators apply (see river and groundwater indicators).	River and groundwater RQO's apply (see river and groundwater RQO's).	River and groundwater numerical limits apply (see river and groundwater numerical limits). Update these based on the findings of the water quality component of the preliminary wetland Reserve.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of C although the likely BAS Category is C/D.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Protection zone	Groundwater indicators apply (see groundwater indicators).	Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply.
	6.1 8.1	Paardenvallei Wetland Complex (Malmaniesloop)	Quantity	Groundwater indicators apply (see groundwater indicators). Surface flow indicators need to be	A constant baseflow must be maintained to ensure that the system remains perennial.	Groundwater numerical limits apply. Undertake a preliminary wetland Reserve for the system and determine the ecological flow requirements of the

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
7: KAALOOG-SE-LOOP		Channelled and Unchannelled valley bottom		determined.	Groundwater RQO's apply (see groundwater RQO's).	wetland. Use these to set the numerical criteria for the water quantity component of the RQO's.
			Quality	River and groundwater indicators apply (see river and groundwater indicators).	River and groundwater RQO's apply (see river and groundwater RQO's).	River and groundwater numerical limits apply (see river and groundwater numerical limits). Update these based on the findings of the water quality component of the preliminary wetland Reserve.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of C/D although the likely BAS Category is D.	Compile an accurate desktop basemap for the system prior to the start of monitoring using the most recent available remote imagery and determine/estimate and map the extent of peat and peat forming plant species in the system. Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. During the habitat assessment determine/estimate whether the extent of peat in the system has changed. Estimate the extent of peat forming plant species. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Protection zone	Groundwater indicators apply (see groundwater indicators).	Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply (see groundwater numerical limits).
	7_1	Marico Eye Wetland (Kaaloo se Loop) Unchannelled valley bottom (peatland)	Quantity	Groundwater indicators apply (see groundwater indicators). Surface flow indicators need to be determined.	A constant baseflow must be maintained that ensure that the system remains perennial. Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply (see groundwater numerical limits). Undertake a preliminary wetland Reserve for the system and determine the ecological flow requirements of the wetland. Use these to set the numerical criteria for the water quantity component of the RQO's.
			Quality	River and groundwater indicators apply (see river and groundwater indicators).	River and groundwater RQO's apply (see river and groundwater RQO's).	River and groundwater numerical limits apply (see river and groundwater numerical limits). Update these based on the findings of the water quality component of the preliminary wetland Reserve.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland – see the method of Kotze, 2016a and 2016b).	Area based weighted Average PES category of A/B although the likely BAS Category is B.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. During the habitat assessment determine/estimate whether the extent of peat in the system has changed. Estimate the extent of peat forming plant species.
						Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
	7_1	Rietspruit Wetland Channelled and Unchannelled valley bottom				
			Protection zone	Groundwater indicators apply (see groundwater indicators).	Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply.
			Quantity	Groundwater indicators apply (see groundwater indicators).	A constant baseflow must be maintained to ensure that the system remains perennial. Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply.
			Quality	River and groundwater indicators apply (see river and groundwater indicators).	River and groundwater RQO's apply (see river and groundwater RQO's).	River and groundwater numerical limits apply.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES Category of C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
	7_1	Tufa Waterfall (Tufa)	Protection zone	Groundwater indicators apply (see groundwater indicators).	Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply.
			Quantity	Groundwater indicators apply (see groundwater indicators).	A constant baseflow must be maintained that ensure that the system remains perennial and the waterfall has a constant water supply. Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply.
			Quality	pH, Electrical Conductivity, TDS, Total Alkalinity as CaCO ₃ , Sodium, Calcium, Magnesium, Sulphate, Iron, Chloride, Potassium, Magnesium, Manganese, Aluminium, Phosphorous, Silica, Fluoride Ammonia, Nitrate and Fluoride.	Salinity levels should not increase. Concentrations must be maintained at levels to secure an Ideal/Good water quality status rich in calcium carbonate.	Electrical Conductivity: ≤ 50 mS/m Annual long-term trend should not approach the 95 th percentile (55 mS/m). Bi-annual monitoring of major constituents (macro elements).
			Protection zone	Groundwater indicators apply (see groundwater indicators).	Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply.

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
8: MALMANIESLOOP	8_1	Malmanieloop Wetland Complex Channelled and Unchannelled valley bottom (peatland)	Quantity	Groundwater indicators apply (see groundwater indicators). Surface flow indicators need to be determined.	A constant baseflow must be maintained to ensure that the system remains perennial and that most of the marginal and instream vegetation remains inundated throughout the summer growing season and that the rooting zone is saturated throughout the year. This is a requirement for enabling perennial obligate hydrophytes to complete their life cycle and reproduce and in order to maintain the peat in the system. Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply. Undertake a preliminary wetland Reserve for the system and determine the ecological flow requirements of the wetland. Use these to set the numerical criteria for the water quantity component of the RQOs.
			Quality	River and groundwater indicators apply (see river and groundwater indicators).	River and groundwater RQO's apply (see river and groundwater RQO's).	River and groundwater numerical limits. Update these based on the findings of the water quality component of the preliminary wetland Reserve.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex). The extent and distribution of peat and populations of peat forming plants species in the wetland.	Wetland vegetation and geomorphology must be maintained to protect the unchannelled character of the system and overall biodiversity must be maintained including viable populations of peat forming plant species. Area based weighted Average PES category of B although the likely BAS Category is C. Peat distribution and extent should remain at least unchanged/stable or be increasing.	Compile an accurate desktop basemap for the system prior to the start of monitoring using the most recent available remote imagery and determine/estimate and map the extent of peat and peat forming plant species in the system. Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. During the habitat assessment determine/estimate whether the extent of peat in the system has changed. Estimate the extent of peat forming plant species. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Protection zone	Groundwater indicators apply (see groundwater indicators).	Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply.

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
8: MALMANIESLOOP	8_1 9_2	Upper Molopo River Wetland Complex Channelled and Unchannelled valley bottom (peatland)	Quantity	Groundwater indicators apply. Surface flow indicators need to be determined.	A constant baseflow must be maintained to ensure that the system remains perennial and that most of the marginal and instream vegetation remains inundated throughout the summer growing season and that the rooting zone is saturated throughout the year. This is a requirement for enabling perennial obligate hydrophytes to complete their life cycle and reproduce and in order to maintain the peat in the system.	Groundwater numerical limits apply. Undertake a preliminary wetland Reserve for the system and determine the ecological flow requirements of the wetland. Use these to set the numerical criteria for the water quantity component of the RQOs.
				River and groundwater indicators apply (see river and groundwater indicators).	River and groundwater RQO's apply (see river and groundwater RQO's).	River and groundwater numerical limits apply. Update these based on the findings of the water quality component of the preliminary wetland Reserve.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex). The extent and distribution of peat and populations of peat forming plants species in the wetland.	Wetland vegetation and geomorphology must be maintained to protect the unchannelled character of the system and overall biodiversity must be maintained including viable populations of peat forming plant species. Area based weighted Average PES category of B although the likely BAS Category is C/D. Peat distribution and extent should remain at least unchanged/stable or be increasing.	Compile an accurate desktop basemap for the system prior to the start of monitoring using the most recent available remote imagery and determine/estimate and map the extent of peat and peat forming plant species in the system. Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. During the habitat assessment determine/estimate whether the extent of peat in the system has changed. Estimate the extent of peat forming plant species. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
				Groundwater indicators apply (see groundwater indicators).	Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply.
9: MALMANIESLOOP	8_1	Vergenoegd Wetland Channelled and Unchannelled valley bottom	Quantity	Groundwater indicators apply (see groundwater indicators). Surface flow indicators need to be determined.	A constant baseflow must be maintained to ensure that the system remains perennial. Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply. Undertake a preliminary wetland Reserve for the system and determine the ecological flow requirements of the wetland. Use these to set the numerical criteria for the water quantity component of the RQOs.
			Quality	River and groundwater indicators apply (see river and groundwater indicators).	River and groundwater RQO's apply (see river and groundwater RQO's).	River and groundwater numerical limits apply. Update these based on the findings of the water quality component of the preliminary wetland Reserve.

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
9: MOLOPO	9_2	Middle Molopo River Wetland Complex Channelled valley bottom	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Protection zone	Groundwater indicators apply (see groundwater indicators).	Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply.
			Quantity	Groundwater indicators apply (see groundwater indicators). Surface flow indicators need to be determined.	A constant baseflow must be maintained to ensure that the system remains perennial. Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply.
			Quality	River and groundwater indicators apply (see river and groundwater indicators).	River and groundwater RQO's apply (see river and groundwater RQO's).	Undertake a preliminary wetland Reserve linked to the one for Upper Molopo River Wetland and determine the ecological flow requirements of the wetland. Use these to set the numerical criteria for the water quality component of the RQOs. River and groundwater numerical limits apply (see river and groundwater numerical limits). Update these based on the findings of the water quality component of the preliminary wetland Reserve.
	9_3 9_5	Lower Molopo River Wetland Complex Channelled valley bottom	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland – see the method of Kotze, 2016a and 2016b). The extent and distribution of peat and populations of peat forming plants species in the wetland.	Wetland vegetation and geomorphology must be maintained to protect the unchannelled character of the system and overall biodiversity must be maintained including viable populations of peat forming plant species. Area based weighted Average PES category of C/D although the likely BAS Category is D. Peat distribution and extent should remain at least unchanged/stable or be increasing.	Compile an accurate desktop basemap for the system prior to the start of monitoring using the most recent available remote imagery and determine/estimate and map the extent of peat and peat forming plant species in the system. Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. During the habitat assessment determine/estimate whether the extent of peat in the system has changed. Estimate the extent of peat forming plant species. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
				Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of D.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
10: DINOKANA EYE / NGOTWANE DAM	10_1	Dinokana Wetland Unchannelled and Channelled valley bottom and Hillslope seepage wetlands	Quantity	Groundwater indicators apply (see groundwater indicators). Surface flow indicators need to be determined.	A constant baseflow must be maintained to ensure that the system remains perennial. Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply. Undertake a preliminary wetland Reserve for the system and determine the ecological flow requirements of the wetland. Use these to set the numerical criteria for the water quantity component of the RQOs.
			Quality	River and groundwater indicators apply (see river and groundwater indicators).	River and groundwater RQO's apply (see river and groundwater RQO's).	River and groundwater numerical limits apply. Update these based on the findings of the water quality component of the preliminary wetland Reserve.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Protection zone	Groundwater indicators apply (see groundwater indicators).	Groundwater RQO's apply (see groundwater RQO's).	Groundwater numerical limits apply (see groundwater numerical limits).
11b: GROOT MARICO / SEASONAL TRIBUTARIES	10_1	Ngotwane Wetland Unchannelled valley bottom	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland complex).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of B.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
	11_b_2	Lower Lenkwane River Wetland Unchannelled valley bottom linked to Floodplain	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of B.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
12: BIERSPRUIT	12_1	Kolobeng Wetland Complex Channelled valley bottom and floodplain	Quantity	Extent and frequency of flooding in relation to rainfall in the catchment.	Floods are necessary to inundate the floodplain thereby providing the wetting regime required for supporting the floodplain vegetation, particularly the facultative hydrophytic grasses, sedges and forbs that are dependent on flooding for their life cycles.	Using available remote imagery, estimate the extent and frequency of inundation/flooding in relation to rainfall for the wetland. Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there are any measurable changes in the relationship between flooding extent and rainfall events.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features.

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
13: LOWER CROCODILE 17b: MATLABAS / LIMPOPO	13_3 17_b_1	Lower Crocodile River Floodplain				Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Quantity	Extent and frequency of flooding in relation to rainfall in the catchment.	Floods are necessary to inundate the floodplain thereby providing the wetting regime required for supporting the floodplain vegetation, particularly the facultative hydrophytic grasses, sedges and forbs that are dependent on flooding for their life cycles.	Using available remote imagery, estimate the extent and frequency of flooding in relation to rainfall for the wetland. Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there are any measurable changes in the relationship between flooding extent and rainfall events.
			Quality	River indicators apply (see river indicators).	River RQO's apply (see river RQO's).	River numerical limits apply (see river numerical limits).
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Biota	Maintenance of a structurally and species diverse riparian zone.	The overall structural and species diversity of the riparian zone must be maintained.	Using a rapid field-based assessment monitor the structure and species diversity of the riparian zone at selected sites along the floodplain. Take fixed point photographs of key features. Report on this every 3 to 5 years.
14: TOLWANE / KULWANE / MORETELE / KLIPVOOR	14_1	Apies River Floodplain	Quantity	Extent and frequency of flooding in relation to rainfall in the catchment.	Floods are necessary to inundate the floodplain thereby providing the wetting regime required for supporting the floodplain vegetation, particularly the facultative hydrophytic grasses, sedges and forbs that are dependent on flooding for their life cycles.	Using available remote imagery, estimate the extent and frequency of flooding in relation to rainfall for the wetland. Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there are any measurable changes in the relationship between flooding extent and rainfall events.
			Quality	River indicators apply	River RQO's apply	River numerical limits apply.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Quantity	Extent and frequency of flooding in relation to rainfall in the	Floods are necessary to inundate the floodplain thereby providing	Using available remote imagery, estimate the extent and frequency of flooding in relation to rainfall for the

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
	14_3 14_4		Quality	catchment.	the wetting regime required for supporting the floodplain vegetation, particularly the facultative hydrophytic grasses, sedges and forbs that are dependent on flooding for their life cycles.	wetland. Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there are any measurable changes in the relationship between flooding extent and rainfall events.
				River indicators apply.		
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of B although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system. Verify from monitoring records and recorded sightings from available avifaunal reporting data. Report on this every 3 to 5 years.
			Biota	Reporting rates for aquatic/wetland dependent bird species.	Overall diversity and populations of aquatic/wetland dependent bird species must be maintained.	Using available remote imagery, estimate the extent and frequency of flooding in relation to rainfall for the wetland. Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there are any measurable changes in the relationship between flooding extent and rainfall events.
	14_3	Plat River Floodplain	Quantity	Extent and frequency of flooding in relation to rainfall in the catchment.	Floods are necessary to inundate the floodplain thereby providing the wetting regime required for supporting the floodplain vegetation, particularly the facultative hydrophytic grasses, sedges and forbs that are dependent on flooding for their life cycles.	River numerical limits apply. Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system. Verify from monitoring records and recorded sightings from available avifaunal reporting data. Report on this every 3 to 5 years.
				River indicators apply.	River RQO's apply.	
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	
			Biota	Reporting rates for aquatic/wetland dependent bird species.	Overall diversity and populations of aquatic/wetland dependent bird species must be maintained.	
	14_4	Tswaing Crator Pan Depression / Pan	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of A although the likely BAS Category is B.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
15. UPPER MOKOLO	15_1	Upper Mokolo River Wetland Complex	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of C although the likely BAS Category is C/D.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
		Channelled and Unchannelled valley bottom and Hillslope seepage wetlands	Biota	The continued presence of Blue Cranes within the pentads (5x5 minute squares - the mapping unit used in SABAP2) covering the wetlands.	The continued presence of Blue Cranes must be maintained.	Using the data generated by the South African Bird Atlas Project 2 (SABAP2), the continued presence of Blue Cranes within the pentads must be confirmed by ensuring that a reporting rate higher than 5 % is maintained for the affected pentad (2425_2800 and 2425_2805).
	15_1	Klein Sand River Wetland Complex	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features.
		Channelled and Unchannelled valley bottom and Hillslope seepage wetlands	Biota	The continued presence of Blue Cranes within the pentad (5x5 minute squares - the mapping unit used in SABAP2) covering the wetlands.	The continued presence of Blue Cranes must be maintained.	Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
	15_2	Frikkiesloot River Wetland Complex	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features.
		Channelled and Unchannelled valley bottom	Habitat	The continued presence of Blue Cranes within the pentad (5x5 minute squares - the mapping unit used in SABAP2) covering the wetlands.	The continued presence of Blue Cranes must be maintained.	Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
	15_2	Groofofonteinpruit Wetland Complex	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features.
		Channelled and Unchannelled valley bottom and Hillslope seepage wetlands	Biota	The continued presence of Blue Cranes within the pentad (5x5 minute squares - the mapping unit used in SABAP2) covering the wetlands.	The continued presence of Blue Cranes must be maintained.	Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
	15_5	Grootspuit Wetland Complex	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
		Channelled and Unchannelled valley bottom and Hillslope seepage wetlands	Biota	The continued presence of Blue Cranes within the pentad (5x5 minute squares - the mapping unit used in SABAP2) covering the wetlands.	The continued presence of Blue Cranes must be maintained.	Using the data generated by the South African Bird Atlas Project 2 (SABAP2), the continued presence of Blue Cranes within the pentad must be confirmed by ensuring that a reporting rate higher than 5 % is maintained for the affected pentad (2425_2800).
	15_5	Sandspruit Wetland Complex	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of C/D although the likely BAS Category is D.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
		Channelled and Unchannelled valley bottom and Hillslope seepage wetlands	Biota	The continued presence of Blue Cranes within the pentad (5x5 minute squares - the mapping unit used in SABAP2) covering the wetlands.	The continued presence of Blue Cranes must be maintained.	Using the data generated by the South African Bird Atlas Project 2 (SABAP2), the continued presence of Blue Cranes within the pentad must be confirmed by ensuring that a reporting rate higher than 5 % is maintained for the affected pentad (2430_2800).
	15_5	Sand River Wetland Complex	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of C/D although the likely BAS Category is D.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
		Channelled and Unchannelled valley bottom and Hillslope seepage wetlands	Biota	The continued presence of Blue Cranes within the pentads (5x5 minute squares - the mapping unit used in SABAP2) covering the wetlands.	The continued presence of Blue Cranes must be maintained.	Verify by undertaking a rapid field-based PES assessment of the wetland and take fixed point photographs of key features. Using the data generated by the South African Bird Atlas Project 2 (SABAP2), the continued presence of Blue Cranes within the pentads must be confirmed by ensuring that a reporting rate higher than 5 % is maintained for the affected pentad (2425_2800 and 2425_2805).
	15_5	Sand River Tributary Wetland Complex	Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for all wetland units in the wetland complex).	Area based weighted Average PES category of C although the likely BAS Category is C/D.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
		Channelled and Unchannelled valley bottom and Hillslope seepage wetlands				

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
16: LOWER MOKOLO	16_1 16_5_2	Tambotie River Floodplain	Quantity	Extent and frequency of flooding in relation to rainfall in the catchment.	Floods are necessary to inundate the floodplain thereby providing the wetting regime required for supporting the floodplain vegetation, particularly the facultative hydrophytic grasses, sedges and forbs that are dependent on flooding for their life cycles.	Using available remote imagery, estimate the extent and frequency of flooding in relation to rainfall for the wetland. Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there are any measurable changes in the relationship between flooding extent and rainfall events.
				River indicators for RU 16_5_2 and groundwater indicators as per the floodplain alluvial aquifer for RU 16_4 also apply.	River RQO's for RU 16_5_2 and groundwater RQO's as per the floodplain alluvial aquifer for RU 16_4 also apply.	River numerical limits for RU 16_5_2 and groundwater numerical limits as per the floodplain alluvial aquifer for RU 16_4 also apply.
				River indicators for RU 16_5_2 and groundwater indicators as per the floodplain alluvial aquifer for RU 16_4 apply.	River RQO's for RU 16_5_2 and groundwater RQO's as per the floodplain alluvial aquifer for RU 16_4 apply.	River numerical limits for RU 16_5_2 and groundwater numerical limits as per the floodplain alluvial aquifer for RU 16_4 apply.
				Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of A/B although the likely BAS Category is B/C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Biota	Reporting rates (RR) for aquatic/wetland dependent Red Data bird species.	Overall biodiversity and populations of floodplain dependent Red Data bird species must be maintained.	Verify from monitoring records and recorded sightings from available avifaunal reporting rate data.
				Maintenance of a structurally and species diverse riparian zone.	The overall structural and species diversity of the riparian zone must be maintained.	Using a rapid field-based assessment monitor the structure and species diversity of the riparian zone at selected sites along the floodplain. Take fixed point photographs of key features. Report on the above every 3 to 5 years.
				River indicators apply.	River RQO's apply.	River numerical limits apply.
				River indicators apply.	River RQO's apply.	River numerical limits apply.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland complex).	Area based weighted Average PES category of C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
				Extent and frequency of flooding in relation to rainfall in the	Floods are necessary to inundate the floodplain thereby providing	Using available remote imagery, estimate the extent and frequency of flooding in relation to rainfall for the
	16_5_2	Mokolo River Floodplain	Quantity	Extent and frequency of flooding in relation to rainfall in the	Floods are necessary to inundate the floodplain thereby providing	Using available remote imagery, estimate the extent and frequency of flooding in relation to rainfall for the

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
17a: MAMBA / MOTHLABATSI	17_a_2	Matlabas (Peatland) Channelled and Unchannelled valley bottom and Hillside seepage wetlands		Floodplain, Depressions, backwaters and Seepage wetlands	catchment.	the wetting regime required for supporting the floodplain vegetation, particularly the facultative hydrophytic grasses, sedges and forbs that are dependent on flooding for their life cycles. Flooding together with water in the alluvial aquifer also supports the riparian trees along edges of the floodplain.
				River indicators for RU 16_5_2 and groundwater indicators as per the floodplain alluvial aquifer for RU 16_4 also apply.	River RQO's for RU 16_5_2 and groundwater RQO's as per the floodplain alluvial aquifer for RU 16_4 also apply.	Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there are any measurable changes in the relationship between flooding extent and rainfall events.
				River indicators for RU 16_5_2 and groundwater indicators as per the floodplain alluvial aquifer for RU 16_4 apply.	River RQO's for RU 16_5_2 and groundwater RQO's as per the floodplain alluvial aquifer for RU 16_4 apply.	River numerical limits for RU 16_5_2 and groundwater numerical limits as per the floodplain alluvial aquifer for RU 16_4 also apply.
				Quality	River RQO's for RU 16_5_2 and groundwater RQO's as per the floodplain alluvial aquifer for RU 16_4 apply.	River numerical limits for RU 16_5_2 and groundwater numerical limits as per the floodplain alluvial aquifer for RU 16_4 apply.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of B/C although the likely BAS Category is C.	Undertake a desktop PES assessment and determine the area based weighted average score for the wetland complex. Verify by undertaking a rapid field-based PES assessment of selected pans and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
				Reporting rates (RR) for aquatic/wetland dependent Red Data bird species.	Overall biodiversity and populations of floodplain dependent Red Data bird species must be maintained.	Verify from monitoring records and recorded sightings from available avifaunal reporting rate data.
				Maintenance of a structurally and species diverse riparian zone.	The overall structural and species diversity of the riparian zone must be maintained.	Using a rapid field-based assessment monitor the structure and species diversity of the riparian zone at selected sites along the floodplain. Take fixed point photographs of key features.
			Protection zone	Groundwater indicators as per the floodplain alluvial aquifer for RU 16_4 apply.	Groundwater RQO's as per the floodplain alluvial aquifer for RU 16_4 apply.	Report on the above every 3 to 5 years.
			Quantity	Permanent saturation.	Permanent saturation is required to maintain the peat. The flows should also be such that they do not pose a threat to the unchannelled structure/geomorphology of the wetland system.	Groundwater numerical limits as per the floodplain alluvial aquifer for RU 16_4 apply.
			Habitat	Desktop PES Category (based on a semi-quantitative score for the wetland).	Wetland vegetation and geomorphology must be maintained to protect the	During the habitat assessment determine whether the system is saturated and peat is still present.
						Undertake a desktop PES assessment and determine the area based weighted average score for the wetland. Verify by undertaking a rapid field-based PES

Integrated Units of Analysis	RU	Wetland/Site	Component prioritised	Indicator	Narrative RQO	Numerical Criteria
17b: MATLABAS / LIMPOPO	17_b_1	Lower Matlabas River Floodplain	Quantity	Extent and frequency of flooding in relation to rainfall in the catchment.	unchannelled character of the system and overall biodiversity must be maintained including viable populations of peat forming plant species.	assessment of the wetland. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
					Area based weighted Average PES category of A although the likely BAS Category is A/B.	
			Quality	River indicators apply.	Floods are necessary to inundate the floodplain thereby providing the wetting regime required for supporting the floodplain vegetation, particularly the facultative hydrophytic grasses, sedges and forbs that are dependent on flooding for their life cycles.	Using available remote imagery, estimate the extent and frequency of flooding in relation to rainfall for the floodplain. Repeat the above every 3 to 5 years and assess and report on this with a view to assess if there are any measurable changes in the relationship between flooding and rainfall events.
					River RQO's apply.	River numerical limits apply. Undertake a desktop PES assessment and determine the area based weighted average score for the floodplain. Verify by undertaking a rapid field-based PES assessment of the system and take fixed point photographs of key features. Repeat every 3 to 5 years and assess and report on this with a view to assess if there have been any changes in the state of the system.
			Habitat	Desktop PES Category (based on a semi-quantitative area based weighted average score for the wetland).	Area based weighted Average PES category of A/B although the likely BAS Category is B.	
			Biota	Maintenance of a structurally and species diverse riparian zone.	The overall structural and species diversity of the riparian zone must be maintained.	Using a rapid field-based assessment monitor the structure and species diversity of the riparian zone at selected sites along the floodplain. Take fixed point photographs of key features. Report on this every 3 to 5 years.

Table 22: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 1: UPPER CROCODILE / HENNOPS / HARTEBESPOORT

IUA	Groundwater unit	RU	Sub-component	Resource Quality Objective	Indicator/ Measure	Numerical Limit
IUA1: Upper Crocodile/H	RU - G1	1_1, 1_2, 1_3, 1_8 and 1_9.	Quantity	Groundwater flow patterns based on piezometric elevations in aquifer units should not be reversed from its natural flow directions toward the local drainages (Hennops, Rietvlei and Bloubaanspruit systems).	Groundwater level depths (piezometric levels to show flow regime wrt surface water sources).	Dolomite aquifer systems: Saturation levels should not be lowered >6 m below an average water level depth of ~22 m (1_1 – 1_2), ~20 m (1_3), ~15 m (1_9), and ~34 m (1_8) in the dolomite aquifer area.
					Time series water level monitoring (Monthly) vs abstractions and rainfall	

IUA	Groundwater unit	RU	Sub-component	Resource Quality Objective	Indicator/ Measure	Numerical Limit
					input Abstraction of groundwater within prescribed zones from the river course/wetland/eye) Calculation of Stress Indexes (Aquifer Unit Use divided by Aquifer Unit Recharge) expressed as a percentage.	Water level recession rate must be less than 0.75 m/a. Abstraction zoning: should be regulated within a 1000 m radius from flowing eye's. Annual abstraction should not be larger than 65% of average annual recharge (i.e. SI of 65%);
				Sustainable abstractions at Grootfontein-Rietvlei and Pretoria Eyes. Groundwater balance (aquifer recharge and abstraction) needs to be assessed for wet and dry cycles (to secure groundwater yields during dry periods).		
				Aquifer water quality maintained to support ideal/good quality domestic water supply.	Nutrients - Nitrate (NO_3^- -N, mg/l). Bi-annual monitoring of major constituents (macro elements).	Nitrate: Less than 1.0 mg/l. Annual long-term trend should not approach the 50 th percentile (i.e. 0.9 NO_3^- -N mg/l).
					Salts - Electrical Conductivity (TDS), mg/l). Bi-annual monitoring of major constituents (macro elements).	Electrical Conductivity ≤ 30 mS/m; Annual long-term trend should not approach the 95 th percentile (i.e. 60 mS/m).
			Quality	Background water quality status in dolomite aquifer system downstream from Tweelopies Spruit and Bloubaank Spruit must be maintained. (Currently impacted EC=220 mS/m, $\text{SO}_4=965$ mg/l, and NO_3^- -N=3.3 mg/l, median values). Maintain good water quality status at Grootfontein-Rietvlei and Pretoria Dolomite Eye's.	EC, Sulphates and nitrates (origin AMD) in head water area (Tweelopies Spruit) Monthly water quality monitoring at source (TCTA WTW discharges).	Tweelopiespruit (RU 1_8): Limit long-term water quality indicators: EC level = 220 mS/m; SO_4 concentration = 200 mg/l; and NO_3^- -N concentration = 3.3 mg/l.
					EC, pH, SO_4 and NO_3^- -N to be used was quality indicators.	Limit long-term–Annual long-term: EC: 25 mS/m–27 mS/m (95 th percentile); SO_4 : <4.5 mg/l–6.4 mg/l SO_4 (95 th percentile); NO_3^- -N: 0.9 mg/l–1.0 mg/l (95 th percentile).
					Limit radius of influence (r) due to abstractions	Water level drawdown limited to dolomite sub-compartment unit.
					Distance from river (L)	Activity should be >500 m.
					Distance from wetland (L)	Activity should be > 1000 m.
					Distance from Dolomite Eye (L)	Activity should be > 1000 m.
			Protection Zone	Specifically dolomite aquifer systems (Hennops and Bloubaankspruit, Rietvlei wet lands, Grootfontein-Rietvlei and Pretoria Eyes); Specific water resource protection requirements should become audit conditions in WUL.	Ground stability (draw down limit, L, to protect buildings/roads /infrastructures)	Limited to 6 m in sub-compartment unit, unless specifically authorised.

Table 23: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 2: MAGALIES

IUA	Groundwater unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
MALONEY'S EYE	RU - G2	2_1; 2_3	Quantity	Maloney's Eye – Continuous flow at eye discharge (head waters of the Magalies River System).	Groundwater Levels (boreholes) in the eye's catchment, i.e. depth to groundwater level from ground elevation;	Dolomite aquifer saturation levels should not be lowered more than 6 m below an average water level depth of ~65 m in the Maloney's Eye catchment area;
					Flow volumes at Maloney's Eye (compared with rainfall input, water level trends and abstractions in catchment of the eye (i.e. Steenkoppies Compartment));	Flow volume at Maloney's Eye must not be lower than ~4 Mm ³ /a (i.e. the pre 1974 long-term yield since 1908 – 1973).
					Abstraction of groundwater within prescribed protection zones at the Maloney's Eye (pool and downstream course as per monitor programme).	Abstraction zoning: to be regulated with the flow at the eye in a radius of 1000 m from the eye pool area.
				Groundwater balance (aquifer recharge and irrigation abstraction)	Calculation of Stress Indexes (Aquifer Unit Use/ Aquifer Unit Recharge) as percentages. Only 65% of recharge value should be abstracted.	Limitation of SI value (<=65%); and Flow stage heights at discharge area (eye): <0.50 m/a) between annual recharge events.
				Nitrate values in the recharge area must be maintained to support domestic water users.	Nutrients - Nitrate (NO ³ -N, mg/l). Bi-annual Monitoring.	Nitrate: Less than 0.5 mg/l. Annual long-term trend should not approach the 95 th Percentile (0.5 mg/l)
			Quality	Remain Ideal Water Quality status at Maloney's Eye and lower Magalies River.	Sulphates (origin AMD) in head water area in the Randfontein Spruit and Bloubaan Spruit with possible link across A21D and A21F boundary (fractured Turlon dyke)	SO ₄ : Less than 5 mg/l. Annual long-term trend should not approach the 95 th percentile (7.5 mg/l)
				Salinity levels should not increase. Concentrations must be maintained at levels to secure an Ideal/Good water quality status.	Salinity - Electrical Conductivity (TDS), mg/l). Bi-annual monitoring of major constituents (macro elements).	Electrical Conductivity ≤26 mS/m; Annual long-term trend should not approach the 95 th percentile (30 mS/m).
					Stream Depletion Factor	Limit to <=5% of wetland/surface water resource
			Protection Zone		Distance from river (L).	Activity regulated if <500 m from downstream drainage
					Distance from Dolomite Eye (L).	Activity regulated if <1000 m from downstream drainage.
					Distance from wetland (L).	Activity regulated if <1000 m from downstream drainage.
					Ground stability (DCU drawdown limit, L) (Buildings/roads/infrastructures).	Limited to 6 m sub-compartment unit, unless specifically authorised.

Table 24: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 3: CROCODILE / ROODEKOPJES

IUA	Groundwater unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
IUA3: (Upper) Crocodile River (Alluvial Aquifers)	RU – G3 Alluvial River Section	3_1 and 3_2	Quantity	Time series water level monitoring (L) across local intergranular and fractured aquifer to establish aquifer-river water interaction; Water level observations (local piezometric status).	Water Level - Depth to groundwater level on alluvial aquifer system. Groundwater level trends; and Gwater level gradient in drainage valley.	Reverse groundwater gradient in a 500 m zone along main stem not allowed. Water level recession rate must be less than 1.0 m/a.
				Water balance (interception of Swater).	Positive/Negative water balance estimations; Volume (Q); Flow depletion at downstream gauging weirs.	Swater losses at gauging stations must equal authorised abstractions from river.
				Groundwater balance status in intergranular and fractured aquifer system	Calculation of Stress Indexes (Aquifer Unit Use/ Aquifer Unit Recharge) as percentages.	Limitation of SI value ($\leq 65\%$).
			Quality	Nitrate values in the recharge area must be maintained to support domestic water users.	Nutrients - Nitrate ($\text{NO}_3\text{-N}$, mg/l). Bi-annual Monitoring.	Nitrate: less than 6.0 mg/l; Annual long-term trend should not approach the 95 th percentile.
				Manage irrigation return flows from alluvial aquifer system. Salinity levels should not increase. Concentrations must be maintained at levels to secure an Ideal - Good water quality status.	Salts - Electrical Conductivity Monthly monitoring To monitor quality of return flows from alluvial area. SAR for alluvial aquifer water	Electrical Conductivity ≤ 75 mS/m; (95 th percentile)
			Protection Zone	Protect intergranular (alluvial) and fractured aquifer system along central Crocodile and Rose Spruit segments in terms of Sw-Gw Interaction Land use activities that may impact on the intergranular aquifer.	Stream Depletion Factor (manage distance between surface water source and well fields).	Limit impact to $<5\%$ of abstraction yield supported by surface water sources.
					Specify all land use activities on floodplain area and intergranular aquifer system.	Limit activities according to 50 day (microbial) and 365 (dilution) day water quality protection zoning (L).

Table 25: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 6a: KLEIN MARICO / KROMELLEMBOOG

IUA	Groundwater unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
6a: Klein Marico Eyes	RU – G6	6_1,	Quantity	Groundwater flow patterns based on piezometric elevations in aquifer units should not be reversed from its natural flow directions toward the local drainages (Upper Klein Marico River, Rhenosterfontein Spruit, and Lower Malmani Loop).	Water Levels - Depth to groundwater level from ground elevation. Time series water level monitoring (Monthly) vs abstractions and rainfall input	Dolomite aquifer systems: Saturation levels should not be lowered >6 metres below an average water level depth of ~21 m in the dolomite aquifer area. Water level recession rate must be less than 0.75 m/a.
				Groundwater balance (aquifer recharge and irrigation abstraction) needs to be assessed for wet and dry cycles (to secure groundwater yields during dry periods).	Calculation of Stress Index (Aquifer Unit Use/ Aquifer Unit Recharge) as percentages.	Annual abstraction should not be larger than 65% of average annual recharge (i.e. SI of 65%);
				Nitrate values must be maintained to support domestic water users (Ideal –Good water quality).	Nutrients - Nitrate (NO ³ -N, mg/l). Bi-annual Monitoring.	Nitrate: ~0.3 mg/l Long-term trend should not approach 95 th percentile (1.2 mg/l)
				Flouride – impact on users – elevated flouride levels	Flouride (F, mg/l)	Flouride: ~0.2 mg/l. Annual long-term trend should not approach the 50 th percentile (0.2 mg/l).
				Salinity levels should not increase. Concentrations must be maintained at levels to secure an Ideal-Good water quality status.	Salts - Electrical Conductivity (TDS), mg/l). Bi-annual monitoring of major constituents (macro elements). Na-Cl concentrations from mining activities in local eye catchments	Electrical Conductivity: ≤ 50 mS/m Annual long-term trend should not approach the 95 th percentile (60 mS/m)
			Protection Zone	Specifically dolomite aquifer systems (Irrigation area);	Map catchment (hectares) of the Eye and include a bulk water supply abstraction limitation.	Restriction of abstraction based on application of the Stress Index approach.
				Specific water resource protection requirements should become audit conditions in WUL;	Waterlevel drawdown limit in dolomite compartment unit. Limitation of irrigation area on property size (ha's).	Maximum 6 m (unless specifically authorised) Limit to 9% of deed area (ha's)
					Distance from local river system	Activity should be >500 m.
					Distance from Dolomite Eye (L)	Activity should be >1000 m, unless specifically authorised.
					Ground stability (DCU drawdown limit, L) (buildings/roads/infrastructures).	Limited to 6 m sub-compartment unit.

Table 26: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 7: KAALOOG-SE-LOOP

IUA	Groundwater unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
MARICO EYE (ref. Kaaloo Se Loop, Rietpruit and Bokkraal Eyes)	RU – G6	7_1,	Quantity	Continuous Flow measurement at selected dolomite eyes, i.e. Bokkraal Nr. 1 via the Vanstratensvlei River (only flow data from 1907 to 1943!).	Demarcation of eye catchment area (southern boundary not clear);	Dolomite aquifer systems: Saturation levels should not be lowered >6 metres below an average water level depth of ~21 m in the eye catchment area.
				(Other important eye discharging into the upper Groot Marico River is Rietpruit (via the Vanstratensvlei River));	Water Levels - Depth to groundwater level from ground elevation;	Water level recession rate must be less than 0.75 m/a.
				(Note: there are several other dolomite eyes in the area, but no information are available, except Rhenosterfontein, which falls in the A31D QC).	Time series water level monitoring (Monthly) vs abstractions and rainfall input; and	Abstraction zoning: should be regulated with flow of the eye in a radius of 1000 m from the Bokkraal and Rietpruit Eye pool areas.
				Groundwater balance (aquifer recharge and irrigation abstraction) needs to be assessed for wet and dry cycles (to secure groundwater yields during dry periods).	Abstraction of groundwater within prescribed zones from the river course/wetland/eye-spring)	Annual abstraction should not be larger than 65% of average annual recharge (i.e. SI of 65%);
				Nitrate values in the recharge area must be maintained to support domestic water users.	Calculation of Stress Indexes (Aquifer Unit Use/ Aquifer Unit Recharge) as percentages.	
			Quality	Flouride – impact on users – elevated flouride levels	Nutrients - Nitrate ($\text{NO}_3\text{-N}$, mg/l). Bi-annual monitoring.	Nitrate: ≤ 0.5 mg/l; Annual long-term trend should not approach the 75 th percentile (0.5 mg/l)
				Salinity levels should not increase. Concentrations must be maintained at levels to secure an Ideal/Good water quality status.	Flouride (F, mg/l) Bi-annual monitoring.	Flouride: ~ 0.1 mg/l Annual long-term trend should not approach the 95 th percentile (1.0 mg/l).
				Demarcated protection zones to be introduced, i.e. distances between activity and eye/pool. Specifically for dolomite aquifer systems (Marico Eye's and Klein Marico River downstream).	Salts - Electrical Conductivity (TDS), mg/l). Bi-annual monitoring of major constituents (macro elements). Map catchment (hectares) of the Eye and include a bulk water supply abstraction limitation. Limitation of irrigation area on property size (ha's). Distance from local river system	Electrical Conductivity: ≤ 50 mS/m Annual long-term trend should not approach the 95 th percentile (55 mS/m)
					Distance from Dolomite Eye (L)	Restriction of abstraction based on application of the Stress Index approach.
					Distance from wetland (L).	Limit to 9% of deed area (ha's)
			Protection Zone		Distance from Dolomite Eye (L)	Activity regulated if <500 m from downstream drainage
					Distance from wetland (L).	Activity regulated if <1000 m from downstream drainage.
					Waterlevel drawdown limit in dolomite compartment unit.	Activity regulated if <1000 m from downstream drainage. Limited to 6 m sub-compartment unit.

Table 27: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 8: MALMANIESLOOP

IUA	Ground-water unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
8: Malmannie Se Loop	RU – G8	8_1	Quantity	Groundwater flow patterns based on piezometric elevations in aquifer units should not be reversed from its natural flow directions toward the local drainages (Malmannie Eye Se Loop).	Water Levels - Depth to groundwater level from ground elevation.	Dolomite aquifer systems: Saturation levels should not be lowered >6 metres below an average water level depth of ~21 m in the dolomite aquifer area.
				Discharge areas (i.e. Malmannie Eye, Malmannie-Noupoort, Doornplaat Eye, Rietpoort Eye and Doornfontein Eye) should be protected against total depletion of water table).	Time series water level monitoring (Monthly) vs abstractions and rainfall input	Water level recession rate must be less than 0.75 m/a.
				Groundwater balance (aquifer recharge and irrigation abstraction) needs to be assessed for wet and dry cycles (to secure groundwater yields during dry periods).	Abstraction of groundwater within prescribed zones from the river course/wetland/eye-spring);	Abstraction zoning: should be regulated (1000 m for eye pools).
				Proper irrigation schedules need to be developed and applied at all times (100% compliance).	Abstraction - Volume (Q), Time series of abstraction-rainfall-water level of aquifer system.	Annual abstraction should not be larger than 65% of average annual recharge (i.e. SI of 65%);
				Water balance Status	Annual groundwater balance (aquifer recharge and irrigation abstraction) needs to be for wet and dry cycles.	
			Quality	Nitrate values in the recharge area must be maintained to support domestic water users (95 th percentile = 18 mg/l).	Calculation of Stress Indexes (Aquifer Unit Use/ Aquifer Unit Recharge) as percentages.	Nitrate: Less than 1.0 mg/l; Annual long-term trend should not approach the 75 th percentile (i.e. 3.5 mg/l)
				Salinity levels should not increase. Concentrations must be maintained at levels to secure a healthy water quality status.	Nutrients - Nitrate (NO ³ -N, mg/l). Bi-annual Monitoring.	Electrical Conductivity: ≤ 50 mS/m; Annual long-term trend should not approach the 95 th percentile (i.e. 85 mS/m)
				Fluoride – impact on users – elevated fluoride levels	Salts - Electrical Conductivity Monthly monitoring at discharge	Fluoride ~0.1 mg/l; Annual long-term trend should not approach the 95 th percentile (1.0 mg/l).
				Specifically dolomite aquifer systems (i.e. Malmannie Eye, Malmannie-Noupoort, Doornplaat Eye, Rietpoort Eye and Doornfontein Eye);	Waterlevel drawdown limit in dolomite compartment unit.	Maximum 6 m (unless specifically authorised)
				Specific water resource protection requirements should become audit conditions in WUL;	Stream Depletion Factor	Limit to <1/5% of wetland/surface water resource
			Protection Zone		Limitation of irrigation area on property size (ha's).	Limit to 9% of deed area (ha's)
					Distance from Dolomite Eye and wetland zone (L)	Should be >1000 m, unless specifically authorised for bulk water supplies.

Table 28: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 9: MOLOPO

IUA	Ground-water unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
9: Upper Molopo River	RU – G9 9_1 and 9_2		Quantity	Groundwater flow patterns based on piezometric elevations in aquifer units should not be reversed from its natural flow directions toward the local drainages	Water Levels - Depth to groundwater level from ground elevation.	Dolomite aquifer systems: Saturation levels should not be lowered >6 metres below an average water level depth of ~19 m in the dolomite water area.
				Discharge areas (i.e. Malapo Eye) should be protected against total depletion of water table (i.e. as the case is for Grootfontein Eye and Bodibe Eye.	Time series water level monitoring (Monthly) vs abstractions and rainfall input Abstraction of groundwater within prescribed zones from the river course/wetland/eye-spring)	Water level recession rate must be less than 0.75 m/a.
				Groundwater balance (aquifer recharge and irrigation abstraction) needs to be assessed for wet and dry cycles (to secure groundwater yields during dry periods). Proper irrigation schedules need to be developed and applied at all times (100% compliance).	Abstraction - Volume (Q). Time series of abstraction-rainfall-water level of aquifer system.	Abstraction zoning: should be regulated (1000 m for karst aquifer systems).
		Quality	Quality	Water balance Status	Annual groundwater balance (aquifer recharge and irrigation abstraction) needs to be for wet and dry cycles.	Annual abstraction should not be larger than 65% of average annual recharge (i.e. SI of 65%);
				Nitrate values in the recharge area must be maintained to support domestic water users. (Agricultural sources for nitrate)	Calculation of Stress Indexes (Aquifer Unit Use/ Aquifer Unit Recharge) as percentages.	
				Salinity levels should not increase. Concentrations must be maintained at levels to secure a healthy water quality status.	Nutrients - Nitrate ($\text{NO}_3\text{-N}$, mg/l). Bi-annual Monitoring Monthly monitoring at DWS gauging stations.	Nitrate: Less than 1.0 mg/l; Annual long-term trend should not approach the 95 th percentile (3.0 mg/l).
		Protection Zone	Protection Zone	Industrial/agricultural pollutants for Molopo, Grootfontein, Itsoseng (Bodibe) Eyes.	Salts - Electrical Conductivity. Monthly monitoring at DWS gauging stations.	Electrical Conductivity: ≤ 50 mS/m; Annual long-term trend should not approach the 95 th percentile (80 mS/m).
				Protection of Intergranular and Fractured Aquifers: Protect lower sections of Madibe, Polfontein Spruit and Molopo River against industrial/agricultural/microbial pollution.	Sulphates SO_4 concentrations Monthly water quality monitoring at source areas (eye's and well fields)	SO_4 : Less than 5.0 mg/l; Annual long-term trend should not approach the 95 th percentile (30 mg/l).
					Distance from drainage valley: based on 50 Day travel time (microbial) and 365 day dilution period (inorganic constituents) Distance from discharge area of dolomite eyes: based on 50 Day travel time (microbial) and 365 day dilution period (inorganic constituents)	<1000 m Protection zoning (DLMT aquifers) <500 m Protection zoning (hard rock aquifers).

Table 29: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 10: DINOKANA EYE / NGOTWANE DAM

IUA	Ground-water unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
IUA10: Dinokana Eye	RU – G10	10_1	Quantity	Discharge areas (i.e. Eyes/springs) should be protected against total depletion of water table)	Water levels: Time series water level monitoring (Monthly) vs abstractions and rainfall input.	Dolomite aquifer systems: Saturation levels should not be lowered >6 metres below an average water level depth of ~24 m in the dolomite aquifer area.
				Water balance Status (Water use regulation in recharge area)		Water level recession rate must be less than 0.75 m/a.
					Flow gauging at Eye discharge.	Abstraction zoning: should be regulated (1000 m radius from eye pool)
	RU – G10	10_1	Quality	Nitrate values in the recharge area must be maintained to support domestic water users.	Calculation of Stress Indexes (Aquifer Unit Use/ Aquifer Unit Recharge) as percentages.	Annual abstraction should not be larger than 65% of average annual recharge (i.e. SI of 65%).
				Flouride – impact on users – elevated flouride levels	Nutrients - Nitrate (NO ³ -N, mg/l). Bi-annual Monitoring.	Nitrate: ~1.0 mg/l; Annual long-term trend should not approach the 95 th percentile (1.1 mg/l).
				Salts: Concentrations must be maintained at levels to secure a healthy water quality status.	Flouride (F, mg/l) Bi-annual monitoring.	Flouride ~0.15 mg/l; Annual long-term trend should not approach the 95 th percentile (0.5 mg/l).
	RU – G10	10_1	Protection Zone	Specifically dolomite aquifer systems ; Specific water resource protection requirements should become audit conditions in WUL.	Salinity - Electrical Conductivity Monthly monitoring at discharge area.	Electrical Conductivity: ≤ 45 mS/m; Annual long-term trend should not approach the 95 th percentile (55 mS/m).
				Additional wellfields in the catchment area of the DML T Eyes.	Map catchment (hectares) of the eye and include a bulk water supply abstraction limitation.	Restriction of abstraction based on application of the Stress Index approach.
					Waterlevel drawdown limit in dolomite compartment unit.	Maximum 6 m (unless specifically authorised).
					Limitation of irrigation area on property size (ha's).	Limit to 9% of deed area (ha's).
					Distance from Dolomite Eye (L).	Should be >1000 m, unless specifically authorised for bulk water supplies.

Table 30: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 13: LOWER CROCODILE

IUA	Ground-water unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
13: Lower Crocodile River	RU – G13 Alluvial River Section	13_1 and 13_3	Quantity	Limit capturing of surface water when abstracting water via boreholes in the flood plain alluvial aquifer systems (there should be a distance limit).	Groundwater level gradient across intergranular aquifer system; and Groundwater level trends on intergranular aquifer systems.	Reverse groundwater gradient (river towards borehole/well field in a 500 m zone along main stem not allowed). Water level recession rate must be less than 1.0 m/a.
				Groundwater balance status in intergranular and fractured aquifer system	Stream/river flow gauging: Positive/Negative water balance estimations: Volume (Q); Flow depletion at downstream gauging weirs.	Surface water losses must be equal to authorised abstractions from river (incl. evapotranspiration losses).
					Calculation of Stress Indexes (Aquifer Unit Use/ Aquifer Unit Recharge) as percentages.	Annual abstraction should not be larger than 65% of average annual recharge (i.e. SI of 65%).
				Nitrate values in the recharge area must be maintained to support domestic water users.	Nutrients - Nitrate (NO ³ -N, mg/l). Bi-annual Monitoring.	Nitrate: ≤ 1.0 mg/l (95 th percentile)
			Quality	Dissolved salts in groundwater resource: Manage irrigation return flow quality from intergranular (alluvial) aquifer system. Concentrations must be maintained at levels to secure an Ideal - Good water quality status.	Salinity - Electrical Conductivity Weekly/Monthly monitoring. Quality of intergranular (alluvial) aquifer system. SAR for alluvial aquifer water	Electrical Conductivity: ≤ 85 mS/m (95 th percentile) SAR: Within appropriate limit for irrigation water.
				Minimum distance from surface water resource where groundwater may be abstracted (based on the hydraulic characteristics of the intergranular (alluvial) aquifer system).	Stream Depletion Factor.	Limit borehole/well field abstraction yield to less than 5% of flow in surface water resources (at specific abstraction point).
			Protection Zone	Land use activities that may impact on the alluvial aquifer. Specify protection zoning (i.e. distance from surface water resources) on intergranular (alluvial) aquifer system in terms of microbial and industrial/agricultural pollution migration.	Water quality measure (microbial migration towards surface water source); Water quantity measure (impact on surface water whilst abstracting from intergranular (alluvial) aquifer system.	Water quality limit (1): A 50 day (microbial) zoning, distance between activity and surface water source. Water quantity limit (2): A 365 (dilution) day water quality protection zoning (L).

Table 31: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 16: LOWER MOKOLO

IUA	Ground-water unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
16: Sandloop & Mokolo	RU – G16_4	16_4	Quantity	Limit depletion (lowering) of aquifer saturations levels (water levels).	Time series aquifer water level in a surrounding Reference Area which represent a background zone around a particular development, i.e. mining area, industrial area and agricultural development).	Water level recession rate must be less than 0.5 m/a in reference area of specific activity.
				Groundwater balance status in aquifer system (Inflow vs outflow).	Stress Index (Aquifer Unit Use/ Aquifer Unit Recharge), outside Area of Activity	Annual abstraction should not be larger than 65% of average annual recharge (i.e. SI of 65%) in Reference Area.
				Acidity of groundwater with regard to acid rock drainage potential (high in areas of coal mining and UCG's)	pH-value of groundwater in specified Reference Area.	pH value between 6.1 and 8.2 in Reference Area.
				Nutrition's in groundwater impacting on consumer's health.	Nitrate (NO ₃ -N) concentration in groundwater in specified Reference Area (T3)	Nitrate: ≤35 mg/l in Reference Area Annual long-term trend should not approach the 50 th percentile + 10% (~40 mS/m) – Based on local studies.
			Quality (Note that elevated background values for critical hydro-chemical elements may be a natural phenomenon and should be acknowledged, i.e. EC, NO ₃ -N, Cl, SO ₄ and F).	Dissolved salts in groundwater resources - Monitoring Medupi/ Grootegeluk and other impact related monitoring networks.	Salinity: Electrical Conductivity (EC) of groundwater in specified Reference Area (T3).	Electrical Conductivity ≤200 mS/m in Reference Area. Annual long-term trend should not approach the 50 th percentile + 10% (~220 mS/m) – Based on local studies.
				Macro chemical element of concern dissolved in groundwater.	Chloride (Cl) concentration in groundwater in specified Reference Area (T3).	Chloride: ≤300 mg/l in Reference Area. Annual long-term trend should not approach the 50 th percentile + 10% (~330mS/m) – Based on local studies.
				Acid Mine Water (or ARD) and decanting into surface water resources.	Sulphates (SO ₄) concentration in groundwater in specified Reference Area. (T3)	SO ₄ : ≤200mg/l in Reference Area. Annual long-term trend should not approach the 50 th percentile + 10% (~220 mg/l) – Based on local studies.
				Fluoride concentrations in groundwater supplied to domestic users.	Fluoride (F) concentration in groundwater in specified Reference Area. (T3)	Fluoride: ≤2.5 mg/l in Reference Area. Annual long-term trend should not approach the 50 th percentile + 10% (~2.7 mg/l) – Based on local studies.
			Protection Zone	Aquifer saturation levels	Water level set for a three (3) tier zoning area.	T1–Area of activity: Water level depletion required for activity. T2–Buffer Area: Water level recession rate must be less than 1.0 m/a. T3–Background or Reference Area: Water level recession rate must be less than 0.5 m/a.

IUA	Ground-water unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
				As per water quality specifications.	Water quality parameters set for a three (3) tier zoning area.	T1–Area of activity, concentration levels due to impact (95th Percentile of water quality in quaternary catchment): pH: 4.5 to 9.5; NO₃-N: 60 mg/l; Salinity EC: 780 mS/m; Chloride: 1500 mg/l; Sulphates: 1500 mg/l; and Fluoride: 6.4 mg/l. T2–Buffer Area: Allow up to 75th Percentile supported by a buffer area background study – actual values in observed in quaternary catchment A42J: pH: 6.5 to 8.5; NO₃-N: 35 mg/l; Salinity EC: 370 mg/l; Chloride: 650 mg/l; Sulphates: 600 mg/l; and Fluoride: 2.5 mg/l. T3–Background or Reference Area: Allow up to 50th Percentile + 10% in key constituents as indicated above (Quality).
16 : Mokoilo Mainstem	RU – G16	16_5_2	Quantity	Limit capturing of surface water when abstracting water via boreholes in the flood plain alluvial aquifer systems (there should be a distance limit).	Water levels in aquifer: Groundwater level gradient across intergranular aquifer system; and Groundwater level trends on intergranular aquifer systems.	Reverse groundwater gradient in a 500 m zone along main stem not allowed. Water level trends not <-1.0 m/a
				Interaction status between Swater and Gwater resources.	Positive/Negative water balance estimations: Volume (Q); Flow depletion at downstream gauging weirs.	Surface water losses must be equal to authorised abstractions from river (incl. evapotranspiration losses).
				Groundwater balance status in intergranular and fractured aquifer system	Calculation of Stress Index (Aquifer Unit Use/ Aquifer Unit Recharge) as percentages.	Annual abstraction should not be larger than 65% of average annual recharge (i.e. SI of 65%).

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Government Gazette Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID AFRIKA

Vol. 652

18 October 2019
Oktober

No. 42775

PART 3 OF 6

N.B. The Government Printing Works will not be held responsible for the quality of "Hard Copies" or "Electronic Files" submitted for publication purposes

ISSN 1682-5843



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IUA	Ground-water unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
			Quality that elevated background values for critical hydro-chemical elements may be a natural phenomenon and should be acknowledged, i.e. EC, NO ₃ -N, Cl, SO ₄ , and F).	Nutrients - Nitrate	Monthly monitoring at DWS gauging stations. Establish background "natural" nitrate concentration in water resource.	Nitrate: ≤ 0.5 mg/l (95 th percentile)
				Dissolved salts in groundwater resources -	Salinity - Electrical Conductivity Establish background "natural" salinity concentration in water resource.	Electrical Conductivity: ≤ 55 mS/m (95 th percentile)
				Acid Mine Water (or AMD) of nearby potential acidic underground rock types	Sulphates (SO ₄) concentration levels in groundwater. Establish background "natural" sulphate concentration in water resource.	SO ₄ : ≤ 80 mg/l. (95 th percentile)
				Limit capturing of surface water when abstracting water via boreholes in the flood plain alluvial aquifer systems (there should be a distance limit).	Stream Depletion Factor for Mokolo alluvial aquifer system, (L).	Limit borehole/well field abstraction yield to less than 5% of flow in surface water resources (at specific abstraction point).
			Protection Zone	Land use activities that may impact on the intergranular (alluvial) aquifer system.	Water quality measure (microbial migration towards surface water source); Water quantity measure (impact on surface water whilst abstracting from intergranular (alluvial) aquifer system.	Water quality limit (1): A 50 day (microbial) zoning, distance between activity and surface water source. Water quantity limit (2): A 365 (dilution) day water quality protection zoning (L).

Table 32: Regional and Resource Unit specific Resource Quality Objectives for GROUNDWATER in priority Resource Units in the Integrated Unit of Analysis 17b: MATLABAS / LIMPOPO

IUA	Ground-water unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
IUA 17: MATLABAS	RU – G17_b_2	17_b_2	Quantity	Limit depletion (lowering) of aquifer saturations levels (water levels).	Water levels in aquifer system; Groundwater level trends.	Water level recession rate must be less than 0.5 m/a.
				Groundwater balance status in aquifer system;	A Positive/Negative water balance.	Annual abstraction should not be larger than 65% of average annual recharge (i.e. SI of 65%).
				Calculation of Stress Index (Aquifer Unit Use/ Aquifer Unit Recharge) as percentages.		
				Nutrition's in groundwater impacting on consumer's health.		
			Quality (Note that elevated background values for critical hydro-chemical elements may be a natural phenomenon and should be acknowledged, i.e. EC, NO ₃ -N, Cl, SO ₄ , and F).	Dissolved salts in groundwater resources -	Nitrate (NO ₃ -N) concentration in groundwater in specified reference area.	Nitrate: ≤3.0 mg/l; Annual long-term trend should not approach the 75 th percentile (~3.3 mg/l).
				Macro chemical element of concern dissolved in groundwater.	Salinity: Electrical Conductivity (EC) of groundwater.	Electrical Conductivity ≤140 mS/m Annual long-term trend should not approach the 75 th percentile +10% (~155 mS/m).
				Generation of acid mine water from underlying potential acidic rocks; and Prevent future decanting of underground mine water into surface water resources.	Chloride (Cl) concentration in groundwater in specified reference area.	Chloride: ≤145 mg/l in Reference Area. Annual long-term trend should not approach the 75 th percentile +10% (~160 mg/l).
				Fluoride concentrations in groundwater supplied to domestic users.	Sulphates (SO ₄) concentration in groundwater in specified reference area.	SO ₄ : ≤85 mg/l. Annual long-term trend should not approach the 75 th percentile +10% (~94 mg/l).
				Aquifer saturation levels	Fluoride (F) concentration in groundwater in specified reference area.	Fluoride: ≤1.3 mg/l; Annual long-term trend should not approach the 75 th percentile +10% (~1.4 mg/l).
					Water level set for a three (3) tier zoning area.	T1–Area of activity: Water level depletion required for activity. T2–Buffer Area: Water level recession rate must be less than 1.0 m/a. T3–Background or Reference Area: Water level recession rate must be less than 0.5 m/a.
			Protection zoning	As per water quality specifications.	Water quality parameters set for a three (3) tier zoning area.	T1–Area of activity, maximum concentration levels due to impact (based on dataset in impacted area): pH: 4.5 to 9.5;

IUA	Ground-water unit	RU	Sub-component	Narrative RQO	Indicator/ Measure	Numerical Limit RQO
						NO₃-N: 60 mg/l; Salinity EC: 780 mS/m; Chloride: 1500 mg/l; Sulphates: 1500 mg/l; and Fluoride: 6.4 mg/l. T2-Buffer Area: Allow up to 75th Percentile of actual background values in quaternary catchment A41E: pH: 6.0 – 8.5; NO₃-N: 35.0 mg/l; Salinity EC: 370 mg/l; Chloride: 650 mg/l; Sulphates: 600 mg/l; and Fluoride: 2.5 mg/l. T3-Background or Reference Area: Allow up to 50th Percentile + 10% in key constituents as indicated above (see Quality above).

KITSISOKAKARETSO

**MOLAO WA BOSETŠHABA WA METSI, 1998
(MOLAO 36 WA 1998)****TLHOMAMISO YA DITLHOPA TSA MOTSWEDI WA METSI LE MAIKAELELO A BOLENG
JWA MOTSWEDI WA MADUTISO A MOKOLO, MATLABAS, CROCODILE (WEST) LE
MARICO**

Nna ke le, Gugile Nkwinti, Tona ya Metsi le Kgeleloleswe, go ya ka karolo 13(1) ya Molao wa Bosetšhaba wa Metsi, 1998 (Molao 36 wa 1998) ke tlhomamisa fano, kitsiso ya ditlhopa tsa metswedi ya metsi le maikaelelo a boleng jwa metswedi a madutiso a Mokolo, Matlabas, Crocodile (West) le Marico.



RRE GUGILE NKWINTI
TONA YA KGORO YA METSI LE KGELELOLESWE
LETLHA: 22/02/2019

THULAGANYO**TLHOMAMISO YA DITLHOPA TSA MOTSWEDI WA METSI LE MAIKAELELO A BOLENG
JWA MOTSWEDI WA MADUTISO A MOKOLO, MATLABAS, CROCODILE (WEST) LE
MARICO****1. DITLHALOSO**

Mo thulaganyong e, lefoko lengwe le lengwe go sa kgathalasege gore lefe, le bokao jwa lona bo supilweng mo go tsa Molao wa Bosetshaba wa Metsi le tla raya bokao joo jaaka go kailwe, ntle le fa e le gore tlhaloso ya lone ke e sele -

"Setlhopa I" se tlhalosa tlhamalalo ya tsa kamano ya ditlhopa tsa ditshedi tsa metsi mo teng ga bolekganyo jwa lefelo, go isa seemo sa tsa metsi mo teng ga bolekganyo jwa lefelo mo seemo se fetogileng go le go nyenyane fa go tshwantshiwa le seemo sa pele ga kwa tshimologong;

"Setlhopa II" se tlhalosa tlhamalalo ya tsa kamano ya ditlhopa tsa ditshedi tsa metsi mo teng ga bolekganyo jwa lefelo go isa seemo sa tsa metsi mo teng ga bolekganyo jwa lefelo mo seemo se fetogileng ka selekganyo fa go tshwantshiwa le seemo sa pele ga kwa tshimologong;

"Setlhopa III" se tlhalosa tlhamalalo ya tsa kamano ya ditlhopa tsa ditshedi tsa metsi mo teng ga bolekganyo jwa lefelo go isa seemo sa tsa metsi mo teng ga bolekganyo jwa lefelo mo seemo se fetogileng thata fa go tshwantshiwa le seemo sa pele ga kwa tshimologong;

"Setlhopa sa kamano gareng ga ditshedi le tikologo" se tlhalosa maemo a tsa kamano ya ditshedi mo metsing tseo di supang boitekanelo jwa metsi ao go ya ka phetogo ya dikarolwana tsa mebele ya tsone fa go bapiswa le maemo a tsone a tlholego;

"Tlhokego ya metsi a maemo a botsalano gareng ga ditshedi le tikologo" e tlhalosa tsela ya kelelo ya metsi (bogolo, nako le lobaka) le boleng e e tlhokagalang go tshegatsa maemo a tikologo ya molapo ka tsela e e riling, mme e akaretsa seelo le boleng jwa botsalano gareng ga ditshedi le tikologo;

"Dikarolo tse kopaneng tsa tshekatsheko" e tlhalosa dikarolo tse kopaneng tsa tshekatsheko tse di emetseng maemo a a tshwanang a tikologo ya tsamaiso ya metsi e e nang le ditlamorago tse di tshwanang le mmono tshitsinyo wa karolo e e bontshang maemo a katlatlelo loago le ekonomi a tikologo ya tsamaiso ya metsi e e farologaneng le go bega ka maemo a botsalano gareng ga ditshedi le tikologo a karolwana ya tikologo ya tsamaiso ya metsi;

"Molao wa bosetshaba wa tsamaiso ya metsi" e tlhalosa National Water Act, 1998 (Act No. 36 of 1998);

"Selekanyetso mo lekgolong" e tlhalosa kgonagalo ya go se fete tekanyetso, ke gore selekanyetso mo lekgolong sa 95 le tshwanetse go nna kwa tlase ga tekanyetso; selekanyetso mo lekgolong sa 50 se tshwanetse go nna kwa tlase ga bogare jwa tekanyetso;

"Maemo a gajaana a botsalano gareng ga ditshedi le tikologo" e tlhalosa maemo a gajaana a pholo le botsitso jwa tikologo go tlhotlheletsa se se diragalang mo ditsheding tse di farologaneng, go bapisa le maemo a tlhago kgotsa maemo a a leng gaufi le tlhago;

“Keleletso ya setlhopa sa botsalano gareng ga ditshedi le tikologo” e tthalosa setlhopa se se bontshang taolo ya go fitlhelela maikaelelo a maemo/setlhopa a botsalano gareng ga ditshedi le tikologo a motswedi wa metsi a a ka fitlhelelwang;

“Maikaelelo a boleng jwa motswedi” a tthalosa maikaelelo a boleng jwa motswedi a a akaretsang tthaloso le dipalo tsa se se tlotlheletsang se se diragalang mo ditsheding, mo kemoning le dikhemikhale tsa motswedi ya metsi e e botlhokwa mo karolong ya tikologo ya tsamaiso ya metsi.

“Karolo ya motswedi” e tthalosa sebaka sa molapo, letsha/mogobe kgotsa setlhopa sa megobe, tulo ya bokopano jwa noka le lewatle, kgotsa letamo, e e kgethegileng go ya ka botsalano/kamano gareng ga ditshedi le tikologo go netefatsa tlokego ya metsi a yona a a botsalano gareng ga ditshedi le tikologo kgotsa maikaelelo a boleng jwa motswedi le molelwane wa tikologo o o dirilweng;

“Setlhopa sa motswedi wa metsi” se tthalosa karolo e e emetseng mekgwa e e tlhokagalang ya motswedi e e farologaneng go ya ka balaodi ba motswedi ya metsi (Lefapha la Metsi le Kgeleloteswe).

2. TLHALOSO YA MOTSWEDI WA METSI

Ditlhopa tsa motswedi ya metsi le maikaelelo a boleng jwa motswedi di tlhomamisediwa motswedi yotlhe kgotsa karolo ya motswedi mongwe le mongwe o o bonalang jaaka go tthalositswe fa tlase:

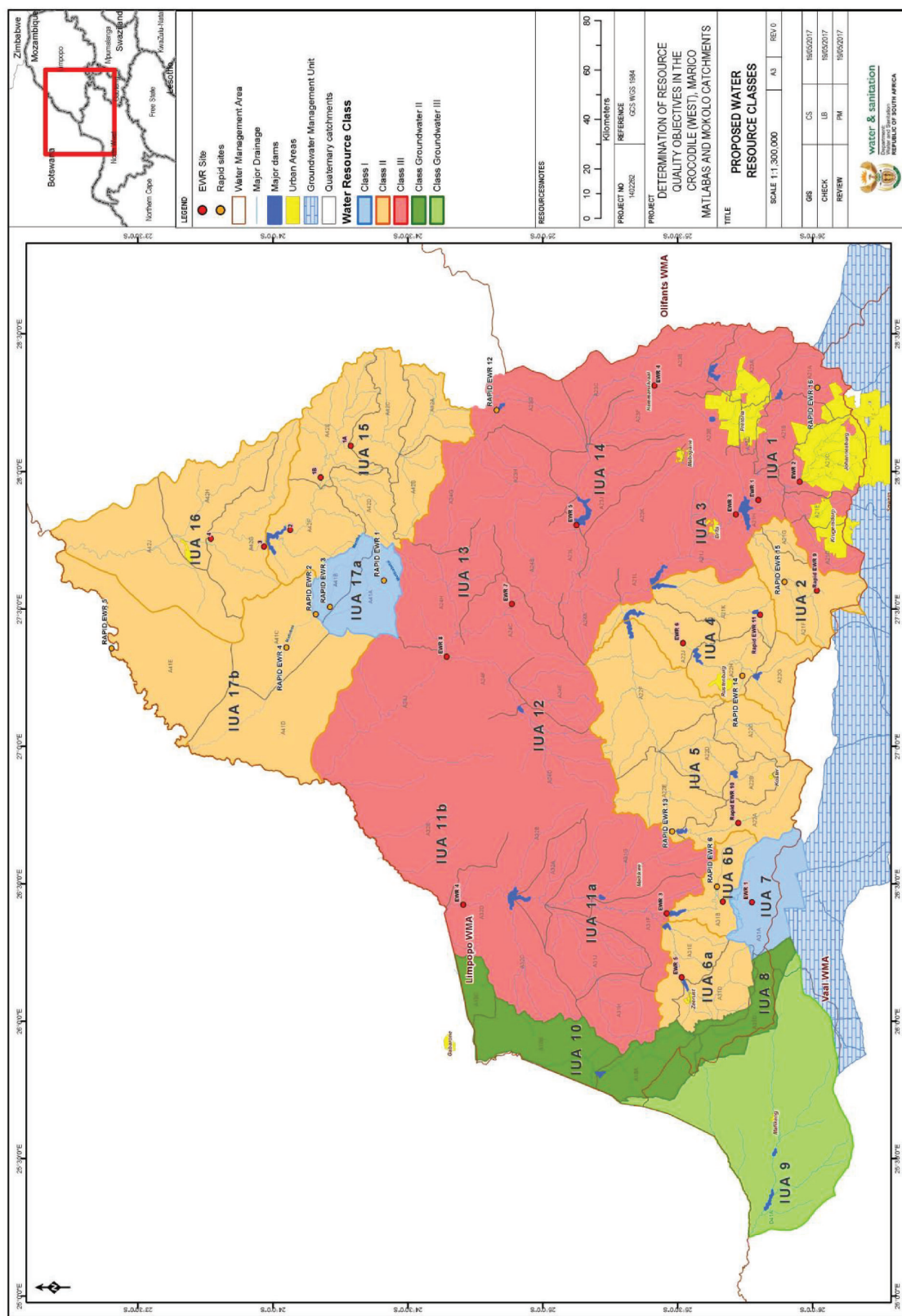
Lefelo la Taolo ya Metsi:	Limpopo North West
Kgaolo ya go Ntshetsa metsi:	A10, A21 go fitlha ka A24, A31, A32, A41 le A42 Kgaolo e Kgolo ya go Ntshetsa metsi
Noka/dinoka:	Mokolo, Matlabas, Crocodile (West) le Marico river systems
Lefelo la Taolo ya Metsi:	Lefelo la Taolo ya Metsi la Vaal
Kgaolo ya go Ntshetsa metsi:	D41A Quaternary Drainage Region
Noka/dinoka:	Noka ya Molopo

3. TLHOMAMISO YA DITLHOPA TSA MOTSWEDI WA METSI JAAKA GO TLHOKEGA MALEBANA LE KAROLO 13(1)(a) YA MOLAO WA BOSETŠHABA WA METSI, 1998

- i. Ditlhopa tsa motswedi ya metsi tsa madutiso a Mokolo, Matlabas, Crocodile (West) le Marico di tsentswe mo lenaaneng le le mo Lenaneong la 1 go ya ka setlhopa sa kakaretso mo dikarolong tse di kopaneng tsa tshekatsheko (IUA), e kailweng mo Setshwantsho 1.
- ii. Di-IUA di beilwe ka ditlhopa malebana le selekano sa tsone sa tiriso e e letlelesegang le tshireletso jaaka Setlhopa I: se se kayang tshireletso e e kwa godimo ya tikologo le tiriso e e kwa tlase; Setlhopa II se se kayang tshireletso e e mo magareng le tiriso e e mo magareng; le Setlhopa III se se kayang tshireletso e e tswelelang mo go nnye le tiriso e e kwa godimo.
- iii. Lenaneo 1 le neela IUA, setlhopa sa yone sa motswedi wa metsi le popego ya bodutiso jwa yone. Popego ya bodutiso e na le dintlhagare di le mmalwa tsa baeofisikhale tse di tlhagisang dikarolo tsa noka kgotsa dikarolo tsa motswedi (di-RU). Go tlametswe setlhopa sa ikholoji se se tshwanetseng go somarelwa mo RU nngwe le nngwe mo IUA.

4. TLHOMAMISO YA MAIKAELELO A BOLENG JWA MOTSWEDI A METSWEDI YA METSI JAAKA GO TLHOKEGA MALEBANA LE KAROLO 13(4)(a)(i)(bb) YA MOLAO WA BOSETŠHABA WA METSI, 1998

- i. Maikaelelo a Boleng jwa Motswedi (di-RQO) a tthaloseditse mo RU nngwe le nngwe e e dirilweng setlapele sa IUA nngwe le nngwe malebana le bokanakang jwa metsi, legaetlhago le diphologolo, dimela le ditschedi tsa lefelo le le rileng, le boleng jwa metsi.
- ii. Setshwantsho 2 se tlhagisa mehlwane ya RU ya madutiso a Crocodile (West), Marico, Mokolo le Matlabas.
- iii. Lenaneo 2 go ya go Lenaneo 20 le neela di-RQO tsa DINOKA LE MATAMO mo di-RU tse e leng ditlapele.
- iv. Lenaneo 21 le tlhagisa di-RQO tsa MATSHA A E LENG DITLAPELE mo Dikarolong tse di tlhopilweng tsa Motswedi.
- v. Lenaneo 22 go fitlha ka Lenaneo 32 le tlhagisa di-RQO tsa Kgaolo le tse di maleba mo RU e e rileng tsa METSI A A KA FA TLASE GA LEFATSHE mo di-RU tse e leng ditlapele.
- vi. Di-RQO di tla dira go tloga ka letlha le di konoseditsweng ka lone jaaka go tlhomamisitswe malebana le Karolo 13(1) ya Molao wa Bosetšhaba wa Metsi, 1998, ntle le fa go tthalositswe ka tsela e nngwe e sele ke Tona.



Setshwantsho 1: Dithlopa tsa Motswedi wa Metsi tsa madutiso a Crocodile (West), Marico, Mokolo le Matlabas



Lenaneo 1: Tshobokanyo ya Dithhopa tsa Motswedi wa Metsi mo Karolong nngwe le nngwe e e Sobokantsweng ya Tshekatsheko le Dithhopa tsa Ikholoji – madutiso a Crocodile (West), Marico, Mokolo le Matlabas

IUA	Sethhopa sa Motswedi ya metsi	Leina la Nthhagare	Bodutiso jwa Kotanari	Karolo ya motswedi	Leina la Noka	Sethhopa sa Ikholoji se se tshwanetseng go somarelwa	Selekano sa magareng sa ngwaga le ngwaga sa metsi a a eelang ka bontsi mo bogodimong jwa lefatshe (milione m ³ /a)	EWR jaaka % ya selekano sa magareng sa ngwaga le ngwaga sa metsi a thago a a eelang mo bogodimong jwa lefatshe
1 Karolo e e godingwana ya Crocodile/ Hennops/ Hartbeespoort	III	CROC Rapid EWR_16	A21A	1_1	Rietvlei (motswedi)	C	4.788	27.83
		HN1	A21A	1_1	Noka ya Hennops e e eelang go ya kwa nthheng e sele ya Letamo la Rietvlei	C	11.66	27.83
		HN2	A21B	1_3	Sesmyspruit le dinokana tsa yone go kgathana le Hennops	D	-	-
		HN3	A21C	1_7	Modderfonteinpruit go kgathana le Jukskei	D	-	-
		HN4	A21C	1_7	Klein Jukskei mo makgathanonong le Jukskei	D	-	-
		EWR site CROC_EWR2	A21C	1_7	Noka ya Jukskei	D	139.9	29.19
		HN6	A21D	1_8	Bloubankspruit le dinokana (molomo wa kwatanari/makgathano le Crocodile)	D	-	-
		HN8	A21H	1_9	Swartspruit go ya Letamong la Hartbeespoort	D	-	-
		EWR CROC_EWR1	A21H	1_9	Noka ya Crocodile go tswa mo makgathanonong a Jukskei go elela mo teng ga Letamo la Hartbeespoort	D	231.05	24.07
		HN11	A23A	1_4	Karolo e e kwa godingwana ya Noka ya Pienaars, Dinoka tsa Edendalespruit le Moretele go ya kwa Letamong la Rooideplaas	D	-	-
		EWR site CROC_EWR4	A23B	1_6	Pienaars go tswa kwa Letamong la Rooideplaas go ya kwa molomong wa bodutiso jwa kotanari (molomo wa IUA1)	C	28.2	30.81
		HN13	A23B	1_6	Boekenhoutspruit go kgathana le Pienaars	C	-	-
		HN14	A23D	1_6	Skipperspruit (motswedi) go kgathana le Apies	D	-	-
2 Magalies	II	HN15	A23D, E	1_6	Apies (motswedi) go ya kwa Letamong la Bon Accord, fa tase ga letamo mo molomong wa IUA1	D	-	-
		CROC Rapid_EWR9	A21F	2_1	Magalies fa tase ga Maloney's Eye	B	14.7	45.93
		CROC Rapid_EWR15	A21G	2_2	Magalies, Klein Magalies, Bloubaank	C/D	21.9	21.18
3	III	HN18	A21G, F	2_2	Skeerpoort mo molomong wa IUA2	C/D	-	-
		HN19	A21J	3_1	Rosespruit mo makgathanonong le Crocodile	C/D	-	-

IUA	Sethopa sa Metswedi ya metsi	Leina la Nthagare	Bodutiso jwa Kotanari	Karolo ya motswedi	Leina la Noka	Sethopa sa ikholoji se se tshwanetseng go somarelwa	Selekano sa magareng sa ngwaga le ngwaga sa metsi a a elelang bogodimong jwa lefatshe (milione m ³ /a)	EWR jaaka % ya selekano sa magareng sa ngwaga le ngwaga sa metsi a a elelang bogodimong jwa lefatshe
Crocodile/ Roodekopjes		EWR site CROC_EWR3	A21J	3_1	Crocodile go tswa mo Letamong la Hartbeespoort go ya kwa noka e elelang go ya kwa teng mo Letamong la Roodekopjes	C/D	143.3	25.02
4 Hex/ Waterkloof-spruit/ Vaalkop	II	CROC Rapid_EWR11	A21K	4_2	Dikarolo tse di kwa godingwana tsa noka ya Sterkstroom (motswedi) go ya kwa metsing a a elelang go tsena mo teng ga Letamo la Buffelspoort	C	13.95	28.21
		HN22	A21K	4_1	Sterkstroom go tswa mo Letamong la Roodekopjes	C	-	-
		HN23	A22G	4_4	Karolo e e kwa godingwana ya Hex (motswedi) go ya kwa Letamong la Olifantsnek, Rooikloofspruit	C	-	-
		CROC Rapid_EWR14	A22H	4_8	Waterkloofspruit go kgathana le Hex	B/C	5.469	28.27
5 Elands/ Vaalkop	II	HN25	A22H	4_6	Hex go tswa mo Letamong la Olifantsnek go ya kwa Letamong la Bospoort, Sandspruit	D	12.11	15.26
		EWR site CROC_EWR6	A22J	4_9	Hex go tswa mo Letamong la Bospoort go ya kwa elelang go tsena mo teng ga Letamo la Vaalkop	D	26.9	14.96
		CROC Rapid_EWR10	A22A	5_1	Dikarolo tse di kwa godingwana tsa noka Elands (motswedi) go ya kwa Letamong la Swarttruggens	B/C	10.1	30.48
		HN29	A22A	5_2	Elands go tswa kwa Letamong la Swarttruggens go ya kwa Letamong la Lindleyspoort	C	12.87	23.99
		HN30	A22B	5_4	Karolo e e kwa godingwana ya Koster (motswedi) go ya kwa Letamong la Koster	C	2.54	22.77
		HN31	A22C, A22D	5_6	Noka ya Selons, Koedoespruit, Dwarsspruit, Noka e e ko tlasenyana ya Koster	C	-	-
6b Groot Marico	II	CROC Rapid_EWR13	A22E, A22F	5_7	Elands go tswa mo Letamong la Lindleyspoort go ya kwa Letamong la Vaalkop	C	18.77	21.90
		MAR Rapid_EWR6	A31B	6_6	Polkadraaispruit go kgathana le Marico	B	9.87	49.27
		EWR Site MAR_EWR2	A31B	6_5	Karologolo ya Noka ya Groot Marico a elelang go tswa mo nokeng go ya kwa makgathanong a Polkadraaispruit	B	42.08	50.26
		HN63	A31B	6_7	Groot Marico go tswa mo makgathanong a Polkadraaispruit go ya kwa Letamong la Marico Bosveld	B	56.92	50.61
6a Klein Marico	II	HN64	A31D	6_1	Malmariesloop go kgathana le Klein Marico	C/D	-	-
		HN35	A31D	6_1	Klein Marico le dinokana tse di elelang go tswa mo molapong tsa Zeerust	C/D	-	-

IUA	Sethopa sa Metswedi ya metsi	Leina la Nthagare	Bodutiso jwa Kotanari	Karolo ya motswedi	Leina la Noka	Sethopa sa Ikholoji se se tshwanetseng go somarelwa	Selekano sa magareng sa ngwaga le ngwaga sa metsi a a elelang ka bontsi mo bogodimong jwa lefatše (milione m ³ /a)	EWR jaaka % ya selekano sa magareng sa ngwaga le ngwaga sa metsi a a elelang ka bontsi mo bogodimong jwa lefatše
7 Kaaloo-se-Loop	I	HN65	A31E	6_1	Klein Marico go tswa mo Letamong la Zeerust go ya kwa Letamong la Klein Maricopoort	C/D	16.25	14.26
		EWR Site MAR_EWR5	A31E	6_3	Klein Marico go tswa mo Letamong la Klein Maricopoort go ya kwa Letamong la Kromelleboog	C	16.25	11.70
		EWR site MAR_EWR1	A31A	7_1	Marico Eye, Kaaloo-se-Loop, Bokkraal-se-Loop, Ribbokfontein-se-Loop, Rietspruit (southern eye), Kuilsfontein, Syferfontein, Bronkhorstfontein	B	10.539	76.32
8 Malmaniesloop	II*	HN38	A31A	7_1	Vanstraatenvlei le dinokana mo makgathlanong le Kaaloo-se-Loop, molomo wa IUA7	B	-	-
9 Molopo	II*	-	A31C	8_1	Lefelo la metsi a dolomaete	B	-	-
		HN66	D41A	9_3	Karokgolo ya Noka ya Molopo fela go tswa mo Letamong la Modimola go ya kwa Letamong la Disaneng	D	-	-
		HN67	D41A	9_2	Dinokana tse di kwa godingwana ga Noka ya Molopo go eiea go tsena mo letamong la Setumo (Modimola) (lefelu la metsi a dolomaete)	D	-	-
10 Dinokana Eye/Letamo la Ngotwane	III*	HN39	D41A	9_6	Molopo mo molomong wa IUA9	D	-	-
11a Groot Marico/Letamo la Molatedi	III	HN68	A10A	10_1	Ngotwane go tswa mo Letamong la Dinokana go ya kwa Letamong la Ngotwane	D	-	-
11b Groot Marico/Letamo tsa dinokana tsa nakwana (go ya ka setha)	III	EWR Site MAR_EWR3	A31F, A31G, A32A	11a_1	Marico Groot Marico go tswa mo go elelang kwa ntle ga Letamo la Marico Bosveld go ya kwa Letamong la Molatedi, dinokana tsothe	C/D	65.083	23.62
12 Bierspruit	III	EWR Site MAR_EWR4	A32D, E	11b_1	Marico go tswa mo Letamong la Molatedi go kgathana le Dinoka tsa Limpopo, Rasweu, Maselaje; molomo wa IUA11b	C	153.25	7.96
13	III	-	A24D	12_1	Wilgespruit, Bofule, Kolobeng, Magoditshane, Motlhaba	C	-	-
		HN42	A24E, F	12_2	Bierspruit go kgathana le Noka ya Crocodile, Brakspruit, Phufane, Sefatlhane, Lesobeng, karolo e e kwa tlasenyana ya noka ya Bofule; molomo wa IUA12.	D	-	-
13	III	HN43	A24G, A24H	13_2	Sand go kgathana le Crocodile	B	-	-

IUA	Sethopa sa Metswedi ya metsi	Leina la Nthagare	Bodutiso jwa Kotanari	Karolo ya motswedi	Leina la Noka	Sethopa sa Ikholoji se se tshwanetseng go somarelwa	Selekano sa magareng sa ngwaga le ngwaga sa metsi a a elelang ka bontsi mo bogodimong jwa lefatshe (milione m ³ /a)	EWJ jaaka % ya selekano sa magareng sa ngwaga le ngwaga sa metsi a a elelang a a elelang mo bogodimong jwa lefatshe
14 Karolo e e kwa tlasenyana ya Noka ya Crocodile		EWJ Sites CROC_EWR7	A21L, A24A-C, A24H	13_1	Noka ya Crocodile e elela go tswa mo Letamong la Roodekopes go ya kwa ntheng e sele mo makgathano a Noka ya Sand, Sleepfonteinpruit, dinokana tsa Klipspruit	D	463.4	13.9
		EWJ Site CROC_EWR8	A24J	13_3	Karolo e e kwa tlase ya Crocodile go tswa mo makgathano a Bierspruit go kgathana le Limpopo, molomo wa IUA13	D	565.16	7.48
		CROC Rapid_EWR12	A23G	14_3	Noka ya Plat	C/D	4.864	23.08
14 Tolwane/ Kulwane/ Moretele/ Klipvoor	III	-	A23F	14_1	Noka ya Apies, nokana ya Tshwane	D		
		-	A23C	14_2	Noka ya Boekenshout go tswa mo makgathano go ya kwa makgathano a Noka ya Apies	C		
			A23J	14_4	Noka ya Moretele (Pienaars) go tswa mo makgathano a Noka ya Plat go ya kwa Letamong la Klipvoor, Kutswane go ya kwa Letamong la Klipvoor	C		
		EWJ Site CROC_EWR5	A23J, A23L	14_7	Moretele (Pienaars) go kgathana le Crocodile, molomo wa IUA14	D	113.0	11.82
		HN49	A23K	14_7	Tolwane go kgathana le Moretele	C/D	-	-
		HN50	A42A	15_5	Sand (motswedi) go kgathana le Grootspuit	C	-	-
15 Karolo e e kwa godingwana ya Mokolo	II	HN51	A42B	15_5	Grootspuit (motswedi) go kgathana le Sand	D	27.8	21.73
		EWJ Site MOK_EWR1a	A42C	15_1	Mokolo go kgathana le Dwaars	C/D	84.84	16.79
		EWJ Site MOK_EWR1b	A42E	15_6	Mokolo go kgathana le Sterkstroom	B/C	135.03	13.6
		HN54	A42D	15_2	Sterkstroom (motswedi) go kgathana le Mokolo,	B	43.45	52.63
		EWJ Site MOK_EWR2	A42F	15_4	Noka ya Mokolo mo A42F go elela go tsena mo Letamong la Mokolo,	B/C	196.2	11.7
		EWJ Site MOK_EWR3	A42G	15_4	Letamo la Mokolo go ya kwa karolong e e kwa godingwana ya A42G (10km go elela kwa ntheng ya kelelo ya letamo)	B/C	213.99	8.65
16 Karolo e e kwa tlasenyana ya	II	-	A42H (karolwana e e mo bothaba	16_1	Noka ya Tambotie	B		
		-	A42G	16_2	Poer-se-Loop	B		

IUA	Setlhopa sa Metswedi ya metsi	Leina la Nthagare	Bodutiso jwa Kotanari	Karolo ya motswedi	Leina la Noka	Setlhopa sa Ikholojseng go tshwanetseng go somarelwa	Selekano sa magareng sa ngwaga le ngwaga sa metsi a a eelang ka bontsi mo bogodimong jwa lefatshe (milione m ³ /a)	EWJ jaaka % ya selekano sa magareng sa ngwaga le ngwaga sa metsi a tihago a a eelang mo bogodimong jwa lefatshe
Mokolo		-	A42J le karolo e e setseng ya A42H	16_4	Sandloop	C		
		EWJ Site MOK_EWR4	A42G	16_5_1	Karokogolo ya Noka ya Mokolo - Mokolo tloga mo tiase ga EWR3 go ya kwa makgathano a Tambotie	C	253.3	12.3
		HN58	A42H, A42J	16_5_2	Karokogolo ya Noka ya Mokolo - go tswa mo makgathano a Tambotie e go ya kwa Limpopo	C	-	-
		HN59	A41A	17a_3	Dinokana tse di kwa godingwana tsa molapo wa Mothabatsi (Matlabas-Zyn-Kloof, mafatshe a a nang le dijalo tse di bodileng/humase)	A	5.23	57.07
17a Mothabatsi/ Mamba	I	MAT	A41B	17a_1	Mamba go kgathana le Mothabatsi	B/C	9.54	35.49
		Rapid_EWR3	A41B	17a_2	Makgathano a Matlabas/Mothabatsi (molomo wa IUA)	B/C	32.80	33.23
		Rapid_EWR2	A41C	17b_1	Matlabas	B	35.58	33.42
17b Matlabas	II	HN62	A41C, D	17b_1	Matlabas go kgathana le Limpopo, molomo wa IUA17b	B	-	-

*Lefelo la metsi a a ka fa tiase ga lefatshe

Lenaneo 2: Maikaelelo a Boleng jwa Motswedi wa DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko 1: KAROLO E E KWA GODINGWANA YA CROCODILE/HENNOPS/HARTEBESPOORT

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa Ikholojsi	Karoliwana	Karoliwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo
1: KAROLWANA E E KWA GODINGWANA YA CROCODILE/HENNOPS/HARTEBESPOORT	III	Karolo e e kwa godingwana ya Noka ya Hennops le Noka ya Rietvlei (tse di eelang go tsena mo teng ga Letamo la Rietvlei) (A21A)	1_1	D	Bokanakang		Kelelo ya EWR le kelelo e e bonyaka nako ya kelelo: Noka ya Hennops mo A2H090 mo A21A NIMAR = 11.66x10 ⁶ m ³ Setlhopa sa REC=C	Kelelo e e bonyaka nako ya kelelo - segolo bogolo e e thokegang morago ga go kgathana ga Dinoka tsa Rietvlei le Hennops	Kelelo e e bonyaka nako ya kelelo (m ³ /s)
									Diph
									Ngwan
									Sed
									Fer
									Tlhak
									Mop
									Mor

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IUA	Setlh opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							metso a kwa noka e elelang go ya teng.	tsoa dipholologo le dijalo tsoa lefelo le le rileng kwa A2H090)	Motsh 0.065 Seet 0.064 Phuk 0.059 Phat 0.054 Lwe 0.048 Dimilegerama/diilitara tse ≤ 0.060 (mg/l) (Phesenthaele ya bo50)
							Kokoano ya dikotla ya metso a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswelidisa boitekanelo jwa dipholologo tsothe le dimela tsa metso le go ntefatsa sethopa se se laolelsweng sa ikholoji le gore go fitholelwa dithokego tsa boleng jwa metso tsa badirisi ba metso. Tiriso ya ditekanyetso tsa kokoano e tshwanetse go dirwa go tsamaisana le tekatokano ya selekano sa dikotla mo bodutisong.	Othofosofate (PO ₄) jaaka Fosoforo Naeterojene e e Tlhaolositseweng e e sa boleng (DIN) jaaka Naeterojene	Dimilegerama/diilitara tse ≤ 1.25 (mg/l) (Phesenthaele ya bo50)
						Dikotla		Naeterite (NO ₃) & Naeterate (NO ₂) jaaka Naeterojene	Dimilegerama/diilitara tse ≤ 1.0 (Phesenthaele ya bo50)
							Boletswai jwa metso a a elelang go tsena mo nokeng bo tshwanetse go somarelwa kgotsa go tokafadiwa go tshwegetsa ditshedi tsothe le dimela tsoa metso le dithokego tsa boleng jwa metso tsa badirisi ba metso.	Kgonagalo ya moela wa motlakase (EC)	MiliSiemens/metara tse ≤ 55 (mS/m) (Phesenthaele ya bo95) Hennops mo godimo ga makgathano Rietvlei MiliSiemens/metara ≤ 70 (mS/m) (Phesenthaele ya bo95) fa tlase ga makgathano
						Matswai		Salefite (SO ₄)	Dimilegerama/diilitara tse ≤ 80 (mg/l) Phesenthaele ya bo95)
								Sodium (Na)	Dimilegerama/diilitara tse ≤ 70 (mg/l) (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga tshola kotsi e e kwa tlase mo boitekanelong jwa batho. pH e tshwanetse go somarelwa ka seemo sa ga jaana.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimiliilitara tse 100 (ml) (Phesenthaele ya bo95)
							Go tshokega tlathobho ya motheo go tlhomanisa seemo sa ga jaana sa kgoberego ya metso a a elelang go tsena mo molapong.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 9.0 (Phesenthaele ya bo95)
						Dintha tse di ka kgonang go fetoga		Kgoberego	Go letelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
							Dilekano tsa okosijene e e tshanoleng	Okosijene e e Tlhaolileng	Dimilegerama/diilitara tse 6-7 (mg/l)

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							go tokafadiwa go tshetsetsa ditshedi tsothe le dimela tsa metsi.		
								Amonia jaaka N	Dimilegerama/dilitara tse ≤ 0.0725 (mg/l) (Phesenthaele ya bo95)
								Aluminiamo (Al)	Dimilegerama/dilitara tse ≤ 0.105 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
							Dikokoano tsa dire tse di bothole di tshwanetse go somarelwa di le mo dilekanong tse di seng bothole mo ditshedding tse dinnye tsa metsi le fa e le go nna matsosetsi mo boitekanelong jwa batho.	Lloto (Pb) e popota	Dimilegerama/dilitara tse ≤ 0.0095 (mg/l) (Phesenthaele ya bo95)
						Dire tse di bothole		Koporo (Cu) e popota	Dimilegerama/dilitara tse ≤ 0.0073 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimilegerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
							(Dibolayadisenyi di tshwanetse go thomamisiwa)	Atrazine	Dimilegerama/dilitara tse ≤ 0.078 (mg/l)
								Mancozeb	Dimilegerama/dilitara tse ≤ 0.009 (mg/l)
								Tlalaefoseite	Dimilegerama/dilitara tse ≤ 0.7 (mg/l)
								Endosulfan	Dimilegerama/dilitara tse ≤ 0.13 (ug/l)
								Oli le kirisi	2.5 mg/l
								Melemo e thotholeditsweng ke dihormone	17 β -oestradiol: ≤ 0.001 mg/l
								Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Thathobho ya Legaethago (RHAMM)	Sethopa sa ikholoji sa tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong = C $\geq$ 62%

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Legaethago le le mo dintshing tsa noka	Taolo ya diphologolo le dimela tsa seeng tse di senyang e tshwanetse go tseengwa tirisong. Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa gore di nne mo setlhopheng sa C sa ikholoji.	Tshupane ya Tshomarelo ya popego e e lekakanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Tlathobho ya Tsibogo ya Dimedi	Sethopa sa ikholoji sa VEGRAI = C $\geq 62\%$ Fa losing lwa noka IHI = C $\geq 62\%$
						Ditlhapi	Sethopa sa ditlhapi tsa lefelo le le rileng se tshwanetse go somarelwa se le mo setlhopheng sa ikholoji sa C. Lobelo lwa kelelo le golaganngwa le ditlhoko tsa nakwana tse di tshokegang mo <i>BMAR</i> , <i>AURA</i> le <i>CPRE</i>	Tshupane ya Tlathobho ya Tsibogo ya Ditlhapi (FRAI). Go tshwanetse ga elwa tlhoko go fetofetoga go ya ka ditlha.	Sethopa sa ikholoji sa ditlhapi = C FRAI $\geq 62\%$
						Ditshedi tsa metsi tse dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo maemong a a tokafaditsweng go se kaekae kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla le Mokgwatsamaiso wa Kabo ya Maduo wa Afrikaborwa wa Mofuta 5 (SASS5).	Sethopa sa ikholoji sa MIRAI C $\geq 62\%$ SASS ≥ 80 ASPT ≥ 4.8
						Diphologolo, dimela le ditshedi tse di nnang mo metsing le mo lefatsheng	Tshwanelego ya boalo jo jwa noka go dira jaaka legaethago le ditselana tse di salwang morago ke diphologolo, dinonyane kgotsa ditlhapi fa di fudugela kwa magaeithagong a farologaneng fa gare ga mariga le selemo tsa dinonyane le diamusi tsa metsi e tshwanetse go somarelwa ka taolo e e maleba ya legaethago.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshomamisa mefuta ya kemedi ya dinonyane (mofuta le dipalo gore di dire jaaka dikao). Go na le tlhokego ya gore go diwe ditekanyetso tsa dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Dilekano tsa Letamo	Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelang go ya teng. Go thama le go thabolola melawana e e ka dirisiwang go tswelisa dilekano tse di kwa godimo tsa letamo go netefatisa	Selekano se se kwa tlase sa tiro mo letamong	Melawana ya tiro jaaka e le maleba. Selekano se se kwa tlase go tswelisa botshelo jwa diphologolo tsothe le dijalo tsa metsi (15-18%).

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tihaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							gore go somarelwa mefutafuta ya diitshedi tsothe le dimela tsa metsi. Kokoano ya othofosofate e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa diitshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi kgotsa e e botoka.	Othofosofate	≤ 0.025 mg/l Phesenthaele ya bo50
							Kokoano ya palogotlhe ya fosoforo e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa diitshedi tsothe le dimela tsa lefelo le le riling le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Palogotlhe ya Fosoforo	≤ 0.130 mg/l Phesenthaele ya bo50
					Boleng	Dikotla	Kokoano ya palogotlhe ya Amonia jaaka N e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa dipholologo tsothe le dijalo le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Total Amonia jaaka N	≤ 0.0725 mg/L N Phesenthaele ya bo95
							Kokoano ya palogotlhe ya naeteraete & naeteraite e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa diitshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi kgotsa e e botoka.	Naeteraete & Naeteraite	≤ 1.00 mg/L N Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo	Kgonagalo ya moela wa	≤ 70 mS/m

IUA	Setlh opa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							tshwanetse go somarelwa go tshagetsa boitekanelo jwa ditshedhi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelang go ya teng.	motlakase	Phesenthaele ya bo95
							Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa ditshedhi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelang go ya teng.	Salefeite	≤ 80 mg/l Phesenthaele ya bo95
							Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa ditshedhi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelang go ya teng.	Sodiamo	≤ 70 mg/l Phesenthaele ya bo95
						Dipathojene	Dipathojene di tshwanetse go somarelwa gore di nne ka dilekano tse di babalesegileng gore di ka dirisiwa ke batho.	<i>Escherichia coli</i>	≤ makgetho a le 130/dimiilitara tse 100 (ml) (Phesenthaele ya bo95)
							Metsi a tshwanetse go nna a maemo a a amogelesegang go ka dirisetswa boitapolo.	pH	6.5 – 9.0 Phesenthaele ya bo95
						Dintlha tse di ka kgonang go fetoga	Bophepa jo bo oketsegileng fa go balwa ≥ 0.4 m	Kgoberego	Phesenthaele e e kwa tlase ya bo95
							Phetogo ya mo magareng	Thempereitšha	Go sa fete 2 °C ya phetogo e e oketsegang mo palong e e kwa godimo le e e kwa tlase ka bobedi
							Dilekano tsa okosijene di tshwanetse go somarela tsamaiso ya ikholoji.	Okosijene e e Thaologileng	≥ 7.0 mg/L O ₂ Phesenthaele ya bo95
							Letamo le tshwanetse go laolwa go fokotsa go runya ga baketeria e e bothole ya fotosintese	Baketeria ya fotosintese	Phesentso ya baketeria ya fotosintese ka kokoano ya Chl a e e kwa godingwana ga 30µg/l e tshwanetse go tsholwa e le ka ga tlase ga 20% ya nako.
						Dire tse di bothole	Metsi a noka ga a tshwanela go nna bothole mo ditshedding tse dinnye tsa metsi kgotsa go nna	Dibolayadisenyi	Cyanide: ≤ 110 µg/l Endosulfan: ≤ 20 µg/l Atrazine: ≤ 100 µg/l Phesenthaele ya bo95

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							matshosetsi boitekanelong jwa batho.		
							Metsi a a tshetsweng mo setshodong sengwe ga a tshwanela go nna matshosetsi mo tsweledisong ya mats'helo a diphologolo kgotsa batho.	Melemo e e tshoheleditsweng ke dihormone	17 β -oestradiol: $\leq 1 \mu\text{g/l}$
							Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswelediswa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa sethopa se se laolelsweng sa ikholoji le gore go fithelelwa dithokego tsa boleng jwa metsi tsa badirisi ba metsi.	Orthophosphate (PO ₄ ⁻) jaaka Fosforo Naeterojene e e Tlhalositsweng e e sa boleng	Dimilegerama/dilitara tse ≤ 0.125 (mg/l) (Phesenthaele ya bo50) Dimilegerama/dilitara tse ≤ 3.0 (Phesenthaele ya bo50)
						Dikotla		Naeterite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 1.0 (Phesenthaele ya bo50)
							Boletswai jwa metsi a a elelang go tsena mo nokeng bo tshwanetse go tokafadiwa go tshetsetsa dithedi tsothe le dimela tsa metsi le dithokego tsa boleng jwa metsi tsa badirisi ba metsi.	Kgonagalo ya moela wa motlakase (EC)	DimiliSiemens/metara tse ≤ 85 (mS/m) (Phesenthaele ya bo95) Dimilegerama/dilitara tse ≤ 70 (Phesenthaele ya bo95)
							Ditlamorago tse di mo lefats'heng le go tsholelelwa ga metsimaswe go tshwanetse ga laolwa gore go sireletswe motswedi.	Sodiumo	Dimilegerama/dilitara tse ≤ 70 (mg/l) (Phesenthaele ya bo95)
						Matswai Dipathojene	Go nna teng ga dipathojene go tshwanetse ga tshola kotsi e e kwa tlase mo boitekanelong jwa batho.	<i>Escherichia coli</i>	makgetho a le 130/dimililitara tse 100 (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositsweng go tshetsetsa dithedi tsothe le dimela tsa metsi le dithokego tsa badirisi ba metsi.	selekano sa pH	selekano sa pH 7.5 (Phesenthaele ya bo5) - 9.2 (Phesenthaele ya bo95)
						Dintsha tse di ka kgonang go fetoga			
						Dire tse di bothole	Go tlokega tlathobho ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo	Kgoberego	Go letlelelwa phapogo ya 10% go tsa mo kokoanong ya temorago.

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							molapong.		
							Dilekano tsa oksijene e e tshanoleng di tshwanetse go tokafadiwa go tshetsetsa ditshedi tsothe le dimela tsa metsi.	Okosijene e e Tlhaoligileng	Dimilegerama/dilitara tse ≥ 6 (mg/l)
							Dikokoano tsa dire tse di bothole di tshwanetse go somareliwa di le mo dilekanong tse di seng bothole mo dishing tse dimye tsa metsi le fa e le go nna matshosetsi mo boitekanelong jwa batho	Amonia jaaka N	Dimilegerama/dilitara tse ≤ 0.1 (mg/l) Phesenthaele ya bo95)
								Aluminiumo (Al)	Dimilegerama/dilitara tse ≤ 0.150 (mg/l) Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/dilitara tse ≤ 0.1 (mg/l) Phesenthaele ya bo95)
								Loto (Pb) e popota	Dimilegerama/dilitara tse ≤ 0.013 (mg/l) Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimilegerama/dilitara tse ≤ 0.0075 (mg/l) Phesenthaele ya bo95)
								Nikele (Ni)	Dimilegerama/dilitara tse ≤ 0.07 (mg/l) Phesenthaele ya bo95)
								Atrazine	Dimilegerama/dilitara tse ≤ 0.078 (mg/l)
								Mancozeb	Dimilegerama/dilitara tse ≤ 0.009 (mg/l)
								Tlelaefosete	Dimilegerama/dilitara tse ≤ 0.7 (mg/l)
							Endosulfan		Dimaekherogarama/litara tse 0.13 (ug/l)
							Mefutafuta ya magaeithago e tshwanetse go somareliwa e le mo sethopheng sa D sa ikholoji kgoisa e tshwanetse go tokafadiwa. Go tshwanetse ga fithelwa boteng jo bo lekaneng jwa lobelo mo mefuteng e e boifang kelelo (AURA le CPRE) mme go thokega mefutafuta e e farologaneng.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaethago (RHAMM)	Sethopa sa tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la meisi a a mo molapong $\geq D \geq 42\%$
							Go thokega taolo ya diphologolo le dimela tsa seeng tse di senyang.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya	Sethopa sa ikholoji sa VEGRAI = D $\geq 42\%$ IHI ya mo losing lwa noka = D $\geq$

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Dimedí tsa mo dintshing tsa noka di tshwanetse go tokafadiwa gore di tswe mo sethopheng sa E sa ikholoji go nna mo sethopheng sa D.	dipharologantsho tsa fisikhokhemikale le legaeithago, Tshupane ya Tlhathobho ya Tsibogo ya Dimedi	42%
							Sethopa sa dithapi tsa lefelo le le rileng se tshwanetse go tokafadiwa go tswa mo sethopheng sa ga jaana sa ikholoji go ya kwa sethopheng sa D. Lobelo lwa kelelo le golaganngwa le dithokego tsa nakwana tse di tlhokegang mo BMAR le BMAT.	Tshupane ya Tlhathobho ya Tsibogo ya Dithapi (FRAI)	FRAI e tshwanetse go dirwa ngwaga le ngwaga go di ela thoko fa go bapisiwa le sethopa se se laoletswang sa ikholoji sa D. FRAI ≥ 42%
							Kgobokanyo ya ditschedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlhathobho ya Tsibogo ya Diphologo tse dikgolo mme di se na mokwatla le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 55 ASPT ≥ 4.2
							Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa sethopa se se laoletswang sa ikholoji le gore go fihlelelwa dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Taolo ya dikotla tse di tlhokegang go tokafatsa seemo sa boleng jwa metsi a a elelang go tsena mo nokeng.	Othofosofate (PO_4^-) jaaka Fosoforo Naeterojene e e Tlhaolositsweng e e sa boleng (DIN) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 0.125 (mg/l) (Phesenthaele ya bo50)
		Karlo e e kwa Godingwana ya Noka ya Pienaars, Dinoka tsa Edendalespruit le Moretele go ya kwa Roodeplaat (A23A)			Boleng	Dikotla	le go netefatsa sethopa se se laoletswang sa ikholoji le gore go fihlelelwa dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Taolo ya dikotla tse di tlhokegang go tokafatsa seemo sa boleng jwa metsi a a elelang go tsena mo nokeng.	Naeterite (NO_3^-) & Naeteraete (NO_2^-) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 1.0 (Phesenthaele ya bo50)
							Boletswai jwa metsi a a elelang go tsena mo nokeng bo tshwanetse go somarelwa go tshegetsa dithokego tsa ditschedi tsothe le dimela tsa metsi le dithokego tsa boleng jwa	Kgonagalo ya moela wa motlakase (EC) Salefeite (SO_4) Tloraete (Cl)	DimiliSiemens/metara tse ≤ 65 (mS/m) (Phesenthaele ya bo95) Dimilegerama/dilitara tse ≤ 50 (mg/l) (Phesenthaele ya bo95) Dimilegerama/dilitara tse ≤ 50 (mg/l) (Phesenthaele ya bo95)

IUA	Setlh opa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dipathojene	metshi tsa badirisi ba metsi. Go nna teng ga dipathojene go tshwanetse ga tihola kotsi e e kwa tlase mo boitekanelong jwa batho.	<i>Escherichia coli</i>	makgetho a le 130/dimiliilitara tse 100 (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositse go tshagetsa ditshedhi tsothe le dimela tsa metsi le diithokego tsa badirisi ba metsi.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 9.0 (Phesenthaele ya bo95)
						Dintsha tse di ka kgonang go fetoga	Go tlokega tlathobo ya motheo go thomanisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molaopong.	Kgoberego	Go letlelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
							Ditekano tsa okosijene e e tshagoleleng di tshwanetse go tokafadiwa go tshagetsa ditshedhi tsothe le dimela tsa metsi.	Okosijene e e Tlhaologileng	Dimilegerama/dilitara tse ≥ 6 (mg/l)
								Amonia jaaka N	Dimilegerama/dilitara tse ≤ 0.0725 (mg/l) (Phesenthaele ya bo95)
								Aluminium (Al)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
							Dikokoano tsa dire tse di bothole di tshwanetse go somarelwa di le mo dilekanong tse di seng bothole mo ditshedhi tse dinnye tsa metsi le fa e le go nna matshosetsi mo boitekanelong jwa batho.	Lloto (Pb) e popota	Dimilegerama/dilitara tse ≤ 0.007 (mg/l) (Phesenthaele ya bo95)
							(Tlhaologileng)	Koporo (Cu) e popota	Dimilegerama/dilitara tse ≤ 0.0075 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimilegerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Folaraete (F)	Dimilegerama/dilitara tse ≤ 2.54 (mg/l) (Phesenthaele ya bo95)

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
								Benzene Toluene Melemo e e tlotheleditsweng ke dihoromone	Dimilegerama/dilitara tse ≤0.01 (mg/l) (Phesenthaele ya bo95) Dimilegerama/dilitara tse ≤0.7 (mg/l) (Phesenthaele ya bo95) 17β-oestradiol: ≤ 0.001 mg/l
						Metsi a elelang go tsena mo nokeng Legaeithago	Go nna teng ga legaeithago la dithapi le ditshedi tse di kgolo mme di se na mokwatla go tshwanetse ga somarelwa, go tsweledisa mefutufa ya karolo ya ditshedi tse di rileng. Go thokega dimedi tse di thogang mo losing lwa metsi go tshegetsa <i>BANO</i> . Go thokega taolo ya dipholologo le dimela tsa seeng tse di senyang. Dimedi tsa mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa E go ya go sethopa sa ikholoji sa D.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlathhobo ya Legaeithago (RHAMM)	Sethopa sa ikholoji sa tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlathhobo ya Legaeithago (RHAMM)
						Legaeithago le le mo dintshing tsa noka Malele	Kgobokano ya bolele e tshwanetse go somarelwa mo maemong a a fetotsweng thata kgotsa a a tokafaditsweng.	Tshupane e Totobetseng ya Kgotlelego	Sethopa sa ikholoji sa VEGRAI = D ≥ 42% IHI ya losi lwa noka = D ≥ 42% (A2HART-KAMEE le A2PIEN-BAVIA)
					Dipholologo, dimela le ditshedi tsa lefelo le le rileng	Ditschedi tsa metsi tse dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathhobo ya Tsbogo ya Dimedi	Sethopa sa ikholoji sa MIRAI = D ≥ 42% REMP Site kwa A2PIEN-BAVIA: SASS ≥ 60 ASPT ≥ 3.8 REMP Site A2HART-KAMEE: SASS ≥ 60 ASPT ≥ 3.8
						Dilekano Letamo Bokanakang	Letamo le tshwanetse go laolwa le Letamo le tshwanetse go laolwa go sireletsa tiro ya dipholologo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelelang oo va teng. Go	Selekano se se kwa tiase ya tiriso se se tshoegang mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tiase go tsweledisa botshelo jwa dipholologo tsothe le dijalo tsa metsi (15-18%).

IUA	Setlh opa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							tlhama le go tlhabolola melawana e e ka dirisiwang go tswetsa dilekano tse di kwa godimo tsa letamo go nelefatsa gore go somarelwa metutafuta ya ditshedi tsothe le dimela tsa metsi. Go goliwa ga metsi a letamo go tshwanetse ga fithelela ditlhokego tsa kwa metsi a elelang go ya teng go direla mabaka a kelelo metsi e e tswelang mosola diphologolo le dijalo.		
							Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswedisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le rileng le ditlhokego tsa boleng jwa metsi tsa badiisi ba metsi. Letamo le tshwanetse go somarelwa jaaka seemo se se nang le dikotla tse dintsi. Kgolo ya hayiesenthe (hyacinth) e tshwanetse go laolwa. Go thokega togamaano ya taolo go samagana le mokoa wa disedimente.	Othofosofate	$\leq 0.025 \text{ mg/l}$ Phesenthaele ya bo50
					Boleng	Dikotla	Kokoano ya palogotlhe ya fosoforo e tshwanetse go tokafadiwa go tswedisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le rileng le ditlhokego tsa boleng jwa metsi tsa badiisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Palogotlhe ya Fosoforo	$\leq 0.130 \text{ mg/l}$ Phesenthaele ya bo50
							Kokoano ya naeteraete & naeteraete e tshwanetse go tokafadiwa go tswedisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo	Naeteraete & Naeteraite	$\leq 1.00 \text{ mg/l N}$ Phesenthaele ya bo95

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa lkholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.		
							Boletswai mo letamong bo tshwanetse go somarelwa go tshhegetsisa boitekanelo jwa ditshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	≤ 55 mS/m Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somarelwa go tshhegetsisa boitekanelo jwa ditshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Salefate	≤ 80 mg/l Phesenthaele ya bo95
							Boletswai mo letamong bo tshwanetse go somarelwa go tshhegetsisa boitekanelo jwa ditshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Sodiamo	≤ 70 mg/l Phesenthaele ya bo95
						Diphathojene	Diphathojene di tshwanetse go somarelwa gore di nne ka dilekano tse di babalesegileng gore di ka dirisiwa ke batho.	<i>Escherichia coli</i>	$\leq$ makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
							Metsi a tshwanetse go nna a maemo a amogelesegang go ka dirisetswa boitapolo.	pH	6.5 – 9.0 Phesenthaele ya bo95
						Dintha tse di ka kgonang go fetoga	Bophepa jo bo oketsegileng ka palo ≥ 0.4 m	Kgoberego	Phesenthaele e e kwa tlase ya bo95
							Phetogo ya mo magareng	Thempereitšha	Go sa fete 2 °C ya phetogo e e oketsegang mo palong e e kwa godimo le e e kwa tlase ka bobedi
							Dilekano tsa okosijene di tshwanetse go somarela diphologolo tsothe le dijalo tsa lefelo le le rileng.	Okosijene e e Thaologileng	≥ 7.0 mg/L O ₂ Phesenthaele ya bo95
						Dire tse di nang le	Letamo le tshwanetse go	Bakteria ya fotosintese	Pheketso ya bakteria ya

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa lkholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						bothole	laolwa go fokotsa go runya ga baketeria e e bothole ya fotosintese		fotosintese ka kokoano ya Chl a e e kwa godingwana ga 30µg/l e tshwanetse go tsholwa e le ka ga tlase ga 20% ya nako.
							Metsi a a a tshetsweng le go bewa mo setshodong ga a tshwanela go nna matshosetsi mo tsweledisong ya ditshedi le batho.	Melemo e e tshothlediwang ke dihormone	17β-oestradiol: ≤ 1 µg/l
							Kelelo ya EWR le kelelo e e bonya ya metsi ka nako ya komelelo: Noka ya Pienaars mo CROC_EWR4 mo A23B NIMAR = 28.20x10 ³ m ³ Sethopa sa REC=C Kelelo e e kwa tlase le kelelo e e bonya ya metsi ka nako ya komelelo di tshwanetse go fithelelwa gore go fithelelwe ditlhokego tsa metsi tse di tswelang mosola badiri ba mo tikologong e le go tshagetsa maemo a a itekanetseng a diphologolo tsotlhe le di.	Kelelo e e bonya ya metsi ka nako ya komelelo Dikelelo tsa tshomarelo le kelelo e e bonya ya metsi ka nako ya komelelo. Setsha sa magareng sa bo4 sa EWR mo Nokeng ya Pienaars (thokomelo A2H006)	Diph 0.104 Ngwan 0.136 Sed 0.146 Fer 0.211 Thak 0.242 Mop 0.208 Mor 0.174 Motsh 0.144 Seet 0.133 Phuk 0.120 Phat 0.111 Lwe 0.103 Diph 0.104 Ngwan 0.136 Kelelo e e kwa godimo ya metsi (m ³ /s) 0 0.210 0.339 0.203 0.56 0.203 0 0 0 0 0 0
		Dikarolo tse di kwa godingwana tsa noka _Apies, Skinner-spruit le Noka ya Pienaars di elela go tswa mo Letamong la Roodeplaat (A23B, A23D, A23E)	1_6		Bokanakang	Kelelo e e kwa godimo ya metsi	Kelelo e e kwa godimo ya metsi ya EWR: Noka ya Pienaars mo CROC_EWR4 mo A23B NIMAR = 28.20x10 ³ m ³ Sethopa sa REC=C Go tshwanetse ga fithelelwa kelelo e e kwa godimo ya metsi gore ditlhokego tsa kelelo ya metsi a boleng a a thokegang go tswela mosola diphologolo tsotlhe le dijalo le batho ba mo	Merwalela (Leba Mametlelelo A dintlha ka ga ditlhokego tsa monwalela) Setsha sa magareng sa bo4 sa EWR mo Nokeng ya Pienaars (thokomelo A2H006)	Diph 0 Ngwan 0.210 Sed 0.339 Fer 0.203 Thak 0.56 Mop 0.203 Mor 0 Motsh 0 Seeteb 0 Phuk 0 Phat 0 Lwe 0

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							tikologong e e rileng e fithlelelwe go tshhegetsatsa maemo a a itekanetseng a diphologolo tsothe le dijalo tsa lefelo le rileng		
						Dikotla	Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswelidisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa sethopa se se laletseng sa ikholoji le gore go fithlelelwa dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Dikokoano ga di a tshwanela go letlelelwa gore di etegele go ya pele.	Othofosofate (PO₄) jaaka Fosoforo	Dimilegerama/dilitara tse ≤ 0.5 (mg/l) (Phesenthaele ya bo50) Apies Dimilegerama/dilitara tse ≤ 0.09 (mg/l) (Phesenthaele ya bo50) Penaars Dimilegerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo50) Skinnerpruit Dimilegerama/dilitara tse ≤ 3.0 (Phesenthaele ya bo50) Skinnerpruit le Apies Dimilegerama/dilitara tse ≤ 1.0 (mg/l) (Phesenthaele ya bo50) Penaars
							Boletswai jwa metsi a a elelang go tsena mo teng bo tshwanetse go somarelwa bo le mo dilekanong tse di amogelesegang go tshhegetsatsa diphologolo tsothe le dijalo tse di itekanetseng tsa metsi le dithokego tsa boleng jwa metsi tsa badirisi ba metsi.	Kgonagalo ya moela wa motlakase (EC)	DimiliSiemens/metara tse ≤ 55 (mS/m) (95thpercentile) Noka ya Penaars DimiliSiemens/metara tse ≤ 70 (mS/m) (95thpercentile) Noka ya Apies Dimilegerama/dilitara tse ≤ 70 (Phesenthaele ya bo95)
							Go nna teng ga dipathojene go tshwanetse ga thola kotsi e e kwa tlase mo boitekanelong jwa batho.	Salafete (SO₄)	Dimilegerama/dilitara tse ≤ 50 (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositseng go tshhegetsatsa dithedi tsothe le dimela tsa metsi le dithokego tsa badirisi ba metsi.	Sodiumo (Na)	Dimilegerama/dilitara tse ≤ 50 (Phesenthaele ya bo95)
							Go thokega tlathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	<i>Escherichia coli</i> (<i>E. coli</i>)	Makgetho a le 130/dimiliitara tse 100 (Phesenthaele ya bo95)
							Selekano sa pH	selekano sa pH	6.5 (Phesenthaele ya bo5) le 9.0 (Phesenthaele ya bo95)
								Kgoberego	Go letlelelwa phapogo ya 10% go tsa mo kokoanong ya lemorago.

IUA	Seth opa	Noka	Karolo ya motswedi	Sethhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Dilekano tsa okosijene e e tshalogileng di tshwanetse go tokafadiwa go tshetsa ditshedi tsothe le dimela tsa metsi.	Okosijene e e Tlhalogileng	Dimilegerama/dilitara tse ≥ 6 (mg/l)
						Botthole	Dikokoano tsa dire tse di botthole di tshwanetse go somarelwa di le mo dilekanong tse di seng botthole mo ditshedding tse dinnye tsa metsi le fa e le go nna matshosetsi mo boitekanelong lwa batho	Atrazine Mancozeb Tlalafofoseite Endosulfan	Dimilegerama/dilitara tse ≤ 0.078 (mg/l) Dimilegerama/dilitara tse 0.009 (mg/l) Dimilegerama/dilitara tse 0.7 (mg/l) Dimaekherogerama/litara tse 0.13 (ug/l)
						Metsi a elelang go tsema mo nokeng	Go nna teng ga legaethago la ditlhapi le Go nna teng ga legaethago la ditlhapi le ditshedi tse di kgolo mme di se na mokwala go tshwanetse ga somarelwa, go tswaledisa mefutafuta ya magaethago a a amanangwang le ditshedi tse di rileng, segolo bogolo go somarela dimedi tse di golang fa losing lwa metsi go tshetsa mefutafuta ya ditlhapi tsa MBRE le BANO.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Tlathhobo ya Legaeathago (RHAMM)	Sethhopa sa ikholoji sa tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong = C $\geq 62\%$
						Legaeathago	Go tlokega taolo ya diphologolo le dimela tsa seeng tse di senyang, Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa gore di nne mo sethopheng sa C sa ikholoji.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Tlathhobo ya Tsbogo ya Dimedi (VEGRAI)	Sethhopa sa ikholoji sa VEGRAI = C $\geq 62\%$
						Ditlhapi	Ditlhapi tsa lefelo le le rileng di tshwanetse go tokafadiwa gore di tswa mo sethopheng sa ga jaana sa E sa ikholoji mme di nne mo sethopheng sa D.	Tshupane ya Tlathhobo ya Tsbogo ya Ditlhapi (FRAI)	Sethhopa sa ikholoji sa ditlhapi = D FRAI $\geq 42\%$ (Dinoka tsa Apies/Skinnerspruit)
						Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Go tshwanetse ga dirwa tlathhobo ya ditlhapi tsa lefelo le le rileng ngwaga le ngwaga go di ela thoko fa go bapisiwa le sethlopha C sa ikholoji sa seemo sa ga jaana. Go somarela	Tshupane ya Tlathhobo ya Tsbogo ya Ditlhapi (FRAI)	Sethhopa sa ikholoji sa ditlhapi = C FRAI $\geq 62\%$ (Noka ya Pienaars mo REMP site A2PIEN-DINOK (d/s EWR 4)

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tihaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							mefutafuta e e leng teng. Kelelo e tshwanetse go somarelwa go amogela mefuta ya <i>LCYL</i>, <i>LMOL</i> le <i>BMAR</i> Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwa. Ditshedi tsa metsi tse dikgolo mme di se na mokwatla	Tshupane ya Tlathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5). Tshupane ya Tlathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 50 ASPT ≥ 3.4 (Apies le Skinner mo setsheng sa REMPAZAPIE-BOSCH (A23D & A23E)) MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.0 (REMP site A2PIEN-DINOK (d/s EWR 4))
						Malele	Pleenaars e e elelang go ya kwa ntlheng e sele ya Letamo la Roo-deplaat go ya kwa makgatharong a Boekenhoutspuit (A23B): Kgobokano ya bolelele e tshwanetse go somarelwa mo maemong a a fetotsweng thata kgotsa a a tokafaditsweng.	Tshupane e e ya Totobetseng Kgofelelego	EC ya Malele = D ≥ 42%
		Jukskei, Klein Jukskei, Modderfontein pruit (A21C)	1_7		Bokanakang	Kelelo e e kwa tlase ya metsi	Kelelo ya EWR le kelelo e e bonya ya metsi ka nako ya komelelo: Noka ya Jukskei mo CROC_EWR2 mo A21C PMAR = 139.9x10⁶ m³ Sethopa sa REC=D Go tshwanetse ga fitlhelelwa ditlhokego tsa metsi a a tswelang mosola dipholologo, dimedi le batho (Resefe) gore dithokego tsa kelelo e e tsweleng mosola badirisi ba metsi ba mo tikologong e e riling di fitlhelelwe go tshhegetsatsa	Kelelo e e bonya ya metsi ka nako ya komelelo Dikelelo tsa tshomarelo le kelelo e e bonya ya metsi ka nako ya komelelo Setsha sa magareng sa bo2 sa EWR mo Jukskei mo (thokomelo A2H023/ A2H044)	Kelelo e e kwa tlase ya metsi (m³/s) Kelelo e e bonya ya metsi ka nako ya komelelo (m³/s) Diph 0.725 Ngwan 0.775 Sed 0.770 Fer 0.814 Tlhak 0.936 Mop 0.845 Mor 0.839 Motsh 0.795

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo		
							maemo a a itekanetseng a diphologolo tsothe le dijalo tsa lefelo le le rileng le badirisi.		Seet	0.815	0.815
									Phuk	0.785	0.785
									Phat	0.774	0.774
									Lwe	0.762	0.762
						Dikotla	Kokoano ya dikotla ya metsi a a eilang go tsena mo teng e tshwanetse go tokafadiwa go tswelotisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa sethlopha se se laoletsweng sa ikholoji le gore go fithelelwa ditlhokego tsa boleng jwa metsi tsa badirisi ba metsi. Go tlhokega taolo ya dikotla go tokafatsa seemo sa ga jaana le go netefatsa tswelelo ya tsamaiso.	Othofosofate (PO ₄ ⁻) jaaka Fosoforo	Dimilegerama/dilitara tse ≤ 0.5 (mg/l) (Phesenthaele ya bo50) (tekanyetso ya nakwana ya dipalo) Dimilegerama/dilitara tse ≤ 0.125 (mg/l) (Phesenthaele ya bo50) (tekanyetso ya paka e telele ya dipalo)		
								Naeterite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 1.0 (Phesenthaele ya bo50)		
						Matswai	Boletswai jwa metsi a a elelang go tsena mo nokeng bo tshwanetse go somarelwa go tshhegetsatsa ditlhokego tsa ditsheditsa tsothe le dimela tsa metsi le ditlhokego tsa boleng jwa metsi tsa badirisi ba metsi.	Kgonagalo ya moela wa motlakase (EC)	DimiliSiemens/metara tse ≤ 65 (mS/m) (Phesenthaele ya bo95)		
								Salefeite (SO ₄)	Dimilegerama/dilitara tse ≤ 70 (mg/l) (Phesenthaele ya bo95)		
								Sodium (Na)	Dimilegerama/dilitara tse ≤ 70 (mg/l) (Phesenthaele ya bo95)		
								Tloraete	Dimilegerama/dilitara tse ≤ 60 (mg/l) (Phesenthaele ya bo95)		
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga tlhola kotsi e e kwa tlase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	makgetho a le 130/dimililitara tse 100 (Phesenthaele ya bo95)		
						Dintlha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositsweng go tshhegetsatsa ditsheditsa tsothe le dimela tsa metsi le ditlhokego tsa badirisi ba metsi.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 9.0 (Phesenthaele ya bo95)		
							Go tlhokega tlathobho ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tsa mo kokoanong ya lemorago.		
							Dilekano tsa okosijene e e tlhalogileng di tshwanetse	Okosijene e e Tlhalogileng	Dimilegerama/dilitara tse ≥ 6 (mg/l)		

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							go tokafadiwa go tshhegetsatsa ditshedi tsothe le dimela tsa metsi.		Dimilegerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Amonia jaaka N	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Aluminiamo (Al)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/dilitara tse ≤ 0.3 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimilegerama/dilitara tse ≤ 0.013 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimilegerama/dilitara tse ≤ 0.0075 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimilegerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Atrazine	Dimilegerama/dilitara tse ≤ 0.078 (mg/l)
								Mancozeb	Dimilegerama/dilitara tse 0.009 (mg/l)
								Tlilaefoseite	Dimilegerama/dilitara tse 0.7 (mg/l)
								Endosulfan	Dimaekherogerama/litara tse 0.13 (ug/l)
								Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = D ≥ 42%	
							Mefutafuta ya magaethago e tshwanetse go tokafadiwa gore e tswe mo sethopheng sa E sa ikholoji mme e tsene mo sethopheng sa D. Bokgoni jwa dipholologo tsothe le dijalo jwa go tshhegetsatsa go tswelisa ditirego tsa ikholoji le mefutafuta ya ditshedi e tshwanetse go tokafala.		
							Metsi a a elelang go tsena mo nokeng		
							Legaethago		
							Dimedi tse di mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa C sa ikholoji kgotsa mo maemong a a		
							Legaethago le le mo dintshing tsa noka		
								Tshupane ya Thathobo ya Tsbogo ya Dimedi	VEGRAI EC = C ≥ 62%

IUA	Sethop opa	Noka	Karolo ya motswedi	Sethop sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							botoka. Go thokega taolo ya diphologolo le dimela tsa seeng tse di senyang. Sethop sa ditlhapi tsa lefelo le le rileng se tshwanetse go tokafadiwa go tswa mo sethopheng sa go jaana sa ikholoji sa E go ya go sethopa sa ikholoji sa D. Go netafatsa go nna teng ga mefuta ya <i>BMAR</i> le <i>BMOT</i> (mefuta e e ikaegileng ka kelelo). Boteng jwa kelelo bo tshwanetse go nna teng go tshagetsa ga legaeithago la <i>TSPA</i> , <i>CGAR</i> , <i>BANO</i> , <i>BMAR</i> le <i>BMOT</i> .	Tshupane ya Tlathhobo ya Tsibogo ya Dithlapi (FRA)	Sethop sa ikholoji sa ditlhapi = D FRA $\geq 42\%$
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Ditshedi tsa metsi tse dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathhobo ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	Sethop sa ikholoji sa MIRA = D $\geq 42\%$ SASS ≥ 50 ASPT ≥ 38 (EWR2, A2JUKS-DIENR)
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa D kgotsa go tokafadiwa.	Tshupane e e ya Totobetseng Kgotilego	EC ya Malele $\geq 42\%$ A2JUKS-DIENR
						Dikotla	Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netafatsa gore sethopa se se laolelsweng sa ikholoji se a fithelelewa.	Othofosofate (PO ₄) jaaka Fosoforo	Dimilegerama/dilitara tse ≤ 0.125 (mg/l) (Phesenthaele ya bo50)
		Dikarolo tse di godingwana tsa Noka ya Bloubank spruit (A21D, A21E)	1_8		Boleng	Matswai	Boletswai jwa metsi a a elelang go tsena mo nokeng bo tshwanetse go somarelwa e le jwa boleng jwa seemo sa ga jaana. Laola dilamorado le dikago tsa mo isagong.	Naeteraite (NO ₃) & Naeteraite (NO ₂) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 1.0 (Phesenthaele ya bo50)
							Diekano tsa boletswai di kwa godimo thata.	Kgonagalo ya moela wa motlakase (EC)	Crocodile e elela go ya kwa makgathano a Bloubankspruit: DimiliSiemens/metara tse ≤ 45 (mS/m) (Phesenthaele ya bo95)
									Bloubankspruit: DimiliSiemens/metara tse ≤ 85

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa lkholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Boletswai jwa metsi a a elelang go tsena mo nokeng bo tshwanetse go tokafadiwa go somarela ditshedi tsothe le dimela tsa metsi di le mo seemong se se ka tselediwang le go tshegetsisa dithokego tsa boleng jwa metsi tsa badirisi ba metsi		(mS/m) (Phesenthaele ya bo95) Crocodile e elela go ya kwa nitheng ya makgathano a Bloubankspruit Dimilegerama/diilitara tse ≤ 40 (mg/l) (Phesenthaele ya bo95)
							Go nna teng ga dipathojene go tshwanetse ga thola kotsi e e kwa tiase mo boitekanelong jwa batho.		Bloubankspruit: Dimilegerama/diilitara tse ≤ 200 (mg/l) (Phesenthaele ya bo95)
					Dipathojene		Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositsweng go tshegetsisa ditshedi tsothe le dimela tsa metsi le dithokego tsa badirisi ba metsi.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimiliilitara tse 100 (Phesenthaele ya bo95)
					Dintsha tse di ka kgonang go fetoga			selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
								Cyanide	Dimilegerama/diilitara tse ≤ 0.110 (Phesenthaele ya bo95)
								Yuraniomo (U) (238)	Dimilegerama/diilitara tse ≤ 0.03 (Phesenthaele ya bo95)
								Arsenic (As)	Dimilegerama/diilitara tse ≤ 0.130 (Phesenthaele ya bo95)
								Gross α	0.42 Bq/diilitara
								Gross β	0.42 Bq/diilitara
								Aluminiomo (Al)	Dimilegerama/diilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/diilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/diilitara tse ≤ 0.3 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimilegerama/diilitara tse ≤ 0.0095 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimilegerama/diilitara tse ≤ 0.0075 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimilegerama/diilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Metsi a a elelang go tsena mo nokeng	Go tshwanetse ga tokafadiwa mefutafuta ya legaethago go somarela sethopa D sa ikholoji.	Zinki (Zn) Tshupane ya Tshomarelo ya popego e e lekalekanang ya diphahlogantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Tlaththobo ya Legaeethago (RHAMM)	Dimilegerama/dilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95) Tshomarelo ya popego e e lekalekanang ya diphahlogantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = D $\geq$ 42%
					Legaeethago	Legaeethago le le mo dintshing tsa noka	Dimedi tsa mo dintshing di tshwanetse go somarela di le sethopheng sa ikholoji sa D. Go tshwanetse ga tokafadiwa dimedi tse di tshogang mo losing lwa metsi. Go thokega taolo ya dijalo tsa seeng tse di senyang le tsosoloso ya lefelo le le mo losing lwa metsi. Go na le legaethago le le lekanyeditsweng. Tsosoloso ya lefelo le le dirang molewane wa metsi le lefatše e a thokega go tshagetsa mefuta e e nhang mo metsing le mo lefatshe (dinonyane).	Tshupane ya Tshomarelo ya popego e e lekalekanang ya diphahlogantsho tsa fisikhokhemikale le legaethago, Tshupane ya Tlaththobo ya Tsibogo ya Dimedi (VEGRAI)	VEGRAI EC = D $\geq$ 42%
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Ditlhapi	Ditlhapi tsa lefelo le le rileng di tshwanetse go laolwa gore di nne mo sethopheng D se se laletsweng sa ikholoji kgotsa di tshwanetse go tokafadiwa. Ditlhakego tsa legaethago tsa <i>B MOT</i> (dimedi) le kerabole khurumeditseng bottase jwa noka le kelelo ya <i>CPRE</i> di tshwanetse go fithelelwa	Tshupane ya Tlaththobo ya Tsibogo ya (FRAI)	Sethopa sa ikholoji = D FRAI $\geq$ 42%
						Ditshedi tsa metsi tse dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarela mo sethopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlaththobo ya Tsibogo ya mme di se na mokwatla le Mokgwatsamiso wa Kabo ya Maduo wa Aforikabonwa wa Motuta	Sethopa sa ikholoji sa MIRAI = D $\geq$ 42% SASS $\geq$ 60 ASPT $\geq$ 4.0 (A2CROC-ELAND)

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswelidisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go netefatsa sethopa se se laotsweng sa ikholoji le gore go fithelwa ditlhokego tsa boleng jwa metsi tsa badirisi ba metsi. Go thokega taolo ya dikotla go tokafatsa seemo sa ga jaana le go netefatsa tsweliso ya tsamaiso.	5 (SASS5).	Dimilegerama/dilitara tse ≤ 0.20 (mg/l) (Phesenthaele ya bo50)
						Dikotla	Go nna teng ga dipathojene go tshwanetse ga tlhola kotsi e kwa tiase mo boitekanelong jwa batho.	Naeteraite (NO ₃ ⁻) & Naeteraite (NO ₂ ⁻) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 2.0 (Phesenthaele ya bo50)
						Matswai	Go nna teng ga dipathojene go tshwanetse ga tlhola kotsi e kwa tiase mo boitekanelong jwa batho.	Kgonagalo ya moela wa motlakase (EC)	DimiliSiemens/metara tse ≤ 75 (mS/m) (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositweng go tshogetsa tlhalositweng go tshogetsa ditshedhi tsothe le dimela tsa metsi le ditlhokego tsa boleng jwa metsi tsa badirisi ba metsi.	Sodiamo	Dimilegerama/dilitara tse ≤ 60 (mg/l) (Phesenthaele ya bo95)
							Go nna teng ga dipathojene go tshwanetse ga tlhola kotsi e kwa tiase mo boitekanelong jwa batho.	Tloraete	Dimilegerama/dilitara tse ≤ 60 (mg/l) (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositweng go tshogetsa tlhalositweng go tshogetsa ditshedhi tsothe le dimela tsa metsi le ditlhokego tsa badirisi ba metsi.	Salafete	Dimilegerama/dilitara tse ≤ 75 (mg/l) (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga tlhola kotsi e kwa tiase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (E.coli)	makgetho a le 130/dimiliilitara tse 100 (ml) (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositweng go tshogetsa tlhalositweng go tshogetsa ditshedhi tsothe le dimela tsa metsi le ditlhokego tsa badirisi ba metsi.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
						Dintha tse di ka kgonang go fetoga	Go thokega tlathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoonong ya lemorago.
						Dire tse di bothole	Dikokoano tsa dire tse di bothole di tshwanetse go somarelwa di le mo dilekanong tse di seng bothole mo ditshedding tse	Cyanide	Dimilegerama/dilitara tse ≤ 0.110 (Phesenthaele ya bo95)
								Yuraniamo (U) (238)	Dimilegerama/dilitara tse ≤ 0.03 (Phesenthaele ya bo95)
								Gross α	0.42 Bq/dilitara

IUA	Seth opa	Noka	Karolo ya motswedi	Sethhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							dinnye tsa metsi le fa e le go nna matshoseisi mo boitekanelong jwa batho.	Gross β	0.42 Bq/dilitara
								Aluminium (Al)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimilegerama/dilitara tse ≤ 0.013 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimilegerama/dilitara tse ≤ 0.0075 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimilegerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Cobalt (Co)	Dimilegerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo95)
								Zinki (Zn)	Dimilegerama/dilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95)
						Metsi a a elelang go tsena mo nokeng	Ga go a tshwanela go nna le tshenyo go ya pele ya legaethago la mo teng ga molapo e e tshwanetseng go direga. Go tshwanetse ga tokafadiwa mefutafuta ya magaeithago go tswa mo sethopheng sa ikholoji sa E go ya go sethopa sa D.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Tlathobho ya Popego ya Lefatshe	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = D $\geq$ 42%
							Go somarela, go tsosolosa le go simolodisa losi la matirelo le dintshi tsa noka. Go tlhokega taolo ya diphologolo le dimela tsa seeng tse di senyang. Dimedi tsa mo dintshing tsa noka di tshwanetse go somarela gore di nne mo sethopheng sa D sa ikholoji kgotsa di tshwanetse go tokafadiwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Tlathobho ya Tsibogo ya Dimedi	VEGRAI EC = D $\geq$ 42%
						Diphologolo,	Sethhopa sa ditlhapi tsa tokafadiwa.	Tshupane ya Tlathobho	Sethhopa sa ikholoji sa ditlhapi = D

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tihaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					dimela le ditshedi tsa lelele le le rileng		lelele le le rileng se tshwanetse go somareliwa se le mo sethopheng sa ikholoji sa D kgotsa go tokafadiwa. Tokafatso ya legaethago le boleng jwa metsi e a thokega mo CFLA mme kelele e tshwanetse go nna e e lekaneng go direla mofuta e e ikagileng ka kelele go tshela BMAR, BPOL, CPRE	ya Tsbogo ya (FRAI)	FRAI ≥ 42%
						Ditshedi tsa metsi tse dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somareliwa mo maemong a a fetotsweng thata kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsbogo ya Diphologolo tse dikgolo mme di se na mokwatla le Mokgwatsamaiso wa Kabo ya Maduo wa Afonikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 50 ASPT ≥ 3.8 (mo EWR1 = A2CROC-HARTB)
						Diphologolo, dimela le ditshedi tse di nngang mo metsing le mo lefatshe	Tshwanelego ya boalo jo jwa noka go dira jaaka legaethago le ditselana tse di salwang morago ke diphologolo, dinonyane kgotsa ditshedi fa di fudugela kwa magaeithagong a a farologaneng fa gare ga mariga le selomo tsa dinonyane le diamusi tsa metsi e tshwanetse go somareliwa ka taolo e e maleba ya legaethago.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le thokego ya gore go dirwe RQC ya dipalo go direla bokane- kang jwa diphologolo/ dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Malele	Kgobokano ya bolele e tshwanetse go somareliwa mo maemong a a fetotsweng thata kgotsa a a tokafaditsweng.	Tshupane e e ya Kgotlele	EC ya Malele = D ≥ 42% (mo EWR1 = A2CROC-HARTB)
						Dilekano Letamo	Letamo le tshwanetse go laolwa go sireletsa Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelelang go ya teng. Go thama le go thabolola melawana e e ka dirisiwang go tswelisa dilekano tse di	Selekano se se kwa tlase sa tiriso se se se thokegang mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tlase go tswelisa botshelo jwa diphologolo tsothe le dijalo tsa metsi (15-18%).

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa lkholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							kwa godimo tsa letamo go netefatsa gore go somarelwa mefufafuta ya ditshedi tsothe le dimela tsa metsi. Kgolo ya metsi a letamo e tlhoka go fithhelela dithokego tsa kelelo ya kwa metsi a yang teng go direla mabaka a kelelo ya metsi go tswela mosola diphologolo le dijalo Go goliwa ga metsi a letamo go tshwanetse ga fithhelela dithokego tsa kwa metsi a eelang go ya teng go direla mabaka a kelelo metsi e e tswelang mosola diphologolo le dijalo.		
							Kokoano ya othofosofate e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka seemo se se nang le dikotla tse dintsi.	Othofosofate	$\leq 0.050 \text{ mg/l}$ Phesenthaele ya bo95
							Kokoano ya palogotho ya fosoforo e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Palogotho ya Fosoforo	$\leq 0.130 \text{ mg/l}$ Phesenthaele ya bo50
							Kokoano ya palogotho ya Amonia jaaka N e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go	Palogotho ya Amonia	$\leq 00725 \text{ mg/L N}$ Phesenthaele ya bo95

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa lkholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.		
							Kokoano ya naeteraete & naeteraite e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa diitshedi tsothe le dimela tsa lefelo le le rileng le diithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Naeteraete & Naeteraite	≤ 1.00 mg/L N Phesenthaele ya bo95
						Boleng jwa go itumelela bontle jwa letamo bo tshwanetse go laolwa go tshhegetsisa tiriso ya boitapolo le bojanala	Boleng jwa go itumelela bontle jwa letamo bo tshwanetse go laolwa go tshhegetsisa tiriso ya boitapolo le bojanala	Matlakala, masalela, malele, mefero ya mo metsing	Bo tshwanetse go tlhomamisiwa
						Boleng jwa go itumelela bontle jwa letamo bo tshwanetse go somarelwa go tshhegetsisa boitekanelo jwa diitshedi tsothe le dimela le diithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Boleng jwa go itumelela bontle jwa letamo bo tshwanetse go somarelwa go tshhegetsisa boitekanelo jwa diitshedi tsothe le dimela le diithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	≤ 85 mS/m Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somarelwa go tshhegetsisa boitekanelo jwa diitshedi tsothe le dimela le diithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Salefeite	≤ 100 mg/L Phesenthaele ya bo95
							Boletswai mo letamong bo tshwanetse go somarelwa go tshhegetsisa boitekanelo jwa diitshedi tsothe le dimela le diithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Tloraete	≤ 50 mg/l Phesenthaele ya bo95
						Dipathojene	Dipathojene di tshwanetse go somarelwa gore di nne ka ditekano tse di babalesegileng gore di ka dirisiwa ke batho.	<i>Escherichia coli (E.coli)</i>	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintsha tse di ka	Metsi a tshwanetse go nna	pH	6.5 – 9.0

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa lkholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						kgonang go fetoga	a maemo a a amogelesegang go ka dirisetswa boitapolo.		Phesenthaele ya bo95
							Bophepa jo bo oketsegileng	Kgoberego	≥0.4 m Phesenthaele ya bo5
							Phetogo ya mo magareng	Thempereitsha	Go sa fete 2 °C ya phetogo e e oketsegang mo palong e e kwa tlase e e kwa godimo ka bobedi
							Diekano tsa okosijene di tshwanetse go somarelwa mo diphologolong tsothe le dijalo tsa mo lefelong le le rileng.	Okosijene Tlhaologileng	≥ 7.0 mg/L O ₂ Phesenthaele ya bo95
							Letamo le tshwanetse go laolwa go fokotsa go runya ga baketeria e e bothole ya fotosintese	Baketeria ya fotosintese	Pheketso ya baketeria ya fotosintese ka kokoano ya Chl a e e kwa godingwana ga 30µg/l e tshwanetse go tsholwa e le ka ga tlase ga 20% ya nako.
						Dire tse di bothole	Metsi a a tshetsweng le go bewa mo ditshodong ga a tshwanaela go nna bothole mo ditsheding tse dinnye tsa metsi kgotsa go nna matshosetsi boitekanelong jwa batho.	Dibolayadisenyi	Cyanide: ≤ 110 µg/l Endosulfan: ≤ 20 µg/l Atrazine: ≤ 100 µg/l Phesenthaele ya bo95
							Metsi a a tshetsweng le go bewa mo setshodong sengwe ga a tshwanaela go nna matshosetsi tweledisong ya matshelo a diphologolo kgotsa batho.	Melemo e tshothediwang e dihormone	17β-oestradiol: ≤ 1 µg/l
						Periphyton/ Phytoplankton	Dikokoano tsa Chl a di tshwanetse go somarelwa di le mo seemong se go nang le selekano se se humileng ka dikotla kgotsa di tshwanetse go tokafadiwa.	Chl a	20-30µg/l Phesenthaele ya bo50

2: MAGALIES

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IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya Karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
								Sodiumo	Dimilegerama/dilitara tse ≤ 10 (Phesenthaele ya bo95)
								Tloraete	Dimilegerama/dilitara tse ≤ 10 (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene ga go a tshwana go baka kotsi mo boitekanelong jwa batho.	<i>Escherichia coli (E.coli)</i>	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintlha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositsweng go tshagetsa dithedi tsothe le dimela tsa metsi le dithokego tsa badirisi ba metsi. Go thokega tlathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.0 (Phesenthaele ya bo95)
						Metsi a go tsena nokeng	Go tshwanetse ga somarelwa tshwanelego ya mefutafuta ya magaeithago e le mo sethopheng se se laolelsweng sa ikholoji sa B.	Kgoberego	Go lelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
					Legaethago		Go tshwanetse ga somarelwa tshwanelego ya mefutafuta ya magaeithago e le mo sethopheng se se laolelsweng sa ikholoji sa B.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = B ≥ 82% (Rapid EWR 9)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = B ≥ 82% (Rapid EWR 9)
						Legaethago le mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng se se laolelsweng sa ikholoji sa B.	Tshupane ya Tlathobo ya T sibogo ya Dimedi Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago	VEGRAI EC = B ≥ 82% (Rapid EWR 9)

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya Karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dithapi	Dithopa tsa lefelo le le rileng di tshwanetse go laolwa gore di nne mo sethopheng se se laolelweng sa ikholoji sa B Go netefatsa go nna teng ga mefuta ya <i>Yellow fish</i> (BPOL), <i>AURA</i> , <i>CPRE</i> , <i>BMOT</i>	Tshupane ya Tlithahobo ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = B FRAI ≥ 82% Kgobokanya bonnye mefuta e le 10 mo maitekong a kgobokanyo ya sampole ya metsotso e le 20 mo maitekong a kgobokanyo ya sampole ya metsotso e le 20 bonnye 50+ CPRE le 5 BMOT (Rapid EWR site 9 = REMP site A2MAGA-MALON)
					Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Ditshedhi tsa metsi tse dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedhi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo maenong a thago kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlithahobo ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla le Tsamaiso ya Kabo ya Madiuo ya Aforikaborwa, Mofuta 5 (SASS5).	MIRAI EC = B ≥ 82% SASS ≥ 200 ASPT ≥ 6.5 (Rapid EWR site 9 = REMP site A2MAGA-MALON)
					Diphologolo, dimela le ditshedhi tse di nnang mo metsing le leratsheng		Tshwanelego ya boalo jo jwa noka go dira jaaka legaethago la dinonyane le diamusi tsa metsi e tshwanetse go somarelwa ka taolo e maleba ya legaethago.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlithahobo ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go thomamisa mefuta ya kemedi ya dinonyane (mofuta le dipalo gore di dire jaaka dikao). Go na le thokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
		Dinoka tsa Magalies, Klein Magalies, Bloubaan, Skeerpoort (A21F)	2_2		Bokanakang	Kelelo e e kwa tlase ya metsi	Kelelo ya EWR le kelelo e e bonya ya metsi ka nako ya komelelo: Noka ya Magalies mo CROC_EWR15 mo A21F NIMAR = $21.899 \times 10^{-3} \text{ m}^3$ Sethopa sa REC=C/D Go tshwanetse ga fithelelwa kelelo e e kwa tlase ya metsi le kelelo e e bonya ya metsi ka nako ya komelelo go tshetseisa diphologolo tsothe le dijalo tsa metsi le badiri ba mo lefelong le noka e elelang go ya kwa teng.	Kelelo e e bonya ya metsi ka nako ya komelelo Dikelelo tsa tshomarelo le kelelo e e bonya ya metsi ka nako ya komelelo (Setsha sa Karolo ya nako e metsi a elelang ka bonako mo go yone CROC_EWR 15 mo Nokeng ya Magalies Tlhokomelo ya tshololo ka nako ya dipatlisiso tsa baeololikhale	Kelelo e e bonya ya metsi ka nako ya komelelo (m ³ /s) Diph 0.042 0.015 Ngwan 0.044 0.016 Sed 0.052 0.019 Fer 0.100 0.035 Tlhak 0.163 0.031 Mop 0.151 0.045 Mor 0.111 0.039 Matsh 0.080 0.028 Seet 0.066 0.023 Phuk 0.057 0.020 Phat 0.051 0.018 Lwe 0.045 0.016

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IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwana	Karolo ya Karolwana	Thaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tshalositweng go tshagetsa dithedi tsothe le dimela tsa metsi le dithokego tsa badirisi ba metsi.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
						Dintlha tse di ka kgonang go fetoga	Go thokega thathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a eelang go tsena mo molapong.	Kgoberego	Go lelelewa phapogo ya 10% go tswa mo kokoanong ya lemorago.
							Dilekano tsa okosijene e e tshadlogileng di tshwanetse go fithelelwa go tshagetsa diphologolo tsothe le dijalo tsa metsi.	Okosijene e e Tshadlogileng	Dimilegerama/dilitara tse ≥ 6 (mg/l)
								Amonia jaaka N	Dimilegerama/dilitara tse ≤ 0.072 (mg/l) (Phesenthaele ya bo95)
								Aluminiamo (Al)	Dimilegerama/dilitara tse ≤ 0.062 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimilegerama/dilitara tse ≤ 0.006 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimilegerama/dilitara tse ≤ 0.0073 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimilegerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Atrazine	Dimilegerama/dilitara tse ≤ 0.078 (mg/l)
								Mancozeb	Dimilegerama/dilitara tse 0.009 (mg/l)
								Tlalaefoseite	Dimilegerama/dilitara tse 0.7 (mg/l)
								Endosulfan	Dimilegerama/dilitara tse 0.13 (ug/l)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya Karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Metsi a a eielang go tsena nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa C/D sa ikholoji. Dimedi tse di thogang mo losing lwa metsi tse di siameng le selekano se se kwa tlase sa mmukogodi mo dikarolong tse di tletseng maje tsa molapo di tshwanetse go somarelwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlathhobo ya Legaeithago (RHMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago EC = C/D ≥ 58% a a mo molapong EC = C/D ≥ 58%
					Legaethago	Legaethago le le mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa C/D sa ikholoji. Go tshwanetse ga dirwa taolo ya diphologolo le dijalo tsa seeng tse di senyang mme tshiretso ya karolo e dirang molelwane wa noka le lefatshene e tshwanetse go tokafala. Go tshwanetse ga laolwa tseenelelo. Mefuta ya dijalo tsa seeng tse di senyang e tshwanetse go laolwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Tshupane ya Tlathhobo ya Tsiibogo ya Dimedi	VEGRAI EC = C/D ≥ 58%
					Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Ditlhapi	Ditlhapi tsa lefelo le le rileng di tshwanetse go somarelwa di le mo sethopheng se se laolelsweng sa C/D sa ikholoji. Neteletsa go nna teng ga mefuta ya sekai. Kelelo e tshwanetse go somarelwa go direla mefuta.	Tshupane ya Tlathhobo ya Tsiibogo ya Dithapi (FRAI).	Sethopa sa ikholoji sa dithapi = C/D FRAI ≥ 58% Kgobokanya bonnye 8 spp. mo maitekong a kgobokanyo ya sampole ya metsotso e le 20. Mefuta ya sekao <i>Yellow fish (BPOL)</i> , <i>AURA</i> , <i>CPRE</i> , <i>BMOT</i> (Karolo e e kwa tlasenyana ya Skeerpoort setsha A2SKEE-R560B – se se ntlhwa se se tshitshingwang; Karolo ya noka moo metsi a a eielang ka bonako ya Magalies EWR 15 – karolo ya noka A21F-01168)

IUA	Setlhopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya Karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Karolo e e kwa godingwana ya Skeerpoort (A2SKEE-UITKO): Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo maemong a thago kgotsa e tshwanetse go tokafadiwa (setlhopa B sa ikholoji). Karolo e e kwa tlasenyana ya noka ya Skeerpoort (A2SKEE-R560B): le Noka ya Magalies (CROC_ EWR 15): Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo teng ga maemo a fetotsweng mo go seng kaekae kgotsa e tshwanetse go tokafadiwa (setlhopa C sa ikholoji).	Tshupane ya Tlithathobo ya Tsiibogo ya Diphologolo tse dikgolo mme di se na mokwatla le Mokgwatsamaiso wa Kabo ya Madiuo wa Aforikaborwa, Mofuta 5 (SASS5).	Karolo e e kwa tlasenyana ya Noka ya Skeerpoort A2SKEE-R560B setsha se se ntšhwa se se tshitshintsweng le Noka ya Karolo e metsi a eielang ka bonako ya Noka ya Magalies EWR 15 – karolo ya noka A21F-01168; MIRAI EC = C ≥ 62% SASS ≥ 150 ASPT ≥ 6.0	
						Diphologolo, dimela le ditshedi tse di nnang mo metsing le lefatsheng Malele	Tshwanelego ya boalo jo jwa noka go dira jaaka legaeithago la dinonyane le diamusi tsa metsi e tshwanetse go somarelwa ka taolo e e maleba ya legaeithago. Kgobokanyo ya malele e tshwanetse go somarelwa e le mo maemong a a fetotsweng mo magareng kgotsa go tokafadiwa.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi Tshupane e e ya Totobetseng Kgofelelego	Go tshwanetse ga dirwa tlithathobo ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le tlhokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng. EC ya Malele = C ≥ 62%
		Bodutiso jwa Rietspruit Karolwana le mo Borwa boithaba jwa A21F	2_3		Bokanakang Boleng	Kelelo e e kwa tlase ya metsi Dikotla	Leba di-RQO tsa metsi a a ka fa tlase ga lefatsheng Kokoano ya dikotla ya metsi a a eielang go tsena mo teng e tshwanetse go tokafadiwa	Kelelo e e bonya ya metsi ka nako ya komelelo Othofosofate (PO₄) jaaka Fosoforo	Tsamaiso e e tlhohlelediwang ke metsi a a ka fa tlase ga lefatsheng (didolomaete) karolo ya Steenkoppies ya go tlosa. Tshupane ya kgatelelo ga e a tshwanela go nna <65% Dimilegerama/dilitara tse ≤ 0.010 (mg/l) (Phesenthalele ya bo50)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya Karolwana	Tihlalo ya RQO	Sekao	Tekanyetso ya Dipalo
							go tswelidisa boltekanelo jwa diphologolo tsothe le dimela tsa metsi.	Naeterite (NO ₃) & Naeteraete (NO ₂) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 0.05 (Phesenthale ya bo50)
							Boletswai jwa metsi a a elelang go tsena mo nokeng bo tshwanetse go somarelwa bo le mo seemong sa ga jaana go neterafatsa tshireletso ya motswedi.	Kgonagalo ya moela wa motlakase (EC)	DimiliSiemens/metara tse ≤ 20 (mS/m) (Phesenthale ya bo95)
						Matswai		Salefite	Dimilegerama/dilitara tse ≤ 10 (Phesenthale ya bo95)
								Sodiamo	Dimilegerama/dilitara tse ≤ 10 (Phesenthale ya bo95)
								Teloraete	Dimilegerama/dilitara tse ≤ 10 (Phesenthale ya bo95)

Lenaneo 4: Maikaelelo a Boleng jwa Motswedi wa DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatshoko 3: CROCODILE / ROODEKOPJES

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tihlalo ya RQO	Sekao	Tekanyetso ya Dipalo
3: CROCODILE/ROODEKOPJES	III	Noka ya Crocodile go tswa mo keleding ya kwa ntle ya Letamo la Hartebeespoort go ya kwa metsing a a elelang go tsena mo Letamong la Roodekopjes, Rosespruit, Ramogatlale Karespruit (A21J)	3_1	C/D	Bokanakang	Kelelo e e kwa tiase ya metsi	Kelelo ya EWR le kelelo e e bonywa ya metsi ka nako ya komelelo: Noka ya Crocodile mo CROC_EWR3 mo A21J NMAR = 143.3x10 ⁶ m ³ Sethopa sa REC=C/D Go tshwanetse ga fithelelwa kelelo e e kwa tiase ya metsi le kelelo e e bonywa ya metsi ka nako ya komelelo go tshagetsa diphologolo tsothe le dijalo tsa metsi le badiri ba mo lefelong le noka e elelang go ya kwa teng.	Kelelo e e bonywa ya metsi ka nako ya komelelo Dikelelo tsa tshomarelo le kelelo e e bonywa ya metsi ka nako ya komelelo (Setsha sa magareng sa EWR mo Noka ya Crocodile Tlhokomelo mo A2H083)	Kelelo e e kwa tiase ya metsi (m ³ /s) Diph 1.425 1.446 Ngwan 1.591 1.607 Sed 1.690 1.703 Fer 1.993 1.995 Tlhak 2.276 2.267 Mop 2.290 2.279 Mor 2.022 2.024 Motsh 1.870 1.878 Seet 1.765 1.776 Phuk 1.679 1.690 Phat 1.564 1.580 Lwe 1.441 1.462 Kelelo e e kwa godimo ya metsi (m ³ /s) Diph 0 Ngwan 1.717 Sed 2.942 Fer 0 Tlhak 6.191 Mop 1.668 Mor 0 Motsh 0 Seet 0
						Kelelo e e kwa godimo ya metsi	Kelelo e e kwa godimo ya metsi ya EWR: Noka ya Crocodile mo CROC_EWR3 mo A21J NMAR = 143.3x10 ⁶ m ³ Sethopa sa REC=C/D	Mervalela Kelelo e e kwa godimo ya metsi e e tshalositsweng gape jaaka dithokego ka nosi tsa morvalela malebana le bogolo le bolelele jwa paka (leba Mametlelelo A)	

IUA	Setlhopa	Noka	Karo ya motswedi	Setlhopa sa Ikholoji	Karo lwana	Karo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo		
									Phuk		
									Phat		
									Lwe		
							Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswedisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi.	Othofosofate (PO ₄ ⁻³) jaaka Fosoforo	Dimilegerama/dilitara tse ≤ 0.050 (mg/l) (Phesenthaele ya bo50)	0	
						Dikotla		Naeteraite (NO ₃ ⁻) & Naeteraite (NO ₂ ⁻) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 1.0 (Phesenthaele ya bo50)	0	
								DimiliSiemens/metara tse ≤ 75 (mS/m) (Phesenthaele ya bo95)		1.729	
							Kgonagalo ya moela wa motlakase (EC)				
						Matswai	Boletswai mo metsing a a elelang mo teng bo tshwanetse go somarelwa bo le mo seemong sa ga jaana go netefatsa tshireletso ya motswedi le tsweliso ya motswedi.	Salefete	Dimilegerama/dilitara tse ≤ 90 (Phesenthaele ya bo95)		
								Sodiamo	≤ Dimilegerama/dilitara tse 60 (Phesenthaele ya bo95)		
								Tleloraete	Dimilegerama/dilitara tse ≤ 70 (Phesenthaele ya bo95)		
						Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go baka kotsi epe mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimiliilitara tse 100 (ml) (Phesenthaele ya bo95)		
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetso tse di tshwanetseng go tshetsetsa dithedi tsothe le dimela tsa metsi le dithokego tsa badirisi ba metsi.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)		
						Dintlha tse di ka kgonang go fetoga	Go tlokega tlathobo ya motheo go tlohamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.		
							Dilekano tsa okosijene e e tshalogileng di tshwanetse go tokafadiwa go tshetsetsa dithedi tsothe le dimela tsa metsi.	Okosijene e e Tlhaologileng	Dimilegerama/dilitara tse ≥ 6 (mg/l)		

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Dikokoano tsa dire tse di nang le bothole ga di a tshwanela go thola kotsi epe mo ditseding tse dinnye tsa metsi le mo boitekanelong jwa batho. Dire tse di bothole	Amonia jaaka N	Dimilegerama/diilitara tse ≤ 0.0725 (mg/l) (Phesenthaele ya bo95)
								Aluminiamo (Al)	Dimilegerama/diilitara tse ≤ 0.105 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/diilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/diilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimilegerama/diilitara tse ≤ 0.005 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimilegerama/diilitara tse ≤ 0.0073 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimilegerama/diilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Atrazine	Dimilegerama/diilitara tse ≤ 0.078 (mg/l)
								Mancozeb	Dimilegerama/diilitara tse 0.009 (mg/l)
								Tielaefoseite	Dimilegerama/diilitara tse 0.7 (mg/l)
							Endosulfan		Dimilegerama/diilitara tse 0.13 (ug/l)
							Mefutafuta ya magaeithago e tshwanetse go tokafadiwa gore e tswa mo sethopheng sa D sa ikholoji mme e tsene mo sethopheng sa C/D. Go tshwenyegela go fapaana ga kelelo mo ditseding tsothe tse di ikaegileng ka kelelo le legaeithago. Kelelo e tshwanetse go nna e e lekaneng go direla mefuta e e ikaegileng ka kelelo.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Thathobho ya Legaeithago (RHAMM), Tshupane ya Thathobho ya Popego ya Lefatshe	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C/D ≥ 58%

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Legaeathago le le mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa C/D sa ikholoji kgotsa di tshwanetse go tokafadiwa. Go tlalatlala ga dimedi tsa seeng go tshwanetse ga laolwa mme go tshwanetse ga kganelwa dikago mo karolong e e dirang molelwane wa noka le lefatshe.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeathago, Tshupane ya Thathobho ya Tsibogo ya Dimedi	VEGRAI EC = C/D ≥ 58%. Kganelwa kago epe go ya pele mo lefelong le le mo dintshing tsa noka.
						Dithapi	Sethopa sa dithapi tsa lefelo le le riling se tshwanetse go tokafadiwa gore se tswa mo sethopheng sa D sa ikholoji go tsena mo sethopheng sa C/D sa ikholoji. Go thokega go fetofetoga go laolwang ga ditha go direla mefuta ya dithapi tse di boifang kelelo.	Tshupane ya Thathobho ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = C/D FRAI ≥ 58% Mefuta ya sekao mo (Noka ya Crocodile): AJOH, le e e ikaegileng ka kelelo BMAR, CPRE
					Diphologolo, dimela le ditshedi tsa lefelo le le riling	Ditshedi tsa metsi dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Thathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 60 ASPT ≥ 4.0
						Diphologolo, dimela le ditshedi tse di nngang mo metsing le mo lefatsheng	Tshwanelego ya boalo jo jwa noka go dira jaaka legaeathago la tsa dinonyane le diamusi tsa metsi e tshwanetse go somarelwa ka taolo e e maleba ya legaeathago. Go tshwanetse ga tokafadiwa legaeathago la karolo e e dirang molelwane fa gare ga metsi le lefatsheng.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa thathobho ya motheo go tihomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le thokego ya gore go diwe RQC ya dipalo go direla bakanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa D kgotsa go tokafadiwa.	Tshupane e ya Totobetseng Kgotlelego	EC ya Malele = D ≥ 42%

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tihaloso ya RQO	Sekao	Tekanyetso ya Dipalo
		Letamo la Roodekopjes (A21J)	3_2		Bokanakang	Dilekano tsa Letamo	Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelang go ya teng. Go thama le go thabolola melawana e e ka dirisiwang go tswelisa dilekano tse di kwa godimo tsa letamo go netefatsa gore go somarelwa mefutufa ya ditshedhi tsothe le dimela tsa metsi. Go gololwa ga metsi a letamo go tshwanetse ga fithelwa ditshoko tsa kwa metsi a elelang go ya teng go direla mabaka a kelelo metsi e e tswelang mosola diphologolo le dijalo.	Selekano se se kwa tlase sa tiriso se se thokegang mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tlase go tswelisa botshelo jwa diphologolo tsothe le dijalo tsa metsi (15-18%).
							Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswelisa boitekanelo jwa ditshedhi tsothe le dimela tsa lefelo le le rileng le ditshoko tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikotla.	Othofosofate	$\leq 0.050 \text{ mg/l}$ Phesenthaele ya bo95
					Boleng	Dikotla	Kokoano ya palogothhe ya fosoforo e tshwanetse go tokafadiwa go tswelisa boitekanelo jwa ditshedhi tsothe le dimela tsa lefelo le le rileng le ditshoko tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikotla.	Palogothhe ya Fosoforo	$\leq 0.130 \text{ mg/l}$ Phesenthaele ya bo50

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Kokoano ya naeteraete & naeteraite e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa dithshedi tsothe le dimela tsa lefelo le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e nang le dilekano tse di magareng tsa dikolla.	Naeteraete & Naeteraite	≤ 0.70 mg/L N Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somarelwa go tshegetsa boitekanelo jwa dithshedi le dijalo tsothe tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi a elelelang go ya teng. Boletswai mo letamong bo tshwanetse go somarelwa go tshegetsa boitekanelo jwa dithshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	≤ 70 mS/m Phesenthaele ya bo95
							Boletswai mo letamong bo tshwanetse go somarelwa go tshegetsa boitekanelo jwa dithshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Salefeite	≤ 85 mg/L Phesenthaele ya bo95
							Boletswai mo letamong bo tshwanetse go somarelwa go tshegetsa boitekanelo jwa dithshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Sodiamo	≤ 70 mg/l Phesenthaele ya bo95
						Dipathojene	Dipathojene di tshwanetse go somarelwa gore di nne ka dilekano tse di babalesegileng gore di ka dirisiwa ke batho.	<i>Escherichia coli (E.coli)</i>	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Metsi a tshwanetse go nna a maemo a a amogelesegang go ka dirisetswa boitapaloso.	pH	6.5 – 9.0 Phesenthaele ya bo95
							Bophepa jo bo oketsegileng	Kgoberego	≥ 0.4 m Phesenthaele ya bo5
							Phetogo ya mo magareng	Thempereitšha	Go sa fete 2 °C ya phetogo e e oketsegang mo palong e e kwa godimo le e e kwa tlase ka bobedi
							Dilekano tsa okosijene di tshwanetse go somarelwa mo diphololong tsothe le dijalo tsa mo lefelong le le rileng.	Okosijene e e Tlhaologileng	≥ 7.0 mg/L O ₂ Phesenthaele ya bo95
							Letamo le tshwanetse go laolwa go fokotsa go runya ga baketeria e e bothole ya fotosintese	Baketeria ya fotosintese	Pheketso ya baketeria ya fotosintese ka kokoano ya Chl a e e kwa godingwana ga 30µg/l e tshwanetse go tsholwa e le ka ga tlase ga 20% ya nako.

Lenaneo 5: Maikaelelo a Boleng jwa Motswedi wa DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko 4: HEX / WATERKLOOFSPRUIT / VAALKOP

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
4: P HEX/WATERKLOOFSPRUIT/VAALKOP	II	Sterkstroom go tswa mo metsing a a elelang go tswa mo Letamong la Buffelspoort go ya kwa metsing a a elelang go tswa mo Letamong Roodekopies, Maretwane, Tshukutswe – Bodutiso jwa Kotanari A21K	4_1	C	Boleng	Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelelwa jaaka e tshwanetse go tseledisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi go nefeatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Othofosofate (PO ₄) jaaka Fosoforo Naeterite (NO ₃) & Naeteraete (NO ₂) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 0.050 (mg/l) (Phesenthaele ya bo50) Dimilegerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)
						Matswai	Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithelelwa jaaka go tshwanetse go totobetseng go tseledisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go nefeatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Kgonagalo ya moela wa motlakase (EC)	DimiliSiemens/metara tse ≤ 70 (mS/m) (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go baka kolisi epe mo boitekanelong jwa batho.	Salefeite	Dimilegerama/dilitara tse ≤ 70 (Phesenthaele ya bo95)
								<i>Escherichia coli</i> (E.coli)	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)

IUA	Seth opa	Noka	Karolo ya motswe di	Sethopa sa Ikholo ji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
		bodutiso jo bo mo gare le jo bo kwa tlase fa tlase ga letamo				Dintlha tse di ka kgonang fetoga	Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositsweng go tshetsetsa ditshedhi tsothe le dimela tsa metsi le ditlhokego tsa badirisi ba metsi. Go thokega tlathobho ya motheo go tlhomamisa seemo sa ga jaana sa kgoberego ya metsi a elelang go tsena mo molapong.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
							Go thokega tlathobho ya motheo go tlhomamisa seemo sa ga jaana sa kgoberego ya metsi a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
								Amonia jaaka N	Dimilegerama/dilitara tse ≤ 0.0725 (mg/l) (Phesenthaele ya bo95)
								Aluminiamo (Al)	Dimilegerama/dilitara tse ≤ 0.062 (mg/l) (Phesenthaele ya bo95)
								Chromium (IV)	Dimilegerama/dilitara tse ≤ 0.0675 (mg/l) (Phesenthaele ya bo95)
						Dire tse di bothole	Dikokoano tsa dire tse di bothole di tshwanetse go somarelwa di le mo dilekanong tse di seng bothole mo ditshedding tse dinnye tsa metsi le fa e le go nna matshosetsi mo boitekanelong jwa batho	Mankanese (Mn)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Loto (Pb) e popota	Dimilegerama/dilitara tse ≤ 0.005 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimilegerama/dilitara tse ≤ 0.0073 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimilegerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)

IUA	Seth opa	Noka	Karolo ya motswe di	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Legaethago	Metsi a a elelang go tsena mo nokeng	Mefutafuta ya magaethago e tshwanetse go somarelwa e le mo sethopheng sa C sa ikholoji. Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, boleng jwa metsi le maemo a kelelo di tshwanetse go somarelwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago. Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaethago (RHAMM), Tshupane ya Tlathobho ya Popego ya Lefatshe	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago. Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaethago (RHAMM), Tshupane ya Tlathobho ya Popego ya Lefatshe
						Legaethago le le mo dintshing tsa noka	Taolo ya dimedi e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa C. Taolo ya go tlalatlala ga diphologolo kgotsa dijalo tsa seeng e tshwanetse go tsengwa tirisong.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago. Tshupane ya Tlathobho ya Tsbogo ya Dimedi	VEGRAI EC = C ≥ 62%
						Ditlhapi	Go tshwanetse ga somarelwa ditlhapi tsa lefelo le le rileng mo sethopheng sa C/D sa ikholoji. Tlathobho ya ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go di ela tlhoko fa go bapisiwa le sethopa se se laolelweng sa ikholoji.	Tshupane ya Tlathobho ya Tsbogo ya Dimedi (FRAI).	Sethopa sa ikholoji sa ditlhapi= C/D FRAI ≥ 58% Kgobokanya mefuta e le 6 mo maitekong a kgobokanyo ya sampole ya metsotso e le 20. Mefuta ya sekao BMOOT (site AZSTER-MAMOG)
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Ditshedi tsa metsi tse dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsbogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 70 ASPT ≥ 4.2
						Malele	Kgobokano ya bolele e tshwanetse go somarelwa mo maemong a a fetotsweng thata kgotsa a a tokafaditsweng	Tshupane Totobetseng Kgotelego	EC ya Malele = D ≥ 42%

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo						
		Dikarolo tse di kwa godingwana tsa noka ya Sterkstroom go elela go tsena mo Letamong la Buffelspoort (A21K bodutiso jo bo fa gare le jo bo kwa godingwana fa godimo ga letamo)	4_2		Bokanakang	Kelelo e e kwa tlase ya metsi	Kelelo ya EWR le kelelo e e bonywa ya metsi ka nako ya komelelo: Sterkstroom mo CROC_EWR11 mo A21K NIMAR = 14.0x10 ⁻⁶ m ³ Sethopa sa REC=C	Kelelo e e bonywa ya metsi ka nako ya komelelo Dikelelo tsa tshomarelo le kelelo e bonywa ya metsi ka nako ya komelelo Rapid EWR site 11 mo Sterkstroom (tlhokomelo mo A2H053)	Diph	Kelelo e e bonywa ya metsi ka nako ya komelelo (m ³ /s)					
							Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fitlhelelwa jaaka e tlhalositswe go tsweladisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi go netefatsa gore go fitlhelelwa setlhopa se se laolelsweng sa ikholoji.	Othofosofate (PO ₄) jaaka Fosforo	Dimilegerama/dilitara tse ≤ 0.010 (mg/l) (Phesenthaele ya bo50)						
								Naetereite (NO ₃) & Naeteraete (NO ₂) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)						
						Matswai	Diekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fitlhelelwa jaaka go tlhalositswe mo go totobetseng go tsweladisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go netefatsa gore go fitlhelelwa setlhopa se se laolelsweng sa ikholoji.	Kgonagalo ya moela wa motlakase (EC)	DimiliSiemens/metara tse ≤ 55 (mS/m) (Phesenthaele ya bo95)						
								Salefite	Dimilegerama/dilitara tse ≤ 70 (Phesenthaele ya bo95)						

IUA	Seth opa	Noka	Karolo ya motswed I	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Thaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Legaethago	Metsi a a elelang go tsena mo nokeng	Mefutafuta ya magaethago e tshwanetse go somarelwa e le mo sethopheng sa B/C sa ikholoji.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Thathobho ya Legaethago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = B/C ≥ 78%
						Legaethago le le mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa B/C sa ikholoji. Go tlalatlala ga dipholologo kgotsa dijalo tsa seeng go tshwanetse go laolwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Thathobho ya Tsibogo ya Dimedi	VEGRAI EC = B/C ≥ 78%
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Dithapi	Go tshwanetse ga somarelwa dithapi tsa lefelo le le rileng mo sethopheng sa B sa ikholoji. Thathobho ya dithapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go di ela tlhoko fa go bapisiwa le sethopa se se laoletsweng sa ikholoji.	Tshupane ya Thathobho ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = C FRAI ≥ 62% Kgobokanya mefuta e le 6 mo maitekong a kgobokanyo ya sampo le ya metsotso e le 20 Mofuta wa sekao – mofuta o o boifang kelelo, AURA, BIMOT (Sterkstroom CROC_EWR11 mo A21K)
						Ditshedi tsa metsi tse dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Thathobho ya Tsibogo Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 100 ASPT ≥ 5.7
					Bokanakang	Dilekano Letamo	Letamo le tshwanetse go laolwa go sireletsa tiro ya dipholologo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelang go ya teng. Go tlhama le go thabola melawana e e ka dirisiwang go tswelisa diekano tse di kwa godimo tsa letamo go netefatsa gore go somarelwa mefutafuta ya ditshedi tsothe le dimela tsa metsi.	Selekano se se kwa tlase sa tiro se se thokegang mo letamong	(Sterkstroom CROC_EWR11 mo A21K)
		Letamo la Buffelspoort (A21K)	4_3						Melawana ya tiro jaaka e le maleba. Selekano se se kwa tlase go tswelisa botshelo jwa diphologolo tsothe le dijalo tsa metsi (15-18%).

IUA	Seth opa	Noka	Karolo ya motswe d	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa dithshedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e nang le dilekano tse di magareng tsa dikotla.	Othofosofate	≤ 0.015 mg/l Phesenthaele ya bo50
						Dikotla	Kokoano ya naeteraete & naeteraite e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa dithshedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e nang le dilekano tse di magareng tsa dikotla.	Naeteraete & Naeteraite	≤ 0.50 mg/L N Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa dithshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	≤ 55 mS/m Phesenthaele ya bo95
						Dipathojene	Dipathojene di tshwanetse go somarelwa gore di nne ka dilekano tse di babalesegileng gore di ka dirisiwa ke batho.	<i>Escherichia coli</i> (E.coli)	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintha tse di ka kgonang fetoga	Metsi a tshwanetse go nna a maemo a amogelesegang go ka dirisiwa boitapološo.	pH	6.5 – 9.0 Phesenthaele ya bo95
						Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelelwa jaaka e tshalositswe go tswaledisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi go netefatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Othofosofate (PO ₄) jaaka Fosoforo	Dimilegerama/dilitara tse ≤ 0.015 (mg/l) (Phesenthaele ya bo50)
		Karolo e e kwa godingwana ya Noka ya Hex go ya kwa Letamong la Olifantsnek, Rookloofspruit (A22G)	4_4			Matswai	Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithelelwa jaaka go	Naeteraite (NO ₃) & Naeteraite (NO ₂) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)
								Kgonagalo ya moela wa motlakase	DimiliSiemens/metara tse ≤ 55 (mS/m) (Phesenthaele ya bo95)

IUA	Seth opa	Noka	Karolo ya motswe di	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							tlhalositswe mo go totobetseng go tswaledisa boitekanelo jwa diphologolo tsotlhe le dimela tsa metsi le go netefatsa gore go filhelelwa sethopa se se laolelsweng sa ikholoji.	Sodiamo	Dimilegerama/dilitara tse ≤ 70 (Phesenthaele ya bo95)
							Go nna teng ga dipathojene ga go a tshwanela go baka kotsi epe mo boitekanelong jwa batho.	Teloraete	Dimilegerama/dilitara tse ≤ 40 (Phesenthaele ya bo95)
						Dipathojene		<i>Escherichia coli</i> (E.coli)	makgetho a le 130/dimiliilitara tse 100 (ml) (Phesenthaele ya bo95)
						Metsi a a elelang go tsena mo nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa C sa ikholoji. Kelelo e tshwanetse go nna e le lekaneng go tshagetsa mefuta le legaeithago.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Thathhobo ya Legaeithago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C ≥ 62%
						Legaeithago le mo dintshing tsa noka	Dimeidi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa C sa ikholoji. Go tlatlala ga diphologolo kgotsa dijalo tsa seeng e tshwanetse go laolwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Tshupane ya Thathhobo ya Tsibogo ya Dimeidi	VEGRAI EC = C ≥ 62%
						Ditlhapi	Thathhobo ya sethopa sa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go tlhokomela fa go bapiswa le sethopa se se laolelsweng sa ikholoji sa C.	Tshupane ya Thathhobo ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa ditlhapi = C FRAI ≥ 62%
						Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Kgobokanyo ya ditshedhi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Thathhobo ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	Kgobokanya bonnye 20 BMOT mo mathekong a kgobokanyo ya sampole ya metsotso e le 20. Ditshedhi tsa metsi tse dikgolo mme di se na mokwatla EC= C ≥ 62% SASS ≥ 140 ASPT ≥ 5.8

IUA	Seth opa	Noka	Karolo ya motswed i	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Bokanakang	Selekano Letamo sa	Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsothe le dijalo tsa mo lefelong le le riling ga mmogo le badirisi ba kwa metsi a elelang go ya kwa teng. Go tlhama le go thabolola melawana e e ka dirisiwang go tswelisa dilekano tse di kwa godimo tsa letamo go netefatsa gore go somarelwa mefutafuta ya dithedi tsothe le dimela tsa metsi. Go gololwa ga metsi a letamo go tshwanetse ga fithelela dithokego tsa kwa metsi a elelang go ya teng go direla mabaka a kelelo metsi e e tswelang mosola diphologolo le dijalo. Kokoano ya othofosofate e tshwanetse go tokafadiwa go tsweledisisa boitekanelo jwa dithedi tsothe le dimela tsa lefelo le le riling le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikotla.	Othofosofate	≤ 0.015 mg/l Phesenthaele ya bo50
		Letamo la Olifantsnek (A22G)	4_5			Dikotla	Kokoano ya naeteraete & naeteraite e tshwanetse go tokafadiwa go tsweledisisa boitekanelo jwa dithedi tsothe le dimela tsa lefelo le le riling le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikotla.	Naeteraete & Naeteraite	≤ 0.50 mg/L N Phesenthaele ya bo95
					Boleng		Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa dithedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelang go ya teng.	Kgonagalo ya moela wa motlakase	≤ 55 mS/m Phesenthaele ya bo95
						Dipathojene	Dipathojene di tshwanetse go somarelwa gore di nne ka dilekano tse di babalesegileng gore di ka dirisiwa ke batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	makgetho a le 130/dimiliilitara tse 100 (ml) (Phesenthaele ya bo95)

IUA	Seth opa	Noka	Karolo ya mofswed I	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo	
		Noka ya Hex go tswa mo Letamong la Olifantsnek, go elela go tsena mo Letamong la Bospoort, Sandspruit (A22H)			Bokanakang	Kelelo e e kwa tlase ya metsi	Kelelo ya EWR le kelelo e e bonya ya metsi ka nako ya komelelo: Noka ya Hex (mo karolong e ntšhwa ya W) mo A22H NMAR = $12.11 \times 10^6 \text{ m}^3$ Sethopa sa REC=D Kelelo e e kwa tlase le kelelo e e bonya ya metsi ka nako ya komelelo di tshwanetse go fithelelwa gore go fithelelwe ditlhokego tsa metsi tse di tswelang mosola badiri ba mo tikologong e le go tshwegetsa maemo a a itekanetseng a diphologolo tsothe le di.	Kelelo e e bonya ya metsi ka nako ya komelelo Dikelelo tsa tshomarelo le kelelo e e bonya ya metsi ka nako ya komelelo (Nihagare mo Nokeng ya Hex go ya kwa nitheng e sele ya kelelo ya Letamo la Olifantsnek, Tlhokomelo kwa karolong e ntšhwa ya W ya letamo	Kelelo e e kwa tlase ya metsi (m^3/s) Diph Ngwan Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat Lwe	Kelelo e e bonya ka nako ya komelelo (m^3/s) 0.013 0.014 0.015 0.019 0.028 0.026 0.020 0.017 0.017 0.015 0.014 0.013 0.012 0.012
							Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswelisa botekanelo jwa diphologolo tsothe le dijalo tsa metsi le ditlhokego tsa boleng jwa metsi jwa badiri ba metsi. Go tlokega taolo ya dikotla go netefatsa tsweliso ya tsamaiso. Boleng jwa metsi bo tshwanetse go tokafadiwa go tokafatsa seemo sa ga jaana sa ikholoji go tswa mo sethopheng sa ikholoji sa E go ya mo go sa D.	Othofosofate (PO_4) jaaka Fosoforo	Dimilegerama/dilitara tse $\leq$ 0.125 (mg/l) (Phesenthaele ya bo50)	
					Boleng	Dikotla	Naeterite (NO_3) & Naeteraete (NO_2) jaaka Naeterojene	Dimilegerama/dilitara tse $\leq$ 1.0 (Phesenthaele ya bo50)		
						Matswai	Diekano tsa boletswai di kwa godimo thata. Boletswai jwa metsi a a elelang go tsena mo nokeng bo tshwanetse go tokafadiwa go tshwegetsa ditshedi tsothe le dimela tsa metsi le ditlhokego tsa boleng jwa metsi tsa	Kgonagalo ya moela wa motlakase Salefeite	DimilSiemens/metara tse $\leq$ 85 (mS/m) (Phesenthaele ya bo95) Dimilegerama/dilitara tse $\leq$ 120 (Phesenthaele ya bo95)	

IUA	Sethlopha	Noka	Karolo ya motswedi	Sethlopha sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							badirisi ba metsi. Boleng jwa metsi bo tshwanetse go tokafadiwa go tokafatsa seemo sa ga jaana sa ikholoji go tswa mo sethlopheng sa ikholoji sa E go nna sa D.	Teloraete	Dimilegerama/diilitara tse ≤ 120 (Phesenthaele ya bo95)
					Dipathojene		Go nna teng ga dipathojene ga go a tshwanela go baka kotsi epe mo botekanelong jwa batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	makgetho a le 130/dimiliilitara tse 100 (ml) (Phesenthaele ya bo95)
					Dintlha tse di ka kgonang go fetoga		Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsoeng tse di tlhalositsewang go tshagetsa dithedi tsothe le dimela tsa metsi le dithokego tsa badirisi ba metsi.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
							Go thokega tlathobho ya motheo go tlhomamisa seemo sa ga jaana sa kgoberego ya metsi a elelang go tsena mo molapong.	Kgoberego	Go lefela phapogo ya 10% go tswa mo kokoanong ya lemorago.
								Amonia jaaka N	Dimilegerama/diilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Aluminiamo (Al)	Dimilegerama/diilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/diilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
							Dikokoano tsa dire tse di bothole di tshwanetse go somarelwa di le mo dilekanong tse di seng bothole mo ditheding tse dinnye tsa metsi le fa e le go nna matshosetsi mo botekanelong jwa batho	Tshipi (Fe)	Dimilegerama/diilitara tse ≤ 0.3 (mg/l) (Phesenthaele ya bo95)
					Dire tse di bothole			Lloto (Pb) e popota	Dimilegerama/diilitara tse ≤ 0.0095 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimilegerama/diilitara tse ≤ 0.0073 (mg/l) (Phesenthaele ya bo95)

IUA	Setlh opa	Noka	Karolo ya motswe d	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
								Nikele (Ni)	Dimilegerama/dilitara tse ≤0.07 (mg/l) (Phesenthaele ya bo95)
								Atrazine	Dimilegerama/dilitara tse ≤0.078 (mg/l)
								Mancozeb	Dimilegerama/dilitara tse 0.009 (mg/l)
								Tlalaefoseite	Dimilegerama/dilitara tse 0.7 (mg/l)
								Endosulfan	Dimaekherogarama/litara tse 0.13 (ug/l)
						Metsi a a e lelang go tsena mo nokeng	Mefutafuta ya magaeithago e tshwanetse go tokafadiwa gore e tse mo sethopheng sa D sa ikholoji mme e tsene mo sethopheng sa C go tshegetsa bokgoni ka kakaretso jwa diphologolo tsothe le dijalo jwa go tsweladisa ditirego tsa ikholoji le mefutafuta ya ditshedi.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Thathobo ya Legaeithago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = C ≥ 62%
						Legaeithago	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa D sa ikholoji.	Tshupane Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago	VEGRAI EC = D ≥ 42%
						Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Sethopa sa dithapi tsa lefelo le le rileng se tshwanetse go somarelwa se le mo sethopheng sa ikholoji sa D kgotsa go tokafadiwa. Kelelo e tshwanetse go nna e lekaneng go direla mefuta e e ikaegileng ka kelelo go tshela.	Tshupane ya Thathobo ya Tsiibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = D FRAI ≥ 42%

IUA	Sethlopa	Noka	Karolo ya motswed	Sethlopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Diphologolo, le dimela ditshedi tse di nnang metsing le mo lefatsheng	Tshwanelego ya boalo jo jwa noka go dira jaaka legaethago la dinonyane le diamusi tsa metsi e tshwanetse go somarelwa ka taolo e e maleba ya legaethago. Go tshwanetse ga tokafadiwa legaethago la karolo e e dirang molelwane fa gare ga metsi le lefatsheng.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlathobho ya motheo go tshomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le tlhokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Ditshedi tsa metsi tse dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethlopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 70 ASPT ≥ 4.2 (SiteA2HEX-PAARD)
							Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le rileng le ditlhokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Othofosofate	≤ 0.5 mg/l Phesenthaele ya bo50
		Letamo la Bospoort (A22H)	4_7		Boleng	Dikotla	Kokoano ya palogotho ya fosoforo e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le rileng le ditlhokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Palogotho ya Fosoforo	≤ 0.130 mg/l Phesenthaele ya bo50
							Kokoano ya naeteraete & naeteraete e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa ditshedi tsothe le dimela le ditlhokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Naeteraete & Naeteraete	≤ 1.00 mg/L N Phesenthaele ya bo95

IUA	Sethlopa	Noka	Karolo ya motswed	Sethlopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Matswai	Boletswai mo letamong bo tshwanetse go somareliwa go tshetsetsa boitekanelo jwa dithedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelang go ya teng.	Kgonagalo ya moela wa motlakase	≤ 85 mS/m Phesenthaele ya bo95
							Boletswai mo letamong bo tshwanetse go somareliwa go tshetsetsa boitekanelo jwa dithedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelang go ya teng.	Sodiamo	≤ 100 mg/l Phesenthaele ya bo95
						Dipathojene	Dipathojene di tshwanetse go somareliwa gore di nne ka dilekano tse di babalesegileng gore di ka dirisiwa ke batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimiliitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintsha tse di ka kgonang fetoga	Metsi a tshwanetse go nna a maemo a a amogelesegang go ka dirisetswa boitapološo.	pH	6.5 – 9.0 Phesenthaele ya bo95
						Dire tse di bothole	Bophepa jo bo oketsegileng ka palo.	Kgoberego	≥ 0.4 m Phesenthaele ya bo5
							Letamo le tshwanetse go laolwa go fokotsa go runya ga baketeria e e bothole ya fotosintese	Baketeria ya fotosintese	Pheketso ya baketeria ya fotosintese ka kokoano ya Chl <i>a</i> e e kwa godingwana ga 30µg/l e tshwanetse go tsholwa e le ka ga tiase ga 20% ya nako.
						Legaeithago la Letamo	Go laola motswedi wa metsi go direla tshomarelo ya mefutafuta ya dithedi tsothe le dimela tsa metsi (kelelo ya go tsena mo teng, dilo tsothe tse di tshelang le mefuta e e nhang mo metsing le mo lefatsheng, dintshi tsa noka). Go somarela, go tsosolosa le go simolodisa losi la matirelo le dintshi tsa noka. Karolo e dirang molelwane fa gare ga metsi le lefatše ya tihago e tshwanetse go somareliwa ka moo go ka kgonegang ka teng go netefatsa legaeithago le le tshokegang.	Boitekanelo jwa dimedi tse di mo dintshing tsa noka	50% ya lefatše le le apesitsweng ke dimela tsa mo dintshing tsa noka

IUA	Sethlopha	Noka	Karolo ya motswedi	Sethlopha sa ikholoji	Karoliwana	Karolo ya karoliwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo		
		Waterkloofspruit (A22H)	4_8				Kelelo ya EWR le kelelo e e bonya ya metsi ka nako ya komelelo: Waterkloofspruit mo CROC_EWR14 mo A22H NMAR = 5.469x10 ⁶ m ³ Sethlopha sa REC=B/C	Dikelelo tsa tshomarelo le kelelo e e bonya ya metsi ka nako ya komelelo Rapid EWR site 14 mo Waterkloofspruit (tlhokomelo A2H038)	Kelelo e e bonya ya metsi ka nako ya komelelo (m ³ /s)		
					Bokanakang	Kelelo e e kwa tlase ya metsi	Kelelo ya EWR le kelelo e e bonya ya metsi ka nako ya komelelo di tshwanetse go fitlhelelwa gore go fithelelwe dithokego tsa metsi tse di tswelang mosola badiri ba mo tikologong e le go tshegetsa maemo a a itekanetseng a dipholologo tsothe le dijalo tsa lefelo le le rileng le badirisi.		Diph	0.028	0.010
									Ngwan	0.027	0.010
									Sed	0.028	0.010
									Fer	0.035	0.013
									Tlhak	0.039	0.014
									Mop	0.038	0.014
									Mor	0.035	0.013
									Motsh	0.033	0.012
									Seet	0.033	0.012
									Phuk	0.031	0.011
									Phat	0.03	0.011
			Lwe	0.03				0.010			
						Othofosofate (PO ₄) jaaka Fosoforo	Dimilegerama/dilitara tse ≤ 0.025 (mg/l) (Phesenthaele ya bo50)				
					Dikotla	Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go netefatsa gore go filthelelwa sethlopha se se laoletsweng sa ikholoji.	Naeteraite (NO ₃) & Naeteraete (NO ₂) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 0.25 (Phesenthaele ya bo50)			
					Boleng		Kgonagalo ya moela wa mottakase	DimiliSiemens/metara tse ≤ 20 (mS/m) (Phesenthaele ya bo95)			
						Matswai	Kokoano ya boletswai jo bo elelang go tsena mo teng e tshwanetse go somarelwa e le mo seemong sa ga jaana go netefatsa tshireletsego ya dipholologo tsothe le dimela tsa tlhago kgotsa motswedi.	Salefeite	Dimilegerama/dilitara tse ≤ 10 (Phesenthaele ya bo95)		
							Tloraete	Dimilegerama/dilitara tse ≤ 10 (Phesenthaele ya bo95)			
						Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go baka kotsi epe mo boitekanelong jwa batho.	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)			

IUA	Seth opa	Noka	Karolo ya motswed i	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dintsha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tlhalositweng go tshetsetsa ditshedhi tsothe le dimela tse metsi le diithokego tsa badirisi ba metsi.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
							Go thokega tlathobho ya motheo go tlhomamisa seemo sa ga jaana sa kgoberego ya metsi a a eelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
						Metsi a a elelang go tsena mo nokeng	Mefutafuta ya magaethago e tshwanetse go somarelwa e le mo sethopheng sa B sa ikholoji.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaeethago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tse fisikhokhemikale le legaethago la metsi a a mo molapong EC = B ≥ 82%
					Legaeethago	Legaeethago le le mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa B sa ikholoji.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Tlathobho ya Tsibogo ya Dimedi	VEGRA IEC = B ≥ 82%
					Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Ditlhapi	Sethopa sa ditlhapi tsa lefelo le le rileng se tshwanetse go somarelwa se le mo sethopheng sa ikholoji sa B/C. Lefelo le le mo godimo ga lephororo le tshwanetse go sireletswa ka ntha ya go nna teng ga TSPA gaufi le motswedi wa lephororo. FRAI e tshwanetse go dirwa go thokomela fa go bapiswa le sethopa sa ga jaana	Tshupane ya Tlathobho ya Tsibogo ya Ditlhapi (FRAI)	Sethopa sa ikholoji sa ditlhapi = B/C FRAI ≥ 78% Sample 20 BMOT mo mathekong a kgobokanyo ya sample ya metsotso e le 20

IUA	Seth opa	Noka	Karolo ya motswed i	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Mefuta e e nang mo metsing le mo lefatshe	Tshwanelego ya boalo jo jwa noka go dima jaaka legaethago la dinonyane le diamusi tsa metsi e tshwanetse go somarelwa ka taolo e e maleba ya legaethago. Go tshwanetse ga tokafadiwa legaethago la karolo e e dirang molelwane fa gare ga metsi le lefatshe .	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlathobho ya motheo go tlhomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi karolong e telele ya noka. Go na le tlhokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Ditshedi tsa metsi tse dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = C $\geq$ 62% SASS $\geq$ 150 ASPT $\geq$ 6.0
		Noka ya Hex e elela go tswa mo Letamong la Bospoort go elela mo teng ga Letamo la Vaalkop (A22J)				Kelelo e e kwa tlase ya metsi	Kelelo ya EWR le kelelo e e bonyaka metsi ka nako ya komelelo: Noka ya Hex mo CROC_EWR6 mo A22J NIMAR = $26.9 \times 10^{-6} \text{ m}^3$ Sethopa sa REC=D Kelelo e e kwa tlase ya metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo e tshwanetse go fithelelwa go tshagetsa maemo a a tsekanetseng a diphologolo tsothe le dijalo tsa tefelo le le riteng le badirisi.	Kelelo e e bonyaka ya metsi ka nako ya komelelo Dikelelo tsa tshomarelo le kelelo e e bonyaka ya metsi ka nako ya komelelo Setsha sa magareng sa bo6 sa EWR mo Nokeng ya Hex (tlhokomelo mo A2H094)	Kelelo e e kwa tlase ya metsi (m^3/s) Diph 0.024 0.015 Ngwan 0.026 0.023 Sed 0.035 0.022 Fer 0.052 0.022 Tlhak 0.093 0.070 Mop 0.084 0.067 Mor 0.055 0.054 Motsh 0.039 0.039 Seet 0.035 0.035 Phuk 0.030 0.030 Phat 0.028 0.028 Lwe 0.025 0.023
					Boleng	Dikolla	Kokoano ya dikolla tsa metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go	Othofosofate (PO_4) jaaka Fosoforo	Dimilegerama/dilitara tse $\leq$ 0.050 (mg/l) (Phesenthaele ya bo50)

IUA	Seth opa	Noka	Karolo ya motswed i	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Thaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							tsweledisa boitekanelo jwa dipholologo tsotlhe le dijalo tsa metsi le dithokego tsa boleng jwa metsi jwa badirisi ba metsi. Go thokega taolo ya dikotla go netefatsa tswelediso ya tsamaiso. Boleng jwa metsi bo tshwanetse go tokafadiwa go tokafatsa seemo sa ga jaana sa ikholoji go tswa mo sethopheng sa ikholoji sa E go nna sa D.	Naeteraite (NO ₃) & Naeteraete (NO ₂) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 2.0 (Phesenthaele ya bo50)
							Dilekano tsa boletswai di kwa godimo thata. Boletswai jwa metsi a a elelang go tsena mo teng bo tshwanetse go tokafadiwa go tshetsetsa dipholologo tsotlhe le dimela tsa metsi le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Boleng jwa metsi bo tshwanetse go tokafadiwa go tokafatsa seemo sa ikholoji sa ga jaana go tswa mo sethopheng sa ikholoji sa E go ya go sa D.	Kgonagalo ya moela wa motlakase	DimiliSiemens/metara tse ≤ 85 (mS/m) (Phesenthaele ya bo95)
					Matswai		Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di thalositsewang go tshetsetsa dishedi tsotlhe le dimela tsa metsi le dithokego tsa badirisi ba metsi.	Salefeite	Dimilegerama/dilitara tse ≤ 120 (Phesenthaele ya bo95)
					Dipathojene		Go nna teng ga dipathojene ga go a tshwanela go thola kotsi epe mo boitekanelong jwa batho.	Tloraete	Dimilegerama/dilitara tse ≤ 120 (Phesenthaele ya bo95)
					Dintsha tse di ka kgonang fetoga		Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di thalositsewang go tshetsetsa dishedi tsotlhe le dimela tsa metsi le dithokego tsa badirisi ba metsi.	selekano sa pH	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)
							Go thokega thathobo ya motheo go tshomamisa seemo sa ga jaana sa kgoberego ya metsi a elelang go tsena mo molapong.	kgoberego	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
							Dikokoano tsa dire tse di bothole di tshwanetse go somarelwa di le mo dilekanong tse di seng bothole mo diisheding tse dinnye tsa metsi le fa e le go matsosetsi mo boitekanelong jwa batho	Amonia	Go letelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
								Aluminiamo (Al)	Dimilegerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/dilitara tse ≤ 0.3 (mg/l) (Phesenthaele ya bo95)

IUA	Sethop a	Noka	Karolo ya mofswed i	Sethop sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
								Lito (Pb) e popota	Dimilegerama/dilitara tse ≤0.0095 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimilegerama/dilitara tse ≤0.0073 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimilegerama/dilitara tse ≤0.07 (mg/l) (Phesenthaele ya bo95)
						Metsi a a elelang go tsena mo nokeng	Mefutafuta ya magaeathago e tshwanetse go somarelwa e le mo sethopheng sa D sa ikholoji kgotsa e tokafadiwe. Mefutafuta ya magaeathago go direla mefuta e e bofang kelelo le dimedi tse di thogang mo losing lwa metsi e tshwanetse go somalwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantshe tsa fisikhokhemikale le legaethago. Mokgwa le Sekao sa ka bonako sa Thathobho ya Legaethago	Tshomarelo ya popego e e lekalekanang ya dipharologantshe tsa fisikhokhemikale le legaethago. Mokgwa le la metsi a a mo molapong EC = D ≥ 42%
						Legaethago le le mo dintshing tsa noka	Dimedi tse di mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa C sa ikholoji kgotsa mo maemong a a botoka. Go thokega tshireletso ya legaethago. Go tshwanetse ga laoliwa dikago mo karolong e e dirang molelwane fa gare ga metsi le lefatshe.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantshe tsa fisikhokhemikale le legaethago. Tshupane ya Thathobho ya Tsibogo ya Dimedi	VEGRAI EC = C ≥ 62%
						Dithapi	Thathobho ya dithapi tsa lefelo le le ngwaga go di ela tlhoko fa go bapisiwa le sethoba se se laletsweng sa ikholoji sa D.	Tshupane ya Thathobho ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = D FRAI ≥ 42%
						Dithapi	Kgobokanyo ya dithedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwe.	Tshupane ya Thathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 70 ASPT ≥ 4.2 REMP site A2HEXR-ROOIW
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa D kgotsa go tokafadiwa e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa D kgotsa e tokafadiwe	Tshupane e e Totobetseng ya Kgotlelelo	EC ya Malele = D ≥ 42%

IUA	Seth opa	Noka	Karolo ya motswe di	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Thaloso ya RQO	Sekao	Tekanyetso ya Dipalo
		Letamo la Vaalkop le karolo e e kwa tlasenyana ya noka ya Elands pele ga e kgathana le Crocodile (A221)			Bokanakang	Selekano Letamo sa	Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelang go ya teng. Go tlhama le go tlhabolola melawana e e ka dirisiwang go tswelisa dilekano tse di kwa godimo tsa letamo go netefatsa dithedi tsothe le dimela tsa metsi. Go gololwa ga metsi a letamo go tshwanetse ga filhelela dithokego tsa kwa metsi a elelang go ya teng go direla mabaka a kelelo metsi e e tswelang mosola diphologolo le dijalo.	Selekano se se kwa tlase sa tiriso se se tshokegang mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tlase go tswelisa botshelo jwa diphologolo tsothe le dijalo tsa metsi (15-18%).
							Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswelisa boitekanelo jwa dithedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somareliwa jaaka tsamaiso e nang le dilekano tse di magareng tsa dikotla.	Othofosofate	$\leq 0.05 \text{ mg/l}$ Phesenthaele ya bo50
			4_10			Dikotla	Kokoano ya palogotho ya fosoforo e tshwanetse go tokafadiwa go tswelisa boitekanelo jwa dithedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somareliwa jaaka tsamaiso e nang le dilekano tse di magareng tsa dikotla.	Palogotho ya Fosoforo	$\leq 0.055 \text{ mg/l}$ Phesenthaele ya bo50
					Boleng		Kokoano ya naeteraete & naeteraite e tshwanetse go tokafadiwa go tswelisa boitekanelo jwa dithedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somareliwa jaaka tsamaiso e nang le dilekano tse di magareng tsa dikotla.	Naeteraete & Naeteraite	$\leq 0.70 \text{ mg/L N}$ Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somareliwa go tshagetsa boitekanelo jwa dithedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelang go ya teng.	Kgonagalo ya moela wa mollakase	$\leq 55 \text{ mS/m}$ Phesenthaele ya bo95

IUA	Sethopa	Noka	Karolo ya motswed	Sethopa sa kholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa ditshedhi tsothe le dimela le ditlhoko go tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelang go ya teng.	Salefeite,	≤ 100 mg/l Phesenthaele ya bo95
							Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa ditshedhi tsothe le dimela le ditlhoko go tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelang go ya teng.	Teloraete	≤ 100 mg/l Phesenthaele ya bo95
						Dipathojene	Dipathojene di tshwanetse go somarelwa gore di nne ka dilekano tse di babalesegile gore di ka dirisiwa ke batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
							Metsi a tshwanetse go nna a maemo a a amogesehang go ka dirisetwa botlapoloso.	pH	6.5 – 9.0 Phesenthaele ya bo95
							Bophepa jo bo oketsegile	Kgoberego	≥ 0.4 m Phesenthaele ya bo5
						Dintha tse di ka kgonang go fetoga	Phetogo ya mo magareng	Thempereitšha	Go sa fete 2 °C ya phetogo e e oketsegang mo palong e e kwa godimo le e kwa tlase ka bobedi
							Dilekano tsa okosijene mo tsamaisong Dilekano tsa okosijene di tshwanetse go somarelwa mo diphologolong tsothe le dijalo tsa mo lefelong le le rileng.	Okosijene e e Tlhaologile	≥ 7.0 mg/L O ₂ Phesenthaele ya bo95
						Dire tse bothole	Letamo le tshwanetse go laolwa go fokotsa go runya ga baketeria e e bothole ya fotosintese	Baketeria ya fotosintese	Pheketso ya baketeria ya fotosintese ka kokoano ya Chl <i>a</i> e e kwa godingwana ga 30µg/l e e tshwanetse go tsholwa e le ka ga tlase ga 20% ya nako.

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Legaethago	Legaethago la Letamo	Go laola motswedi wa metsi go direla tshomarelo ya mefutafuta ya ditshedi tsothe le dimela tsa metsi (kelelo ya go tsena mo teng, dilo tsothe tse di tshelang le mefuta e e nnaang mo metsing le mo lefatsheng, dintshi tsa noka). Go somarela, go tsosolosa le go simolodisa losi la matirelo le dintshi tsa noka. Karolo e e dirang molelwane fa gare ga metsi le lefatsheng ya tlhago e tshwanetse go somarela ka moo go ka kgonegang ka teng go netefatsa legaeithago le le thokegang.	Boitekanelo jwa dimedi tse di mo dintshing tsa noka	70% ya lefatsheng le le apesitweng ke dimela tsa mo dintshing tsa noka
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Ditlhapi	Go tshwanetse ga somarela mefutafuta le dipalogothe tsa ditlhapi.	Mefutafuta le palogothe ya ditlhapi	Sethopa sa ditlhapi tsa mofuta o le mongwe se tshwanetse go thokomelewa ka go dirisa ditshutatiso tsa tlathobo ya boitekanelo. Go tshwanetse ga thomamisiwa bontsintsi jo bo tshwanelegang. Go tshwanetse ga thomamisiwa ditlhotshwana tse di totiweng tsa ditlhapi tsa mofuta o le mongwe.
					Periphyton/ Phytoplankton		Dikokoano tsa Chl a di tshwanetse go somarela di le mo seemong se go nang le selekano sa magareng sa dikotla tse di tithaologileng.	Chl a	11-20µg/l Phesenthaele ya bo50

Lenaneo 6: Maikaelelo a Boleng jwa Motswedi wa DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko5: ELANDS / VAALKOP

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
5: ELANDS/VAALKOP	II	Dikarolo tse di kwa godingwana tsa noka ya Elands go ya mo Letamong la Swatruugens karolwana e e mo A22A borwa bothaba	5_1	C	Bokanakang	Kelelo e e kwa tlase ya metsi	Kelelo ya EWR le kelelo e e bonyaka nako ka nako ya kelelo: Noka ya Elands mo CROC_EWR10 mo A22A NMAR = 10.1x10 ⁶ m ³ Sethopa sa REC=B/C Go tshwanetse ga fitlhelwa kelelo e e kwa tlase ya metsi le kelelo e e	Kelelo e e bonyaka nako ya kelelo Dikelelo tsa tshomarelo le kelelo e e bonyaka metsi ka nako ya kelelo. Rapid EWR site 10 mo	Kelelo e e kwa tlase ya metsi (m ³ /s) Kelelo e e bonyaka nako ya metsi ka nako ya kelelo Diph

IUA	Seth opa	Noka	Karolo ya ya motswed i	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo		
							bony a metsi ka nako ya komelelo go tshegetsa diphologolo tsothe le dijalo tsa metsi le badiri ba mo lefelong le noka e elelang go ya kwa teng.	Nokeng ya Elands (lhokomelo ka nako ya dipatlisiso tsa baeoloji khale)	Ngwan Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat Lwe	0.045 0.050 0.070 0.094 0.091 0.073 0.056 0.051 0.046 0.042 0.039	0.012 0.011 0.026 0.031 0.019 0.015 0.015 0.019 0.017 0.016 0.015
						Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelelwa jaaka e thalositse go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi go netefatsa gore go fithelelwa sethopa se se laoletsweng sa ikholoji.	Othofosofate (PO ₄) jaaka Fosoforo	Dimilegerama/diilitara tse ≤ 0.025 (mg/l) (Phesenthaele ya bo50)		
								Naeteraite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimilegerama/diilitara tse ≤ 0.5 (Phesenthaele ya bo50)		
					Boleng		Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithelelwa jaaka go thalositse mo go totobetseng go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laoletsweng sa ikholoji.	Kgonagalo ya moela wa motlakase	DimiliSiemens/metara tse ≤ 55 (mS/m) (Phesenthaele ya bo95)		
						Matswai		Salefete	Dimilegerama/diilitara tse ≤ 30 (Phesenthaele ya bo95)		
						Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go baka kotsi epe mo boitekanelong jwa batho.	Escherichia coli (E.coli)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)		

IUA	Setlhopa	Noka	Karolo ya mofswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tthalositsweng go tshagetsa ditshedi tsothe le dimela tsa metsi le diihokego tsa badirisi ba metsi.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 9.0 (Phesenthaele ya bo95)
						Dintlha tse di ka kgonang go fetoga	Go thokega thathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong. Ditekanyetso di tshwanetse go tthalosiwa go laola ditlamorago tsa go epa seletli mo motsweding.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Ditekanyetso di tshwanetse go thomamisiwa.
							Dilekano tsa okosijene e e tthaologileng di tshwanetse go tokafadiwa go tshagetsa ditshedi tsothe le dimela tsa metsi.	Okosijene e e Tthaologileng	Dimilegerama/dilitara tse 6-7 (mg/l)
						Metsi a a go tsena nokeng	Mefutafuta ya magaethago e tshwanetse go somarelwa e le mo sethopheng sa C sa ikholoji. Mefutafuta ya magaethago go direla mefuta e boifang kelelo le dimedi tse di thogang mo losing lwa metsi e tshwanetse go somarelwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Thathobo ya Legaethago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = C ≥ 62%
					Legaethago	Legaethago le le mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa C sa ikholoji. Go thokega tshireletso ya legaethago le le mo dintshing tsa noka. Go tshwanetse ga laolwa dikago mo karolong e e dirang molelwane fa gare ga metsi le lefatshhe.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Thathobo ya Tsbogo ya Dimedi	VEGRAI EC = C ≥ 62%

IUA	Setlh opa	Noka	Karolo ya motswe d	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihlosa ya RQO	Sekao	Tekanyetso ya Dipalo
						Dithapi	Go tshwanetse ga somarelwa dithapi tsa lefelo le le rileng mo sethopheng sa C sa ikholoji. Tihathobo ya dithapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go di ela thoko fa go bapisiwa le sethopa se se laoletsweng sa ikholoji.	Tshupane ya Tihathobo ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa Dithapi = C FRAI $\geq 62\%$ Sample 20 BMOT mo maitekong a kgobokanyo ya sampole ya metsotso e le 20
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Ditshedi tsa metsi dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tihathobo ya Tsibogo, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = C $\geq 62\%$ SASS ≥ 155 ASPT ≥ 5.5
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa C kgotsa go tokafadiwa	Tshupane e e Totobetseng ya Kgotlele	EC ya Malele $\geq 62\%$
		Elands go elela kwa ntheng e seie ya Letamo la Swartruggens go ya kwa Letamong la Lindleyspoort (A22A)	5_2		Bokanakang	Kelelo e e kwa tiase ya metsi	Kelelo ya EWR le kelelo e e bonyaka ya metsi ka nako ya komelelo: Noka ya Elands mo A2H107 mo A22A NIMAR = $12.87 \times 10^{-6} \text{m}^3$ Sethopa sa REC=C Go tshwanetse ga fithelelewa kelelo e e kwa tiase ya metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo go tshagetsa dipholologo tsothe le dijalo tsa metsi le badiri ba mo lefelong le noka e elelang go ya kwa teng.	Kelelo e e bonyaka ya metsi ka nako ya komelelo Dikelelo tsa tshomarelo le kelelo e e bonyaka ya metsi ka nako ya komelelo Thokomelo ya Noka ya Elands mo A2H107	Kelelo e e bonyaka ya metsi ka nako ya komelelo (m^3/s) Diph 0.030 Ngwan 0.037 Sed 0.044 Fer 0.063 Tiha 0.083 Mop 0.081 Mor 0.064 Mots 0.047 Seet 0.042 Phuk 0.036 Phat 0.033 Lwe 0.030

IUA	Seth opa	Noka	Karolo ya mofswed i	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelelwa jaaka e thalositse go tswelidisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi go netefatsa gore go fithelelwa sethopa se se laolelweng sa ikholoji. Go thokega taolo ya ditiro tsa phepatso le tshololo ya metsimaswe.	Othofosofate (PO_4^-) jaaka Fosoforo	Dimilegerama/dilitara tse ≤ 0.050 (mg/l) (Phesenthaele ya bo50)
							Naeterite (NO_3^-) & Naeteraete (NO_2^-) jaaka Naeterojene		Dimilegerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)
							Kgonagalo ya moela wa motlakase		DimiliSiemens/metara tse ≤ 55 (mS/m) (Phesenthaele ya bo95)
							Salefite		Dimilegerama/dilitara tse ≤ 80 (Phesenthaele ya bo95)
							Tleloraete		Dimilegerama/dilitara tse ≤ 40 (Phesenthaele ya bo95)
							Sodiamo		Dimilegerama/dilitara tse ≤ 70 (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go baka kotsi epe mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	makgetho a le 130/dimiliilitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintsha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanetsong tse di thalositse go tshogetsa ditshedhi tsothe le dimela tsa metsi le diithokego tsa badirisi ba metsi.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 9.0 (Phesenthaele ya bo95)

IUA	Seth opa	Noka	Karolo ya motswed i	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Go thokega tlathobho ya motheo go thomamisa seemo sa ga jaana sa Kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Ditekanyetso di tshwanetse go thomamisiwa.
							Dilekano tsa okosijene e e tlaologileng di tshwanetse go tokafadiwa go tshagetsa ditshedi tsothe le dimela tsa metsi.	Okosijene e e Tlaologileng	Dimilegerama/dilitara tse 6-7 (mg/l)
						Metsi a a go mo tsena nokeng	Mefutafuta ya magaeathago e tshwanetse go somarelwa e le mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeathago. Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaeathago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeathago la metsi a a mo molapong EC = C $\geq$ 62%
					Legaeathago	Legaeathago le le mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa C sa ikholoji kgotsa mo maemong a a botoka.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeathago. Tshupane ya Tlathobho ya Tsibogo ya Dimedi	VEGRAI EC = C $\geq$ 62%
					Diphologolo, le dimela ditshedi tse di nngang metsing le mo lefatsheng	Diphologolo, le dimela ditshedi tse di nngang metsing le mo lefatsheng	Tshwanelego ya boalo jo jwa noka go dira jaaka la dinonyane le diamusi tsa metsi e tshwanetse go somarelwa ka taolo e e maleba ya legaeathago.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le thokego ya gore go dirwe RQC ya dipalo go direla bakanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
					Diphologolo, le dimela ditshedi tse di nngang metsing le mo lefatsheng	Ditshedi dikgolo tse di nngang metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsibogo, le Mokgwatsamaiso wa Kabo ya Mafuta wa Aforikaborwa Mofuta 5 (SASS5).	Ditshedi tse dikgolo tse di nngang metsing mme di se na mokwatla EC = C $\geq$ 62% SASS $\geq$ 120 ASPT $\geq$ 5.3

IUA	Setih opa	Noka	Karolo ya motswe I	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa C/D kgotsa go tokafadiwa	Tshupane e e Totobetseng ya Kgotlelego	EC ya Malele $\geq 58\%$
							Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelang go ya teng. Go thama le go thabolola melawana e e ka dirisiwang go tswelisa diekano tse di kwa godimo tsa letamo go netefatsa gore go somarelwa mefutafuta ya dishedi tsothe le dimela tsa metsi.	Selekano se se kwa tlase sa tiriso se se tshokegang mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tlase go tsweladisa botshelo jwa diphologolo tsothe le dijalo tsa metsi (15-18%).
		Letamo la Lindleyspoort (A22A)	5_3		Bokanakang	Selekano letamo sa	Go gololwa ga metsi a letamo go tshwanetse ga fithelela dithokego tsa kwa metsi a elelang go ya teng go direla mabaka a kelelo metsi e e tswelang mosola diphologolo le dijalo. Kokoano ya othofosofate e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa dishedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le diekano tse di magareng tsa dikotla.	Diothofosofate,	≤ 0.015 mg/l Phesenthaele ya bo50
					Boleng	Dikotla			

IUA	Setlh opa	Noka	Karolo ya motswe d	Setlhopa sa Ikholo ji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Kokoano ya palogotho ya fosoforo e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa ditshelele le rileng le dithokago tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikolila.	Palogotho ya Fosoforo	$\leq 0.055 \text{ mg/l}$ Phesenthaele ya bo95
							Kokoano ya naeteraete & naeteraete e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa dithedi tsothe le dimela le dithokago tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikolila.	Naeteraete & Naeteraete	$\leq 0.70 \text{ mg/L N}$ Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa dithedi tsothe le dimela le dithokago tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	$\leq 55 \text{ mS/m}$ Phesenthaele ya bo95
						Dipathojene	Dipathojene di tshwanetse go somarelwa gore di nne ka dilekano tse di babalesegileng gore di ka dirisiwa ke batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintsha tse di ka kgonang fetoga	Metsi a tshwanetse go nna a maemo a a amogelesegang go ka dirisetswa boitapoloso.	pH	6.5 – 9.0 Phesenthaele ya bo95

IUA	Sethlopa	Noka	Karolo ya mofswedi	Sethlopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Bophepa jo bo oketsegileng	Kgoberego	≥0.4 m Phesenthaele ya bo5
							Kelelo ya EWR le kelelo e bonye ya metsi ka nako ya komelelo: Noka ya Koster mo A2H036 mo A22B NMAR = $2.54 \times 10^6 \text{ m}^3$ Sethlopa sa REC=C	Kelelo e e bonye ya metsi ka nako ya komelelo	Kelelo e e bonye ya metsi ka nako ya komelelo
							Go tshwanetse ga fithelelwa kelelo e e bonye ya metsi ka nako ya komelelo go tshwanelisa diphologolo tsothe le dijalo tsa metsi le badiri ba mo lefelong le noka e elelang go ya kwa teng.	Dikelelo tsa tshomarelo le kelelo e e bonye ya metsi ka nako ya komelelo	Diph 0.006 Ngwan 0.004 Sed 0.006 Fer 0.009 Tlhak 0.020 Mop 0.032 Mor 0.031 Motsh 0.018 Seet 0.015 Phuk 0.012 Phat 0.010 Lwe 0.008
		Karolo e e kwa Godingwana ya Noka ya Koster go ya kwa Letamong la Koster (A22B)	5_4			Kelelo e e kwa tlase ya metsi			
							Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa sethlopa se se laolelsweng sa ikholoji.	Othofosofate (PO_4) jaaka Fosoforo	Dimilegerama/dilitara tse ≤ 0.025 (mg/l) (Phesenthaele ya bo50)
						Dikotla		Naeterite (NO_3) & Naeterate (NO_2) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 0.05 (Phesenthaele ya bo50)
						Matswai	Boletswai jwa metsi a a elelang go tsena mo nokeng bo tshwanetse go somarelwa bo le mo seemong sa ga jaana go netefatsa tshireletso ya	Kgonagalo ya moela wa motlakase	DimiliSiemens/metara tse ≤ 30 (mS/m) (Phesenthaele ya bo95)

IUA	Seth opa	Noka	Karolo ya motswe di	Sethopa sa lkholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							motswedi.	Sodiamo	Dimilegerama/dilitara tse ≤ 20 (Phesenthaele ya bo95)
								Salefete	Dimilegerama/dilitara tse ≤ 20 (Phesenthaele ya bo95)
								Tleloraete	Dimilegerama/dilitara tse ≤ 20 (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene tshwanetse ga tlhola kotsi e e kwa tlase mo botekanelong jwa batho.	<i>Escherichia coli</i> (E. coli)	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetso tse di thalositsewang go tshagetsa ditshedi tsothe le dimela tsa metsi le diithokego tsa badirisi ba metsi.	selekano sa pH	6.0 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
						Dintsha tse di ka kgonang go fetoga	Go thokega thathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Ditekanyetso di tshwanetse go tlhomamisiwa.
							Ditekano tsa okosijene e e thaoilogileng di tshwanetse go tokafadiwa go tshagetsa ditshedi tsothe le dimela tsa metsi.	Okosijene e e Thaoilogileng	Dimilegerama/dilitara tse 6-7 (mg/l)

IUA	Setlh opa	Noka	Karolo ya motswed I	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dire tse di bothole	Dikokoano tsa dire tse di bothole di tshwanetse go somareliwa di le mo dilekanong tse di seng bothole mo ditshedding tse dinnye tsa metsi le fa e le go nna matshosetsi mo boitekanelong jwa batho	Melemo e e tlotlholeliwang ke dihoromone	17 β -oestradiol: ≤ 0.001 mg/l
						Dithapi	Sethopa sa dithapi tsa lelelo le le rileng se tshwanetse go somareliwa se le mo sethopheng se se laolelweng sa ikholoji sa C. Kelelo e tshwanetse go nna e e lekaneng go tshagetsa mefutakemedi.	Tshupane ya Thathobho ya Tsibogo ya Dithapi (FRAI).	Sethopa sa ikholoji sa dithapi = C FRAI $\geq 62\%$ Sample ya 20 BMOT mo maitekong a kgobokanyo ya sample ya metsotso e le 20
					Diphologolo, dimela le ditshedi tsa lelelo le le rileng	Ditshedi tse dikgolo tse di nngang mo metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somareliwa mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Thathobho ya Tsibogo, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = C $\geq 62\%$ SASS ≥ 70 ASPT ≥ 4.2
						Dikotla	Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithelwa sethopa se se laolelweng sa ikholoji.	Othofosofate (PO_4) jaaka Fosoforo	Dimilegerama/dilitara tse ≤ 0.050 (mg/l) (Phesenthaele ya bo50)
		Noka ya Selons, Koedoespruit, Dwarsspruit, karolo e e kwa tlasenyana ya Noka ya Koster (A22C, A22D)	5_6		Boleng	Matswai	Kokoano ya boletswai jo bo elelang go tsena mo teng e tshwanetse go somareliwa go somarela seemo sa gajana le go tsweladisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi mo sethopheng se se laolelweng sa ikholoji.	Naeteraite (NO_3) & Naeteraete (NO_2) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)
								Kgonagalo ya moela wa motlakase	DimiliSiemens/metara tse ≤ 30 (mS/m) (Phesenthaele ya bo95)
								Sodiamo	Dimilegerama/dilitara (Phesenthaele ya bo95) tse ≤ 20
								Salefete	Dimilegerama/dilitara (Phesenthaele ya bo95) tse ≤ 20

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopisa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo																																							
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga tlhola kotsi e e kwa tlase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (E. coli)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)																																							
						Dintlha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetsong tse di tshlositsweng go tshegetsa ditshedhi tsothle le dimela tsa metsi le dithokego tsa badirisi ba metsi.	selekano sa pH	6.0 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)																																							
							Go thokega tlathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Ditekanyetso di tshwanetse go thomamisiwa.																																							
		Noka ya Elands e elela go tswa mo Letamong la Lindleyspoort go tsena mo Letamong la Vaalkop, Brakkloofspruit, Roospruit, Sandspruit, Mankwe, Leragane, Molapongwamangana (A22E, A22F)	5.7		Bokanakang			Tlhoraete	<table><tr><td>Dimilegerama /dililitara tse 20 (Phesenthaele ya bo95)</td><td>Kelelo e kwa tlase ya metsi (m³/s)</td><td>Kelelo e bonyame ya metsi ka nako ya komelelo (m³/s)</td></tr><tr><td></td><td>0.038</td><td>0.011</td></tr><tr><td>Ngwan</td><td>0.048</td><td>0.014</td></tr><tr><td>Sed</td><td>0.057</td><td>0.016</td></tr><tr><td>Fer</td><td>0.081</td><td>0.023</td></tr><tr><td>Tlhak</td><td>0.107</td><td>0.012</td></tr><tr><td>Mop</td><td>0.105</td><td>0.027</td></tr><tr><td>Mor</td><td>0.082</td><td>0.023</td></tr><tr><td>Motsh</td><td>0.06</td><td>0.017</td></tr><tr><td>Seet</td><td>0.054</td><td>0.016</td></tr><tr><td>Phuk</td><td>0.047</td><td>0.014</td></tr><tr><td>Phat</td><td>0.042</td><td>0.012</td></tr><tr><td>Lwe</td><td>0.038</td><td>0.011</td></tr></table>	Dimilegerama /dililitara tse 20 (Phesenthaele ya bo95)	Kelelo e kwa tlase ya metsi (m³/s)	Kelelo e bonyame ya metsi ka nako ya komelelo (m³/s)		0.038	0.011	Ngwan	0.048	0.014	Sed	0.057	0.016	Fer	0.081	0.023	Tlhak	0.107	0.012	Mop	0.105	0.027	Mor	0.082	0.023	Motsh	0.06	0.017	Seet	0.054	0.016	Phuk	0.047	0.014	Phat	0.042	0.012	Lwe	0.038	0.011
Dimilegerama /dililitara tse 20 (Phesenthaele ya bo95)	Kelelo e kwa tlase ya metsi (m³/s)	Kelelo e bonyame ya metsi ka nako ya komelelo (m³/s)																																														
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IUA	Setlhopa	Noka	Karolo ya mofswed	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dikotla	Dilekano tsa dikotla di kwa godimo mme di tshwanetse go fokodiwa go fithelela ditshohe tsa metsi. Dikokoano di tshwanetse go fokodiwa go fithelela sethopa se se laolelweng sa ikholoji sa C.	Othofosfate (PO_4) jaaka Fosoforo	
							Dilekano tsa boletswai di kwa godimo thata. Boletswai jwa metsi a a elelang go tsena mo nokeng bo tshwanetse go tokafadiwa go tshagetsa ditshohe tsa ditshedi tsothe le dimela tsa metsi le ditshohe tsa boleng jwa metsi tsa badirisi ba metsi. Boleng jwa metsi bo tshwanetse go tokafadiwa gore bo nne mo sethopheng sa C sa ikholoji.	Kgonagalo ya moela wa molakase	DimilSiemens/metara tse ≤ 85 (mS/m) (Phesenthaele ya bo95)
						Matswai	Go nna teng ga dipathojene go tshwanetse ga nna le kotsi e e kwa tlase mo boitekanelong jwa batho. Selekano sa pH se tshwanetse go somarelwa gore se nne mo dithekanyetsong tse di thalositweng go tshagetsa ditshedi tsothe le dimela tsa metsi le ditshohe tsa badirisi ba metsi.	Sodiamo	Dimilegerama/dilitara tse ≤ 100 (Phesenthaele ya bo95)
							Go nna teng ga dipathojene go tshwanetse ga nna le kotsi e e kwa tlase mo boitekanelong jwa batho. Selekano sa pH se tshwanetse go somarelwa gore se nne mo dithekanyetsong tse di thalositweng go tshagetsa ditshedi tsothe le dimela tsa metsi le ditshohe tsa badirisi ba metsi.	Salefeite	Dimilegerama/dilitara tse ≤ 120 (Phesenthaele ya bo95)
							Go tshohega thathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Tleloraete	Dimilegerama/dilitara tse ≤ 120 (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga nna le kotsi e e kwa tlase mo boitekanelong jwa batho. Selekano sa pH se tshwanetse go somarelwa gore se nne mo dithekanyetsong tse di thalositweng go tshagetsa ditshedi tsothe le dimela tsa metsi le ditshohe tsa badirisi ba metsi.	<i>Escherichia coli</i> (E. coli)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintha tse di ka kgonang go fetoga	Go tshohega thathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	selekano sa pH	6.0 (Phesenthaele ya bo5) le 9.0 (Phesenthaele ya bo95)
								Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Ditekanyetso di tshwanetse go thomamisiwa.

IUA	Setlhopa	Noka	Karolo ya motswed	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go tlhola kotsi epe mo ditheding tse dimnye tsa metsi le mo boitekanelong jwa batho.	Aluminium (Al)	Dimilegerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimilegerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimilegerama/dilitara tse ≤ 0.3 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimilegerama/dilitara tse ≤ 0.0095 (mg/l) (Phesenthaele ya bo95)
								Zinki (Zn)	Dimilegerama/dilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95)
						Metsi a go tse na mokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo setlhopeng sa C/D sa ikholoji kgotsa mo go botoka. Go bothokwa go somarela dimedi tse di tlogang mo losing lwa metsi le kerabole e e khurumeditseng botlase jwa noka ya metsi a a elelang go tsena mo nokeng (ditlhopa tsa boteng jwa kelelo) tsa mefutafuta ya ditlhopi le dithedi tse dikgolo mme di se na mokwatla.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantshe tsa fisikhokhemikale le legaethago. Sekao le Mokgwa wa Tlathobho ya ka Bonako ya Legaethago, Tshupane ya Tlathobho ya Popego ya Lefatshe	Tshomarelo ya popego e e lekalekanang ya dipharologantshe tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = C $\geq$ 62%
					Legaethago	Legaethago le mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo setlhopeng sa C sa ikholoji. Taolo ya dithedi tsa seeng tse di senyang e a thokega. Go tshwanetse ga lekanyediwa dikago mo karolong e e dirang molelwane fa gare ga metsi le lefatshe.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantshe tsa fisikhokhemikale le legaethago, Tshupane ya Tlathobho ya Tsibogo ya Dimedi	VEGRAI EC = C $\geq$ 70%

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Ditlhlapi	Go tshwanetse ga somareliwa ditlhlapi tsa lefelo le le rileng mo setlhopeng sa D sa ikholoji kgotsa se se botoka. Thathobho ya ditlhlapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go di ela thoko fa go bapiswa le setlhopa se se laolelweng sa ikholoji.	Tshupane ya Thathobho ya Tsibogo ya Ditlhlapi (FRAI).	Setlhopa sa ikholoji sa ditlhlapi = D FRAI ≥ 42% Palofase ya sampole ya mofuta e le 4 mo maitekong a kgobokanyo ya sampole ya metsotso e le 20
						Ditshedi tsa metsi dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somareliwa mo setlhopeng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Thathobho ya Tsibogo, le Mokgwatsamaiso wa Kabo ya Madiuo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 110 ASPT ≥ 4.5
						Malele	Kgobokanyo ya malele e tshwanetse go somareliwa e le mo setlhopeng sa ikholoji sa C kgotsa go tokafadiwa.	Tshupane e e Totobetseng ya Kgotelelego	Malele EC ≥ 62%
						Diphologolo, dimela le ditshedi tse di nngang metsing le mo lefatsheng	Tshwanelego ya boalo jo jwa noka go dira jaaka legaethago la dinonyane le diamusi tsa metsi e tshwanetse go somareliwa ka taolo e e maleba ya legaethago.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa thathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le metutakemedi ya diamusi mo karolong e telele ya noka. Go na le thokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.

Lenaneo 7: Maikaelelo a Boleng jwa Motswedi wa DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko 6a: KLEIN MARICO / KROMELLEMBOOG

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
6a: KLEIN MARICO/KROMELLEMBOOG	II	Karolo e e mo godingwana ya Klein Marico go elela go tsena mo Letamong la Klein Maricopoort,	6_1	B/C	Bokanakang	Kelelo e e kwa tlase ya metsi	Kelelo ya EWR le kelelo e e bonyaka nako ya komelelo: Noka ya Klein Marico e elela go ya kwa ntheng ya Letamo Klein la Maricopoort	Kelelo e e bonyaka nako ya komelelo Dikelelo tsa tshomarelo le kelelo e e bonyaka nako ya komelelo	Kelelo e e kwa tlase ya metsi ka nako ya komelelo (m³/s) Diph 0.038 0.035

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo	
		Rhenosterspruit, Malmansiesloop, Kareespruit (A31D)					mo A31D NIMAR = $16.25 \times 10^6 \text{ m}^3$ Sethopa sa REC=C/D Go tshwanetse ga fithlelwa kelelo e e kwa tlase ya metsi le kelelo e e bonywa ya metsi ka nako ya komelelo go tshagetsa diphologolo tsothe le dijalo tsa metsi le badiri ba mo lefelong le noka e elelang go ya kwa teng.	metsi ka nako ya komelelo Go tlhokomela Noka ya Klein Marico ka dipatlisiso tsa baoloji khale	Ngwan Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat Lwe	0.039 0.039 0.041 0.048 0.044 0.045 0.041 0.042 0.039 0.043 0.038 0.040 0.037 0.037
						Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithlelwa jaaka e tlhalositswe go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi go netefatsa gore go fithlelwa sethopa se se laolelweng sa ikholoji.	Orthofosphate (PO_4^{3-}) jaaka Fosoforo Naeterite (NO_3^-) & Naeteraete (NO_2^-) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 0.050 (mg/l) (Phesenthaele ya bo50) Dimilegerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)	
						Matswai	Diekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithlelwa jaaka go tlhalositswe mo go totobetseng go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithlelwa sethopa se se laolelweng sa ikholoji.	Kgonagalo ya moela wa molakase Salefeite Teloraete Sodiamo	DimiliSiemens/metara tse ≤ 55 (mS/m) (Phesenthaele ya bo95) Dimilegerama/dilitara tse ≤ 80 (Phesenthaele ya bo95) Dimilegerama/dilitara tse ≤ 40 (Phesenthaele ya bo95) $\leq$ Dimilegerama/dilitara tse 70 (Phesenthaele ya bo95)	
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga tihola kotsi e e kwa tlase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)	
						Dintha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetso tse di tlhalositsweng go tshagetsa dithedi tsothe le dimela tsa metsi le dithokego tsa badiri ba metsi.	selekano sa pH	6.0 (Phesenthaele ya bo5) le 9.0 (Phesenthaele ya bo95)	

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Go thokega tlathobo ya motheo go tthomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelewa phapogo ya 10% go tswa mo kokoanong ya lenorago. Ditekanyetso di tshwanetse go tthomamisiwa.
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go tlhola kotsi epe mo ditsheding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Foloraete	Dimilegerana/diilitara tse ≤ 2.5 (Phesenthaele ya bo95)
						Metsi a a elelang go tsena mo nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa C/D sa ikholoji. Go somarela dimedi tse di tlhologang mo losing lwa metsi le boalo jwa mo metsing a elelang go tsena mo teng jo ditshedi tse dinnye di nang mo go jone (dithopa tsa boteng jwa lobelo) mo dithaping mefutafuteng ya dithapi le diphologolo tse dikgolo tse di se nang mokwatla.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago. Mokgwa le Sekao sa ka bonako sa Tlathobo ya Legaeithago (RHANM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C/D $\geq 58\%$
					Legaeithago	Legaeithago le le dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go tokafadiwa gore di tswa mo sethopheng sa D sa ikholoji mme di tsene mo sethopheng sa C/D sa ikholoji. Go tshwanetse ga tsenngwa tirisong taolo ya dimedi tsa seeng. Kago ya mo lefelong le le mo dintshing tsa noka e tshwanetse go lekanyediwa le go laolwa.	Tshupane ya Tlathobo ya Tsibogo ya Dimedi	VEGRAI EC = C/D $\geq 58\%$

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
		Letamo la Klein Maricopoort (A31D)	6_2		Bokanakang	Selekano sa Letamo	Letamo le tshwanetse go laolwa go sireletsa tiro ya dipholologo tsothe le dimela ga mmogo le badiresi ba kwa metsi a elelang go ya teng. Go tlhama le go tlhabolola melawana e ka dirisiwang go tswelisa ditekano tse di kwa godimo tsa letamo go neteratsa gore go somarelwa mefutafuta ya ditshedhi tsothe le dimela tsa metsi. Go gololwa ga metsi a letamo go tshwanetse ga fithiela ditlhokego tsa kwa metsi a elelang go ya teng go direla mabaka a kelelo metsi e e tswelang mosola dipholologo le dijalo.	Selekano se se kwa tlase sa tiriso se se tshokegang mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tlase go tswelisa botshelo jwa dipholologo tsothe le dijalo tsa metsi (15-18%).
							Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswelisa boitekanelo jwa ditshedhi tsothe le dimela tsa lefelo le le rileng le ditlhokego tsa boleng jwa metsi tsa badiresi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le ditekano tse di magareng tsa dikotla.	Diothofosofate	$\leq 0.025 \text{ mg/l}$ Phesenthaele ya bo50
					Boleng	Dikotla	Kokoano ya palogotho ya fosoforo e tshwanetse go tokafadiwa go tswelisa boitekanelo jwa ditshedhi tsothe le dimela tsa lefelo le le rileng le ditlhokego tsa boleng jwa metsi tsa badiresi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le ditekano tse di magareng tsa dikotla.	Palogotho ya Fosoforo	$\leq 0.050 \text{ mg/l}$ Phesenthaele ya bo50

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Kokoano ya naeteraete & naeteraete e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa ditshediso the le dimela tsa lefelo le le riling le dithokego tsa boleng jwa metsi tsa badiirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikotla.	Naeteraete & Naeteraete	≤ 0.70 mg/L N Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa ditshediso the le dimela le dithokego tsa boleng jwa metsi tsa badiirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	≤ 65 mS/m Phesenthaele ya bo95
						Dipathojene	Dipathojene di tshwanetse go somarelwa gore di nne ka dilekano tse di babalesegileng gore di ka dirisiwa ke batho.	Tleloraete	≤ 40 mg/l Phesenthaele ya bo95
						Dintha tse di ka kgonang go fetoga	Metsi a tshwanetse go nna a maemo a a amogelesegang go ka dirisetwa boitapolo.	<i>Escherichia coli</i>	makgetho a le ≤ 10 /100µl Phesenthaele ya bo95
							Metsi a bophepa jo bo oketsegileng	pH	6.5 – 9.0 Phesenthaele ya bo95
							Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelwa jaaka e fithelotswe go tswaledisa boitekanelo jwa dipholologo the le dimela tsa metsi go netefatsa gore go fithelwa sethopa se se laolelweng sa ikholoji.	Kgoberego	≥ 0.4 m Phesenthaele ya bo5
							Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelwa jaaka e fithelotswe go tswaledisa boitekanelo jwa dipholologo the le dimela tsa metsi go netefatsa gore go fithelwa sethopa se se laolelweng sa ikholoji.	Othofosofate (PO ₄) jaaka Fosoforo	Dimilegerama/dilitara tse ≤ 0.050 (mg/l) (Phesenthaele ya bo50)
							Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelwa jaaka e fithelotswe go tswaledisa boitekanelo jwa dipholologo the le dimela tsa metsi go netefatsa gore go fithelwa sethopa se se laolelweng sa ikholoji.	Naeteraete (NO ₃) & Naeteraete (NO ₂) jaaka Naeterojene	Dimilegerama/dilitara tse ≤ 0.7 (Phesenthaele ya bo50)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Matswai	Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fihlelelwa jaaka go tshalositswe mo go totobetseng go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go nefeletsa gore go fihlelelwa sethopa se se laolelsweng sa ikholoji.	Kgonagalo ya moela wa motlakase	DimiliSiemens/metara tse ≤ 65 (mS/m) (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga tihola kotsi e e kwa tiase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa gore se nne mo ditekanyetso tse di tshalositsweng go tshetsetsa dithedi tsothe le dimela tsa metsi le dithokego tsa badirisi ba metsi.	selekano sa pH	6.5 (Phesenthaele ya bo5) le 9.0 (Phesenthaele ya bo95)
						Dintha tse di ka kgonang go fetoga	Go itshoka ga sedimente go tshwanetse ga laolwa ka taolo ya mekgwatsamaiso ya tiriso ya lefatše. Go tshokega thathobo ya motheo go tshomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Ditekanyetso di tshwanetse go tshomamisiwa.
						Metsi a a elelang tsena nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa C sa ikholoji kgotsa mo maemong a a botoka. Go somarela dimedi tse di thogang mo losing lwa metsi le boalo jwa mo metsing a elelang go tsena mo teng jo dithedi tse dinnye di nngang mo go jone (dithopa tsa boteng jwa lobelo) mo dithaping mefutafuteng ya dithapi le diphologolo tse dikgolo tse di se nang mokwatla.	Tshupane Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong $EC = C \geq 62\%$

IUA	Sethhopa	Noka	Karolo ya motswedi	Sethhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo
						Legaeithago le le dintshing tsa noka	Dimele tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa C sa ikholoji kgotsa mo maemong a a botoka.	Tshupane ya Tlathhobo ya Tsibogo ya Dimedi	VEGRAI EC = C ≥ 62%
							Go tshwanetse ga somarelwa diithapi tsa lefelo le le rileng mo maemong a sethopa sa C sa ikholoji kgotsa di tshwanetse go tokafadiwa.	Tshupane ya Tlathhobo ya Tsibogo ya Dimedi (FRAI)	Sethopa sa ikholoji sa diithapi = C FRAI ≥ 62% Kgobokanya mefuta e le 5 mo maitekong a kgobokanyo ya sampole ya metsotso e le 20
							Diphologolo, dimele le ditshedi tsa lefelo le le rileng	Tshupane ya Tlathhobo ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Tsamaiso ya Kabo ya Maduo ya Aforikaborwa ya Mofuta 5 (SASS5).	Diphologolo tsa metsi tse dikgolo mme di se na mokwatla EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 5.0
						Ditshedi tsa metsi dikgolo mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.		

Lenaneo 8: Maikaelelo a Boleng jwa Motswedi a DINOKA mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko6b: LETAMO LA GROOT MARICO / MARICO BOSVELD

IUA	Sethhopa	Noka	Karolo ya motswedi	Sethhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya dipalo
	II	Karolo e kgolo ya Groot Marico e elela mo ntheng e sele ya makgathano a Polkadraaispruit (A31B)	6_5	B	Bokanakang	Kelelo e e kwa tiase ya metsi	Dikelelo tse di kwa tiase tsa metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo tsa EWR: Noka ya Marico mo MAR_EWR2 mo A31B NMAAR = 42.08x10 ⁻⁶ m ³ REC=B category Kelelo e e kwa tiase ya metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo di tshwanetse go fithelelwa e le go tshetsetsa diphologolo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e elelang go ya teng.	Dikelelo tsa Motheo Dikelelo tse di kwa tiase tsa metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo Tlhokomelo ya Noka ya Groot Marico morathong o rulagantsweng o monshwa gaufi le EWR2	Kelelo e e kwa tiase ya metsi (m ³ /s) Diph 0.510 Ngwan 0.540 Sed 0.560 Fer 0.620 Tihak 0.710 Mop 0.637 Mor 0.628 Moish 0.584 Seet 0.588 Phuk 0.557 Phat 0.547 Lwe 0.546 Dimelelgerama/dilitara tse ≤ 0.020 (mg/l) (Phesenthaele ya bo50)
					Boleng	Dikotla	Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e	Othofosofate (PO ₄) jaaka Fosoforo	

IUA	Seth opa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya dipalo
							tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netafatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Naeteraite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)
						Matswai	Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithelelwa jaaka go tshwanetse mo go totobetseng go tsweladisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netafatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara tse ≤ 30 (mS/m) (Phesenthaele ya bo95)
								Salafete	Dimiligerama/dilitara tse ≤ 10 (Phesenthaele ya bo95)
								Tleloraete	Dimiligerama/dilitara tse ≤ 10 (Phesenthaele ya bo95)
								Sotiamo	Dimiligerama/dilitara tse ≤ 10 (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga diphathojene go tshwanetse go tihola kotsi e e kwa tlase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintha tse di kgonang fetoga	Selekano sa pH se tshwanetse go somarelwa se le mo diitekanyetsong tse di totobaditsweng go tshagetsa diphologolo tsothe le dijalo tsa metsi le dithokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.8 (Phesenthaele ya bo95)
							Go thokega thathobo ya motheo go tihomamisa seemo sa ga jaana sa kgoberego ya metsi a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga tihomamisiwa ditekanyetso.
							Dilekano tsa okosijene e e tshagolelieng di tshwanetse go tokafadiwa go tshagetsa diphologolo tsothe le dijalo tsa metsi.	Okosijene e e tshagolelieng	Dimiligerama/litara ≥ 7 (mg/l)
							Dikokoano tsa dire tse di bothole ga di a tshwanela go tihola kotsi mo ditshedding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Aluminiamo (Al)	Dimiligerama/litara ≤ 0.062 (mg/l) (Phesenthaele ya bo95)
						Dire tse di bothole		Mankanese (Mn)	Dimiligerama/litara ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimiligerama/litara ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimiligerama/litara ≤ 0.0057 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimiligerama/litara ≤ 0.0048 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimiligerama/litara ≤ 0.07 (mg/l) (Phesenthaele ya bo95)

IUA	Sethi opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya dipalo
								Cobalt (Co)	Dimiligerama/litara ≤ 0.05 (mg/l) (Phesenthaele ya bo95)
								Zinki (Zn)	Dimiligerama/dilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95)
						Metsi a a tsenang mo molapong	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa B kgotsa mo maemong a a botoka. Go somorela dimedi tse di thogang mo losing lwa metsi le boalo jwa mo metsing a eelang go tsena mo teng jo ditshedi tse dinnye di nngang mo go jone (ditlhopa tsa boteng jwa lobelo) mo ditlhaping mefutafuteng ya ditlhapi le diphologolo tse dikgolo tse di se nang mokwatla.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaeithago (RHMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = B $\geq$ 82%
					Legaeithago		Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B kgotsa mo maemong a a botoka.	Tshupane ya Tlathobho ya Tsiobogo ya Dimedi	VEGRAI EC = B $\geq$ 82%
						Ditlhapi	Ditlhopa tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B. Tlathobho ya ditlhopa tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapisiwa le sethopa se se laletsweng sa ikholoji. Legaethago le kelelo di tshwanetse go nna tse di lekaneng go direla mefuta e e ikaegileng ka kelelo.	Tshupane ya Tlathobho ya Tsiobogo ya Ditlhapi (FRAI).	Sethopa sa ikholoji sa ditlhapi = B FRAI $\geq$ 82% Sample 20 BMOT, 30 CPRE le 15 AURA mo maitekong a sampole a metsotso e le 20.
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Ditshedi tse dikgolo tse di nngang mo metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong sa ga jaana mo sethopheng sa A/B sa ikholoji.	Tshupane ya Tlathobho ya Tsiobogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = A/B $\geq$ 88% SASS $\geq$ 220 ASPT $\geq$ 6.5 (Setsha EWR 2 = A3GMAR-KOEDO)
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo maemong a e leng a thago thata go ya go a e leng a thago.	Tshupane Totobetseng Kgotelelego	EC ya Malele $\geq$ 88%

IUA	Seth opa	Noka	Karolo ya motswedi	Sethhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya dipalo	
							Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonywa ya metsi ka nako ya komelelo tsa EWR: Polkadraaispruit mo MAR_EWR6 mo A31B NIMAR = $9.866 \times 10^{-3} \text{ m}^3$ REC=B category Kelelo e e bonywa ya metsi ka nako ya kelelo e e bonywa ya metsi ka nako ya komelelo di tshwanetse go fithelelwa e le go tshagetsa dipholologo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e elelang go ya teng.	Dikelelo tsa Motheo Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonywa ya metsi ka nako ya komelelo Tlhokomelo ya tshololo ya Polkadraaispruit ka nako ya dipatlisiso tsa baeoloji khale	Kelelo e e bonywa ya metsi (m ³ /s) Diph Ngwan Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat Lwe	Kelelo e e bonywa ya metsi (m ³ /s) 0.088 0.099 0.113 0.138 0.157 0.130 0.118 0.104 0.105 0.098 0.095 0.095
		Polkadraaispruit (A31B)	6_6				Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Othofosofate (PO ₄ ⁻) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.020 (mg/l) (Phesenthaele ya bo50)	Dimiligerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)
						Dikotla	Diekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithelelwa jaaka go tshwanetse mo go totobetseng go tswaledisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Kgonagalo ya moela wa motlakase Safefete Tieloraete Sotiamo	Dimiligram/dimetara ≤ 30 (mS/m) (Phesenthaele ya bo95) Dimiligerama/dilitara tse ≤ 10 (Phesenthaele ya bo95) Dimiligerama/dilitara tse ≤ 10 (Phesenthaele ya bo95) Dimiligerama/dilitara tse ≤ 10 (Phesenthaele ya bo95)	Dimiligram/dilitara tse ≤ 10 (Phesenthaele ya bo95) makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Boleng	Go nna teng ga diphathojene go tshwanetse ga tlhola kotsi e e kwa tlase mo boitekanelong jwa batho. Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshagetsa dipholologo tsothe le dijalo tsa metsi le dithokego tsa badirisi ba metsi.	<i>Escherichia coli</i> (<i>E. coli</i>) Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.8 (Phesenthaele ya bo95)	

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihalošo ya RQO	Sekao	Tekanyetso ya dipalo
							Go thokega tlathobho ya motheo go tihomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga tihomamisiwa ditekanyetso.
							Dilekano tsa okosijene e e tihaoilogileng di tshwanetse go tokafadiwa go tshetseisa diphologolo tsothe le dijalo tsa metsi.	Okosijene e e tihaoilogileng	Dimiligerama/dilitara tse ≥ 7 (mg/l)
						Metsi a a tsenang mo molapong	Mefutafuta ya magaeathago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa B/C go ya kwa sethopheng sa B.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaethago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = B $\geq$ 82%
						Legae la mo dintshing tsa noka	Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa B/C go ya go sethoba sa B. Go thokega tshireletso ya legaethago la mo dintshing tsa noka.	Tshupane ya Tlathobho ya Tsiibogo ya Dimedi	VEGRAI EC = B $\geq$ 82%
						Ditlhapi	Ditlhapi tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B/C kgotsa maemo a a botoka. Tlathobho ya ditlhapi tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapiswa le sethoba se se laoletsweng sa ikholoji.	Tshupane ya Tlathobho ya Tsiibogo ya Ditlhapi (FRAI)	Sethoba sa ikholoji sa ditlhapi = B/C FRAI $\geq$ 78%
						Ditshedi tse dikgolo tse di nngang mo metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong sa ga jaana mo sethopheng sa B/C sa ikholoji.	Tshupane ya Tlathobho ya Tsiibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = B/C $\geq$ 78% SASS $\geq$ 155 ASPT $\geq$ 6.0
						Kelelo e e kwa tiase ya metsi	Dikelelo tse di kwa tiase tsa metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo tsa EWR: Noka ya Marico mo borogong jwa tsela ya N4 mo A31B NIMAR = $56.92 \times 10^6 \text{ m}^3$	Dikelelo tsa Motheo	Kelelo e e bonyaka ya metsi (m ³ /s)
		Groot Marico go tswa mo makgathano a draaispruit go ya kwa borogong jwa N4 (A31B)	6.7		Bokanakang	Kelelo e e kwa tiase ya metsi			Kelelo e e bonyaka ya metsi (m ³ /s)

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya dipalo	
							REC=B category Kelelo e e kwa tlase ya metsi le kelelo e e bonywa ya metsi ka nako ya komelelo di tshwanetse go fithelwa e le go tshetsetsa dipholologo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e eelang go ya teng.	Tlhokomelo ya tshololo ya Noka ya Grot Marico ka nako ya dipatlisiso tsa baeoloji khale	Diph 0.649 Ngwan 0.704 Sed 0.762 Fer 0.890 Tlhak 1.030 Mop 0.908 Mor 0.864 Motsh 0.783 Seet 0.779 Phuk 0.730 Phat 0.709 Lwe 0.701	0.345 0.372 0.398 0.458 0.513 0.466 0.447 0.408 0.407 0.383 0.373 0.370
						Dikotla	Kokoano ya dikotla tsa metsi a a eelang go tsena mo teng e tshwanetse go fithelwa jaaka e tshalositswe go tswelisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi, le go somarela seemo sa ikholoji le go tshetsetsa badirisi ba kwa metsi e eelang go ya kwa teng. Ditshololo tsa metsi maswe di tshwanetse go laolwa go sireletsa bokgoni ka kakaretso jwa dipholologo tsothe le dijalo jwa go tswelisa ditirego tsa ikholoji le mefutafuta ya ditshedi jwa lefelo.	Orthofosfate (PO ₄) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.025 (mg/l) (Phesenthaele ya bo50)	
								Naeteraite (NO ₃) & Naeteraite (NO ₂) Naeterojene	Dimiligerama/dilitara tse ≤ 0.7 (Phesenthaele ya bo50)	
							Diekano tsa boletswai jwa metsi a a eelang go tsena mo nokeng di tshwanetse go fithelwa jaaka go tshalositswe mo go totobetse go tswelisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go neteratsa gore go fithelwa sethopa se se laolelsweng sa ikholoji. Dikgololo tsa metsi maswe le ditlamorago tsa tiriso ya lefathe di tshwanetse go laolwa go sireletsa bokgoni ka kakaretso jwa dipholologo tsothe le dijalo jwa go tswelisa ditirego tsa ikholoji le mefutafuta ya ditshedi jwa lefelo.	Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara ≤ 55 (mS/m) (Phesenthaele ya bo95)	
								Salefeite	Dimiligerama/dilitara tse ≤ 50 (Phesenthaele ya bo95)	
						Matswai		Tleloraete	Dimiligerama/dilitara tse ≤ 40 (Phesenthaele ya bo95)	
								Sotiamo	Dimiligerama/dilitara tse ≤ 50 (Phesenthaele ya bo95)	
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga thola kotsi e e kwa tlase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)	
						Dintlha tse di kgonang go fetoga	Selekano sa pH se tshwanetse go somarela se le mo ditekanetsong tse di totobaditsweng go tshetsetsa dipholologo tsothe le dijalo tsa metsi le ditshokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)	

IUA	Seth opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya dipalo
							Go tlokega tlathlatho ya motheo go tihomamisa seemo sa ga jaana sa kgoberego ya metsi a eielang go tsena mo molapong.	Kgoberego	Go letelelwa phapogo ya 10% go tswa mo kokoanong ya lenorago. Go tshwanetse ga tihomamisiwa ditekanyetso.
							Dilekano tsa okosijene e e tihaoilogileng di tshwanetse go tokafadiwa go tshetsetsa diphologolo tsothe le dijalo tsa metsi.	Okosijene e e tihaoilogileng	Dimiligerama/dilitara tse ≥ 7 (mg/l)
							Dikokoano tsa dire tse di bothole ga di a tshwanaela go tihola kotsi mo ditshedding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Aluminiumo (Al)	Dimiligerama/dilitara tse ≤ 0.062 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimiligerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimiligerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Lilo (Pb) e popota	Dimiligerama/dilitara tse ≤ 0.0057 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimiligerama/dilitara tse ≤ 0.0048 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimiligerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Cobalt (Co)	Dimiligerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo95)
								Zinki (Zn)	Dimiligerama/dilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95)
							Mefutafuta ya magaeithago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya kwa sethopheng sa C.	Tshupane ya Tshomarelo ya popego e lekalekanang ya dipharologantsho e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C $\geq 62\%$	
					Legaeithago	Metsi a a tsenang mo nokeng	Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya go sethopa sa C.	Tshupane ya Tlathlatho ya Tsbogo ya Dimedi	VEGRAI EC = C $\geq 62\%$

IUA	Setlh opa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya dipalo
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Ditlhapi	Ditlhapi tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa le mo sethopheng sa ikholoji sa C/D kgotsa maemo a a botoka. Thathobho ya ditlhapi tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go tlhokomela fa go bapisiwa le sethopa se se laolelsweng sa ikholoji.	Tshupane ya Tlathobho ya Tsbogo ya Tlathobho ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	Sethopa sa ikholoji sa ditlhapi = C/D FRAI $\geq 58\%$ Mofuta wa sekao <i>certain</i> BMOT, AURA, CPRE, AMOS
						Ditshedi tse dikgolo tse di nngang mo metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong sa ga jaana mo sethopheng sa B sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsbogo ya Tlathobho ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = B $\geq 82\%$ SASS ≥ 210 ASPT ≥ 6.2 (Site A3GMAR-WONDE)
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo maemong a e leng a thago thata go ya go a e leng a thago.	Tshupane Totobetseng Kgolelelo	EC ya Malele = A/B $\geq 88\%$ (Site A3GMAR-WONDE)
		Letamo la Marico Bosveld (A31B)	6_8		Bokanakang	Selekano sa Letamo	Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelelang go ya teng. Go tlhama le go tlhabolola melawana ya tiriso go tswedisa dilekano tse di kwa godimo tsa letamo go netefatsa gore mofutafuta ya diphologolo tsothe le dijalo tsa metsi e a somarelwa. Kgolo ya metsi a letamo e tlhoka go fihlelela ditshedi tsa kelelo ya kwa metsi a yang teng go direla mabaka a kelelo ya metsi go tswela mosola diphologolo le dijalo.	Go thokega selekano se se kwa tlase sa tiriso mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tlase go tswedisa diphologolo le dijalo tsa metsi (15-18%).
					Boleng	Dikotla	Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswedisa boitekanelo jwa ditshedi tsothe le dijalo le ditshedi tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e nang le dilekano tse di magareng tsa dikotla.	Diothofosofate	≤ 0.015 mg/l Phesenthaele ya bo50

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya dipalo
							Kokoano ya palogothhe ya fosoforo e tshwanetse go somareliwa go tswelisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somareliwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikotla.	Palogothhe ya fosoforo	$\leq 0.025 \text{ mg/l}$ Phesenthaele ya bo50
							Kokoano ya naeteraete & naeteraite e tshwanetse go tokafadiwa go tswelisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somareliwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikotla.	Naeteraete & Naeteraite	$\leq 0.70 \text{ mg/l}$ N Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somareliwa go tshagetsa boitekanelo jwa ditshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	$\leq 35 \text{ mS/m}$ Phesenthaele ya bo95
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga thola kotsi e kwa tiase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	makgetho a le 130/dimiliitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintlha tse di kgonang go fetoga	Metsi a tshwanetse go nna a maemo a a amogeselegang go ka dirisetswa boitapolosho.	pH	6.5 – 9.0 Phesenthaele ya bo95

Lenaneo 9: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatshheko7: KAALOOG-SE-LOOP

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo	
7: KAALOOG-SE-LOOP	I	Leitlho la Marico, Kaaloog-se-Loop, Bokkraal se Loop Rietspuit	7_1	B	Bokanakang	Kelelo e e kwa tiase ya metsi	Dikelelo tse di kwa tiase tsa metsi le kelelo e e bonyaka ya ka nako ya komelelo tsa EWR: Kaaloog-se-Loop mo MAR_EWR1 mo A31A NMAR = $10.539 \times 10^{-3} \text{ m}^3$ REC=B category	Dikelelo tsa Motheo Dikelelo tse di kwa tiase tsa metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo. Tlhokomelo ya tshololo	Kelelo e e kwa tiase ya metsi (m^3/s)	Kelelo e e bonyaka ka nako ya komelelo (m^3/s)
									Diph	0.244
									Ngwan	0.252
										0.159
										0.164

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo	
		Ribbokfontein-se-Loop Rietfontein Bronkhorstfontein Zyferfontein (Kuiffontein) Syferfontein (A31A)					Kelelo e e kwa tlase ya metsi le kelelo e e bonywa ya metsi ka nako ya komelelo di tshwanetse go fihlelwa e le go tshetsetsa dipologolo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e elelang go ya teng.	kwa lefelong la EWR ka nako ya dipatlisiso tsa baoloji khale le ntho e metsi a elelang go ya kwa go yone kwa morathong o montshwa o o sa tswang go rulaganya.	Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat Lwe	0.245 0.250 0.280 0.254 0.262 0.253 0.261 0.252 0.252 0.257
							Seemo sa metsi a a se nang selabe se tshwanetse go somarelwa. Ga go na kwelotlase mo boleng jwa metsi e e tshwanetseng go letlelelwa. Boletswai jwa metsi a a tšenang mo molapong bo tshwanetse go somarelwa go netefatsa gore bokgoni ka kakaretso jwa dipologolo tsothe le dijalo jwa go tswaledisa ditirego tsa ikholoji le mefutafuta ya diitshedi jwa Karolo ya motswedi bo nna bo sa fetoge.	Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara ≤ 50 (mS/m) (Phesenthaele ya bo95)	
							Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa B kgotsa mo maemong a a botoka.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaethago	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong $EC = B \geq 25\%$	
							Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B kgotsa mo maemong a a botoka.	Tshupane ya Tlathobho ya Tsihogo ya Dimedi	VEGRAI $EC = B \geq 82\%$	

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Dithapi	Dithopa tsa dithapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B. Tlathobho ya dithopa tsa dithapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapisiwa le sethopa se se laletsweng sa ikholoji.	Tshupane ya Tlathobho ya Tsibogo ya (FRAI).	Sethopa sa ikholoji sa dithapi = B FRAI ≥ 82%
						Diphologolo tse di nang le mokwatla tsa mo metsing	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong sa ga jaana mo sethopheng sa A/B sa ikholoji.	Tshupane ya Tlathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = A/B ≥ 88% SASS ≥ 220 ASPT ≥ 6.4 (Site A3KAAL-RIETS)
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo maemong a e leng a tihago thata go ya go a e leng a tihago.	Tshupane e e Totobetseng ya Kgotlelego	EC ya Malele ≥ 88%

Lenaneo 10: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko8: MALMANIESLOOP

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo
8: MALMANIESLOOP	III	Malmanies-loop (A31C)	8_1	-	Boleng	Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelwa jaaka e tshwanetse go tseledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go somarelwa boleng jwa metsi le seemo sa ga jaana sa ikholoji.	Othofosofate (PO ₄ ⁻³) jaaka Fosoforo Naeterite (NO ₃ ⁻) & Naeterite (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.025 (mg/l) (Phesenthaele ya bo50) Dimiligerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Matswai	Boletswai jwa metsi a a tsehang mo nokeng bo tshwanetse go somarelwa go tshetsetsa diphologolo tsothe le dijalo tsa metsi le go somarela seemo sa ga jaana sa ikholoji.	Kgonagalo ya moela wa mollakase	DimiliSiemens/dimetara ≤ 55 (mS/m) (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga thola kotsi e e kwa tlase mo botekanelong jwa batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimiliitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintla tse di ka kgonang fetoga	selekano sa pH se tshwanetse go somarelwa se le mo ditekanetsong tse di totobaditsweng go tshetsetsa diphologolo tsothe le dijalo tsa metsi le ditlhokego tsa tiriso tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
							Go tlokega tlathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelewa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga thomamisiwa ditekanetsong.
					Legaethago	Lefatshe le le manyemunyemu	Leba di-RQO tsa lefatshe le le manyemunyemu, legaethago ke karolo ya lefatshe le le manyemunyemu.		
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Ditlhapi	Ditlhapi tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa C kgotsa maemo a a botoka. Tlathobo ya ditlhapi tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go tlhokomela fa go bapisiwa le sethopa se se laolelweng sa ikholoji. Laola le go tlosa mefuta ya ditlhapi tsa seeng le tse di senyang ya MSAL. Thibela go anama ga mefuta ya seeng.	Tshupane ya Tlathobo ya Tsbogo ya Ditlhapi (FRAI)	Sethopa sa ikholoji sa ditlhapi = C FRAI $\geq 62\%$ Sampole 10 BMOT mo maitekong a sampole a metsotso e le 20

Lenaneo 11: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko 9: MOLOPO

IUA	Setho pa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
9: MOLOPO	II	Leitlho la Molopo, Leitlho la Grootfontein, dinokana tse e le motswedi wa metsi tsa Molopo go elela mo teng ga Letamo la Setumo/Modimola D41A	9_1	C	Boleng	Bokanakang	Leba di-RQO tsa Metsi a ka fa tlase ga lefatshe		
							Metsi a ka fa tlase ga lefatshe (Leitlho la Molopo le Grootfontein)		
							Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa diphologolo tsofhe le dimela tsa metsi le go neteratsa gore go fitholelwa sethoba se se laolelweng sa ikholoji.	Othofosofate (PO ₄ ⁻³) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.025 (mg/l) (Phesenthaele ya bo50)
							Dilekano tsa boletswai tsa metsi a a tsenang mo molapong jaaka go totobaditswe di tshwanetse go fitholelwa go tsweladisa boitekanelo jwa diphologolo tsofhe le dijalo tsa metsi le go tshagetsa badirisi ba kwa metsi a elelang go ya kwa teng. Go thokega tokafalo mo dikokoanong tsa boletswai.	Naeteraite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.7 (Phesenthaele ya bo50)
							Matswai	Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara ≤ 75 (mS/m) (Phesenthaele ya bo95)
			9_2			Dintlha tse di ka kgonang go fetoga	Selekano sa pH e tshwanetse go somarelwa e le mo ditekanetsong tse di thalositweng go tshagetsa diphologolo tsofhe le dijalo tsa metsi le dithokego tsa tiriso ya badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.8 (Phesenthaele ya bo95)
							Go thokega thathobo ya motheo go tihomamisa seemo sa ga jaana sa kgoberego ya metsi a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga thomamisiwa ditekanetsong.
							Leba di-RQO tsa lefatshe le le manyemunyemu, legaethago ke karolo ya lefatshe le le manyemunyemu.		
					Legaethago	Metsi a a tsenang mo nokeng Lefatshe le le manyemunyemu			
							Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Tshupane ya Thathobo ya Tsibogo ya Dithhapi (FRAI).	Setlhopa sa ikholoji sa dithhapi = D FRAI ≥ 42% Sampole ya mefuta e le 3, go akaretse BBR/ mo patlisisong ya 20. Sampole 15 PPH/ mo metsotsong e le 20

IUA	Setho pa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Ditshedi tse dikgolo tse di nngang metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa D sa ikholoji (maemo a a fetotsweng ka bontsi) kgotsa e tshwanetse go tokafadiwa.	Tshupane Thathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = D $\geq$ 42% SASS $\geq$ 80 ASPT $\geq$ 4.0
		Karolo e kgolo ya Noka ya Molopo go tswa mo Letamong la Modimola go ya kwa Letamong la Disaneng D41A (karolokgolo)	9_3		Legaethago	Metsi a tsenang nokeng	Meufatuta ya magaethago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa E go ya kwa sethopheng sa D. Tokafatsa metsi a a elelang mo bogodimong jwa lefathe mo lefelong go tokafatsa go nna mo sethopheng sa ikholoji sa D. Laola go bopega ga sedimente le mathetse o o bolang.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = D $\geq$ 42%
						Legae la mo dintshing tsa noka	Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa E go ya go sethopheng sa D. Meufuta ya seeng e e thaselang e tshwanetse go laolwa. Lefelo le le mo dintshing tsa noka le tshwanetse go tsosoloswa.	Tshupane ya Thathobho ya Tsibogo ya Dimedi	VEGRAI EC = D $\geq$ 42%
					Bokanakang	Selekano sa Letamo	Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelang go ya teng. Go thama le go thabolola melawana ya tiriso go tswaledisa dilekano tse di kwa godimo tsa letamo go netefatsa gore mefutafuta ya diphologolo tsothe le dijalo tsa metsi e a somarelwa.	Go thokega selekano se se kwa tlase sa tiriso mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tlase go tswaledisa diphologolo le dijalo tsa metsi (15-18%).
		Letamo la Modimola (Setumo) (D41A)	9_4		Boleng	Dikotla	Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa ditshedi tsothe le dimela le ditlhokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi. Tokafatso e e tshokegang go tswa mo seemong sa koketsego e e feteletseng.	Diothofosofate	$\leq$ 0.050 mg/l Phesenthaele ya bo50
							Kokoano ya palogotho ya fosoforo e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le rileng le ditlhokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Palogotho ya fosoforo	$\leq$ 0.055 mg/l Phesenthaele ya bo50

IUA	Setiho pa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tihaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Kokoano ya naeteraite & naeteraite e tshwanetse go tokafadiwa go tswelisa boitekanelo jwa dipholologo tsothe le dijalo tsa mo lefelong le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikolita tse dintsi.	Naeteraite & Naeteraite	$\leq 0.70 \text{ mg/l N}$ Phesenthaele ya bo95
							Boletswai mo letamong bo tshwanetse go somarelwa go tshetsetsa boitekanelo jwa ditshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	$\leq 85 \text{ mS/m}$ Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somarelwa go tshetsetsa boitekanelo jwa ditshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Teloraete	$\leq 100 \text{ mg/l}$ Phesenthaele ya bo95
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga thola kotsi e kwa tiase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (E. coli)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
							Metsi a tshwanetse go nna a maemo a a amogelesegang go ka dirisetswa boitapoboso.	pH	6.5 – 9.0 Phesenthaele ya bo95
						Dintlha tse di ka kgonang go fetoga	Bophhepa jo bo oketsegileng ka palo $\geq 0.4 \text{ m}$	Kgoberego	Phesenthaele e e kwa tiase ya bo95
							Phetogo ya magareng	Thempereitsha	E seng go feta 2°C phetogo e e oketsegang mo minimamong le makisimamong ka bobedi
							Dilekano tsa okosijene di tshwanetse go somarela dipholologo tsothe le dijalo tsa mo lefelong le le rileng.	Okosijene e e thhaologileng	$\geq 7.0 \text{ mg/L O}_2$ Phesenthaele ya bo95
						Dire tse di bothole	Letamo le tshwanetse go laolwa go fokotsa go runya ga baketeria e bothole ya fotosintese	Baketeria ya fotosintese	Pheketso ya baketeria ya fotosintese ka kokoano ya Chl a e e kwa godingwana ga $30 \mu\text{g/l}$ e tshwanetse go tsholwa e le ka ga tiase ga 20% ya nako.
						Dilekano tsa Letamo	Letamo le tshwanetse go laolwa go sireletsa tiro ya dipholologo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelelang go ya teng. Go thama le go thaboloa melawana ya tiriso go tswelisa dilekano tse di kwa godimo tsa letamo go nefeatsa gore mefutafuta ya dipholologo tsothe le dijalo tsa metsi e a somarelwa.	Go thokega selekano se se kwa tiase sa tiriso mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tiase go tswelisa dipholologo le dijalo tsa metsi (15-18%).
		Letamo la Disaneng (D41A)	9_5		Bokanakang				

IUA	Setlho pa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswelidisa boitekanelo jwa ditshedhi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le ditekano tse di magareng tsa dikotla.	Diothofosofate	≤ 0.010 mg/l Phesenthaele ya bo50
							Kokoano ya palogotho ya fosoforo e tshwanetse go somarelwa go tswelidisa boitekanelo jwa ditshedhi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le ditekano tse di magareng tsa dikotla.	Palogotho ya fosoforo	≤ 0.025 mg/l Phesenthaele ya bo50
					Boleng		Kokoano ya naeteraete & naeteraete e tshwanetse go tokafadiwa go tswelidisa boitekanelo jwa dipologolo tsothe le dijalo tsa mo lefelong le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Naeteraete & Naeteraete	≤ 0.70 mg/l N Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa ditshedhi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	≤ 75 mS/m Phesenthaele ya bo95
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga tshola kotsi e kwa tiase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (E. coli)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintha tse di ka kgonang go fetoga	Metsi a tshwanetse go nna a maemo a a amogesehang go ka dirisetswa boitapolo.	pH	6.5 – 9.0 Phesenthaele ya bo95

Lenaneo 12: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko 11a: LETAMO LA GROOT MARICO / MOLATEDI

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
11a: LETAMO LA GROOT MARICO / MOLATEDI	III	Groot Marico go tswa mo metsing a a elelang go tswa mo Letamong la Marico Bosveld go ya	11a_1	C/D	Bokanakang	Kelelo e e kwa tiase ya metsi	Dikelelo tse di kwa tiase tsa metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo tsa EWR: Noka ya Groot Marico mo MAR EWR3 mo A31F NMAR = 65.0839x10 ⁶ m ³	Dikelelo tsa Motheo Dikelelo tse di kwa tiase tsa metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo. Tlhokomelo ya Noka ya Groot Marico mo A3H029	Kelelo e kwa tiase ya metsi (m ³ /s) Kelelo e bonyaka ya metsi ka nako ya komelelo (m ³ /s)
								Diph	0.248 0.196

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo		
		kwa Letamong la Molatedi, Dinokana tsothe (A31G, A31H, A31F, A31J, A32A, A32B, A32C)					REC=C/D sethopa Kelelo e e kwa tlase ya metsi le kelelo e e bonywa ya metsi ka nako ya komelelo di tshwanetse go fithlelwa go tshgetsa diphologolo tsothe le dijalo tsa metsi le badirisi ba kwa metsi a elelang go ya kwa teng.		Ngwan	0.262	0.206
									Sed	0.266	0.209
									Fer	0.284	0.223
									Tlhak	0.318	0.250
									Mop	0.281	0.221
									Mor	0.278	0.219
									Motsh	0.262	0.207
									Seet	0.268	0.211
									Phuk	0.258	0.203
									Phat	0.256	0.202
									Lwe	0.260	0.205
							Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithlelwa sethopa se se laolelsweng sa ikholoji.	Othofosofate (PO ₄ ⁻) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.090 (mg/l) (Phesenthaele ya bo50)		
						Dikotla		Naeterite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.7 (Phesenthaele ya bo50)		
							Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithlelwa jaaka go tthalositswe mo go totobetseng go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithlelwa sethopa se se laolelsweng sa ikholoji.	Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara ≤ 55 (mS/m) (Phesenthaele ya bo95)		
						Matswai		Salafeite	Dimiligerama/dilitara tse ≤ 50 (Phesenthaele ya bo95)		
								Tleloraete	Dimiligerama/dilitara tse ≤ 40 (Phesenthaele ya bo95)		
								Sotiamo	Dimiligerama/dilitara tse ≤ 50 (Phesenthaele ya bo95)		
							Selekano sa pH se tshwanetse go somarelwa se le mo ditekanetsong tse di totobaditsweng go tshgetsa diphologolo tsothe le dijalo tsa metsi le ditlhokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.8 (Phesenthaele ya bo95)		
						Dinitha tse di ka kgonang go fetoga	Go tlhokega tlathhobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga thomamisiwa ditekanyetso.		

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Metsi a a tsenang nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa C/D go ya kwa sethopheng sa B. Metsi a a elelang mo bogodimong jwa lefatshe a a feletsang a dirile kgotlelego ya dibodi mme kgotlelego ya baketeria ya motswedi e tshwanetse go laolwa.	Tshupane ya Tshomarelo e popego e ya lekalekanang tsa dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaeithago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C/D $\geq$ 58%
						Legae la mo dintshing noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa C/D. Dimedi tse di thaselang tsa seeng di tshwanetse go laolwa mme kago mo lefelong le le mo dintshing tsa noka e tshwanetse go lekanyediwa.	Tshupane ya Tlathobho ya Tsiobogo ya Dimedi	VEGRAI EC = C/D $\geq$ 58%
						Ditlhapi	Ditlhapi tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa D kgotsa go tokafadiwa. Tlathobho ya ditlhapi tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go tlhokomelela fa go bapiswa le sethopa se se laoleletsweng sa ikholoji.	Tshupane ya Tlathobho ya Tsiobogo ya Ditlhapi (FRAI)	Sethopa sa ikholoji sa ditlhapi = D FRAI $\geq$ 42% Kgobokanya 10+ mofuta mo maitekong a go dira sampole a metsotso e le 20
						Ditshedi tse dikgolo tse di nnang metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong sa ga jaana mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsiobogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Madio wa Afirikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = C $\geq$ 62% SASS $\geq$ 120 ASPT $\geq$ 5.5
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo maemong a le leng a tlhago thata go ya go a e leng a tlhago.	Tshupane e ya Totobetseng Kgotlelego	EC ya Malele = A/B $\geq$ 88%

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Mefuta e e nngang metsing le mo lefatsheng	Tshwanelego ya boalo jo jwa noka go dira jaaka legaeithago la dinonyane le diamusi tsa metsi e tshwanetse go somarelwa ka taolo e e maleba ya legaeithago. Lefelo le le mo dintshing tsa noka le tshwanetse go tokafadiwa.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga diwa tlhatlhobo ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakenedi ya diamusi mo karolong e telele ya noka. Go na le tlhokego ya gore go diwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
							Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelelang go ya teng. Go thama le go thabolola melawana ya tiriso go tswaledisa ditekano tse di kwa godimo tsa letamo go netefatsa gore mefutututa ya diphologolo tsothe le dijalo tsa metsi e a somarelwa. Kgololo ya metsi a letamo e thoka go filhelela dithokego tsa kelelo ya kwa metsi a yang teng go direla mabaka a kelelo ya metsi go tswela mosola diphologolo le dijalo.	Go tlhokega selekano se se kwa tlase sa tiriso mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tlase go tswaledisa diphologolo le dijalo tsa metsi (15-18%).
	Letamo la Molatedi (A32A, A32B, A32C)	11a_2			Bokanakang	Selekano Letamo	Kokoano ya othofosofate e tshwanetse go somarelwa go tswaledisa botekanelo jwa diphologolo tsothe le dijalo tsa lefelo le le riling le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le ditekano tse di magareng tsa dikotla.	Diothofosofate	≤ 0.015 mg/l Phesenthaele ya bo50

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Kokoano ya palogotho ya fosoforo e tshwanetse go somarelwa go tswaledisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le riling le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikotla.	Palogotho ya fosoforo	$\leq 0.055 \text{ mg/l}$ Phesenthaele ya bo50
							Kokoano ya naeteraete & naeterite e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa ditshedi tsothe le dimela tsa lefelo le le riling le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dilekano tse di magareng tsa dikotla.	Naeteraete & Naeterite	$\leq 0.70 \text{ mg/l N}$ Phesenthaele ya bo95
						Matswai	Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa ditshedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	$\leq 55 \text{ mS/m}$ Phesenthaele ya bo95
						Dintlha tse di ka kgonang fetoga	Metsi a tshwanetse go nna a maemo a a amogelesegang go ka dirisetswa boitapoloso.	pH	6.5 – 9.0 Phesenthaele ya bo95
							Dilekano tsa okosijene di tshwanetse go somarela diphologolo tsothe le dijalo tsa mo lefelong le le riling.	Okosijene tshaoilogileng	$\geq 7.0 \text{ mg/l O}_2$ Phesenthaele ya bo95

Lenaneo 13: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko 1b: GROOT MARICO / DINOKANA TSA NAKWANA GO YA SETLHA

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo

11b: GROOT MARICO / DINOKANA TSA NAKWANA GO YA KA SETLHA

IUA	Sethlhopa	Noka	Karolo ya motswedi	Sethlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihlalo ya RQO	Sekao	Tekanyetso ya Dipalo
						Metsi a mo tsenang nokeng	Mefutafuta ya magaeathago e tshwanetse go somarelwa e le mo sethlopheng sa ikholoji sa C. Phetheane ya kelelo ya thago e tshwanetse go somarelwa. Tokafatsa legaeathago la metsi a a tsenang mo molapong le lobelo/boteng jwa mefutafuta ya dipholologo, dimela le dishedi tsa metsi. Kgolagano le ntha e metsi a elang go ya kwa go yone go ya kwa (11b_2) e tshwanetse go filhelelwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologants'ho tsa fisikhokhemikale le legaeathago, Mokgwa le Sekao sa ka bonako sa Thathobo ya Legaeathago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologants'ho tsa fisikhokhemikale le molapong EC = C ≥ 62%
					Legaeathago	Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethlopheng sa ikholoji sa C. Ditlamorago go akaretse go fulwa/go gatiwa ga lefelo le le mo dintshing tsa noka go tshwanetse ga laolwa. Go thokega taolo ya go bopega ga sedimente.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologants'ho tsa fisikhokhemikale le legaeathago	VEGRAI EC = C ≥ 62%
					Diphologolo, dimela le dishedi tsa lefelo le le rileng	Dithlapi	Dithlapi tsa dithlapi tsa mota o le mongwe di tshwanetse go somarelwa di le mo sethlopheng sa ikholoji sa C/D kgoisa mo go botoka. Thathobo ya dithlapi tsa dithlapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapisiwa le sethlopa se se laolelweng sa ikholoji. Ditselana tsa dithlapi di tshwanetse go agelwa go direla mefuta e e tudugang gonne ga jaana ga go na kgolagano mo merathong e le mmalwa.	Tshupane ya Thathobo ya Tsibogo ya Dithlapi (FRAI)	Sethlhopa sa ikholoji sa dithlapi = C/D FRAI ≥ 58% Sample 8+ mefuta go ya ka patliso ya sampole nngwe le nngwe Mofuta wa sekao: BMAR, LMOL, SZAM

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo
						Ditshedi tse di dikgolo tse di nnang mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Thathobho ya Tsiibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 4.8
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo maemong a a fetotsweng mo magareng kgotsa go tokafadiwa.	Tshupane Totobetseng Kgotlelego	EC ya Malele ≥ 62%
		Elandsiaagtespruit, Lengope la Kgamanyane, Lenkwane (A32E)	11b_2				Go dirisiwa di-RQO tsa lefelo le le manyemunyemu		

Lenaneo 14: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatshenko¹²: BIERSPRUIT

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
12: BIERSPRUIT	III	Wilgespruit, Bofule, Kolobeng, Magoditshane, Motlhabe (A24D)	12_1	D	Boleng	Dikotla	Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa setlhopa se se laoletsweng sa ikholoji.	Othofosofate (PO ₄ ⁻³) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.090 (mg/l) (Phesenthaele ya bo50)
								Naeteraite (NO ₃ ⁻) & Naeteraite (NO ₂ ⁻) jaaka Naeteroijene	Dimiligerama/dilitara tse ≤ 0.7 (Phesenthaele ya bo50)
						Matswai	Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithelelwa jaaka go tshalositswe mo go totobetseng go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa setlhopa se se laoletsweng sa ikholoji.	Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara ≤ 55 (mS/m) (Phesenthaele ya bo95)
								Salefete	Dimiligerama/dilitara tse ≤ 80 (Phesenthaele ya bo95)
								Tlebraete	Dimiligerama/dilitara tse ≤ 40 (Phesenthaele ya bo95)
								Sotiamo	Dimiligerama/dilitara tse ≤ 70 (Phesenthaele ya bo95)
						Dintlha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somareliwa se le mo ditekanyetsetse di totobaditsweng go tshagetsa diphologolo tsothe le dijalo tsa metsi le ditlokego tsa badirisi ba metsi.	Selekano sa pH	6.0 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
								Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga thomamisiwa ditekanyetso.
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go thola kotsi mo ditshedding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Aluminiamo (Al)	Dimiligerama/dilitara tse ≤ 0.105 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimiligerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimiligerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimiligerama/dilitara tse ≤ 0.0095 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimiligerama/dilitara tse ≤ 0.0073 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimiligerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
								Cobalt (Co)	Dimiligerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo95)
								Zinki (Zn)	Dimiligerama/dilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga tlhola kotsi e e kwa tlase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Metsi a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya kwa sethopheng sa C. Somarela kelelo ya tlhago. Tokafatsa legaeithago la metsi a tsenang mo molapong le lobelo/boteng jwa mefutafuta ya diithapi.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaethago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C ≥ 62%
						Legae la mo dintshing tsa noka	Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya go sethopheng sa C. Tokafatsa lefelo le le mo dintshing tsa noka. Tlosa dimedi tsa seeng.	Tshupane ya Tlathobho ya Tsbogo ya Dimedi	VEGRAI EC = C ≥ 62%
						Dithapi	Dithopa tsa diithopa tsa mofuta o le mongwe di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya kwa sethopheng sa C/D. Somarela kelelo e e kwa tlase ya metsi ya tlhago. Tokafatsa legaeithago la metsi a tsenang mo molapong le lobelo/boteng jwa mefutafuta ya diithapi.	Tshupane ya Tlathobho ya Tsbogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa diithapi = C/D FRAI ≥ 58% Sample bonnye 10+ mefuta mo maitekong a metsotso e le 20 Mofuta wa sekao: AJOH, LCYL, BMAR, MBRE
						Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go filhelelwa jaaka e thalositse go tswaledisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi go netefatsa gore go filhelelwa sethopa se se laletswe go sa ikholoji. Dikokoano ga di a tshwanetse go di letlelelwe go wela tlase.	Othofosofate (PO ₄) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.125 (mg/l) (Phesenthaele ya bo50)
								Naeterite (NO ₃) & Naeteraete (NO ₂) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 1.0 (Phesenthaele ya bo50)
						Matswai	Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go filhelelwa jaaka go	Kgonagalo ya moela wa molakase (EC)	Dimiligram/dimetara ≤ 85 (mS/m) (Phesenthaele ya bo95)

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							tthalositswe mo go totobetse go tswelisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le dithokego tsa boleng jwa metsi tsa badirisi ba metsi.	Salefete (SO ₄)	Dimiligerama/dilitara tse ≤ 100 (Phesenthaele ya bo95)
								Sotiamo (Na)	Dimiligerama/dilitara tse ≤ 100 (Phesenthaele ya bo95)
								Tloraete (Cl)	Dimiligerama/dilitara tse ≤ 100 (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshetsetsa dipholologo tsothe le dijalo tsa metsi le dithokego tsa badirisi ba metsi.	Selekano sa pH	6.0 (Phesenthaele ya bo5) le bo95
						Dintlha tse di ka kgonang go fetoga	Go thokega thathobo ya motheo go tshomamisa seemo sa ga jaana sa kgoberego ya metsi a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga tshomamisiwa ditekanyetso.
								Aluminiamo (Al)	Dimiligerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimiligerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimiligerama/dilitara tse ≤ 0.3 (mg/l) (Phesenthaele ya bo95)
							Dikokoano tsa dire tse di bothole ga di a tshwanela go thola kotsi mo diitsheding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Lifo (Pb) e popota	Dimiligerama/dilitara tse ≤ 0.0095 (mg/l) (Phesenthaele ya bo95)
						Dire tse di bothole		Koporo (Cu) e popota	Dimiligerama/dilitara tse ≤ 0.0073 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimiligerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Cobalt (Co)	Dimiligerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo95)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
								Zinki (Zn)	Dimiligerama/dilitara tse 5 0.002 (mg/l) (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene go tshwanetse ga tlhola kotsi e e kwa tlase mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa D. Somarela kelelo e e kwa tlase ya metsi a a thago. Tokafatsa legaeithago la metsi a a tsenang mo molapong le lobelo/boteng jwa mefutafuta ya dithapi le diphololo tse dikgolo mme di se na mokwatla.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologants'ho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaeithago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologants'ho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = D $\geq$ 42%
						Legaeithago	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa D. Kago mo lefelong le le mo dintshing tsa noka e tshwanetse go laolwa le go lekanyediwa. Ditlamorago tsa bopega ga sedimente go tshwanetse ga laolwa.	Tshupane ya Tlathobho ya Tsibogo ya Dimedi	VEGRAI EC = D $\geq$ 42%
						Dipholologo, dimela le dits'hele tsa lefelo le le rileng	Dithopa tsa dithapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa D kgoisa e tshwanetse go tokafadiwa. Tlathobho ya dithopa tsa dithapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go tlhokomela fa go bapisiwa le sethopa se se laolelsweng sa ikholoji.	Tshupane ya Tlathobho ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = D FRAI $\geq$ 42% Kgobokanya 4+ mefuta mo maitekong a go dira sampole a metsofotso e le 20

Lenaneo 15: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshokatsheko 13: KAROLO E E KWA TLASENYANA YA CROCODILE

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
13: KAROLWANA E E KWA TLASENYANA YA CROCODILE	III	Crocodile e elela go tswa mo Letamong la Roodekopjes go ya kwa makgathanon g a noka ya Sand.	13_1	C/D	Bokanakang	Kelelo e e kwa tlase ya metsi	Dikelelo tse di kwa tlase tsa metsi ka nako ya komelelo tsa EWR: Noka ya Crocodile mo CROC EWR7 mo A24C NIMAR = $463.4 \times 10^{-6} m^3$ REC=D category	Dikelelo tsa Motheo Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya metsi ka nako ya komelelo.	Kelelo e e bonyana ya metsi ka nako ya komelelo (m ³ /s)
								Diph	1.134
								Ngwan	1.362
								Sed	1.481
								Fer	1.938

IUA	Setlho pa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo	
									Tlhak	
		Sleepfontein-spruit, Dinokana tsa Klipspruit (A21L, A24A, A24B, A24C)					fitlhelwa e le go tshagetsa dipholologo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e eelang go ya teng.		2.638	2.488
									Mop	2.481
									Mor	2.118
									Motsh	1.745
									Seet	1.574
									Phuk	1.389
									Phat	1.262
									Lwe	1.172
										1.172
										Kelelo e e kwa godimo ya metsi (m ³ /s)
									Diph	0
									Ngwan	0.790
									Sed	1.529
									Fer	0
									Tlhak	1.270
									Mop	0
									Mor	0.790
									Motsh	0
									Seet	0
									Phuk	0
									Phat	0
									Lwe	0
										Dimiligerama/dilitara tse ≤ 0.060 (mg/l) (Phesenthaele ya bo50)
										Dimiligerama/dilitara tse ≤ 1.0 (Phesenthaele ya bo50)
										Dimiligerama/dilitara tse ≤ 85 (mS/m) (Phesenthaele ya bo95)
										Dimiligerama/dilitara tse ≤ 100 (Phesenthaele ya bo95)
										Dimiligerama/dilitara tse ≤ 80 (Phesenthaele ya bo95)
										Dimiligerama/dilitara tse ≤ 80 (Phesenthaele ya bo95)

IUA	Setlho pa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go tlhola kotsi epe mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshhegetsisa dipholologo tsothle le dijalo tsa metsi le ditlhokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
						Dintha tse di kgonang go fetoga	Go tlhokega tlathobho ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
							Go tshwanetse ga fithelelwa dilekano tsa oksijene e e tshoalogileng go tshhegetsisa dipholologo tsothle le dijalo tsa metsi.	Okosijene e e tshoalogileng	Dimiligerama/dilitara tse ≥ 6 (mg/l)
								Atrazine	Dimiligerama/dilitara tse ≤ 0.078 (mg/l)
								Metolachlor	Dimiligerama/dilitara tse ≤ 0.30 (mg/l)
								Aluminium (Al)	Dimiligerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimiligerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimiligerama/dilitara tse ≤ 0.3 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimiligerama/dilitara tse ≤ 0.0095 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimiligerama/dilitara tse ≤ 0.0073 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimiligerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Cobalt (Co)	Dimiligerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo95)

IUA	Setlho pa	Noka	Karolo ya motswedi	Sethropa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo (mg/l)
								Zinki (Zn)	Dimiligerama/dilitara tse ≤ 0.002 (Phesenthaele ya bo95)
								Aluminiamo (Al)	Dimiligerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa D kgotsa mo maemong a a botoka. Somarela dikelele tse di siameng tse di kwa tlase tsa metsi go tswaledisa legaeithago go direla mefuta e e bofang legaeithago le boalo jo bo kwa tlase ga noka.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago. Mokgwa le Sekao sa ka bonako sa Thathobho ya Legaeithago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = D $\geq$ 42%
					Legaeithago	Legae la mo dintshing tsa noka	Go tlhokega tsosoloso/paakanyo. Dimedi tse di tholegetse mo lefelong leo di tshwanetse go sireletswa (<i>Acacia galepinii</i> e kgethegileng (Monkey thorn). Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa D kgotsa mo maemong a a botoka. Somarela lefelo le le mo dintshing tsa noka mo mafelong a a lemilweng. Laola kago.	Tshupane ya Thathobho ya Tsibogo ya Dimedi	VEGRAI EC = D $\geq$ 42%
						Dithapi	Dithopa tsa dithapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa D kgotsa mo maemong a a botoka. Lobelo/boteng jwa kelelo bo tshwanetse go nna jo bo lekaneng go direla mefuta e e bofang kelelo CPRE le LMOL le mefuta e e bosisi mo legaeithagong – AJOH.	Tshupane ya Thathobho ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = D FRAI $\geq$ 42% Sample 6 + mofuta mo maitekong mangwe le mangwe a sampole Mofuta wa sekao Mofuta o o bosisi wa dithapi. boalo jo bo magwata jo bo mo tlase ga metsi, CPRE, LMOL
					Diphologolo, dimela le dithedi tsa lefelo le le rileng	Dithedi tse dikgolo tse di nnang mo metsing mme di se na mokwatla	Kgobokanyo ya dithedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Thathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5)	MIRAI EC = D $\geq$ 42% SASS $\geq$ 60 ASPT $\geq$ 4.5 (Site A2CROC-KOEDO)

IUA	Setlho pa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo					
		Noka ya Sand go kgathana le Noka Crocodile (A24G, A24H)	13_2		Bokanakang	Dikelelo tse di kwa tlase tsa metsi	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo tsa EWR: Noka ya Sand e elela go ya ntheng e sele ya makgathano a Noka ya Sondags mo S24.6289, E27.6223 mo A24H NMAR = 26.56x10 ⁶ m ³ REC=B category	Dikelelo tsa Motheo Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo.	Diph	0.085	Kelelo e e bonyaka nako ya metsi (m ³ /s)	Kelelo e e bonyaka komelelo (m ³ /s)		
									Ngwan	0.104		0.042		
									Sed	0.120		0.024		
									Fer	0.196	Tlhokomelo ya tshololo ya Noka ya Sand ka nako ya dipatlisiso tsa baeoloji khale	0.021		0.063
									Tlhak	0.263				0.105
									Mar	0.199				0.055
									Mor	0.158				0.071
									Motsh	0.127				0.059
									Seet	0.119				0.056
									Phuk	0.108				0.051
									Phat	0.098				0.047
									Lwe	0.089				0.044
						Kelelo e e kwa godimo ya metsi	Dikelelo tse di kwa godimo tsa metsi tsa EWR: Noka ya Sand Tlhokomelo ya tshololo ya Noka ya Sand ka nako ya dipatlisiso tsa baeoloji khale mo S24.6289, E27.6223 mo A24H NMAR = 26.56x10 ⁶ m ³ REC=B category	Dikelelo tse di oketsegileng go direla diithapi	Diph	0.009	Kelelo e e kwa godimo ya metsi (m ³ /s)			
									Ngwan	0.056				
									Sed	0.090				
									Fer	0.181				
									Tlhak	0.500	Kelelo e e kwa godimo le yone e totobaditswe jaaka tlhokego ya monwalela ka nosi malebana le bogolo le bolelele jwa paka (Leba Mamelelelo A)	0.181		0.093
									Mop	0				0
									Mor	0				0
									Motsh	0				0
									Seet	0				0
									Phuk	0				0
									Phat	0				0
									Lwe	0				0
					Boleng	Dikotla Matswai	Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tsweladisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laolelweng sa ikholoji. Dilekano tsa boletswai jwa metsi a a	Othofosofate (PO ₄ ⁻³) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.020 (mg/l) (Phesenthaele ya bo50)					
								Naeterite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)					

IUA	Setho pa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							elelang go tsena mo nokeng di tshwanetse go fithelwa jaaka go thalositse mo go totobetseng go tsweladisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go netefatsa gore go fithelwa sethopa se se laolelweng sa ikholoji.	Kgonagalo ya moela wa motlakase	DimilSiemens/dimetara ≤ 30 (mS/m) (Phesenthaele ya bo95)
								Salefeite	Dimiligerama/dilitara tse ≤ 20 (Phesenthaele ya bo95)
								Teloraete	Dimiligerama/dilitara tse ≤ 20 (Phesenthaele ya bo95)
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa B.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlaththobo ya Legaeithago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = B $\geq 82\%$
					Legaeithago	Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B kgotsa mo maemong a a botoka.	Tshupane ya Tlaththobo ya Tsiobogo ya Dimedi	VEGRAI EC = B $\geq 82\%$
						Ditlhapi	Ditlhapa tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B. Tlaththobo ya ditlhapa tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapisiwa le sethopa se se laolelweng sa ikholoji . Legaeithago le kelelo e tshwanetse go nna tse di lekaneng go direla mefuta e e ikagileng ka kelelo e e ikagileng ka go fetoga ga ditlha, CPAR.	Tshupane ya Tlaththobo ya Tsiobogo ya Ditlhapi (FRAI)	Sethopa sa ikholoji sa ditlhapi = B FRAI $\geq 82\%$
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Ditshedi tse dikgolo tse di nnang mo metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlaththobo ya Tsiobogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Afonkaborwa wa Mofuta 5 (SASS5)	MIRAI EC = C $\geq 62\%$ SASS ≥ 100 ASPT ≥ 5.5 (Site A2SUND-WATER)

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Government Gazette Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID AFRIKA

Vol. 652

18 October 2019
Oktober

No. 42775

PART 4 OF 6

N.B. The Government Printing Works will not be held responsible for the quality of "Hard Copies" or "Electronic Files" submitted for publication purposes

ISSN 1682-5843



AIDS HELPLINE: 0800-0123-22 Prevention is the cure

IUA	Setho pa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
		Karolo e e kwa tlasenyana ya Crocodile go tswa mo Bierspruit go ya kwa molewaneng wa Botswana (Noka ya Limpopo) (A24J)	13_3		Bokanakang	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo tsa EWR: Noka ya Crocodile mo A2H128 mo A24J $NMAR = 565,16 \times 10^6 m^3$ REC=C/D category Kelelo e e kwa tlase ya metsi le kelelo e e bonyana ya komelelo di tshwanetse go fitlhelelwa e le go tshagetsa diphologolo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e eelang go ya teng.	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya metsi ka nako ya komelelo. Tlhokomelo ya Noka ya Crocodile mo A2H128	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo Kelelo e e kwa tlase ya metsi le kelelo e e bonyana ya komelelo	Diph Ngwan Sed Fer Tlhak Mar Mor Motsh Seet Phuk Phat Lwe Kelelo e e kwa godimo ya metsi (m^3/s) Diph Ngwan Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat Lwe Kelelo e e kwa godimo ya metsi (m^3/s) 0 0.395 2.829 0 0.423 0 0 0 0 0 0 0
						Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo tsa EWR: Noka ya Crocodile mo A2H128 mo A24J $NMAR = 565,16 \times 10^6 m^3$ REC=C/D category Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo di tshwanetse go fitlhelelwa e le go tshagetsa diphologolo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e eelang go ya teng.	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo Kelelo e e kwa tlase ya metsi le kelelo e e bonyana ya komelelo	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo Kelelo e e kwa tlase ya metsi le kelelo e e bonyana ya komelelo	Diph Ngwan Sed Fer Tlhak Mar Mor Motsh Seet Phuk Phat Lwe Kelelo e e kwa godimo ya metsi (m^3/s) Diph Ngwan Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat Lwe Kelelo e e kwa godimo ya metsi (m^3/s) 0 0.395 2.829 0 0.423 0 0 0 0 0 0 0
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						Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo tsa EWR: Noka ya Crocodile mo A2H128 mo A24J $NMAR = 565,16 \times 10^6 m^3$ REC=C/D category Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo di tshwanetse go fitlhelelwa e le go tshagetsa diphologolo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e eelang go ya teng.	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo Kelelo e e kwa tlase ya metsi le kelelo e e bonyana ya komelelo	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo Kelelo e e kwa tlase ya metsi le kelelo e e bonyana ya komelelo	Diph Ngwan Sed Fer Tlhak Mar Mor Motsh Seet Phuk Phat Lwe Kelelo e e kwa godimo ya metsi (m^3/s) Diph Ngwan Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat Lwe Kelelo e e kwa godimo ya metsi (m^3/s) 0 0.395 2.829 0 0.423 0 0 0 0 0
						Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo tsa EWR: Noka ya Crocodile mo A2H128 mo A24J $NMAR = 565,16 \times 10^6 m^3$ REC=C/D category Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo di tshwanetse go fitlhelelwa e le go tshagetsa diphologolo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e eelang go ya teng.	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo Kelelo e e kwa tlase ya metsi le kelelo e e bonyana ya komelelo	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo Kelelo e e kwa tlase ya metsi le kelelo e e bonyana ya komelelo	Diph Ngwan Sed Fer Tlhak Mar Mor Motsh Seet Phuk Phat Lwe Kelelo e e kwa godimo ya metsi (m^3/s) Diph Ngwan Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat Lwe Kelelo e e kwa godimo ya metsi (m^3/s) 0 0.395 2.829 0 0.423 0 0 0 0 0
						Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo tsa EWR: Noka ya Crocodile mo A2H128 mo A24J $NMAR = 565,16 \times 10^6 m^3$ REC=C/D category Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo di tshwanetse go fitlhelelwa e le go tshagetsa diphologolo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e eelang go ya teng.	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo Kelelo e e kwa tlase ya metsi le kelelo e e bonyana ya komelelo	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyana ya komelelo Kelelo e e kwa tlase ya metsi le kelelo e e bonyana ya komelelo	Diph Ngwan Sed Fer Tlhak Mar Mor Motsh Seet Phuk Phat Lwe Kelelo e e kwa godimo ya metsi (m^3/s) Diph Ngwan Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat Lwe Kelelo e e kwa godimo ya metsi ($m^3/s</$

IUA	Setlho pa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							tsweledisa boitekanelo jwa diphologolo tsothe le dimele tsa metsi le ditlhokego tsa boleng jwa metsi tsa badirisi ba metsi. Dikokoano ga di a tshwanelwa gore di letlelelwe go wela tlase.	Sotiamo (Na)	Dimiligerama/dilitara tse ≤ 80 (Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go tihola kotsi epe mo boitekanelong jwa batho.	Tloraete (Cl)	Dimiligerama/dilitara tse ≤ 100 (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa se le mo ditekanetsong tse di totobaditsweng go tshagetsa diphologolo tsothe le dijalo tsa metsi le ditlhokego tsa badirisi ba metsi.	<i>Escherichia coli</i> (<i>E.coli</i>)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintsha tse di kgonang go fetoga	Go thokega tlathobho ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a eielang go tsena mo molapong.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
							Go tshwanetse ga fithelelwa dilekano tsa oksijene e e tshagetsa diphologolo tsothe le dijalo tsa metsi.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go tihola kotsi mo ditsheding tse dinnye tsa metsi le mo boitekanelong jwa batho	Okosijene e e tshagetsa	Dimiligerama/dilitara tse ≥ 6 (mg/l)
							Mefutafuta ya magaeithago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya kwa sethopheng sa C/D. Somarela dikelele tse di siameng tse di kwa tlase tsa metsi go tswaledisa legaeithago go direla mefuta e e boifang legaeithago le boalo jo bo kwa tlase ga noka.	Atrazine	Dimiligerama/dilitara tse ≤ 0.078 (mg/l)
							Dimedi tse di tshagetseng mo lefelong leo di tshwanetse go sireletswa <i>Acacia galel</i> e e kgethegileng (Monkey thorn). Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya go sethopheng sa C/D.	Mancozeb	Dimiligerama/dilitara tse 0.009 (mg/l)
						Legaeithago	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C/D ≥ 58%	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago. Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaeithago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C/D ≥ 58%
						Legaeithago	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago. Tshupane ya Tlathobho ya Tsibogo ya Dimedi	VEGRAI EC = C/D ≥ 58%	

IUA	Setlho pa	Noka	Karolo ya motswedi	Sethopha sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Diphologolo, dimela le ditshedi tsa lefelo le le riling	Dithapi	Dithopa tsa dithapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa D. Lobelo/boteng jwa kelelo bo tshwanetse go somarelwa go direla CPAR, MACU le LMOL, le mofuta e e bosisi mo legaethagong le le riling – MMAC, BANN.	Tshupane ya Tlathhobo ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = D FRAI $\geq 42\%$ Sample 6 + mofuta mo maitekong mangwe le mangwe a sample
						Mefuta e e nngang mo metsing le lefatsheng	Tshwanelego ya boalo jo jwa noka go dira jaaka legaethago la dinonyane le diamusi tsa metsi e tshwanetse go somarelwa ka taolo e e maleba ya legaethago. Somarela lefatsheng le le siameng le le khurumeditsweng ke dimedi tsa mo dintshing tsa noka goo direla manyedi.	Dinonyane tsa metsi/Mofuta wa diamusi	Go tshwanetse ga dirwa tlathhobo ya motheo go tihomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le thokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/le e kgobokantsweng.
						Diphologolo tse di nang le mokwatla tsa metsi	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa C/D sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathhobo ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mogwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5)	MIRAI EC = C/D $\geq 58\%$ SASS ≥ 120 ASPT ≥ 5.0
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo maemong a a fetotsweng thata kgotsa go tokafadiwa.	Tshupane Totobetseng Kgotlelego	EC ya Malele $\geq 42\%$

Lenaneo 16: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko 14: TOLWANE / KULWANE / MORETELE / KLIPVOOR

IUA	Setlho pa	Noka	Karolo ya motswedi	Sethopha sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
14: TOLWANE / KULWANE / MORETELE / KLIPVOOR	III	Noka ya Aples, Nokana ya Tshwane (A23F)	14_1	D	Bokanaka ng	Dikelelo	Togamaano ya taolo go laola metsi- phetelela a leng teng (dikelelo tse di boelang morago) mo lefelong le diphologolo le dijalo di nngang mo go lone e tshwanetse go dirwa. Maithophelo a a tshwanetse go taolo a tshwanetse go tlathhobwa. Go tshwanetse ga tihomamisiwa ditshiamelo tsa go fokotsa kelelo.	Kelelo e e kwa tlase ya metsi	Go tihomamisiwa fa fela go dirilwe togamaano ya taolo
					Boleng	Dikotla	Kokoano ya dikotla tsa metsi a a elalang go tsena mo teng e tshwanetse go fithilelewa jaaka e tlhalositswe go	Othofosofate (PO ₄) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.5 (mg/l) (Phesenthaele ya bo50)

IUA	Setlho pa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							tswelidisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi go netefatsa gore go fithlelelwa sethopa se se laoletsweng sa ikholoji.	Naeterite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/diilitara tse ≤ 3.0 (Phesenthaele ya bo50)
							Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithlelelwa jaaka go thalositse mo go totobetseng go tswelidisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go netefatsa gore go fithlelelwa sethopa se se laoletsweng sa ikholoji.	Kgonagalo ya moela wa motlakase (EC)	DimiliSiemens/dimetara ≤ 80 (mS/m) (Phesenthaele ya bo95)
								Salefite (SO ₄)	Dimiligerama/diilitara tse ≤ 70 (Phesenthaele ya bo95)
								Tloraete (Cl)	Dimiligerama/diilitara tse ≤ 75 (Phesenthaele ya bo95)
								Sotiamo (Na)	Dimiligerama/diilitara tse ≤ 80 (Phesenthaele ya bo95)
							Go nna teng ga dipathojene ga go a tshwanela go thola kotsi epe mo boitekanelong jwa batho.	<i>Escherichia coli</i> (E.coli)	makgetho a le 130/dimiilitara tse 100 (ml) (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshegetsa dipholologo tsothe le dijalo tsa metsi le dithokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
							Go thokega tlathobho ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
							Go tshwanetse ga fithlelelwa dilekano tsa okosijene e e thaologileng go tshegetsa dipholologo tsothe le dijalo tsa metsi.	Okosijene e e thaologileng	Dimiligerama/diilitara tse ≥ 6 (mg/l)
								Atrazine	Dimiligerama/diilitara tse ≤ 0.078 (mg/l)
								Mancozeb	Dimiligerama/diilitara tse 0.009 (mg/l)
								Glyphosate	0 Dimiligerama/diilitara tse 7 (mg/l)
								Endosulfan	Dimiligerama/diilitara tse 0.13 (ug/l)
							Dikokoano tsa dire tse di bothole ga di a tshwanela go thola kotsi mo ditheding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Chromium (VI)	Dimiligerama/diilitara tse ≤ 0.2 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimiligerama/diilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Lioto (Pb) e popota	Dimiligerama/diilitara tse ≤ 0.0013 (mg/l) (Phesenthaele ya bo95)
								Cobalt (Cb)	Dimiligerama/diilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo95)

IUA	Setho pa	Noka	Karolo ya motswedi	Setlhopa sa Ikholoji	Karolwan a	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
								Nikele (Ni)	Dimiligerama/diilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Zinki (Zn)	Dimiligerama/diilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95)
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go tokafadiwa go ya kwa sethopheng sa D. Somarela dikelele tse di siameng tse di kwa tlase tsa metsi go tsweledisa legaeithago go direla mefuta e e boifang legaeithago le boalo jo bo kwa tlase ga noka (BMAR, BUN).	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = D ≥ 42% (lelelo le le fa tlase ga makgathano a Apies le Tshwane)	
					Legaeitha go	Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa D kgotsa mo maemong a a botoka. Somarela lefelo le le mo dintshing tsa noka mo mafelong a a lemlleng.	Tshupane ya Tlhalithobo ya Tsibogo ya Dimedi	VEGRAI EC = D ≥ 42%
					Bokanaka ng	Dikelelo	Togamaano ya taolo go laola metsi phethelela a leng teng (dikelelo tsa poelomorago) mo lefelong e tshwanetse go dirwa. Matliphelo a a tshwanelegang a taolo a tshwanetse go tlathobiwa. Go tshwanetse ga tlhomamisiwa ditshiamelo tsa go fokotsa kelelo.	Kelelo e e kwa tlase ya metsi	Go thomamisiwa fa fela go dirliwe togamaano ya taolo
		Noka ya Pienaars go tswa mo makgathanon g a Boekenshout go ya kwa makgathanon g a Noka ya Apies (A23C)	14_2		Boleng	Dikotla	Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tsweledisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Othofosofate (PO ₄ ⁻) jaaka Fosoforo	Dimiligerama/diilitara tse ≤ 0.090 (mg/l) (Phesenthaele ya bo50)
								Naeterite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/diilitara tse ≤ 0.7 (Phesenthaele ya bo50)
								Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara ≤ 55 (mS/m) (Phesenthaele ya bo95)
								Salefeite	Dimiligerama/diilitara tse ≤ 50 (Phesenthaele ya bo95)
						Matswai		Tloraete	Dimiligerama/diilitara tse ≤ 50 (Phesenthaele ya bo95)
								Sotiamo	(Phesenthaele ya bo95)
						Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go tlhola kotsi epe mo boitekanelong jwa batho	Escherichia coli (E.coli)	makgetho a le 130/dimiliilitara tse 100 (ml) (Phesenthaele ya bo95)

IUA	Setho pa	Noka	Karolo ya motswedi	Sethlopa sa ikholoji	Karolwan a	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dintlha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshegetsa diphologolo tsothle le dijalo tsa metsi le diithokego tsa badirisi ba metsi. Go thokega tlathobho ya motheo go thomanisa seemo sa ga jaana sa kgoberego ya metsi a a eelang go tsena mo molapong. Go tshwanetse ga fithelwa dilekano tsa okosijene e e thaoalogileng go tshegetsa diphologolo tsothle le dijalo tsa metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
								Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
								Okosijene e e thaoalogileng	Dimiligerama/dilitara tse ≥ 6 (mg/l)
								Atrazine	Dimiligerama/dilitara tse ≤0.078 (mg/l)
								Tshipi (Fe)	Dimiligerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimiligerama/dilitara tse ≤ 0.0095 (mg/l) (Phesenthaele ya bo95)
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go thola kotsi mo dithsheding tse dinnye tsa metsi le mo boltekanelong jwa batho.	Koporo (Cu) e popota	Dimiligerama/dilitara tse ≤ 0.00735 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimiligerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Zinki (Zn)	Dimiligerama/dilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95)
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaethago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa C.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago. Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaethago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a mo molapong EC = C ≥ 62%
					Legaethago	Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa C. Go thokega paakanyo ya lefelo le le mo dintshing tsa noka le le Boekenshout. Go epiwa ga santa go tshwanetse ga laolwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Tlathobho ya Tshiboro ya Dimedi	VEGRAI EC = C ≥ 62%

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Ditlhapi	Diphologolo o, dimela le ditshedhi tsa lefelo le le rileng	Ditlhopa tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo setlhopeng sa ikholoji sa C kgotisa mo go botoka. Thathobo ya ditlhopa tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go tlhokomela fa go bapisiwa le sethlhopa se se laoleletsweng sa ikholoji. Lobelo/boteng jwa kelelo bo tshwanetse go somarelwa mo mefuteng ya ditlhapi – CPAR le LMOL le mofuta e e bosisi mo legaeithagong – AKAT e go nang le kgonagalo ya gore e ka nna teng mo mafatsheng a manyemunyemu.	Tshupane ya Thathobho ya Tsibogo ya Dithapi (FRAI)	Sethlhopa sa ikholoji sa ditlhapi = C FRAI ≥ 62% Sample 10 CPAR le 10 LMOL mo maitekong a metsotsotse e le 20
					Mefuta e e nnang mo metsing le mo lefatsheng		Go tshwanetse ga somarelwa Legaeithago mo Mothabeng wa Moretele. Boleele jwa noka bo tshwanetse go somarelwa go dira jaaka legaeithago la dinonyane tsa metsi le ditlhopa tsa diamusi tsa mofuta o le mongwe ka taolo e e maleba ya legaeithago. Somarela lefelo le le khurumeditsweng sentle la mo dintshing tsa noka go direla manyedi. Somarela lefelo la mo dintshing tsa noka jaaka legaeithago la bothokwa la dinonyane.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa thathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le tlhokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
							Dikelelo tse di kwa tlase tsa EWR: Noka ya Plat mo A2H064 mo A23G NMAR = 9.64×10^{-3} REC=C/D category	Dikelelo tsa Motheo	Kelelo e e bonyaka tsa metsi (m ³ /s) Kelelo e e bonyaka tsa metsi (m ³ /s)
					Kelelo e e bonyaka tsa metsi	Bokanaka ng	Kelelo e e bonyaka tsa metsi ka nako ya komelelo di tshwanetse go fithelelewa e le go tshegetsa diphologolo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e elelang go ya teng.	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka tsa metsi ka nako ya komelelo Tlhokomelo ya Noka ya Plat mo A2H064	Diph Ngwa n Sed Fer Tlhak Mop Mor Motsh Seet Phuk Phat We 0.021 0.023 0.023 0.025 0.014 0.030 0.027 0.027 0.025 0.025 0.024 0.024 0.023 0.012 0.012 0.013 0.014 0.016 0.015 0.014 0.013 0.014 0.013 0.013 0.012

IUA	Setho pa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwan a	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Legaeitha go	Metsi a a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya mo sethopheng sa C/D.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaeithago (RHMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C/D $\geq$ 58%
						Legaeitha go	Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya go sethopa sa C/D.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Tshupane ya Tlathobho ya Tlathobho ya Dimedi	VEGRAI EC = C/D $\geq$ 58%
						Ditlhapi	Ditlhapi tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya kwa sethopheng sa C/D. Somarela lobelo/boteng jwa kelelo jwa mofuta ya ditlhapi ya LCYL le LMOL le mofuta e e bosisi mo legaeithagong, MBRE le BBR. Ditlhapi tse di thaatsweng tsa CTHE mo boleeleng jo bo kwa godimo jwa noka di tshwanetse go somarelwa.	Tshupane ya Tlathobho ya Tlathobho ya Tlathobho (FRAI)	Sethopa sa ikholoji sa ditlhapi = C/D FRAI $\geq$ 58% Sampole 2 kgotsa 3 CTHE le 10 LMOL mo maitekong a metsotso e le 20 (Site A2PLAT-KOMAN)
						Ditshedi tse dikgolo tse di nngang mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa C sa ikholoji kgotsa e tshwanetse e go tokafadiwa.	Tshupane ya Tlathobho ya Tlathobho ya Tlathobho mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Afrikaborwa wa Mofuta 5 (SASS5)	MIRAI EC = C $\geq$ 62% SASS $\geq$ 120 ASPT $\geq$ 6.0 (Site A2PLAT-KOMAN)
						Dikelelo	Togamaano ya taolo go laola metsi-phetelela a leng teng (dikelelo tse di boelang morago) mo lefelong le dipholologo le dijalo di nngang mo go lone e tshwanetse go dirwa. Matlhophele a a tshwanetse go taolo a tshwanetse go tlathobiwa. Go tshwanetse ga thomamisiwa ditshiamelo tsa go fokotsa kelelo.	Kelelo e e kwa tlase ya metsi	Go thomamisiwa fa fela go dirliwe togamaano ya taolo
						Dikotla	Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tsweledisa boitekanelo jwa dipholologo tsotlhe le dimela tsa metsi le go neteratsa gore go filhelelwa sethopa se se laolelweng sa ikholoji.	Orthosofate (PO ₄ ⁻³) jaaka Fosoforo	Dimiligerama/dilitara tse $\leq$ 0.5 (mg/l) (Phesenthaele ya bo50)
						Boleng		Naeteraite (NO ₃ ⁻) & Naeteraite (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse $\leq$ 3.0 (Phesenthaele ya bo50)

IUA	Setho pa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Matswai		Diekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithelelwa jaaka go thaloitswe mo go totobetseng go tswedisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laletseng sa ikholoji.	Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara ≤ 85 (mS/m) (Phesenthaele ya bo95)
								Salafete (SO ₄)	Dimiligerama/dilitara tse ≤ 70 (Phesenthaele ya bo95)
								Teloraete (Cl)	Dimiligerama/dilitara tse ≤ 75 (Phesenthaele ya bo95)
								Sotiamo (Na)	Dimiligerama/dilitara tse ≤ 80 (Phesenthaele ya bo95)
					Dipathojene		Go nna teng ga dipathojene ga go a tshwana go thola kotsi epe mo boitekanelong jwa batho.	<i>Escherichia coli</i> (E.coli)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
					Dintlha tse di ka kgonang go fetoga		Selekano sa pH se tshwanetse go somarelwa se le mo ditekanetsong tse di totobaditsweng go tshagetsa diphologolo tsothe le dijalo tsa metsi le ditlokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
							Go thokega thathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
							Go tshwanetse ga fithelelwa diekano tsa okosijene e e tshagetsa diphologolo tsothe le dijalo tsa metsi.	Okosijene e e tshagetsa	Dimiligerama/dilitara tse ≥ 6 (mg/l)
							Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsothe le dimela ga mmogo le badirisi ba kwa metsi a elelang go ya teng. Go thama le go thabolola melawana ya tiriso go tswedisa diekano tse di kwa godimo tsa letamo go netefatsa gore mefutafuta ya diphologolo tsothe le dijalo tsa metsi e a somarelwa.	Go thokega selekano se se kwa tlase sa tiriso mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tlase go tswedisa diphologolo le dijalo tsa metsi (15-18%).
							Kgololo ya metsi a letamo e tlhoka go fithelela ditlokego tsa kelelo ya kwa metsi a yang teng go direla mabaka a kelelo ya metsi go tswela mosola diphologolo le dijalo.		
							Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswedisa boitekanelo jwa ditshedhi tsothe le dimela le ditlokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Othofosofate	≤ 0.05 mg/l Phesenthaele ya bo50

IUA	Setho pa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Kokoano ya palogotho ya fosoforo e tshwanetse go tokafadiwa go tseledisa boitekanelo jwa dithedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Palogotho ya fosoforo	$\leq 0.130 \text{ mg/l}$ Phesenthaele ya bo50
							Kokoano ya palogotho ya Amonia jaaka N e tshwanetse go tokafadiwa go tseledisa boitekanelo jwa dipholologo tsothe le dijalo le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka tsamaiso e e nang le dikotla tse dintsi.	Palogotho ya Amonia	$\leq 0.072 \text{ mg/l N}$ Phesenthaele ya bo95
					Matswai		Boletswai mo letamong bo tshwanetse go somarelwa go tsegetsa boitekanelo jwa dithedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng.	Kgonagalo ya moela wa motlakase	$\leq 75 \text{ mS/m}$ Phesenthaele ya bo95
							Metsi a tshwanetse go nna a maemo a a amogelesegang go ka dirisetwa boitapolo.	pH	6.5 – 9.0 Phesenthaele ya bo95
					Dintlha tse di ka kgonang go fetoga		Bophepa jo bo oketsegile	Kgoberego	$\geq 0.4 \text{ m}$ Phesenthaele ya bo5
							Phetogo ya magareng	Thempereitšha	E seng go feta 2°C phetogo e e oketsegang mo minimamong le maksimamong ka bobedi
							Diekano tsa okosijene di tshwanetse go somarela dipholologo tsothe le dijalo tsa mo lefelong le le rileng.	Okosijene e e tshalogile	$\geq 7.0 \text{ mg/l O}_2$ Phesenthaele ya bo95
					Dipathojene		Go nna teng ga dipathojene ga go a tshwanela go tlhola kotsi epe mo boitekanelong jwa batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)
							Letamo le tshwanetse go laolwa go fokotsa go runya ga baketeria e e bothole ya fotosintese	Baketeria ya fotosintese	Phesenthaele ya baketeria ya fotosintese ka kokoano ya Chl a e e kwa godingwana ga $30\mu\text{g/l}$ e tshwanetse go tsholwa e le ka ga tlase ga 20% ya nako.
					Dire tse di bothole		Metsi a noka ga a tshwanela go nna bothole mo ditheding tse dinnye tsa metsi kgotsa go nna matshosetsi mo boitekanelong jwa batho.	Dibolayadisenyi	Cyanide: $\leq 110 \mu\text{g/l}$ Endosulfan: $\leq 20 \mu\text{g/l}$ Atrazine: $\leq 100 \mu\text{g/l}$ Phesenthaele ya bo95

IUA	Setho pa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo	
		Noka ya Moretele go tswa kwa Letamong la Klipvoor go ya kwa Nokeng ya Crocodile, Tolwane (A23K, A23L)			Bokanaka ng	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaya ya metsi ka nako ya komelelo tsa EWR: Dinoka tsa Moretele/ Pienaars mo CROC_EWR5 mo A23J NMAR = $113.0 \times 10^6 \text{ m}^3$ REC=D category Kelelo e e kwa tlase ya metsi le kelelo e e bonyaya ya metsi ka nako ya komelelo di tshwanetse go fithelelwa e le go tshagetsa dipholologo tsothe le dijalo tsa metsi le badiresi ba metsi a kwa noka e elelang go ya teng.	Dikelelo tsa Motheo Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaya ya metsi ka nako ya komelelo Tlhokomelo ya Noka ya Pienaars mo A2H106	Kelelo e e bonyaya ya metsi (m ³ /s) Kelelo e e bonyaya ya komelelo (m ³ /s)	Diph Ngwa n Sed Fer Thak Mar Mor Motsh Seet Phuk Phat Lwe
						Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelelwa jaaka e tlhalositswe go tswaledisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi go netafatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji. Dikokoano tsa dikotla di tshwanetse go fokodiwa.	Othofosofate (PO ₄ ⁻) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.060 (mg/l) (Phesenthaele ya bo50)	
					Dikotla	Boletswai jwa metsi a a mo molapong bo tshwanetse go somarelwa go tshagetsa seemo sa ga jaana sa ikholoji. Ga go na tshenyego go ya pele e e tshwanetseng go direga. Ditiro tse di mo lefatsheng le dikgololo tsa WWTW di tshwanetse go laolwa.	Naetereite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 1.0 (Phesenthaele ya bo50)	
					Matswai	Go nna teng ga dipathojene ga go a tshwanela go tlhola kotsi epe mo boitekanelong jwa batho. Kgotelego ya maekherobiale e tshwanetse go fokodiwa.	Kgonagalo ya moela wa motlakase	Dimiligram/dimetara ≤ 75 (mS/m) (Phesenthaele ya bo95)	
							Salefeite	Dimiligerama/dilitara tse ≤ 60 (Phesenthaele ya bo95)	
							Tlebraete	Dimiligerama/dilitara tse ≤ 70 (Phesenthaele ya bo95)	
							Sotiamo	Dimiligerama/dilitara tse 100 (Phesenthaele ya bo95)	
					Dipathojene	Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshagetsa dipholologo tsothe le dijalo tsa metsi le ditlhokego tsa badiresi ba metsi.	<i>Escherichia coli</i> (E.coli)	makgetho a le 130/dimilitara tse 100 (ml) (Phesenthaele ya bo95)	
					Dintlha tse di ka kgonang go fetoga		Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)	

IUA	Setlho pa	Noka	Karolo ya motswedi	Sethopha sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Go thokega tlathobo ya motheo go tlhomamisa seemo sa ga jaana sa kgoberego ya metsi a a eelang go tsena mo molapong.	Kgoberego	Go lefela phapogo ya 10% go tswa mo kokoanong ya lemorago.
							Go tshwanetse ga fithelwa dilekano tsa okosijene e e thalogileng go tshagetsa diphologolo tsothe le dijalo tsa metsi.	Okosijene e e thalogileng	Dimiligerama/dilitara tse ≥ 6 (mg/l)
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go thola kotsi mo ditshedding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Atrazine	Dimiligerama/dilitara tse ≤ 0.078 (mg/l)
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya mo sethopheng sa C. Somarela dikelele tse di siameng tse di kwa tlase tsa metsi go tsweladisa legaeithago go direla mefuta e boifang legaeithago le boalo jo bo kwa tlase ga noka.	Metolachlor	Dimiligerama/dilitara tse ≤ 0.30 (mg/l)
					Legaeithago		Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya go sethopheng sa C. Go epiwa ga santa mo lefelong le le mo dintshing tsa noka go tshwanetse ga lekanyediwa.	Mancozeb	Dimiligerama/dilitara tse ≤ 0.009 (mg/l)
						Legaeithago (RHAMM)	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago. Mokgwa le Sekao sa ka bonako sa Tlathobo ya Legaeithago (RHAMM)		Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C $\geq 62\%$
						Legaeithago	Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya go sethopheng sa C. Go epiwa ga santa mo lefelong le le mo dintshing tsa noka go tshwanetse ga lekanyediwa.		VEGRAI EC = C $\geq 62\%$
						Ditlthapi	Ditlthopa tsa ditlthapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa C/D. Tlathobo ya ditlthopa tsa ditlthapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapisiwa le setlthopa se se laolelweng sa ikholoji. Somarela lobelo/boteng jwa kelelo jwa mofuta ya LMOL LCYL le CPAR le mofuta e bosisi mo legaeithagong, MBRE.	Tshupane ya Tlathobo ya Tlathobo ya Dimedi	Sethopha sa ikholoji sa ditlthapi = C/D FRAI $\geq 58\%$ Sample 10+ mofuta mo matlekong a sampole nngwe le nngwe Sample 20 BMAR mo matlekong a metsotso e le 20

IUA	Setihopa	Noka	Karolo ya motswedi	Setihopa sa Ikholo	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo
						Ditshedi tse dikgolo tse di nngang mo metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa D sa ikholo kgotisa e tshwanetse go tokafadiwa.	Tshupane ya Tihathobo ya Tsibogo ya Diphologo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 100 ASPT ≥ 5.0 (REMP site A2PIEN – BUFFE kgotisa EWR5)
						Diphologo, dimela le ditshedi tse di nngang mo metsing le mo metsing	Boalo jwa noka bo tshwanetse go somarelwa gore bo kgone go dira jaaka legaethago la ditlhopa tsa dinonyane tsa metsi ka taolo e maleba ya legaethago. Somarela lefelo le le mo ditshing tsa noka go tlamela magaethago a a maleba.	Mofuta wa sekao wa dinonyane tsa metsi	Go tshwanetse ga dirwa tihathobo ya motheo go tihomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le tihoko go ya gore go dirwe RQC ya dipalo go direla bokanakang jwa dinonyane go ya ka data e e leng teng/e e kgobokantseng.
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo maemong a a fetotsweng thata kgotisa go tokafadiwa.	Tshupane e e Totobetseng ya Kgotilego	EC ya Malele = D ≥ 42%

Lenaneo 17: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshakatsheko 15: KAROLO E E KWA GODIMO YA MOKOLO

IUA	Setihopa	Noka	Karolo ya motswedi	Setihopa sa Ikholo	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo
15: KAROLO E E KWA GODIMO YA MOKOLO	II	Noka ya Moloko, Klein Sand, Sondagsloop, Heuningspruit, Dwaars, dinokana tsa Jim se loop (A42C, A42E)	15_1	B/C	Bokanakang	Kelelo e e kwa tlase ya metsi	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyanya ya ka nako ya komelelo tsa EWR: Noka ya Mokolo mo MOK_EWR1a mo A42C NMAR = 84.84x10 ⁶ m ³ PES=C/D category Kelelo e e kwa tlase ya metsi le kelelo e e bonyanya ya ka nako ya komelelo di tshwanetse go fithelelwa e le go tshetsetsa diphologo tsothe le dijalo tsa metsi le badiisi ba metsi a kwa noka e elelang go ya teng.	Dikelelo tsa Motheo Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyanya ya metsi ka nako ya komelelo. Thokomelo ya Noka ya Mokolo mo A4H002	Kelelo e e bonyanya ya metsi ka nako ya komelelo (m ³ /s) Diph 0.110 0.005 Ngwan 0.120 0.005 Sed 0.200 0.020 Fer 0.550 0.040 Tlhak 0.850 0.060 Mar 0.700 0.050 Mor 0.500 0.040 Motsh 0.350 0.030 Seet 0.270 0.020 Phuk 0.230 0.015 Phat 0.180 0.010 Lwe 0.100 0.005

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihlalo ya RQO	Sekao	Tekanyetso ya Dipalo
						Dikotla	Kokoano ya dikotla ya metsi a a eelang go tsena mo teng e tshwanetse go tokafadiwa go tswedisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithiwelewa sethopa se se laolelsweng sa ikholoji.	Othofosofate (PO_4^{3-}) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.025 (mg/l) (Phesenthaele ya bo50) Thokomelo ya data – kgaolo
						Matswai	Dilekano tsa boletswai jwa metsi a a eelang go tsena mo nokeng di tshwanetse go fithiwelewa jaaka go thalositse mo go totobetseng go tswedisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithiwelewa sethopa se se laolelsweng sa ikholoji.	Naeterite (NO_3^-) & Naeteraete (NO_2^-) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)
						Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go thola kotsi epe mo boitekanelong jwa batho.	Kgonagalo ya moela wa mottakase	DimiliSiemens/dimetara ≤ 30 (mS/m) (Phesenthaele ya bo95)
					Boleng		Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshwagisa diphologolo tsothe le dijalo tsa metsi le ditlhokego tsa badirisi ba metsi.	<i>Escherichia coli</i> (E.coli)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintha tse di ka kgonang go fetoga	Go tihokega tihatthobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a eelang go tsena mo molapong. Go tshwanetse ga thalosiwa gape ditekanyetso go laola ditlamorago tsa go epiwa ga seleti mo motswedeng.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.0 (Phesenthaele ya bo95)
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go thola kotsi mo ditshedding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga tihomamisiwa ditekanyetso.
								Atrazine	Dimiligerama/dilitara tse ≤ 0.078 (mg/l)
								Bromoxynil	Dimiligerama/dilitara tse ≤ 0.010 (mg/l)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Metsi a a tsenang mo nokeng	Maemo a legaethago a tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa C/D go ya go sethopa sa B/C. Dikelelo tse di kwa tlase tse di siameng tsa metsi di tshwanetse go somarelwa go tswaledisa legaethago la mofuta e boifang boalo jwa noka le tse di bosisi mo legaethagong. Dikelelo tsa poelomorago le tloso mo karolong ya motswedi di tshwanetse go thokomelwa le go laolwa go sireletsa legaethago la metsi a a mo molapong.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = B/C $\geq 78\%$	
					Legae la mo dintshing tsa noka		Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa C/D go ya go sethopa sa C. Mafelo a a mo dintshing tsa noka a tshwanetse go sala a le mo mafelong a a lemilweng. Temo e tshwanetse go laolwa go thibela tathegelo ya lefelo le le mo dintshing tsa noka.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Tlaththobo ya Tsibogo ya Dimedi	VEGRAI EC = C $\geq 62\%$
						Ditlhapi	Ditlhapi tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa C/D go ya kwa sethopheng sa C. Lobelo/boteng jwa kelelo bo tshwanetse go somarelwa mo mefuteng. LMOL, BMAR le CPRE le mofuta e e bosisi mo legaethagong. BRAD, BVIV.	Tshupane ya Tlaththobo ya Tsibogo ya Ditlhapi (FRAI)	Sethopa sa ikholoji sa ditlhapi = C FRAI $\geq 62\%$ Sample 15+ mofuta mo maitekong a sampole nngwe le nngwe Sample 25 CPRE le 15 AURA mo maitekong a metsotso e le 20 (Setsha EWR1a Dwaars)
					Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Mefuta e e nnang mo metsing le mo lefatsheng	Boalo jo jwa noka bo tshwanetse go somarelwa gore bo kgone go dira jaaka legaethago la dinonyane tsa metsi le ditlhapi tsa diphologolo ka	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlaththobo ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le thokego ya gore go dirwe RQC ya

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tihaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							taolo e e maleba ya legaethago.		dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Ditshedi tse dikgolo tse di nnang mo metsing mme di dikgolo tse di nnang mo metsing mme di se na mokwatla	Dimedid tse dikgolo tse di nnang mo metsing mme di go somarelwa di le mo sethopheng sa ikholoji sa C kgotsa go tokafadiwa.	Tshupane ya Tlhatlhobo ya Tshibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Afrikaborwa wa Mofuta 5 (SASS5).	Ditsha: EWR 1a = A4MOKO-VAALW MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.5 A4SAND-TOPBR: MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 6.0 Site DWARS 1a = Rapid EWR site: MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.5
						Malele	Kgobokano ya malele e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa B kgotsa mo maemong a a botoka.	Tshupane e e Totobetseng ya Kgotelego	EC ya Malele ≥ 82%
							Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka nako ya komelelo tsa EWR: Sterkstroom mo A42D NMAR = $43.43 \times 10^6 \text{ m}^3$ REC=B category	Dikelelo tsa Motheo	Kelelo e e bonyaka nako ya komelelo (m ³ /s) Diph 0.382 Ngwan 0.060 Sed 0.517 Fer 0.130 Thak 1.778 Mar 0.210 Mor 2.842 Motsh 2.996 Seet 1.020 Phuk 1.908 Phat 1.390 Lwe 1.090 0.758 0.426 0.060
						Kelelo e e kwa tlase ya metsi	Kelelo e e kwa tlase ya metsi le kelelo e e bonyaka nako ya komelelo tsa EWR: Sterkstroom mo A42D NMAR = $43.43 \times 10^6 \text{ m}^3$ REC=B category	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka nako ya komelelo tsa EWR: Sterkstroom mo A4H008	Kelelo e e bonyaka nako ya komelelo (m ³ /s) Diph 0.382 Ngwan 0.517 Sed 0.972 Fer 1.778 Thak 2.842 Mar 2.996 Mor 2.529 Motsh 1.908 Seet 1.390 Phuk 1.090 Phat 0.758 Lwe 0.426 0.060
						Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelwa jaaka e thalositse go tswelidisa boitekanelo jwa diphologolo	Othofosofate (PO ₄) jaaka Fosoforo Naeteraite (NO ₃) & Naeteraite (NO ₂) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.015 (mg/l) (Phesenthaele ya bo50) Dimiligerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							tsotlhe le dimela tsa metsi go nefeletsa gore go fithlelelwa sethopa se se laoleletsweng sa ikholoji.		
						Matswai	Dilekano tsa boletswai jwa metsi a eelang go tsena mo nokeng di tshwanetse go fithlelelwa jaaka go tthalositswe mo go totobetseng go tswaledisa boitekanelo jwa diphologolo tsotlhe le dimela tsa metsi le go nefeletsa gore go fithlelelwa sethopa se se laoleletsweng sa ikholoji.	Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara ≤ 20 (mS/m) (Phesenthaele ya bo95)
						Dintlha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshagetsa diphologolo tsotlhe le dijalo tsa metsi le dithokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.0 (Phesenthaele ya bo95)
							Go tlokega thathobho ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a eelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga thomamisiwa ditekanyetso.
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa mo sethopheng sa ikholoji sa B/C. Somarela dikelele tse di kwa tlase tsa metsi go tswaledisa legaeithago go direla mefuta e e boifang boalo jwa noka le tse di bosisi mo legaeithagong. Sethopa sa ikholoji.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC B/C $\geq 78\%$	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC B/C $\geq 78\%$
						Legaeithago	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B/C kgotsa mo maemong a a botoka.	Tshupane ya Tlathobho ya Tsbogo ya Dimedi	VEGRAI EC = B/C $\geq 78\%$
						Diphologolo, dimela le dits'hedi tsa lefelo le le	Dithopa tsa dithapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa	Tshupane ya Tlathobho ya Tsbogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = B/C FRAI $\geq 78\%$ Sample 9+ mefuta mo maitekong a sampole nngwe le nngwe

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Thaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					rileng		Ikholoji sa B/C. Tlathobho ya dithopa tsa dithapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapisiwa le sethopa se se laolelsweng sa ikholoji. Somarela lobelo/boteng jwa kelelo mo mefuteng. <i>LMOL</i> , <i>BMAR</i> , <i>AURA</i> le <i>CPRE</i> le mefuta e e bosisi mo legaeathagong – <i>CTHE</i> . Go nna teng ga mefuta e mentšhwa: <i>B. waterbergensis</i> e tshwanetse go thomamisiwa.		Sampole 10 <i>AJOH</i> le 2 <i>CTHE</i> mo maitekong a metsotso e le 20
						Mefuta e e nnang mo metsing le mo lefatsheng	Boalo jo jwa noka bo tshwanetse go somarelwa gore bo kgone go dira jaaka legaeathago la dinonyane tsa metsi le dithopa tsa diphologolo ka taolo e e maleba ya legaeathago.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le thokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Ditshedi tse di dikgolo tse di nnang mo metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa B sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsebogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5)	Ditshedi tse dikgolo tse di nnang mo metsing mme di se na mokwatla EC $\geq 82\%$ (Site A4STER-WELGE)
		Noka ya Mokolo A42F, e elela go tsena mo Letamong la Mokolo, Taaibosspruit, Malmaries le Bulspruit (A42F)	15_3		Bokanakang	Kelelo e e kwa tlase ya metsi	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka nako ya komelelo tsa EWR: Noka ya Mokolo mo MOK_EWR2 mo A42F NMAF = $195.69 \times 10^3 \text{ m}^3$ PES=B/C category Kelelo e e kwa tlase ya metsi le kelelo e e bonyaka nako ya komelelo di tshwanetse go fithelelwa	Dikelelo tsa Motheo Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka nako ya komelelo. Thokomelo ya Noka ya Mokolo mo A4H005	Kelelo e e bonyaka nako ya komelelo tsa metsi le kelelo e e bonyaka nako ya komelelo Kelelo e e kwa tlase ya metsi (m ³ /s) Diph 0.230 Ngwan 0.240 Sed 0.370 Fer 0.602 Tinak 1.064 Mop 0.953

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo			
							e le go tshgetsa diphologo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e elelang go ya teng.		Mor	0.808		0.252
									Motsh	0.627		0.207
									Seet	0.512		0.181
									Phuk	0.400		0.120
									Phat	0.320		0.008
									Lwe	0.230		0.005
							Kokoano ya dikotla ya metsi a elelang go tsena mo teng e tshwanetse go tokafadiwa go tsweledisa boitekanelo jwa diphologo tsothe le dimela tsa metsi le go netefatsa gore go fithlelwa sethopa se se laoletsweng sa ikholoji.	Othofosofate (PO ₄ ⁻) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.025 (mg/l) (Phesenthaele ya bo50)			
						Dikotla		Naeterite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)			
							Dilekano tsa boletswai jwa metsi a elelang go tsena mo nokeng di tshwanetse go fithlelwa jaaka go tshalositswe mo go totobetseng go tsweledisa boitekanelo jwa diphologo tsothe le dimela tsa metsi le go netefatsa gore go fithlelwa sethopa se se laoletsweng sa ikholoji.					
						Matswai		Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara ≤ 30 (mS/m) (Phesenthaele ya bo95)			
					Boleng	Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go thola kotsi epe mo boitekanelong jwa batho.	<i>Escherichia coli</i> (E.coli)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)			
							Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshgetsa diphologo tsothe le dijalo tsa metsi le dithokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.0 (Phesenthaele ya bo95)			
						Dintlha tse di ka kgonang go fetoga	Go tshokega thathobo ya motheo go ithomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong. Go tshwanetse ga tshaloswa gape ditekanyetso go laola ditlamorago tsa go epiwa ga seleiti mo motsweding.	Kgoberego	Go letlelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga ithomamsiwa ditekanyetso.			

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go thola kotsi mo ditseding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Metolachlor	Dimiligerama/dilitara tse ≤ 0.30 (mg/l)
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa B/C go ya mo sethopheng sa B. Dikelelo tsa poelomorago ya mo legaeithagong di tshwanetse go laolwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago. Mokgwa le Sekao sa ka bonako sa Tlathhobo ya Legaeithago (RHMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = B $\geq 82\%$
						Legae la mo dintshing tsa noka	Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa B/C go ya go sethopa sa B. Somarela lefelo le le mo dintshing tsa noka mo mafelong a a lemilweng, le go laola temo mo lefelong le le mo dintshing tsa noka.	Tshupane ya Tlathhobo ya Tsibogo ya Dimedi	VEGRAI EC = B $\geq 82\%$
						Ditlhapi	Ditlhopa tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa C. Tlathhobo ya ditlhopa tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapisiwa le sethopa se se laolelweng sa ikholoji. Somarela mefuta e e boifang lobelo/boteng jwa kelelo ya CPRE le e e bosisi, MMAC le AJOH.	Tshupane ya Tlathhobo ya Tsibogo ya Ditlhapi (FRA)	Sethopa sa ikholoji sa ditlhapi = C FRAI $\geq 62\%$ Sample 10+ mefuta mo maitekong a sample nngwe le nngwe Sample 10 AJOH mo maitekong a metsotso e le 20
					Diphologolo, dimela le diitshedi tsa lefelo le le rileng	Mefuta e e nngang mo metsing le mo lefatsheng	Boalo jo jwa noka bo tshwanetse go somarelwa gore bo kgone go dira jaaka legaeithago la dinonyane tsa metsi le ditlhopa tsa diphologolo ka	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlathhobo ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le thokego ya gore go dirwe RQC ya

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							taolo e maleba ya legaethago.		dipalo go direla bakanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Ditshedi tse dikgolo tse di nngang mo metsing mme di se na mokwatla	Kgobokanyo ya diitshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlhatlho ya Tsbogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 6.0 (Site MOK_EWR2)
						Malele	Kgobokanyo ya malele e tshwanetse go somarelwa e le mo maemong a a fetotsweng thata kgotsa go tokafadiwa.	Tshupane e e Totobetseng ya Kgotlelego	EC ya Malele ≥ 82%
							Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonya ya metsi ka nako ya komelelo tsa EWR: Noka ya Mokolo mo MOK_EWR3 mo A42G NMAR = 215.995x10 ⁶ m ³ PES=B/C category	Dikelelo tsa Motheo	Kelelo e e bonya ya metsi ka nako ya komelelo (m ³ /s)
							Kelelo e e kwa tlase ya metsi le kelelo e e bonya ya metsi ka nako ya komelelo di tshwanetse go fithelelwa e le go tshhegetsa diphologolo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e elelang go ya teng.	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonya ya metsi ka nako ya komelelo.	Diph Ngwan Sed Fer Tlhak Mar Mor Motsh Seet Phuk Phat Lwe
							Kelelo e e kwa tlase ya metsi le kelelo e e bonya ya metsi ka nako ya komelelo di tshwanetse go fithelelwa e le go tshhegetsa diphologolo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e elelang go ya teng.	Tlhokomelo ya Noka ya Mokolo mo A4H010	0.383 0.399 0.406 0.444 0.559 0.504 0.493 0.450 0.441 0.413 0.399 0.396
							Dikelelo tse di kwa godimo tsa metsi tsa EWR: Noka ya Mokolo mo MOK_EWR3 mo A42G NMAR = 215.995x10 ⁶ m ³ PES=B/C category	Merwalela	Kelelo e e bonya ya metsi ka nako ya komelelo
							Dikelelo tse di kwa godimo tsa metsi di tshwanetse go fithelelwa jaaka di totobaditswe go tshhegetsa diphologolo	Merwalela Kelelo e e kwa godimo le yone e totobaditswe jaaka thokego ya merwalela ka nosi malebana le bogolo le bolelele jwa paka. Tlhokomelo ya Noka ya Mokolo mo A4H010	Go ya ka melawana ya tiriso mo thempoleiteng ya Resefo, karolo 3.

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							tsothle le dijalo tsa metsi.		
						Dikotla	Kokoano ya dikotla ya metsi a a eielang go tsena mo teng e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa diphologolo tsothle le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Orthofosphate (PO_4^{3-}) jaaka Fosoforo	Dimiligram/dilitara tse ≤ 0.010 (mg/l) (Phesenthaele ya bo50)
						Matswai	Dilekano tsa boletswai jwa metsi a a eielang go tsena mo nokeng di tshwanetse go fithelelwa jaaka go tshalelwa mo go totobetseng go tswaledisa boitekanelo jwa diphologolo tsothle le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Naeteraite (NO_3^-) & Naeteraite (NO_2^-) jaaka Naeterojene	Dimiligram/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)
						Dipathojene	Go nna teng ga dipathojene ga go a tshwanela go thola kotsi epe mo boitekanelong jwa batho.	Kgonagalo ya moela wa motlakase	$\leq$ DimiliSiemens/dimetara 30 (mS/m) (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa se le mo ditekanetsong tse di totobaditsweng go tshalelwa diphologolo tsothle le dijalo tsa metsi le diithokego tsa badirisi ba metsi.	<i>Escherichia coli</i> (<i>E. coli</i>)	makgetho a le 130/dimililitara tse 100 (ml) (Phesenthaele ya bo95)
						Dintsha tse di ka kgonang go fetoga	Go ithokega thathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a eielang go tsena mo molapong. Go tshwanetse ga tlhalosiwa gape ditekanetsong go laola ditlamorago tsa go epiwa ga seleiti mo motsweding.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.0 (Phesenthaele ya bo95)
						Metsi a a tsenang mo nokeng	Metatata ya magaeithago e tshwanetse go tokafadiwa go tsama mo sethopheng sa ikholoji sa D go ya mo sethopheng sa C/D.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga thomamisiwa ditekanetsong.
						Legaeithago		Tshupane ya Tshomarelo ya popego e e lekakanang ya dipharologantsho tsa fisikhokhemikale le dipharologantsho tsa metsi a a mo molapong EC = B $\geq$	

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo
								legaethago, Mokgwa le Sekao sa ka bonako sa Tihathobo ya Legaethago (RHAMM)	82%
						Legae la mo dintshing tsa noka	Dimele tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B/C. Somarela lefelo la mo dintshing tsa noka malebana le <i>Syzygium cordatum</i>	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Tihathobo ya Tsibogo ya Dimedi.	VEGRAI EC = B/C ≥ 78%
						Ditlhapi	Ditlhapi tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B/C. Somarela boteng/lobelo la kelelo la mofuta ya <i>CPRE</i> .	Tshupane ya Tihathobo ya Tsibogo ya Ditlhapi (FRAI)	Sethopa sa ikholoji sa ditlhapi = B/C FRAI ≥ 78%
						Mefuta e e nngang mo metsing le mo lefatsheng	Bolelele jo iwa noka bo tshwanetse go somarelwa go dira jaaka legaethago la dinonyane tsa metsi le ditlhapi tsa diamusi tsa mofuta o le mongwe ka taolo e e maleba ya legaethago.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tihathobo ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le thokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Ditshedi tse dikgolo tse di nngang mo metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tihathobo ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 6.0
						Selekano Letamo	Letamo le tshwanetse go laolwa go sireletsa tiro ya diphologolo tsotlhe le dimela ga mmogo le badirisi ba kwa metsi a elelelang go ya teng. Go tnama le go thabolola melawana ya tiriso go tsweladisa dilekano tse di kwa godimo tsa letamo go netefatsa gore mefutafuta ya diphologolo tsotlhe le dijalo tsa metsi e a	Go tlhokega selekano se se kwa tiase sa tiriso mo letamong	Melawana ya tiriso jaaka e le maleba. Selekano se se kwa tiase go tsweladisa diphologolo le dijalo tsa metsi (15-18%).

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							somarelwa. Kgolo ya metsi a letamo e tlhoka go filhelela dithokego tsa kelelo ya kwa metsi a yang teng go direla mabaka a kelelo ya metsi go tswela mosola diphologolo le dijalo. Kokoano ya othofosofate e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa ditschedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka lefelo le go nang le tihalelo ya dikotla tsa dijalo. Kokoano ya palogotlhe ya fosoforo e tshwanetse go somarelwa go tswaledisa boitekanelo jwa ditschedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka lefelo le go nang le tihalelo ya dikotla tsa dijalo. Kokoano ya naeteraete & naeteraite e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa ditschedi tsothe le dimela tsa lefelo le le rileng le dithokego tsa boleng jwa metsi tsa badirisi ba metsi. Letamo le tshwanetse go somarelwa jaaka lefelo le go nang le tihalelo ya dikotla tsa dijalo. Boletswai mo letamong bo tshwanetse go somarelwa go tshagetsa boitekanelo jwa ditschedi tsothe le dimela le dithokego tsa boleng jwa metsi tsa badirisi ba kwa metsi a elelelang go ya teng. Go nna teng ga dipathojene ga go a tshwanela go thola	Diothofosofate Palogotlhe ya fosoforo Naeteraete & Naeteraite Kgonagalo ya moela wa motlakase <i>Escherichia coli</i> (<i>E. coli</i>)	≤ 0.010 mg/l Phesenthaele ya bo50 ≤ 0.025 mg/l Phesenthaele ya bo50 ≤ 0.50 mg/l N Phesenthaele ya bo95 ≤ 20 mS/m Phesenthaele ya bo95 makgetho a le 130/dimilitara tse 100 (ml)
						Dikotla			
						Boleng			
						Matswai			
						Dipathojene			

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							kotsi epe mo boitekanelong jwa batho.		(Phesenthaele ya bo95)
						Dintsha tse di ka kgonang go fetoga	Metsi a tshwanetse go nna a maemo a a amogelesegang go ka dirisetwa boitapaloso.	pH	6.5 – 9.0 Phesenthaele ya bo95
							Bophelha jo bo oketsegileng ka palo	Kgoberego	≥0.4 m Phesenthaele ya bo5
							Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyla ya metsi ka nako ya komelelo tsa EWR: Grootspuit mo A42B NMAR = $27.8 \times 10^{-3} \text{m}^3$ REC= D category	Dikelelo tsa motheo Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyla ya metsi ka nako ya komelelo. Thokomelo ya tshololo ka nako ya dipatlisiso tsa baeoloji khale.	Kelelo e e bonyla ya metsi ka nako ya komelelo (m ³ /s) Diph 0.271 0.136 Ngwan 0.269 0.135 Sed 0.291 0.148 Fer 0.345 0.180 Tlhak 0.401 0.213 Mar 0.384 0.203 Mor 0.338 0.160 Motsh 0.320 0.120 Seet 0.311 0.160 Phuk 0.304 0.156 Phat 0.299 0.152 Lwe 0.286 0.145
		Dinokana tsa le Grootspuit le Sandspuit (Bodutiso jwa dinokana tse e leng motswedi wa metsi wa Mokolo) (A42A, A42B)	15_5		Bokanakang	Kelelo e e kwa tlase ya metsi	Kokoano ya dikotla ya metsi a a elelang go tsena mo teng e tshwanetse go tokafadiwa go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laletseng sa ikholoji.	Othofosofate (PO ₄) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo50)
						Dikotla	Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithelelwa jaaka go tshalositswe mo go totobetseng go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laletseng sa ikholoji.	Naeteraite (NO ₃) & Naeteraete (NO ₂) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.7 (Phesenthaele ya bo50)
					Boleng	Matswai	Dilekano tsa boletswai jwa metsi a a elelang go tsena mo nokeng di tshwanetse go fithelelwa jaaka go totobetseng go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le go netefatsa gore go fithelelwa sethopa se se laletseng sa ikholoji.	Kgonagalo ya moela wa motlakase	DimilSiemens/dimetara ≤ 55 (mS/m) (Phesenthaele ya bo95)
						Dintsha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somarelwa	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.0 (Phesenthaele ya bo95)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							se le mo ditekanyetsong tse di totobaditsweng go tshetsetsa diphologolo tsofhe le dijalo tsa metsi le diithokego tsa badirisi ba metsi.		
							Go thokega thathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong. Go tshwanetse ga thalosiwa gape ditekanyetso go laola ditlamorago tsa go epiwa ga seleti mo motsweding.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga thomamisiwa ditekanyetso.
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go thola kotsi mo ditheding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Atrazine	Dimiligerama/dilitara tse ≤ 0.078 (mg/l)
						Metsi a a tsenang mo nokeng	Metutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa C. Kgolagano ya mofuta ya phudugo e tshwanetse go somarelwa.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Thathobo ya Legaeithago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = C $\geq$ 62%
					Legaeithago	Legaeithago	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa C.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Tshupane ya Thathobo ya Tsibogo ya Dimedi	VEGRAI EC = C $\geq$ 70%
						Dithapi	Dithopa tsa dithapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa C. Somarela lobelo/boteng jwa kelelo mo mefuteng ya CPRE, AURA, LCYL le mofuta e e bosisi	Tshupane ya Thathobo ya Tsibogo ya Dithapi (FRAI)	Setlhopa sa ikholoji sa dithapi = C FRAI $\geq$ 62% Sample 10+ mofuta mo maitekong a sampole nngwe le nngwe

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							mo legaeathagong MMAC le AJOH.		
						Mefuta e e nngang mo metsing le mo lefatsheng	Bolelele jo jwa noka bo tshwanetse go somarelwa go dira jaaka legaeathago le tselana ya phudugo ya diithopa tsa mofuta o le mongwe tsa dinonyane tsa metsi ka taolo e e maleba ya legaeathago. Laola lefelo le le mo dintshing tsa noka – ntshe dimedi tsa seeng, tsosolosa mefuta e e tiholeletseng mo lefelong.	Mefuta ya dinonyane tsa metsi	Go tshwanetse ga dirwa tlathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le tlokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Ditshedi tse di dikgolo tse nngang mo metsing mme di se na mokwatla	Kgobokanyo ya diitshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa D sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Madio wa Aforikaborwa wa Mofuta 5 (SASS5)	MIRAI EC = D ≥ 42% SASS ≥ 80 ASPT ≥ 5.5 (site A4GROO-GROOT)
		Noka ya Mokolo go tswa mo Nokeng ya Dwars go kgathana le Sterkstroom, Klein Vaalwaterspruit (A42E)	15_6		Bokanakang	Kelelo e e kwa tlase ya metsi	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka nako ya komelelo tsa EWR: Noka ya Mokolo mo MOK_EWR1b mo A42E NMAR = 135.03x10 ⁶ m ³ PES=B/C category Kelelo e e kwa tlase ya metsi le kelelo e e bonyaka nako ya komelelo di tshwanetse go fitlhelelwa e le go tshetgetsa diphologolo tsotlhe le dijalo tsa metsi le badiisi ba metsi a kwa noka e elelang go ya teng	Dikelelo tsa Motheo Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka nako ya komelelo. Thokomelo ya tshololo ya Noka ya Mokolo ka nako ya dipatlisiso tsa baeoloji/khale	Kelelo e e bonyaka nako ya komelelo (m ³ /s) Diph 0.120 0.005 Ngwan 0.120 0.005 Sed 0.320 0.020 Fer 0.700 0.050 Tlhak 1.400 0.080 Mop 1.150 0.065 Mor 0.850 0.050 Motsh 0.600 0.040 Seet 0.450 0.020 Phuk 0.320 0.015 Phat 0.250 0.010
					Boleng	Dikotla	Kokoano ya dikotla tsa metsi a elelang go tsena mo teng e tshwanetse go fithelelwa jaaka e tlhalositse go tsweladisa boitekanelo jwa diphologolo tsotlhe le dimela tsa metsi go netefatsa gore go	Othofosofate (PO ₄ ⁻³) jaaka Fosoforo Naeteraite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.020 (mg/l) (Phesenthaele ya bo50) Dimiligerama/dilitara tse ≤ 0.5 (Phesenthaele ya bo50)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Thaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							filhelelwa sethopa se se laolelsweng sa ikholoji.		
						Matswai	Kokoano ya boletswai ya metsi a a mo molapong e tshwanetse go somarelwa go sireletsa seemo sa ikholoji le boitekanelo jwa diphologolo tsotlhe le dijalo tsa metsi.	Kgonagalo ya moela wa motlakase	DimilSiemens/dimetara ≤ 30 (mS/m) (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetso tse di totobaditsweng go tshetsetsa diphologolo tsotlhe le dijalo tsa metsi le ditshokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.0 (Phesenthaele ya bo95)
						Dintsha tse di ka kgonang go fetoga	Go thokega thathobo ya motheo go tihomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong. Go tshwanetse ga thalosiwa gape ditekanyetso go laola ditlamorago tsa go epiwa ga seleiti mo motsweding.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga tihomamisiwa ditekanyetso.
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go tlhola kotsi mo dithsheding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Atrazine	Dimiligerama/diilitara tse ≤ 0.078 (mg/l)
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaethago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa B/C go ya kwa sethopheng sa B.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Tlathobo ya Legaethago. (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = B $\geq$ 82%
						Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B/C kgotsa mo maemong a a botoka.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane	VEGRAI EC = B/C $\geq$ 78%

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Ditlhopa tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B/C. Tlathobob ya ditlhopa tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapisiwa le sethopa se se laletseng sa ikholoji.	ya Tlathobob ya Tsiibogo ya Dimedi	
					Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Ditlhapi	Kgobokanyo ya ditshedhi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mme di se na mokwatla le Mokgwatsamaiso wa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobob ya Tsiibogo ya Diphologolo tse dikgolo mme di se na mokwatla le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5)	Sethopa sa ikholoji sa ditlhapi = B/C FRAI ≥ 78%
						Ditshedhi tse dikgolo tse di nngang mo metsing mme di se na mokwatla			MIRAI EC = B/C ≥ 78% SASS ≥ 140 ASPT ≥ 6.0 (MOK_EWR1b le A42E)

Lenaneo 18: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatseheko16: KAROLO E KWA TLASENYANA YA MOKOLO

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
16: KAROLO E KWA TLASENYANA YA MOKOLO	II	Noka ya Tambotie A42H (karolwana e kgolo - bothaba)	16_1	B/C	Legaeithago	Metsi a a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa B.	Tshupane ya Tshomarelo ya popego e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago	Tshomarelo ya popego e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = B ≥ 82%
						Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B. Somarela seemo sa lefelo le le mo dintshing tsa noka.	Tshupane ya Tshomarelo ya popego e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago	VEGRAI EC = B ≥ 82%

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Diphologolo, dimela le ditshebi tsa lefelo le le rileng	Dithapi	Dithopa tsa dithapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B. Thathobo ya dithopa tsa dithapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapiswa le sethopa se se laolelweng sa ikholoji. Somarela lobelo/boteng jwa kelelo jwa mofuta <i>CPRE</i> , <i>CPAR</i> , <i>LCYL</i> , <i>LRUD</i> le mofuta ya bosisi jwa legaethago <i>MMAC</i> le <i>AJOH</i> .	Tshupane ya Thathobo ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = B FRAI $\geq 82\%$ Sample 20+ mofuta mo maitekong a sampole nngwe le nngwe Sample 5 <i>BBRI</i> le 3 <i>PCAT</i> mo maitekong a metsotso e le 20
		Poer-se-Loop (karolo e e kwa godimo ya bodutiso) (A42G)	16_2			Metsi a a tsenang mo nokeng	Mefutafuta ya magaethago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa B. Thokomela tloso le kelelo.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = B $\geq 82\%$	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a a mo molapong EC = B $\geq 82\%$
					Legaethago	Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B. Somarela seemo sa lefelo le le mo dintshing tsa noka.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Thathobo ya Tsibogo ya Dimedi	VEGRAI EC = B $\geq 82\%$

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
					Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Ditlhapi	Ditlhapa tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B. Tlathobho ya ditlhapa tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go thokomela fa go bapisiwa le sethopa se se laolelsweng sa ikholoji. Somarela lobelo/boteng jwa kelelo jwa mofuta e e kaegileng ka kelelo le e e bosisi mo legaithagong le le rileng. (bodutiso jo bo kwa godingwana)	Tshupane ya Tlathobho ya Tsibogo ya Ditlhapi (FRAI)	Sethopa sa ikholoji sa ditlhapi B FRAI $\geq 82\%$ Sample 25+ mofuta mo maitekong a sampole nngwe le nngwe Sample 5 BBR/ le 3 PCAT mo maitekong a metsotso e le 20
							Kokoano ya dikolla tsa metsi a elelang go tsena mo teng e tshwanetse go fithelelwa jaaka e tshalelwa go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi go netefatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Othofosofate (PO_4) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo50)
		Sandloop A42J le karolwana e e setseng ya A42H	16_4			Dikolla	boitekanelo jwa diphologolo tsothe le dimela tsa metsi go netefatsa gore go fithelelwa sethopa se se laolelsweng sa ikholoji.	Naeteraite (NO_3) & Naeteraite (NO_2) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.1 (Phesenthaele ya bo50)
					Boleng	Matswai	Kokoano ya boletswai jwa metsi a mo nokeng e tshwanetse go somarelwa go sireletsa seemo sa ga jaana sa ikholoji le boitekanelo jwa diphologolo tsothe le dijalo tsa metsi.	Kgonagalo ya moela wa motlakase	Dimilisiemens/dimetara ≤ 55 (mS/m) (Phesenthaele ya bo95)
						Dintlha tse di ka kgonang go fetoga	Selekano sa pH se tshwanetse go somarelwa se le mo ditekanetsong tse di totobaditsweng go tshagetsa diphologolo tsothe le dijalo tsa metsi le ditlhokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Go tlokega tlathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong. Go tshwanetse ga tlhalosiwa gape ditekanyetso go laola difilamorado tsa go epiwa ga seleiti mo motsweding.	Kgoberego	Go tetelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago. Go tshwanetse ga thomamisiwa ditekanyetso.
								Atrazine	Dimiligerama/dilitara tse ≤ 0.078 (mg/l)
								Aluminiamo (Al)	Dimiligerama/dilitara tse ≤ 0.062 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimiligerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimiligerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Lloto (Pb) e popota	Dimiligerama/dilitara tse ≤ 0.0057 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimiligerama/dilitara tse ≤ 0.0048 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimiligerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Cobalt (Co)	Dimiligerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo95)
								Zinki (Zn)	Dimiligerama/dilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Metsi a a tsenang mo nokeng	Metufatuta ya magaethago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa B.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhohemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Tlathobobo ya Legaethago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhohemikale le legaethago la metsi a mo molapong EC = B ≥ 82%
					Legaethago	Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhohemikale le legaethago, Tshupane ya Tlathobobo ya Tsibogo ya Dimedi	VEGRAI EC = B ≥ 82%
		Karolo e kgolo ya Mokolo go ya kwa makgathamong a Tambotie fa tiase (bolelele jwa boalo jwa noka (go itsheka ga santa, go ya kwa karolong e e athameng ya noka)	16_5_1		Bokanakang	Kelelo e e kwa tiase ya metsi	Dikelelo tse di kwa tiase tsa metsi le kelelo e e bonyaka ya tsa EWR: Noka ya Mokolo mo MOK_EWR4 mo A42G NMAR = 253.5x10 ⁶ m ³ PES=C category Kelelo e e kwa tiase ya metsi le kelelo e e bonyaka ya tsa metsi ka nako ya komelelo di tshwanetse go fithlelelwa e le go tshegetsa dipholologo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e eielang go ya teng.	Dikelelo tsa Motheo Dikelelo tse di kwa tiase tsa metsi le kelelo e e bonyaka ya metsi ka nako ya komelelo. Tl'hokomelo ya Noka ya Mokolo mo A4H013	Kelelo e e bonyaka ya metsi ka nako ya komelelo (m ³ /s) Diph 0.489 0 Ngwan 0.508 0 Sed 0.508 0 Fer 0.540 0 Tlhak 0.657 0 Mop 0.595 0 Mor 0.589 0 Motsh 0.547 0 Seet 0.543 0 Phuk 0.512 0 Phat 0.500 0 Lwe 0.504 0

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Kelelo e e kwa godimo ya metsi	Dikelelo tse di kwa godimo tsa metsi tsa EWR: Noka ya Mokolo mo MOK_EWR4 mo A42G NIMAR = 253.5x10 ⁶ m ³ REC=C category Kelelo e e kwa godimo ya metsi e tshwanetse go totobadiwa go tshagetsa ditlhokego tsa diphologolo tsothe le dijalo tsa metsi.	Mervalela Tlhokomelo ya Noka ya Mokolo kwa A4H013	
						Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelwa jaaka e tlhalositswe go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi, le go somarela seemo sa ikholoji.	Othofosofate (PO ₄ ⁻) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.02 (mg/l) (Phesenthale ya bo50)
								Naeterite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.05 (Phesenthale ya bo50)
								Kgonagalo ya moela wa motlakase	Dimilisiemens/dimetara ≤ 30 (mS/m) (Phesenthale ya bo95)
						Matswai	Kokoano ya boletswai ya metsi a a mo molapong e tshwanetse go somarela go sireletsa seemo sa ikholoji le boitekanelo jwa diphologolo tsothe le dijalo tsa metsi.	Salefeite	≤ Dimiligerama/dilitara tse ≤ 20 (Phesenthale ya bo95)
								Sotiamo	Dimiligerama/dilitara tse ≤ 20 (Phesenthale ya bo95)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tthaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshagetsa dipholologo tsothe le dijalo tsa metsi le diithokego tsa badiirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
						Dintlha tse di ka kgonang go fetoga	Go tlokega thathobho ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
							Go tshwanetse ga fithelelwa dilekano tsa okosijene e e tinaologileng go tshagetsa dipholologo tsothe le dijalo tsa metsi.	Okosijene e e tinaologileng	Dimiligerama/dilitara tse ≥ 6 (mg/l)
						Dire tse di bothole	Dikokoano tsa dire tse di bothole ga di a tshwanela go tlhola kotsi mo ditshedding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Atrazine	Dimiligerama/dilitara tse ≤ 0.078 (mg/l)
						Metsi a a tsenang mo nokeng	Meitafuta ya magaeithago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa B/C go ya kwa sethopheng sa B. Tlhokomela tloso le kelelo.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikohkemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaeithago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikohkemikale le legaeithago la metsi a a mo molapong EC = B $\geq$ 82%
					Legaeithago	Legaeithago	Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa C go ya go sethopa sa B/C. Neteafata gore go somarelwa kgolo e e kwa tlase go direla thaopo ya <i>Xanthocercis zambesiaca</i> ka nako ya diithathobho tsa VEGRAI. Somarela lefelo le le mo dintshing tsa noka	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikohkemikale le legaeithago, Tshupane ya Tlathobho ya Tsbogo ya Dimedi.	VEGRAI EC = B/C $\geq$ 80%

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Dithapi	Dithopa tsa dithopa tsa mofuta o le mongwe di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa C go ya kwa sethopheng sa B. Tlathobho ya dithopa tsa dithapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go tlhokomela fa go bapisiwa le sethopa se se laoletsweng sa ikholoji. Somarela lobelo/boteng jwa kelelo jwa mofuta e e ikaegileng ka kelelo le e e bosisi mo legaethagong le le rileng.	Tshupane ya Tlathobho ya Tsbogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = B/C FRAI ≥ 78% Sampole 25+ mofuta mo maitekong a sampole nngwe le nngwe Sampole 5 BBR/le 3 PCAT mo maitekong a metsotso e le 20
					Diphologolo, dimela le dithedi tsa lefelo le le rileng	Mefuta e e nngang mo metsing le mo lefatsheng	Tshwanelego ya boalo jo jwa noka go dira jaaka legaethago la dinonyane le diamusi tsa metsi e tshwanetse go somareliwa ka taolo e e maleba ya legaethago	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mofutakemedi ya diamusi mo karolong e telele ya noka. Go na le tlhokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Dithedi tse dikgolo tse di nngang mo metsing mme di se na mokwatla	Kgobokanyo ya dithedi tse dikgolo mme di se na mokwatla e tshwanetse go somareliwa mo seemong mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsbogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5)	MIRAI Dithedi tse dikgolo tse di nngang mo metsing mme di se na mokwatla EC = C ≥ 62% SASS ≥ 80 ASPT ≥ 5.2
					Bokanakang	Kelelo e e kwa tlase ya metsi	Somarela dikelelo mo nokeng go tshegetsa dithokego tsa lefatshene le le manyemunyemu mo A42J	Dikelelo tsa Motheo	Dithokego tsa lefatshene le le manyemunyemu la motlhaba - Tlhokomela dikelelo kwa morathong o montshwa (e ne le A4H014)
		Karolo e kgolo ya Mokolo go tswa mo makgathanonong a Tambotie le Limpopo A42H, A42J mo noka ya karolo e kgolo	16_5_2		Boleng	Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fitlhelelwa jaaka e tlhalositswe go tswelidisa boitekanelo jwa diphologolo tsofhe le dimela tsa metsi, le go somarela seemo sa ikholoji.	Ohofosofate (PO ₄) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.01 (mg/l) (Phesenthaele ya bo50)
								Naeterite (NO ₃) & Naeteraete (NO ₂) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.05 (Phesenthaele ya bo50)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Matswai	Kokoano ya boletswai ya metsi a a mo molapong e tshwanetse go somarelwa go sireletsa seemo sa ikholoji le boitekanelo jwa diphologolo tsothe le dijalo tsa metsi.	Kgonagalo ya moela wa motakase	DimiliSiemens/dimetara ≤ 30 (mS/m) (Phesenthaele ya bo95)
							Selekano sa pH se tshwanetse go somarelwa se le mo ditekanyetsong tse di totobaditsweng go tshegetsa diphologolo tsothe le dijalo tsa metsi le ditlhokego tsa badirisi ba metsi.	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)
						Dintla tse di ka kgonang go fetoga	Go tlhokega thathobo ya motheo go thomamisa seemo sa ga jaana sa kgoberego ya metsi a a elelang go tsena mo molapong.	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.
							Go tshwanetse ga fithelelwa dilekano tsa okosijene e e tshalogileng go tshegetsa diphologolo tsothe le dijalo tsa metsi.	Okosijene e e tshalogileng	Dimiligerama/dilitara tse ≥ 6 (mg/l)
								Aluminiamo (Al)	Dimiligerama/dilitara tse ≤ 0.062 (mg/l) (Phesenthaele ya bo95)
								Mankanese (Mn)	Dimiligerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95)
								Tshipi (Fe)	Dimiligerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95)
								Loto (Pb) e popota	Dimiligerama/dilitara tse ≤ 0.0057 (mg/l) (Phesenthaele ya bo95)
								Koporo (Cu) e popota	Dimiligerama/dilitara tse ≤ 0.0048 (mg/l) (Phesenthaele ya bo95)
								Nikele (Ni)	Dimiligerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95)
								Cobalt (Co)	Dimiligerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo95)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Thaloso ya RQO	Sekao	Tekanyetso ya Dipalo
								Zinki (Zn)	Dimiligerama/dilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95)
								Atrazine	Dimiligerama/dilitara tse ≤ 0.078 (mg/l)
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaethago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya kwa sethopheng sa C/D. Tlhokomela tloso le kelelo Somarela kgolagano e e siameng go ya kwa mafelong a nitha e sele le e noka e elelang kwa go yone (16 5.1).	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Tlathhobo Legaethago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago la metsi a mo molapong EC = C/D ≥ 58%
					Legaethago	Legae la mo dintshing tsa noka	Dimedi tse di mo dintshing tsa noka di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya go sethopa sa C/D. Netefatsa tshomarelo ya kgolo e e kwa tiase go letelelelha go ya <i>Xanthocercis zambesiaca</i> ka nako ya tlathhobo ya VEGRAI.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaethago, Tshupane ya Tlathhobo ya Tsibogo ya Dimedi.	VEGRAI EC = C/D ≥ 58%
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Dithapi	Dithopa tsa dithopa tsa mofuta o le mongwe di tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa D go ya kwa sethopheng sa C/D. Tlathhobo ya dithopa tsa dithapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go tlhokomela fa go bapisiwa le sethopa se se laoletsweng sa ikholoji.	Tshupane ya Tlathhobo ya Tsibogo ya Dithapi (FRAI)	Sethopa sa ikholoji sa dithapi = C/D FRAI ≥ 58% Sample 12+ mefuta mo maitekong a sample nngwe le nngwe

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo
						Mefuta e e nhang mo metsing le mo lefatsheng	Bolelele jo jwa noka bo tshwanetse go somarelwa go dira jaaka legaethago la dinonyane tsa metsi le dithopa tsa diamusi tsa motu o le mongwe ka taolo e e maleba ya legaethago. Somarela lefelo le le mo dintshing tsa noka.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa thathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le thokego ya gore go dirwe RQC ya dipalo go direla bokanakang jwa dipholologo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.

Lenaneo 19: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatshemo 17a: MOTLHABATSI / MAMBA

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihalo ya RQO	Sekao	Tekanyetso ya Dipalo
17a: MOTLHABATSI / MAMBA	I	Noka Mamba (A41B)	17a_1	B/C	Bokanakang	Kelelo e e kwa tlase ya metsi	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka nako ya komelelo tsa EWR: Noka ya Mamba mo MAT_EWR3 mo A41B NMAR = $9.54 \times 10^{-6} \text{m}^3$ REC=B/C category Kelelo e e kwa tlase ya metsi le kelelo e e bonyaka nako ya komelelo di tshwanetse go filhelelwa e le go tsegetsa dipholologo tsothe le dijalo tsa metsi le badirisi ba metsi a kwa noka e elelang go ya teng.	Dikelelo tsa Motheo Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyaka nako ya metsi ka nako ya komelelo. Tlhokomelo ya tshololo ya Noka ya Mamba ka nako ya dipatlisiso tsa baeoloji khale	Kelelo e e bonyaka nako ya metsi ka nako ya komelelo (m^3/s) Diph 0.034 0.004 Ngwan 0.047 0.007 Sed 0.072 0.014 Fer 0.104 0.021 Tlhak 0.149 0.016 Mop 0.129 0.011 Mor 0.090 0.011 Motsh 0.058 0.004 Seet 0.045 0.011 Phuk 0.039 0.011 Phat 0.035 0.011 Lwe 0.030 0.007
					Boleng	Dikotla	Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go filhelelwa jaaka e tihalo tse go tswaledisa boitekanelo jwa dipholologo tsothe le dimela tsa metsi le bokgoni ka kakaretso jwa dipholologo tsothe le dijalo jwa go tswaledisa ditirego tsa ikholoji le mefutafuta ya ditshedi.	Ohofosofate (PO_4) jaaka Fosoforo Naeterite (NO_3^-) & Naeteraete (NO_2^-) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.015 (mg/l) (Phesenthale ya bo50) Dimiligerama/dilitara tse ≤ 0.25 (Phesenthale ya bo50)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
						Matswai	Dilekano tsa boletswai jwa metsi a a tsenang mo molapong jaaka di totobaditswe di tshwanetse go somarelwa go sireletsa boitekanelo jwa dipholologo tsothe le dijalo tsa metsi le bokgoni ka kakaretso jwa dipholologo tsothe le dijalo jwa go tsewedisa ditirego tsa ikholoji le mefutafuta ya ditshedi jwa lefelo.	Kgonagalo ya moela wa motlakase	DimiliSiemens/dimetara ≤ 20 (mS/m) (Phesenthaele ya bo95)
						Metsi a a tsenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa B/C.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaethago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC= B/C $\geq 78\%$
					Legaethago	Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B/C. Netefatsa gore ga go na kago epe mo lefelong le le dintshing tsa noka.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Tshupane ya Tlathobho ya Tsibogo ya Dimedi	VEGRAI EC = B/C $\geq 78\%$
						Dithapi	Dithopa tsa dithapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa C. Somarela kelelo e e kwa tlase go akaretisa dithopa tsa lobelo kwa kelelo le boteng tsa mefuta e e ikaegileng ka kelelo.	Tshupane ya Tlathobho ya Tsibogo ya Dithapi (FRAI).	Sethopa sa ikholoji sa dithapi = C FRAI $\geq 62\%$ Sample 7+ mefuta mo maitekong a sampole nngwe le nngwe. Sample 8 AURA le 2 CTHE ka nako ya maiteko a go dira sampole
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Mefuta e e nnang mo metsing le mo lefatsheng	Bolelele jo jwa noka bo tshwanetse go somarelwa go dira jaaka legaeithago le tselana ya phudugo ya dithopa tsa mofuta o le mongwe tsa dinonyane tsa metsi ka taolo e e maleba ya legaeithago. Lefelo le le sireleditsweng le le mo dintshing tsa noka – ga go a tshwanela go nna le tsenelelo mo dintshing tsa	Mefuta ya dinonyane tsa metsi	Go tshwanetse ga dirwa tlathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mefutakemedi ya diamusi mo karolong e telele ya noka. Go na le tlhokego ya gore go dirwe RQC ya dipalo go direla bokanankang jwa dipholologo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							noka.		
						Ditshedi tse dikgolo tse di nnang mo metsing mme di se na mokwatla	Kgobokanyo ya di tshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa C sa ikholoji go tsa ikholoji le metufata ya tokafadiwa.	Tshupane ya Tlhalothob ya Tsibogo ya Diphologolo tse dikgolo mme di se na Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5)	MIRAI EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 5.5
							Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyanya ka nako ya komelelo tsa EWR: Matlabas mo MAT_EWR2 mo NMA = 32.80x10 ⁶ m ³ REC=B/C category	Dikelelo tsa Motheo Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyanya ka nako ya komelelo.	Kelelo e e bonyanya ka nako ya komelelo (m ³ /s) Diph 0.153 0.007 Ngwan 0.178 0.012 Sed 0.220 0.080 Fer 0.280 0.101 Tlhak 0.373 0.095 Mop 0.330 0.116 Mor 0.265 0.077 Motsh 0.208 0.071 Seet 0.193 0.070 Phuk 0.179 0.065 Phat 0.168 0.034 Lwe 0.154 0.008
		Noka ya Mothabatsi/ Matlabas (A41A, A41B)	17a_2		Bokanakang	Kelelo e e kwa tlase ya metsi	Kelelo e e kwa tlase ya metsi le kelelo e e bonyanya ka nako ya komelelo di tshwanetse go fithelwa go tsothe le dijalo tsa metsi.	Tlhokomelo ya tshololo ya Noka ya Matlabas mo A4H004	
							Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelwa jaaka e tlhalositswe go tswaledisa boitekanelo jwa diphologolo tsothe le dimela tsa metsi le bokgoni ka kakaretso jwa diphologolo tsothe le dijalo jwa go tswaledisa ditirego tsa ikholoji le metufata ya ditshedi jwa lefelo.	Othofosofate (PO ₄) jaaka Fosoforo	Dimiligerama/dilitara tse ≤ 0.015 (mg/l) (Phesenthaele ya bo50)
						Dikotla		Naeteraite (NO ₃) ⁻ & Naeteraite (NO ₂) ⁻ jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.25 (Phesenthaele ya bo50)
					Boleng	Matswai	Dilekano tsa boletswai jwa metsi a a tsenang mo molapong jaaka di totobaditswe di tshwanetse go somarelwa go sireletsa boitekanelo jwa diphologolo tsothe le dijalo tsa metsi le bokgoni ka kakaretso jwa	Kgonagalo ya moela wa motlakase	Dimilisiemens/dimetara ≤ 20 (mS/m) (Phesenthaele ya bo95)

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tihaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							diphologolo tsotlhe le dijalo jwa go tswaledisa ditirego tsa ikholoji le mofutafuta ya ditshedi ya lefelo.		
						Metsi a mo tsenang nokeng	Mefutafuta ya magaethago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa C go ya kwa sethopheng sa B/C.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikokhemikale le legaethago, Mokgwa le Sekao sa ka bonako sa Tlathobho ya Legaethago (RHAMM)	Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikokhemikale le legaethago B/C $\geq 78\%$
						Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa C.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikokhemikale le legaethago, Tshupane ya Tlathobho ya Tsibogo ya Dimedi.	VEGRAI EC = C $\geq 62\%$
						Ditlhapi	Ditlhapi tsa ditlhapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa C. Tlathobho ya ditlhapi tsa ditlhapi tsa lefelo le le rileng e tshwanetse go dirwa ngwaga le ngwaga go tlhokomela fa go bapisiwa le sethopa se se laoleletsweng sa ikholoji.	Tshupane ya Tlathobho ya Tsibogo ya Ditlhapi (FRAI)	Sethopa sa ikholoji sa ditlhapi = C FRAI $\geq 62\%$
						Mefuta e e nngang mo metsing le mo lefatsheng	Bolelele jo jwa noka bo tshwanetse go somarelwa go dira jaaka legaethago la dinonyane tsa metsi le ditlhapi tsa diamusi tsa mofuta o le mongwe ka taolo e e maleba ya legaethago. Somarela lefelo le le mo dintshing tsa noka.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mofutakemedi ya diamusi mo karolong e telele ya noka. Go na le tlhokego ya gore go dirwe RQC ya dipalo go direla bakanakang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Ditshedi dikgolo tse di nngang metsing mme di se na mokwatla	Kgobokanyo ya ditshedi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsibogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASSS)	MIRAI EC = C $\geq 62\%$ SASS ≥ 140 ASPT ≥ 5.5

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo		
		Dinokana tse e leng motswedi wa Mothabatsi (Matlabas-Zyn-Kloof, lefatše la dimedi tse di bodileng tsa seka-mmu) (A41A)	17a_3		Bokanakang		Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonywa ya metsi ka nako ya komelelo tsa EWR: Matlabas Zyn Kloof mo MAT EWR1 mo A41A NMAR = 5.23x10 ⁶ m ³ REC=A category	Dikelelo tsa Motheo		Kelelo e e bonywa ya metsi ka nako ya tlaase ya metsi (m ³ /s)	Kelelo e e bonywa ya metsi ka nako ya komelelo (m ³ /s)
						Kelelo e e kwa tlaase ya metsi		Dikelelo tse di kwa tlaase tsa metsi le kelelo e e bonywa ya metsi ka nako ya komelelo.	Diph	0.053	0.022
									Ngwan	0.057	0.027
									Sed	0.063	0.030
									Fer	0.075	0.037
									Tihak	0.094	0.041
									Mop	0.086	0.037
									Mor	0.076	0.031
									Motsh	0.065	0.030
									Seet	0.065	0.033
									Phuk	0.061	0.032
									Phat	0.060	0.031
					Lwe	0.056	0.030				
						Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a a mo molapong EC = A ≥ 90%					
					Legaeithago	Metsi a a tšenang mo nokeng	Mefutafuta ya magaeithago e tshwanetse go tokafadiwa go tswa mo sethopheng sa ikholoji sa B go ya kwa sethopheng sa A.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago	VEGRAI EC = B ≥ 82%		
						Legae la mo dintshing tsa noka	Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B.	Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago, Tshupane ya Tlathobho ya Tsibogo ya Dimedi.			
					Diphologolo, dimela le ditshedi tsa lefelo le le rileng	Dithapi	Dithopa tsa dithapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B. Somarela kelelo e e kwa tlaase go akaretisa dithopa tsa lobelo kwa kelelo le boteng tsa mefuta e e ikaegileng ka kelelo.	Tshupane ya Tlathobho ya Tsibogo ya Dithapi (FRAI):	Sethopa sa ikholoji sa dithapi = B FRAI ≥ 82% Sample 5+ mefuta mo maitekong a sampole nngwe le nngwe. Sample 8 AURA ka nako ya maiteko a go dira sampole		

Lenaneo 20: Maikaelelo a Boleng jwa Motswedi a DINOKA LE MATAMO mo Dikarolong tsa setlapele tsa Motswedi mo Dikarolong tse di kopaneng tsa tshekatsheko 17b: MATLABAS / LIMPOPO

IUA	Sethopa	Noka	Karolo ya motswedi	Sethopa sa Ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo		
17b: MATLABAS	II	Matlabas (A41D, A41C)	17b_1	B/C	Boleng	Bokanakang	Dikelelo tse di kwa tlase tsa metsi le kelelo e e bonyanya ya metsi ka nako ya komelelo tsa EWR: Matlabas mo MAT_EWR4 mo A41C NIMAR = 35.58x10 ⁶ m ³ REC=B category	Dikelelo tsa Motheo	Kelelo e e kwa tlase ya metsi (m ³ /s)	Kelelo e e bonyanya ya metsi ka nako ya komelelo (m ³ /s)	
							Kelelo e e kwa tlase ya metsi le kelelo e e bonyanya ya metsi ka nako ya tshwanetse go fithelelwa go tshogetsa dipholologo tsoithe le dijalo tsa metsi		Diph	0.151	0.007
									Ngwan	0.178	0.016
									Sed	0.225	0.072
									Fer	0.285	0.092
									Tlhak	0.398	0.100
									Mop	0.339	0.110
									Mor	0.266	0.077
									Motsh	0.208	0.066
									Seet	0.192	0.061
									Phuk	0.178	0.056
									Phat	0.166	0.034
									Lwe	0.151	0.008
									Dimiligerama/dilitara tse ≤ 0.050(mg/l) (Phesenthaele ya bo50)		
							Dikotla		Kokoano ya dikotla tsa metsi a a elelang go tsena mo teng e tshwanetse go fithelelwa jaaka e tlhalositse go tsweledisa boitekanelo jwa dipholologo tsoithe le dimela tsa metsi, le go somarela seemo sa ikholoji.	Naeterite (NO ₃ ⁻) & Naeteraete (NO ₂ ⁻) jaaka Naeterojene	Dimiligerama/dilitara tse ≤ 0.07 (Phesenthaele ya bo50)
						Matswai	Kokoano ya boletswai jwa metsi a a mo nokeng e tshwanetse go somarelwa go sireletsa seemo sa ga jaana le boitekanelo jwa dipholologo tsoithe le dijalo tsa metsi.	Kgonagalo ya moela wa molakase	DimilSiemens/dimetara ≤ 40 (mS/m) (Phesenthaele ya bo95)		
								Salefeite	Dimiligerama/dilitara tse ≤ 20 (Phesenthaele ya bo50)		
Dintha tse di ka kgonang go fetoga Dire tse di bothole	Selekano sa pH	6.5 (Phesenthaele ya bo5) le 8.5 (Phesenthaele ya bo95)									
		Go thokega tlhathobo ya motheo go tlhomamisa seemo sa ga jaana sa kgonberego va metsi a a	Kgoberego	Go letlelelwa phapogo ya 10% go tswa mo kokoanong ya lemorago.							

IUA	Sethopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							elatang go isena mo molapong. Go tshwanetse ga fitlhelwa dilekano tsa okosijene e e tshaoogileng go tshagetsa dipholologo tsothe le dijalo tsa metsi. Dikokoano tsa dire tse di bothole ga di a tshwanela go tshola kotsi mo ditshedding tse dinnye tsa metsi le mo boitekanelong jwa batho.	Okosijene e e tshaoogileng Aluminiumo (Al) Mankanese (Mn) Tshipi (Fe) Lito (Pb) e popota Koporo (Cu) e popota Nikele (Ni) Cobalt (Co) Zinki (Zn) Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago. Mokgwa le Sekao sa ka bonako sa Thathobo ya Legaeithago (RHMM) Tshupane ya Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le	Dimiligerama/dilitara tse ≥ 6 (mg/l) Dimiligerama/dilitara tse ≤ 0.062 (mg/l) (Phesenthaele ya bo95) Dimiligerama/dilitara tse ≤ 0.15 (mg/l) (Phesenthaele ya bo95) Dimiligerama/dilitara tse ≤ 0.1 (mg/l) (Phesenthaele ya bo95) Dimiligerama/dilitara tse ≤ 0.0057 (mg/l) (Phesenthaele ya bo95) Dimiligerama/dilitara tse ≤ 0.0048 (mg/l) (Phesenthaele ya bo95) Dimiligerama/dilitara tse ≤ 0.07 (mg/l) (Phesenthaele ya bo95) Dimiligerama/dilitara tse ≤ 0.05 (mg/l) (Phesenthaele ya bo95) Dimiligerama/dilitara tse ≤ 0.002 (mg/l) (Phesenthaele ya bo95) Tshomarelo ya popego e e lekalekanang ya dipharologantsho tsa fisikhokhemikale le legaeithago la metsi a mo molapong EC = B $\geq 82\%$ VEGRAI EC = B $\geq 82\%$
						Metsi a a tshwanetse go somarelwa e le mo sethopheng sa ikholoji sa B. Sireletsa bokgoni jwa molapo jwa go tshagetsa ditshedding le dijalo tsa one ka go laola ditlamorago tsa mo lefatsheng. Go tshwanetse ga somarelwa kgolagano le Noka ya Limpopo. Dimedi tsa mo dintshing tsa noka di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B.	Legaeithago Legae la mo dintshing tsa noka		

IUA	Setlhopa	Noka	Karolo ya motswedi	Setlhopa sa ikholoji	Karolwana	Karolo ya karolwana	Tlhaloso ya RQO	Sekao	Tekanyetso ya Dipalo
							Ditlhopa tsa dithapi tsa mofuta o le mongwe di tshwanetse go somarelwa di le mo sethopheng sa ikholoji sa B. Somarela tshireletso ya setlhopa sa boteng le lobelo mo metung e e bosisi (e e boifang kelelo: <i>LMOL, BMB</i> e bile e le bosisi mo legathagong: <i>PCAT</i>)	Tshupane ya Tlathobho ya Tsbogo ya Dithapi (FRAI)	Setlhopa sa ikholoji sa dithapi = B FRAI $\geq 82\%$ Sampole 13+ mofuta ka nako ya matleko a sampole
					Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Mefuta e e nngang mo metsing le mo lefatsheng	Boalo jo iwa noka bo tshwanetse go somarelwa gore bo kgone go dira jaaka legathago la dinonyane tsa metsi le dithopa tsa diphologolo ka taolo e e maleba ya legathago. Somarela lefelo le le mo dintshing tsa noka.	Dinonyane tsa metsi/Mofuta wa sekao wa diamusi	Go tshwanetse ga dirwa tlathobho ya motheo go thomamisa dipalopalo tsa dinonyane tsa metsi le mofutakemedi ya diamusi mo karolong e telele ya noka. Go na le tihokego ya gore go dirwe RQC ya dipalo go direla bokanehang jwa diphologolo/dinonyane go ya ka data e e leng teng/e e kgobokantsweng.
						Ditshedhi tse dikgolo tse di nngang mo metsing mme di se na mokwatla	Kgobokanyo ya ditshedhi tse dikgolo mme di se na mokwatla e tshwanetse go somarelwa mo seemong mo sethopheng sa C sa ikholoji kgotsa e tshwanetse go tokafadiwa.	Tshupane ya Tlathobho ya Tsbogo ya Diphologolo tse dikgolo mme di se na mokwatla, le Mokgwatsamaiso wa Kabo ya Maduo wa Aforikaborwa wa Mofuta 5 (SASS5)	MIRAI EC = C $\geq 62\%$ SASS ≥ 120 ASPT ≥ 5.0

Lenaneo 21: Maikaelelo a Boleng jwa Motswedi tsa MATSHA A E LENG DITLAPELE mo Dikarolong tse di tlophihlang tsa Motswedi mo WMA ya Mokolo, Matlabas, Crocodile (West) le Marico

Dikarolo tse di Sobokantsweng tsa Tshokatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
1: KAROLO E GODIMO E KWA CROCODILE / HENNOPS / HARTBEES POORT	1_1	Khompekekese ya Pane ya Bronkhorstfontein (Depresene/Pane)	Bokanakang	Perimetara e e kolobileng ya pane jaaka e lekanyeditse go tswa mo go diriseng mmapa malebana le pula e e neng pele.	Ditlamorago tsa bokanakang jwa metsi di tshwanetse go laolwa gore di se nnyefatse boleng jwa ikholoji jwa pane. Segolo bogolo, go tloswa kgotsa dilo tsa matirelo tse di tsenyang metsi di tshwanetse go lekanyediwa mo	Rulaganya kgobokanyo ya data ya GIS e e dirang mmapa wa lefelo le diphologolo tsothe le dijalo tsa lefelo le le rileng di nngang mo go lone pele ga tshimologo ya thokomelo ka go dirisa ditshwantsho tsa sešweng tse di leng teng tse di kgakala le go thomamisa perimetara e e kolobileng malebana le go na ga pula e e neng pele mo dipaneng tse di

Dikarolo tse di Sobokantsweng tsa Tshekatshoko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
	1_1 1_2	Khompelekese ya Lefatshe le le Manyemunyemu la Rietvlei Karolo e kwa tlase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebiswang (lefatshe la dimedi tse di bodileng tsa seka-mmu)	Bokanakang		dipaneeng gore boteng le bolelele jwa nako ya morwalela bo a somarelwa mo sekanong se se tiwaelegileng mo dingwageng tsa sekanono se se kwa godimo, sa magareng kgotsa se se kwa tlase sa pula.	thophiliweng. Ka go dirisa se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega ka ga se ka nthatebo ya go thathoba gore a go na le diphetogo dipe tse di ka lekanyediwang mo kamanong fa gare ga perimetara e e kolobileng le pula e e neleng pele mo dipaneng tse di thophiliweng.
				pH, Kgonagalo ya moela wa motlakase, TDS, Palogotho ya Boalekali Jaaka CaCO ₃ , Sotiamo, Khalesiamo, Makenesiamo, Saletete, Tshipi, Tieloraete, Potasiamo, Makenesiamo, Mankaneso, Aluminiamo, Fosoforo, Silikha, Foloraete, Amonia le Naetereite.	Ditlamorago tsa boleng jwa metsi mo dipaneng di tshwanetse go lekanyediwa go netefatsa gore khemisteri ya metsi le sedimente e nna e le mo sekanong sa motheo (kokoano ya anyione le khatone mo kamanong ya bolumu ya pane) mo motuteng o wa pane ya khemisteri ya metsi.	Mo dipaneng tse di thophiliweng, dira sampole mo dingwageng dingwe le dingwe tse 3 go ya go tse 5.
				Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiwang palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa dipane mo khompelekeseeng ya lefatshe le manyemunyemu)	Sethopa sa PES sa magareng se se fiwang palo se se ikaegileng ka lefelo sa C/D se tshwanetse go somarelwa.	Dira thathoba ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompelekese ya lefatshe le manyemunyemu. Rurifatsa ka go dira thathoba ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophiliweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa.
				Go thokega gore go nne manyemunyemu go somarela dimedi tse di bodileng tsa seka-mmu. Dikelelo le tsone di tshwanetse gore di se ke tsa nna matshosetsi mo popego e e sa lebiswang mo go sepe se se rileng/thuto ya saentefiki ya lefatshe le manyemunyemu.	Go thokega gore go nne manyemunyemu go somarela dimedi tse di bodileng tsa seka-mmu. Dikelelo le tsone di tshwanetse gore di se ke tsa nna matshosetsi mo popego e e sa lebiswang mo go sepe se se rileng/thuto ya saentefiki ya lefatshe le manyemunyemu.	Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
				Sethopa sa PES sa Desekethopo (se se ikaegileng ka maduo a seka-dipalo a lefatshe le manyemunyemu). Selekano le go anamisiwa ga dimedi tse di bodileng tsa seka-	Dimedi tsa lefatshe le manyemunyemu le thuto ya saentefiki ya lefatshe di tshwanetse go somarelwa go sireletsa popego e e sa lebiswang sengwe se se rileng ya lefelo le dipholologo tsothe le	Ka nako ya thathoba ya legaethago thomamisa gore a lefelo le le rileng le dipholologo tsothe le dijalo di nngang mo go lone le manyemunyemu le gore a go na le dimedi tse di bodileng tsa seka-mmu. Rulaganya kgobokanyo ya data ya GIS e e dirang mmapha wa lefelo le dipholologo tsothe le dijalo tsa lefelo le le rileng di nngang mo go lone pele ga tshimologo ya thokomelo ka go dirisa ditshwantsho tsa sešweng tse di leng teng tse di kgakala le go thomamisa/fopholetsa le go kaya mo mmapheng selekano sa dimedi tse di bodileng tsa seka-mmu le

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatriso wa dipalo
				mmu le dithlopa tsa dimedi tse di bodileng tsa seka-mmu tsa mefuta ya tsone mo lefatsheng le le manyemunyemu.	dijalo di nhang mo go lone le mefutafuta ya diphologolo le dijalo mme di tshwanetse go somarelwa go akaretisa dithlopa tse di kgonegang tsa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu. Sethlopa sa PES sa magareng se se filweng palo se se ikaegileng ka lefelo sa B le fa seemo se go nang le kgonagalo e ntsi ya gore se ka fithelelwa ke Sethlopa B/C. Go anamisiwa ga dimedi tse di bodileng tsa seka-mmu le selekano sa tsone go tshwanetse ga tlogelwa bonnye go le mo seemong se se sa fetogeng/se se thomameng kgotsa go tshwanetse ga oketsega.	mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu mo lefelong. Dira tlathobho ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekeke ya lefatsheng le le manyemunyemu. Rurifatsa ka go dira tlathobho ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng ntle e e rileng ya dipharologantsho tsa bothokwa. Ka nako ya tlathobho ya legaelthago thomamisa/fopholetsa gore a mme selekano sa dimedi tse di bodileng tsa seka-mmu se fetogile mo lefelong le diphologolo tsothe le dijalo di nhang mo go lone. Fopholetsa selekano sa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathobho le go bega se ka ntlhatebo ya go tlathobho gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
	1_3	Pane ya Glen Austin (Diprešene / Pane)	Bokanakang	Perimetara e e kolobileng ya pane jaaka e lekanyeditswe go tswa mo go diriseng mmapa malebana le pula e e neling pele.	Ditlamorago tsa bokanakang jwa metsi di tshwanetse go laolwa gore di se nyenyefatse boleng jwa ikholoji jwa pane. Segolo bogolo, go tlosiwa kgotsa dilo tsa maitirelo tse di tsenyang metsi di tshwanetse go lekanyediwa mo dipaneng gore boteng le bolelele jwa nako ya morwalela bo a somarelwa mo selekanong se se tiwaelegileng mo dingwageng tsa selekano se se kwa godimo, sa magareng kgotsa se se kwa tlase sa pula.	Rulaganya kgobokanyo ya data ya GIS e e dirang mmapa wa lefelo le diphologolo tsothe le dijalo tsa lefelo le le rileng di nhang mo go lone pele ga tshimologo ya thokomelo ka go dirisa dishwantsho tsa sešweng tse di leng teng tse di kgakala le go thomamisa perimetara e e kolobileng malebana le go na ga pula e e neng pele mo dipaneng tse di thophilweng. Ka go dirisa se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathobho le go bega ka ga se ka ntlhatebo ya go tlathobho gore a go na le diphetogo dipe tse di ka lekanyediwang mo kamanong fa gare ga diperimetara tse di kolobileng le pula e e neling pele mo paneng.
			Boleng	pH, Kgonagalo ya moela wa motlakase, TDS, Palogotho ya Boalekai jaaka CaCO_3, Sotiamo, Khalesiamo, Makenesiamo, Salefeite, Tshipi, Tieloraete, Potasiamo, Makenesiamo, Mankanese, Aluminiamo, Fosoforo, Silikha, Amonia ya Foloraete, Naeteraite le	Ditlamorago tsa boleng jwa metsi mo dipaneng di tshwanetse go lekanyediwa go netefatsa gore khemisteri ya metsi le sedimente e nna e le mo selekanong sa motheo (kokoano ya anyone le khatone mo kamanong ya bolumu ya pane) mo mofuteng o wa pane ya	Dira sampole mo dingwageng dingwe le dingwe tse 3 go ya go tse 5.

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				Foloraete.	khemiseteri ya metsi.	
				Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu – leba mokgwa wa ga Kotze, 2016a le 2016b).	Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa C/D le fa Sethopa se se kgonagalang sa BAS e le D.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khomelekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng ntle e e rileng ya dipharologantsho tsa bothokwa.
						Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphethogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
				Dithopa tsa tsadiso ya Matlametlo a Magolo.	Go somarela dipalopalo tse di kgonegang tsa tsadiso ya Matlametlo a Magolo mo paneng.	Rurifatsa go tswa mo direkotong tsa thokomelo le matlametlo a magolo a a bonwang sewelo le ditragalo tse di rekotilweng tsa tsalo. Bega ka se mo dingwageng dingwe le dingwe tse 3 go ya go tse 5.
				Go koloba ga leruri.	Go thokega gore go nne manyemunyemu go somarela dimedi tse di bodileng tsa seka-mmu. Dikelele le tsone di tshwanetse gore di se ke tsa nna matshosetsi mo popego e e sa lebiswang mo go sepe se se rileng/thuto ya saentefiki ya lefatshe le le manyemunyemu.	Thomamisa gore a lefelo le le rileng le dipholologo tsothe le dijalo di nnang mo go lone le manyemunyemu le gore a go na le dimedi tse di bodileng tsa seka-mmu.
						Rulaganya kgobokanyo ya data ya GIS e e dirang mmapo wa lefelo le dipholologo tsothe le dijalo tsa lefelo le le rileng di nnang mo go lone pele ga tshimologo ya thokomelo ka go dirisa ditshwantsho tsa sešweng tse di leng teng tse di kgakala le go thomamisa/fopholetsa le go kaya mo mmapeng selekano sa dimedi tse di bodileng tsa seka-mmu le mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu mo lefelong.
				Sethopa sa PES sa Desekethopo (se se ikaegileng ka maduo a seka-dipalo a lefatshe le le manyemunyemu).	Sethopa sa PES sa Desekethopo (se se ikaegileng ka maduo a seka-dipalo a lefatshe le le manyemunyemu).	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khomelekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng
				Selekano le go anamisiwa ga dimedi tse di bodileng tsa seka-mmu le dithopa tsa dimedi tse di bodileng tsa seka-mmu tsa mefuta ya tsone mo lefatsheng le le manyemunyemu.	Selekano le go anamisiwa ga dimedi tse di bodileng tsa seka-mmu le dithopa tsa dimedi tse di bodileng tsa seka-mmu tsa mefuta ya tsone mo lefatsheng le le manyemunyemu.	

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					e filweng palo e e ikaegileng ka lefelo sa B/C le fa Sethopa se se kgonagalang sa BAS e le C. Go anamisiwa ga dimedi tse di bodileng tsa seka-mmu le selekano sa tsone go tshwanetse ga tlogelwa bonnye go le mo seemong se se sa fetogeng/se se thomameng kgotsa go tshwanetse ga oketsega.	nthla e e rileng ya dipharologantsho tsa bothokwa. Ka nako ya tlathobho ya legaethago thomamisa/fopholetsa gore a mme selekano sa dimedi tse di bodileng tsa seka-mmu se fetogile mo lefelong le diphologolo tsothe le dijalo di nnang mo go lone. Fopholetsa selekano sa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathobha le go bega se ka nthatebo ya go tlathobha gore a go na le dipheto go dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
				Matleputlepu a leruri.	Go thokega gore go nne manyemunyemu go somarela dimedi tse di bodileng tsa seka-mmu. Dikelelo le tsone di tshwanetse gore di se ke tsa nna matshoseisi mo popego e e sa lebiswang mo go sepe se se rileng/thuto ya saentefiki ya lefatshe le manyemunyemu.	Ka nako ya tlathobho ya legaethago thomamisa gore a lefelo le le rileng le diphologolo tsothe le dijalo di nnang mo go lone le manyemunyemu le gore a go na le dimedi tse di bodileng tsa seka-mmu.
4: HEX / WATERKLOOFSPRUIT / VALKOP	4_6	Lefatshe le manyemunyemu Waterkloofspruit Karolo e e kwa tlase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebiswang le mafatshe a a manyemunyemu	Bokanakang Legaethago	Sethopa sa PES sa Desekethopo (se se ikaegileng ka madiuo a seka-dipalo a lefatshe le le manyemunyemu. Selekano le go anamisiwa ga dimedi tse di bodileng tsa seka-mmu le ditlhopa tsa dimedi tse di bodileng tsa seka-mmu tsa mefuta ya tsone mo lefatsheng le le manyemunyemu.	Dimedi tsa lefatshe le le manyemunyemu le thuto ya saentefiki ya lefatshe di tshwanetse go somareliwa go sireletsa popego e e sa lebiswang sengwe se se rileng ya lefelo le diphologolo tsothe le dijalo di nnang mo go lone le mefutafuta ya diphologolo le dijalo mme di tshwanetse go somareliwa go akaretisa ditlhopa tse di kgonegang tsa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu. Sethopa sa PES sa Palogare e e filweng palo e e ikaegileng ka lefelo sa A le fa Sethopa se se kgonagalang sa BAS e le A/B. Go anamisiwa ga dimedi tse di bodileng tsa seka-mmu le selekano sa tsone go tshwanetse ga tlogelwa bonnye go le mo seemong se se sa	Rulaganya kgobokanyo ya data ya GIS e e dirang mmapa wa lefelo le diphologolo tsothe le dijalo tsa lefelo le le rileng di nnang mo go lone pele ga tshimologo ya thokomelo ka go dirisa ditshwantsho tsa sešweng tse di leng teng tse di kgakala le go thomamisa/fopholetsa le go kaya mo mmapeng selekano sa dimedi tse di bodileng tsa seka-mmu le mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu mo lefelong. Dira tlathobho ya PES ya Desekethopo le go thomamisa madiuo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira tlathobho ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Ka nako ya tlathobho ya legaethago thomamisa/fopholetsa gore a mme selekano sa dimedi tse di bodileng tsa seka-mmu se fetogile mo lefelong le diphologolo tsothe le dijalo di nnang mo go lone. Fopholetsa selekano sa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu. Boeletsa mo dingwageng dingwe le dingwe tse 3 go

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					fetogeng/se se thomameng kgotsa go tshwanetse ga oketsega.	ya go tse 5 le go tlathlhoaba le go bega se ka nthatebo ya go tlathlhoaba gore a go na le dipheto go dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
			Bokanakang	Perimetara e e kolobileng ya pane jaaka e lekanyeditswe go tswa mo go diriseng mmapa malebana le pula e e neling pele.	Ditlamorago tsa bokanakang jwa metsi di tshwanetse go laolwa gore di se nyenyefatse boleng jwa ikholoji jwa pane. Segolo bogolo, go tloswa kgotsa dilo tsa matirelo tse di tsenyang metsi di tshwanetse go lekanyediwa mo dipaneng gore boteng le bolelele jwa nako ya morwalela bo a somarelwa mo sekanong se se twaelegileng mo dingwageng tsa sekanong se se kwa godimo, sa magareng kgotsa se se kwa tlase sa pula. Ka go dirisa se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathlhoaba le go bega ka ga se ka nthatebo ya go tlathlhoaba gore a go na le dipheto go dipe tse di ka lekanyediwang mo kamanong fa gare ga perimetara e e kolobileng le pula e e neling pele mo dipaneng tse di thophilweng.	Rulaganya kgobokanyo ya data ya GIS e e dirang mmapa wa lefelo le dipholologo tsothe le dijalo tsa lefelo le le rileng di nng mo go lone pele ga tshimologo ya thokomelo ka go dirisa ditshwantsho tsa sešweng tse di leng teng tse di kgakala le go thomamisa perimetara e e kolobileng malebana le go na ga pula e e neling pele mo dipaneng tse di thophilweng.
	5_1	Khompelakese ya Pane ya Koster Diprešene / Pane	Boleng	pH, Kgonagalo ya moela wa molakase, TDS, Palogothle ya Boalekali jaaka CaCO ₃ , Sotiamo, Khalesiamo, Makenesiamo, Salefeite, Tshipi, Tieloraete, Potasiamo, Makenesiamo, Mankanese, Aluminiamo, Fosoforo, Silikha, Amonia ya Foloraete, Naeteraite le Foloraete.	Ditlamorago tsa boleng jwa metsi mo dipaneng di tshwanetse go lekanyediwa go netefatsa gore khemisetere ya metsi le sedimente e nna e le mo sekanong sa motheo (kokoano ya anyione le khatlone mo kamanong ya bolumu ya pane) mo mofuteng o wa pane ya khemisetere ya metsi.	Mo dipaneng tse di thophilweng, dira sampole mo dingwageng dingwe le dingwe tse 3 go ya go tse 5.
5: ELANDS / VAALKOP			Legaethago	Sethopa sa PES sa Desekethopo (go ya ka madio a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa dipane mo khompelakeseeng ya lefatshe le manyemunyemu).	Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa B/C le fa Sethopa se se kgonagalang sa BAS e le C.	Dira thathlhoaba ya PES ya Desekethopo le go thomamisa madio a palogare a a ikaegileng ka lefelo go bona khompelakese ya lefatshe le manyemunyemu. Rurifatsa ka go dira thathlhoaba ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa.
MARICO / KROMEL / LEMBOO	6_1 8_1	Khompelakese ya Lefatshe le Manyemunyemu Buffelshoek	Bokanakang	Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe (leba dikao tsa metsi a a ka fa tlase ga lefatshe RU 6_1 le 8_1).	Kelole e e thomameng ya motheo e tshwanetse go somarelwa go netefatsa gore dipholologo tsothe le dijalo tsa lefelo le le rileng di nna di tshela	Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathlhoaba le go bega se ka nthatebo ya go tlathlhoaba gore a go na le dipheto go dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
						Go dirisiwa dithekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe (leba dithekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe).
						Dira Resefo ya lefatshe le le manyemunyemu la

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatriso wa dipalo
		Karolo e e kwa tlase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgotla e e sa lebiswang		Dikao tsa kelelo ya bogodimo di thoka go thomamisiwa.	nako e telele. Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa metsi a a ka fa tlase ga metsi).	lefelo le dipholologo le dijalo di nnang mo go lone le go thomamisa dithokego tsa kelelo tsa lefatshe le le manyemunyemu. Dirisa tse go seta mokgwatriso wa dipalo wa karolwana ya bokanakang jwa metsi ya di-RQO.
			Boleng	Go dirisiwa dikao tsa noka le metsi a a ka fa tlase ga lefatshe (leba dikao tsa noka le metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa noka le metsi a a ka fa tlase ga lefatshe).	Go dirisiwa noka le ditekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe (leba Ditekanyetso tsa dipalo tsa dinoka le tsa metsi a a ka fa tlase ga lefatshe). Thabolola tseno go ya ka dipithilelo tsa karolwana ya boleng jwa metsi ya Rasefo ya pele ya metsi.
			Legaeathago	Sethopa sa PES sa Desekeho (go ya ka maduo a magareng a a filweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le manyemunyemu mo khompekeseng ya lefatshe le manyemunyemu).	Sethopa sa PES sa Palogare e e filweng palo e e ikaegileng ka lefelo sa B le fa Sethopa se se kgonagang sa BAS e le C/D.	Dira thathobo ya PES ya Desekeho le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekeseng ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di tlhophiwe mme o tseye dinepe tse di totleng niha e e rileng ya dipharologantsho tsa bothokwa.
	6_1 8_1	Khompekeseng ya Lefatshe le Manyemunyemu Paardenvlei (Malmansloop) Karolo e e kwa tlase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgotla e e sa lebiswang	Lefelo la Tshireletso	Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe (leba dikao tsa metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa metsi a a ka fa tlase ga lefatshe).	Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka ntlhatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
			Bokanakang	Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe (leba dikao tsa metsi a a ka fa tlase ga lefatshe). Dikao tsa kelelo ya bogodimo di thoka go thomamisiwa.	Kelelo e e thomameng ya motheo e tshwanetse go somarelwa go netefatsa gore dipholologo tsothe le dijalo tsa lefelo le le rileng di nna di tshela nako e telele. Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa metsi a a ka fa tlase ga lefatshe).	Go dirisiwa ditekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe. Dira Rasefo ya lefatshe le le manyemunyemu la lefelo le dipholologo le dijalo di nnang mo go lone le go thomamisa dithokego tsa kelelo tsa lefatshe le le manyemunyemu. Dirisa tse go seta mokgwatriso wa dipalo wa karolwana ya bokanakang jwa metsi ya di-RQO.
			Boleng	Go dirisiwa dikao tsa noka le metsi a a ka fa tlase ga lefatshe (leba dikao tsa noka le metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa noka le metsi a a ka fa tlase ga lefatshe).	Go dirisiwa noka le ditekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe (leba Ditekanyetso tsa dipalo tsa dinoka le tsa metsi a a ka fa tlase ga lefatshe). Thabolola tseno go ya ka dipithilelo tsa karolwana ya boleng jwa metsi ya Rasefo ya pele ya metsi.
			Legaeathago	Sethopa sa PES sa Desekeho (go ya ka maduo a	Sethopa sa PES sa Palogare e e filweng palo e e ikaegileng ka	Rulaganya kgobokanyo ya data ya GIS e e dirang mmapa wa lefelo le dipholologo tsothe le dijalo tsa

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				magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompekeseng ya lefatshe le le manyemunyemu).	lefelō sa C/D le fa Sethōpa se se kgonagalang sa BAS e le D.	lefelō le le rileng di nng mo go lone pele ga tshimologo ya thokomelo ka go dirisa ditshwantsho tsa sešweng tse di leng teng tse di kgakala le go thomamisa/fopholetsa le go kaya mo mmapeng sekanano sa dimedi tse di bodileng tsa seka-mmu le metuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu mo lefelong.
						Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelō go bona khompekeseng ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totileng nthā e e rileng ya dipharogantsho tsa bothokwa. Ka nako ya thathobo ya legaethago thomamisa/fopholetsa gore a mme sekanano sa dimedi tse di bodileng tsa seka-mmu se fetogile mo lefelong le dipologolo tsothe le dijalo di nng mo go lone. Fopholetsa sekanano sa metuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu. Boeletsa mo dingweng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa dipologolo tsothe le dijalo tsa lefelō le le rileng.
			Lefelo la Tshireletso	Go dirisiwa dikao tsa metsi a a ka fa tiase ga lefatshe (leba dikao tsa metsi a a ka fa tiase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tiase ga lefatshe (leba di-RQO tsa metsi a a ka fa tiase ga lefatshe).	Go dirisiwa dithekanyetso tsa dipalo tsa metsi a a ka fa tiase ga lefatshe (leba dithekanyetso tsa dipalo tsa metsi a a ka fa tiase ga lefatshe).
			Bokanakang	Go dirisiwa dikao tsa metsi a a ka fa tiase ga lefatshe (leba dikao tsa metsi a a ka fa tiase ga lefatshe).	Kelelo e e thomameng ya motheo e tshwanetse go somarelwa go netefatsa gore dipologolo tsothe le dijalo tsa lefelō le le rileng di nna di tshela nako e telele.	Go dirisiwa dithekanyetso tsa dipalo tsa metsi a a ka fa tiase ga lefatshe (leba dithekanyetso tsa dipalo tsa metsi a a ka fa tiase ga lefatshe).
	7_1	Leitho la lefatshe le le manyemunyemu la Marico (Kaaloog se Loop) Karolo e e kwa tiase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebiswang		Dikao tsa kelelo ya bogodimo di tlhoka go thomamisiwa.	Go dirisiwa di-RQO tsa metsi a a ka fa tiase ga lefatshe (leba di-RQO tsa metsi a a ka fa tiase ga lefatshe).	Dira Resefo ya lefatshe le le manyemunyemu la lefelō le dipologolo le dijalo di nng mo go lone le go thomamisa dithekanyetso tsa kelelo tsa lefatshe le le manyemunyemu. Dirisa tse go seta mokgwatiriso wa dipalo wa karolwana ya bokanakang jwa metsi ya di-RQO.
7: KAALOOG-SE-LOOP			Boleng	Go dirisiwa dikao tsa noka le metsi a a ka fa tiase ga lefatshe (leba dikao tsa noka le metsi a a ka fa tiase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tiase ga lefatshe (leba di-RQO tsa noka le metsi a a ka fa tiase ga lefatshe).	Go dirisiwa noka le dithekanyetso tsa dipalo tsa metsi a a ka fa tiase ga lefatshe (leba Ditekanyetso tsa dipalo tsa dinoka le tsa metsi a a ka fa tiase ga lefatshe). Thabolola tseno go ya ka dipithilelo tsa karolwana ya boleng jwa metsi ya Rasefo ya pele ya metsi.

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			Legaethago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu – leba mokgwa wa ga Kotze, 2016a le 2016b).	Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa A/B le fa Sethopa se se kgonagalang sa BAS e le B.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Ka nako ya thathobo ya legaethago thomamisa/fopholetsa gore a mme selekano sa dimedi tse di bodileng tsa seka-mmu se fetogile mo lefelong le dipholologo tsothe le dijalo di nngang mo go lone. Fopholetsa selekano sa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
				Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe (leba dikao tsa metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa metsi a a ka fa tlase ga lefatshe).	Go dirisiwa ditekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe.
				Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe (leba dikao tsa metsi a a ka fa tlase ga lefatshe).	Kelelo e e thomameng ya motheo e tshwanetse go somarelwa go netefatsa gore dipholologo tsothe le dijalo tsa lefelo le le rileng di nna di tshela nako e telele.	Go dirisiwa ditekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe.
				Go dirisiwa dikao tsa noka le metsi a a ka fa tlase ga lefatshe (leba dikao tsa noka le metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa noka le metsi a a ka fa tlase ga lefatshe).	Go dirisiwa noka le ditekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe.
				Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu)	Sethopa sa PES sa magareng se se fiweng palo se se ikaegileng ka lefelo sa C.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa.

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatirisano wa dipalo
	7_1	Lephororo la Tufa (Tufa)				Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
			Lefelo la Tshireletso	Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe (leba dikao tsa metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa metsi a a ka fa tlase ga lefatshe).	Go dirisiwa dikekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe.
			Bokanakang	Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe (leba dikao tsa metsi a a ka fa tlase ga lefatshe).	Kelelo e e tlhomameng ya motheo e tshwanetse go somarelwa go netefatsa gore dipholologo tsothe le dijalo tsa lefelo le le rileng di nna di tshela nako e telele le gore lephororo le na le tlamelo e e tlhomameng ya metsi.	Go dirisiwa dikekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe.
			Boleng	pH, Kgonagalo ya moela wa motlakase, TDS, Palogotho ya Boalekai jaaka CaCO_3 , Sotiamo, Khalesiamo, Makenesiamo, Salefete, Tshipi, Tloraete, Potasiamo, Makenesiamo, Mankanese, Aluminiamo, Fosoforo, Silikha, Amonia ya Foloraete, Naeteraite le Foloraete.	Dilekano tsa boletswai ga di a tshwanela go oketsega. Go tshwanetse ga somarelwa dikokoano di le mo dilekanong go sireletsa seemo se se siameng sa boleng jwa metsi se se humileng ka khalesiamo khaboneite.	Kgonagalo ya moela wa motlakase: $\leq 50 \text{ mS/m}$ Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (55 mS/m). Tlhokomelo ya mo dingwageng dingwe le dingwe tse pedi tsa dikarolwana tse dikgolo
			Lefelo la Tshireletso	Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe (leba dikao tsa metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa metsi a a ka fa tlase ga lefatshe).	Go dirisiwa dikekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe.
8: MALMANIESLOOP	8_1	Khomepeleke le Lefatshe Manyemunyemu Malmanieloop Karolo e e kwa tlase ya mokgatsha e e lebisitweng kwa sengwe se se rileng kgotla e e sa lebiswang le mafatshe a a manyemunyemu)	Bokanakang	Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe (leba dikao tsa metsi a a ka fa tlase ga lefatshe). Dikao tsa kelelo ya bogodimo di tlhoka go thomamisiwa.	Kelelo e e tlhomameng ya motheo e tshwanetse go somarelwa go netefatsa gore dipholologo tsothe le dijalo tsa lefelo le le rileng di nna di tshela nako e telele mme bontsi jwa dimedi tsa mo losing le tsa mo metsing di nna di sa swe mo setheng sothe sa kgolo sa selemo le gore lefelo le medi e leng mo go lone le kolobile mo	Go dirisiwa dikekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatshe. Dira Resefo ya lefatshe le le manyemunyemu la lefelo le dipholologo le dijalo di nang mo go lone le go thomamisa diihokego tsa kelelo tsa lefatshe le le manyemunyemu. Dirisa tse go seta mokgwatirisano wa dipalo wa karolwana ya bokanakang jwa metsi ya di-RQO.

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					ngwageng otlhe. E ke tlhokego ya go kgonisha dijalo tse di melang mo metsing fela tsa paka e telele go fetsa tshekatsheko ya tsone le go ntsha dikuno go somarela dimedi tse di bodileng tsa seka-mmu mo lefelong. .	
				Go dirisiwa dikao tsa noka le metsi a a ka fa tlase ga lefatshe (leba dikao tsa noka le metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa noka le metsi a a ka fa tlase ga lefatshe).	Ditekanyetso tsa dipalo tsa dinoka le tsa metsi a ka fa tlase ga lefatshe. Tlhabolola tseno go ya ka diphithilelo tsa karolwana ya boleng jwa metsi ya Rasefo ya pele ya metsi.
			Boleng	Go dirisiwa dikao tsa noka le metsi a a ka fa tlase ga lefatshe (leba dikao tsa noka le metsi a a ka fa tlase ga lefatshe).	Dimedi tsa lefatshe le le manyemunyemu le thuto ya saentefiki ya lefatshe di tshwanetse go somareliwa go sireletsa popego e e sa lebiswang sengwe se se rileng ya lefelo le diphologolo tsothe le dijalo di nngang mo go lone le mefutafuta ya diphologolo le dijalo mme di tshwanetse go somareliwa go akaretsa ditlhopa tse di kgonegang tsa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu.	Rulaganya kgobokanyo ya data ya GIS e e dirang mmaba wa lefelo le diphologolo tsothe le dijalo tsa lefelo le le rileng di nngang mo go lone pele ga tshimologo ya tlhokomelo ka go dirisa ditshwantsho tsa sešweng tse di leng teng tse di kgakala le go thomamisa perimetara e kolobileng malebana le go na ga pula e e neng pele mo dipaneng tse di thophilweng.
			Legaeathago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompelekeseng ya lefatshe le le manyemunyemu).	Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa B le fa Sethopa se se kgonagalang sa BAS e le C.	Dira tlathobho ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompelekeseng ya lefatshe le le manyemunyemu. Rurifatsa ka go dira tlathobho ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthia e e rileng ya dipharologantsho tsa boithokwa. Ka nako ya tlathobho ya legaeathago thomamisa/fopholetsa gore a mme selekano sa dimedi tse di bodileng tsa seka-mmu se fetogile mo lefelong le diphologolo tsothe le dijalo di nngang mo go lone. Fopholetsa selekano sa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathobha le go bega se ka nthatebo ya go tlathobha gore a go na le dipheto go dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
			Lefelo la Tshireletso	Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe (leba dikao tsa metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa metsi a a ka fa tlase ga lefatshe).	Go dirisiwa ditekanyetso tsa dipalo tsa metsi a ka fa tlase ga lefatshe.

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
8: MALMANIESLOOP 9: MOLOPO	8 9_2	Khompelekese le Lefatshe le Manyemunyemu la Karolo e e kwa Godimo ya Molopo Karolo e e kwa tlase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebiswang le mafatshe a manyemunyemu	Bokanakang	Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatshe. Dikao tsa kelelo ya bogodimo di tlhoka go thomamisiwa.	Kelelo e e tlhomameng ya motheo e tshwanetse go somarelwa go netefatsa gore dipholologo tsothe le dijalo tsa lefelo le le rileng di nna di tshela nako e telele mme bontsi jwa dimedi tsa mo losing le tsa mo metsing di nna di sa swe mo setheng sothe sa kgolo sa selemo le gore lefelo le medi e leng mo go lone le kolobile mo ngwageng othe. E ke thokego ya go kgontsha dijalo tse di melang mo metsing fela tsa paka e telele go fetsa tshetshelo ya tsone le go ntsha dikuno go somarela dimedi tse di bodileng tsa seka-mmu mo lefelong. .	Go dirisiwa ditekanyetso tsa dipalo tsa metsi a ka fa tlase ga lefatshe. Dira Resefo ya lefatshe le le manyemunyemu la lefelo le dipholologo le dijalo di nng mo go lone le go thomamisa dithokego tsa kelelo tsa lefatshe le le manyemunyemu. Dirisa tse go seta mokgwatiriso wa dipalo wa karolwana ya bokanakang jwa metsi ya di-RQO.
				Go dirisiwa dikao tsa noka le metsi a a ka fa tlase ga lefatshe (leba dikao tsa noka le metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe. Tlhabolola tseno go ya ka dipithitshelo tsa karolwana ya boleng jwa metsi ya Rasefo ya pele ya metsi.	Go dirisiwa noka le ditekanyetso tsa dipalo tsa metsi a ka fa tlase ga lefatshe. Tlhabolola tseno go ya ka dipithitshelo tsa karolwana ya boleng jwa metsi ya Rasefo ya pele ya metsi.
			Legaethago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a filweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompelekeseng ya lefatshe le le manyemunyemu).	Dimedi tsa lefatshe le le manyemunyemu le thuto ya saentefiki ya lefatshe di tshwanetse go somarelwa go sireletsa popego e e sa lebiswang sengwe se se rileng ya lefelo le dipholologo tsothe le dijalo di nng mo go lone le mefutata ya dipholologo le dijalo mme di tshwanetse go somarelwa go akaretisa dithopa tse di kgonegang tsa mefuta ya bodileng tsa seka-mmu.	Rulaganya kgobokanyo ya data ya GIS e e dirang mmapa wa lefelo le dipholologo tsothe le dijalo tsa lefelo le le rileng di nng mo go lone pele ga tshimologo ya thokomelo ka go dirisa ditshwantsho tsa sešweng tse di leng teng tse di kgakala le go thomamisa/fopholetsa le go kaya mo mmapeng selekano sa dimedi tse di bodileng tsa seka-mmu le mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu mo lefelong.
				Selekano le go anamisiwa ga dimedi tse di bodileng tsa seka-mmu le dithopa tsa dimedi tse di bodileng tsa seka-mmu tsa mefuta ya tsone mo lefatshe le le manyemunyemu.	Dira tlathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompelekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira tlathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Ka nako ya tlathobo ya legaethago thomamisa/fopholetsa gore a mme selekano sa dimedi tse di bodileng tsa seka-mmu se fetogile mo lefelong le dipholologo tsothe le dijalo di nng mo	Dira tlathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompelekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira tlathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Ka nako ya tlathobo ya legaethago thomamisa/fopholetsa gore a mme selekano sa dimedi tse di bodileng tsa seka-mmu se fetogile mo lefelong le dipholologo tsothe le dijalo di nng mo

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
8: MALMANIESLOOP	8_1	Lefatshe le manyemunyemu Vergenoegd Karlo e e kwa tlase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgoisa e e sa lebiswang le mafatshe a a manyemunyemu	Bokanakang		bodileng tsa seka-mmua le selekano sa tsone go tshwanetse ga tlogelwa bonnye go le mo seemong se se sa fetogeng/se se thomameng kgoisa go tshwanetse ga oketsega.	go lone. Fopholetsa selekano sa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmua. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
				Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatsho (leba dikao tsa metsi a a ka fa tlase ga lefatsho).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatsho (leba di-RQO tsa metsi a a ka fa tlase ga lefatsho).	Go dirisiwa dithekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatsho.
				Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatsho (leba dikao tsa metsi a a ka fa tlase ga lefatsho). Dikao tsa kelelo ya bogodimo di thoka go thomamisiwa.	Kelole e e thomameng ya motheo e tshwanetse go somarelwa go netefatsa gore dipholologo tsothe le dijalo tsa lefelo le le rileng di nna di tshela nako e telele. Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatsho (leba di-RQO tsa metsi a a ka fa tlase ga lefatsho).	Go dirisiwa dithekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatsho. Dira Resefo ya lefatsho le le manyemunyemu la lefelo le dipholologo le dijalo di nang mo go lone le go thomamisa dithekago tsa kelelo tsa lefatsho le le manyemunyemu. Dirisa tse go seta mokgwatiriso wa dipalo wa karolwana ya bokanakang jwa metsi ya di-RQO.
				Go dirisiwa dikao tsa noka le metsi a a ka fa tlase ga lefatsho (leba dikao tsa noka le metsi a a ka fa tlase ga lefatsho).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatsho (leba di-RQO tsa noka le metsi a a ka fa tlase ga lefatsho).	Go dirisiwa noka le dithekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatsho. Thabolola tseno go ya ka diphithelelo tsa karolwana ya boleng jwa metsi ya Rasefo ya pele ya metsi.
9: MOLOPO	9_2	Khompelekese ya Lefatshe le le Manyemunyemu la Nokagare ya Molopo	Bokanakang	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatsho le le manyemunyemu)	Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa B/C le fa Sethopa se se kgonagalang sa BAS e le C.	Dira thathoba ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompelekese ya lefatsho le le manyemunyemu. Rurifatsa ka go dira thathoba ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
				Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatsho (leba dikao tsa metsi a a ka fa tlase ga lefatsho).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatsho (leba di-RQO tsa metsi a a ka fa tlase ga lefatsho).	Go dirisiwa dithekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatsho.
				Go dirisiwa dikao tsa metsi a a ka fa tlase ga lefatsho (leba dikao tsa metsi a a ka fa tlase ga lefatsho). Dikao tsa kelelo ya bogodimo di	Kelole e e thomameng ya motheo e tshwanetse go somarelwa go netefatsa gore dipholologo tsothe le dijalo tsa lefelo le le rileng di nna di tshela	Go dirisiwa dithekanyetso tsa dipalo tsa metsi a a ka fa tlase ga lefatsho. Dira Resefo ya pele ya lefatsho le le manyemunyemu le le golaganeng le la Lefatshe le le Manyemunyemu

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatirisano wa dipalo
		Karolo e e kwa tlase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng		tlhoka go thomamisiwa.	nako e telele. Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa metsi a a ka fa tlase ga lefatshe).	la Noka ya Molopo le go thomamisa ditlhokago tsa kelelo ya ikholoji ya lefatshe le le manyemunyemu. Dirisa tse go seta mokgwatirisano wa dipalo wa karolwana ya bokane kang jwa metsi ya di-RQO.
			Boleng	Go dirisiwa dikao tsa noka le metsi a a ka fa tlase ga lefatshe (leba dikao tsa noka le metsi a a ka fa tlase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tlase ga lefatshe (leba di-RQO tsa noka le metsi a a ka fa tlase ga lefatshe).	Go dirisiwa noka le ditekanyetso tsa dipalo tsa metsi a ka fa tlase ga lefatshe (leba Ditekanyetso tsa dipalo tsa dinoka le tsa metsi a a ka fa tlase ga lefatshe). Thabolola tseno go ya ka dipitlhelelo tsa karolwana ya boleng jwa metsi ya Rasefo ya pele ya metsi.
				Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a filweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu – leba mokgwa wa ga Kotze, 2016a le 2016b).	Dimedi tsa lefatshe le le manyemunyemu le thuto ya saentefiki ya lefatshe di tshwanetse go somarelwa go sireletsa popego e e sa lebiswang sengwe se se rileng ya lefelo le diphologolo tsothe le dijalo di nngang mo go lone le mefutafuta ya diphologolo le dijalo mme di tshwanetse go somarelwa go akaretisa ditlhopa tse di kgonegang tsa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu.	Rulaganya kgobokanyo ya data ya GIS e e dirang mmaba wa lefelo le diphologolo tsothe le dijalo tsa lefelo le le rileng di nngang mo go lone pele ga tshimologo ya thokomelo ka go dirisa ditshwantsho tsa sešweng tse di leng teng tse di kgakala le go thomamisa/fopholetsa le go kaya mo mmapeng selekano sa dimedi tse di bodileng tsa seka-mmu le mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu mo lefelong.
			Legaeathago	Selekano le go anamisiwa ga dimedi tse di bodileng tsa seka-mmu le ditlhopa tsa dimedi tse di bodileng tsa seka-mmu tsa mefuta ya tsone mo lefatsheng le le manyemunyemu.	Sethopa sa PES sa Palogare e e filweng palo e e ikaegileng ka lefelo sa C/D le fa Sethopa se se kgonagalang sa BAS e le D. Go anamisiwa ga dimedi tse di bodileng tsa seka-mmu le selekano sa tsone go tshwanetse ga tlogelwa bonnye go le mo seemong se se sa fetogeng/se se thomameng kotsa go tshwanetse ga oketsega.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totlileng nthla e e rileng ya dipharologantsho tsa bothokwa. Ka nako ya thathobo ya legaeathago thomamisa/fopholetsa gore a mme selekano sa dimedi tse di bodileng tsa seka-mmu se fetogile mo lefelong le diphologolo tsothe le dijalo di nngang mo go lone. Fopholetsa selekano sa mefuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mmu. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
	9_3_9_5	Khompekekese le Lefatshe Manyemunyemu Karolo e e kwa tlase ya Noka ya Molopo Karolo e e kwa tlase ya mokgatsha e e lebisitsweng	Legaeathago	tha).	Sethopa sa PES sa magareng se se filweng palo se se ikaegileng ka lefelo sa D.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totlileng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go

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10: LEITLHO LA DINOKANA / LETAMO LA NGOTWANE		kwa sengwe se se rileng				ya go tse 5 le go thathoba le go bega se ka ntlhatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
				Go dirisiwa dikao tsa metsi a a ka fa tiase ga lefatshe (leba dikao tsa metsi a a ka fa tiase ga lefatshe).	Kelelo e e thomameng ya motheo e tshwanetse go somarelwa go netefatsa gore diphologolo tsothe le dijalo tsa lefelo le le rileng di nna di tshela nako e telele.	Go dirisiwa ditekanyetso tsa dipalo tsa metsi a ka fa tiase ga lefatshe.
			Bokanakang	Dikao tsa kelelo ya bogodimo di thoka go thomamisiwa.	Go dirisiwa di-RQO tsa metsi a a ka fa tiase ga lefatshe (leba di-RQO tsa metsi a a ka fa tiase ga lefatshe).	Dira Resefo ya lefatshe le le manyemunyemu la lefelo le diphologolo le dijalo di nna go lone le go thomamisa ditlhoko go tsa kelelo tsa lefatshe le le manyemunyemu. Dirisa tse go seta mokgwatiriso wa dipalo wa karolwana ya bokanakang jwa metsi ya di-RQO.
	10_1	Lefatshe le manyemunyemu Dinokana	Boleng	Go dirisiwa dikao tsa noka le metsi a a ka fa tiase ga lefatshe (leba dikao tsa noka le metsi a a ka fa tiase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tiase ga lefatshe (leba di-RQO tsa noka le metsi a a ka fa tiase ga lefatshe).	Go dirisiwa noka le ditekanyetso tsa dipalo tsa metsi a a ka fa tiase ga lefatshe. Thabolola tseno go ya ka dipithitshelo tsa karolwana ya boleng jwa metsi ya Raseto ya pele ya metsi.
		Karolo e e kwa tiase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebiswang le mafatshe a a manyemunyemu la Hillslope leba tsebe	Legaeathago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu)	Sethopa sa PES sa Palogare e fiweng palo e e ikaegileng ka lefelo sa B/C le fa Sethopa se se kgonagalang sa BAS e le C.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng ntlha e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka ntlhatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
			Lefelo la Tshireletso	Go dirisiwa dikao tsa metsi a a ka fa tiase ga lefatshe (leba dikao tsa metsi a a ka fa tiase ga lefatshe).	Go dirisiwa di-RQO tsa metsi a a ka fa tiase ga lefatshe (leba di-RQO tsa metsi a a ka fa tiase ga lefatshe).	Go dirisiwa ditekanyetso tsa dipalo tsa metsi a a ka fa tiase ga lefatshe (leba ditekanyetso tsa dipalo tsa metsi a a ka fa tiase ga lefatshe).
	10_1	Lefatshe le manyemunyemu Ngotwane	Legaeathago	Sethopa sa PES ya Desekethopo (go ya ka lefelo la seka-palo go ya ka maduo a magareng a a khompekekese ya lefatshe le le manyemunyemu).	Sethopa sa PES sa Palogare e fiweng palo e e ikaegileng ka lefelo sa B/C le fa Sethopa se se kgonagalang sa BAS e le C.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng ntlha e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka ntlhatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatirisano wa dipalo
11b: GROOT MARICO / DINOKANA TSA NAKWANA TSE DI IKAEGILENG KA SETLHA	11_b_2	Karolo e e kwa tlasenyana ya Lefatshe le le manyemunyemu la Noka ya Lenkwane Karolo e e kwa tlase ya mokgatsha e e lebisitsweng kwa molhabeng	Legaeethago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu	Sethopa sa PES sa magareng se se fiweng palo se se ikaegileng ka lefelo sa B.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
12: BIERSPRUIT	12_1	Khompekekese ya Lefatshe le le Manyemunyemu la Kolobeng Karolo e e kwa tlase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebiswang le mafatshe a a manyemunyemu	Bokanakang	Selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo bodutisong.	Mervalela e bothokwa go tiatsa molhaba wa morwalela ka jalo e tlamela kolobetsa e e tlhokegang go tshagetsa dimedi tsa molhaba, segolo bogolo majang a a tlhogang mo metsing fela, metsitla le bojang jwa ditlamo (fobo) tse di ikaegileng ka go nna teng ga morwalela mo ditshekoishelong tsa tsone.	Ka go dirisa se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega ka ga se ka nthatebo ya go thathoba gore a go na le diphetogo dipe tse di ka lekanyediwang mo kamanong fa gare ga selekano sa morwalela le ditragalo tsa go na ga pula.
13: KAROLO E KWA TLASENYANA YA CROCODILE LIMPOPO / MATLABAS	13_3 17_b_1	Karolo e e kwa godingwana ya Noka ya Crocodile Mothaba	Bokanakang	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu	Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa B/C le fa Sethopa se se kgonagalang sa BAS e le C.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
13: KAROLO E KWA TLASENYANA YA CROCODILE LIMPOPO / MATLABAS	13_3 17_b_1	Karolo e e kwa godingwana ya Noka ya Crocodile Mothaba	Bokanakang	Selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo bodutisong.	Mervalela e bothokwa go tiatsa molhaba wa morwalela ka jalo e tlamela kolobetsa e e tlhokegang go tshagetsa dimedi tsa molhaba, segolo bogolo majang a a tlhogang mo metsing fela, metsitla le bojang jwa ditlamo (fobo) tse di ikaegileng ka go nna teng ga morwalela mo ditshekoishelong tsa tsone.	Ka go dirisa se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega ka ga se ka nthatebo ya go thathoba gore a go na le diphetogo dipe tse di ka lekanyediwang mo kamanong fa gare ga selekano sa morwalela le ditragalo tsa go na ga pula.

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatriso wa dipalo
14: TOLWANE / KULWANE / MORETELE / KLIPPOOR	14_1	Mothaba wa Noka ya Apies	Boleng	Go dira dikao tsa noka (leba dikao tsa noka).	Go dira di-RQO tsa Noka (leba di-RQO tsa noka).	Go dira ditekanyetso tsa palo tsa noka (leba ditekanyetso tsa palo tsa noka).
			Legaethago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu)	Sethopa sa PES sa Palogare e e fiweng palo e ikaegileng ka lefelo sa B/C le fa Sethopa se se kgonagalang sa BAS e le C.	Dira tlathobho ya PES ya Desekethopo le go tlhomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira tlathobho ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di tlhophiwe mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathobha le go bega se ka nthatebo ya go tlathobha gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
			Diphologolo, dimela le dithedi tsa lefelo le le rileng	Tshomarelo ya lefelo le le mo dintshing tsa noka le le nang le mefuta e e farologaneng le e e farologaneng ka popego .	Mefutafuta ka kakaretso ya popego le mefuta ya lefelo le le mo dintshing tsa noka e tshwanetse go somarelwa.	Go dirisiwa tlathobho ya ka bonako e e mo lefelong le le kwa ntle tlhokomela popego le mefutafuta ya lefelo le le mo dintshing tsa noka mo mafelong a a tlhophiwe mme o tseye dinepe tsa nthla e e tlhomameng tsa dipharologantsho tsa bothokwa. Bega ka se mo dingwageng dingwe le dingwe tse 3 go ya go tse 5.
			Bokanakang	Selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo bodutisong.	Merwalela e bothokwa go tiatsa mothaba wa morwalela ka jalo e tiamele kolobetso e e thokegang go tshetsetsa dimedi tsa mothaba, segolo bogolo majang a a tlhogang mo metsing fela, metsita le bojang jwa ditlama (fobo) tse di ikaegileng ka go nna teng ga morwalela mo ditshekotshehong tsa tsone.	Ka go dirisa dithwantsho tse di leng teng tse di kgakala, tsholetsa selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo lefatshe le le manyemunyemu. Ka go dirisa se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathobha le go bega ka se ka nthatebo ya go tlathobha gore a go na le diphetogo dipe tse di ka lekanyediwang mo kamanong fa gare ga selekano sa morwalela le ditragalo tsa go na ga pula.
			Boleng	Go dira dikao tsa noka	Go dira di-RQO tsa Noka	Go dira ditekanyetso tsa palo tsa noka.
			Legaethago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu)	Sethopa sa PES sa Palogare e e fiweng palo e ikaegileng ka lefelo sa B/C le fa Sethopa se se kgonagalang sa BAS e le C.	Dira tlathobho ya PES ya Desekethopo le go tlhomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira tlathobho ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di tlhophiwe mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathobha le go bega se ka nthatebo ya go tlathobha gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
			Bokanakang	Selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo bodutisong.	Merwalela e bothokwa go tiatsa mothaba wa morwalela ka jalo e tlamela kolobetso e e thokegang go tshagetsa dimedi tsa a a thogang mo metsing fela, metsitla le bojang jwa dilama (fobo) tse di ikaegileng ka go nna teng ga morwalela mo ditshetkotshehong tsa tsone.	Ka go dirisa ditshwantsho tse di leng teng tse di kgakala, fopholetsa selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo lefatsheng le le manyemunyemu. Ka go dirisa se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega ka se ka nthatebo ya go thathoba gore a go na le diphetogo dipe tse di ka lekanyedwang mo kamanong fa gare ga selekano sa morwalela le ditiragalo tsa go na ga pula.
	14_1 14_2 14_3 14_4	Mothaba wa Noka ya Moretele	Boleng	Go dira dikao tsa noka.		Dira thathobo ya PES ya Desekethopo le go tthomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompelekese ya lefatsheng le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
			Legaethago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatsheng le le manyemunyemu	Sethopa sa PES sa Palogare e fiweng palo e e ikaegileng ka lefelo sa B le fa Sethopa se se kgonagalang sa BAS e le C.	Rurifatsa go tswa mo direkotong tsa thokomelo le dipono tse di rekotilweng go tswa mo dateng e e leng teng ya pegelo ya dinonyane le dijalo. Bega ka se mo dingwageng dingwe le dingwe tse 3 go ya go tse 5.
			Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Dielo tsa pegelo tsa mefuta ya dinonyane tse di ikaegileng ka go nna mo metsing/lefatsheng le le manyemunyemu.	Mefutafuta ka kakaretso le ditlhopa tsa mefuta e e ikaegileng ka metsi/lefatsheng le le manyemunyemu e tshwanetse go somarelwa.	Ka go dirisa ditshwantsho tse di leng teng tse di kgakala, fopholetsa selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo lefatsheng le le manyemunyemu.
			Bokanakang	Selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo bodutisong.	Merwalela e bothokwa go tiatsa mothaba wa morwalela ka jalo e tlamela kolobetso e e thokegang go tshagetsa dimedi tsa a a thogang mo metsing fela, metsitla le bojang jwa dilama (fobo) tse di ikaegileng ka go nna teng ga morwalela mo ditshetkotshehong tsa tsone.	Ka go dirisa se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega ka se ka nthatebo ya go thathoba gore a go na le diphetogo dipe tse di ka lekanyedwang mo kamanong fa gare ga selekano sa morwalela le ditiragalo tsa go na ga pula.
	14_3	Mothaba wa Noka ya Plat	Boleng	Go dira dikao tsa noka.	Go dira di-RQO tsa Noka.	Go dira dithekanyetso tsa palo tsa noka.
			Legaethago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo	Sethopa sa PES sa Palogare e fiweng palo e e ikaegileng ka lefelo sa B/C le fa Sethopa se se kgonagalang sa BAS e le C.	Dira thathobo ya PES ya Desekethopo le go tthomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompelekese ya lefatsheng le le manyemunyemu. Rurifatsa ka go dira thathobo ya

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15: KAROLO E KWA GODIMO YA MOKOLO	14_4	Pane ya Tswaing Crator Diprešene / Pane	Legaetlithago	Dielo tsa pegelo tsa mefuta ya dinonyane tse di ikaegileng ka go nna mo metsing/lefatshe le le manyemunyemu.	Go tshwanetse ga somarelwa mefuta ya dinonyane tse di ikaegileng ka Data e Khibidu tsa mefutafuta ya kakaretso le ditlhopa tsa diphologolo le dijalo tsa mothaba.	ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totlileng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le dipheto go dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
				Sethlhopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu)	Sethlhopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa A le fa Sethlhopa se se kgonagalang sa BAS e le B.	Rurifatsa go tswa mo direkoting tsa tlhokomelo le dipono tse di rekotilweng go tswa mo dateng e e leng teng ya pegelo ya dinonyane le dijalo.
	15_1	Khompelekese ya Lefatshe le Manyemunyemu la Karolo e e kwa godimo ya Noka ya Mokolo Karolo e e kwa tlase ya mokgatsha e e lebisitweng kwa sengwe se se rileng kgotsa e e sa lebiswang le mafatshe a a manyemunyemu a popego ya sedimente a Hillslope	Legaetlithago	Sethlhopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompelekeng ya lefatshe le le manyemunyemu).	Sethlhopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa C le fa Sethlhopa se se kgonagalang sa BAS e le C/D.	Bega ka se mo dingwageng dingwe le dingwe tse 3 go ya go tse 5.
				Dira thathoba ya PES ya Desekethopo le go tlhomamisa maduo a palogare a a ikaegileng ka lefelo go bona lefatshe le le manyemunyemu. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le dipheto go dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.		
15_1	Khompelekese ya Lefatshe le Manyemunyemu la Noka ya Klein Sand Karolo e e kwa tlase ya	Legaetlithago	Sethlhopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la dikarolo tsothe tsa lefatshe le le manyemunyemu mo	Sethlhopa sa PES sa magareng se se se fiweng palo se se ikaegileng ka lefelo sa C.	Dira thathoba ya PES ya Desekethopo le go tlhomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompelekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathoba ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totlileng	
			Dira thathoba ya PES ya Desekethopo le go tlhomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompelekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathoba ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totlileng			

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		mokaisha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebisitsweng le mafatshe a a manyemunyemu a popego ya sedimante a Hillslope	Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	khompelekeseng ya lefatshe le le manyemunyemu).		nitha e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nithatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
				Go nna teng mo go tswelletseng ga Megolodi mo seshopheng sa thano (5x5 disekwere tsa metsotso – karolo ya go mmapa e e dirisiwang mo SABAP2) e e khurumetsang mafatshe a a manyemunyemu).	Go nna teng mo go tswelletseng ga Megolodi go tshwanetse ga somarelwa.	Ka go dirisa data e e dirilweng ke Porojeke 2 ya Atelase ya Dinonyane tsa Aforikaborwa (SABAP2), go tshwanetse ga thomamisiwa go nna teng mo go tswelletseng ga Megolodi mo ditlhopeng tsa thano ka go netefatsa gore go somarelwa seelo sa pegelo se kwa godimonyana ga 5% mo seshopheng se se amegang sa thano (2425_2805).
	15_2	Khompeleke le Lefatshe Manyemunyemu la Noka ya Frikiesloot Karolo e e kwa tlase ya mokaisha e e lebisitsweng kwa sengwe se se rileng	Legaeithago	Sethopa sa PES sa Desekeithopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompelekeseng ya lefatshe le le manyemunyemu).	Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa B/C le fa Sethopa se se kgonagalang sa BAS e le C.	Dira thathoba ya PES ya Desekeithopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompeleke ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathoba ya ka bonako e e dirilwang kwa ntle ya PES ya dipane tse di tlhophiwang mme o tseye dinepe tse di totleng nitha e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nithatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
				Sethopa sa PES sa Desekeithopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompelekeseng ya lefatshe le le manyemunyemu).	Sethopa sa PES sa magareng se se fiweng palo se se ikaegileng ka lefelo sa C.	Dira thathoba ya PES ya Desekeithopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompeleke ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathoba ya ka bonako e e dirilwang kwa ntle ya PES ya dipane tse di tlhophiwang mme o tseye dinepe tse di totleng nitha e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nithatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
	15_2	Khompeleke le Lefatshe Manyemunyemu la Grooiteinspruit Karolo e e kwa tlase ya mokaisha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebisitsweng le mafatshe a a manyemunyemu a popego ya sedimante a Hillslope	Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	Go nna teng mo go tswelletseng ga Megolodi mo seshopheng sa thano (5x5 disekwere tsa metsotso – karolo ya go mmapa e e dirisiwang mo SABAP2) e e khurumetsang mafatshe a a manyemunyemu).	Go nna teng mo go tswelletseng ga Megolodi go tshwanetse ga somarelwa.	Ka go dirisa data e e dirilweng ke Porojeke 2 ya Atelase ya Dinonyane tsa Aforikaborwa (SABAP2), go tshwanetse ga thomamisiwa go nna teng mo go tswelletseng ga Megolodi mo ditlhopeng tsa thano ka go netefatsa gore go somarelwa seelo sa pegelo se kwa godimonyana ga 5% mo seshopheng se se amegang sa thano.
	15_5	Khompeleke ya Lefatshe le le	Legaeithago	Sethopa sa PES sa Desekeithopo (go ya ka maduo a	Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka	Dira thathoba ya PES ya Desekeithopo le go thomamisa maduo a palogare a a ikaegileng ka

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
	15_5	Manyemunyemu la Grootspuit Karolo e e kwa tlase ya mkgatsha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebiswang le mafatshe a a manyemunyemu a popego ya sedimente a Hillslope	Diphologolo, dimela le ditshedhi tsa lefelo le le rileng	magareng a a filweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompelekeseng ya lefatshe le le manyemunyemu).	lefelo sa B/C le fa Sethlhopa se se kgonagalang sa BAS e le C.	lefelo go bona khompeleke ya lefatshe le le manyemunyemu. Rurifatsa ka go dira tlaththobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingweng dingwe le dingwe tse 3 go ya go tse 5 le go tlaththoba le go bega se ka nthlathobo ya go tlaththoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
				Go nna teng mo go tswelletseng ga Megolodi mo sethopheng sa thano (5x5 disekwere tsa metsotso – karolo ya go mmapa e e dirisiwang mo SABAP2) e e khurumetsang mafatshe a a manyemunyemu.	Go nna teng mo go tswelletseng ga Megolodi go tshwanetse ga somarelwa.	Ka go dirisa data e e dirilweng ke Porojeke 2 ya Atelase ya Dinonyane tsa Aforikaborwa (SABAP2), go tshwanetse ga thomamisiwa go nna teng mo go tswelletseng ga Megolodi mo ditlhopeng tsa thano ka go ntefatsa gore go somarelwa seelo sa pegelo se kwa godimonyana ga 5% mo sethopheng se se amegang sa thano (2425_2800).
				Sethlhopa sa PES sa Desekethopo (go ya ka maduo a magareng a a filweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompelekeseng ya lefatshe le le manyemunyemu).	Sethlhopa sa PES sa Palogare e e filweng palo e e ikaegileng ka lefelo sa C/D le fa Sethlhopa se se kgonagalang sa BAS e le D.	Dira tlaththobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompeleke ya lefatshe le le manyemunyemu. Rurifatsa ka go dira tlaththobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingweng dingwe le dingwe tse 3 go ya go tse 5 le go tlaththoba le go bega se ka nthlathobo ya go tlaththoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
				Go nna teng mo go tswelletseng ga Megolodi mo sethopheng sa thano (5x5 disekwere tsa magareng a a filweng palo a a metsotso – karolo ya go mmapa e e dirisiwang mo SABAP2) e e khurumetsang mafatshe a a manyemunyemu.	Go nna teng mo go tswelletseng ga Megolodi go tshwanetse ga somarelwa.	Ka go dirisa data e e dirilweng ke Porojeke 2 ya Atelase ya Dinonyane tsa Aforikaborwa (SABAP2), go tshwanetse ga thomamisiwa go nna teng mo go tswelletseng ga Megolodi mo ditlhopeng tsa thano ka go ntefatsa gore go somarelwa seelo sa pegelo se kwa godimonyana ga 5% mo sethopheng se se amegang sa thano (2430_2800).
	15_5	Khompeleke le Lefatshe le Manyemunyemu la Sandspruit Karolo e e kwa tlase ya mkgatsha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebiswang le mafatshe a a manyemunyemu a popego ya sedimente a Hillslope	Legaeatlhago	Sethlhopa sa PES sa Desekethopo (go ya ka maduo a magareng a a filweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompelekeseng ya lefatshe le le manyemunyemu).	Sethlhopa sa PES sa Palogare e e filweng palo e e ikaegileng ka lefelo sa C/D le fa Sethlhopa se se kgonagalang sa BAS e le D.	Dira tlaththobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompeleke ya lefatshe le le manyemunyemu. Boeletsa mo dingweng dingwe le dingwe tse 3 go ya go tse 5 le go tlaththoba le go bega se ka nthlathobo ya go tlaththoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
				Sethlhopa sa PES sa Desekethopo (go ya ka maduo a magareng a a filweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompelekeseng ya lefatshe le le manyemunyemu).	Sethlhopa sa PES sa Palogare e e filweng palo e e ikaegileng ka lefelo sa C/D le fa Sethlhopa se se kgonagalang sa BAS e le D.	Rurifatsa ka go tsaya tlaththobo ya PES ya ka bonako e e ikaegileng ka lefelo la kwa ntle ya lefatshe le le

Dikarolo tse di Sobokantsweng tsa Tshekatshoko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
16: KAROLO E KWA TLASENYANA YA MOKOLO		Hillslope	Diphologolo, dimela le ditshedl tsa lefelo le le rileng	Go nna teng mo go tswelletseng ga Megolodi mo ditlhopeng tsa tihano (5x5 disekwere tsa metsotso - karolo ya go mmapa e e dirisiwang mo SABAP2) e e khurumetsang mafatshe a a manyemunyemu.	Go nna teng mo go tswelletseng ga Megolodi go tshwanetse ga somarelwa.	manyemunyemu le go tsaya dinepe tsa ntsha e e tlhomameng tsa dipharologantsho tsa bothokwa.
	15_5	Khompekekese le Lefatshe Manyemunyemu la Nokana ya Noka ya Sand	Legaethago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fliweng palo a a ikaegileng ka lefelo la seka-palo a dikarolo tsothe tsa lefatshe le le manyemunyemu mo khompekekese ya lefatshe le manyemunyemu).	Sethopa sa PES sa Palogare e e fliweng palo e e ikaegileng ka lefelo sa C le fa Setlhopa se se kgonagalang sa BAS e le C/D.	Dira thathobo ya PES ya Desekethopo le go tlhomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng ntsha e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingweng dingwe le dingwe tse 3 go ya tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
				Selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo bodutisong.	Mervalela e bothokwa go tiatsa morwalela ka jalo e tiamele kolobetso e e thokegang go tshetsetsa dimedi tsa mothaba, segolo bogolo majang a a tlhogang mo metsing fela, metsitla le bojang jwa ditlama (fobo) tse di ikaegileng ka go nna teng ga morwalela mo ditshetsoishelong tsa tsone.	Ka go dirisa se se fa godimo mo dingweng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega ka go se ka nthatebo ya go thathoba gore a go na le diphetogo dipe tse di ka lekanyediwang mo kamanong fa gare ga selekano sa morwalela le ditragalo tsa go na ga pula.
	16_1 16_5_2	Mothaba wa Noka ya Tambotie	Bokanakang	Dikao tsa noka tsa RU 16_5_2 le dikao tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya mothaba wa morwalela wa RU.	D-RQO tsa noka tsa RU 16_5_2 le dikao tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya mothaba wa morwalela wa RU 16_4 le tsone di ita dira	Ditekanyetso tsa dipalo tsa noka tsa RU 16_5_4 le dikao tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya mothaba wa morwalela wa RU 16_5_4 le tsone di a dira.
			Boleng	Dikao tsa noka tsa RU 16_5_2 le dikao tsa metsi a a ka fa tiase ga lefatshe go ya akhwifa ya alubiale ya mothaba wa morwalela wa RU 16_4 le tsone di a dira.	Di-RQO tsa noka tsa RU 16_5_2 le di-RQO tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya mothaba wa morwalela wa RU 16_4 ke tsone di a dira.	Ditekanyetso tsa dipalo tsa noka tsa RU 16_5_2 le ditekanyetso tsa dipalo tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya mothaba wa morwalela wa RU 16_4 e a dira.
			Legaethago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fliweng palo a a	Sethopa sa PES sa Palogare e e fliweng palo e e ikaegileng ka lefelo sa A/B le fa Setlhopa se se	Dira thathobo ya PES ya Desekethopo le go tlhomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
				ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu	kgonagalang sa BAS e le B/C.	manyemunyemu. Rurifatsa ka go dira tlathhobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathhoba le go bega se ka nthatebo ya go tlathhoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
			Diphologolo, dimela le ditsheddi tsa lefelo le le rileng	Dielo tsa Pegelo (RR) tsa mefuta ya dinonyane tsa Data e Khibidu tse di ikaegileng ka go nna mo metsing/mo lefatsheng le le manyemunyemu . Tshomarelo ya lefelo le le mo dintshing tsa noka le le nang le mefuta e e farologaneng le e e farologaneng ka poego .	Mefutafuta ya kakaretso le ditlhopa tsa mefuta ya dinonyane tsa Data e Khibidu tse di ikaegileng ka mothaba e tshwanetse go somarelwa. Mefutafuta ka kakaretso ya poego le mefuta ya lefelo le le mo dintshing tsa noka e tshwanetse go somarelwa.	Rurifatsa go tswa mo direkotong tsa tlhokomelo le dipono tse di rekotilweng go tswa mo dateng ya seelo sa pegelo sa dinonyane le dijalo. Go dirisiwa tlathhobo ya ka bonako e e mo lefelong le le kwa ntle tlhokomela poego le mefuta tsa lefelo le le mo dintshing tsa noka mo mafelong a a thophilweng mo mothabeng. Tsaya dinepe tsa nthla e e thomameng tsa dipharologantsho tsa bothokwa. Bega ka ga se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5.
			Bokanakang	Go dira dikao tsa noka.	Go dira di-RQO tsa Noka.	Go dira dithekanyetso tsa palo tsa noka.
			Boleng	Go dira dikao tsa noka.	Go dira di-RQO tsa Noka.	Go dira dithekanyetso tsa palo tsa noka.
16_3	Rietspruit Wetland 2 Karolo e e kwa tlase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgotsa e e sa lebiswang le mafatshe a a manyemunyemu		Legaethago	Sethopa sa PES ya Desekeithopo (go ya ka lefelo la seka-palo go ya ka maduo a magareng a khompekekese ya lefatshe le le manyemunyemu).	Sethopa sa PES sa C se se fihleng palo se se ikaegileng ka lefelo.	Dira tlathhobo ya PES ya Desekeithopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira tlathhobo ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathhoba le go bega se ka nthatebo ya go tlathhoba gore a go na le diphetogo dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
16_5_2	Mothaba wa Noka ya Mokolo Methaba, diprešene, dinokana tse e leng metswedi ya metsi ya molapo le mafatshe a a manyemunyemu a a tšimogang metsi		Bokanakang	Selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo bodutisong.	Mervalela e bothokwa go tiatsa mothaba wa morwalela ka jalo e tlamela kolobeto e e tlhokegang go tshagetsa dimedi tsa mothaba, segolo bogolo majang a a tlhokang mo metsing fela, metsila le bojang jwa ditlama (fobo) tse di ikaegileng ka go nna teng ga morwalela mo ditshekoishelong tsa tsone.	Ka go dirisa se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathhoba le go bega ka ga se ka nthatebo ya go tlathhoba gore a go na le diphetogo dipe tse di ka lekanyedwang mo kamanong fa gare ga selekano sa morwalela le

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
					Morwalela ga mmogo le metsi a a mo akhwifeng ya alubiale le yone e tsegetsa dithare tsa mo dintshing tsa metsi mo dintshing tsa molhaba.	ditiagalo tsa go na ga pula.
				Dikao tsa noka tsa RU 16_5_2 le dikao tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya molhaba wa morwalela wa RU.	Di-RQO tsa RU 16_5_2 le dikao tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya molhaba wa morwalela wa RU 16_4 le tsona di a dira.	Ditekanyetso tsa dipalo tsa noka tsa RU 16_5_2 le ditekanyetso tsa dipalo tsa noka go ya ka akhwifa ya alubiale ya molhaba wa morwalela ya RU 16_4 le tsona di a dira.
			Boleng	Dikao tsa noka tsa RU 16_5_2 le dikao tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya molhaba wa morwalela wa RU 16_4 di a dira.	Di-RQO tsa noka tsa RU 16_5_2 le dikao tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya molhaba wa morwalela wa RU 16_4 le tsona di a dira.	Ditekanyetso tsa dipalo tsa noka tsa RU 16_5_2 le dikao tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya molhaba wa morwalela wa RU 16_4 le tsona di a dira.
			Legaeithago	Sethopha sa PES sa Desekethopo (go ya ka madio a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu	Sethopha sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa B/C le fa Sethopha se se kgonagalang sa BAS e le C.	Dira tlathobho ya PES ya Desekethopo le go thomamisa madio a palogare a a ikaegileng ka lefelo go bona khompekekese ya lefatshe le le manyemunyemu. Rurifatsa ka go dira tlathobho ya ka bonako e e direlwang kwa ntle ya PES ya dipane tse di thophilweng mme o tseye dinepe tse di totleng nthla e e rileng ya dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go tlathobha le go bega se ka nthatebo ya go tlathobha gore a go na le diphetogo dipe mo seemong sa dipholologo tsothe le dijalo tsa lefelo le le rileng.
		Diphologolo, dimela le dithedi tsa lefelo le le rileng		Dielo tsa Pegelo (RR) tsa mefuta ya dinonyane tsa Data e Khibidu tse di ikaegileng ka go nna mo metsing/mo lefatshe le le manyemunyemu. Tshomarelo ya lefelo le le mo dintshing tsa noka le le nang le mefuta e e farologaneng le e e farologaneng ka popego.	Go tshwanetse ga somarelwa mefuta ya dinonyane tse di ikaegileng ka Data e Khibidu tsa mefuta ya kakaretso le dithopha tsa dipholologo le dijalo tsa molhaba. Mefutafuta ka kakaretso ya popego le mefuta ya lefelo le le mo dintshing tsa noka e tshwanetse go somarelwa.	Rurifatsa go tswa mo direkotong tsa thokomelo le dipono tse di rekotiwe go tswa mo dateng ya seelo sa pegelo sa dinonyane le dijalo. Go dirisiwa tlathobho ya ka bonako e e mo lefelong le le kwa ntle thokomela popego le mefuta tsa lefelo le le mo dintshing tsa noka mo mafelong a a thophilweng mo molhabeng. Tsaya dinepe tsa nthla e e thomameng tsa dipharologantsho tsa bothokwa. Bega ka ga se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5.
		Lefelo la Tshireletso		Dikao tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya molhaba ya RU 16_4 di a dira.	Di-RQO tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya molhaba ya RU 16_4 di a dira.	Ditekanyetso tsa dipalo tsa metsi a a ka fa tiase ga lefatshe go ya ka akhwifa ya alubiale ya molhaba ya RU 16_4 di a dira.
	17_a_2	Lefatshe manyemunyemu	Bokanakang	Matleputlepu a leruri.	Go tlokega gore go nne manyemunyemu go somarela	Ka nako ya tlathobho ya legaeithago thomamisa gore

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
		Matlabas (Peatland) Karolo e e kwa tlase ya mokgatsha e e lebisitsweng kwa sengwe se se rileng kgotla e e sa lebiswang le mafatshe a a manyemunyemu a popego ya sedimente a Hillslope			dimedl tse di bodileng tsa seka-mm. Dikelelo le tsone di tshwanetse gore di se ke tsa nna matshoseisi mo popego e e sa lebiswang mo go sepe se se rileng/thuto ya saentefiki ya lefatshe le le manyemunyemu. Dimedi tsa lefatshe le le manyemunyemu le thuto ya saentefiki ya lefatshe di tshwanetse go somarelwa go sireletsa popego e e sa lebiswang sengwe se se rileng ya lefelo le diphologolo tsothe le dijalo di nngang mo go lone le mefutafuta ya diphologolo le dijalo mme di tshwanetse go somarelwa go akareisa dithopa tse di kgonegang tsa mofuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mm. Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa A le fa Sethopa se se kgonagalang sa BAS e le A/B.	a lefelo le le rileng le diphologolo tsothe le dijalo di nngang mo go lone le manyemunyemu le gore a go na le dimedi tse di bodileng tsa seka-mm.
			Legaethago	Sethopa sa PES sa Desekethopo (se se ikaegileng ka maduo a seka-dipalo a lefatshe le le manyemunyemu).	Dimedi tsa lefatshe le le manyemunyemu le thuto ya saentefiki ya lefatshe di tshwanetse go somarelwa go sireletsa popego e e sa lebiswang sengwe se se rileng ya lefelo le diphologolo tsothe le dijalo di nngang mo go lone le mefutafuta ya diphologolo le dijalo mme di tshwanetse go somarelwa go akareisa dithopa tse di kgonegang tsa mofuta ya dijalo tse di dirang dimedi tse di bodileng tsa seka-mm. Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa A le fa Sethopa se se kgonagalang sa BAS e le A/B.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona lefatshe le le manyemunyemu. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya lefatshe le le manyemunyemu. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le dipheto go dipe mo seemong sa diphologolo tsothe le dijalo tsa lefelo le le rileng.
			Bokanakang	Selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo bodutisong.	Mervalela e bothokwa go tiatsa mothaba wa morwalela ka jalo e tlamela kolobetso e e tlhokegang go tshagetsa dimedi tsa mothaba, segolo bogolo majang a a tlhokang mo metsing fela, metsita le bojang jwa ditlama (fobo) tse di ikaegileng ka go nna teng ga morwalela mo ditshekoishelong tsa tsone.	Ka go dirisa diithwanisho tse di leng teng tse di kgakala, fopholetsa selekano le bokgapetsakgapetsa jwa morwalela malebana le selekano sa pula mo mothabeng. Ka go dirisa se se fa godimo mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega ka ga se ka nthatebo ya go thathoba gore a go na le dipheto go dipe tse di ka lekanyediwang mo kamanong fa gare ga selekano sa morwalela le ditragalo tsa go na ga pula.
	17_b_1	Mothaba o o kwa tlasenyana wa Noka ya Matlabas	Boleng	Go dira dikao tsa noka.	Go dira di-RQO.	Go dira diithwanisho tsa dipalo tsa noka.
17b: MATLABAS / LIMPOPO			Legaethago	Sethopa sa PES sa Desekethopo (go ya ka maduo a magareng a a fiweng palo a a ikaegileng ka lefelo la seka-palo la lefatshe le le manyemunyemu	Sethopa sa PES sa Palogare e e fiweng palo e e ikaegileng ka lefelo sa A/B le fa Sethopa se se kgonagalang sa BAS e le B.	Dira thathobo ya PES ya Desekethopo le go thomamisa maduo a palogare a a ikaegileng ka lefelo go bona mothaba wa morwalela. Rurifatsa ka go dira thathobo ya ka bonako e e direlwang kwa ntle ya PES ya lefelo le go tsaya dinepe tsa nthla e e thomameng tsa dipharologantsho tsa bothokwa. Boeletsa mo dingwageng dingwe le dingwe tse 3 go ya go tse 5 le go thathoba le go bega se ka nthatebo ya go thathoba gore a go na le dipheto go

Dikarolo tse di Sobokantsweng tsa Tshekatsheko (IUA)	RU	Lefatshe le le manyemunyemu/Setsha	Karolwana e dirilwe setlapele	Sekao	Tlhaloso ya RQO	Mokgwatiriso wa dipalo
						dipe mo seemong sa dipologolo tsotlhe le dijalo tsa lefelo le le rileng.
			Dipholologo, dimela le dishedi tsa lefelo le le rileng	Tshomarelo ya lefelo le le mo dintshing tsa noka le le nang le mefuta e e farologaneng le e e farologaneng ka popego .	Mefutafuta ka kakaretso ya popego le mefuta ya lefelo le le mo dintshing tsa noka e tshwanetse go somarelwa.	Go dirisiwa thathobho ya ka bonako e e mo lefelong le le kwa ntle thokomela popego le mefutafuta ya lefelo le le mo dintshing tsa noka mo mafelong a a thophiwieng mo mothabeng. Tsaya dinepe tsa nthla e e thomameng tsa dipharologantsho tsa bothokwa. Bega ka se mo dingwageng dingwe le dingwe tse 3 go ya go tse 5.

Lenaneo 22: Maikaelelo a Boleng jwa Motswedi tse di totileng Karolo ya motswedi le Kgaolo ya METSI A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshekatsheko1: KAROLWANA E E KWA GODIMO YA CROCODILE / HENNOPS / HARTEBESPOORT

IUA	Karolo ya metsi a a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
IUA1: Karolo e e kk kgogogo ya Crocodile/Hennops/Hartebeespoort	RU - G1	1_1, 1_2, 1_3, 1_8 le 1_9.	Bokanakang	Diphehene tsa kelelo tsa metsi a a ka fa tlase ga lefatshe go ya ka dikoketsego tsa phaesometeriki mo dikarolong tsa akhwifa ga di a tshwanela go busetswa morago go tswa mo dintheng tse di elelang go ya kwa go tsona tsa thago go ya kwa diithololong tsa selegae (Hennops, Rietvlei le Bloubankspruit).	Boteng jwa selekano sa metsi a ka fa tlase ga lefatshe (dilekano tsa phaesometeriki go bontsha kelelo malebana le metswedi ya metsi a a godimo ga lefatshe). Tihokomelo ya selekano sa metsi ya tihathamano ya nako (kgwedi le kgwedi) fa go bapisiwa le difoso le metsi a a tsenang ka nthla ya pula	Dilekano tsa go koloba ga di a tshwanela go fokodiwa gore di nne > dimetara tse 6 fa tlase ga boteng jwa magareng jwa selekano sa metsi jwa ~22 m (1_1 - 1_2), ~20 m (1_3), ~15 m (1_9), le ~34 m (1_8) mo lefelong la akhwifa ya dolomaete. Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 0.75 m/a. Kgaoganyo ya lefelo le go ntshiwang metsi mo go lone: go tshwanetse ga laolwa mo 1000 m ya rediase go tloga mo mathong a a elelang. Go tlosiwa ga ngwaga le ngwaga ga go a tshwanela go nna kwa godimo ga65% ga retshatšhe ya ngwaga le ngwaga ya magareng (k.g.r. SI ya65%);
				Ditloso tse di tsweledisegang kwa Mathong a Groofofontein-Rietvlei le Pretoria. Tshalelo ya metsi a a ka fa tlase ga lefatshe (retshatšhe ya akhwifa le tloso ya metsi a nosetso) e thoka go thathobelwa ditsheko tse di	Palelo ya Dithupane tsa Kgatelelo (Tiriso ya Karolo ya Akhwifa e arogantswe ka Retshatšhe Karolo ya Akhwifa) e e ithagisitsweng jaaka phesente.	

IUA	Karolo ya metsi a a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				kolobileng le tse di omeletseng (go babalela ditekano tsa metsi a ka fa tlase ga lefatshe ka dipaka tsa komelelo).		
				Boleng jwa metsi a akhwifa bo somarelwa go tshagetsa tiamelo ya metsi a fa gae a boleng jo bo siameng.	Dikotla - Naeterite (NO_3^- -N, mg/l). Tihokomelo ya mo dingwageng dingwe le dingwe tse pedi tsa dikarolwana tse dikgolo	Naeterite: Ka fa tlase ga 1.0 mg/l. Tiwaolo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo50 (k.g.r. 0.9 NO_3^- -N mg/l).
					Matswai - Kgonagalo ya moela wa motlakase (TDS), mg/l). Tihokomelo ya mo dingwageng dingwe le dingwe tse pedi tsa dikarolwana tse dikgolo	Kgonagalo ya moela wa motlakase ≤ 30 mS/m; Tiwaolo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (k.g.r. 60 mS/m).
			Boleng	Seemo sa boleng jwa metsi sa lemorago mo akhwifeng ya dolomaete go ya kwa ntheng e sele go tloga mo Tweelopies Spruit le Bloubaan Spruit se tshwanetse go somarelwa. (Ga jaana se amegile jaana EC=220 mS/m, $\text{SO}_4=965$ mg/l, le NO_3^- -N=3.3 mg/l, bolengpalo jwa magareng).	EC, Disalefite le Dinaeterite (tshimologo AMD) mo lefelong la dinokana tse e leng motswedi wa molapo (Tweelopies Spruit) Tihokomelo ya kgwedi le kgwedi ya boleng jwa metsi kwa motswedding (Dikgolo tsa TCTA WTW).	Tweelopiespruit (RU 1_8): Lekanyetsa dikao tsa pakatelele tsa boleng jwa metsi: Selekano sa EC = 220 mS/m; Kokoano ya SO_4 = 200 mg/l; le Kokoano ya NO_3^- -N = 3.3 mg/l.
				Somarela seemo sa boleng jo bo siameng jwa metsi kwa Mathong a Groofontein-Rietvlei le Pretoria a Dolomaete.	EC, pH, SO_4 le NO_3^- -N di tshwanetse go dirisiwa jaaka dikao tsa boleng.	Lekanyetsa paka e telele-Paka e telele ya ngwaga le ngwaga: EC: 25 mS/m-27 mS/m (Phesenthaele ya bo95); SO_4 : <4.5 mg/l-6.4 mg/l SO_4 (Phesenthaele ya bo95); NO_3^- -N: 0.9 mg/l-1.0 mg/l (Phesenthaele ya bo95).
			Lefelo la Tshireletso	Segolo bogolo mafelo akhwifa a dolomaete (Hennops le Bloubaan spruit, matatshe a a manyemunyemu a Rietvlei, Matlho a Groofontein-Rietvlei le Pretoria): Ditlhokego tse di rileng tsa motswedi wa metsi di tshwanetse go nna mabaka a boruni mo WUL.	Lekanyetsa rediase ya tthothetso (r) ka nthla ya ditliso Sekgala go tswa fa nokeng (L) Sekgala go tswa mo lefatsheng le le manyemunyemu (L) Sekgala go tswa mo Leithlong la Dolomaete (L) Tihomamo ya mmu (tekanyetso ya phokotsego ya selekano sa metsi, L,	Phokotsego ya selekano sa metsi e lekanyeditswe go karolo ya karolwana ya khompamente ya dolomaete. Tiro e tshwanetse go nna >500 m. Tiro e tshwanetse go nna >1000 m. Tiro e tshwanetse go nna >1000 m. E lekanyeditswe go 6 m mo karolong ya karolwana ya khompamente, ntle le fa

IUA	Karolo ya metsi a a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
					go sireletsa dikago/ditsela/mafaraathatha)	go lefetswe ka tsela e e totobetseng.

Lenaneo 23: Maikaelelo a Boleng jwa Motswedi tse di totileng Karolo ya motswedi le Kgaolo ya METSI A A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshekatsheko2: MAGALIES

IUA	Karolo ya metsi a a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
LEITLHO LA MALONEY	RU - G2	2_1; 2_3	Bokanakang	Leitlho la Maloney – Kelelo e e tswelang mo tsholong ya leitlho (dinokana tse e leng motswedi wa noka tsa Noka ya Magalies).	Ditekano tsa Metsi a a ka fa tlase ga lefatshe (didiba tse di borilweng) mo bodutisong jwa leitlho, k.g.r. Boteng jwa selekano sa metsi a a ka fa tlase ga lefatshe go tswa mo bogodimong jwa lefatshe;	Ditekano tsa dolomaete tsa kolobeto ya akhwifa ga di a tshwanela go fokodiwa gore di fete 6 m fa tlase ga boteng jwa selekano sa metsi sa magareng jwa ~65 m mo bodutisong jwa Leitlho la Maloney;
					Dibolumu tsa kelelo kwa Leitlho la Maloney (fa go bapisiwa le metsi a a dirwang ke pula, mekgwatlaelo ya selekano sa metsi le ditloso mo bodutisong jwa leitlho (k.g.r. Khomphatente ya Steenkoppies);	Bolumu ya kelelo kwa Leitlho la Maloney ga e a tshwanela go nna kwa tlase ga ~4 Mm ³ /a (k.g.r. selekano sa pele ga 1974 sa paka e telele fa e sale ka 1908 – 1973).
				Tshalelo ya metsi a a ka fa tlase ga lefatshe (retshatshe ya akhwifa le tloso ya metsi a nosetso)	Palelo ya Dithupane tsa Kgatelelo (Tiriso ya Karolo ya Akhwifa / Retshatshe ya Karolo ya Akhwifa) jaaka diphesente. Ke fela 65% ya bolengpalo jwa retshatshe jo bo tshwanetse go tlosiwa.	Kgaoganyo ya lefelo le go ntshiwang metsi mo go lone: e tshwanetse go laolwa ka kelelo mo leitlho mo rediaseng ya 1000 m go tswa mo lefelong la phulu.
BOLENG				Bolengpalo jwa naeterite mo lefelong le go tsholelwang mo go lone le tshwanetse go somarelwa go tshetsetsa badirisi ba fa gae ba metsi.	Dikotla - Naeterite (NO ³ -N, mg/l). Thokomelo ya ngwaga mongwe le mongwe wa bobedi.	Tekanyetso ya bolengpalo jwa SI (<=65%); le Bogodimo jwa kgato ya kelelo mo lefelong la tshololo (leitlho): <0.50 m/a) fa gare ga ditragalo tsa ngwaga le ngwaga tsa retshatshe.
				Sala mo seemo sa Boleng jo bo Siameng jwa Metsi kwa Leitlho la Maloney le karolo e e kwa	Disalefite (tshimologo AMD) mo dinokaneng tse e leng metswedi ya molapo mo Randfontein Spruit le	Naeterite: Ka fa tlase ga 0.5 mg/l. Tiwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthalele ya bo95 (0.5 mg/l) SO ₄ : Ka fa tlase ga 5 mg/l. Tiwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela

IUA	Karolo ya metsi a a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				tlasiyana ya Noka ya Magalies.	Bloubaan Spruit ka kgalagano e e kgonegang go ralala A21D le molelwane wa A21F (daeke e e robegileng ya Tarlton)	Phesenthaele ya bo95 (7.5 mg/l)
				Dilekano tsa boletswai ga di a tshwanela go oketsega. Dikokoano di tshwanetse go somarelwa mo maemong go babalela seemo se se siameng sa boleng jwa metsi.	Boletswai - Kgonagalo ya moela wa motlakase (TDS), mg/l). Tlhokomelo ya mo dingwageng dingwe le dingwe tse pedi tsa dikarolwana tse dikgolo	Kgonagalo ya moela wa motlakase ≤ 26 mS/m; Tiwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (30 mS/m).
					Setlhotheletsi sa Go fela ga Metsi a Molapo	Lekanyetsa go $\leq 5\%$ ya motswedi wa metsi wa lefatshe le le manyemunyemu/metsi a a mo godimo ga lefatshe
				Mafelo a a tswaletsweng a tshireletso a tshwanetse go itsisiwe, k.g.r. dikgala fa gare ga tiro le leitho/phulu.	Sekgala go tswa fa nokeng (L).	Tiro e a laolwa fa e le gore < 500 m go tswa mo tsholong ya kwa metsi a elelang go ya kwa teng
			Lefelo la Tshireletso	Segolo bogolo mo mafelong a akhwifa a dolomaete (Leitho la Maloney le kwa Noka ya Magalies e elelang go ya kwa teng).	Sekgala go tswa mo Leithong la Dolomaete (L).	Tiro e a laolwa fa e le gore < 1000 m go tswa mo tsholong ya kwa metsi a elelang go ya kwa teng.
					Sekgala go tswa mo lefatsheng le le manyemunyemu (L).	Tiro e a laolwa fa e le gore < 1000 m go tswa mo tsholong ya kwa metsi a elelang go ya kwa teng.
					Tihomamo ya Mmu (DCU tekanyetso ya phokotsego ya metsi, L) (Dikago/ditseta/mafaratlhatlha).	E lekanyeditswe go karolo ya karolwana ya khompamente ya 6 m, ntle le fa go letleletswe ka tsela e e totobetse.

Lenaneo 24: Maikalelo a Boleng jwa Motswedi tse di totileng Karolo ya motswedi le Kgaolo ya METSI A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshekatsheko3: CROCODILE / ROODEKOPJES

IUA	Karolo ya metsi a a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
godingwana) Noka ya Crocodile	RU – G3 Karolo ya Alubiale ya Noka	3_1 le 3_2	Bokanakang	Tlhokomelo ya selekano sa metsi sa tlhathamano ya nako (L) go ralala akhwifa ya selegae ya inthakrenyula le e e robegileng go simolodisa kamano ya metsi a noka le a akhwifa; Ditebelelo tsa selekano sa metsi	Selekano sa metsi – Boteng go ya kwa selekanong sa metsi a a ka fa tlase ga lefatshe mo akhwifeng ya alubiale; le keradiante ya selekano sa Gwater mo mokgatsheng wa tshololo.	Ga go a letlelelwa keradiante ya metsi a a ka fa tlase ga lefatshe a poelomorago mo lefelong la 500 m mo karolong e kgolo. Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				(seemo sa selegae sa phaezometeriki).		ga 1.0 m/a.
				Tshalelo ya Metsi (nthakopanyi ya Sw).	Diphopholetso tse di siameng/tse di sa siamang tsa tshalelo ya metsi, Bolumu (Q); Go fela ga kelelo mo merathong ya tekanyetso ya kwa metsi a elelang go ya teng.	Ditathegelo tsa swater mo diteiseneng tsa tekanyetso di tshwanetse go lekana le ditloso tse di lefetsweng go tswa nokeng.
				Seemo sa tshalelo ya metsi a ka fa tlase ga lefatshe mo akhwifeng ya inthakrenyula le e e robegileng	Palelo ya Ditshupane tsa Kgatelelo (Tiriso ya Karolo ya Akhwifa / Retshatshhe ya Karolo ya Akhwifa) jaaka diphesente.	Tekanyetso ya bolengpalo jwa SI (</=65%).
				Bolengpalo jwa naeterite mo lefelong le go tsholelwang mo go lone le tshwanetse go somarelwa go tshagetsa badirisi ba fa gae ba metsi.	Dikotla - Naeterite (NO ³ -N, mg/l). Thokomelo ya ngwaga mongwe le mongwe wa bobedi.	Naeterite: ka fa tlase ga 6.0 mg/l; Tiwaolo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95.
			Boleng	Laola dikelelo tsa pusetso tsa nosetso go tswa mo akhwifeng ya alubiale. Dilekano tsa boletswai ga di a tshwanela go oketsega. Dikokoano di tshwanetse go somarelwa di le mo dilekanong go babalela seemo se se siameng sa metsi.	Matswai - Kgonagalo ya moela wa motlakase Thokomelo ya kgwedi le kgwedi Go thokomela boleng jwa dikelelo tsa pusetso go tswa mo lefelong la alubiale. SAR ya metsi a akhwifa a alubiale	Kgonagalo ya moela wa motlakase ≤75 mS/m; (Phesenthaele ya bo95)
			Lefelo la Tshireletso	Sireletsa akhwifa e Inthakrenyula (alubiale) le e e robegileng go bapa le dikarolwana tse di fa gare ga Noka ya Crocodile le Rose Spruit malebana le Kamano ya Sw-Gw Ditiro tsa tiriso ya lefatshe tse di ka nngang le ditlamorago mo akhwifeng ya inthakrenyula.	Setlholtheletsi sa Go fela ga Metsi a Molapo (laola sekgala fa gare ga motswedi wa metsi a fa godimo ga lefatshe le mafelo a didiba).	Lekanyetsa ditlamorago go nna <5% ya selekano sa tloso se se tshegeditsweng ke metswedi ya metsi a mo godimo ga lefatshe.
					Tlhalosa ditiro tsothe tsa tiriso ya lefatshe mo lefelong la mothaba le akhwifa ya inthakrenyula.	Lekanyetsa ditiro go ya ka boleng jwa metsi jwa malatsi a le 50 (maekherobiale) le malatsi a le 365 (thaooso). Kgaoganyo ya lefelo go direla tshireletso (L).

Lenaneo 25: Maikaelelo a Boleng jwa Motswedi tse di totileng Karolo ya motswedi le Kgaolo ya METSI A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshekatsheko6a: KLEIN MARICO / KROMELLEMBOOG

IUA	Karolo ya metsi a a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
6a: Matlho a Klein Marico	RU – G6	6_1,	Bokanakang	Diphethene tsa kelelo tsa metsi a a ka fa tlase ga lefatshe go ya ka dikoketsego tsa phaesometeriki mo dikarolong tsa akhwifa ga di a tshwanela go busetswa morago go tswa mo dintlheng tse di elelang go ya kwa go tsona tsa tlhago go ya kwa ditshololong tsa selegae (Karolo e e kwa godimo ya Noka ya Klein Marico, Rhenosterfontein Spruit, le Karolo e e kwa tlasenyana ya Malmani Loop).	Ditekano tsa Metsi - Boteng jwa selekano sa metsi a a ka fa tlase ga lefatshe go tswa mo bogodimong jwa lefatshe. Thokomelo ya selekano sa metsi ya tlhathlhamano ya nako (kgwedi le kgwedi) fa go bapisiwa le ditloso le metsi a a tsenang ka ntho ya pula	Mafelo a akhwifa a dolomaete: Dilekano tsa go koloba ga di a tshwanela go fokodiwa gore di nne > dimeitara tse 6 fa tlase ga boteng jwa selekano sa magareng sa metsi sa ~21 m mo lefelong la akhwifa ya dolomaete. Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 0.75 m/a.
				Tshalelo ya metsi a a ka fa tlase ga lefatshe (retshatsho ya akhwifa le tloso ya metsi a nosetso) e tlhoka go tlathobelwa diitshoko tse di kolobileng le tse di omeletseng (go babalela dilekano tsa metsi a a ka fa tlase ga lefatshe ka dipaka tsa komelelo).	Palelo ya Tshupane ya Kgatelelo (Tiriso ya Karolo ya Akhwifa / Retshatsho ya Karolo ya Akhwifa) jaaka diphesente.	Go tloswa ga ngwaga le ngwaga ga go a tshwanela go nna kwa godimo ga 65% ga retshatsho ya ngwaga le ngwaga ya magareng (k.g.r. SI ya 65%);
			Boleng	Bolengpalo jwa naeteraite bo tshwanetse go tshagediwa go tshagetsa badirisi ba fa gae ba metsi (Boleng jo bo Siameng jwa Metsi).	Dikotla - Naeteraite (NO ³ -N, mg/l). Thokomelo ya ngwaga mongwe le mongwe wa bobedi.	Naeteraite: ~0.3 mg/l Mokgwatiwaelo wa pakatelele ga o a tshwanela go atamela Phesenthaele ya bo95 (1.2 mg/l)
				Folaraete – ditlamorago mo badirising – dilekano tse di oketsegileng tsa folaraete	Folaraete (F, mg/l)	Folaraete: ~0.2 mg/l. Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo50 (0.2 mg/l).
Lefelo la Tshireletso			Dilekano tsa boletswai ga di a tshwanela go oketsega. Dikokoano di tshwanetse go somarelwa di le mo dilekanong go babalela seemo se se siameng sa metsi.	Matswai - Kgonaqalo ya moela wa motlakase (TDS), mg/l). Thokomelo ya mo dingwageng dingwe le dingwe tse pedi tsa dikarolwana tse dikgolo Dikokoano tsa Na-Cl tse di tswang mo ditirong tsa go epe mo bodutisong kwa leitho la selegae	Kgonaqalo ya moela wa motlakase: ≤ 50 mS/m Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (60 mS/m)	
			Segolo bogolo mafelo akhwifa a dolomaete (Lefelo la nosetso);	Bodutiso jwa mmapa (dihaketara) jwa Leitho le go akaretsa tekanyetso ya tloso ya tlamelo ya metsi a mantsintsi.	Kganelo ya tloso go ikaegile ka tiriso ya mokgwatebo wa Tshupane ya Kgatelelo.	
			Dithokego tse di riling tsa motswedi			

IUA	Karolo ya metsi a a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				wa metsi di tshwanetse go nna mabaka a boruni mo WUL;	metsi mo karolong ya khompateamente ya dolomaete .	leteletswe ka tsela e e totobetseng)
					Tekanyetso ya lefelo la nosetso mo bogolong jwa lefelo (di-ha).	Lekanyetsa go 9% ya lefelo la molao (di-ha)
					Sekgala go tswa kwa nokeng ya selegae	Tiro e tshwanetse go nna >500 m.
					Sekgala go tswa mo Leitlhong la Dolomaete (L)	Tiro e tshwanetse go nna >1000 m, ntle le fa go leteleletse ka tsela e e totobetseng.
					Tlhomamo ya mmu (Tekanyetso ya phokotsego ya selekano sa metsi ya DCU, L)	E lekanyeditse go karolo ya karolwana ya khompateamente ya 6 m .

Lenaneo 26: Maikalelo a Boleng jwa Motswedi tse di totileng Karolo ya motswedi le Kgaolo ya METSI A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshekatsheko7: KAALOOG-SE-LOOP

IUA	Karolo ya metsi a a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
LEITLHO LA MARICO (ref. Kaaloo Se Matsi a Loop, Rietspruit le Bokkraal)	RU – G6	7_1,	Bokanakang	Tekanyetso ya Kelelo e e Tswelelang kwa matlhong a a tlhophilweng a dolomaete, k.g.r. Bokkraal Nr. 1 ka Noka ya Vanstratensvlei (data ya kelelo fela go simolola ka 1907 go fitlha ka 1947).	Molelwane wa bodutiso jwa leitho (molelwane o o mo borwa ga o bonale sentle);	Mafelo a akhwifa a dolomaete: Dilekano tsa go koloba ga di a tshwanela go fokodiwa gore di nne > dimetara tse 6 fa tlase ga boteng jwa magareng jwa selekano sa metsi jwa ~21 m mo lefelong la bodutiso jwa leitho.
				(Leitho le lengwe la bothokwa le le tsholelelang mo karolong e e kwa godingwana ya Noka ya Groot Marico ke Rietspruit (ka Noka ya Vanstratensvlei));	Ditekano tsa Metsi - Boteng jwa selekano sa metsi a a ka fa tlase ga lefatshe go tswa mo bogodimong jwa lefatshe;	Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 0.75 m/a.
				(Ela thoko, go na le matlho a mangwe a le mmalwa a dolomaete mo lefelong, mme ga go na tshedimosetso e e leng teng, ntle le ya Rhenosterfontein e e welang mo A31D QC).	Tlhokomelo ya selekano sa metsi ya tlhathamano ya nako (kgwedi le kgwedi) fa go bapisiwa le ditloso le metsi a a tsenang ka nthla ya pula; le	Kgaoganyo ya lefelo le go ntshiwang metsi mo go lone: go tshwanetse ga laolwa le kelelo ya leitho mo rediaseng ya 1000 m go tswa kwa mafelong a diphulu a Leitho la Bokkraal le Rietspruit.

IUA	Karolo ya metsi a a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				Tshalelo ya metsi a a ka fa tlase ga lefatshe (retshatsho ya akhwifa le tloso ya metsi a nosetso) e thoka go tshatsho ya diitsho tse di kolobileng le tse di omeletseng (go babalela dilekano tsa metsi a a ka fa tlase ga lefatshe ka dipaka tsa komelelo).	Palelo ya Ditshupane tsa Kgatelelo (Tiriso ya Karolo ya Akhwifa / Retshatsho ya Karolo ya Akhwifa) jaaka diphesente.	Go tloswa ga ngwaga le ngwaga ga go a tshwanela go nna kwa godimo ga 65% ga retshatsho ya ngwaga le ngwaga ya magareng (k.g.r. SI ya 65%);
				Bolengpalo jwa naeterite mo lefelong le go tsholelwang mo go lone le tshwanetse go somarelwa go tshetsho badirisi ba fa gae ba metsi.	Dikotla - Naeterite ($\text{NO}^3\text{-N}$, mg/l). Tlhokomelo ya ngwaga mongwe le mongwe wa bobedi.	Naeterite: ≤ 0.5 mg/l; Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo5 (0.5 mg/l)
			Boleng	Foloraete – ditlamorago mo badirising – dilekano tse di oketsegileng tsa foloraete	Foloraete (F, mg/l) Tlhokomelo ya ngwaga mongwe le mongwe wa bobedi.	Foloraete: ~ 0.1 mg/l Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (1.0 mg/l).
				Dilekano tsa boletswai ga di a tshwanela go oketsega. Dikokoano di tshwanetse go somarelwa mo maemong go babalela seemo se se siameng sa boleng jwa metsi.	Matswai - Kgonagalo ya moela wa motlakase (TDS), mg/l). Tlhokomelo ya mo dingwageng dingwe le dingwe tse pedi tsa dikarolwana tse dikgolo	Kgonagalo ya moela wa motlakase: ≤ 50 mS/m Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (55 mS/m)
				Mafelo a a tswaletsweng a tshireletso a tshwanetse go tsisiwe, k.g.r. dikgala fa gare ga tiro le leitho/phulu. Segolo bogolo mo mafelong a akhwifa a dolomaete (Leitho la Marico le kwa metsi a Noka ya Klein Marico a elelang go ya kwa teng).	Bodutiso jwa mmapa (dihaketara) jwa leitho le go akaretse tekanyetso ya tloso ya tlamelo ya metsi a mantsho. Tekanyetso ya lefelo la nosetso mo bogolong jwa lefelo (di-ha).	Kganelo ya tloso go ikaegile ka tiriso ya mokgwatebo wa Tshupane ya Kgatelelo. Lekanyetso go 9% ya lefelo la molao (di-ha)
			Lefelo la Tshireletso		Sekgala go tswa kwa nokeng ya selegae	Tiro e a laolwa fa e le gore <500 m go tswa mo tsholong ya kwa metsi a elelang go ya kwa teng
					Sekgala go tswa mo leithong la Dolomaete (L)	Tiro e a laolwa fa e le gore <1000 m go tswa mo tsholong ya kwa metsi a elelang go ya kwa teng.
					Sekgala go tswa mo lefatsheng le le manyemunyemu (L).	Tiro e a laolwa fa e le gore <1000 m go tswa mo tsholong ya kwa metsi a elelang go ya kwa teng.
					Tekanyetso ya phokotsego ya selekano sa metsi mo karolong ya khompamente ya dolomaete.	E lekanyeditswe go karolo ya karolwana ya khompamente ya 6 m.

Lenaneo 27: Maikaelelo a Boleng jwa Motswedi tse di totileng Karolo ya motswedi le Kgaolo ya METSI A A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshekatsheko8: MALMANIESLOOP

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
8: Malmannie Se Loop	RU – G8	8_1	Bokanakang	Diphethene tsa kelelo tsa metsi a a ka fa tlase ga lefatshe go ya ka dikoketsego tsa phaesometeriki mo dikarolong tsa akhwifa ga di a tshwanela go buetswa morago go tswa mo dintlheng tse di elelang go ya kwa go tsona tsa tlhago go ya kwa ditshololong tsa selegae (Leitho la Malmannie Se Loop).	Ditekano tsa Metsi - Boteng jwa selekano sa metsi a a ka fa tlase ga lefatshe go tswa mo bogodimong jwa lefatshe.	Mafelo a akhwifa a dolomaete: Dilekano tsa go koloba ga di a tshwanela go fokodiwa gore di nne > dimetara tse 6 fa tlase ga boteng jwa magareng jwa selekano sa metsi jwa ~21 m mo lefelong la akhwifa ya dolomaete.
				Mafelo a metsi a tswang mo go one (k.g.r. Leitho la Malmannie, Malmannie-Noupoort, Leitho la Doornplaas, Leitho la Rietpoort le Leitho la Doornfontein) a tshwanetse go sireletswa kgathano le go fela goithelele ga selekano sa metsi).	Tlhokomelo ya selekano sa metsi ya tlhathamano ya nako (kgwedi le kgwedi) fa go bapisiwa le ditloso le metsi a a tsenang ka ntha ya pula	Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 0.75 m/a.
				Tshalelo ya metsi a a ka fa tlase ga lefatshe (retshatšhe ya akhwifa le tloso ya metsi a nosetso) e tlhoka go tlhathobelwa ditshoko tse di kolobileng le tse di omeletseng (go babalela dilekano tsa metsi a a ka fa tlase ga lefatshe ka dipaka tsa komelelo).	Tloso - Bolumu (Q). Tlhathamano ya nako ya selekano sa tloso-pula-metsi ya akhwifa.	Kgaoganyo ya lefelo le go ntshiwang metsi mo go lone: go tshwanetse ga laolwa (1000 m ya diphulu tsa leitho).
			Boleng	Disejule tse di maleba tsa nosetso di tlhoka go dirwa le go dirisiwa ka dinako tsotho (Kobamelo ya 100%).	Tloso - Bolumu (Q). Tlhathamano ya nako ya selekano sa tloso-pula-metsi ya akhwifa.	Go tloswa ga ngwaga le ngwaga ga go a tshwanela go nna kwa godimo ga65% ga retshatšhe ya ngwaga le ngwaga ya magareng (k.g.r. SI ya65%);
				Seemo sa Tshalelo ya metsi	Tshalelo ya metsi a a ka fa tlase ga lefatshe ya ngwaga le ngwaga (retshatšhe ya akhwifa le tloso ya metsi a nosetso) e tshwanetse go nna ya ditshoko tse di kolobileng le tse di omileng.	
				Bolengpalo jwa naeteraete mo lefelong la retshatšhe bo tshwanetse go somarelwa go tshagetsa badirisi ba metsi ba fa gae (Phesenthaele ya bo95 = 18 mg/l).	Palelo ya Ditshupane tsa Kgatelelo (Tiriso ya Karolo ya Akhwifa / Retshatšhe ya Karolo ya Akhwifa) jaaka diphesente.	Naeteraete: Ka fa tlase 1.0 mg/l;
				Dilekano tsa boletswai ga di a tshwanela go oketsega.	Dikofa - Naeteraete (NO ³ -N, mg/l).	Thwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo5 (k.g.r. 3.5 mg/l)
				Dikokoano di tshwanetse go somarelwa mo dilekanong go netefatsa go nna teng	Tlhokomelo ya kgwedi le kgwedi mo tshololong	Kgonagalo ya moela wa motlakase: ≤ 50 mS/m;
						Thwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				ga seemo sa boleng jo bo itekanetseng jwa metsi.		Phesenthaele ya bo95 (k.g.r. 85 mS/m)
				Foloraete – ditlamorago mo badirising – dilekano tse di oketsegileng tsa foloraete	Foloraete (F, mg/l) Thokomelo ya ngwaga mongwe le mongwe wa bobedi.	Foloraete ~0.1 mg/l; Tiwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (1.0 mg/l).
				Segolo bogolo mafelo akhwifa a dolomaete (k.g.r. Leitho la Malmani, Malmani-Noupoort, Leitho la Doornplaat, Leitho la Rietpoort le Leitho la Doornfontein);	Tekanyetso ya phokotsego ya selekano sa metsi mo karolong ya khompamente ya dolomaete.	Makisimamo wa 6 m (ntle le fa go letleletswe ka tsela e e totobetseng)
			Lefelo la Tshireletso	Ditlhokego tse di rileng tsa motswedi wa metsi di tshwanetse go nna mabaka a boruni mo WUL;	Sethothaetsi sa Go fela ga Metsi a Molapo	Lekanyetsa go </=5% ya motswedi wa metsi wa lefatshe le le manyemunyemu/metsi a mo godimo ga lefatshe
					Tekanyetso ya lefelo la nosetso mo bogolong jwa lefelo (di-ha).	Lekanyetsa go 9% ya lefelo la molao (di-ha)
					Sekgala go tswa mo Leithong la Dolomaete le lefelo le le manyemunyemu (L)	E tshwanetse go nna >1000 m, ntle le fa go letleletswe ka tsela e e totobetseng ditlamelo tsa metsi a mantshi thata.

Lenaneo 28: Maikaelelo a Boleng jwa Motswedi tse di totileng Karolo ya motswedi le Kgaolo ya METSI A A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshetshetso: MOLOPO

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
9: Karolo e e kwa godimo ya Molapo	RU – G9	9 ₁ le 9 ₂	Bokanakang	Diphethene tsa kelelo tsa metsi a a ka fa tlase ga lefatshe go ya ka dikoketsego tsa phaesometeriki mo dikarolong tsa akhwifa ga di a tshwanela go busetswa morago go tswa mo dintheng tse di eilelang go kwa go tsona tsa thago go ya kwa ditsholong tsa selegae	Ditekano tsa Metsi - Boteng jwa selekano sa metsi a a ka fa tlase ga lefatshe go tswa mo bogodimong jwa lefatshe.	Mafelo a akhwifa a dolomaete: Dilekano tsa go koloba ga di a tshwanela go fokodiwa gore di nne > dimetara tse 6 fa tlase ga boteng jwa magareng jwa selekano sa metsi jwa ~19 m mo lefelong la metsi a dolomaete.
				Mafelo a metsi a tswang mo go one (k.g.r. Leitho la Malapo) a tshwanetse go sireletswa kgathano le go fela go thelele ga selekano sa metsi (k.g.r. mo lebakeng la Leitho la Grootfontein le	Thokomelo ya selekano sa metsi ya thathamano ya nako (kgwedi le kgwedi) fa go bapisiwa le ditloso le metsi a a tsenang ka ntsha ya pula Tloso ya metsi a a mo tlase ga lefatshe mo mafelong a a laolelsweng go tswa mo nokeng/lefatshe le le manyemunyemu/leitho-motswedi)	Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 0.75 m/a.
						Kgaoganyo ya lefelo le go ntshiwang metsi mo go lone: go tshwanetse ga laolwa (1000 m ya diakhwifa tsa kalaka.

IUA	Karolo ya metsi a ka fa tiase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				Leitlho la Bodibe.		
				Tshalelo ya metsi a ka fa tiase ga lefatshe (retshatshhe ya akhwifa le tloso ya metsi a nosetso) e tlhoka go tlathobelwa ditsheko tse di kolobileng le tse di omeletseng (go babalela dilekano tsa metsi a ka fa tiase ga lefatshe ka dipaka tsa komelelo). Disejule tse di maleba tsa nosetso di tlhoka go dirwa le go dirisiwa ka dinako tsothe (100% ya kobamelo ya molawana).	Tloso ya Metsi - Bolumu (Q). Tlaththamano ya nako ya selekano sa tloso-pula-metsi ya akhwifa. Tshalelo ya metsi a ka fa tiase ga lefatshe ya ngwaga le ngwaga (retshatshhe ya akhwifa le tloso ya metsi a nosetso) e tshwanetse go nna ya ditsheko tse di kolobileng le tse di omileng.	Go tloswa ga ngwaga le ngwaga ga go a tshwanela go nna kwa godimo ga65% ga retshatshhe ya ngwaga le ngwaga ya magareng (k.g.r. Si ya65%);
				Seemo sa Tshalelo ya metsi	Palelo ya Dithupane tsa Kgatelelo (Tiriso ya Karolo ya Akhwifa / Retshatshhe ya Karolo ya Akhwifa) jaaka diphesente.	
				Bolengpalo jwa naeterite mo lefelong le go tsholelwang mo go lone le tshwanetse go somarelwa go tshagetsa badirisi ba fa gae ba metsi. (Metswedi ya temothuo ya naeterite)	Dikotla - Naeterite ($\text{NO}^3\text{-N}$, mg/l). Tlhokomelo ya ngwaga mongwe le mongwe wa bobedi Tlhokomelo ya kgwedi le kgwedi kwa diteiseneng tsa tekanyetso tsa DWS.	Naeterite: Ka fa tiase ga 1.0 mg/l; Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (3.0 mg/l).
			Boleng	Dilekano tsa boletswai ga di a tshwanela go oketsega. Dikokoano di tshwanetse go somarelwa mo dilekanong go netafatsa go nna teng ga seemo sa boleng jo bo itekanetseng jwa metsi. Dikgotledi tsa madirelo/temothuo tsa Matlho a Molopo, Grootfontein, Itsoseng (Bodibe).	Matswai - Kgonagalo ya moela wa motlakase. Tlhokomelo ya kgwedi le kgwedi kwa diteiseneng tsa tekanyetso tsa DWS.	Kgonagalo ya moela wa motlakase: $\leq 50 \text{ mS/m}$; Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (80 mS/m).
					Dikokoano tsa Salefeite (SO_4) Tlhokomelo ya kgwedi le kgwedi ya boleng jwa metsi kwa mafelong a motswedi (isa matlho le mafelo a didiba)	SO_4 : Ka fa tiase ga 5.0 mg/l; Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (30 mg/l).
			Lefelo la Tshireletso	Tshireletso ya Diakhwifa tse di inthakrenyula le tse di Robegileng: Sireletsa dikarolo tse di kwa	Sekgala go tswa mo mokgatsheng wa tshololo: go ikaegile ka nako ya 50 Nako ya mosepele wa mo gare ga	<1000 m Kgaoganyo ya lefelo go direla tshireletso (diakhwifa tsa DLMT) <500 m Kgaoganyo ya lefelo go direla

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				tlasenana tsa Madibe, Polfontein Spruit le Noka ya Noka ya Molopo kgatshanong le kgotlele go ya intaseteri/temothuo/maekherobiale.	Ietsatsi (maekherobiale) le paka ya tihaooso ya malatsi a le 365 (dikarolwana tse di sa boleng)	tshireletso (diakhwifa tsa letlapa le le popota).
					Sekgala go tswa mo lefelong le metsi a tswang mo go lone la matho a dolomaete: go ya ka nako ya mosepele ya malatsi a le 50 (maekherobiale) le paka ya tihaooso ya malatsi a le 365 (dikarolwana tse di sa boleng)	<1000 m Kgaoganyo ya lefelo go direla tshireletso (diakhwifa tsa letlapa le le popota)

Lenaneo 29: Maikaelelo a Boleng jwa Motswedi tse di totileng Karolo ya motswedi le Kgaolo ya METSI A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshekatsheko 10: LEITLHO LA DINOKANA / LETAMO LA NGOTWANE

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
IUA10: Leitlho la Dinokana	RU – G10 10_1	Bokanakang		Maefelo a metsi a tswang mo go one (k.g.r. Matho/motswedi) a tshwanetse go sireletswa kgatshanong le go fela gothelele ga selekano sa metsi	Dilekano tsa metsi: Tlhokomelo ya selekano sa metsi ya tihathamano ya nako (kgwedi le kgwedi) fa go bapisiwa le go ntshiwa le go na ga pula.	Maefelo a akhwifa a dolomaete: Dilekano tsa go koloba ga di a tshwanela go fokodiwa gore di nne > dimetara tse 6 fa tlase ga boteng jwa magareng jwa selekano sa metsi jwa ~24 m mo lefelong la akhwifa ya dolomaete.
						Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 0.75 m/a.
						Kgaoganyo ya lefelo le go ntshiwang metsi mo go lone: go tshwanetse ga laolwa (rediasa ya 1000 m go tswa mo phulung ya leitho)
				Seemo sa Tshalelo ya metsi (Taolo ya tiriso ya metsi mo lefelong le metsi a tswang mo go lone)	Tekanyetso ya kelelo mo metsi a tswang teng mo leithong. Palelo ya Ditshupane tsa Kgatelelo (Tiriso ya Karolo ya Akhwifa / Retshatshhe ya Karolo ya Akhwifa) jaaka diphesente.	Go tloswa ga ngwaga le ngwaga ga go a tshwanela go nna kwa godimo ga 65% ga retshatshhe ya ngwaga le ngwaga ya magareng (k.g.r. SI ya 65%).
			Boleng	Bolengpalo jwa naetereite mo lefelong	Dikotla - Naetereite (NO ³ -N, mg/l).	Naetereite: ~1.0 mg/l;

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				le go tsholelwang mo go lone le tshwanetse go somarelwa go tshagetsa badirisi ba fa gae ba metsi. Folaraete – ditlamorago mo badirising – dilekano tse di oketsegileng tsa folaraete	Tlhokomelo ya ngwaga mongwe le mongwe wa bobedi.	Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (1.1 mg/l).
				Folaraete – ditlamorago mo badirising – dilekano tse di oketsegileng tsa folaraete	Folaraete (F, mg/l) Tlhokomelo ya ngwaga mongwe le mongwe wa bobedi.	Folaraete ~0.15 mg/l; Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (0.5 mg/l).
				Matswai: Dikokoano di tshwanetse go somarelwa mo dilekanong go netefatsa go nna teng ga seemo sa boleng jo bo itekanetseng jwa metsi.	Kokoano ya boletswai ya metsi a a mo molapong e tshwanetse go somarelwa go sireletsa seemo sa ikholoji le boitekanelo jwa diphologolo tsothe le dijalo tsa metsi - Kgonagalo ya moela wa motlakase Tlhokomelo ya kgwedi le kgwedi kwa lefelong le metsing a tswang mo go lone.	Kgonagalo ya moela wa motlakase: ≤ 45 mS/m; Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo95 (55 mS/m).
				Segolo bogolo mafelo akhwifa a dolomaete ; Dithokego tse di rileng tsa motswedi wa metsi di tshwanetse go nna mabaka a boruni mo WUL.	Bodutiso jwa mmapa (dihaketara) jwa leitho le go akaretisa tekanyetso ya tloso ya tlamelo ya metsi a mantsi. Tekanyetso ya kgogelomorago ya selekano sa metsi mo karolong ya sethopa	Kganalo ya tloso go ikaegile ka tiriso ya mokgwatebo wa Tshupane ya Kgatelelo. Makismamo ya 6 m (ntle le fa go letleletswe ka tsela e e totobetseng).
			Lefelo la Tshireletso	Mafelo a tlaletso a didiba mo lefelong la bodutiso la Matlho a DMLT.	Tekanyetso ya lefelo la nosetso mo bogolong jwa lefelo (di-ha). Sekgala go tswa mo Leithong la Dolomaete (L).	Tekanyetso ya 9% ya lefelo la molao (di-ha). Go tshwanetse go nna >1000 m, ntle le fa go letleletswe ka tsela e e totobetseng tsa ditlamelo tsa metsi a mantsi thata.

Lenaneo 30: Maikaelelo a Boleng jwa Motswedi tse di totileng Karolo ya motswedi le Kgaolo ya METSI A A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshekatsheko 13: KAROLO E KWA TLASE YA CROCODILE

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
13: Karolo e e Noka ya Phelele	RU – G13 Karolo ya Alubiale ya Noka	13_1 le 13_3	Bokanakang	Lekanyetsa go tshwanwa ga metsi a a mo godimo fa o ntsha metsi ka didiba tse di borilweng mo diakhwifeng tsa motlhaba wa morwalela tsa alubiale (ga go a tshwanela go nna le tekanyetso ya sekgala).	Keradiante ya selekano sa metsi a a ka fa tlase ga lefatshe go ralala akhwifa e e inthakrenyula; le Mekgwatlwaelo ya selekano sa metsi a a ka fa tlase ga lefatshe mo diakhwifeng tsa inthakrenyula.	Keradiante ya kwa morago ya metsi a a ka fa tlase ga lefatshe (noka e e yang kwa lebaleng la mo sedibeng se se mo lefelong la 500 m mo karolong ya bothokwa ga e a letlelelwa. Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
						1.0 m/a.
					Tekanyetso ya molapo/noka: Diphopholetso tse di siameng/sa siamang tsa metsi: Bolumu (Q); Go fela ga kelelo mo merathong ya tekanyetso ya kwa metsi a elelang go ya teng.	Ditathhegelo tsa metsi a bogodimo di tshwanetse go lekana le ditloso tse di letleletsweng mo nokeng (go akaretisa ditathhegelo tsa mowafalo le pula).
				Seemo sa tshalelo ya metsi a ka fa tlase ga lefatshe mo akhwifeng ya inthakrenyula le e e robegileng	Palelo ya Ditshupane tsa Kgatelelo (Tiriso ya Karolo ya Akhwifa / Retshatshe ya Karolo ya Akhwifa) jaaka diphesente.	Go tloswa ga ngwaga le ngwaga ga go a tshwanela go nna kwa godimo ga65% ga retshatshe ya ngwaga le ngwaga ya magareng (k.g.r. SI ya65%).
				Bolengpalo jwa naeteireite mo lefelong le go tsholelwang mo go lone le tshwanetse go somarelwa go tshegetsa badirisi ba fa gae ba metsi.	Dikotla - Naeteireite (NO ³ -N, mg/l). Thokomelo ya ngwaga mongwe le mongwe wa bobedi.	Naeteireite: ≤ 1.0 mg/l (Phesenthaele ya bo95)
				Matswai a a thaologileng mo motsweding wa metsi a a mo tlase ga lefatshe: Laola boleng jwa kelelo ya poelomoro ya ya nosetso go tswa mo akhwifeng ya inthakrenyula. Dikokoano di tshwanetse go somarelwa di le mo dilekanong go babalela seemo se se siameng – seemo sa boleng jo bo siameng jwa metsi.	Kokoano ya boletswai ya metsi a a mo molapong e tshwanetse go somarelwa go sireletsa seemo sa ikholoji le boitekanelo jwa dipholologo tsothe le dijalo tsa metsi - Kgonagalo ya moela wa motlakase Thokomelo ya Beke le beke/Kgwedi le kgwedi. Boleng jwa akhwifa ya alubiale. SAR ya metsi a akhwifa a alubiale	Kgonagalo ya moela wa motlakase: ≤ 85 mS/m (Phesenthaele ya bo95) SAR: Mo tekanyetsong e e maleba ya metsi a nosetso.
				Sekgala se se kwa tlase go tswa mo motsweding wa metsi a a mo godimo ga lefatshe moo go ka ntshiwang metsi a a ka fa tlase ga lefatshe (go ikagile ka dipharologantsho tsa haeteroloji tsa akhwifa ya inthakrenyula.	Feketara ya Go fela ga metsi a Molapo.	Lekanyetsa selekano sa tloso ya metsi a sediba se se borilweng/sediba gore se nne ka fa tlase ga 5% ya kelelo mo motsweding ya metsi a mo godimo ga lefatshe (mo lefelong le le rileng la tloso ya metsi).
				Lefelo la Tshireletso		

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				Ditiro tsa tiriso ya lefatshe tse di ka n nang le ditlamorago mo akhwifeng ya alubiale. Totobatsa kgaolo ya tshireletso (k.g.r. sekgala go tswa mo metsweding ya metsi e e mo bogodimong) mo akhwifeng ya alubiale malebana le phudugo ya kgotilego ya temothuo/madirelo le maekherobiale.	Tekanyetso ya boleng jwa metsi (khudugelo mo motsweding wa metsi a a fa godimo); Tekanyetso ya bokanakang jwa metsi (ditlamorago mo metsing a a mo godimo ga lefatshe fa a ntshiwa mo akhwifeng sa alubiale.	Tekanyetso ya boleng jwa metsi (1): Kgaoganyo ya malatsi a le 50 (maekherobiale), sekgala fa gare ga tiro le motswedi wa metsi a a fa godimo ga lefatshe. Tekanyetso ya bokanakang jwa metsi (2): Kgaoganyo ya malatsi a le 365 (tlaoloso) ya tshireletso ya boleng jwa metsi (L).

Lenaneo 31: Maikaelelo a Boleng jwa Motswedi tse di totileng Karolo ya Motswedi le Kgaolo ya METSI A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshekatsheko16: KAROLO E KWA TLASENYANA YA MOKOLO

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikaelelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
16: Sandloop & Mokolo	RU – G16_4	16_4	Bokanakang	Go ya tlase ga dilekano tsa metsi tsa akhwifa (dilekano tsa metsi). Seemo sa metsi a a setseng a a ka fa tlase ga lefatshe (Metsi a a tsenang fa go bapisiwa le a a tswang).	Selekano sa metsi sa akhwifa sa tthatlhamano ya nako mo Lefelotshupetsong le le gaufi le le emelang lefelo la lemorago mo tikologong ya thabololo e e rileng, k.g.r. lefelo la moepo, lefelo la madirelo le thabololo ya temothuo). Tshupane ya Kgatelelo (Tiriso ya Karolo ya Akhwifa / Retshatshe ya Karolo ya Akhwifa), kwa ntle ga lefelo la Tiro	Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 0.5 m/a mo lefelotshupetsong la tiro e e rileng. Go tloswa ga ngwaga le ngwaga ga go a tshwanela go nna kwa godimo ga65% ga retshatshe ya ngwaga le ngwaga ya magareng (k.g.r. SI ya 65%) mo Lefelotshupetsong. Selekano sa pH fa gare ga 6.1 le 8.2 mo Lefelotshupetsong. Naetereite: ≤35 mg/l mo Lefelotshupetsong Tlwaeto ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthalele ya bo50 + 10% (~40 mS/m) – Go ikaegile ka dithutopatlisiso tsa selegae.
			Boleng (Ela thoko gore bolengpalo jwa lemorago le le tsholeditsweng tsa dikarolwana tsa bothokwa tsa haeterokhemikale e ka nna pono ya tholego mme di tshwanetse go	Boesiti jwa metsi a a ka fa tlase ga lefatshe malebana le kgonagalo ya tshololo ya matlapa a esiti (mo mafelong a a kwa godimo a meepo ya malathra le di-UCG) Dikotla tse di mo metsing a a mo tlase ga lewatle tse di nang le ditlamorago mo boitekanelong jwa modirisi.	selekano sa pH sa metsi a a ka fa tlase ga lefatshe mo Lefelotshupetsong le le rileng. Kokoano ya naetereite (NO3-N) mo metsing a a ka fa tlase ga lefatshe mo lefelotshupetsong le le thalositweng (T3)	

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karoliwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
			amogelwa, k.g.r. EC, NO ₃ -N, Cl, SO ₄ le F).	Matswai a a thaologileng mo metsweding ya metsi a a mo tlase ga lefatshe - Go thokomela Medupi/ Grootegeluk le dineteweke tse dingwe tsa tlhokomelo tse di amanang le ditlamorago.	Kokoano ya boletswai ya metsi a a mo molapong e tshwanetse go somarelwa go sireletsa seemo sa ikholoji le boitekanelo jwa dipholologo tsothe le dijalo tsa metsi: Kgongalo ya moela wa moliakase (EC) ya metsi a a ka fa tlase ga lefatshe mo Lefelotshupetsong le le rileng (T3).	Kgongalo ya moela wa moliakase ≤200 mS/m mo Lefelotshupetsong. Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo50 + 10% (~220 mS/m) – Go ikaegile ka dithutopatlisiso tsa selegae.
			Karoliwana e kgolo ya khemikale e e kailwang e e thaologileng mo metsing a a ka fa tlase ga lefatshe.	Karoliwana e kgolo ya khemikale e e kailwang e e thaologileng mo metsing a a ka fa tlase ga lefatshe.	Kokoano ya Tloraete (Cl) mo metsing a a ka fa tlase ga lefatshe mo lefelotshupetsong le le thalositweng (T3).	Tloraete: ≤300 mg/l mo Lefelotshupetsong. Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo50 + 10% (~330mS/m) – Go ikaegile ka dithutopatlisiso tsa selegae.
			Metso a esiti a moepo (kgotsa ARD) le go go tshela ka iketlo mo metsweding ya metsi e e fa godimo ga lefatshe.	Metso a esiti a moepo (kgotsa ARD) le go go tshela ka iketlo mo metsweding ya metsi e e fa godimo ga lefatshe.	Kokoano ya disalefete (SO ₄) mo metsing a a ka fa tlase ga lefatshe mo lefelotshupetsong le le thalositweng. (T3)	SO ₄ : ≤200mg/l mo Lefelotshupetsong. Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo50 + 10% (~220 mg/l) – Go ikaegile ka dithutopatlisiso tsa selegae.
			Kokoano ya Foloraete (F) mo metsing a a ka fa tlase ga lefatshe e direlwa badirisi ba fa gae.	Kokoano ya Foloraete (F) mo metsing a a ka fa tlase ga lefatshe e direlwa badirisi ba fa gae.	Kokoano ya Foloraete (F) mo metsing a a ka fa tlase ga lefatshe e direlwa badirisi ba fa gae. (T3)	Foloraete: ≤2.5 mg/l mo Lefelotshupetsong. Tlwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo50 + 10% (~2.7 mg/l) – Go ikaegile ka dithutopatlisiso tsa selegae.
				Dilekano sa kolobetso ya akhwifa	Selekano sa metsi se setetswe mafelo a le mararo (3) a kgaogantsweng ka maemo.	T1–Lefelo la Tiro: Go fela ga selekano sa metsi a a tlhokelwang tiro. T2–Lefelo la Bafa: Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 1.0 m/a. T3–Lemorago kgotsa Lefelotshupetso: Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 0.5 m/a.
			Lefelo la Tshireletso	Go ya ka dithaloso tsa boleng jwa metsi.	Go setiwa diparametara tsa boleng jwa metsi tsa mafelo a le mararo (3) a kgaogannangwang ka maemo.	T1–Lefelo la Tiro, dilekano tsa kokoano ka ntlha ya ditlamorago (Phesenthaele ya bo95 ya boleng jwa metsi mo QC): pH: 5.0 go ya go 9.5; NO ₃ -N: 60 mg/l; Boletswai EC: 600 mS/m; Tloraete: 1500 mg/l; Disalefete: 800 mg/l; le Foloraete: 6.4 mg/l.

IUA	Karolo ya metsi a ka fa tiase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
						T2-Lefelo la Bafa: Letelela go fitha ka Phesenthaele ya bo5 e e tshagediawang ke thutopatliso ya lemorago la lefelo la bafa – bolengpalo jwa mmatoa jo bo bonweng mo QC A42J: pH: 6.7 go ya go 8.1; NO₃-N: 35 mg/l; Boletswai EC: 340 mg/l; Tleloraete: 650 mg/l; Disalefeite: 250 mg/l; le Foloraete: 2.5 mg/l. T3-Lemorago kgotsa Lefelotshupetso: Letelela go fitha ka Phesenthaele ya bo50 + 10% mo dikarolwaneng tsa bothokwa jaaka go kailwe fa godimo (Boleng).
				Lekanyetsa go tshwarwa ga metsi a a mo godimo fa o ntsha metsi ka didiba tse di borilweng mo diakhwifeng tsa motlhaba wa morwalela tsa alubiale (ga go a tshwanela go nna le tekanyetso ya sekgala).	Dilekano tsa metsi mo teng ga akhwifa: Thapamo ya selekano sa metsi a a ka fa tiase ga lefatshe go ralala akhwifa e e nang le inthakrenyula; le Mekgwatiwaelo ya selekano sa metsi a a ka fa tiase ga lefatshe mo diakhwifeng tsa inthakrenyula. Diphopholetso tse di siameng/tse di sa siamang tsa tshalelo ya metsi: Bolumu (Q); Go fela ga kelelo mo merathong ya tekanyetso ya kwa metsi a elelang go ya teng.	Ga go a letlelela keradiante ya metsi a a ka fa tiase ga lefatshe a poelomorago mo lefelong la 500 m mo karolong e kgolo. Mekgwatiwaelo ya selekano sa etsi mo go <- 1.0 m/a
		16_5_2	Bokanakang	Seemo sa kamano fa gare ga metswedi ya Swater le Gwater.		Ditathhegelo tsa metsi a bogodimo di tshwanetse go lekana le ditloso tse di letleletsweng mo nokeng (go akaretisa ditathhegelo tsa mowafalo le pula).
		RU – G16		Seemo sa tshalelo ya metsi a ka fa tiase ga lefatshe mo akhwifeng ya inthakrenyula le e e robegileng		Go tloswa ga ngwaga le ngwaga ga go a tshwanela go nna kwa godimo ga 65% ga retshatšhe ya ngwaga le ngwaga ya magareng (k.g.r. SI ya 65%).
			Boleng (Ela tihoko gore bolengpalo jwa lemorago le le tsholeditsweng tsa dikarolwana tsa bothokwa tsa	Dikotla - Naeterete		Naeterete: ≤ 0.5 mg/l (Phesenthaele ya bo95)
				Matswai a a tithaologileng mo	Boletswai - Kgonagalo ya moela wa	Kgonagalo ya moela wa motlakase: ≤ 55

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
	haeterokhemikale e ka nna pono ya tlhologo mme di tshwanetse go amogelwa, k.g.r. EC, NO ₃ -N, Cl, SO ₄ , le F).			metsweding ya metsi a a mo tlase ga lefatshe -	motlakase Thoma kokoano ya boletswai jwa tlhago jwa lemorago mo motsweding wa metsi.	mS/m (Phesenthaele ya bo95)
				Metsi a Esiti a Moepo (kgotsa AMD) a mefuta ee gaufi ya matlapa a a mo tlase ga lefatshe a a nang le kgonagalo ya go nna le esiti	Dilekano tsa kokoano ya disalefeite (SO ₄) mo metsing a ka fa tlase ga lefatshe. Dira gore go nne le kokoano ya salefeite ya "tlhago" ya lemorago mo motsweding wa metsi.	SO ₄ ≤ 80 mg/l. (Phesenthaele ya bo95)
				Lekanyetsa go tshwarwa ga metsi a a mo godimo fa o ntsha metsi ka didiba tse di borilweng mo diakhwifeng tsa motlhaba wa morwalela tsa alubiale (ga go a tshwanela go nna le tekanyetso ya sekgala).	Feketara ya Go fela ga Molapo ya akhwifa ya alubiale ya Mokolo, (L).	Lekanyetsa selekano sa tloso ya metsi a sediba se se borilweng/sediba gore se nne ka fa tlase ga 5% ya kelelo mo motsweding wa metsi a mo godimo ga lefatshe (mo lefelong le le rileng la tloso ya metsi).
			Lefelo Tshireletso	Ditiro tsa tiriso ya lefatshe di ka nna le ditlamorago mo akhwifeng ya inthakrenyula.	Tekanyetso ya boleng jwa metsi (khudugelo mo motsweding wa metsi a a fa godimo); Tekanyetso ya bakanakang jwa metsi (ditlamorago mo metsing a a mo godimo fa go ntshiwa mo akhwifeng ya alubiale).	Tekanyetso ya boleng jwa metsi (1): Kgaoganyo ya malatsi a le (maekherobiale), sekgala fa gare ga tiro le motswedi wa metsi a a fa godimo. Tekanyetso ya selekano sa metsi (2): Kgaoganyo ya letsatsi la tshireletso la 365 (tlhaoloso) (L).

Lenaneo 32: Maikalelo a Boleng jwa Motswedi tse di totleng Karolo ya motswedi le Kgaolo ya METSI A A KA FA TLASE GA LEFATSHE mo Dikarolong tsa setlapele mo Dikarolong tse di kopaneng tsa tshekatshoko 17b: MATLABAS / LIMPOPO

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
IUA 17: MATLABAS	RU – G17_b_2	17_b_2	Bokanakang	Go ya tlase ga dilekano tsa metsi tsa akhwifa (dilekano tsa metsi).	Dilekano tsa metsi mo akhwifa; Mekgwatiwaelo ya dilekano tsa metsi a a ka fa tlase ga lefatshe.	Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 0.5 m/a.

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
				Seemo sa tshalelo ya metsi a a ka fa tlase ga lefatshe mo akhwifeng; Palelo ya Tshupane ya Kgatelelo (Tiriso ya Karolo ya Akhwifa / Retshatšhe ya Karolo ya Akhwifa) jaaka diphesente.	Tshalelo e e siameng/e e sa siamang ya metsi.	Go tlosiwa ga ngwaga le ngwaga ga go a tshwanela go nna kwa godimo ga65% ga retshatšhe ya ngwaga le ngwaga ya magareng (k.g.r. Si ya65%).
				Dikotla tse di mo metsing a a mo tlase ga lewatle tse di nang le ditlamorago mo boitekanelong jwa modirisi.	Kokoano ya naetereite (NO ₃ -N) mo metsing a a ka fa tlase ga lefatshe mo lefelotshupetsong le le thalositšweng.	Naetereite: ≤3.0 mg/l; Tiwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo5 (~3.3 mg/l).
			Boleng (Ela thoko gore bolengpalo jo bo kwa godimo jwa lemorago jwa dikarolwana tsa bothokwa sa haeterokhemikale e ka nna pono ya tlhago mme di tshwanetse go amogelwa, K.g.r. EC, NO ₃ -N, Cl, SO ₄ le F).	Matswai a a tlhaologileng mo metsweding ya metsi a a ka fa tlase ga lefatshe -	Boletswai: Kgonagalo ya moela wa motlakase (EC) wa metsi a a ka fa tlase ga lefatshe.	Kgonagalo ya moela wa motlakase ≤140 mS/m Tiwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo5 +10% (~155 mS/m).
				Karolo e kgolo ya khemikale e e kaiwang e e tlhaositšweng mo metsing a a ka fa tlase ga lefatshe.	Kokoano ya Tloraete (Cl) mo metsing a a ka fa tlase ga lefatshe mo lefelotshupetsong le le thalositšweng.	Tloraete: ≤145 mg/l mo Lefelotshupetsong. Tiwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo5 +10% (~160 mg/l).
				Go tlholwa ga metsi a moepo a a nang le esiti go tswa mo matlapeng a a kgonang go nna le esiti; le go thibela go itshela ka iketlo ga mo isagong ga metsi a a mo tlase ga lefatshe mo moepong mo metsweding ya metsi e e mo godimo.	Kokoano ya disalefeite (SO ₄) mo metsing a a ka fa tlase ga lefatshe mo lefelotshupetsong le le thalositšweng.	SO ₄ : ≤85 mg/l. Tiwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo 75 +10% (~94 mg/l).
				Dikokoano tsa foloraete mo metsing a ka fa tlase ga lefatshe a direlwa badirisi ba fa gae.	Kokoano ya Foloraete (F) mo metsing a a ka fa tlase ga lefatshe e direlwa badirisi ba fa gae.	Foloraete: ≤1.3 mg/l; Tiwaelo ya paka e telele ya ngwaga le ngwaga ga e a tshwanela go atamela Phesenthaele ya bo5 +10% (~1.4 mg/l).
				Dilekano sa kolobetso ya akhwifa	Selekano sa metsi se setetswe mafelo a le mararo (3) a a kgaogantsweng ka maemo.	T1—Lefelo la Tiro: Go fela ga selekano sa metsi a a tlhokelwang tiro. T2—Lefelo la Bafa: Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 1.0 m/a. T3—Lemorago kgotsa Lefelotshupetso: Seelo sa kwelotlase ya selekano sa metsi se tshwanetse go nna ka fa tlase ga 0.5 m/a.
			Lefelo	Go ya ka ditlhaloso tsa boleng jwa	Go setiwa diparametara tsa boleng jwa	T1—Lefelo la Tiro, dilekano tse di kwa

IUA	Karolo ya metsi a ka fa tlase ga lefatshe	RU	Karolo ya karolwana	Maikalelo a Boleng jwa Motswedi	Sekao/Tekanyetso	Tekanyetso ya Dipalo
			tshireletso	metsi.	metsi tsa mafelo a le mararo (3) a a kgaoganngwang ka maemo.	godimo ka ntlha ya ditlamorago (go ya ka datasete mo lefelong le le amegileng): pH: 5.0 go ya go 9.5; NO₃-N: 60 mg/l; Boletswai EC: 600 mS/m; Tieloraete: 1500 mg/l; Disalefeite: 800 mg/l; le Foloraete: 6.4 mg/l. T2-Lefelo la Bafa: Letelela go fitha ka Phesenthaele ya bo5 ya bolengpalo jwa totalota mo QC A41E: pH: 7.2 – 7.8; NO₃-N: 8.0 mg/l; Boletswai EC: 200 mg/l; Tieloraete: 300 mg/l; Disalefeite: 170 mg/l; le Foloraete: 1.8 mg/l. T3-Lemorago kgotsa Lefelotshupetso: Letelela go fitha ka Phesenthaele ya bo50 + 10% mo dikarolwaneng tsa bothokwa jaaka go kailwe fa godimo (leba Boleng fa godimo).

TSEBIŠO KAKARETŠO

**MOLAO WA BOSETŠHABA WA METSI, 1998
(MOLAO 36 WA 1998)****TLHOMAMISO YA DITLHOPA TSA MOTSWEDI WA METSI LE MAIKAELELO A BOLENG
JWA MOTSWEDI WA MADUTISO A MOKOLO, MATLABAS, CROCODILE (WEST) LE
MARICO**

Nna ke le, Gugile Nkwinti, Tona ya Metsi le Kgeleloleswe, go ya ka karolo 13(1) ya Molao wa Bosetšhaba wa Metsi, 1998 (Molao 36 wa 1998) ke tlhomamisa fano, kitsiso ya ditlhopa tsa metswedi ya metsi le maikaelelo a boleng jwa metswedi a madutiso a Mokolo, Matlabas, Crocodile (West) le Marico.



RRE GUGILE NKWINTI
TONA YA KGORO YA METSI LE KGELELOLESWE
LETLHA: 22/02/2019

ŠETULE

TAETŠO YA MAGORO A METHOPO YA MEETSE LE MAIKEMIŠETŠO A BOLENG BJA METHOPO YA KGOBOKETŠO YA MEETSE YA BOGARENG BJA MOKOLO, MATLABAS, CROCODILE (WEST) LE MARICO

1. DITLHALOŠO

Mo šetuleng ye, lentšu goba mmolelwana ofe goba ofe o na le tlhalešo ye e swanago le yeo e šomišitšwego Molaong wa Bosetšhaba wa Meetse, ntle le ge tshwaraganyo e laetša ka tsela ye nngwe –

“Legoro I” le ra gore ke moo thulaganyong ya magoro a tswalano ya diphedi le tikologo mo methopong ya meetse e feleletšago e le gore maemo kakaretšo a methopo yeo ya meetse e fetotšwe gannyane go tšwa seemong sa yona pele ga tšwelopele;

“Legoro II” le ra gore ke moo thulaganyong ya magoro a tswalano ya diphedi le tikologo mo methopong ya meetse e feleletšago e le gore maemo kakaretšo a methopo yeo ya meetse e fetotšwe ka tsela ya magareng go tšwa seemong sa yona pele ga tšwelopele;

“Legoro III” le ra gore ke moo thulaganyong ya magoro a tswalano ya diphedi le tikologo mo methopong ya meetse e feleletšago e le gore maemo kakaretšo a methopo yeo ya meetse e fetotšwe kudu go tšwa seemong sa yona pele ga tšwelopele;

“Legoro la tswalano ya diphedi le tikologo” e ra seemo sa tswalano ya diphedi le tikologo sa mothopo wa meetse wo o tšweletšago seemo sa tswalano ya diphedi le tikologo sa mothopo woo wa meetse go ya ka phetogo ya diripana tša diphedi tša hlago go tšwa seemong sa tšweletšo ya pele;

“Dinyakwa tša meetse a tswalano ya diphedi le tikologo” malebana le methopo ya meetse, e ra bokae le boleng bja meetse a mothopo woo mo legorong le le beilwego la tswalano ya diphedi le tikologo;

“Yuniti ye kopantšwego ya tekolo” e ra yuniti ye kopantšwego ya tekolo yeo e laetšago kgoboketšo ya meetse yeo e swanago go ya ka khuetšo ge go lekolwa ditlamorago tsa leago-ekonomi la peakanyo ya maemo a fapafapanego le go begela seemo sa tswalano ya diphedi le tikologo mo kgoboketšwaneng ya meetse;

“Molao wa Bosetšhaba wa Meetse” e ra Molao wa Bosetšhaba wa Meetse, 1998 (Molao wa 36 wa 1998);

“Phesenthaele” e ra kgonagalo ya go se fete mollwane, e ra gore, mo phesenthaeleng ya bo95 diphesente tše 95 tša dipalopalo di swanetše di be ka tlase ga palo yeo, le mo phesenthaeleng ya bo50 diphesente tše 50 tša dipalopalo di swanetše di be ka tlase ga palo yeo;

“Seemo sa gabjale sa tswalano ya diphedi le tikologo” e ra seemo sa ga bjale sa maphelo sa diphedi tše fapafapanego tša methopo, se bapetšwa le seemo sa hlago goba seemo sa tšhupetšo sa kgauswi le seemo sa hlago;

“Legoro la tswalano ya diphedi le tikologo le hlohleletšwago” e ra legoro le laetšago nepo ya taolo ya tswalano ya diphedi le tikologo go ya ka magoro a tswalano ya diphedi le tikologo ao a swanetšego go fihlelelwa;

“Maikemišetšo a boleng bja methopo” e ra maikemišetšo a boleng bja methopo ao e lego tlhaloso ga mmogo le tekanyetšo ya dipalo tša thutamaphelo, sebopego le dikhemikhale tša

methopo e bohlokwa ka kgoboketšong ya meetse. Ke ditatamente tše hlathollago boleng kakaretšo bja yuniti ya mothopo;

“Yuniti ya mothopo” e ra monabo wa noka, mohlaka goba sehlopha sa mehlaka, esetšuwane, goba letamo leo e lego gore seemo sa lona sa tswalano ya diphedi le tikologo se dumella gore le be le taetšo ya lona ya dinyakwa tša meetse a tswalano ya diphedi le tikologo goba maikemišetšo a boleng bja methopo gape mellwane ya lona ya lefelo e thalwe. Yuniti ya mothopo ke bonnyane bja yuniti bjo maikemišetšo a boleng bja methopo a tla go šomišwa gona;

“Legoro la mothopo wa meetse” e ra taetšo ka molaodi wa methopo ya meetse (Kgoro ya Meetse le Kelelatšhila) ya dimelo tšeo di hlokegago ya methopo ya meetse yeo e fapafapanego.

2. TLHALOŠO YA MOTHOPHO WA MEETSE

Magoro a methopo ya meetse le maikemišetšo a boleng bja methopo di tšweletšwe go karolo goba methopo ka moka ya meetse yeo e lego bohlokwa bjalo ka ge go laeditšwe ka mo go latelago:

Lefelo la Taolo ya Meetse:	Limpopo North West
Lefelo la go Ntšha meetse:	Lefelo la go Ntšha meetse leo le phagamego la A10, A21 to A24, A31, A32, A41 le A42
Noka / Dinoka:	Mananeo a dinoka tša Mokolo, Matlabas, Crocodile (West) le Marico
Lefelo la Taolo ya Meetse:	Lefelo la Taolo ya Meetse la Vaal
Lefelo la go Ntšha meetse:	D41A Quaternary Drainage Region
Noka / Dinoka:	Lenaneo la Noka ya Molopo

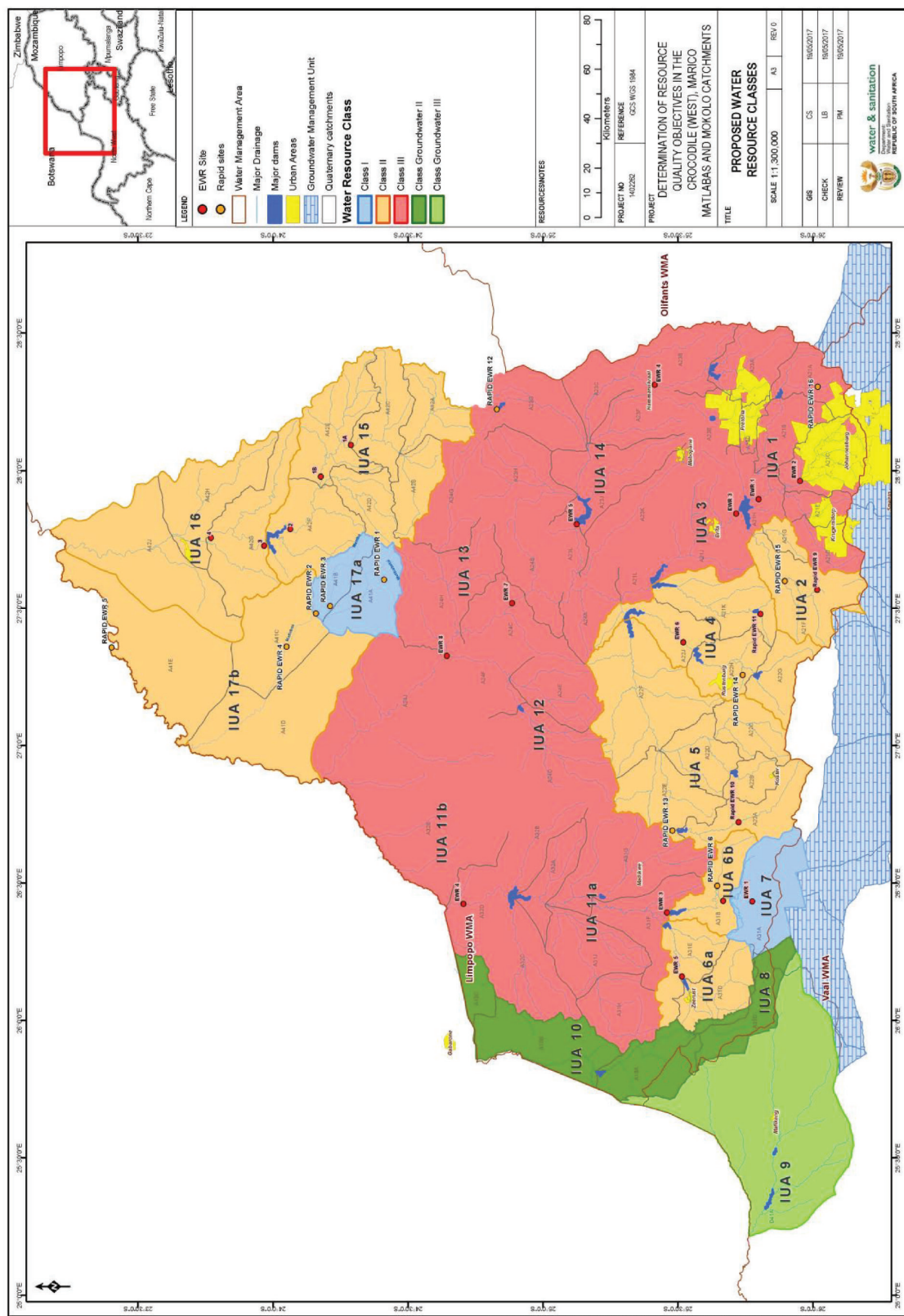
3. MAGORO A METHOPO YA MEETSE BJALO KA GE GO NYAKEGA GO YA KA KAROLO 13(1)(a) YA MOLAWANA WA MEETSE WA SETŠHABA WA, 1998

- i. Magoro a methopo ya meetse a kgoboketšo ya meetse ya Mokolo, Matlabas, Crocodile (West) le Marico di ngwadilwe Tafolaneng 1 go ya ka palo ya lenaneo ka yuniti yeo e kopantšhitšwego ya (integrated unit of analysis (IUA)), yeo e bontšhitšwego go Seswantšho 1.
- ii. Di IUA di tlhophilwe go ya ka tšhomišo ya tšona yeo e dumeletšwego le tšhireletšo go ya ka Legoro I: ka go laetša tšhireletšo ya godimo ya tikologo le tšhomišo ye nnyane; Legoro II leo le laetšago tšhireletšo ya maleba le tšhomišo ya maleba; le Legoro III leo le laetšago tšhomišo ya maleba yeo e swarelelago le tšhomišo ya godimo.
- iii. Tafolana 1 e bontšha IUA, mothopo wa yona wa meetse le kgoboketšo ya yona ya pekanyo. Kgoboketšo ya yona ya peakanyo e na le bontšhi bja dinoutse tša fisika tšeo di emelago diphihlelelo tša noka goba diyuniti tša mothopo (resource units (RUs)). Legoro la tša tikologo leo le tla tlhokomelwago la RU yengwe le yengwe ka gare ga IUA le abilwe.

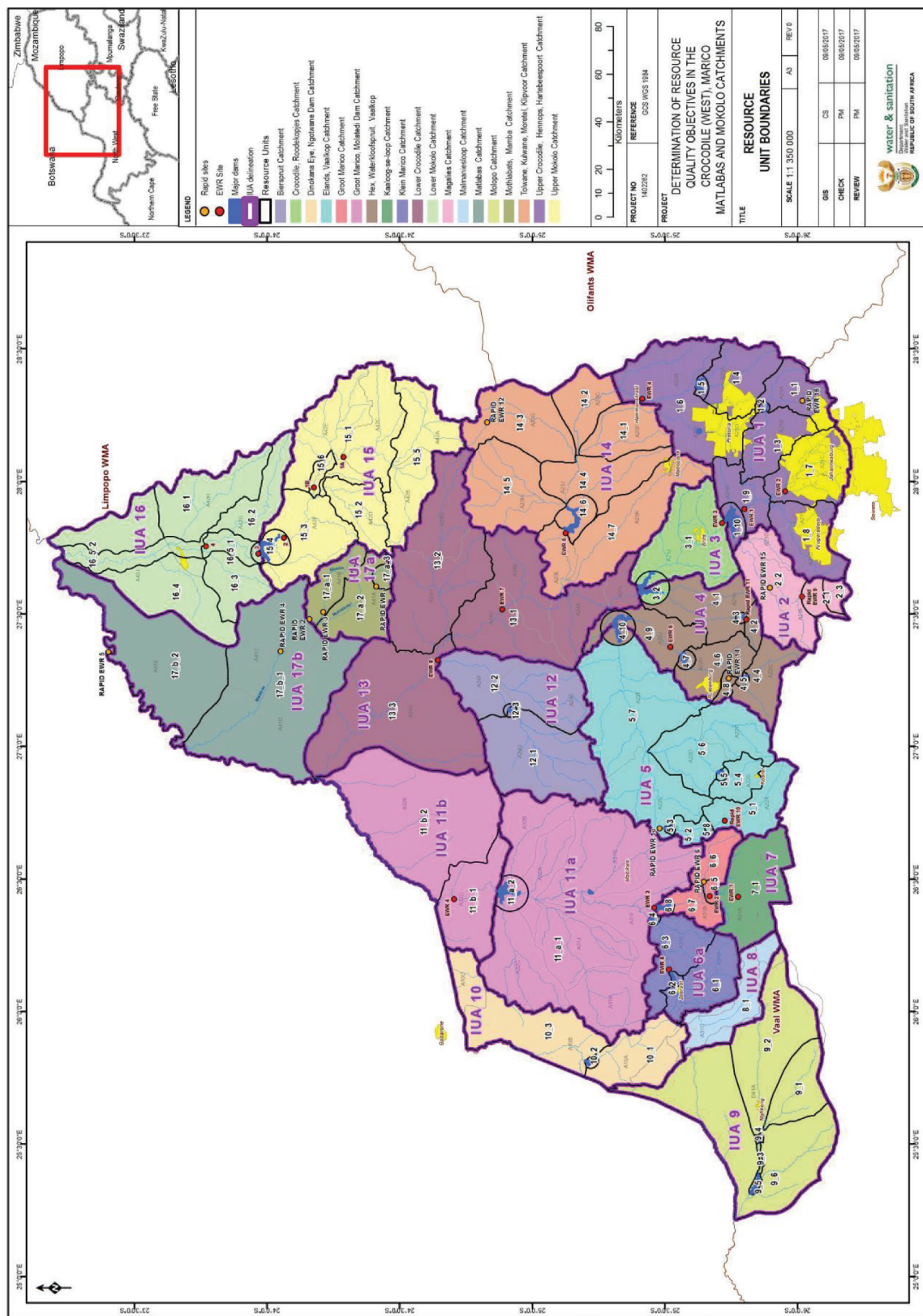
4. MAIKEMIŠETŠO A BOLENG BJA METHOPO YA MEETSE BJALO KA GE GO HLOKEGA GO YA KA KAROLO 13(4)(a)(i)(bb) YA MOLAWANA WA MEETSE WA SETŠHABA, 1998

- i. Maikemišetšo a Boleng bja Methopo (Resource Boleng Objectives (RQOs) a tlhalošwa go RU yengwe le yengwe yeo e kgethilwego ya IUA yengwe le yengwe go ya ka bontšhi bja meetse, tikologo le diphedi, le boleng bja meetse.

- ii. Seswantšho 2 se laetša mellwane ya diRU tša kgoboketšo ya meetse ya Crocodile (West), Marico, Mokolo le Matlabas.
- iii. Tafolana ya 2 go iša go ya 20 e aba diRQO tša DINOKA LE MATAMO go diRU tše bohlokwa.
- iv. Tafolana 21 e laetša diRQO tša DIHLOPHA LE MANANEO TŠE BOHLOKWA TŠA MEHLAKA go Diyuniti tša Methopo yeo e kgethilwego.
- v. Tafolana 22 go iša go Tafolana 32 e laetša diRQO tša meetse a ka fase ga lefase go bohlokwa bja diRU bja Tikologo le diRQO tše itšego.
- vi. DiRQO di tla šoma go tloga ka letšatši leo go saenilwego ka fao go tthamilwego go ya ka Karolo 13(1) ya Molawana wa Meetse wa Setšhaba, 1998, ka ntle le ge go laetšwe ke Tona.



Seswantsho 1: Mananeo a Mothopo wa Meetse wa Crocodile (West), Marico, Mokolo le Matlabas



Seswantšho 2: diyuniti tša Mothopo wa Crocodile (West), Marico, Mokolo kgoboketšo ya meetse ya Matlabas

Taolana 1: Kakaretšo ya Mananeo a Mothopo wa Meetse ka Yuniti ya Kopanyo ya Tshekatsheko le Mehuta ya Ditikologo– Crocodile (West), Marico, Mokolo le kgoboketšo ya meetse ya Matlabas

IUA	Lenaneo la Mothopo wa Meetse	Leina la Noute	Kgoboketšo ya meetse ya lekgetlo la bone	Yuniti ya Mothopo	Leina la Noka	Legoro la Tikologo yeo e tla tihokomelwago	Palo ya go Nošetšo ya Ngwaga (dimilione tše m ³ /a)	EWR bjalo ka % ya Palo ya hlago ya go goga meetse ka ngwaga
1 Upper Crocodile/ Hennops/ Hartbeespoort	III	CROC Lebelo la EWR_16	A21A	1_1	(mothopo) wa Rietvlei	C	4.788	27.83
		HN1	A21A	1_1	Noka ya Hennops ka godimo ga Letamo la Rietvlei	C	11.66	27.83
		HN2	A21B	1_3	Sesmyspruit le di tributharisi tša yona e tla kopantšhwa le Hennops	D	-	-
		HN3	A21C	1_7	Modderfonteinspruit e tla kopana le Jukskei	D	-	-
		HN4	A21C	1_7	Klein Jukskei e kopana le Jukskei	D	-	-
		EWR Lefelo CROC_EWR2	A21C	1_7	Noka ya Jukskei	D	139.9	29.19
		HN6	A21D	1_8	Bloubankspruit le dinoka tšeo di elelelago ka gare ga noka ye kgolo (tsela yeo meetse a tšwago gona / kopantšho le (Crocodile)	D	-	-
		HN8	A21H	1_9	Swartspruit go iša go Letamo la Hartbeespoort	D	-	-
		EWR CROC_EWR1	A21 H	1_9	Noka ya Crocodile go tšwa go kopantšho ya Jukskei go elelela Letamong la Hartbeespoort	D	231.05	24.07
		HN11	A23A	1_4	Noka ya Godimo ya Pienaars , Edendalespruit le Dinoka tša Moretele go iša go Letamo la Roodeplaat	D	-	-
		EWR Lefelo CROC_EWR4	A23B	1_6	Pienaars go tloga go Letamo la Roodeplaat go iša go tsela ya go ntšha meetse ya kgoboketšo ya meetse ya lekgetlo la bone (tsela ya go ntšha meetse ya IUA1)	C	28.2	30.81
		HN13	A23B	1_6	Boekenhoutspruit e tla kopana le Pienaars	C	-	-
		HN14	A23D	1_6	(mothopo) wa Skipperspruit o tla kopana Apies	D	-	-
		HN15	A23D, E	1_6	(mothopo) wa Apies go iša go Letamo la Bon Accord , ka fase ga letamo la go ntšha meetse la IUA1	D	-	-
2 Magalies	II	CROC Lebelo la EWR9	A21F	2_1	Magalies ka fase ga Leihlo la Maloney	B	14.7	45.93
		CROC Lebelo	A21G	2_2	Magalies, Klein Magalies, Bloubaank	C/D	21.9	21.18

IUA	Lenaneo la Mothopo wa Meetse	Leina la Noute	Kgoboketšo ya meetse ya lekgetlo la bone	Yuniti ya Mothopo	Leina la Noka	Legoro la Tikologo yeo e tla thokomelwago	Palo ya go Nošetšo ya Ngwaga (dimillione tše m ³ /a)	EWR bjalo ka % ya Palo ya hlago ya go goga meetse ka ngwaga
		la _EWR15						
		HN18	A21G, F	2_2	Skeerpoort mo tseleng ya go nišha meetse ya IUA2	C/D	-	-
3	III	HN19	A21J	3_1	Rosespruit kopanišhong ya Crocodile	C/D	-	-
		Lefelo la EWR CROC_EWR3	A21J	3_1	Crocodile go tšwa Letamong la Hartbeespoort go iša go moela wa ka godimo wa Letamo la Roodekopjes	C/D	143.3	25.02
		CROC lebelo _EWR11	A21K	4_2	Phihlelele ya godimo ya (mothopo) wa Sterkstroom go elelela ka gare ga Letamo la Buffelspoort	C	13.95	28.21
		HN22	A21K	4_1	Sterkstroom go tšwa go Letamo la Buffelskloof go iša go Letamo la Roodekopjes	C	-	-
4	II	HN23	A22G	4_4	(mothopo) wa Hex ya Godimo go iša go Letamo la Olifantsnek, Rooikloofspruit	C	-	-
		CROC lebelo _EWR14	A22H	4_8	Waterkloofspruit e tla kopana le Hex	B/C	5.469	28.27
		HN25	A22H	4_6	Hex go tšwa go Letamo la Olifantsnek go iša go Letamo la Bospoort , Sandspruit	D	12.11	15.26
		Lefelo la EWR CROC_EWR6	A22J	4_9	Hex go tšwa go Letamo la Bospoort go iša keelong ya Letamo la Vaalkop	D	26.9	14.96
		CROC lebelo _EWR10	A22A	5_1	Diphilelele tša (mothopo) wa Elands ya Godimo go iša go Letamo la Swarttruggens	B/C	10.1	30.48
		HN29	A22A	5_2	Elands go tšwa go Letamo la Swarttruggens go iša go Letamo la Lindleyspoort	C	12.87	23.99
5	II	HN30	A22B	5_4	(mothopo) wa Koster ya godimo go iša go Letamo la Koster	C	2.54	22.77
		HN31	A22C, A22D	5_6	Letamo la Selons, Koedoespruit, Dwaarspruit, le Noka ya fase ya Koster	C	-	-
		CROC lebelo _EWR13	A22E, A22F	5_7	Elands go tšwa go Letamo la Lindleyspoort go iša go Letamo la Vaalkop	C	18.77	21.90
6b	II	MAR lebelo _EWR6	A31B	6_6	Polkadraaispruit e tla kopana le Marico	B	9.87	49.27

IUA	Lenaneo la Mothopo wa Meetse	Leina la Noute	Kgoboketšo ya meetse ya lekgetlo la bone	Yuniti ya Mothopo	Leina la Noka	Legoro la Tikologo yeo e tla tlhokomelwago	Palo ya go Nošetšo ya Ngwaga (dimilione tše m ³ /a)	EWR bjalo ka % ya Palo ya hlago ya go goga meetse ka ngwaga
6a Klein Marico	II	Lefelo la EWR MAR_EWR2	A31B	6_5	Modu wo mogolo wa Groot Marico go iša go moela wa godimo wa Polkadraaispruit	B	42.08	50.26
		HN63	A31B	6_7	Groot Marico go tšwa go Polkadraaispruit e tla kopana le Letamo la Marico Bosveld	B	56.92	50.61
		HN64	A31D	6_1	Maimaniesloop e tla kopana le Klein Marico	C/D	-	-
		HN35	A31D	6_1	Klein Marico le dinoka tše di elelelago ka gare ga noka ye kgolo ya moela wa godimo wa Zeerust	C/D	-	-
		HN65	A31E	6_1	Klein Marico go tšwa go Zeerust go iša go Letamo la Klein Maricopoort	C/D	16.25	14.26
7 Kaaloog-se-Loop	I	Lefelo la EWR MAR_EWR5	A31E	6_3	Klein Marico go tšwa go Letamo la Klein Maricopoort go iša go Letamo la Krommelboom	C	16.25	11.70
		EWR Lefelo MAR_EWR1	A31A	7_1	Leihlo la Marico, Kaaloog-se-Loop, Bokkraal-se-Loop, Ribbokfontein-se-Loop, Rietspruit (leihlo la borwa), Kuilsfontein, Syferfontein, Bronkhorstfontein	B	10.539	76.32
		HN38	A31A	7_1	Vanstraatenvlei le dinoka tšeo di elelelago ka gare ga noka ye kgolo Kopanyong le Kaaloog-se-Loop, tsela ya go ntšha meetse ya IUA7	B	-	-
8 Maimaniesloop	II*	-	A31C	8_1	Lefelo la meetse la Dolomite	B	-	-
9 Molopo	II*	HN66	D41A	9_3	Modu wo mogolo wa noka ya Molopo go tloga go letamo la Modimola go iša go letamo la Disaneng	D	-	-
		HN67	D41A	9_2	Meetse a Molopo a tla elelela ka gare ga letamo la Setumo (Modimola) (lefelu la meetse la dolomite)	D	-	-
		HN39	D41A	9_6	Molopo mo tseleng ya go ntšha meetse ya IUA9	D	-	-
10 Dinokana Eye/Letamo la Ngotwane	III*	HN68	A10A	10_1	Ngotwane go tšwa go Dinokana go iša go Letamo la Ngotwane	D	-	-

IUA	Lenaneo la Mothopo wa Meetse	Leina la Noute	Kgoboketšo ya meetse ya lekgetlo la bone	Yuniti ya Mothopo	Leina la Noka	Legoro la Tikologo yeo e tla tlhokomelwago	Palo ya go Nošetšo ya Ngwaga (dimilione tše m ³ /a)	EWR bjalo ka % ya Palo ya hlago ya go goga meetse ka ngwaga
11a Groot Marico/ Letamo la Molatedi	III	Lefelo la EWR Lefelo MAR_EWR3	A31F, A31G, A32A	11a_1	Marico Groot Marico go tšwa go keleleo ya ka ntle ya Letamo la Marico Bosveld go iša go Letamo la Molatedi, dinoka ka moka tšeo di elelelago ka gare ga noka ye kgolo	C/D	65.083	23.62
11b Groot Marico/ dinoka tšeo di elelelago ka gare ga noka ye kgolo ka dihla	III	Lefelo la EWR MAR_EWR4	A32D, E	11b_1	Marico go tšwa go Letamo la Molatedi go iša go bokopanelong le Limpopo, Rasweu, dinoka tša Maselaje; ditšela tša go ntšha meetse tša IUA11b	C	153.25	7.96
12 Bierspruit	III	-	A24D	12_1	Wilgespruit, Bofule, Kolobeng, Magoditshane, Mothabe	C		
		HN42	A24E, F	12_2	Bierspruit e tla kopana le Crocodile River, Brakspruit, Phufane, Sefathane, Lesobeng, Bofule ya fase; tsela ya go ntšha meetse ya IUA12.	D	-	-
13 Lower Crocodile	III	HN43	A24G, A24H	13_2	Sand e tla kopantšhwa le Crocodile	B	-	-
		Mafelo a EWR CROC_EWR7	A21L, A24A-C, A24H	13_1	Kelelo ya ka ntle ya Noka ya Crocodile ya letamo la Roodekopjes go iša go kelelo ya godimo ya kopanyo ya Noka ya Sand, le dinoka tšeo di elelelago ka gare ga noka ye kgolo ya Sleepfonteinspruit, Klipspruit	D	463.4	13.9
		EWR Lefelo CROC_EWR8	A24J	13_3	Lower Crocodile go tšwa go kopantšho ya Bierspruit go kopantšhwa le Limpopo, tsela ya go ntšha meetse ya IUA13	D	565.16	7.48
14 Tolwane/ Kulwane/ Moretele/ Klipvoor	III	CROC Lebelo la_EWR12	A23G	14_3	Noka ya Plat	C/D	4.864	23.08
		-	A23F	14_1	Noka ya Apies, noka yeo e elelelago ka gare ga noka ye kgolo ya Tshwane	D		
		-	A23C	14_2	Noka ya Pienaars go tšwa go kopanyo ya Bookenshout go iša go kopantšho ya Noka ya Apies	C		
			A23J	14_4	Noka ya Moretele (Pienaars) go tšwa go kopantšho ya noka ya Plat go iša Letamong la Klipvoor, Kutswane go iša Letamong la	C		

IUA	Lenaneo la Mothopo wa Meetse	Leina la Noute	Kgoboketšo ya meetse ya lekgetlo la bone	Yuniti ya Mothopo	Leina la Noka	Legoro la Tikologo yeo e tla tlhokomelwago	Palo ya go Nošetšo ya Ngwaga (dimilione tše m ³ /a)	EWR bjalo ka % ya Palo ya go hlago ya go goga meetse ka ngwaga
15 Mokolo wa Godimo					Klipvoor			
		EWL Lefelo CROC_EWR5	A23J, A23L	14_7	Moretele (Pienaars) e tla kopantšhwa le Crocodile, tsela ya go nšha meetse ya IUA14	D	113.0	11.82
		HN49	A23K	14_7	Tolwane to e tla kopantšhwa le Moretele	C/D	-	-
		HN50	A42A	15_5	(mothopo) wa Sand o tla kopantšhwa le Grootspuit	C	-	-
		HN51	A42B	15_5	(mothopo) wa Grootspuit o tla kopantšhwa le Sand	D	27.8	21.73
	II	EWL Lefelo MOK_EWR1a	A42C	15_1	Mokolo o tla kopantšhwa le Dwaars	C/D	84.84	16.79
		EWL Lefelo MOK_EWR1b	A42E	15_6	Mokolo o tla kopantšhwa le Sterkstroom	B/C	135.03	13.6
		HN54	A42D	15_2	(mothopo) wa Sterkstroom o tla kopantšhwa le Mokolo,	B	43.45	52.63
		EWL Lefelo MOK_EWR2	A42F	15_4	Mokolo River go A42F e tla elelela ka gare ga Letamo la Mokolo,	B/C	196.2	11.7
		EWL Lefelo MOK_EWR3	A42G	15_4	Letamo la Mokolo go iša go seripa sa godimo sa A42G (10km ya moela wa fase wa letamo)	B/C	213.99	8.65
16 Mokolo wa Fase	II	-	A42H karolwana ya (south eastern)	16_1	Noka ya Tambotie	B		
		-	A42G	16_2	Poer-se-Loop	B		
		-	A42J le mašaledi a A42H	16_4	Sandloop	C		
		EWL Lefelo MOK_EWR4	A42G	16_5_1	Modu wo mogolo wa Mokolo - Mokolo go tloga fase go EWR3 go ya go Tambotie e tla kopantšhwa le	C	253.3	12.3
		HN58	A42H, A42J	16_5_2	Modu wo mogolo wa Mokolo – go tloga go Tambotie e tla kopantšhwa le go iša go Limpopo	C	-	-
17a Mothlabatsi/ Mamba	I	HN59	A41A	17a_3	Headwaters Mothlabatsi (Matlabas-Zyn-Kloof, peatlands)	A	5.23	57.07
		MAT Lebelo la_EWR3	A41B	17a_1	Mamba e tla kopantšhwa le Mothlabatsi	B/C	9.54	35.49

IUA	Lenaneo la Mothopo wa Meetse	Leina la Noute	Kgoboketšo ya meetse ya lekgetlo la bone	Yuniti ya Mothopo	Leina la Noka	Legoro la Tikologo yeo e tla thokomelwago	Palo ya go Nošetšo ya Ngwaga (dimillione tše m ³ /a)	EWR bjalo ka % ya Palo ya hlago ya go goga meetse ka ngwaga
		MAT Lebelo la_EWR2	A41B	17a_2	Matlabas/Motlhabatsi e tla kopantšhwa le (tsela ya go ntšha meetse ya IUA)	B/C	32.80	33.23
17b	II	MAT Lebelo la_EWR4	A41C	17b_1	Matlabas	B	35.58	33.42
		HN62	A41C, D	17b_1	Matlabas e tla kopantšhwa le Limpopo, tsela ya go ntšha meetse ya IUA17b	B	-	-

***Meetse-a-ka-fase-ga-lefase**

Taolana 2: Dipono tša Boleng bja Mothopo wa DINOKA LE MATAMO ke Diyuniti tše bohlokwa tša Mothopo go Tshekatsheko ya Yuniti ya pele yeo e kopantšhišwego: UPPER CROCODILE/HENNOPS/HARTEBEESSPOORT

IU A	Lenane o	Noka	Yuniti ya Mothopo	Legorola Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo		
1: UPPER CROCODILE/HENNOPS/HARTEBEESSPOORT	III	Upper Hennops le Rietvlei Rivers (kelelo ya ka gare ga letamo la Rietvlei) (A21A)	1_1	D	Bontšhi	Dikelelo tša fase	Thhokomelo ya fase ya EWR le kelelo ya komelelo : Noka ya Hennops go A2H090 ka gare ga A21A NMAR = 11.66x10 ⁶ m ³ REC=C legoro	Dikelelo tšeo di sa swanelago - tšeo di nyakwago ka morago di tla kopantšhwa le Rietvlei le dinoka tša Hennops Rivers	Thhokomelo o ya kelelo ya fase (m ³ /s)	Kelelo komelelo ya fase (m ³ /s)	
									Oct 0.041	0.007	
									Nov 0.054	0.007	
									Dec 0.056	0.010	
									Jan 0.078	0.017	
									Feb 0.100	0.015	
									Mar 0.087	0.017	
									Apr 0.072	0.014	
									May 0.065	0.013	
									Jun 0.064	0.017	
									Jul 0.059	0.016	
									Aug 0.054	0.013	
									Sep 0.048	0.007	
								≤ 0.060 dimilikramo/lithara (50 th phesenthaele)			
					Boleng	Didinutriente	Kelelo yeo e tsenago ya motswako wa dinutriente e swanetše go kaonafatšwa go tšwetšapele bophelo	Naetrotsene yeo e tologilego yeo e se nago le khapone (DIN) bjalo ka Naetrotsene	≤1.25 dimilikramo/lithara (50 th phesenthaele)		

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							bja diphedi tša ka fase ga meetse le go netefatša gore legoro la diphedi le tikologo le a fihlelelwa. Tekanyetšo ya tirišo ya motswako e swanetše go dirwa ka kopantšho ya tekanyetšo ya nutriende ya kgoboketšo ya meetse	Naetreti (NO_3^-) & Naetreti (NO_2^-) bjalo ka Naetrotsene	≤ 1.0 dimilikramo/lithara (50 th phesenthaele)
						Matswai	Kelelo yeo e tsenago ya motswako wa leswai e swanetše go thokomelwa goba go kaonafatšwa go thekga diphedi le tikologo ya dilo tša ka fase ga meetse le dinyakwa tša boleng bja meetse bja bašomiši ba meetse.	Tshwaro ya Mohlagase (EC)	≤ 55 milisimense/mmitha (mS/m) (95 th phesenthaele) Hennops ka godimo e tia kopantšwa le Rietvlei
								Safeti (SO_4)	≤ 70 milisimense/mmitha (mS/m) (95 th phesenthaele) ka fase tia kopantšwa le
								Sodiamo (Na)	≤ 80 dimilikramo/lithara (mg/l) 95 th phesenthaele
						Diphathotšene	Go ba gona ga diphathotšene go swanetše go fokotša kotsi ya maphelo a batho	Eskherišia kholi (E. coli)	≤ 70 dimilikramo/lithara (mg/l) (95 th phesenthaele)
							pH e swanetše go thokomelwa maemong a bjale.	Phapaphapano ya pH	Dipalo tše 130 /100 dimililiithara (ml) (95 th phesenthaele)
						Diphethogphetogo tša Lenaneo	Tshekatsheko ya mothalotho go tihatha maemo a bjale a kelolo ya ka gare e ya thokega	Kgobokano ya diela	6.5 (5 th phesenthaele) le 9.0 (95 th phesenthaele)
							Maemo a oksitšene yeo e moyafetšego a swanetše go kaonafatšwa	Oksitšene yeo e moyafetšego	Phapano ya 10% go tšwa go bokamorago bja motswako e dumeletšwe
									6-7 dimilikramo/lithara (mg/l)

IU A	Lenane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
							thekga maemo a tikologo le diphehi tša ka re ga meetse.		
								Amonia bjalo ka N	≤ 0.0725 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Aluminiamo (Al)	≤ 0.105 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Ayone (Fe)	≤ 0.1 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Liti (Pb) ye bothata	≤ 0.0095 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Khopha (Cu) ye bothata	≤ 0.0073 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Nikhele (Ni)	≤ 0.07 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Atrazine	≤ 0.078 dimilikramo/lithara (mg/l)
								Mancozeb	0.009 dimilikramo/lithara (mg/l)
								Glaefoseiti	0.7 dimilikramo/lithara (mg/l)
								Endosulufene	0.13 maekhrakramo/lithara (ug/l)
								Makhura le kirisi	2.5 mg/l
								Ditšweletšwa tša kalafo tšeo di hlotšwego ke dihomoune	17β-oestradiol: ≤ 0.001 mg/l
								Dikagare tša nepagalo ya tikologo, Tshekatsheko ya mokgwa wa tiragalo yeo e diragago ka lebelo ya tikologo le Mokgwa wa Mmotlole le Mimmotlo (RHAMM)	Nepagalo ya kelelo ya ka gare ya legoro la tswalano ya diphehi le Tikologo = C ≥ 62%
								Dikagare tša Nepagalo ya Tikologo, Tshekatsheko ya Mokgwa wa Mmotlole le Mimmotlo (RHAMM)	Legoro la tswalano ya diphehi le tikologo la VEGRAI = C ≥ 62% Monola IHI = C ≥ 62%

IU A	Lenane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							tikologo.		
						Dihlapi	Tikologo ya dihlapi e swanetše go hlokomelwa ka legoro la tikologo la C. Lebelo la kelelo leo le amantšhwago le dinyakwa tša diihla leo le hlokegago go <i>BMAR, AURA le CPRE</i>	Tshekatsheko ya Dikagare tša Phetolo ya dihlapi (FRAI). Go swanetše go elwa šedi diihla.	Legoro la tswalano ya diphedi le tikologo la dihlapi = C FRAI ≥ 62%
					Thutaphedi	Diphedi tša ka gare ga meetse tše dikgolo tšeo di hlokegago lerapo la mokokotlo	Kgobokantšho ya Diphoofole tšeo di hlokegago lerapo la mokokotlo e swanetše go tihokomelwa go maemo ao a fetotšwego goba ao a kaonafadišwego.	Tshekatsheko ya dikagare le phetolo ya diphoofole tšeo di hlokegago lerapo la mokokotlo le Bešene ya bohloko ya Lenaneo la go Lokela la Afrika-Bonwa (SASS5).	Legoro la tswalano ya diphedi le tikologo la MIRAI C ≥ 62% SASS ≥ 80 ASPT ≥ 4.8
						Thutaphedi ya diphedi tša ka fase ga meetse	Tshwanelo ya bophara bja noka ye go šoma bjalo ka tikologo le tsejana ya go huduga ya nonyane ya go phela ka meetse le setšhaba sa diamušu di swanetše go tihokomelwa ka taolo ya maleba ya tikologo.	Dinonyane tšeo di phelago ka gare ga meetse/ sebontšhi sa diphedi tšeo di amušago.	Tlhama kemedi ya diphedi tša dinonyane (mehuta le dipalo tša setšhaba go šoma bjalo ka dibontšhi). Go na le thokego ya gore ditekanyetšo tša dipalo tša bolumu ya diphoofole/ dinonyane go ya ka tshedimošo yeo e hweditšwego/ yeo elego gona.
		Letamo la Rietvlei (A21A)	1_2		Bontšhi	Maemo a matamo	Letamo le swanetše go laolwa go tšhireleša mešomo ya tswalano ya diphedi le tikologo gotee le bašomiši ba moela wa fase. Go	Maemo a fase ao a sepetšago a thokega matamong	Melao ya tshepedišo ka mo go nyakegago Maemo ao a lekanego go tšwetsapele tswalano ya diphedi tša ka gare ga meetse le tikologo (15-18%).

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							tšweletša le go mpshafatša melao ya tshapedišo ya matamo go tšwetšapele maemo a makaone a matamo go netefatša gore tswalano ya diphedi tša ka gare ga meetse le tikologo di tihokometšwe.		
							Motswako wa othofosfeiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le tikologo le dinyakwa tša boleng bja bašomiši ba meetse letamo le swanetše go tihokomelwa bjalo ka lenaneo leo le humilego ka dimenerale goba bokaone.	Othofosfeiti	≤ 0.025 mg/l 50th phesenthaele
		Bolen g				Dinutrient	Motswako wa palomoka ya fosforase o swanetše go kaonafatšwa go tšwetšapele bophelo bja tswalano ya diphedi le tikologo le boleng bja dinyakwa tša bašomiši ba meetse. Letamo le swanetše go kaonafatšwa bjalo ka lenaneo leo le humilego ka dimenerale	Palomoka ya fosforase	≤ 0.130 mg/l 50th phesenthaele
							Motswako wa	Palomoka ya Amonia	≤ 0.0725 mg/L N 95th

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							palomoka ya Amonia o swanetše go tshokomelwa go tšwetšapele bophelo bja tswalano ya diphedi le tikologo le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go kaonafatšwa bjalo ka lenaneo leo le humilego ka dimenerale.	bjalo ka N	phesenthaele
							Motswako wa palomoka ya nitraete le naetreiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja tswalano ya diphedi le tikologo le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go kaonafatšwa bjalo ka lenaneo leo le humilego ka dimenerale.	Nitraete le Naetreite	≤ 1.00 mg/L N 95th phesenthaele
						Matswai	Motswako wa letswai le le lego ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo ba tswalano ya diphedi le tikologo le boleng bja dinyakwa tša meetse tša bašomiši ba moela wa fase.	Tshwaro ya Mohlagase	≤ 70 mS/m 95th phesenthaele
							Motswako wa letswai le le lego ka gare ga	Salefeiti	≤ 80 mg/l 95th phesenthaele

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							letamo o swanetše go thokomelwa go thekga tswalano ya diphedi le tikologo le dinyakwa tša boleng bja meetse bja bašomiši ba moela wa fase.		
							Motswako wa letswai le le lego ka gare ga letamo o swanetše go thokomelwa go thekga tswalano ya diphedi le tikologo le dinyakwa tša boleng bja meetse bja bašomiši ba moela wa fase.	Sodiamo	≤ 70 mg/l 95 th phesenthaele
						Phathotšene	Diphathotšene di swanetše go thokomelwa maamong ao a boloketšego batho.	Eskheršia kholi	Dipalo tše ≤ 130 /100 millilitthara (ml) (95 th phesenthaele)
							Meetse a swanetše go dumelelwa go šomišetšwa boitapološo.	pH	6.5 – 9.0 95 th phesenthaele
							Kgonthišo yeo e okeditšwego ya palo ≥ 0.4 m	Kgobokanyo ya diela	95 th phesenthaele ya fase
						Diphetogophetogo tša Lenaneo	Phetogo yeo elego maleba	Thempheireitšhara	Ga go na phetogo yeo e oketšegago ya 2 °C godimo goba fase
							Maemo a oksitšene ka gare ga lenaneo a swanetše go thokomela lenaneo la tswalano ya diphedi le tikologo.	Oksitšeni yeo e moyafetšego	≥ 7.0 mg/L O ₂ 95 th phesenthaele
						Mepholo	Letamo le swanetše go thokomelwa go fokotša tšweletšo ya	Saenopaktheria	Saenopaktheria yeo e atilego ka motswako wa Chl wo olego godimo go feta 30µg/l e swanetše

IU A	Lenane o	Noka	Yuniti ya Mothopo o	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
							mpholo wa disaenopaktheria Meetse a noka ga a swanela go ba mpholo go diphedi tša ka gare ga meetse goba go di bea kotsing Meetse ao a bolokilwego ga a swanela go ba kotsi go tšwelopelo yeo e swarelelago ya diphoofolo le batho.		go bolokwa go 20% nakong ye ntshi.
							Meetse ao a bolokilwego ga a swanela go ba kotsi go tšwelopelo yeo e swarelelago ya diphoofolo le batho. Go laola mothopo wa meetse wa tlhokomelo ya phapaphapano ya tswalano ya diphedi tša ka fase ga meetse le tikologo (kelelo ya ka gare, diphedi tšeo di phelago ka gare ga meetse le tšeo di tsholwago ke diwana tšeo di phelago, mafelo a monola) go boloka, Tlhokomela, go tsošološa le go tlhama mothaladi wa lebopo wa maitirelo le mafelo a monola. Mafelo a hlago a monola a swanetše go bolokwa ka mo go ka kgonegago go netafaletša tikologo yeo e swanelago.	Dibolaya-dikhunkhwane	Sianaete: ≤ 110 µg/l Endosalfene: ≤ 20 µg/l Atrazine: ≤ 100 µg/l 95th phesenthaele
							Meetse ao a bolokilwego ga a swanela go ba kotsi go tšwelopelo yeo e swarelelago ya diphoofolo le batho. Go laola mothopo wa meetse wa tlhokomelo ya phapaphapano ya tswalano ya diphedi tša ka fase ga meetse le tikologo (kelelo ya ka gare, diphedi tšeo di phelago ka gare ga meetse le tšeo di tsholwago ke diwana tšeo di phelago, mafelo a monola) go boloka, Tlhokomela, go tsošološa le go tlhama mothaladi wa lebopo wa maitirelo le mafelo a monola. Mafelo a hlago a monola a swanetše go bolokwa ka mo go ka kgonegago go netafaletša tikologo yeo e swanelago.	Ditšweletšwa tša kalafo tšeo di tsholago ke dihomouni	17β-oestradiol: ≤ 1 µg/l
						Tikologo ya Letamo	meetse le tikologo (kelelo ya ka gare, diphedi tšeo di phelago ka gare ga meetse le tšeo di tsholwago ke diwana tšeo di phelago, mafelo a monola) go boloka, Tlhokomela, go tsošološa le go tlhama mothaladi wa lebopo wa maitirelo le mafelo a monola. Mafelo a hlago a monola a swanetše go bolokwa ka mo go ka kgonegago go netafaletša tikologo yeo e swanelago.	Bophelo bja tšeo di dibjalo golago monoleng	80% kapešo ya dibjalo tšeo di golago monoleng
					Bolen	Dinutrientsee	Motswako wa kelelo	Othofosfeiti (PO ₄) ⁻ bjalo	≤ 0.125 dimilikramo/lithara (mg/l)
		Hennops go							

IU A	Lenane o	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
		tšwa keelong ya Letamo la Rietvlei go ya go A21H Sesmyspruit, Kaalspruit le Olifantspruit (A21B)			g		yeo e tšenago ya dinutrient o swanetše go kaonafatšwa go tšwetšapele tswalano ya diphedi tša ka gare ga meetse le tikologo le go netefatša legoro leo le laetšwego la tikologo le gore dinyakwa tša bašomiši ba meetse di a fihlelelwa.	ka fosforase Naetrotsene yeo e moyafetšego yeo e se nago khapone	(50 th phesenthaele) ≤ 3.0 dimilikramo/lithara (50 th phesenthaele) ≤ 1.0 dimilikramo/lithara (50 th phesenthaele)
							Kelelo ya ka gare ya motswako wa letswai e swanetše go kaonafatšwa go fihlelela legoro la tswalano ya diphedi le tikologo yeo e nyakegago le dinyakwa tša boleng bja bašomiši ba meetse. Ditutuetšo tšeo elego tša naga le ditšhila tša meetse di swanetše go laolwa go tšhireletša mothopo.	Tshwaro ya Mohlagase (EC) Safeti	≤ 85 milisimense/mmitha (mS/m) (95 th phesenthaele) ≤ 70 dimilikramo/lithara (95 th phesenthaele)
						Diphathotšene matswai tša		Sodiamo	≤ 70 dimilikramo/lithara (mg/l) (95 th phesenthaele)
							Go ba gona ga diphathotšene go swanetše go fokotša kotsi maphelong a batho.	<i>Eskherišia kholi</i>	Dipalo tše dimililithara (95 th phesenthaele) 130/100 tša
						Diphetogophetogo Lenaneo tša	Phapaphapano ya pH e swanetše go tihokomelwa ditekanyetšong tšeo di kgethilwego go thekga tikologo ya meetse le dinyakwa	Bontšhi bja pH	Phapaphapano ya pH 7.5 (5 th phesenthaele) - 9.2 (95 th phesenthaele)

IU A	Lenane	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
							tša bašomiši ba meetse.		
							Mathomo a tshekatsheko go tšweletša maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a tlhokega.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe
							Maemo a oksitšeni yeo e moyafetšego a swanetše go kaonafatšwa go thekga tswalano ya diphedi tša ka gare ga meetse le tikologo.	Oksitšeni yeo e moyafetšego	≥ 6 dimilikramo/lithara (mg/l)
						Mepholo		Amonia bjalo ka N	≤ 0.1 dimilikramo/lithara (mg/l) 95th pesenthaele)
							Aluminiamo (Al)	≤ 0.150 dimilikramo/lithara (mg/l) (95th pesenthaele)	
							Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95th pesenthaele)	
							Ayone(Fe)	≤ 0.1 dimilikramo/lithara (mg/l) (95th pesenthaele)	
							Liti (Pb) ye bothata	≤ 0.013 dimilikramo/lithara (mg/l) (95th pesenthaele)	
							Khopha (Cu) ye bothata	≤ 0.0075 dimilikramo/lithara (mg/l) (95th pesenthaele)	
							Nikhele (Ni)	≤ 0.07 dimilikramo/lithara (mg/l) (95th pesenthaele)	
							Atrazine	≤0.078 dimilikramo/lithara (mg/l)	
							Mankhozeb	0.009 dimilikramo/lithara (mg/l)	
							Tlaefoseiti	0.7 dimilikramo/lithara (mg/l)	
						Endosalfene	0.13 dimakhrokramo/lithara (ug/l)		
					Tikologo go	Kelelo ya ka gare	Phapapapano ya tikologo e swanetše go tlhokomeiwa go legoro la tša tikologo la D, go ba n	Dikagare tša Maemo a Tikologo,Mokgwa wa Tshekatsheko ya Lebelo la Tikologo le Mokgwa wa Mmotlolo	Legoro la Botshephedi bja Tikologo la ≥ D ≥ 42%

IU A	Lenane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							kaonafatšwa. Bophara bja lebelo la kelelo ya diphedi tšeo di gobalago ga bonolo (AURA le CPRE) di a tshokega. Tsenelo ya dilo tše di šele e a tshokega. Dibjalo tša monoleng di swanetše go kaonafatšwa go tloga go legoro la E la tša tikologo go iša go legoro la D.	Mmotlo (RHAMM)	
						Tikologo ya monola		Dikagare tša Botshepedi bja Tikologo, Dikagare tša Tshakatsheko ya Dipelo tša Dibjalo	Legoro la tša tikologo la VEGRAI = $D \geq 42\%$ Dimela tša monoleng IHI = $D \geq 42\%$
							Lefelo la dihlapu le swanetše go kaonafatšwa go tšwa go legoro la bjale la Dihlapi la E go ya go legoro la D. Lebelo la kelelo leo le amantšhišwego le dinyakwa tša dihla tšeo di nyakegago go BMAR le BMAT.	Dikagare tša Tshakatsheko ya dipelo tša dihlapu (FRAI)	FRAI e swanetše go lekolwa ka ngwaga go tshokomela kgatšhanong le legoro leo le laetšwego la tša tikologo la D. FRAI $\geq 42\%$
							Kopantšho ya diphoofolo tša ka meetseng tša go tshoka lerapo la mokotlo e swanetše go tshokomelwa mo legorong la D la tša tikologo goba go kaonafatšwa.	Dipelo tša Dikagare tša Tshakatsheko ya Diphedi tšeo di tshokago lerapo la mokotlo le Karolo ya bohano ya Lenaneo la go Nweša la Afrika Borwa (SASS5).	MIRAI EC = $D \geq 42\%$ SASS ≥ 55 ASPT ≥ 4.2
							Motswako wa Kelelo ya ka gare ya dinutrient o swanetše go kaonafatšwa	Othofosfeiti (PO ₄ ⁻) bjalo ka fosforase Naetrotsene yeo e moyafetšego yeo e senago khapone (DIN) bjalo ka N	≤ 0.125 dimilikramo/lithara (mg/l) (50 th phesenthaele) ≤ 1.25 dimilikramo/lithara (mg/l) (50 th phesenthaele)
		Noka ya Upper Pienaars, Edendalespruit le Dinoka tša Moretele go ya go Roodeplaat	1_4			Dinutrient			

IU A	Len ane o	Noka (A23A)	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							tšwetšapele bophelo bja tša tikologo ya diphedi tša ka gare ga meetse le go netefatša gore legoro leo le laetšwego la tša tikologo le diphedi le dinyakwa tša boleng bja bašomiši ba meetse di a fihlelwa. Taolo ya dinutrient yeo e thokegago go kaonafatša maemo a boleng bja kelelo ya ka gare ya meetse.	Naetrotsene	≤ 1.0 dimilikramo/lithara (50 th phesenthaele)
							Moela wa ka gare wa motswako wa letswai o swanetše go thokomelwa go thekga tša tikologo le diphedi tša ka gare ga meetse le boleng bja dinyakwa tša bašomiši ba meetse.	Tshwaro ya Mohlagase (EC)	≤ 65 milisimense/mmitha (mS/m) (95 th phesenthaele)
						Matswai		Salfeti (SO ₄)	≤ 50 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Kloraete (Cl)	≤ 50 dimilikramo/lithara (mg/l) (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene bo swanetše bobe le ditlamorago tše dinnyane go maphelo a batho.	Esk/heršia kholi	Dipalo tše 130/100 miliilithara (95 th phesenthaele)
						Diphetogophetogo tša Lenaneo	Phapaphapano ya pH e swanetše go thokomelwa ditekanyetšong tseo di laetšwego go thekga tša tikologo le diphedi le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th phesenthaele) le 9.0 (95 th phesenthaele)

IU A	Lenane o	Noka	Yuniti ya Mothopo	Legorola Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Tshekatsheko ya mothalotho go tšweletša maemo a bjale a kelelo ya ka gare ga kgobokano ya seela e a tihokega.	Kgobokano ya seela	10% ya phapahapano ya bokamorago bja motswako e dumeletšwe.
							Maemo a Oksitšeni yeo e moyafetšego a swanetše go kaonafatšwa go thekga tša diphelele tikologo.	Oksitšeni yeo e moyafetšego	≥ 6 dimilikramo/lithara (mg/l)
								Amonia bjalo ka N	≤ 0.0725 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Aluminiamo (Al)	≤ 0.15 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Ayone (Fe)	≤ 0.1 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Liti (Pb) ye bothata	≤ 0.007 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Khopha (Cu) ye bothata	≤ 0.0075 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Nikhele (Ni)	≤ 0.07 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Floraete (F)	≤ 2.54 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Benzene	≤ 0.01 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Toluene	≤ 0.7 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Ditšweletšwa tša kalafo tseo di tihotšego ke dihomouni	17β-oestradioli: ≤ 0.001 mg/l
								Dikagare tša Tshephagalo ya Tikologo, Mokgwa wa Tshekatsheko ya Tikologo le Mokgwa wa Mmotlolo le Mmotlo	Tshephagalo ya Moela wa ka gare wa legoro la tša y = D ≥ 42% (A2HART-KAMEE le A2PIEN-BAVIA)
								Khwetšagalo ya Tikologo ya dihlapi le diphelele tša ka gare ga meetse tšeo di hlokago lerapo la mokokotlo di	
								Moela wa ka gare	
								Tikologo	

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							swanetše go tihokomelwa go tšwetšapele phapaphapano ya diphedi. Legoro la dibjalo tšeo di tihokegago go thekga <i>BANO</i> . Taolo ya tsenelo ya dilo tše di šele tšeo di tihokegago. Dibjalo tša mondleng di swanetše go kaonafatšwa go tloga go legoro la E la diphedi le tikologo go iša go legoro D.	(RHAMM)	
						Tikologo ya monola		Dikagare tša Tshephagalo ya Tikologo, Dipolelo tša Dikagare tša Tshekatsheko ya Dibjalo	Legoro la tša tikologo le diphedi la VEGRAI = $D \geq 42\%$ Monola IHI = $D \geq 42\%$ (A2HART-KAMEE le A2PIEN-BAVIA)
						Malele		Dikagare tša tšhilafatšo ye e itšego	Legoro la tša tikologo le diphedi Legoro la malele a tikologo le diphedi = $D \geq 42\%$ (go bobedi bja REMP Lefelo A2HART-KAMEE le A2PIEN-BAVIA)
					Diphe di		Kopantšho ya malele e swanetše e tihokomelwe mo maamong ao a fetotšwego goba ao a kaonafatšwego.		Legoro tša tikologo la MIRAI = $D \geq 42\%$ Lefelo la REMP go A2PIEN-BAVIA: SASS ≥ 60 ASPT ≥ 3.8
						Diphedi tša ka meetseng tšeo di hlokago lerapo la swanetše go tihokomelwa go legoro D la tša tikologo le diphedi goba go kaonafatšwa.		Dikagare tša Dipolelo tša Tshekatsheko ya Diphedi tša meetseng tšeo di tihokago lerapo la mokokotlo le Karolo ya bohloko ya go Nweša ya Afrika-Borwa (SASS5).	Lefelo la REMP A2HART-KAMEE: SASS ≥ 60 ASPT ≥ 3.8
					Bontšhi	Maamo a matamo	Letamo le swanetše go laolwa go tšhireletša mešomo le bašomišwa ba moela wa fase. Go tihama le go godiša melao ya tshepedišo gore letamo le	Maamo a fase a tshepedišo a a tihokega go letamo	Melao ya tshepedišo ka mo go tihokegago. Maamo a go tšwetšapele tswalano ya diphedi tša ka gare ga meetse le tikologo (15-18%).
		Letamo la Roodeplaat	1_5						

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							tšwetšepela maemo a makaone a go netefatšago gore phapaphapano ya tikologo le diphedi e a tihokomelwa. Ditšhila tša letamo di swanetše go kopana le kelelo ya fase ya dinyakwa tša kelelo ya tša tikologo le diphedi.		
							Motswako wa othofosfeiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja tša tikologo le diphedi le boleng bja bašomiši ba meetse. Letamo le swanetše go tihokomelwa bjalo ka maemo a lenaneo leo le humilego ka dimenerale. Kgolo ya lepolomo la 'Hyacinth' e swanetše go laolwa. Lenaneo la go laola go lebagana le morwalo wa ditšhila le a hlokega. Motswako wa palomoka ya fosforase o swanetše go kaonafatšwa go tšwetšapele bophelo bja tša tikologo le diphedi le boleng bja bašomiši ba meetse. Letamo le swanetše go tihokomelwa ka	Othofosfeiti	≤ 0.025 mg/l 50th phesenthaele
		Bolen g				Dinutrient	Motswako wa palomoka ya fosforase o swanetše go kaonafatšwa go tšwetšapele bophelo bja tša tikologo le diphedi le boleng bja bašomiši ba meetse. Letamo le swanetše go tihokomelwa ka	Palomoka ya fosforase	≤ 0.130 mg/l 50th phesenthaele

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							lenaneo leo le humilego ka dimenerale.		
							Motswako wa nitreiti le naetreiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphelele le tikologo le boleng bja dinyakwa tša bašomiši ba meetse. Letamo le swanetše go tihokomelwa bjalo ka lenaneo leo le humilego ka dimenerale.	Nitraete le Naetreiti	≤ 1.00 mg/l N 95th phesenthaele
							Motswako wa letswai ka gare ga letamo o swanetše go tihokomelwa go thekga bophelo bja diphelele tša ka gare ga meetse le tikologo le boleng bja dinyakwa tša meetse tša bašomiši ba moela wa fase.	Tshwaro ya Mohlagase	≤ 55 mS/m 95th phesenthaele
						Matswai	Motswako wa letswai ka gare ga letamo o swanetše go tihokomelwa go thekga bophelo bja diphelele le tikologo le boleng bja dinyakwa tša bašomiši ba meetse a moela wa fase.	Salfeti	≤ 80 mg/l 95th phesenthaele
							Motswako wa letswai ka gare ga letamo o swanetše go tihokomelwa go		≤ 70 mg/l 95th phesenthaele

IU A	Lenane o	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							thekga bophelo bja diphedi le tikologo le boleng bja dinyakwa tša bašomiši ba meetse a moela wa fase.		
						Phathotšene	Phathotšene e swanetše go thokomelwa maamong ao a boloketšwego tšhomišo ya batho.	<i>Eskherišia kholi</i>	Palo ya ≤ 130 /100 millilitara (ml) (95 th phesenthaele)
							Meetse a swanetše go dumelelwa gore a šomišetšwe boitapološo.	pH	6.5 – 9.0 95 th phesenthaele
						Diphetogophetogo tša Lenaneo	Koketšo ya kgonthisišo ka palo ya ≥ 0.4 m	Kgobokano ya seela	95 th phesenthaele ya fase
							Phetogo ya maleba	Themphereitšha	Go se ke gwa feta 2 °C ya kokešo ya phetogo ya fase le ya godimo
							Maemo a oksitšene ka gare ga lenaneo a swanetše go thokomela lenaneo la diphedi le tikologo.	Oksitšeni yeo moyafetšego	≥ 7.0 mg/L O ₂ 95 th phesenthaele
						Mepholo	Letamo le swanetše go laolwa go fokotša tšweletšo ya mpholo wa saenopaktheria	Saenopaktheria	Go ata ga saenopaktheria ka motswako wa Chl wo olego godimo go feta 30µg/ℓ go swanetše go bolokwa ka fase ga 20% ya nako.
							Meetse ao a bolokilwego ga a swanela go ba kotsi go tšwetšopele ya batho le diphoofofo.	Dišweletšwa tša kalafo tšeo di tšhotšego ke dihomouni	17β-oestradiol: ≤ 1 µg/ℓ
						Tikologo ya letamo	Go laola mothopo wa meetse wa thokomelo ya phapanophapano ya diphedi tša ka gare ga meetse le tikologo	Bophelo bja dibjalo tša monoleng	Kapešo ya dibjalo tša monoleng ya 70%

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo		
									Tihokomel o ya dikelelo tša fase (m³/s)	Dikelelo tša komelelo (m³/s)	
							(kelelo ya ka gare, dilo tšeo di tšweletšago ke diphedi, diphedi tšeo di phelago mo go nago le monolana, mafelo a monola). Boloka, tihokomela, tsošološa le go tšweletša lebope la maitirelo le mafelo a monola. Lefelo la monola la hlago le swanetše go bolokwa ka fao go kgonegago go netaletša tikologo ya maleba.				
		Upper reaches – Apies, Skinner-spruit le kelelo ya ka ntle ya Noka ya Pienaars go tloga go Letamo la Roodeplaat (A23B, A23D, A23E)	1_6		Bontšhi	Dikelelo tša fase	Tihokomelo ya EWR ya fase le kelelo ya komelelo: s: Noka ya Pienaars go CROC_EWR4 ka A23B NMAR = 28.20x10 ⁶ m³ Legoro la REC=C Tihokomelo ya kelelo ya fase le kelelo ya komelelo e swanetše go fihlelelwa gore dinyakwa tša dikelelo tša tikologo di fihlelelwe go thekga maemo a mabotse a diphedi le tikologo le bašomiši.	Tihokomelo ya kelelo yeo e sa hamegago gabotse le kelelo ya komelelo. EWR ya Lefelo leo le lego magareng la bone go Noka ya Pienaars (tihokomelo go AZH006)	Oct 0.104 Nov 0.136 Dec 0.146 Jan 0.211 Feb 0.242 Mar 0.208 Apr 0.174 May 0.144 Jun 0.133 Jul 0.120 Aug 0.111 Sep 0.103 Oct 0.104 Nov 0.136	0.063 0.081 0.086 0.122 0.140 0.119 0.102 0.085 0.080 0.072 0.067 0.063 0.063 0.081	
						Dikelelo tša godimo	Kelelo ya godimo ya EWR: Noka ya Pienaars go CROC_EWR4 ka	Mafuila (lebelela lemetletšo A go dintlha ka ga mafuila)	Dikelelo tša godimo (m³/s)		
									Oct 0 Nov 0.210 Dec 0.339		

IU A	Lenane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							A23B NIMAR = 28.20x10 ⁶ m ³ Legoro la REC=C Kelelo ya godimo e swanetše go fihlelelwa gore dinyakwa tša kelelo ya tikologo di fihlelelwe go thekga maemo a mabotse a diphedi le tikologo.	EWR ya magareng ya lefelo la bone go Noka ya Pienaars (tlhokomelo go AZH006)	Jan 0.203 Feb 0.56 Mar 0.203 Apr 0 May 0 Jun 0 Jul 0 Aug 0 Sep 0
							Motswako wa kelelo ya ka gare wa dinutrient o swanetše go kaonafatšwa go tšwetšapele diphedi tša ka gare ga meetse le tikologo le go netefatša gore legoro leo le laetšwego la diphedi le tikologo le a fihlelelwa. Metswako ga ya swanela go dumelelwa gore e be ka maatla.	Othofosfeiti (PO ₄ ⁻) bjalo ka Fosforase	≤ 0.5 dimilikramo/lithara (mg/l) (50 th phesenthaele) Apies ≤ 0.09 dimilikramo/lithara (mg/l) (50 th phesenthaele) Pienaars ≤ 0.05 dimilikramo/lithara (mg/l) (50 th phesenthaele) Skinnerspruit
					Boleng		Kelelo ya ka gare ya motswako wa letswai wa kelelo ya ka gare o swanetše go tlhokomelwa maemong ao a amogelelago a go thekga bophelo bja diphedi tša ka gare ga meetse le tikologo le boleng bja bašomiši ba meetse.	Nitritei (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 3.0 dimilikramo/lithara (50 th phesenthaele) Skinnerspruit and Apies ≤ 1.0 dimilikramo/lithara (mg/l) (50 th phesenthaele) Pienaars
							Kelelo ya ka gare ya motswako wa letswai wa kelelo ya ka gare o swanetše go tlhokomelwa maemong ao a amogelelago a go thekga bophelo bja diphedi tša ka gare ga meetse le tikologo le boleng bja bašomiši ba meetse.	Tshwaro ya Mohlagase (EC)	≤ 55 milisimense/mmitha (mS/m) (95 th phesenthaele) Pienaars River ≤ 70 milisimense/mmitha (mS/m) (95 th phesenthaele) Apies River
						Matswai		Salfitei (SO ₄)	≤ 70 dimilikramo/lithara (95 th phesenthaele)
								Sodiamo (Na)	≤ 50 dimilikramo/lithara (95 th phesenthaele)
						Phathotšene	Bogona bja	Eskherita kholi (E.kholi)	Dipalo tše 130 /100 miliilithara

IU A	Lenane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							phatšhene bo swanetše go fokotša kotsi maphelong a batho.		(95 th phesenthaele)
							Phapaphapano ya pH e swanetše go tlhokomelwa ditekanyetšong tšeo di tihalošitšwego go thekga diphedi tša ka gare ga meetse le tikologo le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th phesenthaele) and 9.0 (95 th phesenthaele)
						Diphetogophetogo tša Lenaneo	Tshekatsheko ya mothalotho go tšweletša maemo a bjale a kelelo ya ka gare kgobokano ya seela e a tlhokega.	Kgobokano ya seela	A 10% ya phapaphapano go tšwa bokamoragong bja motswako e dumeletšwe.
							Maemo a Oksitšeni yeo e moyafetšego a swanetše go kaonafatšwa go thekga diphedi tša ka gare ga meetse le tikologo.	Oksitšeni yeo e moyafetšego	≥ 6 dimilikramo/lithara (mg/l)
							Metswako ya mepholo ga ya swanela go ba maemong ao a lego kotsi go diphedi tša ka gare ga meetse le maphelong a batho.	Atrazine	≤ 0.078 dimilikramo/lithara (mg/l)
								Mancozeb	0.009 dimilikramo/lithara (mg/l)
						Mepholo		Klaefoseiti	0.7 dimilikramo/lithara (mg/l)
								Endosulfan	0.13 maekhrokramo/lithara (ug/l)
							Tlhokomelo ya fase le dikelelo tša komelelo tša EWR:	Dikelelo tšeo di sego maleba	Tlhokomel o ya dikelelo tša fase (m ³ /s)
							Noka ya Jukskei go CROC_EWR2 ka A21C	Dikelelo tša fase le dikelelo tša komelelo EWR ya Lefelo la bobedi la gare go Jukskei River	Oct 0.725
							PMAR = 139.9x10 ⁶ m ³		Nov 0.775
									Dec 0.770

IU A	Lenane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Legoro la REC=D Dinyakwa tša meetse a tša diphedi le tikologo (Poloko) e swanetše go fihlelwa gore tšhepedišo ya dinyakwa tša tikologo e fihlelwe go thekga maemo a mabotse a diphedi le tikologo le bašomiši. Kelelo ya ka gare ya motswako wa dinutrient e swanetše kaonafatšwa go tšweletša bophelo bja diphedi le tikologo le go netafetša legoro la tša diphedi le tikologo yeo e laetšwego le bo bona gore boleng bja bašomiši ba meetse bo a fihlelwa. Taolo ya dinutrient yeo e nyakegago go kaonafatša maemo a bjale le go netefatša tšwetšopele ya lenaneo.	(tlhokomelo go A2H023/ A2H044)	Jan 0.814 0.814 Feb 0.936 0.936 Mar 0.845 0.845 Apr 0.839 0.839 May 0.795 0.795 Jun 0.815 0.815 Jul 0.785 0.785 Aug 0.774 0.774 Sep 0.762 0.762
							Kelelo ya ka gare ya motswako wa dinutrient e swanetše kaonafatšwa go tšweletša bophelo bja diphedi le tikologo le go netafetša legoro la tša diphedi le tikologo yeo e laetšwego le bo bona gore boleng bja bašomiši ba meetse bo a fihlelwa. Taolo ya dinutrient yeo e nyakegago go kaonafatša maemo a bjale le go netefatša tšwetšopele ya lenaneo.	Othofosfeti (PO ₄ ⁻) bjalo ka Fosforase	≤ 0.5 dimilikramo/lithara (mg/l) (50 th phesenthaele) (tekanyo ya dipalo ya nakwana) ≤ 0.125 dimilikramo/lithara (mg/l) (50 th phesenthaele) (tekanyo ya dipalo ya lebaka le le telele)
					Boleng	Dinutrient	gore boleng bja bašomiši ba meetse bo a fihlelwa. Taolo ya dinutrient yeo e nyakegago go kaonafatša maemo a bjale le go netefatša tšwetšopele ya lenaneo.	Nitriti (NO ₃ ⁻) le Naetriti (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 1.0 dimilikramo/lithara (50 th phesenthaele)
						Matswai	Kelelo ya ka gare ya motswako wa letswai e swanetše go tlhokomelwa go thekga diphedi tša ka gare ga meetse le tikologo le boleng bja dinyakwa tša	Tshwara ya Mohlagase (EC)	≤ 65 milisimense/mmitha (mS/m) (95 th phesenthaele)
								Salfeti (SO ₄)	≤ 70 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Sodiamo (Na)	≤ 70 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Kloraete	≤ 60 dimilikramo/lithara (mg/l) (95 th phesenthaele)

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							bašomiši ba meetse.		
						Phathotšene	Bogona bja phathotšene bo swanetše go fokotša kotsi maphelong a batho.	<i>Escheria coli</i> (<i>E. coli</i>)	Dipalo tše 130/100 tša dimiliithara (95 th phesenthaele)
							Phapaphapano ya pH e swanetše go tshokomelwa mo ditekanyetšong tseo di hlalošitšwego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th phesenthaele) and 9.0 (95 th phesenthaele)
						Diphetogophetogo tša Lenaneo	Tshekatsheko ya mothalotheo go tšweletša maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega. Maemo a Oksitšeni yeo e moyafetšego a swanetše go kaonafatšwa go thekga diphedi tša ka gare ga meetse le tikologo.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja moitswako e dumeletšwe
								Oksitšeni yeo e moyafetšego	≥ 6 dimilikramo/lithara (mg/l)
								Amonia bjalo ka N	≤ 0.1 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Aluminiamo (Al)	≤ 0.15 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Ayone (Fe)	≤ 0.3 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Liti (Pb) ye bothata	≤ 0.013 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Khopha (Cu) ye bothata	≤ 0.0075 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Nikhele (Ni)	≤ 0.07 dimilikramo/lithara (mg/l) (95 th phesenthaele)

IU A	Lenane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
								Atrazine	≤0.078 dimilikramo/lithara (mg/l)
								Mancozeb	0.009 dimililikramo/lithara (mg/l)
								Klaefoseiti	0.7 dimililikramo/lithara (mg/l)
								Endosulfene	0.13 maekhrokramo/lithara (ug/l)
						Kelelo ya ka gare	Phapaphapano ya tikologo e swanetše go kaonafatšwa go tšwa go legoro E la diphedi le tikologo go iša go legoro la D. Maemo a lenaneo la diphedi le tikologo a swanetši go kaonafatšwa.	Dikagare tša Maemo a Tikologo	Kelelo ya ka gare ya Maemo a Tikologo EC = D ≥ 42%
					Tikologo go	Tikologo ya monola	Dibjalo tša monoleng di swanetše go tlhokomelwa go legoro C la tša tikologo. Taolo ya dibjalo tše di šele e a tlhokega.	Dikagare tša Tshekatsheko ya Dipoele tša Dibjalo	VEGRAI EC = C ≥ 62%
					Diphe di	Dihlapi	Setšhaba sa dihlapi se swanetše go kaonafatšwa go tloga go legoro la E la diphedi le tikologo go iša go legoro la D, go netaletša go ba gona ga diphedi tša BMAR le BMOT (tšhepedišo ya diphedi tšeo di ithekgile go ka tše dingwe). Bofase bja kelelo bo swaneše go ba gona go thekga bogona bja tikologo ya TSPA, CGAR, BANO, BMAR le BMOT.	Dikagare tša Dipoele tša Tshekatsheko ya Dihlapi (FRAI)	Legoro la diphedi le tikologo ya = D FRAI ≥ 42%

IU A	Lenane o	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphedi tša ka meeseng tšeo di hlokgalo lerapo la mokokotlo	Kopanyo ya diphoofolo tša ka meeseng tšeo di hlokgalo lerapo la mokokotlo e swanetše go thokomelwa mo go legoro D la diphedi le tikologo goba go kaonafatšwa.	Dikagare tša Tshakatsheko ya Dipelo tša Diphoofolo tšeo di hlokgalo lerapo la mokokotlo le Karolo ya bohloko ya Lenaneo la go Nweša la Afrika-Borwa (SASS5).	Legoro la diphedi le tikologo la = D ≥ 42% SASS ≥ 50 ASPT ≥ 3.8 (EWR2, A2JUKS-DIENR)
						Ditaeathomo	Kopanyo ya Taeathomo e swanetše go thokomelwa mo legorong la D la diphedi le tikologo goba go kaonafatšwa.	Dikagare tša Tšhlatšo ye e itšego	Taeathomo EC ≥ 42% A2JUKS-DIENR
						Dinutrient	Kelelo ya ka gare ya motswako wa dinutrient e swanetše go thokomelwa go tšwetšapele diphedi tša ka gare ga meetse le tikologo le go netafatša legoro leo le laetšwego la tša tikologo le diphedi le a fihlelelwa.	Othofosfeiti (PO ₄) bjalo ka Fosforase	≤ 0.125 dimilikramo/lithara (mg/l) (50 th phesenthaele)
			1_8		Boleng		Kelelo ya ka gare ya motswako wa letswai e swanetše go thokomelwa maamong a bjale a boleng. Taolo ya dituetšo le dišweletšo tša bokamoso.	Nitritei (NO ₃) le Naetritei (NO ₂) bjalo ka Naetrotšene	≤ 1.0 dimilikramo/lithara (50 th phesenthaele)
		Diphilelelo tša Godimo tša Noka ya Crocodile le Bloubank spruit (A21D, A21E)				Matswai	Kelelo ya ka gare ya motswako wa letswai e swanetše go thokomelwa maamong a bjale a boleng. Taolo ya dituetšo le dišweletšo tša bokamoso.	Tshwara ya Mohlagase (EC)	Moela wa godimo wa Crocodile Bloubankspruit o tla kopantšhwa le ≤ 45 milisimense/mmitha (mS/m) (95 th phesenthaele)
							Maemo a motswako wa letswai a godimo		Bloubankspruit: ≤ 85 milisimense/mmitha (mS/m)

IU A	Lenane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							kudu. Kelelo ya ka gare ya motswako wa letswai e swanetše go kaonafatšwa go thokomela diphedi tša ka fase ga meetse ka maemo ao a swanelago le go thekga boleng bja dinyakwa tša bašomiši ba meetse.		(95 th phesenthaele)
							gare ya motswako wa letswai e swanetše go thokomela diphedi tša ka fase ga meetse ka maemo ao a swanelago le go thekga boleng bja dinyakwa tša bašomiši ba meetse.	Salfeiti (SO ₄)	Crocodile upstream Bloubankspruit e tla kopantšhwa le ≤ 40 dimilikramo/lithara (mg/l) (95 th phesenthaele)
							Bogona bja phathotšene bo swanetše go fokotša kotsi maphelong a batho.		Bloubankspruit: ≤ 200 dimilikramo/lithara (mg/l) (95 th phesenthaele)
						Phathotšene		<i>Escheria coli</i> (E.coli)	Dipalo tše 130/100 millilithara (95 th phesenthaele)
						Diphegophelogo tša Lenaneo		Phapaphapano ya pH	6.5 (5 th phesenthaele) and 8.5 (95 th phesenthaele)
							Phapaphapano ya pH e swanetše go thokomelwa mo ditekanyetšong tšeo di bontšhišwego go thekga lenaneo la diphedi tša ka meetse le dinyakwa tša bašomiši ba meetse.	Saenaete	≤ 0.110 dimilikramo/lithara (95 th phesenthaele)
								Yureniamo (U) (238)	≤ 0.03 dimilikramo/lithara (95 th phesenthaele)
							Motswako wa mepholo o swanetše go thokomelwa maemong ao a sego kotsi go diphedi tša ka gare ga meetse le go ba kotsi maphelong a batho.	Aseniki (As)	≤ 0.130 dimilikramo/lithara (95 th phesenthaele)
						Mepholo		Krose α	0.42 Bq/lithara
								Krose β	0.42 Bq/lithara
								Aluminiamo Al)	≤ 0.1 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Ayone (Fe)	≤ 0.3 dimilikramo/lithara (mg/l) (95 th phesenthaele)

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Government Gazette Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID AFRIKA

Vol. 652

18 October 2019
Oktober

No. 42775

PART 5 OF 6

N.B. The Government Printing Works will not be held responsible for the quality of "Hard Copies" or "Electronic Files" submitted for publication purposes

ISSN 1682-5843



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IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Liti (Pb) ye bothata Khopha (Cu) ye bothata Nikhele (Ni) Zinc (Zn)	≤ 0.0095 dimilikramo/lithara (mg/l) (95th phesenthaele) ≤ 0.0075 dimilikramo/lithara (mg/l) (95th phesenthaele) ≤ 0.07 dimilikramo/lithara (mg/l) (95th phesenthaele) ≤ 0.002 dimilikramo/lithara (mg/l) (95th phesenthaele)
		Moela wa ka gare				Phapaphapano ya tikologo e swanetše go kaonafatšwa go ithokomela legoro D la diphedi le tikologo.	Dikagare tša Maemo a Tikologo, Mokgwa wa Tshekatsheko ya Tikologo ya Lebelo le Mmotlo (RHAMM)	Kelelo ya ka gare ya Maemo a Tikologo EC = D $\geq 42\%$
		Tikologo ya monola				Dibjalo tša monoleng di swanetše go ithokomelwa go legoro D la tša tikologo. Dibjalo tša mothalothoeng di swanetše go kaonafatšwa. Taolo ya tsenelo ya dimela tše di šele le tsosološo ya lefelo la mothalothoeng di hlokega. Tikologo yeo e lekanyeditšwego e a hlokega. Tsošološo ya lefelo la monoleng e a hlokega go thekga diphedi tšeo di dulago lefelong leo nkego le na le meetse (dinonyane).	Dikagare tša Maemo a Tikologo, Dikagare tša Tshekatsheko ya Dipelo tša Dibjalo (VEGRAI)	VEGRAI EC = D $\geq 42\%$
		Diphedi				Setšhaba sa dihlapa se swanetše go laolwa go legoro D leo le laetšwego la diphedi le tikologo goba kaonafatšwa.	Dikagare tša Tshekatsheko ya Dipelo tša Dihlapi (FRAI)	Legoro la tša diphedi le tikologo = D FRAI $\geq 42\%$

IU A	Lenane o	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Dinyakwa tša tikologo tša <i>BMOT</i> (dibjalo) le lefelo leo dimela di golago go lona le kelelo ya <i>CPRE</i> e swanetše go fihlelwa.		
						Diphedi tša ka meetse tšeo di hlokago lerapo la mokokotlo	Kopanyo ya diphoofo tša ka meetse tšeo di hlokago mokokotlo e swanetše go tihokomelwa go legoro D la diphedi le tikologo goba go kaonafatšwa.	Dikagare tša Tshekatsheko ya Dipelo tša Diphoofo tša ka gare ga meetse tšeo di hlokago lerapo la mokokotlo le Karolo ya bohloko le Lenaneo la go Nweša la Afrika-Borwa (SASS5).	Legoro la tša diphedi le tikologo la MIRAI = D ≥ 42% SASS ≥ 60 ASPT ≥ 4.0 (A2CROC-ELAND)
		Noka ya Crocodile go tšwa go Jukskei e tla kopantšhwa le go ya go Letamo la Hartbeespoort (A21H)	1_9		Boleng	Dinutrient	Kelelo ya ka gare ya motswako wa dinutrient e swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi tša ka gare ga meetse le go netefatša gore legoro leo le laetšwego la tša diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba meetse bo a fihlelewa. Taolo ya nutrient yeo e hlokegago go kaonafatša maemo a bjale le go netefatša tšwetšopele ya lenaneo.	Nitriti (NO ₃ ⁻) le Naetriti (NO ₂ ⁻) bjalo ka Naetrotšene	≤ 2.0 dimilikramo/lithara (50 th phesenthaele)
						Matswai	Kelelo ya ka gare ya motswako wa letswai e swanetše go tihokomelwa go	Tshwato ya Mohlagase (EC) Sodiumo	≤ 75 milisimense/mmitha (mS/m) (95 th phesenthaele) ≤ 60 dimilikramo/lithara (mg/l) (95 th phesenthaele)

IU A	Lenane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							thekega dipheleli tša ka gare ga meetse le tikologo le dinyakwa tša boleng bja bašomiši ba meetse.	Tloraete	≤ 60 dimilikramo/lithara (mg/l) (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene bo swanetše go fokotšha kotsi maphelong a batho.	Salfeiti	≤ 75 dimilikramo/lithara (mg/l) (95 th phesenthaele)
							Phapaphapano ya pH e swanetše go tlhokomelwa mo ditekanyetšong tšeo di laetšwego go thekega dipheleli tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	<i>Escheria coli</i> (<i>E. coli</i>)	Dipalo tše 130/100 tša dimiliithara (ml) (95 th phesenthaele)
						Diphetogophetogo tša Lenaneo	Tshekatsheko ya mothalotheo go tšweletša maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a nyakega.	Phapaphapano ya pH	6.5 (5 th phesenthaele) le 8.5 (95 th phesenthaele)
								Kgobokano ya seela	Phapaphapano ya 10% go tšwa go bokamorago bja motswako bo dumeletšwe.
								Saenaete	≤ 0.110 dimilikramo/lithara (95 th phesenthaele)
								Yureniamo (U) (238)	≤ 0.03 dimilikramo/lithara (95 th phesenthaele)
								Krose α	0.42 Bq/litharas
								Krose β	0.42 Bq/litharas
								AluminiamoAl	≤ 0.15 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Ayone (Fe)	≤ 0.1 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Liti (Pb) ye bothata	≤ 0.013 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Khopha (Cu) ye	≤ 0.0075 dimilikramo/lithara (mg/l)

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tlhaloso ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
								bothata	(95th phesenthaele)
								Nikhele (Ni)	≤ 0.07 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Cobalt (Co)	≤ 0.05 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Zinc (Zn)	≤ 0.002 dimilikramo/lithara (mg/l) (95th phesenthaele)
						Kelelo ya ka gare	Ga go na tšwelopele ya phokotšego ya kelelo ya ka gare ya tikologo e swanetše go direga phaphaphapanong ya tikologo yeo e swanetšego go kaonafatšwa go tšwa legorong la E la tša diphedi le tikologo go ya go legoro la D.	Dikagare tša Maemo a Tikologo, dikagare tša tšhekatsheko ya Tikologo	Kelelo ya ka gare ya Maemo a tikologo EC = D ≥ 42%
					Tikologo go	Tikologo ya monola	Boloka, tihokomelela, tsošološa le go lokela mananeo a matirelo ao a nago le mohana mo lebopong le lefelong la monola. Taolo ya Tsenelo ya dilo tše di šele e a hlokega. Dibjalo tša monoleng di swanetše go tihokomelwa maemong a legoro D la diphedi le tikologo goba go kaonafatšwa.	Dikagare tša maemo a tikologo, Dikagare tša Tšhekatsheko ya Dipelo tša Dibjalo	VEGRAI EC = D ≥ 42%
					Diphe di	Dihlapi	Setšhaba sa dihlapi se swanetše go tihokomelwa legorong la D la diphedi le tikologo goba go kaonafatšwa.	Dikagare tša Dipelo tša Tšhekatsheko ya Dihlapi (FRAI)	Legoro la tikologo ya dihlapi = D FRAI ≥ 42%

IU A	Lenane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Tikologo le boleng bja meetse di hloka go kaonafatšwa go CFLA le kelelo e swanetše lekanela kelelo yeo e sa ikemetšego. <i>BMAR, BPOL, CPRE</i>		
						Diphedi tša ka meetseng tšeo di hloka go lerapo la mokokotlo	Kopanyo ya diphoofolo tša ka gare ga meetse e swanetše go thokomelwa go maemo ao a fetotšwego kudu goba ao a kaonafadišwego.	Dikagare tša Tshakatsheko ya Dipelo tša diphoofolo tša ka meetseng tšeo di hloka go lerapo la mokokotlo le Karolo ya bohlang ya Lenaneo la go Nweša la Afrika Borwa (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 50 ASPT ≥ 3.8 (go EWR1 = A2CROC-HARTB)
						Diphedi tšeo di dulago lefelong leo nkego le na le meetse.	Tšwetšopele ya kotlolo ya noka ye e šoma bjalo ka tikologo le khudugo ya tsejana ya nonyane ya meetseng le setšhaba sa diamušiše swanetše go thokomelwa ka taolo ya maleba ya tikologo.	Dinonyane tša ka meetseng/ sebontšhi sa diamušiše	Tshakatsheko ya mothalotheo e swanetše go swarwa go tšwetša setšhaba sa nonyane ya meetseng le kemedi ya diamušiše mo nokeng. Go na le hlokego ya go beakantšha tatelano ya RQO ya kgobokano ya diphoofolo/ dinonyane go ba tshedimošo yeo e lego gona/ yeo e kgobokantšhitšwego.
						Ditaeathomo	Kopanyo ya Taeathomo e swanetše go thokomelwa go phetogo ye kgolo ya maemo goba go kaonafatšwa.	Dikagare tša Tšhlatatšo ye e itšego	Taeathomo EC = D ≥ 42% (at EWR1 = A2CROC-HARTB)
		Letamo la Hartbeespoort	1_10		Bontšhi	Maemo a matamo	Matamo a swanetše go laolwa go tšhireletša mešomo ya diphedi le tikologo gotee le bašomiši ba moela wa fase. Go	Maemo ao a lekanetšego a tshepedišo ao a nyakegago matamong.	Maemo a tshepedišo a melao bjalo ka mo go hlokegago. Maemo ao a lego a manyane go tšwetšapele diphedi tša ka gare ga meetse le tikologo (15-18%).

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							tšweletša le go tlhama melao ya tshepedišo ya letamo, go tšwetšapele maemo a makaone a matamo, go netefatša gore phapaphapano ya diphedi tša ka gare ga meetse e tlhokomeišwe. Ditšhila tša matamo di hlokega go kopana kelelong ya fase ya dinyakwa tša diphedi le tikologo. Ditšhila tša matamo di hlokega go kopana le kelelo ya fase ya dinyakwa tša diphedi le tikologo.		
							Motswako wa othofosfeiti o swanetše go kaonafatšwa go tšwetšapele boleng bja dinyakwa tša bašomiši ba meetse. Letamo le swanetše go tlhokomelwa bjalo ka lenaneo leo le humilego ka dimenerale.	Othofosfeiti	$\leq 0.050 \text{ mg/l}$ 95 th phesenthaele
		Bolen g				Dinutrient	Motswako wa palomoka ya fosforase o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le tikologo le boleng bja dinyakwa tša	Palomoka ya fosforase	$\leq 0.130 \text{ mg/l}$ 50 th phesenthaele

IU A	Len ane o	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karol o	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							bašomiši ba meetse. Letamo le swanetše go tlhokomelwa bjalo ka lenaneo leo le humilego ka dimenerale.		
							Motswako wa palomoka ya Amonia bjalo ka N o swanetše go kaonafatšwa go tšwetsapele diphedi le tikologo le boleng bja dinyakwa tša bašomiši ba meetse. Letamo le swanetše go tlhokomelwa bjalo ka lenaneo leo le humilego ka dimenerale.	Palomoka ya Amonia	≤ 00725 mg/L N 95th phesenthaele
							Motswako wa Nitreiti le Naetreiti e swanetše go kaonafatšwa go tšwetsapele bophelo bja diphedi le tikologo le boleng bja bašomiši ba meetse. Letamo le swanetše go tlhokomelwa bjalo ka lenaneo leo le humilego ka dimenerale.	Naetreiti le Nitreiti	≤ 1.00 mg/L N 95th phesenthaele
						Boleng bja dilo tšeo di kgahlišago bo swanetše go laolwa go thekga tšhomišo ya boithabišo le tša boeti.		Ditšhila, tepirisi, malele, mafoka a meetseng	E tla tšweletšwa
						Matswai	Motswako wa letswai ka gare ga letamo o swanetše go	Tshwaro ya Mohlagase	≤ 85 mS/m 95th phesenthaele

IU A	Lenane o	Noka	Yuniti ya Mothopo	Legorola Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
							thokomelwa go thekga dinyakwa tša boleng bja bašomiši ba moela wa fase. Motswako wa letswai ka gare ga letamo o swanetše go thokomelwa go thekga diphedi le tikologo le boleng bja dinyakwa tša bašomiši ba moela wa fase. Motswako wa letswai ka gare ga letamo go thekga diphedi le tikologo le boleng bja dinyakwa tša bašomiši ba moela wa fase.	Salfeiti Tloraete <i>Escheria kholi (E.coli)</i>	≤ 100 mg/L 95th phesenthaele ≤ 50 mg/l 95th phesenthaele Dipalo tše 130 /100 millilithara (ml) (95th phesenthaele)
						Phathotšene	Phathotšene e swanetše thokomelwa mo maemong ao a bolokegetši tšhomišo ya batho. Bašomiši ba meetse ba swanetše go amogelela go tšhomišo ya tša boithabišo.	pH	6.5 – 9.0 95th phesenthaele
						Diphetogopphetogo Lenaneo	Kgonthišo yeo e okeditšwego Phetogo ye e lekane Maemo a oksitšene lenaneong a swanetše go thokomela lenaneo la diphedi le tikologo.	Kgobokano ya seela Thempereitšhara Oksitšeni yeo e moyafetšego	≥ 0.4 m 5th phesenthaele Ga go swanela go feta 2 °C godimo le fase ≥ 7.0 mg/L O₂ 95th phesenthaele
						Mepholo	Letamo le swanetše go thokomelwa go	Saenopakteria	Go ata ga seanopakteria ka motswako wa Chi wo olego

IUA	Lenane o	Noka	Yuniti ya Mothopo o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							fokotša tšwetšopele ya saenopaktheria		godimo go feta 30µg/l o swanetše go ba ka fase ga 20% ya noka.
							Meetse ao a bolokilwego ga a swanela go ba mpholo go diphedi tša ka meetseng goba go ba kotsi maphelong a batho.	Dilaola-dikhunkhwane	saenaete: ≤ 110 µg/l Endosulfan: ≤ 20 µg/l Atrazine: ≤ 100 µg/l 95th phesenthaele
							Meetse ao a bolokilwego ga a swanela go ba kotsi go diphoofole goba tšwetšopelo yeo e swarelelago ya batho.	Ditšweletšwa tša kalafo tšeo di hlotšwego ke dihomouni	17β-oestradiol: ≤ 1 µg/l

Tafolana 3: Boleng bja Dipono tša Mothopo wa DINOKA LE MATAMO go mohola wa Diyuniti tša Mothopo go Tshekatsheko ya bobedi ya Kopantšho ya Yuniti: MAGALIES

IUA	Lenaneo	Noka	Mothopo wa Yuniti	Legoro la tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya dipalo
2: MAGALIES	II	Maloneys Eye (A21F)	2_1	C	Bontšhi	Kelelo ya fase	Tlhokomelo ya fase ya EWR le kelelo ya komelelo: Noka ya Magalies go CROC_EWR9 in A21F NMAR = 14.68x10 ⁶ m ³ Legoro la REC=B	Dikelelo tšeo di sego gabotse	Tlhokomelo ya komelelo tša fase tša (m ³ /s)
									Oct 0.211 0.211
									Nov 0.216 0.216
									Dec 0.211 0.211
									Jan 0.212 0.212
									Feb 0.224 0.224
									Mar 0.206 0.206
									Apr 0.212 0.212
									May 0.208 0.208
									Jun 0.214 0.214
									Jul 0.210 0.210
									Aug 0.211 0.211
									Sep 0.217 0.217

IUA	Lenaneo	Noka	Mothopo wa Yuniti	Legoro la tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya dipalo
						Dinutrient	Kalelo ya ka gare ya motswako wa dinutrient e swanetše go thokomelwa go tšwetšapele bophelo bja diphedi tša ka gare ga meetse le go netefatša gore legoro la diphedi le tikologo leo le laetšwego le a fihlelelwa.	Othofosfeiti (PO_4^-) bjalo ka Fosforase	≤ 0.020 dimilikramo/lithara (mg/l) (50 th phesenthaele)
								Nitritei (NO_3^-) le Naetreiti (NO_2^-) bjalo ka Naetrotsene	≤ 0.5 dimilikramo/lithara (50 th phesenthaele)
								Tshwaro ya Mohlagase	≤ 30 milisimense/mmitha (mS/m) (95 th phesenthaele)
								Salfeiti	≤ 10 dimilikramo/lithara (95 th phesenthaele)
								Sodiamo	≤ 10 dimilikramo/lithara (95 th phesenthaele)
								Tloraete	≤ 10 dimilikramo/lithara (95 th phesenthaele)
					Boleng		Kelelo ya ka gare ya motswako wa letswai e swanetše go thokomelwa maemong a bjale go netefatša botshephegi goba mothopo.	<i>Eskheria kholi</i> (<i>E.coli</i>)	Dipalo tše 130/100 miliilithara (ml) (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene ga boa swanela go ba kotsi maphelong a batho.		

IUA	Lenaneo	Noka	Mothopo wa Yuniti	Legoro la tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya dipalo
						Diphetogophetogo tša Lenaneo	Phapaphapamo ya pH e swanetše go thokomelwa mo ditekanyetšong tšeo di laetšwego go thekga diphedi tša ka fase ga meetse le dinyakwa tša bašomiši ba meetse. Tshekatsheko ya mothalotho go tšweletša maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega.	Phapaphapamo ya pH	6.5 (5 th phesenthaele) and 8.0 (95 th phesenthaele)
								Kgobokano ya seela	Phapano ya 10% go tšwa go bokamorago bja motswako e dumeletšwe.
						Kelelo ya ka gare	Phapaphapamo ya tikologo le tšwetšopele di swanetše go thokomelwa legorong la B leo le laetšwego.	Dikagare tša Maemo a Tikologo, Mokgwa wa Tshekatsheko ya Lebelo la Tikologo le Mmotlolo (RHMM)	Maemo a Kelelo ya ka gare ya Tikologo EC = B ≥ 82% (lebelo la EWR 9)
					Tikologo	Tikologo ya mondlang	Dibjalo tša monlang di swanetše go thokomelwa ka legoro la B la diphedi le tikologo leo le laetšwego.	Dikagare tša Dipoleo tša Tshekatsheko ya Maemo a Tikologo	VEGRAI EC = B ≥ 82% (lebelo EWR 9)
						Dihlapi	Setšhaba sa dihlapi se swanetše go thokomelwa go legoro B la diphedi le tikologo go natefaleša bogona bja dihlapi tše di sorolwana (BPOL), AURA, CPRE, BMOT	Dikagare tša Tshekatsheko ya Dipoleo tša Dihlapi (FRAI)	Legoro la diphedi le tikologo ya dihlapi = B FRAI ≥ 82% Kgoboketša diphedi tše e ka bago tše lesome ka metsotso ye 20 ya nyakišiso ka tshwantšhetšo ya metsotso ye 20 ya tekanyo ya 50+ CPRE le 5 BMOT (lebelo la EWR Lefelo 9 = REMP Lefelo A2MAGA-MALON)
					Diphedi	Diphoofolo tša ka meetseng tšeo di hlokago lerapo la mokokotlo di hlokago lerapo la mokokotlo	Kopanyo ya diphoofolo tša ka meetseng tšeo di hlokago lerapo la mokokotlo di swanetše go thokomelwa go maemo a hiago goba go kaonafatšwa	Dikagare tša Tshekatsheko ya Dipoleo tša Diphoofolo tša ka meetseng tšeo di hlokago lerapo la mokokotlo le Karolo ya bohiano ya Lenaneo la go Nweša la Afrika- Borwa (SASS5).	MIRAI EC = B ≥ 82% SASS ≥ 200 ASPT ≥ 6.5 (lebelo la EWR Lefelo 9 = REMP Lefelo A2MAGA-MALON)

IUA	Lenaneo	Noka	Mothopo wa Yuniti	Legoro la tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya dipalo
						Diphedi tša lefelong leo nkego le na le meetse	Tšwetšopele ya kotlollo ya noka ye go šoma bjalo ka tikologo ya nonyana ya ka meetseng le dišhaba tša diamuši di swanetše go tlhokomelwa ka taolo ya maleba ya tikologo.	Nonyana ya ka meetseng/ sebontšhi sa diamuši	Tshekatsheko ya mothalotheo e swanetše go swarwa go tšweletša sešhaba sa nonyana ya ka meetseng le kemedi ya diamuši mo phithelelong ya noka. Go na le tlhokego ya go beakanya tatelano ya RQO goba tekanyo ya bolumu ya diphofolo/dinonyane go ya ka tshedimošo yeo elego gona/ yeo e kgobakeditšwego.
		Noka ya Magalies, Klein Magalies, Bloubank, Dinoka tša Skeerpoort (A21F)	2_2		Bontšhi	Dikelelo tša fase	Tlhokomelo ya fase ya EWR le kelelo ya komelelo: Noka ya Magalies go CROC_EWR15 in A21F NMAR = $21.899 \times 10^6 \text{ m}^3$ Legoro la REC=C/D Tlhokomelo ya kelelo ya fase le kelelo ya komelelo di swanetše go hwetšwa go thekga diphedi tša ka gare ga meetse le bašomiši ba moela wa fase.	Dikelelo tše di sa swanelago Tlhokomelo ya dikelelo le dikelelo tša komelelo (Lebelo la Lefelo CROC_EWR 15 go Noka ya Magalies Go tlhokomela dišhila nakong ya nyakišo ya thutaphelo	Tlhokomelo ya dikelelo tša fase (m^3/s) Tshepedišo ya komelelo (m^3/s) Oct 0.042 Nov 0.044 Dec 0.052 Jan 0.100 Feb 0.163 Mar 0.151 Apr 0.111 May 0.080 Jun 0.066 Jul 0.057 Aug 0.051 Sep 0.045 0.015 0.016 0.019 0.035 0.031 0.045 0.039 0.028 0.023 0.020 0.018 0.016
					Boleng	Dinutrient	Kelelo ya ka gare ya dinutrient e swanetše go kaonafatšwa go tšwetšapele diphedi tša ka gare ga meetse le go nefeletša gore legoro leo le laetšwego la diphedi le a fihlelwa.	Othofosfeiti (PO_4) bjalo ka Fosforase Nitritei (NO_3^-) Naetreiti (NO_2^-) bjalo ka Naetrotsene	≤ 0.090 dimilikramo/lithara (mg/l) (50 th phesenthaele) ≤ 1.0 dimilikramo/lithara (50 th phesenthaele)

IUA	Lenaneo	Noka	Mothopo wa Yuniti	Legoro la tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya dipalo
							Kelelo ya ka gare ya motswako wa letswai e swanetše go tlhokomelwa go maemo a bjale go netaletša tshireletšo ya mothopo wa meetse.	Tshwaro ya Mhlagase (EC)	≤ 40 milisimense/mmitha (mS/m) (95 th phesenthaele)
						Matswai		Salfeiti	≤ 15 dimilikramo/lithara (95 th phesenthaele)
								Sodiamo	≤ 10 dimilikramo/lithara (95 th phesenthaele)
								Tleloraete	≤ 15 dimilikramo/lithara (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene ga boa swanela go ba kotsi go maphelo a batho.	<i>Escheria coli</i> (<i>E.coli</i>)	Dipalo tše 130/100 miliilithara (ml) (95 th phesenthaele)
						Diphetogophetogo tša Lenaneo	Phapaphapano ya pH e swanetše go tlhokomelwa ditekanyetšong tseo di bontšhitšwego go thekga dipheidi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th phesenthaele) le 8.5 (95 th phesenthaele)
							Tshekatshekong ya mothalotho go tšweletša maemo a bjale a kelelo ya ka gare kgobokano ya seela e a hlokega.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe

IUA	Lenaneo	Noka	Mothopo wa Yuniti	Legoro la tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya dipalo
							Maemo a Oksitšeni yeo e moyafetšego a swanetše go fihlelewa go thekga diphedi tša ka gare ga meetse.	Oksitšeni yeo e moyafetšego	≥ 6 dimilikramo/lithara (mg/l)
							Metswako ya mepholo e swanetše go tlhokomelewa maemong ao a sego kotsi go diphedi tša ka gare ga meetse le go ba kotsi maphelong a batho	Amonia bjalo ka N	≤ 0.072 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Aluminiamo (Al)	≤ 0.062 dimilikramo/lithara (mg/l) (95th phesenthaele)
						Mepholo		Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Ayone (Fe)	≤ 0.1 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Liti (Pb) ye bothata	≤ 0.006 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Khopha (Cu) ye bothata	≤ 0.0073 dimilikramo/lithara (mg/l) (95th phesenthaele)

IUA	Lenaneo	Noka	Mothopo wa Yuniti	Legoro la tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya dipalo
								Nikheletle (Ni)	≤ 0.07 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Atrazine	≤ 0.078 dimilikramo/lithara (mg/l)
								Mancozeb	0.009 dimilikramo/lithara (mg/l)
								Tlaefoseiti	0.7 dimilikramo/lithara (mg/l)
								Endosulfene	0.13 maekthrokramo/lithara (ug/l)
								Dikagare tša Maemo a Tikologo, Lebelo la Tshekatsheko ya Mokgwa wa Tikologo le Mmotlolo (RHAMM)	Maemo a kelelo ya ka gare ya tikologo EC = C/D ≥ 58%
								Phapaphapano ya tikologo e swanetše tshokomelwa legorong la C/D la diphedi le tikologo. Dibjalo tše dibotse le leraga le le nnyane go karolo ya moela di swanetše go tshokomelwa.	
								Tikologo	
								Kelelo ya ka gare	

IUA	Lenaneo	Noka	Mothopo wa Yuniti	Legoro la tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya dipalo
						Tikologo monola	Dibjalo tša monoleng di swanetše go tihokomelwa mo legorong la C/D la diphedi le tikologo. Taolo ya Tsenelo ya dilo tše di šele e swanetše go dirwa le go tšhireletšwa go lefelo la monola le swanetše go kaonafatšwa. Lefelo leo go sa tseniwego go lona le swanetše go laolwa. Tsenelo ya dimela tše dišele e swanetše go laolwa.	Maemo a Tikologo, Dikagare tša Tshekatsheko ya Dipoelo tša Dibjalo	VEGRAI EC = C/D ≥ 58%
					Diphedi	Dihlapi	Setšhaba sa dihlapi se swanetše go tihokomelwa go legoro la C/D la diphedi. Go netefaletša dibontšhi tša sebontšhi. Kelelo e swanetše go akaretša diphedi.	Dikagare tša Tshekatsheko ya Dipoelo tša dihlapi (FRAI).	Legoro la tikologo ya dihlapi = C/D FRAI ≥ 58% Kgobokeša tekanyo ya 8 spp. Ka metsotso ye 20min ya boiteko bja tshwantšhetšo. Sebontšhi sa diphedi tša dihlapi tše di serolwana (BPOL), AURA, CPRE, BMOT (lefelo la Lower Skeerpoort A2SKEE-R560B – tšhišinyo ye mphsa; Lebelo la Magalies EWR 15 – reach A21F-01168)

IUA	Lenaneo	Noka	Mothopo wa Yuniti	Legoro la tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya dipalo
						Diphoofole tša hloka lerapo la mokokotlo	Upper Skeerpoort (A2SKEE-UITKO): Kopanyo ya diphoofole tša ka gare ga meetse tšeo di hlokago lerapo la mokokotlo e swanetše go thokomelwa ka maemo a hlago goba go kaonafatšwa (legoro B la diphedi le tikologo). Lower Skeerpoort (A2SKEE-R560B): le Noka ya Magalies (CROC_ EWR 15): Kopanyo ya diphoofole tša ka gare ga meetse tšeo di hlokago lerapo la mokokotlo e swanetše go thokomelwa ka maemo oa a fetotšwego goba a kaonafaditšwego (legoro C la diphedi le tikologo).	Dikagare tša Tshekatsheko ya Dipoofole tša ka metseng tšeo di hlokago lerapo la mokokotlo le Karolo ya bohloko ya Lenaneo la go Nweša la Afrika-Borwa (SASS5).	Lefelo la Upper Skeerpoort: A2SKEE-UITKO; MIRAI EC = B ≥ 82% SASS ≥ 200 ASPT ≥ 6.5 Skeerpoort sa fase A2SKEE-R560B se šišintše lefelo le le swa le L ebelo la Noka ya Magalies EWR 15 – reach A21F-01168; MIRAI EC = C ≥ 62% SASS ≥ 150 ASPT ≥ 6.0
						Diphedi tša lefelong leo nkego le na le meetse a mannyane	Tshwanelo ya kokeišo ya noka ya go šoma bjalo ka tikologo ya nonyana ya ka meetse le setšhaba sa diamuši di swanetše go thokomelwa ka taola ya maleba ya tikologo.	Dinonyana tša ka gare ga meetse/ sebontšhi sa diamuši	Tshekatsheko ya mothalotheo e swanetše go swarwa go tšweletša setšhaba sa dinonyana tša ka gare ga meetse le kemedi ya diamuši mo phihlelong ya noka. Go na le hlokego ya tatelano ya RQO ya motswako wa diphoofole/ dinonyana go ya ka tshedimošo yeo e lego gona/ yeo e kgobokeditšwego.
						Ditaeathomo	Kopanyo ya Taeathomo e swanetše go thokomelwa ka maemo ao a fetotšwego goba go kaonafatšwa.	Dikagare tša di itšego	Taeathomo EC = C ≥ 62%
		Lefelo la Borwa bja Bohlabela la kgoboketšo va meetse	2_3		Bontšhi	Dikelelo tša fase	Hlaloša Meetse a ka fase ga lefase diRQO	Dikelelo tšeo di sego maleba	Meetse a ka fase ga lefase ao a hlotšwego ke lenaneo (ditolomaete) karolo ya Steenkoppies go meetse ao a ntšhiitšwego <65%

IUA	Lenaneo	Noka	Mothopo wa Yuniti	Legoro la tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya dipalo
		la Rietspruit A21F				Dinutrient	Kelelo ya ka gare ya motswako wa dinutrient e swanetše go thokomelwa go tšwetšapele diphedi tša ka gare ga meetse.	Othofosfeiti (PO_4^{3-}) bjalo ka Fosforase	≤ 0.010 dimilikramo/lithara (mg/l) (50 th phesenthaele)
								Nitreiti (NO_3^-) le Naetreiti (NO_2^-) ka Naetroišene	≤ 0.05 dimilikramo/lithara (50 th phesenthaele)
								Tshwaro ya Mohlagase (EC)	≤ 20 milisimense/mmitha (mS/m) (95 th phesenthaele)
								Salfeti	≤ 10 dimilikramo/lithara (95 th phesenthaele)
								Sodiamo	≤ 10 dimilikramo/lithara (95 th phesenthaele)
								Tloraete	≤ 10 dimilikramo/lithara (95 th phesenthaele)

Tafolana 4: Boleng bja Dipono tša Mothopo wa DINOKA LE MATAMO go diYuniti tša Mothopo wa Tshekatsheko ya Yuniti yeo e Kopantšhišwego ya boraro: CROCODILE / ROODEKOPJES

IUA	Lenaneo	Noka	Mothopo wa yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo		
3: CROCODILE/ROODEKOPJES	III	Kelelo ya kamele ntle ya Noka ya Crocodile go tšwa go Letamo la Harthebespoort go ša go kelelo ya ka gare ya Letamo la Roodekopjes, Rosespruit, Ramogatlana leKareespruit (A21J)	3_1	C/D	Bontšhi	Dikelelo tša fase	Tlhokomelo ya fase ya EWR le kelelo ya komelelo: Noka ya Crocodile go CROC_EWR3 in A21J NMAR = 143.3x10 ⁶ m ³ Legoro la REC=C/D	Dikelelo tseo di sego maleba	Tlhokomelo ya dizelelo le kelelo ya komelelo	Tlhokomelo ya Dikelelo tša fase (m ³ /s)	Dikelelo tša komelelo (m ³ /s)
							Oct	1.425	1.446		
							Nov	1.591	1.607		
							Dec	1.690	1.703		
							Jan	1.993	1.995		
							Feb	2.276	2.267		
							Mar	2.290	2.279		
							Apr	2.022	2.024		
							May	1.870	1.878		
							Jun	1.765	1.776		
							Jul	1.679	1.690		
							Aug	1.564	1.580		
							Sep	1.441	1.462		
								Dikelelo (m ³ /s)	godimo		
							Oct	0			
							Nov	1.717			
Dec	2.942										
Jan	0										
Feb	6.191										
Mar	1.668										
Apr	0										
May	0										
Jun	0										
Jul	0										
Aug	0										
Sep	1.729										
		Othofosfeiti (PO ₄ ⁻) bjalo ka Fosforase	≤ 0.050 dimilikramo/lithara (mg/l) (50 th phesenthaele)								

IUA	Lenaneo	Noka	Mothopo wa yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							ka gare ga meetse.	Nitriti (NO ₃ ⁻) le Naetriti (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 1.0 dimilikramo/lithara (50 th phesenthaele)
								Tshwaro ya Mohlagaše (EC)	≤ 75 milisimense/mmitha (mS/m) (95 th phesenthaele)
								Salfeti	≤ 90 dimilikramo/lithara (95 th phesenthaele)
						Matswai	Kelelo ya ka gare ya motswako wa letswai e swanetše go hlokomelwa maemong a bjale go netefatša tšhireletšo ya mothopo le tšwetšopele ya mothopo.	Sodiamo	≤ 60 dimilikramo/lithara (95 th phesenthaele)
								Tieloraete	≤ 70 dimilikramo/lithara (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene ga boa swanela go ba kotsi maphelong a batho.	<i>Escheria</i> (<i>E.coli</i>) <i>kholi</i>	Dipalo tše 130/100 millilithara (ml) (95 th phesenthaele)
						Diphetogopphetogo tša Lenaneo	Phapaphapano ya pH e swanetše go thokomelwa ka ditekanyetšo tše di itšego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th phesenthaele) le 8.5 (95 th phesenthaele)

IUA	Lenaneo	Noka	Mothopo wa yuniti	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
							Tshekatsheko ya mothalotheo go tšweletša maemo a bjalo a kelelo ya ka gare kgobokano ya seela e a hlokega	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe.
							Maemo a Oksitšeni yeo e moyafetšego a swanetše go fihlelelwa go thekga diphedi tša ka gare ga meetse.	Oksitšeni yeo e moyafetšego	≥ 6 dimilikramo/lithara (mg/l)
								Amonia bjalo ka N	≤ 0.0725 dimilikramo/lithara (mg/l) (95th phesenthaele)
								AluminiumoAl	≤ 0.105 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Ayone (Fe)	≤ 0.1 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Liti (Pb) ya bothata	≤ 0.005 dimilikramo/lithara (mg/l) (95th phesenthaele)
						Mepholo	Metswako ya mepholo ga ya swanela go ba kotsi maphelong a diphedi tša ka gare ga meetse le maphelong a batho.		

IUA	Lenaneo	Noka	Mothopo wa yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
								Khopha (Cu) ya bothata	≤ 0.0073 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Nikhele (Ni)	≤ 0.07 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Atrazine	≤ 0.078 dimilikramo/lithara (mg/l)
								Mancozeb	0.009 dimilikramo/lithara (mg/l)
								Tlaefoseiti	0.7 dimilikramo/lithara (mg/l)
								Endosulfan	0.13 maekhrokramo/lithara (ug/l)

IUA	Lenaneo	Noka	Mothopo wa yuniti	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
						Kelelo ya ka gare	Phapahapano ya tikologo e swanetše go kaonafatšwa go tloga go legoro D la diphedi le tikologo go isa go legoro la C/D. Phapahapano ya go ama tshepedišo ya kelelo le tikologo yeo e ithekgilego ka diphedi. Tshepedišo e swanetše go lekanela kelelo yeo e ithekgilego ka sehlopha sa diphedi.	Dikagare tša Maemo a Tikologo, Tshekatsheko Mokgwa wa ya Lebelo la Tikologo le Mmotlolo (RHAMM), Tshekatsheko ya Dikagare tša Tikologo	Kelelo ya ka gare Maemo a Tikologo EC = C/D ≥ 58%
					Tikologo	Tikologo monola	Dimela tša monoleng di swanetše tshokomelwa go legoro la C/D la diphedi le tikologo goba go kaonafatšwa. Tsenelo ya dimela tšeo di sa tiwaelegago e swanetše go laolwa le ditšwetšopele lefelong la monola di swanetše go thibelwa.	Dikagare tša Maemo a Tikologo, Dikagare tša Tshekatsheko ya Dipoelo tša Dibjalo	VEGRAI EC = C/D ≥ 58%. Thibela tšwetšopele ya lefelo la monola.
					Diphedi	Dihlapi	Setšhaba sa dihlapa se swanetše go kaonafatšwa go tšwa go legoro D la diphedi le tikologo go isa go legoro la C/D. Ditlha tšeo di laotšwego tšeo di hlokegago go sepetša tshepedišo ya dihlapa tšeo di gobalago ga bonolo.	Dikagare tša Tshekatsheko ya Dipoelo tša Dihlapi (FRAI)	Legoro la tikologo ya Dihlapi = C/D FRAI ≥ 58% Sebontshi sa diphedi go (Crocodile River): AJOH, le go ithekga ka kelelo BMAR, CPRE

IUA	Lenaneo	Noka	Mothopo wa yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphedi tša ka meetseng tšeo di hlokago lerapo la mokokotlo	Kopanyo ya diphoofolo tša ka gare ga meetse tšeo di hlokago lerapo la mokokotlo e swanetše go tihokomelwa go legoro D la diphedi le tikologo goba go kaonafatšwa.	Dikagare tša Tshekatsheko ya Dipoelo tša diphoofolo tšeo di hlokago lerapo la mokokotlo, le Karolo ya bohlang ya Lenaneo la go Nweša la Afrika- Borwa (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 60 ASPT ≥ 4.0
						Diphedi tša lefelo leo nkego le na le meetse manyane	Tshwanelo ya kokešo ya noka ya go šoma bjalo ka tikologo ya nonyana ya ka gare ga meetse le setšhaba sa diamuši se swanetše go tihokomelwa ka taolo ya maleba ya tikologo. Tikologo ya monola e swanetše go kaonafatšwa.	Dinonyane tša ka meetseng/ Sebontšhi sa diamuši.	Tshekatsheko ya mothalotheo e swanetše go dinwa go tšweletša setšhaba sa nonyana ya ka gare ga meetse le kemedi ya diamuši mo phitlhelelong ya noka. Go a hlokega go dira tatelano ya RQO ya motswako wa diphoofolo/dinonyana go ya ka tshedimošo ye e kgobokeditšwego/ yeo e lego gona.
						Ditaeathomo	Kopanyo ya Taeathomo e swanetše go tihokomelwa go legoro la D la diphedi le tikologo goba go kaonafatšwa.	Dikagare Tšhilafatšo tše di itšego.	Taeathomo EC = D ≥ 42%

IUA	Lenaneo	Noka	Mothopo wa yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
		Letamo la Roodekopjes (A21J)	3_2		Bontšhi	Maemo a matamo	Letamo le swanetše go laolwa go tšhireletša mošomo wa diphedi le tikologo gotee le bašomiši ba moela wa fase. Tšweletša le go mphsafatša melao ya tshapedišo ya letamo go tšwetsapele maemo a makaone a matamo go netefatša gore bontšhi bja diphedi tša ka meetseng bo thokometšwe. Letamo le swanetše go laolwa go tšhireletša diphedi le tikologo ditšhila tša letamo di swanetše go kopana keelong ya fase ya dinyakwa tša tshapedišo.	Maemo ao a lekanetšego a tshapedišo ya letamo	Melao ya tshapedišo bjalo kage e le gona le. Bonnyane bja maemo a go tšwetsapele diphedi tša ka gare ga meetse le tikologo (15-18%).
					Boleng	Dinutrient	Motswako wa othofosfeiti o swanetše go tšwetsapele bophelo bja diphedi le tikologo le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go thokomelwa ka lenaneo la letsha. Motswako wa palomoka ya fosforase o swanetše go kaonafatšwa go tšwetsapele bophelo bja diphedi le tikologo le dinyakwa tša bašomiši ba meetse. Letamo le swanetše go thokomelwa bjalo ka lenaneo la letsha .	Othofosfeiti	≤ 0.050 mg/l 95 th phesenthaele
								Palomoka ya fosforase	≤ 0.130 mg/l 50 th phesenthaele

IUA	Lenaneo	Noka	Mothopo wa yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Motswako wa nitreiti le Naetreiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphefi le tikologo le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go thokomelwa ka lenaneo la letsha.	Naetreiti le Nitreiti	≤ 0.70 mg/L N 95th phesenthaele
							Motswako wa letswai ka gare ga letamo o swanetše go thokomelwa go thekga bophelo bja diphefi le tikologo le dinyakwa tša boleng bja bašomiši ba moela wa fase wa meetse.	Tshwaro ya Mohlagase	≤ 70 mS/m 95th phesenthaele
						Matswai	Motswako wa letswai ka gare ga letamo o swanetše go thokomelwa go thekga diphefi le tikologo le boleng bja dinyakwa tša bašomiši ba moela wa fase.	Salfeti	≤ 85 mg/L 95th phesenthaele
							Motswako wa letswai ka gare ga letamo o swanetše go thokomelwa go thekga diphefi le tikologo le boleng bja dinyakwa tša bašomiši ba moela wa fase.	Sodiamo	≤ 70 mg/l 95th phesenthaele
						Phathotšene	Phathotšene e swanetše go thokomelwa maamong ao a bokoegilego a tšhomišo ya batho.	<i>Escheria kholi</i> (<i>E.coli</i>)	Dipalo tša 130 /100 miliithara (ml) (95th phesenthaele)

IUA	Lenaneo	Noka	Mothopo wa yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphetogophetogo tša Lenaneo	Tšhomišo ya meetse e swanetše go dumelelwa go dira boithabišo.	pH	6.5 – 9.0 95th phesenthaele
							Kgonthišo yeo e okeditšwego	Kgobokano ya seela	≥0.4 m 5th phesenthaele
							Tekanyo ya phetogo	Thempereitšhara	Ga se gwa swanela go fetiša 2 °C ya koketšo ya phetogo ya fase le godimo
							Maemo a oksitšene a swanetše go tihokomela maemo a diphedi le tikologo.	Oksitšeni yeo e moyafetšego	≥ 7.0 mg/L O ₂ 95th phesenthaele
						Mepholo	Letamo le swanetše go laolwa go fokotša tšwetšopele ya mpholo wa saenopaktheriya	Saenopaktheriya	Go ata ga Saenopaktheriya ka motswako wa Chl a wa swanela go ba ka godimo ga 30µg/l Saenopaktheriya e swanetše go bolokwa ka fase ga 20% ya.

Tafolana 5: Boleng bja Dipono tša Mothopo wa DINOKA LE MATAMO ke Diyuniti tše bohlokwa tša Mothopo go Tshekatsheko ya bone ya Yuniti yeo e Kopantšwego: HEX / WATERKLOOFSPRUIT / VAALKOP

IUA	Lenaneo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
HEX/WATERKLOOFSPRUIT	II	Kelelo ya ka ntle ya Sterkstroom go tšwa go Letamo la Buffelspoort go ya go Kelelo ya ka gare ya	4_1	C	Boleng	Dinutrient	Kelelo ya ka gare ya motswako wa dinutrient e swanetše go fihlelelwa go tšwetšapele diphedi tša ka gare ga meetse le go netefatša gore legoro leo le laetšwego la diphedi le tikologo le a fihlelelwa.	Othofosfeiti (PO ₄ ³⁻) bjalo ka Fosforase Nitritei (NO ₃ ⁻) le Naetreiti (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 0.050 dimilikramo/lithara (mg/l) (50th phesenthaele) ≤ 0.5 dimilikramo/lithara (50th phesenthaele)

IU A	lena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
		Letamo la Roodekopjes, kgoboketšo ya meetse ya kotara ya Maretwane, Tshukutswe – kgoboketšo ya meetse ya gare le ya fase ga letamo ya A21K				Matswai	Kelelo ya ka gare ya motswako wa letswai bjalo ka ge go laeditšwe e swanetše go finlelela bophelo bja diphedi tša ka gare ga meetse le go netefatša gore legoro la diphedi le tikologo le a finlelelwa.	Tshwaro ya Mohlagase (EC)	≤ 70 milisimense/mmitha (mS/m) (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene ga bja swanela go beya maphelo a batho kotsing.	Salfeti	≤ 70 dimilikramo/lithara (95 th phesenthaele)
						Diphetogopheto go tša Lenaneo	Phapaphapano ya pH e swanetše go thokomelwa go ditekanyetšo tseo di bontšhišwego go thekga dinyakwa tša bašomiši ba meetse.	<i>Escheria</i> (<i>E.coli</i>)	Dipalo tše 130/100 miliilithara (ml) (95 th phesenthaele)
							Tshekatsheko ya mothalotho go tšweletša maemo a bjale a Kelelo ya ka gare ga kgobokano ya seela e a hlokega.	Phapaphapano ya pH	6.5 (5 th phesenthaele) and 8.5 (95 th phesenthaele)
								Kgobokano ya seela	Phapaphapano ya 10% go tšwa go bokamorago bja motsako e dumeletšwe.
								Amonia bjalo ka N	≤ 0.0725 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								AluminiamoAl	≤ 0.062 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Khroniamo (IV)	≤ 0.0675 dimilikramo/lithara (mg/l) (95 th phesenthaele)
						Mepholo	Metswako ya mepholo e swanetše go thokomelwa maemong ao a sego kotsi go diphedi tša ka gare ga meetse le go ba kotsi maphelong a batho.	Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								Ayone (Fe)	≤ 0.1 dimilikramo/lithara (mg/l) (95 th phesenthaele)

IU A	lena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
								Liti (Pb) ye bothata	≤ 0.005 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Khopha (Cu) ye bothata	≤ 0.0073 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Nikhele (Ni)	≤ 0.07 dimilikramo/lithara (mg/l) (95th phesenthaele)
					Tikologo	Kelelo ya ka gare	Phapaphapano ya tikologo e swanetše go thokomelwa ka legoro la C la diphedi le tikologo. Maemo a tikologo, boleng bja meetse le maemo a kelelo a swanetše go thokomelwa.	Dikagare tša Maemo a Tikologo, Mokgwa wa Tshakatsheko ya Lebelo la Tikologo le Mmotlo (RHAMM), Dikagare tša Tshakatsheko ya Tikologo	Kelelo ya ka gare ya maemo a tikologo $E = C \geq 62\%$
					Tikologo monola	ya	Taolo ya dibjalo e swanetše go thokomelwa ka legoro C la diphedi le tikologo. Taolo ya ditsenelo tseo di sa tswaelegago e swanetše go dirišwa.	Dikagare tša Maemo a Tikologo Maemo , dikagare tša Tshakatsheko ya Dipelo tša dibjalo	VEGRAI EC = C $\geq 62\%$
					Diphedi	Dihlapi	Setšhaba sa dihlapi se swanetše go thokomelwa ka legoro C/D la diphedi le tikologo. Tshakatsheko ya setšhaba sa dihlapi e swanetše go swarwa ka ngwaga go laola kgahlanong le legoro leo le laetšwego la tikologo le diphedi.	Dikagare tša Tshakatsheko ya Dipelo tša Dihlapi (FRAI).	Legoro la tikologo ya dihlapi = C/D FRAI $\geq 58\%$ Kgoboketša diphedi tše tšhele ka metsotso ye 20 ya maiteko a go bontšha. Sebontshi sa diphedi sa BMOI (Lefelo A2STER-MAMOG)

IU A	Iena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo																																							
						Diphoofolo tša ka meetseng tše di hlokago lerapo la mokokotlo	Kopanyo ya diphoofolo tša ka meetseng e swanetše go tihokomelwa ka legoro D la tikologo le diphedi goba go kaonafatšwa.	Dikagare tša Tshekatsheko ya Dipoele tša Diphoofolo tša ka gare ga meetse tše di hlokago lerapo la mokokotlo, le Karolo ya bohiano ya Lenaneo la go Nweša la Afrika-Borwa (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 70 ASPT ≥ 4.2																																							
						Ditaeathomo	Kopanyo ya Taeathomo e swanetše go tihokomelwa ka maemo ao a fetotšwego kudu goba ao a kaonafadišwego.	Dikagare Tšhilafatšo tše di itšego	Taeathomo EC = D ≥ 42%																																							
	Diphiheleo tša godimo tša Sterkstroom go iša go kelelo ya ka gare ya letamo la Buffelspoort (A21K kokotletšo ya meetse ya gare le ya ka godimo ga letamo)	4_2			Bontšhi	Dikelelo tša fase	Hlokomelo ya EWR ya fase le kelelo ya komelelo: Sterkstroom go CROC_EWR11 ka A21K NIMAR = 14.0x10 ⁶ m ³ Legoro la REC=C Tšhireletšo yeo e lekanego ya Kelelo ya ka gare yeo e hlokegago (e swanetše go tihokomelwa go thekga diphedi). Taolo ya mediro ya naga e a hlokega.	Dikelelo tše di sa swanelago Hlokomelo ya kelelo le kelelo ya komelelo Lebelo la lefelo 11 la EWR go Sterkstroom go (tlhokomelo go A2H053)	<table><tr><td></td><td>Tlhokomelo o ya Dikelelo tša fase (m³/s)</td><td>Dikelelo tša komelelo o (m³/s)</td></tr><tr><td>Oct</td><td>0.078</td><td>0.033</td></tr><tr><td>Nov</td><td>0.083</td><td>0.035</td></tr><tr><td>Dec</td><td>0.086</td><td>0.036</td></tr><tr><td>Jan</td><td>0.094</td><td>0.039</td></tr><tr><td>Feb</td><td>0.113</td><td>0.047</td></tr><tr><td>Mar</td><td>0.104</td><td>0.043</td></tr><tr><td>Apr</td><td>0.101</td><td>0.042</td></tr><tr><td>May</td><td>0.09</td><td>0.038</td></tr><tr><td>Jun</td><td>0.09</td><td>0.038</td></tr><tr><td>Jul</td><td>0.085</td><td>0.036</td></tr><tr><td>Aug</td><td>0.082</td><td>0.035</td></tr><tr><td>Sep</td><td>0.082</td><td>0.035</td></tr></table>		Tlhokomelo o ya Dikelelo tša fase (m ³ /s)	Dikelelo tša komelelo o (m ³ /s)	Oct	0.078	0.033	Nov	0.083	0.035	Dec	0.086	0.036	Jan	0.094	0.039	Feb	0.113	0.047	Mar	0.104	0.043	Apr	0.101	0.042	May	0.09	0.038	Jun	0.09	0.038	Jul	0.085	0.036	Aug	0.082	0.035	Sep	0.082	0.035
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IU A	Iena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
					Boleng	Dinutrient	Kelelo ya ka gare ya motswako wa dinutrient bjalo ka ge go laeditšwe e swanetše go fihlelelwa go tšwetsapele diphedi tša ka gare ga meetse le tikologo le go netefatša gore legoro leo le laetšwego le a fihlelelwa.	Othofosfeiti (PO ₄) bjalo ka Fosforase	≤ 0.010 dimilikramo/lithara (mg/l) (50 th phesenthaele)
								Nitrite (NO ₃) le Naetrite (NO ₂) bjalo ka Naetrotsene	≤ 0.5 dimilikramo/lithara (50 th phesenthaele)
						Matswai	Kelelo ya ka gare ya motswako wa letswai bjalo ka ge go bontšhitšwe e swanetše go fihlelelwa go maemo ao a laeditšwego a swanetše go fihlelelwa go tšwetsapele diphedi tša ka gare ga meetse le go netefatša gore legoro leo le laetšwego le a fihlelelwa.	Tshwara ya Mohlagase (EC)	≤ 55 milisimense/mmitha (mS/m) (95 th phesenthaele)
								Saifeiti	≤ 70 dimilikramo/lithara (95 th phesenthaele)
					Tikologo	Kelelo ya ka gare	Phapahapano ya tikologo e swanetše go tihokomelwa ka legoro la diphedi le tikologo la B/C.	Dikagare tša Maemo a Tikologo, Mokgwa wa Tshekatsheko ya Lebelo la Tikologo le Mmotlolo (RHAMM)	Kelelo ya ka gare Tikologo Maemo EC = B/C ≥ 78%
						Tikologo monola	Dibjalo tša monleng di swanetše go tihokomelwa ka legoro la diphedi le tikologo ya B/C. Tsenelo ya dilo tšeo di sa tlwaelegago e swanetše go laolwa. .	Dikagare tša Maemo a Tikologo, Dikagare tša Tshekatsheko ya Dibjalo	VEGRAI EC = B/C ≥ 78%

IU A	Iena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
					Diphedi	Dihlapi	Seitshaba sa dihlapu se swanetše go tlhokomelwa ka legoro C la diphedi le tikologo. Tshakatsheko ya seitshaba sa dihlapu e swanetše go tlhokomelwa ka legoro C la diphedi le tikologo. Tshakatsheko ya seitshaba sa dihlapu e swanetše go swarwa ka ngwaga go tshireletša kgahlanong le legoro leo le laetšwego.	Dikagare tša Tshakatsheko ya Dipalo tša Diphedi tša gare ga meetse tše di hloko lerapo la mokokotlo, le Karolo la Afrika-Borwa (SASS5).	Legoro la tikologo ya dihlapu = C FRAI ≥ 62% Kgoboketša diphedi tše tshela ka metsotso ye 20 ya sebontshi sa go tshwantšhiša diphedi-tshapedišo ya diphedi tše di gobalago ga bonolo, AURA, BMOT (Sterkstroom go CROC EWR11 in A21K) MIRAI EC = C ≥ 62% SASS ≥ 100 ASPT ≥ 5.7
						Diphedi tša ka meetse tše di hloko lerapo la mokokotlo	Kopanyo ya diphoofole tša ka meetse tše di hloko lerapo la mokokotlo e swanetše go tlhokomelwa ka legoro C la diphedi le tikologo goba go kaonafatšwa		(Sterkstroom go CROC EWR11 ka A21K)
					Bontshi	Maemo matamo	Letamo le swanetše go laolwa go tshireletša mešomo le bašomiš ba moela wa fase. Tšweletša melao ya tshapedišo ya go tšwetšapele maemo a matamo go netefatša gore phapaphapano ya diphedi e tlhomametswe.	Maemo ao a lekanego a tshapedišo ya letamo a a hlokega	Melao ya tshapedišo bjale ka ge e hwetšagala. Maemo a gare a go tšwetšapele diphedi tša ka gare ga meetse (15-18%).
	Letamo la Buffelspoort (A21K)	4_3			Boleng	Dinutrient	Motswako wa othofosfeti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi gammogo le dinyakwa tša boleng bja bašomiš ba meetse. Letamo le swanetše go tlhokomelwa bjalo ka lenaneo la mesotrofiki.	Othofosfeti	≤ 0.015 mg/l 50th phesenthaele

IU A	Iena neo	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Motswako wa Nitreiti le Naetreiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go tlhokomelwa bjalo ka lenaneo la mesotrofiki.	Naetreiti le Nitreiti	≤ 0.50 mg/L N 95 th phesenthaele
						Matswai	Motswako wa letswai ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba moela wa fase	Tshwaro ya Mohlagase	≤ 55 mS/m 95 th phesenthaele
						Phathotšene	Pathotšene e swanetše go tlhokomelwa maemong ao a bolokegetšego tšhomišo ya batho	<i>Escheria coli</i> (<i>E. coli</i>)	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)
						Diphetogopheto go tša Lenaneo	Meetse a swanetše go dumelelwa go šomišetšwa boitapološo	pH	6.5 – 9.0 95 th phesenthaele
							Kelelo ya ka gare ya motswako wa dinutriente bjale ka ge go laeditšwe e swanetše go fihlelwa go tšwetšapele diphedi tša ka meetseng le go netefatša gore legoro leo le laetšwego le a fihlelwa.	Othofosfeiti (PO ₄) bjalo ka fosforase	≤ 0.015 dimilikramo/lithara (mg/l) (50 th phesenthaele)
		Upper Hex river go tša go Letamo la Olifantsnek, Rooikloofspruit (A22G)	4_4			Dinutrient		Nitreiti (NO ₃) le Naetreiti (NO ₂) bjalo ka Naetrotsene	≤ 0.5 dimilikramo/lithara (50 th phesenthaele)
						Matswai	Maemo a kelelo ya ka gare ya motswako wa letswai bjalo ka ge go laeditšwe e swanetše go fihlelwa go tšwetšapele bophelo bja diphedi le tikologo	Tshwaro ya Mohlagase	≤ 55 milisimense/mmitha (mS/m) (95 th phesenthaele)

IU A	Iena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
							gammogo le go nefeletša gore legoro leo le laetšwego le a fihlelelwa.	Sodiamo	≤ 70 dimilikramo/lithara (95 th phesenthaele)
								Tloraete	≤ 40 dimilikramo/lithara (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene ga bja swanela go bea maphelo a batho kotsing.	<i>Escheria</i> (<i>E.coli</i>)	Dipalo tše 130/100 tša dimiliilithara (ml) (95 th phesenthaele)
						Kelelo ya ka gare	Phapahapano ya tikologo e swanetše go tshokomelwa ka legoro C la diphedi le tikologo. Kelelo e swanetše go lekanela go thekga diphedi le sehlopha sa diphedi gammogo le tikologo.	Dikagare tša Maemo a Tikologo, Mokgwa wa Tshekatsheko ya Lebelo la Tikologo le Mmotlolo (RHAMM)	Kelelo ya ka gare Tikologo Maemo EC = C ≥ 62%
					Tikologo	Tikologo monola	Dibjalo tša monoleng di swanetše go tshokomelwa ka legoro C la diphedi le tikologo. Tsenelo e šele e swanetše go tshokomelwa.	Dikagare tša Tshekatsheko ya Dipelo tša Dibjalo, Maemo a Tikologo	VEGRAI EC = C ≥ 62%
					Diphedi	Dihlapi	Tshekatsheko ya setšhaba sa dihlapi e swanetše go swarwa ka ngwaga go tshokomela kgahlanong le legoro C leo le laetšwego la diphedi.	Dikagare tša Tshekatsheko ya Dipelo tša Dihlapi (FRAI).	Legoro la tikologo ya dihlapi = C FRAI ≥ 62% Kgoboketša diBMOT tše 20 ka metsofso ye 20 ya tshwantšhetšo.

IU A	lena neo	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphoofolo tša ka meetseng tšeo di hlokago lerapo la mokokotlo	Kopanyo ya diphoofolo tša ka meetseng tša go hloka mokokotlo e swanetše go tlhokomelwa ka legoro C la diphedi le tikologo goba go kaonafatšwa	Dikagare tša Tshekatsheko ya Dipoelo tša Diphoofolo tša ka gare ga meetse tšeo di hlokago lerapo la mokokotlo, le Karolo ya bohiano ya Lenaneo la go Nweša la Afrika-Borwa (SASS5).	Diphoofolo tša ka meetseng tša go hloka mokokotlo EC= C ≥ 62% SASS ≥ 140 ASPT ≥ 5.8
		Letamo la Olifantsnek (A22G)	4_5		Bontšhi	Maemo a letamo	Letamo le swanetše go laolwa go tšhireleša mešomo gammogo le bašomiši ba moela wa fase. Tšweleša melao ya tshepedišo ya letamo le maemo a makaone a matamo go netefatša gore phapaphapano ya diphedi le tikologo e a tlhokomelwa. Ditšhila tša letamo di hloka go kopana go moela wa fase wa dinyakwa tša kelelo tša tikologo.	Maemo ao a lekanego a tshepedišo ya letamo a a hlokega	Melao ya tshepedišo bjalo ka ge e hwetšagala. Maemo a gare a go tšwetšapele diphedi le tikologo tša ka gare ga meetse (15-18%)
					Boleng	Dinutrient	Motswako wa othofosfeiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba meetse.	Othofosfeiti	≤ 0.015 mg/l 50th phesenthaele
							Motswako wa Nitreiti le Naetreiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go tlhokomelwa bjalo ka lenaneo la mesotrofi	Naetreiti le Nitreiti	≤ 0.50 mg/L N 95th phesenthaele

IU A	Iena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
						Matswai	Motswako wa letswai ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba moela wa fase Pathošetšene e swanetše go tlhokomelwa maemong ao a bolokegetšego tšhomišo ya batho	Tshwaro Mohlagase <i>Escheria coli</i> (<i>E. coli</i>)	≤ 55 mS/m 95th phesenthaele Dipalo tše 130/100 tša dimililithara (ml) (95th phesenthaele)
		Noka ya Hex go tioga go Letamo la Olifantsnek, go iša go kelelo ya ka gare ya Letamo la Bospoort, Sandspruit (A22H)	4_6		Bontshi	Dikelelo tša fase	Tlhokomelo ya fase ya EWR le tshepedišo ya komelelo Noka Hex (go karolo ye mpsha ya W-) go A22H NMAR = 12.11x10⁶m³ Legoro la Tlhokomelo ya dikelelo tša fase le tshepedišo ya komelelo di swanetše go finlelewa gore dikelelo tša tikologo di finlelewe go thekga maemo a mabotse a diphedi le bašomiši.	Dikelelo tše di sa swanelago Tlhokomelo ya dikelelo le tshepedišo ya komelelo (Nouti ya Noka ya Hex ya moela wa Letamo la Olifantsnek. Ka tlhokomelo ya karolo ye mpsha ya W ya letamo.	Thokomel o dikelelo tša fase (m³/s) Oct 0.013 Nov 0.014 Dec 0.015 Jan 0.019 Feb 0.028 Mar 0.026 Apr 0.020 May 0.017 Jun 0.017 Jul 0.015 Aug 0.014 Sep 0.014
					Boleng	Dinutrient	Motswako wa kelelo ya ka gare ya dinutrient o swanetše go kaonafatšwa go tšwetšapele diphedi tša ka gare ga meetse gore le boleng bja dinyakwa tša	Othofosfeiti (PO₄⁻) bja ka fosforase	≤ 0.125 dimilikramo/lithara (mg/l) (50th phesenthaele)

IU A	lenaneo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
							bašomiši ba meetse bo a fihlelelwa. Taolo ya dinutrientse e hlokega go netefatša gore lenaneo le tšwetšwapele go legoro la bjale la E go fihla go legoro la D.	Nitriti (NO3-) le Naereti (NO2-) bjalo ka Naetrotsene	≤ 1.0 dimilikramo/lithara (50 th phesenthaele)
							Maemo a motswako wa letswai a godimo kudu. Kelelo ya ka gare ya motswako wa letswai e swanetše go kaonafatšwa go thekga diphedi tša ka meelseng le dinyakwa tša boleng bja bašomiši ba meetse. Boleng bja meetse bo swanetše go kaonafatšwa go tšwetšapele maemo a legoro la E go tša go D.	Tshwaro ya Mohlagase	≤ 85 milisimense/mmitha (mS/m) (95 th phesenthaele)
						Matswai		Salfeti	≤ 120 dimilikramo/lithara (95 th phesenthaele)
								Tloraete	≤ 120 dimilikramo/lithara (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene ga bja swanela go bea maphelo a batho kotsing.	<i>Eskheria</i> (<i>E. coli</i>)	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)
						Diphethogopheto go tša Lenaneo	Phapaphapano ya pH e swanetše go thokomelwa go ditekanyetšo tšeo di bontšhišwego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th phesenthaele) and 8.5 (95 th phesenthaele)
							Tshekatsheko ya mothalotheo yeo e tšweletšago maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe
						Mepholo	Metswako ya mepholo e swanetše go thokomelwa maamong ao a sego kotsi go diphedi tša ka gare ga meetse le mapheleng a batho.	Amonia bjalo ka N	≤ 0.1 dimilikramo/lithara (mg/l) (95 th phesenthaele)
								AluminiumoAl)	≤ 0.15 dimilikramo/lithara (mg/l) (95 th phesenthaele)

IU A	Iena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
								Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Ayone (Fe)	≤ 0.3 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Liti (Pb) ye bothata	≤ 0.0095 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Khopha (Cu) ye bothata	≤ 0.0073 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Nikhele (Ni)	≤ 0.07 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Atrazine	≤ 0.078 dimilikramo/lithara (mg/l)
								Mancozeb	0.009 dimilikramo/lithara (mg/l)
								Tiaefoseiti	0.7 dimilikramo/lithara (mg/l)
								Endosulfan	0.13 maekhokramo/lithara (ug/l)
								Dikagare tša Maemo a Tikologo, Mokgwa wa Tshakatshoko ya Lebelo la Tikologo le Mmotlo (RHAMM)	Kelelo ya ka gare Tikologo Maemo EC = C ≥ 62%
								Dikagare tša Maemo a Tikologo	VEGRAI EC = D ≥ 42%

IU A	Iena neo	Noka	Yuniti ya ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Dihlapi	Setšhaba sa dihlapi se swanetše go tshokomelwa ka legoro D la diphedi le tikologo goba go kaonafatšwa. Kelelo e swanetše go ba yeo e lekantšwego ya diphedi tšeo di ithekilego ka tše dingwe.	Dikagare tša Tshekatsheko ya Dipolelo tša Dihlapi (FRAI).	Legoro la tikologo ya dihlapi = D FRAI ≥ 42%
					Diphedi	Diphedi tša lefelong leo nkego le na le monola.	Tshwanelo ya koketšo ya noka go šoma bjalo ka tikologo ya nonyana ya ka meitseng le setšhaba sa diamuši se swanetše go tshokomelwa ka taolo ya meleba ya tikologo. Lefelo la monoleng le swanetše go kaonafatšwa. .	Dinonyana tša ka meitseng/ Sešupi sa diamuši	Tshekatsheko ya mothalotheo e swanetše go swarwa go tšweletša setšhaba sa nonyana ya ka meitseng le kemedi ya diamuši mo phihlelong ya noka. Go na le hlokego ya go bea tatelano ya RQO ya motswako wa diphoofolo/dinonyana go ya ka tshedimošo yeo elege gona goba yeo e kgobokeditšwego.
						Diphoofolo tša ka meitseng tšeo di hlokago lerapo la mokokotlo	Kopanyo ya diphoofolo tša ka meitseng tša go hloka mokokotlo e swanetše go tshokomelwa ka legoro D la diphedi le tikologo goba go kaonafatšwa.	Dikagare tša Tshekatsheko ya Dipolelo tša Diphoofolo tša ka gare ga meetse tšeo di hlokago lerapo la mokokotlo, le Karolo ya bohlanano ya Lenaneo la go Nweša la Afrika-Borwa (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 70 ASPT ≥ 4.2 (LefeloA2HEX-PAARD)
		Letamo la Bospoort (A22H)	4_7		Boleng	Dinutrient	Motswako wa othofosfeiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi gammogo le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go tshokomelwa bjalo ka lenaneo leo le humilego ka dimenerale.	Othofosfeiti	≤ 0.5 mg/l 50th phesenthaele

IU A	Iena neo	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Palomoka ya fosforase e swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba meetse. Letamo le swanetše go tihokomelwa bjalo ka lenaneo leo le humilego dimenerale.	Palomoka ya fosforase	≤ 0.130 mg/l 50 th phesenthaele
							Motswako wa Nitreiti le Naetreiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba meetse. Letamo le swanetše go tihokomelwa bjalo ka lenaneo leo le humilego ka dimenerale.	Naetreiti le Nitreiti	≤ 1.00 mg/L N 95 th phesenthaele
							Motswako wa letswai ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba moela wa fase	Tshwaro ya Mohlagase	≤ 85 mS/m 95 th phesenthaele
						Matswai	Motswako wa letswai ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba moela wa fase	Sodiamo	≤ 100 mg/l 95 th phesenthaele
						Phathotšene	Pathotšene e swanetše go tihokomelwa maemong ao a bolokegetšego tšhomišo ya batho	<i>Escheria kholi</i> (<i>E. coli</i>)	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)
						Diphetogophelo go tša Lenaneo	Meetse a swanetše go dumelelwa go šomišetšwa boitapološo	pH	6.5 – 9.0 95 th phesenthaele
							Koketšo ya kgonthišo ka palo.	Kgobokano ya seela	≥ 0.4 m 5 th phesenthaele

IU A	Iena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Mepholo	Letamo le swanetše go laolwa go fokotša tšwetšopele ya mpholo wa mapolomo a saenopaktheriya	Saenopaktheriya	Go ata ga Saenopaktheriya ka motswako wa ka godimo ga 30ug/l go swanetše go bolokwa ka fase ga 20% ya noka.
							Tlhokomelo ya fase ya EWR le tshepedišo ya komelelo go Waterkloofspruit CROC_EWR14 ka A22H NMAR = 5.469x10 ⁶ m ³ Legoro la REC=B/C	Dikelelo tšeo di sa swanelago Tlhokomelo ya dikelelo le tshepedišo ya komelelo	Tlhokomel o ya dikelelo tša fase (m³/s) Tshepe dišo ya komelelo o (m³/s) Oct 0.028 Nov 0.027 Dec 0.028 Jan 0.035 Feb 0.039 Mar 0.038 Apr 0.035 May 0.033 Jun 0.033 Jul 0.031 Aug 0.03 Sep 0.03 0.010 0.010 0.010 0.013 0.014 0.014 0.013 0.012 0.012 0.011 0.011 0.010
					Bontšhi	Dikelelo tša fase	Tlhokomelo ya dikelelo tša fase le tshepedišo ya komelelo di swanetše go finlelewa gore dikelelo tša tikologo di finlelewe go thekga maemo a mabotse a diphedi le bašomiši.	Lebelo la EWR Lefelo go 14 Waterkloofspruit (tlhokomelo A2H038)	
		Waterkloofspruit (A22H)	4_8		Boleng	Dinutrient	Kelelo ya ka gare ya motswako wa dinutrient e swanetše go tlhokomelwa go tšwetšapele bophelo bja diphedi tša ka meetseng le go netefatša gore legoro la diphedi leo le laetšwego le a finlelewa.	Othofosfeiti (PO ₄ -) bjaalo ka fosforase	≤ 0.025 dimilikramo/lithara (mg/l) (50 th phesenthaele)
						Matswai	Kelelo ya ka gare ya motswako wa letswai e swanetše go tlhokomelwa ka maemo a bjaalo go netefatša tšhireletšo ye botse ya maemo a diphedi goba mothopo.	Nitreiti (NO ₃ -) le Naereiti (NO ₂ -) bjaalo ka Naetrotsene	≤ 0.25 dimilikramo/lithara (50 th phesenthaele)
								Tshwaro ya Mohlagase	≤ 20 milisimense/mmitha (mS/m) (95 th phesenthaele)
								Salfeti	≤ 10 dimilikramo/lithara (95 th phesenthaele)

IU A	Iena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
								Tloraete	≤ 10 dimilikramo/lithara (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene ga bja swanela go bea maphelo a batho kotsing.	<i>Eskheria</i> (<i>E. coli</i>) <i>kholi</i>	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)
						Diphetogopheto go tša Lenaneo	Phapaphapano ya pH e swanetše go tlhokomelwa go ditekanyetšo tšeo di bontšhišwego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th phesenthaele) and 8.5 (95 th phesenthaele)
							Tshekatsheko ya mothalotho yeo e tšweletšago maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe
					Tikologo	Kelelo ya ka gare	Phapaphapano ya tikologo e swanetše go tlhokomelwa ka legoro B la diphedi le tikologo.	Dikagare tša Maemo a Tikologo, Mokgwa wa Tshekatsheko ya Lebelo la Tikologo le Mmotlolo (RHAMM)	Kelelo ya ka gare Tikologo Maemo EC = B $\geq$ 82%
						Tikologo monola	Dibjalo tša monoleng di swanetše go tlhokomelwa ka legoro B la diphedi le tikologo.	Dikagare tša Maemo a Tikologo, Dikagare tša Tshekatsheko ya Dipelo tša Dimela	VEGRAI EC = B $\geq$ 82%
					Diphedi	Dihlapi	Setšhaba sa dihlapi se swanetše go tlhokomelwa ka legoro B/C la diphedi le tikologo. Lefelo la ka godimo la moela wa meetse le swanetše go tšhireletšwa go ya ka bogona bja moela wa godimo wa TSPA. FRAI e swanetše go swarwa go laola kgahlanong le legoro la bjale	Dikagare tša Tshekatsheko ya Dipelo tša Dihlapi (FRAI).	Legoro la tikologo ya dihlapi = B/C FRAI $\geq$ 78% Tshwantšhetšo ya diBMOT tše 20 ka metsofso ye 20 ya go swantšhetša

IU A	Iena neo	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphedi lefelong monola	Tshwanelo ya koketšo ya noka go šoma bjalo ka tikologo ya nonyana ya ka meetseng le setšhaba sa diamuši e swanetše go thokomelwa ka taolo ya maleba ya tikologo. Lefelo la monoleng le swanetše go kaonafatšwa. .	Dinonyana tša ka meetseng/ Sešupi sa diamuši	Tshekatsheko ya mothalotheo e swanetše go swarwa go tšweletša setšhaba sa nonyana ya ka meetseng le kemedi ya diamuši mo phihlelong ya noka. Go na le hlokego ya go bea tatelano ya RQO ya motswako wa diphoofolo/dinonyana go ya ka tshedimošo yeo elego g.
						Diphoofolo tša ka meetseng tše di hlokago lerapo la mokokotlo	Kopanyo ya diphoofolo tša ka meetseng tša go hloka mokokotlo e swanetše go thokomelwa ka legoro C la diphedi le tikologo goba go kaonafatšwa	Dikagare tša Tshekatsheko ya Dipoelo tša Diphoofolo tša ka gare ga meetse tše di hlokago lerapo la mokokotlo, le Karolo ya bohlanano ya Lenaneo la go Nweša la Afrika-Borwa (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 150 ASPT ≥ 6.0
	Kelolo ya ka nile ya Noka ya Hex, Letamo la Bospoort go iša go kelelo ya ka gare ya letamo la Vaalkop (A22J)	4_9			Bontšhi	Dikelelo tša fase	Tlhokomelo ya fase ya EWR le tshepedišo ya komelelo ya Nako ya Hex ka CROC_EWR6 in A22J NMAR = 26.9x10 ⁶ m ³ Legoro la	Dikelelo tše di sa swanelago	Tlhokomel o ya dikelelo tša fase (m ³ /s) Oct 0.024 Nov 0.026 Dec 0.035 Jan 0.052 Feb 0.093 Mar 0.084 Apr 0.055 May 0.039 Jun 0.035 Jul 0.030 Aug 0.028 Sep 0.025
							Tlhokomelo ya komelelo tša fase le tshepedišo ya komelelo le swanetše go fihlelwa go thekga maemo a mabotse a diphedi le bašomiši.	Tshenelelo ya EWR Lefelo 6 go Letamo la Hex (tlhokomelo ya A2H094)	Tshepe dišo ya komelel o (m ³ /s) 0.015 0.023 0.022 0.022 0.070 0.067 0.054 0.039 0.035 0.030 0.028 0.023

IU A	Iena neo	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Dinutrient	Motswako wa kelelo ya ka gare ya dinutrient o swanetše go kaonafatšwa go tšwetšapele diphedi tša ka gare ga meetse gore le boleng bja dinyakwa tša bašomiši ba meetse bo a fihlelelwa. Taolo ya dinutrient e hlokega go netefatša gore lenaneo le tšwetšwa pele go kaonafatša maemo go tloga go E go iša go D.	Othofosfeiti (PO ₄ ⁻) bjaalo ka fosforase	≤ 0.050 dimilikramo/lithara (mg/l) (50 th phesenthaele)
								Nitrite (NO ₃ ⁻) le Naereiti (NO ₂ ⁻) bjaalo ka Naetrotsene	≤ 2.0 dimilikramo/lithara (50 th phesenthaele)
								Tshwaro ya Mohlagase	≤ 85 milisimense/mmitha (mS/m) (95 th phesenthaele)
						Matswai		Salfeti	≤ 120 dimilikramo/lithara (95 th phesenthaele)
					Boleng			Tloraete	≤ 120 dimilikramo/lithara (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene ga boa swanela go bea maphelo a batho kotsing.	<i>Escheria</i> (<i>E. coli</i>)	Dipalo tše 130/100 tša dimiliithara (ml) (95 th phesenthaele)
						Diphetogopheto go tša Lenaneo	Phapaphapano ya pH e swanetše go thokomelwa go ditekanyetšo tseo di bontšhišwego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th phesenthaele) and 8.5 (95 th phesenthaele)
							Tshekatsheko ya mothalotho yeo e tšweletšago maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe
						Mepholo	Motswako ya mepholo e swanetše go thokomelwa go ba maamong ao a sego kotsi go	Ammonia	≤ 0.007 dimilikramo/lithara (mg/l) (95 th phesenthaele)

IU A	Iena neo	Noka	Yuniti ya Mo thop o	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							dipedi tša ka gare ga meetse le maphelong a batho.	Aluminium(Al)	≤ 0.1 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Ayone (Fe)	≤ 0.3 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Liti (Pb) ye bothata	≤ 0.0095 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Khopha (Cu) ye bothata	≤ 0.0073 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Nikhele (Ni)	≤ 0.07 dimilikramo/lithara (mg/l) (95th phesenthaele)
						Kelelo ya ka gare	Phapaphapano ya tikologo e swanetše go thokomelwa ka legoro D la dipedi le tikologo goba go kaonafatšwa. Phapaphapano ya tikologo ya kelelo le dibjalo tšeo di gobalago ga bonolo tša mathoko gammogo le sehlopha sa dipedi di swanetše go finlelelwa.	Dikagare tša Maemo a Tikologo, Tshekatsheko ya Mokgwa wa Lebelo la Tikologo le Mmotlolo	Kelelo ya ka gare Tikologo Maemo EC = D ≥ 42%
					Tikologo	Tikologo monola	Dibjalo tša monoleng di swanetše go thokomelwa ka legoro C la dipedi go ba maemong a makaone. Tšhireletšo ya tikologo e a hlokega. Ditšwetšopele go lefelo la monola di swanetše go laolwa.	Dikagare tša Maemo a Tikologo, Dikagare tša Tshekatsheko ya Dipoelo tša Dibjalo	VEGRAI EC = C ≥ 62%
					Dipedi	Dihlapi	Tshekatsheko ya setšhaba sa dihlapi e swanetše go swarwa ka ngwaga go laola kgahlanong le legoro D leo le laetšwego.	Dikagare tša Tshekatsheko ya Dipoelo tša Dihlapi (FRAI)	Legoro la tikologo ya dihlapi = D FRAI ≥ 42%

IU A	Iena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
						Diphelele tša ka meeseng tšeo di hloka lerapo la mokokotlo	Kopanyo ya diphoofolo tša ka meeseng tša go hloka mokokotlo di swanetše go tshwarelelwa go legoro la D goba e kaonafatšwe	Dikagare tša Tshekatsheko ya Dipolelo tša Diphoofolo tša ka meeseng tšeo di hloka lerapo la mokokotlo, le Karolo ya bohloko ya Lenaneo la go Nweša la Afrika-Borwa (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 70 ASPT ≥ 4.2 REMP Lefelo A2HEXR-ROOIW
						Ditaeathomo	Kopanyo ya Taeathomo e swanetše go tlhokomelwa ka legoro D la diphelele le tikologo goba go kaonafatšwa.	Dikagare tša Tšhilafatšo tše di itšego	Taeathomo EC = D ≥ 42%
		Letamo la Vaalkop Le phihlelelo ya fase ya Elands Pele e e tla kopanishwa le Crocodile (A22J)	4_10		Bontshi	Maemo a letamo	Letamo le swanetše go laolwa go tšhireletša mešomo ya diphelele le tikologo gotee le bašomiši ba moela wa fase. Tšweletša melao ya tshepedišo ya letamo go tšwetšapele maemo a makaone a matamo go netefatša gore phapaphapano ya diphelele tlhokometšwe. Ditšhila tša letamo di hlokega go kopana moeleng wa fase wa dinyakwa tša tshepedišo ya diphelele le tikologo.	Maemo ao a lekanego a tshepedišo ya letamo a a hlokega	Melao ya tshepedišo bjalo ka ge e hwetšagala. Maemo a gare a go tšwetšapele diphelele le tikologo tša ka gare ga meetse (15-18%)
					Boleng	Dinutrient	Motswako wa othofosfeiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphelele le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba meetse.	Othofosfeiti	≤ 0.05 mg/l 50 th phesenthaele

IU A	Iena neo	Noka	Yuniti ya Mothop o	Legoro la Tikologo	Karolo	Karolwana	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Palomoka ya motswako wa fosforase e swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le tikologo gammogo le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go tihokomelwa ka lenaneo la letsha.	Palomoka ya fosforase	≤ 0.055 mg/l 50 th phesenthaele
							Motswako wa Nitreiti le Naetreiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go tihokomelwa bjalo ka lenaneo la mesotrofiki	Naetreiti le Nitreiti	≤ 0.70 mg/L N 95 th phesenthaele
							Motswako wa letswai ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba moela wa fase	Tshwaro ya Mohlagase	≤ 55 mS/m 95 th phesenthaele
						Matswai	Motswako wa letswai ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba moela wa fase	Salfeiti,	≤ 100 mg/l 95 th phesenthaele
							Motswako wa letswai ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba moela wa fase	Tloraete	≤ 100 mg/l 95 th phesenthaele
						Phathotšene	Pathotšene e swanetše go tihokomelwa maamong ao a bolokegetšego tšhomišo ya batho	<i>Escheria kholi</i> (<i>E.coli</i>)	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)
						Diphetogophelo go tša Lenaneo	Meetse a swanetše go dumelelwa go šomišetšwa boitapološo	Ph	6.5 – 9.0 95 th phesenthaele

IU A	Iena neo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
							Kgonthiſišo yeo e okeditšwego	Kgobokano ya seela	≥0.4 m 5th phesenthale
							Diphetogo tša magareng	Themphereitšhara	Ga se gwa swanela go feta 2 °C ya kokešo ya phetogo ya fase le ya godimo
							Maemo a oksitšeni ka gare ga lenaneo a swanetše go thhokomela lenaneo la diphedi le tikologo.	Oksitšeni yeo e moyafetšego	≥ 7.0 mg/L O2 95th phesenthale
						Mepholo	Letamo le swanetše go laolwa go fokotša tšwetšopele ya mpholo wa mapolomo a saenopaktheria	Saenopaktheriya	Go ata ga Saenopaktheriya ka motswako wa Chl a yaka godimo ga 30µg/l o swanetše go bolokwa ka fase ga 20% ya nako ye ntšhi.
					Tikologo	Tikologo Letamo	Go laola mothopo wa meetse wa thhokomelo ya phapaphapano ya diphedi tša ka meetseng (kelelo ya ka gare, dilo tšeo di hlalago ke diphedi tša ka meetseng, le mafelo a monola)	Bophelo bja dibjalo tša monoleng	Kapešo ya 70% ya dibjalo tša monoleng
							Boloka, thhokomela, tsošološa, le go tšweletša lebopo la maitirelo gammogo le mafelo a monola. Lefelo la monola la hlago le swanetše go bolokwa ka mo go ka kgonegago go netaletša tikologo ya maleba.	Phapaphapano le bontšhi bja thhokomelwa	Setšhaba sa dihlapa se swanetše go thhokomelwa ka tshakatsheko ya dithuto tša maphelo. Ditahlegelo tšeo di swanetšego di swanetše go tšweletšwa. Ditebanyo tša dihlapa di swanetše go tšweletšwa.
					Diphedi	Dihlapi	Phapaphapano le bontšhi bja dihlapa di swanetše go thhokomelwa	Phapaphapano le bontšhi bja dihlapa	11-20µg/l 50th phesenthale
						Pherifaethone/ Faethoplankthon e	Metswako ya Chl a e swanetše go thhokomelwa ka maemo a letsha.	Chl a	

Taolana 6: Boleng bja Dipono tša Mothopo wa DINOKA ka mehola ya diYuniti tša Mothopo ka gare ga Kopantšho ya Tshekatsheko ya Yuniti ya bohloko: ELANDS / VAALKOP

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo		
									Tihokomelo dikelelo tša fase (m ³ /s)	Tihokomelo ya fase (m ³ /s)	Tshep edišo ya komel elo (m ³ /s)
5: ELANDS/VAALKOP	II	Diphilelelo tša godimo tša Elands go iša go Letamo la Swartruggen A22A Karolwana ya South Eastern	5_1	C	Bontšhi	Dikelelo tša fase	Tihokomelo ya fase ya EWR le tshepedišo ya komelelo Noka ya Elands go CROC_EWR10 ka A22A NMAR = 10.1x10 ⁶ m ³ Legoro la REC=B/C	Dikelelo tše di sa swanelago Tihokomelo ya dikelelo le tshepedišo ya komelelo. Lebelo la EWR Lefelo 10 go Noka ya Elands (tihokomelo ya ditshekatsheko tša thutaphedi)	Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep	0.038 0.045 0.050 0.070 0.094 0.091 0.073 0.056 0.051 0.046 0.042 0.039	0.015 0.012 0.011 0.026 0.031 0.019 0.015 0.015 0.019 0.017 0.016 0.015
							Kelelo ya ka gare ya motswako wa dinutriente bjale ka ge go laeditšwe e swanetše go fihlelelwa go tšwetšapele diphedi tša ka meetseng le go netefatša gore legoro leo le laetšwego le a fihlelelwa	Othofosfeiti (PO ₄ -) bjalo ka fosforase	≤ 0.025 dimilikramo/lithara (mg/l) (50 th phesenthaele)		
								Nitritei (NO ₃ -) le Naeritei (NO ₂ -) bjalo ka Naetrotsene	≤ 0.5 dimilikramo/lithara (50 th phesenthaele)		
							Maemo a kelelo ya ka gare ya motswako wa letswai bjalo ka ge go laeditšwe e swanetše	Tshwaro ya Mohlaga	≤ 55 milisimense/mmitha (mS/m) (95 th phesenthaele)		

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							go fihlelewa go tšwetšapele bophelo bja diphedi le tikologo gammogo le go netefatša gore legoro leo le laetšwego le a fihlelelwa.	Salfeiti	≤ 30 dimilikramo/lithara (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene ga bja swanela go bea maphelo a batho kotsing.	<i>Escheria kholi</i> (<i>E.coli</i>)	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)
							Phapaphapano ya pH e swanetše go thokomelwa go ditekanyetšo tšeo di bontšhišwego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th phesenthaele) and 9.0 (95 th phesenthaele)
						Diphetogophe togo tša Lenaneo	Tshekatsheko ya mothalotheo yeo e tšweletšago maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega. Ditekanyetšo di swanetše go hlalošwa go laola ditutuetšo tša mothopo lenaneo la moepo. Maemo a Oksitišeni yeo e moyafetšego a swanetše go kaonafatšwa go thekga diphedi tša ka gare ga meetse.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe. Ditekanyetšo di swanetše go tšweletšwa.
								Oksitišeni yeo e moyafetšego	6-7 dimilikramo/lithara (mg/l)

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tlhaloso ya RQO	Sebontshi	Tekanyetšo ya Dipalo
						Kelelo ya ka gare	Phapaphapano ya tikologo e swanetše go thokomelwa ka legoro C la diphedi le tikologo. Phapaphapano ya tikologo ya dibjalo tšeo di gobalago ga bonolo tša mathoko e swanetše go thokomelwa	Dikagare tša Maemo a Tikologo, Tshekatsheko ya Mokgwa wa Lebelo la Tikologo le Mmotolo (RHAMM)	Kelelo ya ka gare Tikologo Maemo EC = C ≥ 62%
					Tikologo	Tikologo ya monola	Dibjalo tša monoleng di swanetše go thokomelwa ka legoro C la diphedi le tikologo. Tshireletšo ya tikologo ya monola e a hlokega. Ditšwetsopele tša lefelo la monola di swanetše go laolwa.	Dikagare tša Maemo a Tikologo, Dikagare tša Tshekatsheko ya Dipolelo tša Dimela	VEGRAI EC = C ≥ 62%
						Dihlapi	Setšhaba sa dihlapi se swanetše go thokomelwa ka legoro C la diphedi le tikologo. Tshekatsheko ya setšhaba sa dihlapi e swanetše go swarwa ka ngwaga go thokomela kgahlanong le legoro leo le laetšwego.	Dikagare tša Tshekatsheko ya Dipolelo tša Dihlapi (FRAI)	Legoro la tikologo ya dihlapi = C FRAI ≥ 62% Bontšha diBMOT tše 20 ka metsotso ye 20 ya tshwantšhetšo
					Diphedi	Diphedi tša ka meetseng tšeo di hlokega lerapo la mokotlo	Kopanyo ya diphoofolo tša ka meetseng tša go hloka mokotlo e swanetše go thokomelwa ka legoro C la maemo a diphedi goba go kaonafatšwa.	Dikagare tša Tshekatsheko ya Dipolelo tša Dihlapi tšeo di hlokega lerapo la mokotlo, le Karolo ya bohloko ya Lenaneo la go Nweša la Afrika-Borwa (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 155 ASPT ≥ 5.5

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo																																							
						Ditaeathomo	Kopanyo ya Taeathomo e swanetše go tlhokomela ka legoro C la diphedi goba go kaonafatšwa	Dikagare tša Tšhilafatšo tše di itšego	Taeathomo EC ≥ 62%																																							
							Tlhokomelo ya fase ya EWR le tšhepedišo ya komelelo ya Noka ya Elands go A2H107 ka A22A NMAR = 12.87x10 ⁶ m ³ Legoro la REC=C	Dikelelo tšeo di sa swanelago	<table><tr><td></td><td>Tlhokomelo ya dikelelo tša fase (m³/s)</td><td>Tšhep edišo ya komelelo (m³/s)</td></tr><tr><td>Oct</td><td>0.030</td><td>0.016</td></tr><tr><td>Nov</td><td>0.037</td><td>0.014</td></tr><tr><td>Dec</td><td>0.044</td><td>0.013</td></tr><tr><td>Jan</td><td>0.063</td><td>0.028</td></tr><tr><td>Feb</td><td>0.083</td><td>0.009</td></tr><tr><td>Mar</td><td>0.081</td><td>0.018</td></tr><tr><td>Apr</td><td>0.064</td><td>0.016</td></tr><tr><td>May</td><td>0.047</td><td>0.018</td></tr><tr><td>Jun</td><td>0.042</td><td>0.019</td></tr><tr><td>Jul</td><td>0.036</td><td>0.018</td></tr><tr><td>Aug</td><td>0.033</td><td>0.018</td></tr><tr><td>Sep</td><td>0.030</td><td>0.016</td></tr></table>		Tlhokomelo ya dikelelo tša fase (m ³ /s)	Tšhep edišo ya komelelo (m ³ /s)	Oct	0.030	0.016	Nov	0.037	0.014	Dec	0.044	0.013	Jan	0.063	0.028	Feb	0.083	0.009	Mar	0.081	0.018	Apr	0.064	0.016	May	0.047	0.018	Jun	0.042	0.019	Jul	0.036	0.018	Aug	0.033	0.018	Sep	0.030	0.016
	Tlhokomelo ya dikelelo tša fase (m ³ /s)	Tšhep edišo ya komelelo (m ³ /s)																																														
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Jul	0.036	0.018																																														
Aug	0.033	0.018																																														
Sep	0.030	0.016																																														
		Elands downstream Letamo la Swartruggens go ya go Letamo la Lindleyspoort (A22A)	5_2			Dikelelo tša fase	Tlhokomelo ya dikelelo tša fase le tšhepedišo ya komelelo e swanetše go fihlelelwa go thekga diphedi tša ka meetseng le bašomiši ba moela wa fase.	Tlhokomelo ya tšhepedišo ya komelelo Tlhokomelo ya Noka ya Elands go A2H107																																								
							Kelelo ya ka gare ya motswako wa dinutriente bjale ka ge go laeditšwe e swanetše go fihlelelwa go tšwetšapele diphedi tša ka meetseng le go netefatša gore legoro leo le laetšwego le a fihlelelwa. Taolo ya meetse a ditšhila e a hlokega.	Othofosfeiti (PO ₄) bjalo ka fosforase	≤ 0.050 dimilikramo/lithara (50 th phesenthaele)																																							
					Boleng	Dinutriente		Nitriti (NO ₃ -) le Naeriti (NO ₂ -) bjalo ka Naetrotsene	≤ 0.5 dimilikramo/lithara (50 th phesenthaele)																																							
						Matswai	Maemo a kelelo ya ka gare ya motswako wa letswai bjalo ka ge go laeditšwe e swanetše go fihlelelwa go tšwetšapele bonhelo	Tshwaro ya Mohlagase	≤ 55 milisimense/mmitha (mS/m) (95 th phesenthaele)																																							
								Salfeti	≤ 80 dimilikramo/lithara (95 th phesenthaele)																																							

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo	
									≤ 40 dimilikramo/lithara phesenthaele)	(95 th phesenthaele)
							bja diphedi le tikologo gammogo le go netefatša gore legoro leo le laetswego le a fihlelewa. Taolo ya ditutuetšo tša naga le dišhila tša WWTW di a hlokega.	Tloraete	≤ 70 dimilikramo/lithara phesenthaele)	(95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene ga bja swanela go bea maphelo a batho kotsing.	<i>Escheria kholi</i> (<i>E.coli</i>)	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)	
							Phapaphapano ya pH e swanetše go thokomeiwa go ditekanyetšo tšeo di bontšhitšwego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th phesenthaele) and 9.0 (95 th phesenthaele)	
						Diphetogophe tšo Lenaneo	Tshekatsheko ya mothalotheo yeo e tšweletšago maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe. Go swanetše go tšweletšwa ditekanyetšo.	
							Maemo a Oksitšene yeo e moyafetšego a swanetše go kaonafatšwa go thekga diphedi tša ka gare ga meetse le tikologo.	Oksitšeni yeo e moyafetšego	6-7 dimilikramo/lithara (mg/l)	
					Tikologo	Kelelo ya ka gare	Phapaphapano ya tikologo e swanetše go thokomeiwa ka legoro C la diphedi le tikologo goba go kaonafatšwa.	Dikagare tša Maemo a Tikologo, Tshekatsheko ya Mokgwa wa Lebelo la Tikologo le Mmotlolo (RHMM)	Kelelo ya ka gare ya Maemo a Tikologo EC = C ≥ 62%	

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Tikologo ya monola	Dibjalo tša monoleng di swanetše go thokomelwa ka legoro C la diphedi le tikologo goba maemo a ma kaone.	Dikagare tša Maemo a Tikologo, Dikagare tša Tshakatsheko ya Dipoelo tša Dimela	VEGRAI EC = C ≥ 62%
						Diphedi tša lefelong leo nkego le na le monola.	Kgonego ya koketšo ya letamo le e šoma bjalo ka tikologo ya nonyana ya ka meetseng le setšhaba sa diamuši se swanetše go thokomelwa ka taolo ya maleba ya tikologo.	Dinonyana tša ka meetseng/ Sešupi sa diamuši	Tshakatsheko ya mothalotheo e swanetše go swarwa go tšweletša setšhaba sa nonyana ya ka meetseng le kemedi ya diamuši mo phihlelong ya noka. Go na le hlokego ya go bea tatelano ya RQO ya motswako wa diphoofo/dinonyana go ya ka tshedimošo yeo elego gona.
					Diphedi	Diphoofo tša ka meetseng di tše hlokego lerapo mokokotlo	Kopanyo ya diphoofo tša ka meetseng tša go hloka mokokotlo e swanetše go thokomelwa ka legoro C la maemo a diphedi goba go kaonafatšwa.	Dikagare tša Tshakatsheko ya Dipoelo tša Diphoofo tša ka meetseng tše di hlokego lerapo la mokokotlo, le Karolo ya bohloko ya Lenaneo la go Nweša la Afrika- Borwa (SASS5).	EC ya Diphoofo tša ka meetseng tše di hlokego lerapo la mokokotlo = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.3
						Ditaeathomo	Kopanyo ya Taeathomo e swanetše go thokomelwa ka legoro C/D la tikologo le diphedi goba go kaonafatšwa	Dikagare tša Tšhilafatšo tše di itšego	Taeathomo EC ≥ 58%

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
		Letamo Lindleyspoort (A22A)	5_3		Bontšhi	Maemo letamo a	Letamo le swanetše go laolwa go tšhireletša mešomo ya diphedi le tikologo gotee le bašomiši ba moela wa fase. Tšwetša melao ya tshepedišo ya letamo go tšwetšapele maemo a makaone a matamo go netafša gore phapaphapano ya diphedi e thokometšwe. Ditšhila tša letamo di a hlokega go kopana moeleng wa fase wa dinyakwa tša tshepedišo ya diphedi le tikologo.	Maemo ao a lekanego a tshepedišo ya letamo a a hlokega	Melao ya tshepedišo bjalo ka ge e hwetšagala. Maemo a gare a go tšwetšapele diphedi le tikologo tša ka gare ga meetse (15-18%)
					Boleng	Dinutrinte	Motswako wa othofosfeiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba meetse.	Othofosfeitis,	≤ 0.015 mg/l 50 th phesenthaele
							Palomoka ya motswako wa fosforase e swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le tikologo gammogo le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go thokomelwa ka lenaneo la letsha.	Palomoka ya fosforase	≤ 0.055 mg/l 50 th phesenthaele

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo	
							Motswako wa Nitreiti le Naetreiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le dinyakwa tša boleng bja bašomiši ba meetse. letamo le swanetše go tlhokomelwa bjalo ka lenaneo la mesotrofiki	Naetreiti le Nitreiti	≤ 0.70 mg/L N 95 th phesenthaele	
						Matswai	Motswako wa letswai ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba moela wa fase	Tshwaro ya Mohlagase	≤ 55 mS/m 95 th phesenthaele	
						Phathotšene	Pathotšene e swanetše go tlhokomelwa maamong ao a bolokegetšego tšhomišo ya batho	<i>Escheria kholi</i> (<i>E.coli</i>)	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)	
						Diphetogophe togo tša Lenaneo	Meetse a swanetše go dumelelwa go šomišetšwa boitapološo	pH	6.5 – 9.0 95 th phesenthaele	
							Kgonthišo yeo e okeditšwego	Kgobokano ya seela	≥0.4 m 5 th phesenthaele	
							Tlhokomelo ya fase ya EWR le tshepedišo ya komelelo	Dikelelo tšeo di sa swanelago	Tlhokomelo ya dikelelo tša fase (m³/s)	Tshep edišo ya komelelo (m³/s)
						Dikelelo tša fase	Noka ya Koster go A2H036 ka A22B NMAR = 2.54x10 ⁶ m³ Legoro la REC=C	Tlhokomelo ya dikelelo le tshepedišo ya komelelo	Oct 0.006	0.002
							The Tlhokomelo ya dikelelo tša fase and	Nov 0.004	0.006	0.002
							Tshepedišo ya	Dec 0.006	0.006	0.001
								Jan 0.009	0.009	0.004

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo		
							komelelo e swanetše go fihlelelwa go thekga diphedi tša ka meetseng le bašomiši ba moela wa fase.	A2H036	Feb	0.020	0.005
									Mar	0.032	0.006
									Apr	0.031	0.007
									May	0.018	0.006
									Jun	0.015	0.006
									Jul	0.012	0.005
									Aug	0.010	0.004
									Sep	0.008	0.003
							Kelelo ya ka gare ya motswako wa dinutrient e swanetše go thokomelwa go tšwetšapele bophelo bja diphedi tša ka meetseng le go netefatša gore legoro la diphedi leo le laetšwego le a fihlelelwa.	Othofosfeiti (PO ₄ ⁻) bjalalo ka fosforase	≤ 0.025 dimilikramo/lithara (mg/l) (50 th phesenthaele)		
						Dinutrient		Nitreiti (NO ₃ -) le Naereiti (NO ₂ -) bjalalo ka Naetrotsene	≤ 0.05 dimilikramo/lithara (50 th phesenthaele)		
					Boleng		Kelelo ya ka gare ya motswako wa letswai e swanetše go thokomelwa ka maemo a bjale go netefatša tšhireletšo ye botse ya maemo a diphedi goba mothopo.	Tshwaro Mohlagase	ya	≤ 30 milisimense/mmitha (mS/m) (95 th phesenthaele)	
						Matswai		Sodiamo		≤ 20 dimilikramo/lithara (95 th phesenthaele)	
								Salfeiti		≤ 20 dimilikramo/lithara (95 th phesenthaele)	
								Tloraete		≤ 20 dimilikramo/lithara (95 th phesenthaele)	
						Phathotšene	Bogona phathotšene bo swanetše go fokotša kotsi maphelong a batho.	Eskheria kholi (E. coli)	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)		

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Phapaphapano ya pH e swanetše go thokomelwa go ditekanyetšo tšeo di bontšhitšwego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.0 (5 th phesenthaele) and 8.5 (95 th phesenthaele)
						Diphetogophe togo tša Lenaneo	Tshekatsheko ya mothalotho yeo e tšweletšago maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe .Ditekanyetšo di swanetše go tšweletšwa.
							Maemo a Oksitšene yeo e moyafetšego a swanetše go kaonafatšwa go thekga diphedi tša ka gare ga meetse le tikologo.	Oksitšeni yeo e moyafetšego	6-7 dimilikramo/lithara (mg/l)
						Mepholo	Metswako ya mepholo ga ya swanela go ba kotsi go diphedi tša ka gare ga meetse le maphelong a batho.	Ditšweletšwa tša kalafo tšeo di hlalago ke dihomouni	17β-oestradiol: ≤ 0.001 mg/l
					Diphedi	Dihlapi	Setšhaba sa dihlapi se swanetše go thokomelwa ka legoro C la diphedi le tikologo. Dikelelo di swanetše go lekanela go thekga dikemedi tša diphedi.	Dikagare tša Tshekatsheko ya Dipolelo tša Dihlapi (FRAI).	Legoro la tikologo ya dihlapi = C FRAI ≥ 62% Bontšha diBMOT tše 20 ka metsotsotso ye 20 ya tshwantšhetšo

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphedi tša ka meetseng tšeo di hlokago lerapo la mokokotlo	Kopanyo ya diphoofolo tša ka meetseng tša go hloka mokokotlo e swanetše go thokomelwa ka legoro C la maemo a diphedi goba go kaonafatšwa.	Dikagare tša Tshekatsheko ya Dipoelo tša Diphoofolo tša ka meetseng tšeo di hlokago lerapo la mokokotlo, le Karolo ya bohiano ya Lenaneo la go Nweša la Afrika- Borwa (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 70 ASPT ≥ 4.2
							Kelelo ya ka gare ya motswako wa dinutrient e swanetše go thokomelwa go tšwetšapele bophelo bja diphedi tša ka meetseng le go netefatša gore legoro la diphedi leo le laetšwego le a fihlelelwa.	Othofosfeiti (PO ₄) ³⁻ bjalo ka fosforase	≤ 0.050 dimilikramo/lithara (mg/l) (50 th phesenthaele)
		Noka ya Selons, Koedoespruit, Dwarsspruit, Noka ya Koster ya fase (A22C, A22D)	5_6		Boleng	Dinutrient		Nitreiti (NO ₃ -) le Naereiti (NO ₂ -) bjalo ka Naetrotsene	≤ 0.5 dimilikramo/lithara (50 th phesenthaele)
						Matswai	Kelelo ya ka gare ya motswako wa letswai e swanetše go thokomelwa go boloka maemo a bjale le diphedi tša ka meetseng ka gare ga legoro leo le laetšwego gore le fihlelelwe.	Tshwaro Mohlagase	≤ 30 milisimense/mmitha (mS/m) (95 th phesenthaele)
								Sodiamo	≤ 20 dimilikramo/lithara (95 th phesenthaele)
								Salfeiti	≤ 20 dimilikramo/lithara (95 th phesenthaele)
						Phathotšene	Bogona phathotšene bo swanetše go fokotša kotsi maphelelong a batho.	<i>Escheria kholi</i> (E. <i>coli</i>)	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo																																							
						Diphetogophe togo tša Lenaneo	Phapaphapano ya pH e swanetše go tlhokomelwa go ditekanyetšo tšeo di bontšhitšwego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.0 (5 th phesenthaele) and 8.5 (95 th phesenthaele)																																							
							Tshekatsheko ya mothalotho yeo e tšweletšago maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe Ditekanyetšo di swanetše go tšweletšwa.																																							
		Noka ya Elands kelelo ya ka ntle Letamo la Lindleyspoort go iša go kelelo ya ka gare ya Letamo la Vaalkop, Brakkloofspruit, Roospruit, Sandspruit Mankwe, Leragane, Molapongwamonga (A22E, A22F)	5_7		Bontšhi			Tloraete	<table><tr><td>≤ 20 dimiligr amo/lit hara (95th phese nthael e)</td><td>Tlhokomelo ya dikelelo tša fase (m³/s)</td><td>Tshep edišo ya komel elo (m³/s)</td></tr><tr><td>Nov</td><td>0.038</td><td>0.011</td></tr><tr><td>Dec</td><td>0.048</td><td>0.014</td></tr><tr><td>Jan</td><td>0.057</td><td>0.016</td></tr><tr><td>Feb</td><td>0.081</td><td>0.023</td></tr><tr><td>Mar</td><td>0.107</td><td>0.012</td></tr><tr><td>Apr</td><td>0.105</td><td>0.027</td></tr><tr><td>May</td><td>0.082</td><td>0.023</td></tr><tr><td>Jun</td><td>0.06</td><td>0.017</td></tr><tr><td>Jul</td><td>0.054</td><td>0.016</td></tr><tr><td>Aug</td><td>0.047</td><td>0.014</td></tr><tr><td>Sep</td><td>0.042</td><td>0.012</td></tr><tr><td></td><td>0.038</td><td>0.011</td></tr></table>	≤ 20 dimiligr amo/lit hara (95 th phese nthael e)	Tlhokomelo ya dikelelo tša fase (m ³ /s)	Tshep edišo ya komel elo (m ³ /s)	Nov	0.038	0.011	Dec	0.048	0.014	Jan	0.057	0.016	Feb	0.081	0.023	Mar	0.107	0.012	Apr	0.105	0.027	May	0.082	0.023	Jun	0.06	0.017	Jul	0.054	0.016	Aug	0.047	0.014	Sep	0.042	0.012		0.038	0.011
≤ 20 dimiligr amo/lit hara (95 th phese nthael e)	Tlhokomelo ya dikelelo tša fase (m ³ /s)	Tshep edišo ya komel elo (m ³ /s)																																														
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IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Dinutrient	Maemo a dinutrient tša godimo a swanetše go fokotšwa go finlelela dinyakwa tša diphedi tša ka meetse. Metswako e swanetše e fokotšwe go finlelela legoro C leo le laetšwego.	Othofosfeti (PO ₄ -) bjalo ka fosforase	
							Maemo a motswako wa letswai a godimo kudu. Kelelo ya ka gare motswako wa letswai e swanetše go kaonafatšwa go thekga maemo a diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba meetse. Boleng bja dinyakwa tša meetse bo swanetše go kaonafatšwa go legoro la diphedi le tikologo la C.	Nitriti (NO ₃ -) le Naeriti (NO ₂ -) bjalo ka Naetrošene	≤ 2.0 dimilikramo/lithara (50 th phesenthaele)
							Maemo a motswako wa letswai a godimo kudu. Kelelo ya ka gare motswako wa letswai e swanetše go kaonafatšwa go thekga maemo a diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba meetse. Boleng bja dinyakwa tša meetse bo swanetše go kaonafatšwa go legoro la diphedi le tikologo la C.	Tshwaro Mohlagase	≤ 85 milisimense/mmitha (mS/m) (95 th phesenthaele)
								Sodiumo	≤ 100 dimilikramo/lithara (95 th phesenthaele)
								Salfeti	≤ 120 dimilikramo/lithara (95 th phesenthaele)
								Tloraete	≤ 120 dimilikramo/lithara (95 th phesenthaele)
							Bogona bja phathotšene bo swanetše go fokotša kotsi maphelong a batho.	<i>Escheria coli</i> (E. coli)	Dipalo tše 130/100 tša dimililithara (ml) (95 th phesenthaele)
							Phapaphapano ya pH e swanetše go thokomeiwa go ditekanyetšo tšeo di bontšhišwego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse...	Phapaphapano ya pH	6.0 (5 th phesenthaele) and 9.0 (95 th phesenthaele)

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Tshekatsheko ya mothalotheo yeo e tšweletšago maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe Ditekanyetšo di swanetše go tšweletšwa.
							Metswako ya mepholo ga ya swanela go bea diphedi tša ka gare ga meetse le batho kotsing.	Aluminiamo(Al)	≤ 0.1 dimilikramo/lithara (mg/l) (95th phesenthaele)
						Mepholo		Mankanese (Mn)	≤ 0.15 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Ayone (Fe)	≤ 0.3 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Liliti (Pb) ye bothata	≤ 0.0095 dimilikramo/lithara (mg/l) (95th phesenthaele)
								Zinc (Zn)	≤ 0.002 dimilikramo/lithara (mg/l) (95th phesenthaele)
					Tikologo	Kelelo ya ka gare	Phapaphapano ya tikologo e swanetše go thokomelwa ka legoro C la diphedi le tikologo goba bokaone. Go bohlokwa go thokomela dibjalo tša mathoko le kelelo ya ka gare ya lefelo leo dimela di golago go lona (Mananeo a bofase bja kelelo) ya dihlapa le phapaphapano ya diphoofole tša ka meetse tšeo di hlokega lerapo la mokokoilo.	Dikagare tša Maemo a Tikologo. Tshekatsheko ya Mokgwa wa Lebelo la Tikologo le Mmotlolo	Kelelo ya ka gare Tikologo Maemo EC = C $\geq$ 62%

IU A	Lena neo	Noka	Mothop o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Tikologo ya monola	Dibjalo tša monoleng di swanetše go thokomelwa ka legoro C la diphedi le tikologo. Taolo ya dimela tšeo di sa tiwaelegago e a hlokega. Tšwetšopeleo ya lefeolo la monola e swanetše go lekanyetšwa.	Dikagare tša Maemo a Tikologo, Dikagare tša Tshakatsheko ya Dipoelo tša Dimela	VEGRAI EC = C ≥ 70%
						Dihlapi	Setšhaba sa dihlapi se swanetše go thokomelwa ka legoro D la diphedi le tikologo bjalo ka mo go swanelago goba bokaone. Tshakatsheko ya setšhaba sa dihlapi e swanetše go swarwa ka ngwaga go thokomela kgahlanong le legoro leo laetšwego la diphedi le tikologo.	Dikagare tša Tshakatsheko ya Dipoelo tša Dihlapi (FRAI).	Legoro la tikologo ya dihlapi = D FRAI ≥ 42% Kgoboketša tekanyo ya diphedi tše nne ka metsotso ye 20 ya tshwantšhetšo
					Diphedi	Diphedi tša ka meetseng tšeo hlokago lerapo mokokotlo	Kopanyo ya diphoofofo tša ka meetseng tša go hloka mokokotlo e swanetše go thokomelwa ka legoro C la maemo a diphedi goba go kaonafatšwa.	Dikagare tša Tshakatsheko ya Dipoelo tša Diphoofofo tša ka meetseng tšeo di hlokago lerapo la mokokotlo, le Karolo ya bohloko ya Lenaneo la go Nweša la Afrika- Borwa (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 110 ASPT ≥ 4.5
						Ditaeathomo	Kopanyo ya Taeathomo e swanetše go thokomelwa ka legoro C la diphedi le tikologo goba go kaonafatšwa	Dikagare tša Tšhilaletšo tše di itšego	Taeathomo EC ≥ 62%

IU A	Lena neo	Noka	Mothopo o wa Yuniti	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphedi tša lefelong nkego le na le meetse	Kgonego ya kokoetšo ya letamo le e šoma bjalo ka tikologo ya nonyana ya ka meetseng le setšhaba sa diamuši se swanetše go tihokomelwa ka taolo ya tikologo.	Dinonyana tša ka meetseng/ Sešupi sa diamuši	Tshekatsheko ya mothalotho e swanetše go swarwa go tšweletša setšhaba sa nonyana ya ka meetseng le kemedi ya diamuši mo phihlelong ya noka. Go na le hiokego ya go bea tatelano ya RQO ya motswako wa diphoofolo/dinonyana go ya ka tshedimošo yeo elego gona.

Tafolana 7: Boleng bja Dipono tša Mothopo wa DINOKA LE MATAMO ka bohlokwa bja DiYuniti tša Mothopo tšeo di kopantšhitšwego tša Tshekatsheko ya 6a: KLEIN MARICO / KROMELLEMBOOG

IU A	Lenaneo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo			
6a: KLEIN MARICO/KROMELLEMBOOG	II	Upper Klein Marico go elelela go, Klein Maricopoort Dam, Rhenosterspruit, Maimaniesloop, Kareespruit (A31D)	6_1	B/C	Bontšhi	Dikelelo tša fase	Tlhokomelo ya fase ya EWR le tšhepedišo ya komelelo Noka ya Klein Marico River ka godimo ga kelelo ya Letamo la Klein Maricopoort go A31D NIMAR = 16.25x10 ⁶ m ³ Legoro la REC=C/D The Tlhokomelo ya dikelelo tša fase and Tšhepedišo ya komelelo e swanetše go fihlelelwa go thekga diphedi tša ka meetseng le bašomiši ba moela wa fase.	Dikelelo tšeo di sa swanelago Tlhokomelo ya dikelelo le tšhepedišo ya komelelo Tlhokomelo ya Noka ya Klein Marico ka tshekatsheko ya thutapedi	Tlhokomelo ya dikelelo tša fase (m ³ /s)	Tšhepedišo ya komelelo (m ³ /s)		
									Oct	0.038	0.035	
									Nov	0.039	0.036	
									Dec	0.039	0.036	
									Jan	0.041	0.038	
									Feb	0.048	0.045	
									Mar	0.044	0.040	
					Apr	0.045	0.041					
					May	0.042	0.039					
					Jun	0.043	0.039					
					Jul	0.041	0.038					
					Aug	0.040	0.037					
					Sep	0.041	0.037					
							Kelelo ya ka gare ya motswako wa dinutrient e bjale ka ge go laeditšwe e swanetše go fihlelelwa go tšwetšapele diphedi tša ka meetseng le go netefatša gore legoro leo le laetšwego le a fihlelelwa	Othofosfeiti (PO ₄) bjalo ka fosforase	≤ 0.050 dimilikramo/lithara (mg/l) (50 th phesenthaele)			
				Boleng	Dinutrient			Nitritei (NO ₃ -) le Naeritei (NO ₂ -) bjalo ka Naetrotsene	≤ 0.5 dimilikramo/lithara (50 th phesenthaele)			

IU A	Lenaneo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Matswai	Maemo a kelelo ya ka gare ya motswako wa letswai bjalo ka ge go laetšwe e swanetše go fihlelewa go tšwetšapele bophelo bja diphedi le tikologo gammogo le go netafatsa gore legoro leo le laetšwego le a fihlelewa.	Tshwaro ya Mohlagase	≤ 55 milimense/mmitha (mS/m) (95 th phesenthaele)
								Salfeti	≤ 80 dimilikramo/lithara (95 th phesenthaele)
								Tloraete	≤ 40 dimilikramo/lithara (95 th phesenthaele)
								Sodiamo	≤ 70 dimilikramo/lithara (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene bo swanetše go fokotša kotsi maphelong a batho.	<i>Escheria coli</i> (E. coli)	Dipalo tše dimililithara (ml) (95 th phesenthaele)
						Diphetogeto tša Lenaneo	Phapaphapano ya pH e swanetše go thokomelewa go ditekanyetšo tšeo di bontšhišwego go thekga diphedi tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse. Tshekatsheko ya mothalotho yeo e tšweletšago maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega.	Phapaphapano ya pH	6.0 (5 th phesenthaele) and 9.0 (95 th phesenthaele)
						Mepholo	Motswako wa mepholo ga ya swanela go bea maphelo a batho le diphedi tša ka gare ga meetse kotsing.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe Ditekanyetšo di swanetše go tšweletšwa.
								Fluoraete	≤ 2.5 dimilikramo/lithara (95 th phesenthaele)
					Tikologo	Kelelo ya ka gare	Phapaphapano ya tikologo e swanetše go thokomelewa ka legoro C/D la diphedi le tikologo. Thokomelo ya dibjalo tša mathoko le lefelo leo dimela di golago go lona ya moela wa ka gare (lebelo la bofase bja mananeo) a dihlapi le phapaphapano ya diphoofofo tša ka meetesng tšeo di hlokega lerapo la mokokotlo.	Dikagare tša Maemo a Tikologo, Tshekatsheko ya Mokgwa wa Lebelo la Tikologo le Mmotlolo (RHAMM)	Kelelo ya ka gare Tikologo Maemo EC = C/D ≥ 58%

IU A	Lenaneo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Tikologo ya monola	Dibjalo tša monoleng di swanetše go kaonafatšwa go tloga go legoro D la diphele le tikologo go iša go legoro C/D. Taolo ya dimela tšeo di sa tlwaelegago e swanetše go tšweletšwa. Taolo ya lefelo la monoleng e swanetše go tšweletšwa. Tšweletšo ya lefelo la monoleng e swanetše go lekanyetšwa le go laolwa.	Dikagare tša Tshekatsheko ya Dipoelo tša Dimela	VEGRAI EC = C/D ≥ 58%
							Letamo le swanetše go laolwa go tšhireletša mešomo ya diphele le tikologo gotee le bašomiši ba moela wa fase. Tšweletša melao ya tšhepedišo ya letamo go tšwetšapele maemo a makaone a matamo go netafatsa gore phapaphapano ya diphele e tlhokometšwe.	Maemo ao a lekanago a tšhepedišo ya letamo a a hlokega	Melao ya tšhepedišo bjalo ka ge e hwetšagala. Maemo a gare a go tšwetšapele diphele le tikologo tša ka gare ga meetse (15-18%)
		Letamo la Klein Maricopoort (A31D)	6_2		Bontšhi	Maemo a letamo	Ditšhila tša letamo di hlokega go kopana moeleng wa fase wa dinyakwa tša tšhepedišo ya diphele le tikologo.	Othofosfeitis	≤ 0.025 mg/l 50 th phesenthaele
					Boleng	Dinutrient	Motswako wa othofosfeiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphele le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba meetse. Palomoka ya motswako wa fosforase e swanetše go kaonafatšwa go tšwetšapele bophelo bja diphele le tikologo gammogo le dinyakwa tša boleng bja bašomiši ba meetse. Letamo le swanetše go tlhokomelwa ka lenaneo la letšha.	Palomoka ya fosforase	≤ 0.050 mg/l 50 th phesenthaele

IU A	Lenaneo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Motswako wa Nitreiti le Naetreiti o swanetše go kaonafatšwa go tšwetšapele bophelo bja diphedi le dinyakwa tša boleng bja bašomiši ba meetse. letamo le swanetše go tihokomelwa bjalo ka lenaneo la mesotrofiki	Naetreiti le Nitreiti	≤ 0.70 mg/L N 95th phesenthaele
						Matswai	Motswako wa letswai ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo bja diphedi le tikologo gammogo le boleng bja dinyakwa tša bašomiši ba moela wa fase	Tshwaro ya Mohlagase Tloraete	≤ 65 mS/m 95th phesenthaele ≤ 40 mg/l 95th phesenthaele
						Phathotšene	Phathotšene e swanetše go tihokomelwa maemong ao a bolokegetšego tšhomišo ya batho	<i>Escheria coli</i>	≤ 10 Dipalo tše 130/100µl 95th phesenthaele
						Diphetogop hetogo tša Lenaneo	Meetse a swanetše go dumelelwa go šomišetšwa boitapološo	Ph	6.5 – 9.0 95th phesenthaele
							Kgonthiše yeo e okeditšwego ka dipalopalo	Kgobokano ya seela	≥ 0.4 m 5th phesenthaele
							Kelelo ya ka gare ya motswako wa dinutriente bjale ka ge go laeditšwe e swanetše go fihlelelwa go tšwetšapele diphedi tša ka meelseng le go netefatša gore legoro leo le laetšwego le a fihlelelwa	Othofosfeiti (PO ₄ ⁻) bjalo ka fosforase Nitreiti (NO ₃ -) le Naetreiti (NO ₂ -) bjalo ka Naetrotsene	≤ 0.050 dimilikramo/lithara (mg/l) (50th phesenthaele) ≤ 0.7 dimilikramo/lithara (50th phesenthaele)
		Klein Marico moela wa fase wa Letamo la Klein Maricopoort go iša go Letamo la Kromellenboog, Wlgeboomspuit (A31E)	6_3		Boleng	Dinutrient			

IU A	Lenaneo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Matswai	Maemo a kelelo ya ka gare ya motswako wa letswai bjalo ka ge go laeditšwe e swanetše go finlelewa go tšwetšapele bophelo bja diphelele le tikologo gammogo le go netafatsa gore legoro leo le laetšwego le a finlelelwa.	Tshwara Mohlagase	≤ 65 milisimense/mmitha (mS/m) (95 th phesenthaele)
						Phathotšene	Bogona bja phathotšene bo swanetše go fokotša kotsi maphelong a batho.	<i>Escheria coli</i> (E. coli)	Dipalo tše dimiliithara (ml) (95 th phesenthaele)
						Diphetogop hetogo tša Lenaneo	Phapaphapano ya pH e swanetše go tlhokomelwa go ditekanyetšo tšeo di bontšhitšwego go thekga diphelele tša ka gare ga meetse le dinyakwa tša bašomiši ba meetse. Mašaledi a diitšhila a swanetše go laolwa ka taolo ya tšhomišo ya naga. Tshekatsheko ya mothalotho yeo e tšweletšago maemo a bjale a kelelo ya ka gare ya kgobokano ya seela e a hlokega.	Phapaphapano ya pH	6.5 (5 th phesenthaele) and 9.0 (95 th phesenthaele)
							Phapaphapano ya tikologo e swanetše go tlhokomelwa ka legoro C la diphelele le tikologo goba le le kaone go feta leo. Tlhokomela dibjalo tša mathoko le kelelo ya ka gare ya lefelo leo dimela di golago go lona (lebelo la bofase bja mananeo) a dihlapi le phapaphapano yadiphoofolo tša ka meetse tšeo di hlokago lerapo la mokokotlo.	Kgobokano ya seela	Phapaphapano ya 10% ya bokamorago bja motswako e dumeletšwe Ditekanyetšo di swanetše go tšweletšwa.
					Tikologo	Kelelo ya ka gare		Dikagare tša Maemo a Tikologo	Kelelo ya ka gare Tikologo Maemo EC = C ≥ 62%

IU A	Lenaneo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Tikologo ya monola	Dibjalo tša monleng di swanetše go tihokomeiwa ka legoro C la diphedi le tikologo goba le le kaone.	Dikagare tša Tshekatsheko ya Dipoelo tša Dimela	VEGRAI EC = C ≥ 62%
						Dihlapi	Setšhaba sa dihlapi se swanetše go tihokomeiwa ka legoro C la diphedi le tikologo goba go kaonafatšwa. . .	Dikagare tša Tshekatsheko ya Dipoelo tša Dihlapi (FRAI)	Legoro la tikologo ya dihlapi = C FRAI ≥ 62% Kgoboketša diphedi tše hlano ka metsofotso ye 20 ya tshwantšhetšo
					Diphedi	Diphedi tša ka meetseng tšeo di hlokago lerapo la mokokotlo	Kopanvo ya diphoofole tša ka meetseng tša go hloka mokokotlo di swanetše go beilwa go legoro la D la tikologo goba go le kaonafatšwe	Dikagare tša Tshekatsheko ya Dipoelo tša Diphoofole tša ka meetseng tšeo di hlokago lerapo la mokokotlo, le Karolo ya bohano ya Lenaneo la go Nweša la Afrika- Borwa (SASS5).	Diphoofole tša ka meetseng tšeo di hlokago lerapo la mokokotlo tša EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 5.0
	Letamo la Kromellenboog (A31E)	6_4			Bontšhi	Maemo a letamo	Letamo le swanetše go laolwa go tšhireletša mešomo ya diphedi le tikologo gotee le bašomiši ba moela wa fase. Tšweletša melao ya tšhepedišo ya letamo go tšwetšapele maemo a makaone a matamo go neteratša gore phapaphapano ya diphedi e tihokometšwe. Ditšhila tša letamo di tihokega go kopana moeleng wa fase wa dinyakwa tša tšhepedišo ya diphedi le tikologo.	Maemo ao a lekanego a tšhepedišo ya letamo a a hlokega	Melao ya tšhepedišo bjalo ka ge e hwetšagala. Maemo a gare a go tšwetšapele diphedi le tikologo tša ka gare ga meetse (15-18%)

IU A	Lenaneo	Noka	Yuniti ya Mothopo	Legoro la Tikologo	Karolo	Karolwana	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Motswako wa othofosfeiti o swanetše go thokomelwa go tšwetšapele bophelo bja diphedi le boleng bja bašomiši ba meetse. Letamo le swanetše go thokomelwa bjalo ka lenaneo la letsha.	Othofosfeiti	≤ 0.015 mg/l 50th phesenthaele
						Dinutrient	Motswako wa palomoka ya fosforase o swanetše go thokomelwa go tšwetšapele bophelo bja diphedi le boleng bja bašomiši ba meetse. Letamo le swanetše go thokomelwa bjalo ka lenaneo la letsha.	Palomoka ya fosforase	≤ 0.025 mg/l 50th phesenthaele
					Boleng		Motswako wa Nitreiti & Naetreiti o swanetše go thokomelwa go tšwetšapele bophelo bja diphedi le boleng bja bašomiši ba meetse. Letamo le swanetše go thokomelwa bjalo ka lenaneo la letsha.	Naetreiti le Nitreiti	≤ 0.70 mg/l N 95th phesenthaele
						Matswai	Motswako wa letswai ka gare ga letamo o swanetše go kaonafatšwa go thekga bophelo bja diphedi le boleng bja dinyakwa tša bašomiši ba moela wa fase	Tshwaro ya Mohlagase	≤ 55 mS/m 95th phesenthaele
						Phathotšene	Pathotšene e swanetše go thokomelwa maamong ao a bolokegetšego tšhomišo ya batho	<i>Escheria coli</i> (<i>E.coli</i>)	Dipalo tše 130/100 tša dimiliithara (ml) (95th phesenthaele)
						Diphetogop hetogo tša Lenaneo	Phapaphapano ya pH e swanetše go thokomelwa ditekanyetšong tseo di bontšitšwego go thekga diphedi tša ka gare ga meetse ka gare ga letamo.	pH	6.5 – 9.0 95th phesenthaele

Tafolana 8: Maikemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA mabapi le Tlahlabo yeo e Tsenelalanago ya Yuniti ya 6b: LETAMO LA GROOT MARICO / MARICO BOSVELD

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo									
66:LETAMO LA GROOT MARICO/MARICO BOSVELD	II	Groot Marico main stem upstream to Polkadraaispruit confluence (A31B)	6_5		Bokae	Dikelelo tša tiase	Tlhokomelo ya EWR ya dikelelo tša tiase le komelelo: Noka ya Groot Marico go la MAR_EWR2 in A31B NMAR = 42.08x10 ⁶ m ³ Legoro la REC=B	Dikelelo tša Motheo	Dikelelo tša tiase tlhokomelo le dikelelo tša komelelo	Dikelelo tša tiase tlhokomelo (m ³ /s)	Dikelelo tša komelelo (m ³ /s)							
									Oct	0.510	0.268							
									Nov	0.540	0.283							
									Dec	0.560	0.291							
									Jan	0.620	0.319							
									Feb	0.710	0.364							
									Mar	0.637	0.327							
									Apr	0.628	0.324							
									May	0.584	0.302							
									Jun	0.588	0.305							
									Jul	0.557	0.290							
									Aug	0.547	0.285							
									Sep	0.546	0.285							
															Diphepo	Phatlalatšo ya diphepo tše itšego e swanetše gore e amogelwe go hlokomela bophelo bja tswalano ya diphedi l tikologo ya tšona ya meetse le go netefatša gore legoro leo le beeditswego le a fihlelwa.	Othofosfeiti (Orthophosphate (PO ₄ ⁻) bjalo ka Fosforase	≤ 0.020 dimililikramo/litara (mg/l) (50 th percentile)
																	Naetireiti (Nitrate (NO ₃ ⁻) le Naetraete (Nitrite (NO ₂ ⁻) bjalo ka Naeterotšene	≤ 0.5 dimililikramo/litara (50 th persente)
																	Go swara Mohlagase	≤ 30 miliSiemens/metara (mS/m) (95 th persente)
Salfeti (Sulphate)	≤ 10 dimililikramo/litara (95 th persente)																	
						Matswai	Maemo a Letswai la gare ga noka a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go netefatša gore legoro la tswalano ya diphedi le tikologo ya tšona le a fihlelwa.	Tloraete (Chloride)	≤ 10 dimililikramo/litara (95 th persente)									
								Sodiamo (Sodium)	≤ 10 dimililikramo/litara (95 th persente)									

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphathotš ene	Go ba gona ga diphathotšene go swanetše gore go be le kotsi ya tlase godimo ga bophelo bja batho.	<i>Escherichia coli</i> (E. coli)	130 counts/100 dimililitara (ml) (95 th persente)
							Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga dipeelano tša yona tšeo di beeleletšwego go thekga tswalano ya diphedi le tikologo ya tšona ya gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.8 (95 th persente)
						Diphapaphapano tša Sisteme	Tlhalobo ya mothalohlahli mabapi le go bontšha go se bonagale gare ga noka e hlokega.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe. Tekanyetšo e swanetše gore e bontšhwe.
							Maemo a oketšene ao a tlošitšwego a swanetše gore a kaonafatšwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Oketšene yeo tološitšwego	≥ 7 dimililikramo/litara (mg/l)
							Diphatlalatšo tša ditšhilafatši ga se tša swanela go bea bophelo bja batho le diphedi tša ka gare ga meetse kotsing..	Aluminium (Al)	≤ 0.062 dimililikramo/litara (mg/l) (95 th persente)
								Manganese (Mn)	≤ 0.15 dimililikramo/litara (mg/l) (95 th persente)
								Ayone (Iron (Fe))	≤ 0.1 dimililikramo/litara (mg/l) (95 th persente)
								Lead (Pb) ya go tia	≤ 0.0057 dimililikramo/litara (mg/l) (95 th persente)
								Khopha ya go tia (Copper (Cu))	≤ 0.0048 dimililikramo/litara (mg/l) (95 th persente)
								Nikele (Nickel (Ni))	≤ 0.07 dimililikramo/litara (mg/l) (95 th persente)

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
								Khopaleite (Co) Zinki (Zinc Zn)	≤ 0.05 dimililikramo/litara (mg/l) (95th persente) ≤ 0.002 dimililikramo/litara (mg/l) (95th persente)
					Madulo	Ka gare ga noka	Phapaphapano ya madulo e swanetše gore e hlokomelwe legorong la B la tswalano ya diphedi le tikologo ya tšona goba seemo se se kaone. Tlhokomelo ya dimela le didiriswa tša ka gare ga meetse (magoro a bogolo bja belosithi) ya tswalano ya diphedi le tikologo ya tšona ya hlapi le dimakroinbetheporeiti.	Intekse ya potego ya madulo, mokgwa wa tlhahlobo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a gare ga meetse EC = B $\geq$ 82%
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe legorong la B la tswalano ya diphedi le tikologo ya tšona goba seemong se se kaone.	Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = B $\geq$ 82%
					Payothena (Biota)	Hlapi	Sestšhaba sa dhlapi se swanetše gore se hlokomelwe legorong la B la tswalano ya diphedi le tikologo ya tšona. Tlhahlobo ya setšhaba sa dhlapi e swanetše gore e direge ka ngwaga mabapi le hlokomelo ya kgahlanong le legoro la tswalano ya diphedi le tikologo ya tšona. Madulo le kelelo di swanetše gore di lekanele mehuta yeo e ithekilego ka kelelo.	Intekse ya Tlhahlobo y Karabo ya Hlapi (Fish Response Assessment Index (FRAI)).	Legoro la Tswalano ya Diphedi l Tikologo ya Tswalano ya Dihlapi = B FRAI $\geq$ 82% Mohlala 20 BMOT, 30 CPRE le 15 AURA go matsapa a mohlala wa diminete tše 20.

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Dimakoib etheporeiti tša ka gare ga meetse	Kgobokešo ya Dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la A/B la tswalano y diphedi le tikologo ya tšona.	Intekse ya Tlhalobob ya Karabo y Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = A/B ≥ 88% SASS ≥ 220 ASPT ≥ 6.5 (Site EWR 2 = A3GMAR- KOEDO)
						Diathome	Kgobokešo ya di taeathomo e swanetše gore e hlokomelwe ka gare ga seemo sa hlago se se golo.	Intekse ya Tšhilafatšo ye e itšego	Di taeathomo EC ≥ 88%
		Polkadraaispruit (A31B)	6_6		Bokae	Dikelelo tša tiase	Tlhokomelo ya EWR ya dkelelo tša tiase le komelelo: Polkadraaispruit go la MAR_EWR6 go A31B NMAR = 9 866x10 ⁶ m ³ Legoro la REC=B Dikelelo tša tiase tša tlhokomelo le dikelelo tša komelelo di swanetše gore di amogelwe go thekga tswalano ya diphedi le tikologo ya tšona y meetse le bašomiši ba kelelo ya noka ya tiase.	Dikelelo tša Motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo Tlhokomelo ya ditšhila tša Polkadraaispruit ka nako ya dinyakišišo tša payolotši	Dikelelo tša tiase tša komelelo (m ³ /s) Dikelelo tša tiase tša komelelo (m ³ /s) Oct 0.088 0.000 Nov 0.099 0.003 Dec 0.113 0.003 Jan 0.138 0.024 Feb 0.157 0.010 Mar 0.130 0.007 Apr 0.118 0.005 May 0.104 0.003 Jun 0.105 0.002 Jul 0.098 0.000 Aug 0.095 0.000 Sep 0.095 0.000
					Boleng	Diphepo	Phatlafatšo ya diphepo tše itšego e swanetše gore e amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona ya meetse le go netafatša gore	Othofosfeti (Orthophosphate (PO ₄) bjalo ka fosforase (Phosphorus)	≤ 0.020 dimilikramo/litara (mg/l) (50 th persente)

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							legoro leo le beeditšwego le a fihlelelwa.	Naetreiti (Nitrate (NO ₃ ⁻) le Naetraete (Nitrite (NO ₂ ⁻) bjalo ka Naetrotsene Nitrogen)	≤ 0.5 dimililikramo/litara (50 th persente)
							Maemo a Letswai la ka gare ga noka a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go neletatša gore legoro la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Go swara mohlagase	≤ 30 milliSiemens/mitara (mS/m) (95 th persente)
						Matswai		Salfaete (Sulphate)	≤ 10 dimililikramo/litara (95 th persente)
								Tioraete (Chloride)	≤ 10 dimililikramo/litara (95 th persente)
								Sodiamo (Sodium)	≤ 10 dimililikramo/litara (95 th persente)
						Diphathotš ene	Go ba gona ga diphathotšene go swanetše gore go be le kotsi ya tlase godimo ga bophelo bja batho.	<i>Escherichia coli</i> (E. coli)	130 counts/100 dimililitara (ml) (95 th persente)
						Diphapaphapano tša sesterne	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga dipeelano tša yona tšeo di beeditšwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.8 (95 th persente)
							Tihahlobo ya mothalohlahli mabapi le go bontšha go se bonagale ka gare ga noka e hlokega.	Thupidithi	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe. Ditekanyetšo di swatše gore di bontšhwe.
							Maemo a oksetšene ao a tološitšwego a swanetše gore a kaonafatšwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Oksetšene yeo e tološitšwego	≥ 7 milligrams/litre (mg/l)

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la B/C la tswalano ya diphedi le tikologo ya tšona go iša legorong la A.	Intekse ya potego ya madulo, mokgwa wa tlahlolo ya madulo a koketšego le mokgwa (Index of Habitat Integrity, Rapid Habitat Assessment Method and Model (RHAMM))	Instream Habitat Integrity EC = B ≥ 82%
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di kaonafatšwe go tloga legorong la B/C la tswalano ya diphedi le tikologo ya tšona go iša legorong la B la tswalano ya diphedi. Tšhireletšo ya madulo a kgauswi le meetse e a hlokega.	Intekse ya Tlahlolo ya Karabo ya Dimela	VEGRAI EC = B ≥ 82%
					Payotha	Hlapi	Sestšhaba sa dihlapu se swanetše gore se hlokomelwe legorong la B/C la tswalano ya diphedi le tikologo ya tšona. Tlahlolo ya setšhaba sa dihlapu e swanetše gore e direge ka ngwaga mabapi le tlhokomelo ya kgahlanong le legoro la tswalano ya diphedi le tikologo ya tšona. Madulo le kelelo di swanetše gore di lekaneše mehuta yeo e ithekgilego ka kelelo.	Intekse ya Tlahlolo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi la dihlapi = B/C FRAI ≥ 78%

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Di makroinbet heporeiti tša ka gare ga meetse	Kgoboketšo ya Dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la B/C la tswalano ya diphedi le tikologo ya tšona.	Intekse ya Tihahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = B/C $\geq$ 78% SASS $\geq$ 155 ASPT $\geq$ 6.0
		Groot Marico go tloga Polkadraaispruit confluence go tšona (A31B)	6_7		Bokae	Dikelelo tša tlase	Tlhokomelo ya EWR ya dikelelo tša tlase le komelelo: Noka ya Groot Marico mmileng wa leporogo la tsela ya N4 A31B NMAR = $56.92 \times 10^6 \text{ m}^3$ Legoro la REC=B	Dikelelo tša Dikelelo tša tlhokomelo le dikelelo tša komelelo.	Dikelelo tša tlase Dikelelo tša tlhokomelo (m ³ /s) Dikelelo tša komelelo (m ³ /s)
							Dikelelo tša tlase	Tlhokomelo ya ditšhila tša Noka ya Groot Marico ka nako ya dinyakišišo payolotši	Oct 0.649 Nov 0.704 Dec 0.762 Jan 0.890 Feb 1.030 Mar 0.908 Apr 0.864 May 0.783 Jun 0.779 Jul 0.730 Aug 0.709 Sep 0.701
					Boleng	Diphepo	Phatlalatšo ya diphepo ka gare ga meetse e swanetše gore e kaonafatšwe go hlokomela	Othofosfeti bjalo ka fosforase(PO ₄)	≤ 0.025 dimilikramo/litara (mg/l) (50 th persente)

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse, ka gare ga legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona go thekga bašomišo ba kelelo ya tlase. Tahlō ya meetse a ditšhila e swanetše gore e laolwe go šireletša potego ya tswalano ya diphedi le tikologo ya tšona.	Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naeterotšene	≤ 0.7 milligrams/litre (50 th percentile)
							Maemo a Letswai la ka gare ga meetse le swanetše gore le kaonafatšwe go hlokomela tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse mabapi le legoro la tswalano ya diphedi le tikologo ya tšona le go thekga bašomiši ba kelelo ya tlase. Tahlō ya meetse a ditšhila e tšhomišo ya mabu e swanetše gore e laolwe go šireletša potego ya tswalano ya diphedi le tikologo ya tšona.	Go swara mohlaga Salaete Tloraete	≤ 55 milliSiemens/mitara (mS/m) (95 th persente) ≤ 50 dimililikramo/litara (95 th persente) ≤ 40 dimililikramo/litara (95 th persente)
						Matswai	Go ba gona ga diphathotšene ga se gwa swanela go bea bophelo bja batho kotsing.	Sodiamo	≤ 50 dimililikramo/litre (95 th persente)
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go bea bophelo bja batho kotsing.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 dimililitara (ml) (95 th persente)
						Diphapaphano tša sešeme	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga dipeetšo tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.5 (95 th persente)
							Tlhalobo ya mothalotho mabapi le go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Thubidithi	Phapaphapano ya 10% go tloga phatlalatšong ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gore di botšhwe.

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Maemo a oketšene yeo e tološitšwego a swanetše gore a kaonafatšwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Oketšene yeo e tološitšwego	≥ 7 dimilikramo/litara (mg/l)
							Phatlalatšo ya ditšhilafatš ga se ya swanela go bea bophelo bja batho le diphedi tša gare ga meetse kotsing.	Aluminiamo (Al)	≤ 0.062 dimilikramo/litara (mg/l) (95th persente)
								Mankanese (Mn)	≤ 0.15 dimilikramo/litara (mg/l) (95th persente)
								Ione (Fe)	≤ 0.1 dimilikramo/litara (mg/l) (95th persente)
								Lead (Pb) hard	≤ 0.0057 dimilikramo/litara (mg/l) (95th persente)
								Khopha (Cu) ya go tia	≤ 0.0048 dimilikramo/litara (mg/l) (95th persente)
								Nikele (Ni)	≤ 0.07 dimilikramo/litara (mg/l) (95th persente)
								Khopalite (Co)	≤ 0.05 dimilikramo/litara (mg/l) (95th persente)
								Zink (Zn)	≤ 0.002 dimilikramo/litara (mg/l) (95th persente)
							Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C la tswalano ya diphedi letikologo ya tšona.	Intekse ya potego ya madulo, mokgwa wa tihahlobo ya madulo a kokešego le motele (Index of Habitat Integrity, Rapid Assessment Method and Model (RHAMM))	Potego ya Madulo a kgauswi le meetse EC = C ≥ 62%
					Madulo	Ka gare ga meetse			

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go tša legorong la C la tswalano ya diphedi le tikologo ya tšona.	Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = C ≥ 62%
					Payooha	Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe legorong la C/D la tswalano ya diphedi le tikologo ya tšona goba seemong se se kaone. Tlhahlobo ya setšhaba sa dihlapu e swanetše gore e dirwe ka ngwaga mabapi le kgahlanong le legoro la tswalano ya diphedi le tikologo ya tšona yeo e beeditšwego.	Intekse ya Tlhahlobo ya Karabo ya Hlapi (Fish Assessment Index (FRAI))	Legoro la Tswalano ya diphedi le tikologo ya tšona ya Hlapi = C/D FRAI ≥ 58% Go bontšha mohuta wo o itšego wa <i>BMOT</i> , <i>AURA</i> , <i>CPRE</i> , <i>AMOS</i>
						Dimakroinb ethepoeiti tša ka gare ga meetse	Kgoboketšo ya di makroinbetheporeiti e swanetše gore e hlokomelwe ka seemo la bjale sa legoro la B la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tlhahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Bonwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = B ≥ 82% SASS ≥ 210 ASPT ≥ 6.2 (Lefelo A3GMAR-WONDE)
						Diathomo	Kgoboketšo ya diathomo e swanetše gore e hlokomelwe ka gare ga seemo se segolo sa hlago.	Intekse ya Tšhilafatšo ye e itšego	Diathomo EC = A/B ≥ 88% (Lefelo A3GMAR-WONDE)

IU A	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
		Letamo la Marico Bosveld (A31B)	6_8		Bokae	Boemo bja letamo	Letamo le swanetše gore le laolwe go šireletša mošomo wa tswalano ya diphedi le tikologo ya tšona gammogo le bašomiši ba kelelo ya tšase. Go tšweletša le go tsošološa melao ya go šoma ya letamo go hlokomela maemo a letamo mabapi le go netefatša gore phapaphapano ya tswalano ya diphedi le tikologo ya tšona e a hlokomelwa. Go a hlokega gore matamo a ntšhe go fihlelela dikelelo tša kelelo ya tšase tša dinyakwa tša kelelo ya tswalano ya diphedi le tikologo ya tšona.	Boemo bjo bo nnyane bjoo bo hlokegago mabapi le go šoma ga letamo	Melao ya tshepedišo ka ge e šomišwa ka gona. Boemo bjo bo nnyane bja go hlokomela tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse (15-18%).
							Phatlalatšo ya othofosfeiti e swanetše gore e hlokomelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya mesotrofiki.	Diothofosfeiti	≤ 0.015 mg/l 50th persente
					Boleng	Diphepo	Phatlalatšo ya palomoka ya fosforase e swanetše gore e hlokomelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya mesotrofiki.	Palomoka ya fosforase	≤ 0.025 mg/l 50th persente

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalan o y Diphedi le Tikologo ya Tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Phatlalatšo ya naetreiti le naetraete e swanetše gore e hlokomelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya mesotrofiki.	Naetraete le Naetreiti	$\leq 0.70 \text{ mg/l N } 95^{\text{th}}$ persente
						Matswai	Letswai la ka gare ga letamo le swanetše gore le hlokomelwe go thekga bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba kekelele ya tiase.	Go swara mohlaga	$\leq 35 \text{ mS/m } 95^{\text{th}}$ persente
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia coli</i> (E.coli)	130 counts/100 dimillilitara (ml) (95 th persente)
						Phapapha pano ya sisteme	Meetse a swanetše gore a amogelwe mabapi le tšhomišo ya boitapološo.	pH	6.5 – 9.0 95 th persente

Tafola 9: Maikemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA mabapi le Tihahlobo yeo e Tsenelanelanago ya Yuniti ya Tihahlobo 7: KAALOOG-SE-LOOP

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi leikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
KAALOOG-SE-LOOP	I	Marico Eye, Kaalooq-se-Loop,	7_1	B	Bokae	Dikelelo tša tiase	Tlhokomelo ya EWR ya dikelelo tša tiase le komelelo: Kaalooq-se-Loop go la MAR EWR1 in A31A	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo.	Dikelelo tša tiase Dikelelo tša tlhokomelo Dikelelo tša komelelo (m ³ /s)

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphelele leikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
		Bokkraal se Loop Rietspruit Ribbokfontein- se-Loop Rietfontein Bronkhorstfontei n Zyferfontein (Kuiffontein) Syferfontein (A31A)					NMAR = $10.539 \times 10^6 \text{ m}^3$ Legoro la REC=B Dikelelo tša tiase tša tlhokomelo le dikelelo tša komelelo di swanetše gore di amogelwe go thekga tswalano ya diphelele tikologo ya tšona y meetse le bašomiši ba kelelo ya noka ya tiase.	Tlhokomelo ya go lahla mafelong a marša a kgauswi le EWR2 ka nako ya ditlahlobo tša payolotši le kelelo ya tiase lefelong le mpša leo le rerilwego.	Oct 0.244 0.159 Nov 0.252 0.164 Dec 0.245 0.160 Jan 0.250 0.162 Feb 0.280 0.182 Mar 0.254 0.165 Apr 0.262 0.170 May 0.253 0.164 Jun 0.261 0.170 Jul 0.252 0.164 Aug 0.252 0.163 Sep 0.257 0.167
							Seemo sa meetse a Pristine se swanetše gore se hlokomelwe. Ga go na phuhlamo khwatlithing ya meetse yeo e swanetšego go direga. Letswai la ka gare ga meetse le swanetše gore le hlokomelwe go netefatša gore tswalano ya diphelele tikologo ya tšona le potego ya mothopo ga di fetoge.	Go swara mohlagaše	≤ 50 milliSiemens/mitara (mS/m) (95 th persente)
					Habitat	Ka gare ga meetse	Phapahapano ya madulo e swanetše gore e hlokomelwe ka gare ga legoro la B la tswalano ya diphelele tikologo ya tšona goba seemo se se kaone.	Intekse ya potego ya madulo, mokgwa wa tlahlobo ya madulo a koketšego le mokgwa	Potego ya madulo a gare ga meetse EC = B ≥ 25%

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi leikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
						Madulo kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la B la tswalano ya diphedi le tikologo ya tšona goba seemo se se kaone.	Intekse ya Tihahlobo ya Karabo ya Dimela	VEGRAI EC = B ≥ 82%
						Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe legorong la B la tswalano ya diphedi le tikologo ya tšona. Tihahlobo ya setšhaba sa dihlapu e swanetše gore e dirwe ka ngwaga go hlokomela kgahlanong le legoro la tswalano ya diphedi le tikologo ya tšona leo le beeletšwego.	Intekse ya Tihahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI)).	Legoro la Tswalano ya diphedi le tikologo ya tšona la Hlapi = B FRAI ≥ 82%
					Payooha	Di inbetheporeiti tša gare ga meetse	Kgoboketšo ya di makroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la A/B la tswalano ya diphedi le tikologo ya tšona.	Intekse ya Tihahlobo ya Karabo y Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = A/B ≥ 88% SASS ≥ 220 ASPT ≥ 6.4 (Lefelo A3KAAL-RIETS)
						Dithaeathomo	Kgoboketšo ya dithaeathomo e swanetše gore e hlokomelwe ka gare ga seemo se se golo sa hlago ka hlago.	Intekse ya Tšhilafatšo ye itšego	Di taeathomo EC ≥ 88%

Tafolana 10: Maikemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA le MATAMO mabapi le Tihahlobo yeo e Tselelelanago ya Yuniti ya Tihahlobo 8: MALMANIESLOOP

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya Diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
8: MALMANIESLOOP	III	Malmanies-loop (A31C)	8_1	-	Boleng	Diphepo	Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go hlokomela khwalithi ya meetse yeo e lego gona seemong sa tswalano ya diphedi le tikologo ya tšona.	Othofosfeiti (PO ₄) bjalalo ka fosforase	≤ 0.025 dimililikramo/litara (mg/l) (50 th persente)
							Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalalo ka Naetrotsene		≤ 0.5 dimililikramo/litara (50 th persente)
						Matswai	Letswai la ka gare ga meetse le swanetše gore le hlokomelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go hlokomela khwalithi ya meetse yeo e lego gona seemong sa tswalano ya diphedi le tikologo ya tšona.	Go swara mohlagaase	≤ 55 miliSiemens/mitara (mS/m) (95 th persente)
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 dimililitara (95 th persente)
						Phapaphapano ya sešeme	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go šomiša dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.5 (95 th persente)

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya Diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
							Tihlobo ya mofhalotho go bontšha semo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphano ya 10% ya phatlalatšo ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gore di bontšhwe.
					Madulo	Dimela Monola	Lebela Menola ya di RQO, madulo ke karolo ya sešeme ya monola.		
					Payotha	Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe legorong la C la tswalano ya diphedi goba seemong se se setšhaba a dihlapu e swanetše gore e dirwe ka ngwaga go hlokomela legoro la tswalano ya diphedi le tikologo ya tšona leo le beeletšwego. Go laola le go ntšha mehuta ya dihlapu yeo e sa nyakegego MSAL. Go thibela phatlalatšo ya mehuta ya dihlapu.	Intekse ya Tihahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la Tswalano ya Diphedi le Tikologo ya Tšona la Hlapi = C FRAI ≥ 62% Sample 10 BMOT in 20min sample effort

Tafolana 11: Malkemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA le MATAMO mabapi le Tihahlobo yeo e Tsenelelanago ya Yuniti ya Tihahlobo 9: MOLOPO

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya Diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
MOLOPO 9:	II	Bodibe eye D41A (Polfonteinspruit le Lothakane)	9_1	C			Lebelela di RQO tša metse a ka tlase ga mabu		

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro l Tswalan o ya diphedi le tikologo ya tšona	Karolwana a	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
		tributary catchment area)							
					Bokae	Dikelelo	Meetse a ka tiase ga mabu ao tswalanago (Molopo le Grootfontein Eye)		
						Diphedo	Phatlalato ya diphepo ka gare ga meetse e swanetše gore e amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beledišwego la tswalano ya diphedi le tikologo ya tšona le a fihlelwa.	Othofosfeiti (PO ₄ ⁻) bjalo ka fosforase Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 0.025 dimilikramo/litara (mg/l) (50 th persente) ≤ 0.7 dimilikramo/litara (50 th persente)
					Boleng	Matswai	Maemo a letswai ka gare ga meetse a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go thekga bašomiši ba kelelo ya tiase. Kaonafatšo ya phatlalato ya letswai e a hlokega.	Go swara mohlagase	≤ 75 milliSiemens/mitara (mS/m) (95 th persente)
			9_2			Diphapapha pano tša sešeme	Phapaphapano ya pH e swanetšo gore e hlokomelwe ka gare ga ditekanetšo tseo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona le go šomiša dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.8 (95 th persente)
						Ka gare ga meetse Dimela tša monola	Tihahlobo ya mothalotho go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% go tloga phatlalato ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gor di bontšhwe.
					Madulo		Lebelela di RQO tša monola, mdulo ke karolo ya sešeme ya monola.		
					Payotha	Hlapi	Seišhaba sa dihlapu se swanetše gore se kaonafatšwe go tloga legorong la E la tswalano ya diphedi le tikologo ya tšona go iša legorong la D.	Intekse ya Tihahlobo ya Karabo ya Hlapi (Fish Response Assessment Index	Legoro la tswalano ya diphedi le tikologo ya tšona la hlapi = D FRAI ≥ 42% Mehuta ya mehala ya 3,

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro l Tswalan o ya diphedi le tikologo ya tšona	Karolwan a	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
								(FRAI).	go akaretša BBRI nyakišong ya metsotso ye 20. Mohlala 15 wa PPHI ka metsotso ye 20.
						Di inbetheporeit i tša ka gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la D la tswalano ya diphedi le tikologo ya tšona (seemo se seo se tsošološitšwego) goba go kaonafatšwa.	Intekse ya Tihahlobo ya Karabo ya Makroinbetheporeiti .le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 80 ASPT ≥ 4.0
		Noka ya Molopo keelong ya mathomo go tloga Letamong la Modimola Dam go ya go Letamo la Disaneng D41A (main stem)	9_3		Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la E la tswalano ya diphedi le tikologo ya tšona go iša legorong la D. Go kaonafatša meetse ao a elelago ka gare ga sesteme go iša legorong la D la tswalano ya diphedi le tikologo ya tšona. Taolo ya keletatšhila le sedirišwa sa okaniki.	Intekse ya potego ya madulo	Potego ya madulo a gae ga meetse EC = D ≥ 42%
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di kaonafatšwe go tloga legorong la E la tswalano ya diphedi le tikologo ya tšona go iša legorong la D. Mehuta yeo sa nyakegego ya dimela swanetše gore e laolwe. Mafelo a kgauswi le meetse a swanetše gore a kaonafatšwe.	Intekse ya Tihahlobo ya Karabo ya Dimela	VEGRAI EC = D ≥ 42%
		Letamo la Modimola (Setumo)	9_4		Bokae	Maemo letamo	Letamo le swanetše gore le laolwe go šireletša mošomo a tswalano ya diphedi le tikologo ya tšona ga	Boemo bjo bo nnyane bjo bo hlokegago mabapi	Melao ya tshepedišo ka go šomišwa.

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro l Tswalan o ya diphedi le tikologo ya tšona	Karolwana a	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
		(D41A)					mmogo le bašomiši ba kelelo yatlaše. Go tšweletša le go kaonafatša melao ya tšepedišo ya letamo mabapi le go hlokomela maemo a matamo go netefatša gore phapaphapano ya tswalano ya diphedi le tikologo ya tšona ya gare ga meetse e a hlokomelwa.	le go šoma ga letamo	Boemo bjo bo nnyane bja go hlokomela tswalano ya diphedi le tikologo ya tšona ya gare ga meetse (15-18%).
							Phatlatošo ya othofosfeiti e swanetše gore e kaonafatšwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya yutrofiki. Kaonafatšo yeo e hlokegago go tšwa seemong sa haephathrofiki.	Diothofosfeiti	≤ 0.050 mg/l 50 th persente
							Phatlatošo ya palomoka ya fosforase e swanetše gore e kaonafatšwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya yutrofiki.	Palomoka ya fosforase	≤ 0.055 mg/l 50 th persente
							Phatlatošo ya Naetreiti le naetraete e swanetše gore e kaonafatšwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya yutrofiki.	Naetraete le Naetreiti	≤ 0.70 mg/l N 95 th persente
							Letswai la ka gare ga letamo le swanetše gore le hlokomelwe go thekga bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba kelelo ya tlase.	Go swara mohlagase	≤ 85 mS/m 95 th persente

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro l Tswalan o ya diphedi le tikologo ya tšona	Karolwana a	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
							Letswai la ka gare ga letamo le swanetše gore le hlokomelwe go thekga bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba kelelo ya tiase.	Kloraete	≤ 100 mg/l 95th persente
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia coli</i> (E. coli)	130 counts/100 dimillilitara (ml) (95th persente)
							Meetse a swanetše gore a amogelwe mabapi le tšhomišo ya tša boitapološo.	pH	6.5 – 9.0 95th persente
						Phapaphapano ya sisteme	Tihalošo yeo e oketšegilego ya ≥0.4 m	Turbidity	Persente ye nnyane ya 95th
							Phetogo ya ka gare	Thempereitšha	Phetogo yeo e sa oketšegilego go feta 2 °C godimo l tiase
							Maemo a oketšene ka gare ga sisteme a swanetše gore a sepelelane le sisteme ya tswalano ya diphedi le tikologo ya tšona.	Oketšene yeo e tološitšwego	≥ 7.0 mg/L O ₂ 95th persente
						Ditšhilaletšhi	Letamo le tswanetše gore le hlokomelwe ka gare ga seemo sa yutrofiki go fokotša tšwetšopele ya di saenopakteria.	Saenopakteria	Go ba gona ga saenopakteria ye niši ka phatlalato ya Chi ya go feta 30µg/l go swanetše gore go dule go le tiase ga 20% dinako ka moka.
							Letamo le swanetše gore le laolwe go šireletša mošomo wa tswalano ya diphedi le tikologo ya tšona gammogo le bašomiši ba kelelo ya tiase. Go tšweletša le go tsošološa melao ya tšepedišo ya letamo mabapi le go hlokomela maemo a letamo go netefatša gore phapaphapano ya tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse e a hlokomelwa.	Boemo bjo bo nnyane bjo bo hlokegago bja go šoma letamong	Melao ya tshepedišo ka go šomišwa. Boemo bja tiase bja go hlokomela tswalano ya diphedi le tikologo ya tšona ya gare ga meetse (15-18%).
		Letamo la Disaneng (D41A)	9_5		Bokae	Maemo letamo			

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro l Tswalan o ya diphedi le tikologo ya tšona	Karolwana a	Karolwana ya gare	Tihalošo ya RQO	Go bontšha	Tekanyetšo ya Dipalo
							Phatlalatošo ya othofosfeiti e swanetše gore e hlokomelwe gore e kgone go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya mesotrofiki.	Diothofosfeiti	≤ 0.010 mg/l 50th persente
						Diphepo	Phatlalatošo ya palomoka ya fosforase e swanetše gore e hlokomelwe gore e kgone go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya mesotrofiki.	Palomoka ya fosforase	≤ 0.025 mg/l 50th persente
					Boleng		Phatlalatošo ya naetreti le naetraete e swanetše gore e kaonafatšwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya yutrofiki.	Naetraete le Naetreti	≤ 0.70 mg/t N 95th persente
						Matswai	Letswai la ka gare ga letamo le swanetše gore le hlokomelwe go thekga bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba kelelo ya tlase.	Go swara mohlagase	≤ 75 mS/m 95th persente
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia coli</i> (E. coli)	130 counts/100 dimiliilitara (ml) (95th persenta)
						Diphapapha pano tša sisteme	Meetse a swanetše gore a dumelelwe mabapi le tšhomišo ya tša boitapološo.	pH	6.5 – 9.0 95th persente

Tafolana 12: Maikemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA le MATAMO mabapi le Tlhahlobo yeo e Tsenelanelanago ya Yuniti ya Tlhahlobo 11a: LETAMO LA GROOT MARICO / MOLATEDI

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphelele le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo		
11a: LETAMO LA GROOT MARICO / MOLATEDI	III	Groot Marico go tloga keelong ya letamong la Marico Bosveld go tšona letamong la Molatedi, meedi ka moka (A31G, A31H, A31F, A31J, A32A, A32B, A32C)	11a_1	C/D	Boka	Dikelelo tša tlase	Tlhokomelo ya EWR ya dikelelo tša tlase le komelelo: Noka ya Groot Marico go la MAR_EWR3 go A31F NMAR = $65.0839 \times 10^6 \text{ m}^3$ Legoro la REC=C/D Tlhokomelo ya dikelelo tša tlase le dikelelo tša komelelo e swanetše gore e amogelwe go thekga senyakwa sa tswalano ya diphelele le tikologo ya tšona le bašomiši ba kelelo ya tlase.	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo. Tlhokomelo ya Noka ya Groot Marico go A3H029	Dikelelo tša tlase	Dikelelo tša tlhokomelo (m ³ /s)	Dikelelo tša komelelo (m ³ /s)
									Oct	0.248	0.196
									Nov	0.262	0.206
									Dec	0.266	0.209
									Jan	0.284	0.223
									Feb	0.318	0.250
									Mar	0.281	0.221
									Apr	0.278	0.219
									May	0.262	0.207
									Jun	0.268	0.211
									Jul	0.258	0.203
									Aug	0.256	0.202
									Sep	0.260	0.205
								Othofosfeiti (PO ₄ ⁻) bjalo ka fosforase	≤ 0.090 dimililikramo/litara (mg/l) (50 th persente)		
								Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 0.7 dimililikramo/litara (50 th persente)		
								Go swara mohlagase	≤ 55 miliSiemens/metara (mS/m) (95 th persente)		

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro la tswalano ya diphedi le tikologo ya tšona leo le beeditswego le a finlelelwa.	Salaete	≤ 50 dimililikramo/litara (95 th persente)
								Tloraete	≤ 40 dimililikramo/litara (95 th persente)
								Sodiamo	≤ 50 dimililikramo/litara (95 th persente)
							Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beetšwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša bašomiši ba meetse. Tlhalobo ya mothalotho go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Phapaphapano ya pH	6.5 (5 th persente) le 8.8 (95 th persente)
						Diphapaphapano tša seseme		Turbidity	Phapaphapano ya 10% ya go tloga phatlalatšong ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gore di bontšhwe.
						Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e hlokomelwe legorong la C/D la tswalano ya diphedi le tikologo ya tšona. Kelelo yeo e tšwelelago tšhilafatšong ya okaniki le tšhilafatšong ya pakteria ya mothopo e swanetše gore e laolwe.	Intekse ya potego ya madulo, mokgwa wa tlhalobo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya madulo a ka gare ga meetse EC = C/D ≥ 58%
					Madulo				

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe legorong la C/D la tswalano ya diphedi le tikologo ya tšona. Dimela tšeo di sa nyakegego di swanetše gore di laolwe gomme le tšwetšopele ya lefelo la kgauswi le meetse e fokotšege.	Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = C/D ≥ 58%
						Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe legorong la D la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa. Tlhahlobo ya setšhaba a dihlapu e swanetše gore e dirwe ka ngwaga go hlokomela kgahlanong le legoro la tswalano ya diphedi le tikologo ya tšona.	Intekse ya Tlhahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la dihlapu = D FRAI ≥ 42% Go kgoboketša mehuta ye 10+ ka matsapa a mohlala a metsofso ye 20.
					Payotha	Dimakroinbetheporeiti tša ka gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tlhahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.5

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Ditaeathomo	Kgoboketšo ya di taeathomo e swanetše gore e hlokomelwe ka gare ga seemo se se golo sa hlago.	Intekse ya Tšhilafatšo ye e lišego	Ditaeathomo EC = A/B ≥ 88%
						Payotha ya ka gare ga meetse	Maleba a katološo ya noka ye go šoma bjalo ka madulo a nonyane ya ka gare ga meetse le ditišhaba tša diphedi tša ka gare ga meetse a swanetše gore a hlokomelwe ka bolaodi bja maleba bja madulo. Madulo a mafelo a kgauswi le meetse a swanetše gore a kaonafatšwe.	Dinonyane tša ka gare ga meetse/ mehuta ya diphofoolo tša go bontšha	Tlahlabo ya mothalotheo e swanetše gore e dirwe go bontšha setšhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphofoolo tša ka gare ga meetse kgauswi le noka. Go na le hlokego ya go bea RQO ya nomoro mabapi le bontši bja diphofoolo/dinonyane go ya ka motheo wa dattha yeo e kgobokeditšwego/ e lego gona.

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
		Letamo la Molatedi (A32A, A32B, A32C)	11a_2		Bokae	Boemo bja letamo	Letamo le swanetše gore le laolwe go šireletša mošomo wa tswalano ya diphedi le tikologo ya tšona gammogo le bašomiši ba kelelo ya tšase. Go tšweletša le go tsošološa melao ya tshepedišo ya letamo mabapi le go hlokomela maemo a letamo go netefatša gore phapapapano ya tswalano ya dipedi le tikologo ya tšona e a hlokomelwa. Dikelelo tša letamo di letetšwe gore di fihlelele dikelelo tša tšase mabapi le dinyakwa tša kelelo ya tswalano ya diphedi le tikologo ya tšona.	Maemo a manyane a tshepedišo ao a hlokegago letamong	Melao ya tshepedišomoo go kgonegago. Maemo a ma nnyane a go hlokomela tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse. (15-18%).
					Boleng	Diphepo	Phatlalatšo ya othofosfeiti e swanetše gore e hlokomelwe gore e kgone go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya metse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sešeme ya mesotrofiki.	Diothofosfeiti	≤ 0.015 mg/l 50th persente

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Phatlalatšo ya palomoka ya fosforase e swanetše gore e hlokomelwe gore e kgone go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sešeme ya mesotrofiki.	Palomoka ya fosforase	$\leq 0.055 \text{ mg/l}$ 50th persente
							Phatlalatšo ya naetreiti le naetraete e swanetše gore e hlokomelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sešeme ya mesotrofiki.	Naetraete le Naetreiti	$\leq 0.70 \text{ mg/l}$ N 95th persente
						Matswai	Letswai la ka gare ga letamo le swanetše gore le hlokomelwe go thekga bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba kelelo ya tlase.	Go swara mohlagase	$\leq 55 \text{ mS/m}$ 95th persente

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphelelele tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Phapaphapano ya sisteme	Meetse a swanetše gore a amogelwe mabapi le tšhomišo ya tša boitapološo. Maemo a oketšene ka gare ga sisteme a swanetše gore a hlokomelwe sisteme ya tswalano ya diphelelele tikologo ya tšona.	pH Oketšene yeo e tološitswego	6.5 – 9.0 95th persente ≥ 7.0 mg/l O ₂ 95th persente

Tafolana 13: Maikemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA le MATAMO mabapi le Tihahlobo yeo e Tseenelelanago ya Yuniti ya Tihahlobo 11b: GROOT MARICO / MEEDI YA SEHLA

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphelelele tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
11b: GROOT MARICO / MEEDI YA SEHLA	III	Groot Marico, Rasweu, Maselaje (A32D)	11b_1	C	Bokae	Dikelelo tša tiase	Tlhokomelo ya EWR ya dikelelo tša tiase le komelelo: Noka ya Groot Marico go la MAR_EWR4 in A32D NMAR = 153.25x10 ⁶ m ³ Legoro la REC=C Tlhokomelo ya dikelelo tša tiase le dikelelo tša komelelo e swanetše dinyakwa tša dikelelo tša tikologo di fihlelelwe go thekga peelano ya bophelo bjo bo botse	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo Tlhokomelo ya Noka ya Groot Marico go la A3H007	Dikelelo tša tlhokomelo ya godimo (m ³ /s) Dikelelo tša komelelo (m ³ /s) Oct 0.214 0.173 Nov 0.230 0.185 Dec 0.239 0.191 Jan 0.264 0.209 Feb 0.306 0.242 Mar 0.267 0.211 Apr 0.258 0.206 May 0.234 0.187 Jun 0.236 0.189 Jul 0.227 0.182

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo		
							mabapi le tswalano ya diphedi le tikologo ya tšona le bašomiši.		Aug	0.224	0.180
									Sep	0.226	0.182
							Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go netafaša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Othofosfeiti (PO_4^-) bjalo ka Fosforase	≤ 0.090 dimililikramo/litara (mg/l) (50 th persente)		
						Diphepo		Naetreiti (NO_3^-) le Naetraete (NO_2^-) bjalo ka Naetrotsene	≤ 0.7 dimililikramo/litara (50 th persente)		
					Boleng	Matswai	Maemo a letswai la ka gare ga meetse a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go netafaša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Go swara mohlagaase	≤ 55 milliSiemens/mitara (mS/m) (95 th persente)		

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona. Mokgwa wa kelelo wa tatelano wa hlago o swanetše gore o hlokomelwe. Go kaonafatša madulo a ka gare ga meetse le belosithi/bontši mabapi le phapaphapano ya payotha ya ka gare ga meetse. Kgokagano ya kelelo ya tiase ya (11b_2) e swanetše gore e finlelelwe.	Intekse ya potego ya madulo, mokgwa wa tshahlobo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya madulo a ka gare ga meetse EC = C ≥ 62%
						Madulo a le kgauswi meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona. Dithulano tša go akaretša go fula/go gataka mafelo ao a lego kgauswi le meetse di swanetše gore di laolwe. Bolaodi bja siltheišene bo a hlokega.	Intekse ya potego ya madulo	VEGRAI EC = C ≥ 62%

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphelele le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Setšhaba sa dihlapa se swanetše gore se hlokomelwe ka gare ga legoro la C/D la tswalano ya diphelele le tikologo ya tšona goba bokaone. Tlhahlobo ya setšhaba a dihlapa e swanetše gore di dirwe ka ngwaga go hlokomela kgahlanong le legoro leo le beeditšwego la tswalano ya diphelele le tikologo ya tšona. Ditsela tša dihlapa di swanetše gore di agwe mabapi le mehuta yeo e hudugago ka ge go se na kgokagano mafelong a mmalwa gona bjale.	Intekse ya Tlhahlobo ya Kaabo ya Dihlapa (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphelele le tikologo ya tšona la dihlapa = C/D FRAI ≥ 58% Mehlala ya mehuta ye 8+ go ya ka nyakišo ya mohlala Mehuta ya go bontšha: BMAR, LMOL, SZAM
					Payotha		Kgoboketšo ya dimakoinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la C la tswalano ya diphelele le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tlhahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 4.8

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphelele le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
		Elandsiaagtespruit, Lengope la Kgamanyane, Lenkwane (A32E)	11b_2			Ditaeathomo	Kgoboketšo ya ditaeathomo e swanetše gore e hlokomelwe ka gare ga seemo seo se mpshafadišwego goba go kaonafatšwa.	Intekse ya tšhilafatšo ye e itšego	Ditaeathomo EC ≥ 62%
Di RQO tša monola moo go lkegago									

Tafolana 14: Maikemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA le MATAMO mabapi le Tlhalobelo yeo e Tsenelanelanago ya Yuniti ya Tlhalobelo 12: BIERSPRUIT

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphelele le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
12: BIERSPRUIT	III	Wilgespruit, Bofule, Kolobeng, Magoditshane, Mothabe (A24D)	12_1	D	Boleng	Diphepo	Phatlalatšo ya diphepo ka gare ga meetse e swanetše gore e amogelwe go hlokomela bophelo bja tswalano ya diphelele le tikologo ya tšona ya ka gare ga meetse le go netafatsa gore legoro leo leo le beeditšwego la tswalano ya diphelele le tikologo ya tšona le a fihlelwa.	Othofosfeiti (PO ₄ ⁻) bjaalo ka fosforase Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjaalo ka Naetotšene	≤ 0.090 dimililikramo/litara (mg/l) (50 th persente) ≤ 0.7 dimililikramo/litara (50 th persente)
						Matswai	Maemo a letswai la ka gare ga meetse a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya diphelele le tikologo ya tšona le go netafatsa gore	Go swara mohlagaase Salfaete	≤ 55 miliSiemens/mitara (mS/m) (95 th persente) ≤ 80 dimililikramo/litre (95 th persente)

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona lea fihlelwa.	Tloraete	≤ 40 dimililikramo/litara (95 th persente)
								Sodiamo	≤ 70 dimililikramo/litara (95 th persente)
						Phapaphapano ya sisteme	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beetšwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.0 (5 th persente) le 8.5 (95 th persente)
							Tlhahlobo ya mothalotheo ya go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe. Ditekanyetšo di a bontšhwa.
								Aluminiamo (Al)	≤ 0.105 dimililikramo/litara (mg/l) (95 th persente)
								Mankanese (Mn)	≤ 0.15 dimililikramo/litara (mg/l) (95 th persente)
								Ayone (Fe)	≤ 0.1 dimililikramo/litara (mg/l) (95 th persente)
								Lead (Pb) hard	≤ 0.0095 dimililikramo/litara (mg/l) (95 th persente)
								Khopha (Cu) ya go tia	≤ 0.0073 dimililikramo/litara (mg/l) (95 th persente)
								Nikele (Ni)	≤ 0.07 dimililikramo/litara (mg/l) (95 th persente)
								Khopalte (Co)	≤ 0.05 dimililikramo/litara (mg/l) (95 th persente)

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
								Zink (Zn)	≤ 0.002 dimililikramo/litara (mg/l) (95th persente)
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia coli</i> (E. coli)	130 counts/100 dimililitara (ml) (95th persente)
						Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C la tswalano ya diphedi le tikologo ya tšona. Go swara kelelo ya hiago. Go kaonafatša madulo a kgauswi le meetse le belosithi/bontši bja phapaphapano ya dihlapa.	Intekse ya potego ya madulo, mokgwa wa tlhahlobo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya madulo a gare ga meetse EC = C ≥ 62%
					Madulo	Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C la tswalano ya diphedi le tikologo ya tšona. Go kaonafatša lefelo la kgauswi le meetse. Go tloša dimela tšeo di sa nyakegego.	Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = C ≥ 62%
					Payotha	Hlapi	Setšhaba sa dihlapa se swanetše gore se kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C/D la tswalano ya diphedi le tikologo ya tšona. Go swara kelelo ya hiago. Go kaonafatša madulo a gare ga meetse le belosithi/bontši bja phapaphapano ya dihlapa.	Intekse ya Tlhahlobo ya Karabo ya Dihlapa (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la dihlapa = C/D FRAI ≥ 58% Mohlala wa mehuta ye 10+ ka matsapa a metsofso ye 20 Mehuta ya go bontša: AJOH, LCYL, BMAR, MBRE

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphepo	Phatlalatšo ya diphepo ka gare ga meetse e swanetše gore e kaonafatšwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditswego la tswalano ya diphedi le tikologo ya tšona le a finlelelwa. Diphatlalatšo ga se tša swanela go dumelelwa gore di fele.	Othofosfeiti (PO ₄ ⁻) bjalo ka Fosforase Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetrotsene as	≤ 0.125 dimililikramo/litara (mg/l) (50 th persente) ≤ 1.0 dimililikramo/litara (50 th persente)
	Kelelo ya letamo la Bierspruit go isa letamong la Crocodile, Bierspruit, Brakspruit, Phufane, Sefathane, Lesobeng (A24E, A24F)	12_2			Boleng	Matswai	Letswai la ka gare ga meetse le swanetše gore le hlokomelwe maamong ao a amogelelegile go thekga bophelo bjo bo botse bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Diphatlalatšo ga se tša swanela go fele.	Go swara mohlagase (EC) Salfaete (SO ₄) Sodiamo (Na) Tloraete (Cl)	≤ 85 milliSiemens/mitara (mS/m) (95 th persente) ≤ 100 dimililikramo/litara (95 th persente) ≤ 100 dimililikramo/litara (95 th persente) ≤ 100 dimililikramo/litara (95 th persente)
						Phapaphapano ya sešeme	Phapaphapano ya pH e swanetše gore hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.0 (5 th persente) le 8.5 (95 th persente)

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Tliahlobo ya mothalotho go bontšha semo sa ka gare ga meetse sa bjale se a hlokega.	Turbidity	Phapaphapano ya 10% go tloga phatlalatšong ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gore di bontšhwe.
								Aluminiamo (Al)	≤ 0.1 dimilikramo/litara (mg/l) (95th persente)
								Mankanese (Mn)	≤ 0.15 milligrams/litre (mg/l) (95th persente)
								Ione (Fe)	≤ 0.3 dimilikramo/litara (mg/l) (95th persente)
								Lead (Pb) hard	≤ 0.0095 dimilikramo/litara (mg/l) (95th persente)
								Khopha (Cu) hard	≤ 0.0073 dimilikramo/litara (mg/l) (95th persente)
								Nikele (Ni)	≤ 0.07 dimilikramo/litara (mg/l) (95th persente)
								Khopalte (Co)	≤ 0.05 dimilikramo/litara (mg/l) (95th persente)
								Zink (Zn)	≤ 0.002 dimilikramo/litara (mg/l) (95th persente)
								<i>Escherichia coli</i> (E. coli)	130 counts/100 dimililitara (ml) (95th persente)
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.		

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e hlokomelwe ka gare ga legoro la D la tswalano ya diphedi le tikologo ya tšona. Go hlokomela kelelo ya hlogo. Go kaonafatša madulo a ka gare ga meetse le belosithi/bontši bja hlapi le phapaphapano ya di makroinbetheporeiti.	Intekse ya potego ya madulo, mokgwa wa tlhahlobo ya madulo a koketšego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya madulo a gare EC = D ≥ 42%
						Madulo a le kgauswi meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la D la tswalano ya diphedi le tikologo ya tšona. Tšwetšopele ya lefelo la kgauswi le meetse e swanetše gore e laolwe ebile e lekanetšwe. Dithulano tša saltheišene di swanetše gore di laolwe.	Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = D ≥ 42%
					Payotha	Hlapi	Setšhaba sa dihlapa se swanetše gore se hlokomelwe ka gare ga legoro la D la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa. Tlhahlobo ya setšhaba sa dihlapa e swanetše gore e dirwe ka ngwaga go hlokomela kgahlanong le legoro leo le beeleletšwego la tswalano ya diphedi le tikologo ya tšona.	Intekse ya Tlhahlobo ya Karabo ya Dihlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la Dihlapi = D FRAI ≥ 42% Kgobokešo ya mehuta ye 4+ ka matsapa a meisošo ye 20 a mohlala.

Tafolana 15: Maikemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA le MATAMO mabapi le Tlhahlobo yeo e Tselelanago ya Yuniti ya Tlhahlobo LOWER CROCODYLE

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo			
13: LOWER CROCODYLE	III	Kelelo ya letamo la Crocodile Roodekopje s go iša Nokeng ya Sand, Sleepfontein - spruit, meedi ya Klipspruit (A21L, A24A, A24B, A24C)	13_1	C/D	Bokae	Dikelelo tša tiase	Tlhokomelo ya ERW ya dikelelo tša tiase le komelelo: Noka ya Crocodile go la CROC_EWR7 in A24C NMAR = 463.4x10 ⁶ m ³ Legoro la REC=D	Dikelelo tša motheo Dikelelo tša tiase le dikelelo tša komelelo. Tlhokomelo ya Noka ya Crocodile go la A2H132		Tlhokomelo o ya dikelelo tša tiase (m ³ /s)	Dikelelo tša komelelo (m ³ /s)	
							Oct		1.134	1.134		
							Nov		1.362	1.362		
							Dec		1.481	1.481		
							Jan		1.938	1.938		
							Feb		2.638	2.488		
							Mar		2.481	2.481		
							Apr		2.118	2.118		
							May		1.745	1.745		
							Jun		1.574	1.574		
							Jul		1.389	1.389		
							Aug		1.262	1.262		
							Sep		1.172	1.172		
		Dikelelo tša godimo (m ³ /s)										
		Oct	0									
		Nov	0.790									
		Dec	1.529									
		Jan	0									
		Feb	1.270									
		Mar	0									
		Apr	0.790									
		May	0									
		Jun	0									
		Jul	0									
		Aug	0									
		Sep	0									

IUA	Legor o	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphelele le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							hlokomela bophelo bja tswalano ya diphelele le tikologo ya tšona ya ka gare ga meetse le go netafatsa gore legoro leo le beeditswego le a fihlelelwa. Diphatlalatšo ga se tša swanela go dumelelwa gore di fokotšege.	Naetreiti (NO_3^-) le Naetraete (NO_2^-) bjalo ka Naetrotsšene	≤ 1.0 dimililikramo/litara (50^{th} persente)
							Letswai la ka gare ga meetse le tswanetše gore le hlokomelwe maemong ao a beetšwego go thekga tswalano ya diphelele le tikologo ya tšona ya ka gare ga meetse ya bophelo bjo bo botse le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Diphatlalatšo ga se tša swanela go dumelelwa gore di fokotšege.	Go swara mohlagase (EC)	≤ 85 milliSiemens/mitara (mS/m) (95^{th} persente)
						Matswai		Salfaete (SO_4)	≤ 100 dimililikramo/litara (95^{th} persente)
								Sodiamo (Na)	≤ 80 dimililikramo/litara (95^{th} persente)
								Tloraete (Cl)	≤ 80 dimililikramo/litre (95^{th} persente)
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 dimilililitara (ml) (95^{th} persente)
						Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beetšwego go thekga tswalano ya diphelele le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beetšwego go thekga tswalano ya diphelele le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5^{th} persente) le 8.5 (95^{th} persente)
						Phapaphapano ya mothalotho ya go bonitšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Tlhalobo ya mothalotho ya go bonitšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% go tloga phatlalatšong ya setlogo e dumeletšwe.
							Maemo a Oksetšene yeo e tološitswego a swanetše gore a amogelwe go thekga tswalano ya diphelele le tikologo ya tšona ya ka gare ga meetse.	Oksetšene yeo e tološitswego (Dissolved oxygen)	≥ 6 dimililikramo/litara (mg/l)

IUA	Legor o	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
								Altrazaine (Atrazine)	≤ 0.078 dimililikramo/litara (mg/l)
								Metolachlor	≤ 0.30 dimililikramo/litara (mg/l)
								Aluminiamo (Al)	≤ 0.1 dimililikramo/litara (mg/l) (95th persente)
								Mankanese (Mn)	≤ 0.15 dimililikramo/litara (mg/l) (95th persente)
								Ayone (Fe)	≤ 0.3 dimililikramo/litara (mg/l) (95th persente)
								Lead (Pb) hard	≤ 0.0095 dimililikramo/litara (mg/l) (95th persente)
								Khopha (Cu) ya go tia	≤ 0.0073 dimililikramo/litara (mg/l) (95th persente)
								Nikele (Ni)	≤ 0.07 dimililikramo/litara (mg/l) (95th persente)
								Khopalte (Co)	≤ 0.05 dimililikramo/litara (mg/l) (95th persente)
								Zink (Zn)	≤ 0.002 dimililikramo/litara (mg/l) (95th persente)
								Aluminiamo (Al)	≤ 0.1 dimililikramo/litara (mg/l) (95th persente)
								Intekse ya potego ya madulo, mokgwa wa tihahlobo ya madulo a koketšego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya madulo a gare ga meetse EC = D ≥ 42%
								Phapaphapano ya madulo e swanetše gore e hlokomelwe ka gare ga legoro la D la tswalano ya diphedi le tikologo ya tšona goba se se kaone. Go hlokomela kelelo ye bofse ya tlase go hlokomela madulo le mehuta ya go kgetha madulo le thaksa.	
								Ka gare ga meetse	
								Madulo	

IUA	Legor	Noka	Yuniti ya mothopo	Legoro la tswalano ya dipheleli le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Madulo a kgauswi le meetse	Kaonafatšo/tsošološo e a hlokega. Dimela tša setlogo di swanetše gore di šireletšwe (Acacia galinii(monkey thorn). Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la D la tswalano ya dipheleli le tikologo ya tšona goba seemong se se kaone. Go hlokomela mafelo a kgauswi le meetse mafelong ao a lemilwego. Go laola tšwetšopele.	Intekse ya Tihahlobo ya Karabo ya Dimela	VEGRAI EC = D ≥ 42%
						Hlapi	Setšhaba sa dihlahi se swanetše gore se hlokomelwe ka gare ga legoro la D la tswalano ya dipheleli le tikologo ya tšona goba seemo se se kaone. Belosithi/bontši bja kelelo bo swanetše gore bo lekanele mabapi le mehuta yeo e kgethago kelelo e go CPRE le LMOI le mehuta yeo e kgethago madulo-AJOH.	Intekse ya Tihahlobo ya Karabo ya Dihlahi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya dipheleli le tikologo ya tšona la dihlahi = D FRAI ≥ 42% Mehlala ya mehuta ye 6+ go ya ka matsapa a mohlala wa meuta ya go bontšha ya mehuta ya dihlahi yeo e amegago bonolo. Lefelo la mokgwa, CPRE, LMOI
					Payotha	Dimakroi nbethopo reiti tša ka gare ga meetse	Kgoboketšo ya di makoinbetheporeiti e swanetše gore e hlokomelwe legorong la D la tswalano ya dipheleli le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tihahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = D ≥ 42% SASS ≥ 60 ASPT ≥ 4.5 (Site A2CROC-KOEDO)

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya dipheleli le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo			
	Noka ya Sand ge e kopana le Noka ya (A24G, A24H)	Bokae	13_2		Dikelelo tša tlase	Tlhokomelo ya ERW ya dikelelo tša tlase le dikelelo tša komello: Meetse a noka ya Sand ya Noka ya Sondags ka kopano ya S24.6289, E27.6223 in A24H NMAR = 26.56x10 ⁶ m ³ Legoro la REC=B	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komellelo. Tlhokomelo ya tahlo ya Noka ya Sand ka nako ya dinyakišišo tša payolotši	Oct	0.085	Dikelelo tša o ya dikelelo tša tlase (m ³ /s)	Dikelelo tša komellelo (m ³ /s)	
						Nov		0.104		0.042		
						Dec		0.120		0.024		
						Jan		0.196		0.021		
						Feb		0.263		0.063		
						Mar		0.199		0.105		
						Apr		0.158		0.055		
						May		0.127		0.071		
						Jun		0.119		0.059		
						Jul		0.108		0.056		
Aug	0.098		0.051									
Sep	0.089		0.047									
											0.044	

IUA	Legor	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphelele le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							le tikologo ya tšona le go netefatša gore legoro leo le beeditswego la tswalano ya diphelele le tikologo ya tšona le a fihlelelwa. Maemo a letswai la ka gare ga meetse a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya diphelele le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditswego la tswalano ya diphelele le tikologo ya tšona le a fihlelelwa.	Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 0.5 dimililikramo/litara (50 th persente)
								Go swara mohlagaase	≤ 30 milliSiemens/metre (mS/m) (95 th persente)
								Salfeiti	≤ 20 dimililikramo/litara (95 th persente)
								Tloraete	≤ 20 dimililikramo/litara (95 th persente)
						Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e hlokomelwe ka gare ga legoro la B la tswalano ya diphelele le tikologo ya tšona.	Intekse ya potego ya madulo, mokgwa wa tihahlobo ya madulo a koketšego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a ka gare ga Meetse EC = B ≥ 82%
					Madulo	Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la B la tswalano ya diphelele le tikologo ya tšona goba seemong se se kaone.	Intekse ya Tihahlobo ya Karabo ya Dimela	VEGRAI EC = B ≥ 82%

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karoliwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo																																				
						Hlapi	Setšhaba a dihlapi se swanetše gore se hlokomelwe legorong la B la tswalano ya diphedi le tikologo ya tšona. Tihahlobo ya setšhaba sa dihlapi e swanetše gore e dirwe ka ngwaga mabapi le tlhokomelo kgahlanong le legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona. Madulo le kelelo di swanetše gore di lekanele mabapi le mehuta yeo e ithekilwego ka sehla, CPAR.	Intekse ya Tihahobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona ya dihlapi = B FRAI ≥ 82%																																				
					Payotha	Dimakoin bethopor eiti tša gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe legorong la C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tihahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = C ≥ 62% SASS ≥ 100 ASPT ≥ 5.5 (Site A2SUND-WATER)																																				
	Lower Crocodile go tloga Bierspruit go ya potareng ya Botswana (Noka ya Limpopo) (A24J)	13_3			Bokae	Dikelelo tša tlase	Tlhokomelo ya EWR ya dikelelo tša tlase le komelelo: Noka ya Crocodile go la A2H128 go A24J NMAR = 565.16x10 ⁶ m ³ Legoro la REC=C/D Tlhokomelo ya dikelelo tša tlase le dikelelo tša komelelo e swanetše gore e amogelwe go hlokomela tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le bašomiši ba kelelo ya tlase.	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo. Tlhokomelo ya Noka ya Crocodile go la A2H128	<table><tr><td></td><td>Tlhokomelo o ya dikelelo tša tlase (m³/s)</td><td>Dikelelo tša komelelo o (m³/s)</td></tr><tr><td>Oct</td><td>1.246</td><td>1.057</td></tr><tr><td>Nov</td><td>1.454</td><td>1.228</td></tr><tr><td>Dec</td><td>1.536</td><td>1.294</td></tr><tr><td>Jan</td><td>1.932</td><td>1.616</td></tr><tr><td>Feb</td><td>2.488</td><td>2.074</td></tr><tr><td>Mar</td><td>2.128</td><td>1.776</td></tr><tr><td>Apr</td><td>1.791</td><td>1.503</td></tr><tr><td>May</td><td>1.548</td><td>1.303</td></tr><tr><td>Jun</td><td>1.524</td><td>1.285</td></tr><tr><td>Jul</td><td>1.425</td><td>1.203</td></tr><tr><td>Aug</td><td>1.345</td><td>1.138</td></tr></table>		Tlhokomelo o ya dikelelo tša tlase (m ³ /s)	Dikelelo tša komelelo o (m ³ /s)	Oct	1.246	1.057	Nov	1.454	1.228	Dec	1.536	1.294	Jan	1.932	1.616	Feb	2.488	2.074	Mar	2.128	1.776	Apr	1.791	1.503	May	1.548	1.303	Jun	1.524	1.285	Jul	1.425	1.203	Aug	1.345	1.138
	Tlhokomelo o ya dikelelo tša tlase (m ³ /s)	Dikelelo tša komelelo o (m ³ /s)																																											
Oct	1.246	1.057																																											
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Jun	1.524	1.285																																											
Jul	1.425	1.203																																											
Aug	1.345	1.138																																											

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphelele le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo		
									Sep	1.287	1.091
								Mafula		Dikelelo (m³/s)	tša godimo
								Kelelo ya godimo ka ge e beeditšwe bjalo ka dinyakwa tša lefula go ya ka bogolo le nako (lebelela mameletšo A).	Oct	0	
									Nov	0.395	
									Dec	2.829	
									Jan	0	
									Feb	0.423	
									Mar	0	
									Apr	0	
								Tlhokomelo ya Noka ya Crocodile River go la A2H128	May	0	
									Jun	0	
									Jul	0	
									Aug	0	
									Sep	0	
								Othofosfeiti (PO ₄ ⁻) bjalo ka Fosforase	≤ 0.06 dimililikramo/litara (mg/l) (50 th persente)		
								Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 1.0 dimililikramo/litara (50 th persente)		
								Go swara mohlagaase (EC)	≤ 85 milliSiemens/mitara (mS/m) (95 th persente)		
								Salfeiti (SO ₄)	≤ 100 dimililikramo/litara (95 th persente)		
								Sodiumo (Na)	≤ 80 dimililikramo/litara (95 th persente)		
								Tloraete (Cl)	≤ 100 dimililikramo/litara (95 th persente)		

IUA	Legor o	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia (E.coli)</i>	130 counts/100 dimiliilitara (ml) (95 th persente)
						Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beetswego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH		6.5 (5 th persente) le 8.5 (95 th persente)
						Phapaphapano ya mothalohlali go bonitšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Tlahlolo ya mothalohlali go bonitšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe.
						Maemo a oketšene yeo e tološitšwego a swanetš gore a amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya gae ga meetse.	Maemo a oketšene yeo e tološitšwego a swanetš gore a amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya gae ga meetse.	Oketšene yeo e tološitšwego	≥ 6 dimililikramo/litara (mg/l)
						Diphatlatši tša dišhilafatši ga se tša swanela go hlola kotsi bophelong bja diphedi tša ka gare ga meetse le bophelo bja batho.	Diphatlatši tša dišhilafatši ga se tša swanela go hlola kotsi bophelong bja diphedi tša ka gare ga meetse le bophelo bja batho.	Atrazine	≤ 0.078 dimililikramo/litara (mg/l)
						Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C/D la tswalano ya diphedi le tikologo ya tšona. Go swara dikelele tša tlase tše botse go hlokomela madulo a mehuta yeo e kgethago madulo le taksa.	Intekse ya potego ya madulo, mokgwa wa tlahlolo ya madulo a koketšego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	0.009 dimililikramo/litara (mg/l)
						Madulo			Potego ya Madulo a gare ga Meetse EC = C/D ≥ 58%

IUA	Legor o	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwan a	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Madulo a kgauswi le meetse	Dimela tša setlogo di swanetše gore di šireletšwe (Arcacia galpinii (Monkey thorn). Dimela tša kgauswi le meetse di swanetše gore di kaonfatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C/D la tswalano ya diphedi le tikologo ya tšona.	Inekse ya Potego ya Madulo, Intekse ya Tlhaloblo ya Karabo ya Dimela	VEGRAI EC = C/D ≥ 58%
						Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe ka gare ga legoro la D la tswalano ya diphedi le tikologo ya tšona. Belosithi/bontši bja kelelo bo swanetše gore bo hlokomelwe mabapi le CPAR, MACU le LMOL, le mehuta yeo e kgethao madulo- MMAC, BANN.	Intekse ya Tlhaloblo ya Karabo ya Hlapi Response Index Assessment (FRAI)	Legoro la Tswalano ya diphedi le tikologo ya tšona ya dihlapu = D FRAI ≥ 42% Mohlala wa mehuta ye 6+ go ya ka matsapa a mohlala
					Payotha	Payotha ya gare ga meetse	Maleba a kotošo ya noka mabapi le go šoma bjalo ka madulo a dišhaba tša diphedi tša ka gare ga meetse le dinonyane a swanetše gore a hlokomelwe ka mokgwa wo botse wa bolaodi bja madulo. Tlhokomelo ya kakaretšo ya kgauswi le meetse ya di othara.	Dinonyane tša ka gare ga meetse / mehuta ya diphedi tša ka gare ga meetse	Tlhaloblo ya motholahlali e swanetše gore e dirwe go bontšha setšhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphedi tša ka gare ga meetse tšeo di emelago ka gare ga noka. Go na le thokego ya go bea RQO ya nomoro ya bontši bja phoofolo/ dinonyane ka motheo wa datha yeo e lego gonale kgobokeditšwego.

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Di inbethapo reiti tša ka gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore hlokomelwe legorong la C/D la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tihahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = C/D ≥ 58% SASS ≥ 120 ASPT ≥ 5.0
						Ditaeatho mo	Kgoboketšo ya ditaeathomo e swanetše gore e hlokomelwe ka gare ga seemo se se kaonafadišwego se se golo goba go kaonafatšwa.	Intekse ya Tšhilafatšo ye e itšego	Ditaeathomo EC ≥ 42%

Tafolana 16: Maikemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA le MATAMO mabapi le Tihahlobo yeo e Tsenelanelanago ya Yuniti ya Tihahlobo 14:

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
14: TOLWANE / KULWANE / MORETELE / KLIPVOOR	III	Noka ya Apies, Meedi ya Tshwane (A23F)	14_1	D	Bokae	Dikelelo	Leano la bolaodi la go laola meetse ao a lego gona (dikelelo tša poelo morago) ka gare ga sesteme le swanetše gore le tšweletšwe. Dikgetho tša maleba tša bolaodi di swanetše gore di hlahlobje. Mehola ya go fokotša dikelelo e swanetše gore e bontšwe.	Dikelelo tša tlase	E tla bontšhwa ge leano la bolaodi le tšweletšwa
					Boleng	Diphepo	Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e	Othofosfeiti (PO ₄ -) bjalo ka Fosforase	≤ 0.5 dimillikramo/litara (mg/l) (50 th persente)

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							kaonafatšwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Naetreiti (NO_3^-) le Naetraete (NO_2^-) bjalō ka Naetroitšene	≤ 3.0 dimililikramo/litara (50 th persente)
							Maemo a letswai la ka gare ga meetse a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go netefatša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Go swara mohlagaase (EC)	≤ 80 miliSiemens/mitara (mS/m) (95 th persente)
						Matswai		Salfaete (SO_4)	≤ 70 dimililikramo/litara (95 th persente)
								Tioraete (Cl)	≤ 75 dimililikramo/litara (95 th persente)
								Sodiamo (Na)	≤ 80 dimililikramo/litara (95 th persente)
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 dimilililitara (ml) (95 th persente)
							Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.5 (95 th persente)
						Phapaphapano ya bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Tlhahlobo ya mothahlahli go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% ya phatalatšo ya setlogo e dumeletšwe.
							Maemo a oksetšene yeo e tološitšwego a swanetše gore a amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Oksetšene yeo e tološitšwego	≥ 6 dimililikramo/litara (mg/l)
								Atrazine	≤ 0.078 dimililikramo/litara (mg/l)
								Mancozeb	0.009 dimililikramo/litara (mg/l)
								Glyphosate	0.7 dimililikramo/litara (mg/l)
								Endosulfan	0.13 dimicikramo/litre (ug/l)
						Ditšhilafatš	Diphatlatšo tša ditšhilafatši ga se tša swanela go hlola kotsi bophelong bja batho.	Kromiamo (VI)	≤ 0.2 milligrams/litara (mg/l) (95 th persente)

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
								Ayone (Fe)	≤ 0.1 dimililikramo/litara (95th persente)
								Lead (Pb) hard	≤ 0.0013 dimililikramo/litara (95th persente)
								Khopalite (Cb)	≤ 0.05 dimililikramo/litara (95th persente)
								Nikele (Ni)	≤ 0.07 dimililikramo/litara (95th persente)
								Zink (Zn)	≤ 0.002 dimililikramo/litara (95th persente)
							Phapaphapano ya madulo e swanetše gore e kaonafatšwe go iša legorong la D la tswalano ya diphedi le tikologo ya tšona. Thokomelo ya dikelelo tše botse tša tlase go hlokomela madulo a mehuta yeo e amegago ka pela (BMAR, BUN) le taksa.	Intekse ya potego ya madulo	Potego ya madulo a gare ga meetse EC = D ≥ 42% (kopano ya ka tlase ya Apies le Tshwane)
					Madulo	Ka gare ga meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la D la tswalano ya diphedi le tikologo ya tšona goba seemo se se kaone. Thokomelo ya lefelo la kgauswi le meetse mafelong a go lema.	Intekse ya Tliahlobo ya Karabo ya Dimela	VEGRAI EC = D ≥ 42%
							Leano la bolaodi la go laola meetse ao a lego gona (dikelelo tša poello morago) ka gare ga sešeme le swanetše gore le tšweletšwe. Dikgetho tša bolaodi tša maleba di swanetše gore di hlahlojwe. Mehola ya go fokotša kelelo e swanetše gore e bontšhwe.	Dikelelo tša tlase	E tla bontšhwa ge leano la bolaodi le tšweletšwa
		Noka ya Pienaars go tloga kopanong ya Boekenshout go fihlela kopanong ya Nokeng ya Apies	14_2		Boleng	Diphepo	Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e amogelwe	Othofosfeti (PO ₄ -) bjalo ka Fosforase	≤ 0.090 dimililikramo/litara (mg/l) (50th persente)

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya dipheleli le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
	(A23C)						go hlokomela bophelo bja tswalano ya dipheleli le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditšwego la tswalano ya dipheleli le tikologo ya tšona le a fihlelelwa.	Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalalo ka Naetroišene	≤ 0.7 dimililikramo/litara (50 th persente)
							Maemo a letswai ka gare ga meetse a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya dipheleli le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditšwego la tswalano ya dipheleli le tikologo ya tšona le a fihlelelwa.	Go swara mohlagaase	≤ 55 milisiemens/mitara (mS/m) (95 th persente)
					Matswai			Salfaete	≤ 50 dimililikramo/litara (95 th persente)
								Tloraete	≤ 50 dimililikramo/litara (95 th persente)
								Sodiamo	≤ 70 dimililikramo/litara (95 th persente)
					Diphathotšene		Go ba gona ga diphathotšene ga se gwa swanela go hloka kotsi bophelong bja batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 dimilililitara (ml) (95 th persente)
							Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya dipheleli le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.5 (95 th persente)
					Phapaphapano ya sisteme		Tlhalobo ya mothalohlahli go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% ya phatlalato ya setlogo e dumeletšwe.
							Maemo a oksetšene yeo e tološitšwego a swanetše gore a amogelwe go hlokomela tswalano ya dipheleli le tikologo ya tšona ya ka gare ga meetse.	Oksetšene yeo e tološitšwego	≥ 6 dimililikramo/litara (mg/l)
								Atrazine	≤ 0.078 dimililigrams/litre (mg/l)
							Phatlalato ya ditšhilafatši ga se ya swanela go hloka kotsi bophelong bja batho le dipheleli tša ka gare ga meetse.	Ayone (Fe)	≤ 0.1 milligramo/litara (mg/l) (95 th persente)
					Ditšhilafatši			Lead (Pb) hard	≤ 0.0095 dimililikramo/litara (mg/l) (95 th persente)

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
								Khopha (Cu) hard	≤ 0.00735 dimililikramo/litara (mg/l) (95th persente)
								Nikele (Ni)	≤ 0.07 dimililikramo/litara (mg/l) (95th persente)
								Zink (Zn)	≤ 0.002 dimililikramo/litara (mg/l) (95th persente)
						Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e hlokomelwe legorong la C la tswalano ya diphedi le tikologo ya tšona.	Intekse ya potego ya madulo, mokgwa wa tihahlobo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a gare ga Meetse EC = C $\geq$ 62%
		Madulo				Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe legorong la C la tswalano ya diphedi le tikologo ya tšona. Kaonafatšo ya mafelo a kgauswi le meetse go la Boekenshout e a hlokega. Moepo wa santa o swanetše gore o laolwe.	Intekse ya Potego ya Madulo, Intekse ya Tihahlobo ya Karabo ya Dimela	VEGRAI EC = C $\geq$ 62%
		Payooha				Hlapi	Setšhaba sa dihlapa se swanetše gore se hlokomelwe legorong la C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa. Tihahlobo ya setšhaba sa dihlapa e swanetše gore e dirwe ka ngwaga go hlokomela mabapi le kgahlanong le legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona. Belosithi/bontši bja kelelo bo swanetše gore bo hlokomelwe mabapi le mehuta ya dihlapa-CPAR le LMOL le mehuta yeo e amegago ka pela-AKAT yeo e ka bago gona ka gare ga monola.	Intekse ya Tihahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la dihlapa = C FRAI $\geq$ 62% Mohlala 10 CPAR le 10 LMOL ka matsapa a metsotso ye 20.

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana na	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo																																							
						Payotha ya ka gare ga meetse	Madulo a lefelo la lefula Moretele a swanetše gore a hlokomelwe. Katološo ya noka yeo e šomago bjalo ka madulo a nonyane ya ka gare ga meetse le ditšhaba tša diphedi tša ka gare ga meetse e swanetše gore e hlokomelwe ka bolaodi bja maleba bja madulo. Tlhokomelo ya mafelo a kgauswi le meetse bjalo ka madulo a bohlokwa a nonyane.	Dinonyane tša ka gare ga meetse/ mehuta ya diphedi tša ka gare ga meetse.	Tliahlobo ya motalohlahli e swanetše gore e dinwe go bontšha setšhaba sa dinonyane sa ka gare ga meetse le mehuta ya diphedi tša ka gare ga meetse yeo e emelago nokeng. Go na le hlokego ya go bea RQO ya nomoro ya bontši bja diphoofolo/dinonyane ka motheo wa datha yeo e lego gona goba yeo e kgobokeditšwego.																																							
							Tlhokomelo ya EWR ya dikelelo tša tlase le komelelo: Noka ya Plat go la A2H064 go A23G NMAR = 9.64x10 ⁶ m ³ Legoro la REC=C/D	Dikelelo tša motheo	<table><tr><td></td><td>Tlhokomelo o ya dikelelo tša tlase (m³/s)</td><td>Dikelelo tša komelelo (m³/s)</td></tr><tr><td>Oct</td><td>0.021</td><td>0.012</td></tr><tr><td>Nov</td><td>0.023</td><td>0.012</td></tr><tr><td>Dec</td><td>0.023</td><td>0.013</td></tr><tr><td>Jan</td><td>0.025</td><td>0.014</td></tr><tr><td>Feb</td><td>0.030</td><td>0.016</td></tr><tr><td>Mar</td><td>0.027</td><td>0.015</td></tr><tr><td>Apr</td><td>0.027</td><td>0.014</td></tr><tr><td>May</td><td>0.025</td><td>0.013</td></tr><tr><td>Jun</td><td>0.025</td><td>0.014</td></tr><tr><td>Jul</td><td>0.024</td><td>0.013</td></tr><tr><td>Aug</td><td>0.024</td><td>0.013</td></tr><tr><td>Sep</td><td>0.023</td><td>0.012</td></tr></table>		Tlhokomelo o ya dikelelo tša tlase (m³/s)	Dikelelo tša komelelo (m³/s)	Oct	0.021	0.012	Nov	0.023	0.012	Dec	0.023	0.013	Jan	0.025	0.014	Feb	0.030	0.016	Mar	0.027	0.015	Apr	0.027	0.014	May	0.025	0.013	Jun	0.025	0.014	Jul	0.024	0.013	Aug	0.024	0.013	Sep	0.023	0.012
	Tlhokomelo o ya dikelelo tša tlase (m³/s)	Dikelelo tša komelelo (m³/s)																																														
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Mar	0.027	0.015																																														
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Jul	0.024	0.013																																														
Aug	0.024	0.013																																														
Sep	0.023	0.012																																														
	Noka ya Plat (A23G)	14_3			Bokae	Dikelelo tša tlase	Tlhokomelo ya dikelelo tša tlase le dikelelo tša komelelo e amogelwe go thekga tswalano ya diphedi le tikologo ya tšona le bašomiši ba kelelo ya tlase.	Dikelelo tša motheo																																								
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go tšona legorong la C/D la tswalano ya diphedi le tikologo ya tšona.	Intekse ya potego ya madulo, mokgwa wa tliahlobo ya madulo a kokeišego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya madulo a gare ga meetse EC = C/D ≥ 58%																																							

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana na	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C/D.	Intekse ya potego ya madulo, Intekse ya Tihahlobo ya Karabo ya Dimela	VEGRAI EC = C/D ≥ 58%
							Setšhaba sa dihlapa se swanetše gore se kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C/D. Tlhokomelo ya belosithi/bontši bja kelelo bja mehuta ya dihlapa ya LCYL le LMOL le mehuta yeo e kgethago madulo, MBRE le BBR. dišhaba tšeo di ikgethilego tša CTHE matelona a godimo a noka a swanetše gore a hlokomelwe.	Intekse ya Tihahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona ya dihlapa = C/D FRAI ≥ 58% Mohlala 2 goba 3 CTHE le 10 LMOL ka matsapa a metsotso ye 20 (Lefelo A2PLAT-KOMAN)
					Payotha	Dimakroinb etheporeiti tša ka gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tihahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 6.0 (Lefelo A2PLAT-KOMAN)
					Bokae	Dikelelo	Leano la bolaodi la go laola meetse ao a lego gona (dikelelo tša poelo morago) seitemeng le swanetše gore le tšweletšwe. Dikgetho tša maleba tša boalodi di swanetše gore di hlahlobje. Mehola ya go fokotša kelelo e swanetše gore e bontšhwe.	Dikelelo tša tlase	E tla bontšhwa ge leano la bolaodi le tšweletšwe.
		Noka ya Moretele (Pienaars) go tloga kopanong ya Noka ya Plat go iša Letamong la Klipvoor,	14_4		Boleng	Diphepo	Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e amogelwe	Othofosfeiti (PO ₄ ⁻) bja ka Fostorase	≤ 0.5 dimililikramo/litara (mg/l) (50 th persente)

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
		Kutswane go iša Letamong la Klipvoor (A23J)					go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a finlelelwa.	Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalō ka Naetrotsene	≤ 3.0 dimililikramo/litara (50 th persente)
							Maemo a letswai ka gare ga meetse a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a finlelelwa.	Go swara mohlaga	≤ 85 milliSiemens/mitara (mS/m) (95 th persente)
						Matswai		Saifaete (SO ₄)	≤ 70 dimililikramo/litara (95 th persente)
								Tloraete (Cl)	≤ 75 dimililikramo/litara (95 th persente)
								Sodiamo (Na)	≤ 80 dimililikramo/litara (95 th persente)
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hloa kotsi bophelong bja batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 dimililitara (ml) (95 th persente)
						Phapaphapano ya sešeme	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beetšwego go thekga tswalano ya diphedi le tikologo ya tšona le dinyakwa tša bašomiši ba meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.5 (95 th persente)
							Tlhalobo ya mothalo hlali go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe.
							Maemo a oketšene yeo e tološitšwego a swanetše gore a amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Oketšene yeo e tološitšwego	≥ 6 dimililikramo/litara (mg/l)

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana ya gare	Karolwana	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Bokae	Letamo le swanetše gore le laolwe go šireletša mošomo wa tswalano ya diphedi gammogo le bašomiši ba kelelo ya tlase. Go tšweletša le go tsošološa melao ya go šoma ya letamo mabapi le go hlokomela maemo a letamo le go netefatša gore phapahapano ya tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse e a hlokomelwa. Taho ya letamo e a hlokega gore e fihlele dikelelo tša tlase mabapi le dinyakwa tša kelelo ya tswalano ya diphedi le tikologo ya tšona.	Maemo a ma nnyane a go šoma a letamo	Melao ya go šoma moo go kgonegago. Maemo a ma nnyane a go hlokomela tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse (15-18%).
	Letamo la Klipvoor (A23J)		14_6				Phatlalatšo ya othofosfeiti e swanetše gore e kaonafatšwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sešeme ya yutrofiki.	Othofosfeiti	≤ 0.05 mg/l 50th persente
						Boleng	Phatlalatšo ya palomoka ya ošforase e swanetše gore e kaonafatšwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sešeme ya yutrofiki.	Palomoka ya fosforase	≤ 0.130 mg/l 50th persente
							Phatlalatšo ya palomoka ya Amonia bjalo ka N e swanetše gore e kaonafatšwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sešeme ya yutrofiki.	Palomoka ya Amonia	≤ 0.072 mg/l N 95th persente

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Government Gazette Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID AFRIKA

Vol. 652

18 October 2019
Oktober

No. 42775

PART 6 OF 6

N.B. The Government Printing Works will not be held responsible for the quality of "Hard Copies" or "Electronic Files" submitted for publication purposes

ISSN 1682-5843



AIDS HELPLINE: 0800-0123-22 Prevention is the cure

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana na	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Matswai	Letswai la ka gare ga letamo le swanetše gore le hlokomelwe go thekga bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba kelelo ya tlase.	Go swara mohlagase	≤ 75 mS/m 95th persente
							Meetse a swanetše gore a amogelwe mabapi le tšhomišo ya tša boitapološo.	pH	6.5 – 9.0 95th persente
						Phapapha pano ya sešeme	Tihalošo yeo e tseneletšego	Turbidity	≥0.4 m 5th persente
							Phetogo ye e lekanetšego	Thempheireitšha	Phetogo ya go se fetiše 2 °C godimo le tlase
							Maemo a oksetšene ka gare ga sešeme a swanetše gore a hlokomele sešeme ya tswalano ya diphedi le tikologo ya tšona.	Oksetšene yeo e tološitšwego	≥ 7.0 mg/l O ₂ 95th persente
						Phathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 dimililitara (ml) (95 th persente)
							Letamo le swanetše gore le laolwe go fokotša tšwetšopele ya saenopakteria ye kotsi.	Saenopakteria	Saenopakteria ya go ba le maatla le Chl, phatlalatšo ya go feta 30µg/l e swanetše gore e be ka tlase ga 20%.
						Dišilafatši	Meetse a noka ga se a swanela go hlola kotsi dipheding tša ka gare ga meetse le bophelong bja batho.	Diphestisaete	Cyanide: ≤ 110 µg/l Endosulfan: ≤ 20 µg/l Atrazine: ≤ 100 µg/l 95th persente
							Tlhokomelo ya ERW ya dikelelo tša tlase le dikelelo tša komelelo: Noka ya Moretele/ Pienaars go la CROC_EWR5 in A23J NMAR = 113.0x10 ⁶ m ³ Legoro la REC=D	Dikelelo tša motheo	Tlhokomel o ya tša komelelo
						Dikelelo tša tlase		Dikelelo tša tlhokomelo le dikelelo tša komelelo	(m ³ /s)
									Oct
									0.162
									0.159
									Nov
									0.210
									0.206
									Dec
									0.230
									Jan
									0.303
									0.298
									Feb
									0.356
									0.351

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							tikologo ya tšona le bašomiši ba dikelelo ka moka.		Mar 0.309 0.304 Apr 0.260 0.256 May 0.220 0.216 Jun 0.208 0.205 Jul 0.188 0.185 Aug 0.174 0.171 Sep 0.160 0.158
							Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e kaonafatšwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go netefatša gore legoro leo le beleditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa. Diphatlalatšo tša phepo di swanetše gore di fokotšwe.	Othofosfeiti (PO ₄ ⁻) bjalo ka fosforase	≤ 0.060 dimililikramo/litara (mg/l) (50 th persente)
					Diphepo		Letswai la ka gare ga meetse le swanetše gore le hlokomelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go hlokomela seemo sa bjale sa tswalano ya diphedi le tikologo ya tšona. Ga go na phuhlamo yeo e tšwelele. Ditrangolo tšeo di theilwego godimo ga mabu le di tahllo tša WWTW di swanetše gore di laolwe.	Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 1.0 dimililikramo/litara (50 th persente)
							Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho. Tšhlatšo ya makropayale e swanetše gore e fokotšwe.	Go swara mohlaga	≤ 75 milliSiemens/mitara (mS/m) (95 th persente)
							Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho. Tšhlatšo ya makropayale e swanetše gore e fokotšwe.	Salfeti	≤ 60 dimililikramo/litara (95 th persente)
							Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho. Tšhlatšo ya makropayale e swanetše gore e fokotšwe.	Tloraete	≤ 70 dimililikramo/litara (95 th persente)
							Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho. Tšhlatšo ya makropayale e swanetše gore e fokotšwe.	Sodiamo	≤ 100 dimililikramo/litara (95 th persente)
							Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho. Tšhlatšo ya makropayale e swanetše gore e fokotšwe.	<i>Escherichia coli</i> (<i>E. coli</i>)	130 counts/100 dimililitara (ml) (95 th persente)
							Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho. Tšhlatšo ya makropayale e swanetše gore e fokotšwe.	Phapaphapano ya pH	6.5 (5 th persente) le 8.5 (95 th persente)
							Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho. Tšhlatšo ya makropayale e swanetše gore e fokotšwe.	Turbidity	Phapaphapano ya 20% go tšwa phatlalatšong ya setlogo e dumeletšwe.

IUA	Lego ro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Di inbethepor eiti tša ka gare ga meetse	Kgobokešo ya dimakroinbethepor e swanetše gore e hlokomelwe legorong la D la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tihahlobo ya Karabo ya Makroinbethepor eiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = C ≥ 62% SASS ≥ 100 ASPT ≥ 5.0 (REMP site A2PIEN – BUFPE goba EWR5)
						Payotha ya ka gare ga meetse	Phihlelelo ya noka ya go šoma bjalo ka madulo a setšhaba sa dinonyane tša ka gare ga meetse e swanetše gore e hlokomelwe ka bolaodi bja maleba bja madulo. Tlhokomela lefelo la kgauswi le meetse go abela madulo a maleba.	Mehuta ya go bontšha dinonyane tša ka gare ga meetse	Tihahlobo ya mothalohlahi e swanetše gore e dirwe go bontšha mehuta ya dinonyane tša ka gare ga meetse phihlelelo ya noka. Go na le hlokego ya go bea RQO ya nomoro go ya ka motheo wa bontši bja dinonyane go ya ka datha yeo e kgobokeditšwego/yeo e lego gona.
						Ditaeatho mo	Kgobokešo ya ditaeathomo e swanetše gore e hlokomelwe ka gare ga seemo se se golo seo se kaonafaditšwego goba go kaonafatšwa.	Intekse ya Tšhilafatšo ye e itšego	Ditaeathomo EC = D ≥ 42%

Tafolana 17: Maikemišetšo a Boleng a Mothopo a Diyuniti tša Mothopo go DINOKA le MATAMO mabapi le Tihahlobo yeo e Tseenelelanago ya Yuniti ya Tihahlobo 15: UPPER MOKOLO

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
IIA	II	Noka ya Mokolo, meedi ya Klein	15_1	B/C	Bokae	Dikelelo tša tiase	Tlhokomelo ya EWR ya kelelo ya tiase le	Dikelelo tša motheo	Tlhokomelo ya dikelelo tša

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo		
										tša tlase (m ³ /s)	komelelo (m ³ /s)
		Sand, Sondagsloop, Heuningspruit, Dwars, Jim se loop (A42C, A42E)					komelelo: Noka ya Mokolo go la MOK_EWR1a go A42C NMAR = $84.84 \times 10^{-6} \text{m}^3$ Legoro la PES=C/D Tlhokomelo ya dikelelo tša tlase le dikelelo tša komelelo e swanetše gore e amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le bašomiši ba kelelo ya tlase.	Dikelelo tša tlhokomelo le dikelelo tša komelelo. Tlhokomelo ya Noka ya Mokolo go la A4H002	Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep	0.110 0.120 0.200 0.550 0.850 0.700 0.500 0.350 0.270 0.230 0.180 0.100	0.005 0.005 0.020 0.040 0.060 0.050 0.040 0.030 0.020 0.015 0.010 0.005
							Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e amogelwe go tlhokomela bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditswego la tswalano ya diphedi le tikologo ya tšona le a finlelelwa.	Othofosfeiti (PO ₄ ⁻) bjalalo ka Fosforase	≤ 0.025 dimilikramo/litara (mg/l) (50 th persente) Data ya tlhokomelo -Selete		
						Diphepo		Naetreiti (NO ₃ ⁻) le Naetraete & (NO ₂ ⁻) bjalalo ka Naetrotsene	≤ 0.5 dimilikramo/litara (50 th persente)		
						Matswai		Go swara mohlagase	≤ 30 milliSiemens/mitara (mS/m) (95 th persente)		

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							tšona le go netefatša gore legoro leo le beledišwego la tswalano ya diphedi le tikologo ya tšona le a finlelelwa.		
						Diphathotšene	Go ba gona ga di phathotšene ga se gwa swanela go hlola kotsi bophelong bia batho.	<i>Escherichia coli</i> (<i>E.coli</i>)	130 counts/100 dimililitara (ml) (95 th persente)
						Diphapaphapano tša sešeme	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.0 (95 th persente)
							Thlahlobo ya mothaloahlali go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega. Ditekanyetšo di swanetše gore di hlalošwe go laola dithulano tša moepo wa seleiti mothopong.	Turbidity	Phapaphapano ya 10% go tšwa phatlalatšong ya setlogo e dumelešwe. Ditekanyetšo di swanetše gore di bontšhwe.
						Ditšhilafatši	Diphatlalatšo tša ditšhilafatši ga se tša swanela go hlola kotsi bophelong bia batho le diphedi tša ka gare ga meetse.	Atrazine	≤0.078 dimilikramo/litara (mg/l)
								Bromoxynil	≤0.010 dimilikramo/litara (mg/l)

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IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Hlapi	Setšhaba sa dihlapu se swanetše gore se kaonafatšwe go tloga legorong la C/D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C. Belosithi/bontši bja kelelo bo swanetše gore bo hlokomelwe mabapi le mehuta ya LMOL, BMAR le CPRE le mehuta yeo e kgethago madulo, BRAD, BVIV.	Intekse ya Tlhahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la Tswalano ya diphedi le tikologo ya tšona la Hlapi = C FRAI ≥ 62% Mohlala wa 15+ wa mehuta go ya ka matsapa a mohlala Mohlala 25 CPRE le 15 AURA ka matsapa a metsotso ye 20 (Lefelo EWR1a Dwers)
					Payoatha	Payoatha ya ka gare ga meetse ya gare	Phihlelelo ye ya noka e swanetše gore e hlokomelwe go šoma bjalo ka madulo a dinonyane tša ka gare ga meetse tša ditšhaba tša ka gare ga meetse ka bolaodi bja maleba bja madulo.	Dinonyane tša ka gare ga meetse/ mehuta ya diphedi tša go bontšha	Tlhahlobo ya mothahlahli e swanetše gore e direge go bontšha setšhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphedi yeo e emelago phihlelelong ya noka. Go na le hlokego ya go bea RQO ya nomoro mabapi le bontši bja diphoofo/dinonyane go ya ka motheo wa datha yeo e lego gona goba yeo e kgobokeditšwego.
						Dimakroinbetheporeiti tša ka gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga seemo sa legoro la C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tlhahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South	Mafelo: EWR 1a = A4MOKO-VAALW MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.5 A4SAND-TOPBR: MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 6.0 LEFELO DWARS 1a = Rapid EWR Lefelo: MIRAI EC = C ≥ 62%

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo																																							
								African Scoring System Version 5 (SASS5).	SASS ≥ 120 ASPT ≥ 5.5																																							
							Kgoboketšo ya ditaeathomo e swanetše gore e hlokomelwe ka gare ga legoro la B la tswalano ya diphedi le tikologo ya tšona goba seemong se se kaone.	Intekse ya Tšhilafatšo ye e itšego	Ditaeathomo EC ≥ 82%																																							
							Thokomelo ya EWR ya dikelelo tša tiase le komelelo: Sterkstroom go A42D NIMAR = 43.43x10 ⁶ m ³ Legoro la REC=B	Dikelelo tša motheo	<table><tr><td></td><td>Tlhokomelo ya dikelelo tša tiase (m³/s)</td><td>Dikelelo tša komelelo (m³/s)</td></tr><tr><td>Oct</td><td>0.382</td><td>0.060</td></tr><tr><td>Nov</td><td>0.517</td><td>0.110</td></tr><tr><td>Dec</td><td>0.972</td><td>0.130</td></tr><tr><td>Jan</td><td>1.778</td><td>0.210</td></tr><tr><td>Feb</td><td>2.842</td><td>0.070</td></tr><tr><td>Mar</td><td>2.996</td><td>0.110</td></tr><tr><td>Apr</td><td>2.529</td><td>0.020</td></tr><tr><td>May</td><td>1.908</td><td>0.020</td></tr><tr><td>Jun</td><td>1.390</td><td>0.050</td></tr><tr><td>Jul</td><td>1.090</td><td>0.110</td></tr><tr><td>Aug</td><td>0.758</td><td>0.080</td></tr><tr><td>Sep</td><td>0.426</td><td>0.060</td></tr></table>		Tlhokomelo ya dikelelo tša tiase (m ³ /s)	Dikelelo tša komelelo (m ³ /s)	Oct	0.382	0.060	Nov	0.517	0.110	Dec	0.972	0.130	Jan	1.778	0.210	Feb	2.842	0.070	Mar	2.996	0.110	Apr	2.529	0.020	May	1.908	0.020	Jun	1.390	0.050	Jul	1.090	0.110	Aug	0.758	0.080	Sep	0.426	0.060
	Tlhokomelo ya dikelelo tša tiase (m ³ /s)	Dikelelo tša komelelo (m ³ /s)																																														
Oct	0.382	0.060																																														
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Jul	1.090	0.110																																														
Aug	0.758	0.080																																														
Sep	0.426	0.060																																														
		Sterkstroom, Frikkie se Loop (A42D)	15_2			Bokae	Thokomelo ya dikelelo tša tiase le dikelelo tša komelelo e swanetše gore e amogelwe go thekga tswalano ya diphedi le tikologo ya tšona le bašomiši ba kelelo ya tiase.	Othofosfeiti (PO ₄ ⁻) bjalo ka Fosforase	≤ 0.015 dimililikramo/litara (mg/l) (50 th persente)																																							
					Boleng	Diphepo	Phatlalatšo ya diphepo ka ge go beeditšwe e swanetše gore e hlokomelwe go šireletša bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga	Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 0.5 dimililikramo/litara (50 th persente)																																							

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							meetse le go netefatša gore legoro leo le beleditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.		
						Matswai	Maemo a letswai la ka gare ga meetse a swanetše gore a hlokomelwe go šireletša bophelo bja tswalano ya diphedi le tikologo ya tšona le go netefatša gore legoro leo le beleditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Go swara mohlaga	≤ 20 milliSiemens/mitara (mS/m) (95 th persente)
						Diphapaphapano tša sesteme	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiš'i wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.0 (95 th persente)
							Tlhahlobo ya mothalohlali go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gore di bontšhwe.
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e hlokomelwe ka gare ga legoro la	Intekse ya potego ya madulo, mokgwa wa tlhahlobo ya madulo a kokešego	Potego ya Madulo a gare ga Meetse EC B/C $\geq 78\%$

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							B/C la tswalano ya diphedi le tikologo ya tšona. Tlhokomelo ya dikelelo tša tlase go hlokomela madulo le mehuta yeo e kgethago madulo le thaksa.	le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la B/C la tswalano ya diphedi le tikologo ya tšona goba seemong se se kaone.	Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = B/C ≥ 78%
					Payotha	Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe legorong la B/C la tswalano ya diphedi le tikologo ya tšona. Tlhahlobo ya setšhaba sa dihlapu e swanetše gore e direge ka ngwaga go hlokomela kgahlanong le legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona. Tlhokomelo ya belostiti/bontši bja kelelo bja mehuta, LMOL, BMAR, AURA le CPRE le mehuta yeo e kgethago madulo- CTHE. Go ba gona ga mehuta	Intekse ya Tlhahlobo ya Karabo Response Assessment (FRAI)	Legoro la tswalano ya diphedi le tikologo ya tšona la hlapi = B/C FRAI ≥ 78% Mohlala wa 9+ wa mehuta go ya ka matsapa a mohlala Mohlala wa 10 AJOH le 2 CTHE ka matsapa a metsotso ye 20

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo												
							ye me mpsha : B. Waterbergensis e swanetše gore e kgonthišetšwe.														
						Payotha ya ka gare ga meetse ya gare	Phihlelo ya noka e swanetše gore e hlokomelwe go šoma bjalo ka madulo a dinonyane tša ka gare ga meetse le ditšhaba tša diphedi tša kagare ga meetse ka bolaodi bja maleba bja madulo.	Dinonyane tša ka gare ga meetse/ mehuta ya diphedi ya go bontšha	Tlhahlobo ya mothalahlahli e swanetše gore e direge go bontšha setšhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphedi yeo e emelago phihlelong ya noka. Go na le hlokego ya go bea RQO ya nomoro ya bontši bja diphoofofo/dinonyane go ya ka motheo wa datha yeo e lego gona goba e kgobokeditšwego.												
						Dimakroinbetheporeiti tša gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la B la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tlhahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	Dimakroinbetheporeiti EC ≥ 82% (Lefelo A4STER-WELGE)												
		Noka ya Mokolo A42F, kelelo ya gare ya Letamo la Mokolo , Taaibosspruit, Malmannies le Bulspruit (A42F)	15_3		Bokae	Dikelelo tša tlase	Tlhokomelo ya ERW ya dikelelo tša tlase le komelelo: Noka ya Mokolo MOK_EWR2 go A42F NMAR = 195.69x10 ⁶ m ³ Legoro la PES=B/C	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo.	<table><tr><td>Tlhokomelo ya dikelelo tša tlase(m³/s)</td><td>Dikelelo tša komelelo (m³/s)</td></tr><tr><td>Oct 0.230</td><td>0.008</td></tr><tr><td>Nov 0.240</td><td>0.110</td></tr><tr><td>Dec 0.370</td><td>0.146</td></tr><tr><td>Jan 0.602</td><td>0.201</td></tr><tr><td>Feb 1.064</td><td>0.318</td></tr></table>	Tlhokomelo ya dikelelo tša tlase(m ³ /s)	Dikelelo tša komelelo (m ³ /s)	Oct 0.230	0.008	Nov 0.240	0.110	Dec 0.370	0.146	Jan 0.602	0.201	Feb 1.064	0.318
Tlhokomelo ya dikelelo tša tlase(m ³ /s)	Dikelelo tša komelelo (m ³ /s)																				
Oct 0.230	0.008																				
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IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo		
							Tlhokomelo ya dikelelo tša tiase le dikelelo tša komelelo e swanetše gore e amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le bašomiši ba kelelo ya tiase.	A4H005	Mar Apr May Jun Jul Aug Sep	0.953 0.808 0.627 0.512 0.400 0.320 0.230	0.285 0.252 0.207 0.181 0.120 0.008 0.005
							Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go netefatša gore legoro leo le beledišwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Othofosfeiti (PO ₄ ⁻) bjalo ka Fosforase	≤ 0.025 dimililikramo/litara (mg/l) (50 th persente)		
							Diphepo	Naetreti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetroitšene	≤ 0.5 dimililikramo/litara (50 th persente)		
					Boleng		Maemo a letswai la ka gare ga meetse a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go netefatša gore legoro leo le beledišwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Go swara mohlagaase	≤ 30 milliSiemens/mitara (mS/m) (95 th persente)		
							Matswai				
							Diphathotšene	<i>Escherichia coli</i> (E.coli)	130 counts/100 dimililitara (ml) (95 th persente)		

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							gwa swanela go hlola kotsi bophelong bja batho. Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.0 (95 th persente)
						Diphapaphapano tša seseme	Tlhalobolo ya motholahlahi go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega. Ditekanyetšo di swanetše gore di hlalošwe go laola dithulano tša moepo wa seleiti mothopong.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gore di bontšhwe.
						Ditšhilafatši	Diphatlalatši tša ditšhilafatši ga se tša swanela go hlola kotsi bophelong bja batho le diphedi tša ka gare ga meetse.	Metolachlor	≤0.30 dimililikramo/litara (mg/l)
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la B/C la tswalano ya diphedi le tikologo ya tšona go iša legorong la B.	Intekse ya potego ya madulo, mokgwa wa tlhalobolo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a gare ga meetse EC = B ≥ 82%

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Dikelelo tša poelo morago tša madulo di swanetše gore di laolwe.		
							Dimela tša kgauswi le meetse di swanetše gore di kaonafatšwe go tloga legorong la B/C la tswalano ya diphedi le tikologo ya tšona go iša legorong la B. Tlhokomelo ya lefelo la kgauswi le meetse mafelong a go buna, le go laola puno lefelong la kgauswi le meetse.	Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = B ≥ 82%
							Setšhaba sa dihlapu se swanetše gore se hlokomelwe legorong la C la tswalano ya diphedi le tikologo ya tšona. Tlhahlobo ya setšhaba sa dihlapu e swanetše gore e dirwe ka ngwaga go hlokomela kgahlanong le legoro leo le beeleletšwego la tswalano ya diphedi le tikologo ya tšona. Tlhokomelo ya belosithi/bontši bja kelelo ya mehuta ya CPRE le mehuta yeo e kgethago madulo, MMAC le AJOH.	Intekse ya Tlhahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la Tswalano ya diphedi le tikologo ya tšona = C FRAI ≥ 62% Mohlala wa10+ wa mehuta ya matsapa a mohlala Mohlala wa 10 AJOH ka matsapa a metsotso ye 20
					Payotha	Hlapi			

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Payotha ya ka gare ga meetse ya gare	Phihlelelo ye ya noka e swanetše gore e hlokomelwe go šoma bjalo ka madulo a dinonyane tša ka gare ga meetse le dišhaba tša diphedi tša ka gare ga meetse ka bolaodi bja maleba bja madulo.	Dinonyane tša ka gare ga meetse/ mehuta ya diphedi ya go bontšha	Tliahlobo ya mothaloahlali e swanetše gore e direge go bontšha setšhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphedi yeo e emelago phihlelelong ya noka. Go na le hlokego ya go bea RQO ya nomoro ya diphoofo/dinonyane ka motheo wa datha yeo e lego gona goba yeo e kgobokeditšwego.
						Dimakroinbetheporeiti tša gare ka ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tliahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 6.0 (Lefelo MOK_EWR2)
						Ditaeathomo	Kgoboketšo ya ditaeathomo e swanetše gore e hlokomelwe ka gare ga seemo se se golo sa hlago goba go kaonafatšwa.	Intekse ya Tšhilafatšo ye e itšego	Ditaeathomo EC ≥ 82%
		Letamo la Mokolo go iša karolong ya godimo ya A42G	15_4		Boleng	Dikelelo tša tlase	Thokomelo ya EWR ya dikelelo tša tlase le komelelo: Noka ya Mokolo MOK_EWR3 go	Dikelelo tša motheo Dikelelo tša thokomelo le dikelelo tša	Dikelelo tša dikelelo tša tlase (m³/s) 0.383 0.005

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
		(dikilomitara tše 10 tša kelelo ya tlase ya letamo)					A42G NMAR = $215.995 \times 10^6 \text{m}^3$ Legoro la PES=B/C Tlhokomelo ya dikelelo tša tlase le dikelelo tša komelelo e swanetše gore e amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le bašomiši ba kelelo ya tlase.	komelelo. Tlhokomelo ya Noka ya Mokolo go A4H010 Nov 0.399 Dec 0.406 Jan 0.444 Feb 0.559 Mar 0.504 Apr 0.493 May 0.450 Jun 0.441 Jul 0.413 Aug 0.399 Sep 0.396	0.005 0.005 0.015 0.020 0.018 0.015 0.010 0.008 0.006 0.005 0.005
						Dikelelo tša godimo	Tlhokomelo ya ERW ya dikelelo tša godimo: Noka ya Mokolo go MOK_EWR3 in A42G NMAR = $215.995 \times 10^6 \text{m}^3$ Legoro la PES=B/C Dikelelo tša godimo di swanetše gore di amogelwe go thekga dinyakwa tša tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Mafula Kelelo ya godimo yeo e beilwego bjalo ka senyakwa sa lefula leo le ikemetšego go ya ka bogolo le nako. Tlhokomelo ya Noka ya Mokolo go A4H010	Go ya molao wa tshepedišo thempleiting ya Poloko, Karolo 3.
					Boleng	Diphepo	Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e amogelwe go hlakomela bophelo	Othofosfeiti (PO_4^{3-}) ya bjalo ka Fosforase Naetireiti (NO_3^-) le Naetraete (NO_2^-) ya bjalo ka	≤ 0.010 dimilikramo/litara (mg/l) (50th persente) ≤ 0.5 dimilikramo/litara (50th persente)

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Naetrotsene	
							Maemo a letswai la ka gare ga meetse a swanetše gore a amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Go swara mophlagase	≤ 30 milliSiemens/mitara (mS/m) (95 th persente)
						Diphathotšene	Go ba gona ga di phathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia coli</i> (E.coli)	130 counts/100 dimillilitara (ml) (95 th persente)
						Diphapaphapano tša sešeme	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.0 (95 th persente)

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Tlhalobo ya mothahlali go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega. Ditekanyetšo di swanetše gore di hlalošwe go laola dithulano tša moepo wa seleiti mothopong.	Turbidity	Phapaphapano ya 10% go tloga phatlalatšo ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gore di bontšhwe.
						Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la B/C la tswalano ya diphedi le tikologo ya tšona go iša legorong la B.	Intekse ya potego ya madulo, mokgwa wa tlhalobo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a gare ga Meetse EC = B ≥ 82%
					Madulo	Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la B/C la tswalano ya diphedi le tikologo ya tšona. Tlhokomelo ya lefelo la kgauswi le meetse ka <i>Syzygium cordatum</i> .	Intekse ya Potego ya Madulo, Intekse ya Tlhalobo ya Karabo ya Dimela.	VEGRAI EC = B/C ≥ 78%
					Payotha	Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe ka gare ga legoro la B/C la tswalano ya diphedi le tikologo ya tšona. Tlhokomelo ya belositši/bontši bja kelelo bja mehuta ya	Intekse ya Tlhalobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la Hlapi = B/C FRAI ≥ 78%

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							CPRE.		
						Payotha ya ka gare ga meetse ya gare	Phihlelo ya noka e swanetše gore e hlokomelwe go šoma bjalo ka madulo a dinonyane tša ka gare ga meetse le ditšhaba tša diphedi tša ka gare ga meetse ka bolaodi bja maleba bja madulo.	Dinonyane tša ka gare ga meetse/mehuta ya diphedi ya go bontšha	Tlhahlobo ya mothahlahli e swanetše gore e dirwe ka ngwa go bontšha setšhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphedi yeo e emelago phihlelong ya noka. Go na le hlokego ya go bea RQO ya nomoro ya bontši bja diphoofo/dinonyane ka motheo wa datha yeo e lego gona gona yeo e kgobokeditšwego.
						Dimakroinbetheporeiti tša ka gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tlhahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 6.0
	Letamo Mokolo	la	15_4		Bokae	Maemo a letamo	Letamo le swanetše gore le laolwe go šireletša mošomo wa tswalano ya diphedi le tikologo ya tšona le bašomiši ba kelelo ya tlase. Go tšweletša le go tsošološa melao ya tshepedišo ya	Maemo a ma nnyane a gošoma ao a hlokegago letamong	Melawana ya tshepedišo go ya ka moo e kgonega. Seemo sa fase go tshwarelela seemo sa akhwatiki sa ekhosestemo (15-18%).

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							letamo go hlokomela maemo a letamo go netefatša gore phapaphapano ya tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse e a hlokomelwa. Tahlo ya letamo e hlokega gore e fihlelele dikelelo tša tlase mabapi le dinyakwa tša kelelo ya tswalano ya diphedi le tikologo ya tšona.		
							Phatlalatšo ya othofosfeiti e swanetše gore e hlokomelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiš ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya oliktrofiki.	Diothofosfeiti	≤ 0.010 mg/l 50th persente
					Boleng	Diphepo	Phatlalatšo ya fosforase e swanetše gore e hlokomelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya	Palomoka ya Fosforase	≤ 0.025 mg/l 50th persente

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya olikotrofiki.		
							Phatlalatšo ya Naetraete le Naetreiti e swanetše gore e hlokomelwe go bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba meetse. Letamo le swanetše gore le hlokomelwe bjalo ka sisteme ya olikotrofiki.	Naetraete le Naetreiti	$\leq 0.50 \text{ mg/l}$ N 95th persente
						Matswai	Letswai la ka gare ga letamo le swanetše gore le hlokomelwe go thekga bophelo bja tswalano ya diphedi le tikologo ya tšona le dinyakwa tša khwalithi ya meetse tša bašomiši ba kelelo ya tšase.	Go swara mohlaga	$\leq 20 \text{ mS/m}$ 95th persente
						Diphathotšene	Go ba gona ga diphathotšene ga se gwa swanela go hlola kotsi bophelong bja batho.	<i>Escherichia coli</i> (E.coli)	130 counts/100 millilitara (ml) (95th persente)
						Diphapaphapano tša sisteme	Meetse a swanetše gore a amogelwe mabapi le tšhomišo	pH	6.5 – 9.0 95th persente

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							ya tša boitapološo.		
							Hlalošo yeo e tseneletšego ka go bala	Turbidity	≥0.4 m 5th persente
							Thokomelo ya ERW ya dikelelo tša tlase le komelelo: Grootspuit go A42B NMAR = $27.8 \times 10^6 \text{ m}^3$ Legoro la REC= D	Dikelelo tša motheo Dikelelo tša thokomelo le dikelelo tša komelelo.	Thokomelo ya dikelelo tša tlase (m^3/s) Dikelelo tša komelelo (m^3/s)
							Thokomelo ya dikelelo tša tlase le dikelelo tša komelelo e swanetše gore e amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le bašomiši ba kelelo ya tlase.	Thokomelo ya tahlo ka nako ya dinyakišišo tša payolotši.	Oct 0.271 Nov 0.269 Dec 0.291 Jan 0.345 Feb 0.401 Mar 0.384 Apr 0.338 May 0.320 Jun 0.311 Jul 0.304 Aug 0.299 Sep 0.286
			15_5		Bokae		Phatlalatšo ya ka gare ga meetse ya diphedo e swanetše gore e amogelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go netefatša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a finlelelwa.	Othofosfeiti (PO_4) bjalo ka Fosforase	≤ 0.05 dimilikramo/litara (mg/l) (50 th persente)
		Meedi ya Grootspuit Sandspruit (Letangwana la meetse Mokolo) (A42A, A42B)			Boleng	Diphepo		Naetreiti (NO_3^-) le Naetraete (NO_2^-) bjalo ka Naetrotsene	≤ 0.7 dimilikramo/litara (50 th persente)
					Matswai		Maemo a ka gare ga meetse a leswai a swanetše gore a amogelwe go	Go swara mohlagaase	≤ 55 milliSiemens/mitara (mS/m) (95 th persente)

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go netefatša gore legoro leo le beeditswego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.		
							Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.0 (95 th persente)
						Diphapaphapano tša sisteme	Tlhlalobo ya mothahlahili go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega. Ditekanyetšo di swanetše gore di hlalošwe go laola dithulano tša moepo wa seleiti mothopong.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gore di bontšhwe.
						Ditšhilafatši	Diphatlalatšo tša ditšhilafatši ga se tša swanela go hlola kotsi bophelong bja batho le diphedi tša ka gare ga meetse.	Atrazaene	≤0.078 dimililikramo/litara (mg/l)
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše	Intekse ya potego ya madulo, mokgwa	Potego ya Madulo a ka gare ga Meetse EC = C ≥ 62%

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							gore e hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona. Kgokagano ya mehuta ya go huduga e swanetše gore e hlokomelwe.	wa tlahlolo ya madulo a koketšego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe legorong la C la tswalano ya diphedi le tikologo ya tšona.	Intekse ya Potego ya Madulo, Intekse ya Tlahlolo ya Karabo ya Dimela	VEGRA IEC = C ≥ 70%
						Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona. Tlhokomelo ya belosithi/bontši bja kelelo mabapi le mehuta ya CPRE, AURA, LCYL le mehuta yeo e kgethago madulo ya MMAC le AJOH.	Intekse ya Tlahlolo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la hlapi = C FRAI ≥ 62% Mohlala wa 10+ ya mehuta go ya ka matsapa a mohlala
					Payothena	Payothena ya ka gare ga meetse ya gare	Phihlelelo ya noka e swanetše gore e hlokomelwe go šoma bjalo ka tsela ya madulo le ya go huduga ya ditšhaba tša dinonyane tša ka gare ga meetse ka mokgwa wa bolaodi	Mehuta ya dinonyane tša ka gare ga meetse	Tlahlolo ya mothalohlali e swanetše gore e direge go bontšha setšhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphedi yeo e emelago phihlelelong ya noka. Go na le hlokego ya go bea RQO ya nomoro ya bontši bja diphoofole/dinonyane ka

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo																																				
							bja maleba bja madulo. Tlhokomelo ya lefelo la kgauswi le meetse- go tloša dimela tšeo di sa nyakegego, go kaonafatša ga mehuta ya setlogo.		motheo wa datha yeo e lego gona goba e kgobokeditšwego.																																				
							Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la D la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tlhahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	MIRAI EC = D ≥ 42% SASS ≥ 80 ASPT ≥ 5.5 (LefeloA4GROO-GROOT)																																				
		Noka ya Mokolo go tloga Nokeng ya Dwars go iša kopanong le Sterkstroom, Klein Vaalwaterspruit (A42E)	15_6		Bokae		Tlhokomelo ya EWR ya dikelelo tša tiase le komelelo: Noka ya Mokolo go MOK_EWR1b go la A42E NMAR = 135.03x10 ⁶ m ³ Legoro la PES=B/C Tlhokomelo ya dikelelo tša tiase le dikelelo tša komelelo	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo. Tlhokomelo ya tahllo ya Noka ya Mokolo ka nako ya dinyakišišo tša payolotši	<table><tr><td></td><td>Tlhokomelo ya dikelelo tša tiase(m³/s)</td><td>Dikelelo tša komelelo (m³/s)</td></tr><tr><td>Oct</td><td>0.120</td><td>0.005</td></tr><tr><td>Nov</td><td>0.120</td><td>0.005</td></tr><tr><td>Dec</td><td>0.320</td><td>0.020</td></tr><tr><td>Jan</td><td>0.700</td><td>0.050</td></tr><tr><td>Feb</td><td>1.400</td><td>0.080</td></tr><tr><td>Mar</td><td>1.150</td><td>0.065</td></tr><tr><td>Apr</td><td>0.850</td><td>0.050</td></tr><tr><td>May</td><td>0.600</td><td>0.040</td></tr><tr><td>Jun</td><td>0.450</td><td>0.020</td></tr><tr><td>Jul</td><td>0.320</td><td>0.015</td></tr><tr><td>Aug</td><td>0.250</td><td>0.010</td></tr></table>		Tlhokomelo ya dikelelo tša tiase(m ³ /s)	Dikelelo tša komelelo (m ³ /s)	Oct	0.120	0.005	Nov	0.120	0.005	Dec	0.320	0.020	Jan	0.700	0.050	Feb	1.400	0.080	Mar	1.150	0.065	Apr	0.850	0.050	May	0.600	0.040	Jun	0.450	0.020	Jul	0.320	0.015	Aug	0.250	0.010
	Tlhokomelo ya dikelelo tša tiase(m ³ /s)	Dikelelo tša komelelo (m ³ /s)																																											
Oct	0.120	0.005																																											
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IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							le tikologo ya tšona ya ka gare ga meetse le bašomiši ba kelelo ya tlase.		
							Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e hlokomelwe go šireletša bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le go netefatša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Othofosfeiti (PO_4^-) bjalo ka Fosforase	≤ 0.020 dimililikramo/litara (mg/l) (50 th persente)
					Diphepo			Naetreiti (NO_3^-) le Naetraete (NO_2^-) bjalo ka Naetrotsene	≤ 0.5 dimililikramo/litara (50 th persente)
					Matswai		Phatlalatšo ya ka gare ga meetse ya letswai e swanetše gore e hlokomelwe go šireletša seemo sa bjale sa tswalano ya diphedi le tikologo ya tšona le bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Go swara Mohlagase	≤ 30 milliSiemens/mitara (mS/m) (95 th persente)
							Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tša tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le	Phapaphapano ya pH	6.5 (5 th persente) le 8.0 (95 th persente)

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							dinyakwa tša mošomiši wa meetse. Tlhahlobo ya motholohlahli go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega. Ditekanyetšo di swanetše gore di hlalošwe go laola dithulano tša moepo wa seleiti mothopong.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gore di bontšhwe.
							Diphatlalatši tša ditšhilafatši ga se tša swanela go hlola kotsi bophelong bja batho le diphedi tša ka gare ga meetse.	Atrazae	≤0.078 dimililikramo/litara (mg/l)
							Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la B/C la tswalano ya diphedi le tikologo ya tšona go iša legorong la B.	Intekse ya potego ya madulo, mokgwa wa tlhahlobo ya madulo a koketšego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a ka gare ga Meetse EC = B ≥ 82%
					Madulo	Ka gare ga meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la B/C la tswalano ya diphedi le tikologo ya tšona goba seemong se se kaone.	Intekse ya Potego ya Madulo, Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = B/C ≥ 78%
						Madulo a kgauswi le meetse			

IUA	Legoro	Noka	Yuniti ya mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe ka gare ga legoro la B/C la tswalano ya diphedi le tikologo ya tšona. Tlhahlobo ya setšhaba sa dihlapu e swanetše gore e dirwe ka ngwaga go hlokomela kgahlanong le legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona.	Intekse ya Tlhahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la Tswalano ya diphedi le tikologo ya tšona la Hlapi = B/C FRAI ≥ 78%
					Payotha		Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe legorong la B/C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tlhahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = B/C ≥ 78% SASS ≥ 140 ASPT ≥ 6.0 (MOK_EWR1b in A42E)
						Dimakroinbetheporeiti tša ka gare ga meetse			

Tafolana 18: Maikemisetšo a Boleng bja Mophopo a Diyuniti tša Mophopo go DINOKA le MATAMO mabapi le Tliahlobo yeo e Tselelelanago ya Yuniti ya Tliahlobo 16:
Tafola 19: LOWER MOKOLO

IUA	Legoro	Noka	Yuniti ya Mophopo	Legoro la tswalano ya diphelele tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
16: LOWER MOKOLO	II	Noka ya Tambotie A42H (Karolo ye kgolo-eastern)	16_1	B/C	Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e hlokomelwe gare ga legoro la B la tswalano ya diphelele tikologo ya tšona.	Intekse ya Potego ya Madulo	Potego ya Madulo a gare ga Meetse EC = B ≥ 82%
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la B la tswalano ya diphelele tikologo ya tšona. Tlhokomelo ya lefelo la kgauswi le meetse.	Intekse ya Potego ya Madulo	VEGRAI EC = B ≥ 82%
					Payotha	Hlapi	Setšhaba sa dihlapa se swanetše gore se hlokomelwe ka gare ga legoro la B la tswalano ya diphelele tikologo ya tšona. Tliahlobo ya setšhaba sa dihlapa e swanetše gore e dinwe ka ngwaga go hlokomela kgahlanong le legoro leo le beeditšwego la tswalano ya diphelele tikologo ya tšona. Tlhokomelo ya belosithi/bontši bja kelelo bja mehuta ya CPRE, CPAR, LCYL, LRUD le mehuta yeo e kgethago madulo ya MMAC le AJOH.	Intekse ya Tliahlobo ya Karabo ya Hlapi (Fish Response Index Assessment (FRAI))	Legoro la tswalano ya diphelele tikologo ya tšona la Hlapi = B FRAI ≥ 82% Mohlala wa 20+ wa mehuta go ya ka matsapa a mohlala Mohlala 5 BBR/ le 3 PCAT ka matsapa a metsofso ye 20

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e hlokomelwe legorong la B la tswalano ya diphedi le tikologo ya tšona. Thokomelo ya go ntšha le kelelo.	Intekse ya potego ya madulo, mokgwa wa tihahlobo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a gare ga Meetse EC = B ≥ 82%
					Madulo	Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe ka gare ga legoro la B la tswalano ya diphedi le tikologo ya tšona. Thokomelo ya seemo sa lefelo la kgauswi le meetse.	Intekse ya Potego ya Madulo, Intekse ya Tihahlobo ya Karabo ya Dimela	VEGRAI EC = B ≥ 82%
	Poer-se-Loop (letangwana la godimo) (A42G)	16_2			Payotha	Hlapi	Seitšhaba sa dihlapu se swanetše gore se hlokomelwe ka gare ga legoro la B la tswalano ya diphedi le tikologo ya tšona. Tihahlobo ya setšhaba sa dihlapu e swanetše gore e direge ka ngwaga go hlokomela kgahlanong le leroro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona. Thokomelo ya belositshi/bontši bja kelelo bja mehuta yeo e ikemetšego le yeo e kgethago madulo. (Letangwana la godimo)	Intekse ya Tihahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la hlapi la B FRAI ≥ 82% Mohlala wa 25+ wa mehuta go ya ka matsapa a mohlala Mohlala wa 5 BBR/ le 3 PCAT ka matsapa a metsotso ye 20

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphepo	Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e hlokomelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona le go netefatša gore legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona le a fihlelelwa.	Othofosfeti (PO_4^{3-}) bjalo ka Fosforase	≤ 0.05 dimililikramo/litara (mg/l) (50 th persente)
								Naetreiti (NO_3^-) le Naetraete (NO_2^-) bjalo ka Naetroitšene	≤ 0.1 dimililikramo/litara (50 th persente)
		Sandloop A42J le karo yeo e šetšego ya A42H	16_4		Boleng	Matswai	Phatlalatšo ya ka gare ga meetse ya letswai e swanetše gore e hlokomelwe go šireletša seemo sa bjale sa tswalano ya diphedi le tikologo ya tšona le bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Go swara mohlagaase	≤ 55 milliSiemens/mitara (mS/m) (95 th persente)
						Diphapaphapano tša sešeme	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.5 (95 th persente)

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Tlhalobo ya mothalohlali e swanetše gore e dirwe go bontšha seemo sa bjale sa ka gare ga meetse. Ditekanyetšo di swanetše gore di hlalošwe go laola moepo wa seleiti mothopong.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe. Ditekanyetšo di swanetše gore di bontšhwe.
								Atrazaeene	≤ 0.078 dimilikramo/litara (mg/l)
								Aluminiamo (Al)	≤ 0.062 dimilikramo/litara (mg/l) (95th persente)
								Mankanese (Mn)	≤ 0.15 dimilikramo/litara (mg/l) (95th persente)
								Ayone (Fe)	≤ 0.1 dimilikramo/litara (mg/l) (95th persente)
								Lead (Pb) hard	≤ 0.0057 dimilikramo/litara (mg/l) (95th persente)

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
								Khopha (Cu) ya go tia	≤ 0.0048 dimilikramo/litara (mg/l) (95th persente)
								Nikele (Ni)	≤ 0.07 dimilikramo/litara (mg/l) (95th persente)
								Khopalte (Co)	≤ 0.05 dimilikramo/litara (mg/l) (95th persente)
								Zink (Zn)	≤ 0.002 dimilikramo/litara (mg/l) (95th persente)
								Intekse ya potego ya madulo, mokgwa wa tihahlobo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a kgauswi le Meetse EC = B ≥ 82%
								Intekse ya Potego ya Madulo, Intekse ya Tihahlobo ya Karabo ya Dimela	VEGRAI EC = B ≥ 82%

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo		
		Seteme sa Mokolo go iša kopanong ya Tambotie ka tšase ga phihlelelo ya (bedrock (sand go lahlela, karolong ye kgolo ya noka)	16_5_1		Bokae		Tlhokomelo ya EWR ya dikelelo tša tšase le komelelo: Noka ya Mokolo go MOK_EWR4 go la A42G $NMAR = 253.5 \times 10^6 m^3$ Legoro la PES=C Tlhokomelo ya dikelelo tša tšase le dikelelo tša komelelo e swanetše gore e hlakomelewe go thekga tswalano ya diphedi le tikologo ya tšona le bašomiši ba kelelo ya tšase.	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo. Hlokomelo ya Noka ya Mokolo go A4H013	Tlhokomelo ya dikelelo tša tšase (m³/s) Dikelelo tša komelelo (m³/s)	Oct 0.489 Nov 0.508 Dec 0.508 Jan 0.540 Feb 0.657 Mar 0.595 Apr 0.589 May 0.547 Jun 0.543 Jul 0.512 Aug 0.500 Sep 0.504	0 0 0 0 0 0 0 0 0
		A42G gare ga seteme se se golo sa noka				Dikelelo tša godimo	Dikelelo tša godimo tša EWR: Noka ya Mokolo go MOK_EWR4 go la A42G $NMAR = 253.5 \times 10^6 m^3$ Legoro la REC=C Dikelelo tša godimo di swanetše gore di fihlelewe go thekga dinyakwa tša tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Mafula Tlhokomelo ya Noka ya Mokolo go la A4H013			

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Diphepo	Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e hlokomelwe go tswalano ya diphedi le tikologo ya tšona le go hlokomela seemo sa tswalano ya diphedi le tikologo ya tšona.	Othofosfeiti (PO ₄ ⁻) bjalo ka Fosforase	≤ 0.02 dimililikramo/litara (mg/l) (50 th persente)
								Naetreiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 0.05 dimililikramo/litara (50 th persente)
							Phatlalatšo ya ka gare ga meetse ya letswai e swanetše gore e hlokomelwe go šireletša seemo sa bjale sa tswalano ya diphedi le tikologo ya tšona le bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Go swara mohlagaase	≤ 30 miliSiemens/mitara (mS/m) (95 th persente)
						Matswai		Salfeiti	≤ 20 dimililikramo/litara (95 th persente)
								Sodiamo	≤ 20 dimililikramo/litara (95 th persente)
						Diphapaphapano tša sesteme	Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beliwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.5 (95 th persente)

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Tlhahlobo ya mothalohlahli go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe.
							Maemo a oksetšende yeo e tološitšwego a swanetše gore a amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Oksetšene yeo e tološitšwego	≥ 6 dimililikramo/litara (mg/l)
						Ditšhilafatši	Phatlalatšo ya dišilafatši ga se ya swanela go hlola kotsi bophelong bja batho le diphedi tša ka gare ga meetse.	Atrazaene	≤0.078 dimililikramo/litara (mg/l)
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la B/C la tswalano ya diphedi le tikologo ya tšona go iša legorong la B. Tlhokomelo ya go ntšha le kejele.	Intekse ya potego ya madulo, mokgwa wa tlhahlobo ya madulo a koketšego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a Kgauswi le Meetse EC = B ≥ 82%

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Madulo a kgauswi le meetse Riparian	Dimela tša kgauswi le meetse di swanetše gore di kaonafatšwe go tloga legorong la C la tswalano ya diphedi le tikologo ya tšona go iša legorong la B/C. Go netefatša gore kgolo ya tiase yeo e hiokomešwego go dumelela kgoboketšo ya Xanthocercis zambesiaca ka nako ya dithlahlobo tša VEGRAI. Tlhokomelo ya lefelo la kgauswi le meetse.	Intekse ya Potege ya Madulo, Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = B/C ≥ 80%
					Payotha	Hlapi	Seišhaba sa dihlapu se swanetše gore se kaonafatšwe go tšwa legorong la C la tswalano ya diphedi le tikologo ya tšona go iša legorong la B. Tlhahlobo ya seišhaba sa dihlapu e swanetše gore e dirwe ka ngwaga go hiokomela kgahlanong le legoro leo le beeditšwego la tswalano ya diphedi le tikologo ya tšona. Tlhokomelo ya belosithi/bontši bja kelelo ya mehuta yeo e kgethago madulo.	Intekse ya Tlhahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la hlapi = B/C FRAI ≥ 78% Mohlala wa 25+ wa mehuta go ya ka matsapa a mohlala Mohlala wa 5 BBR/le 3 PCAT ka matsapa a metsotso ye 20

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Payothena ya ka gare ga meetse ya gare	Tshwarelelo ya katološo ye ya noka mabapi le go šoma bjalo ka madulo a a dinonyane tša ka gare ga meetse le dišhaba tša diphedi e swanetše gore e hlokomelwe ka mokgwa wa bolaodi bja maleba bja madulo.	Dinonyane tša ka gare ga meetse/ mehuta ya diphedi ya go bontšha	Tihahlobo ya mothahlahli e swanetše gore e direge go bontšha sešhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphedi yeo e emelago phihlelelong ya noka. Go na le thokego ya go bea RQO ya nomoro ya bontši bja diphoofo/dinonyane ka motheo wa datha yeo e lego gona goba e kgobokeditšwego.
						Dimakroinbetheporeiti tša ka gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tihahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5).	Dimakroinbetheporeiti tša MIRAI EC = C ≥ 62% SASS ≥ 80 ASPT ≥ 5.2
		Seteme se se golo sa Mokolo go tloga kopanong ya Tambotie go iša Limpopo A42H, A42J nokeng ya	16_5_2		Bokae	Dikelelo tša tiase	Tlhokomelo ya dikelelo tša nokeng go thekga dinyakwa tša monola go A42J	Dikelelo tša motheo	Dinyakwa tša monola mabapi le lefelo la lefula- dikelelo tša tlhokomelo lefelong le le mpša - (e be e le A4H014)
					Boleng	Diphepo	Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e hlokomelwe go hlokomela bophelo bja	Othofosfeti (PO ₄) bjalo ka Fosforase	≤ 0.01 dimililikramo/litara (mg/l) (50 th persente)

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
		seleme se se golo					tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse, le go hlokomela seemo sa tswalano ya diphedi le tikologo ya tšona.	Naetreiti (NO_3^-) le Naetraete (NO_2^-) bjalo ka Naetrotsšene	≤ 0.05 dimililikramo/litara (50 th persente)
							Phatlalatšo ya letswai e swanetše gore e hlokomelwe go šireletša seemo sa bjale sa tswalano ya diphedi le tikologo ya tšona le bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Go swara mohlagaase	≤ 30 milliSiemens/mitara (mS/m) (95 th persente)
					Matswai			Salfeiti	≤ 20 dimililikramo/litara (95 th persente)
								Sodiamo	≤ 20 dimililikramo/litara (95 th persente)
							Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.5 (95 th persente)
					Diphapaphapano tša sešeme		Tlhalobo ya mothalahlali go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% ya phatlalatšo ya setlogo e dumeletšwe.
							Maemo a oksetšene yeo e tološitšwego a swanetše gore a amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Oksetšene yeo e tološitšwego	≥ 6 dimililikramo/litara (mg/l)

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Diphatlatšo tša ditšhilafatši ga se tša swanela go hlola kotsi bophelong bja batho le diphedi tša ka gare ga meetse.	Aluminiamo (Al) Mankanese (Mn) Ayone (Fe) Lead (Pb) hard Khophha (Cu) ya go tia Nikele (Ni) Khopalte (Co) Zink (Zn) Atrazaene	≤ 0.062 mililikramo/litara (mg/l) (95th persente) ≤ 0.15 dimilikramo/litara (mg/l) (95th persente) ≤ 0.1 dimilikramo/litara (mg/l) (95th persente) ≤ 0.0057 dimilikramo/litara (mg/l) (95th persente) ≤ 0.0048 dimilikramo/litara (mg/l) (95th persente) ≤ 0.07 dimilikramo/litara (mg/l) (95th persente) ≤ 0.05 dimilikramo/litara (mg/l) (95th persente) ≤ 0.002 dimilikramo/litara (mg/l) (95th persente) ≤ 0.078 dimilikramo/litara (mg/l)
					Madulo	Ka gare ga meetse	Phapahapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C/D. Thokomelo ya go ntšha le kelelo. Thokomelo ya kgokagano ye botse ya mafelo a kelelo ya godimo (16.5.1).	Intekse ya potego ya madulo, mokgwa wa tlhahlobo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a kgauswi le $EC = C/D \geq 58\%$

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C/D. Go netefatša gore kgolo ya tiase e hlokometšwe go dumelela kgoboketšo ya Xanthocerois zambesiaca ka nako ya tihahlobo ya VEGRAI.	Intekse ya Potege ya Madulo, Intekse ya Tihahlobo ya Karabo ya Dimela	VEGRAI EC = C/D ≥ 58%
					Payotha	Hlapi	Setšhaba sa dihlapu se swanetše gore se kaonafatšwe go tloga legorong la D la tswalano ya diphedi le tikologo ya tšona go iša legorong la C/D. Tihahlobo ya setšhaba sa dihlapu e swanetše gore e dirwe ka ngwaga go hlokomela kgahlanong le legoro leo le beeditswego la tswalano ya diphedi le tikologo ya tšona.	Intekse ya Tihahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI	Legoro la tswalano ya diphedi le tikologo ya tšona la Hlapi = C/D FRAI ≥ 58% Mohlala wa 12+ wa mehuta go ya ka matsapa a mohlala

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	RQO	Sebontšhi	Tekanyetšo ya Dipalo
						Payotha ya ka gare ga meetse ya gare	Phihlelelo ye ya noka e swanetše gore e hlakomelewe go šoma bjalo ka madulo a dinyane tša ka gare ga meetse le ditšhaba tša diphedi tša ka gare ga meetse ka mokgwa wa maleba wa bolaodi bja madulo. Tlhokomelo ya lefelo la kgauswi le meetse.	Dinyane tša ka gare ga meetse/ mehuta ya diphedi ya go bontšha	Tlhahlobo ya mothahlahli e swanetše gore e direge go bontšha setšhaba sa dinyane tša ka gare ga meetse le mehuta ya diphedi yeo e emelago phihlelelong ya noka. Go na le hlokego ya go bea RQO ya nomoro ya bontši bja diphoofolo/dinyane ka motheo wa datha yeo e lego gona goba e kgobokeditšwego.

Tafolana 19: Maikemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA le MATAMO mabapi le Tlhahlobo yeo e Tsenelanelanago ya Yuniti ya Tlhahlobo 17a:
Tafolana 19: MOTHLABATSI / MAMBA

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
17a: MOTHLABATSI / MAMBA	I	Noka ya Mamba (A41B)	17a_1	B/C	Bokae	Dikelelo tša tlase	Tlhokomelo ya EWR ya dikelelo tša tlase le komelelo: Noka ya Mamba go MAT_EWR3 go la A41B NMAR = $9.54 \times 10^6 \text{m}^3$	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo.	Tlhokomelo ya dikelelo tša tlase (m ³ /s) Dikelleo tša komelelo (m ³ /s) Oct 0.034 Nov 0.047 Dec 0.072 0.014

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo		
							Legoro la REC=B/C Tlhokomelo ya dikelelo tša tlase le dikelelo tša komelelo e swanetše gore e amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse le bašomiši ba kelelo ya tlase.	Tlhokomelo ya tahlo ya Noka ya Mamba ka nako ya dinyakišišo tša payolotši	Jan Feb Mar Apr May Jun Jul Aug Sep	0.104 0.149 0.129 0.090 0.058 0.045 0.039 0.035 0.030	0.021 0.016 0.011 0.011 0.004 0.011 0.011 0.011 0.007
							Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e hlokomelwe go šireletša bophelo bja tswalano ya diphedi le tikologo ya tšona le potego ya tswalano ya diphedi le tikologo ya tšona ya sisteme.	Othofosfeiti (PO ₄ ⁻) bjalo ka Fosforase	≤ 0.015 dimilikramo/litara (mg/l) (50 th persente)		
						Diphepo	Maemo a leswai a ka gare ga meetse a swanetše gore a hlokomelwe go šireletša bophelo bja tswalano ya diphedi le tikologo ya tšona le potego ya tswalano ya diphedi le tikologo ya tšona ya sisteme.	Naetireiti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) bjalo ka Naetrotsene	≤ 0.25 dimilikramo/litara (50 th persente)		
						Matswai	Maemo a leswai a ka gare ga meetse a swanetše gore a hlokomelwe go šireletša bophelo bja tswalano ya diphedi le tikologo ya tšona le potego ya tswalano ya diphedi le tikologo ya tšona ya sisteme.	Go swara mohlaga	≤ 20 milliSiemens/mitara (mS/m) (95 th persente)		
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e hlokomelwe legorong la B/C la tswalano ya diphedi le tikologo ya tšona.	Intekse ya potego ya madulo, mkgwa wa tihahlobo ya madulo a kokešego le mkgwa (Rapid Habitat Assessment Method and Model	Potego ya Madulo a gare ga Meetse EC= B/C ≥ 78%		

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
								(RHAMIM)	
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe legorong la B/C la tswalano ya diphedi le tikologo ya tšona. Go netefatša gore ga go na tšwetšopele lefelong la kgauswi le meetse.	Intekse ya Potego ya Madulo, Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = B/C ≥ 78%
						Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona. Tlhokomelo ya kelelo ya tlase go akaretša magoro a belosithi ya kelelo le bontši mabapi le mehuta yeo e ithekgilego ka kelelo.	Intekse ya Tlhahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la hlapi = C FRAI ≥ 62% Mohlala wa 7+ wa mehuta go ya ka matsapa a mohlala. Mohlala wa 8 AURA le 2 CTHE ka nako ya matsapa a mohlala
					Payotha	Payotha ya gare ga meetse ya gare	Phihlelo ye ya noka e swanetše gore e hlokomelwe go šoma bjalo ka madulo le tsela ya go huduga ya ditšhaba tša dinonyane tša ka gare ga meetse ka mokgwa wa bolaodi bja maleba bja madulo. Lefelo la kgauswi le meetse leo le šireletsegilego.	Mehuta ya dinonyane tša ka gare ga meetse	Tlhahlobo ya mothalohlahli e swanetše gore e direge go bontšha setšhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphedi yeo e emelago phihlelelong ya noka. Go na le hlokego ya go bea RQO ya nomoro ya bontši bja diphoofo/dinonyane ka motheo wa datha yeo e lego gona goba e kgobokeditšwego.

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphelele le tikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe legorong la C la tswalano ya diphelele le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tihahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = C ≥ 62% SASS ≥ 130 ASPT ≥ 5.5
							Tlhokomelo ya EWR ya dikelelo tša tlase le komelelo: Matlabas go MAT_EWR2 go la A41C NMAR = 32.80x10 ⁶ m ³ Legoro la REC=B/C	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo.	Dikelelo tša komelelo (m ³ /s) Oct 0.153 Nov 0.178 Dec 0.220 Jan 0.280 Feb 0.373 Mar 0.330 Apr 0.265 May 0.208 Jun 0.193 Jul 0.179 Aug 0.168 Sep 0.154
							Tlhokomelo ya dikelelo tša tlase le dikelelo tša komelelo e swanetše gore e amogelwe go thekga tswalano ya diphelele le tikologo ya tšona ya ka gare ga meetse.	Tlhokomelo ya tahlo ya Noka ya Matlabas go la A4H004	0.116 0.077 0.071 0.070 0.065 0.034 0.008
							Phatlalatšo ya ka gare ga meetse ya diphepe e swanetše gore e hlokomelwe go šireletša bophelo bja tswalano ya diphelele le tikologo ya tšona ya ka gare ga meetse.	Othofosfeiti (PO ₄ ⁻) le Naetreti (NO ₃ ⁻) le Naetraete (NO ₂ ⁻) ka Naetretetšong	≤ 0.015 dimililikramo/litara (mg/l) (50 th per sente)
									≤ 0.25 dimililikramo/litara (50 th per sente)

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							tikologo ya tšona ya ka gare ga meetse le potego ya tswalano ya diphedi le tikologo ya tšona ya seseteme.		
					Matswai		Maemo a leswai a ka gare ga meetse a swanetše gore a hlokomelwe go šireletša bophelo bja tswalano ya diphedi le potego ya tswalano ya diphedi le tikologo ya tšona ya seseteme.	Go swara mohlaga	≤ 20 milliSiemens/mitara (mS/m) (95 th persente)
						Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la C la tswalano ya diphedi le tikologo ya tšona go isa legorong la B/C.	Intekse ya potego ya madulo, mokgwa wa tlhahlobo ya madulo a kokešego le mokgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a kgauswi le meetse EC = B/C ≥ 78%
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe legorong la C la tswalano ya diphedi le tikologo ya tšona.	Intekse ya Potego ya Madulo, Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAIEC = C ≥ 62%
					Payooha	Hlapi	Setšhaba sa dihlapu se swanetše gore se kaonafatšwe go tloga legorong la C la tswalano ya diphedi le tikologo ya tšona. Tlhahlobo ya setšhaba sa dihlapu se swanetše gore e dirwe ka ngwaga go	Intekse ya Tlhahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la hlapi = C FRAI ≥ 62%

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							hiokomela kgahlanong le legoro leo le beeditswego la tswalano ya diphedi le tikologo ya tšona.		
						Payotha ya ka gare ga meetse ya gare	Phihlelelo ye ya noka e swanetše gore e hiokomelwe go šoma bjalo ka madulo le tsela ya go huduga ya dišhaba tša dinonyane tša ka gare ga meetse ka mokgwa wa bolaodi bja maleba bja madulo. Tlhokomelo ya lefelo la kgauswi le meetse.	Dinonyane tša ka gare ga meetse/ mehuta ya diphedi ya go bontšha	Tlhahlobo ya mothalohlahli e swanetše gore e direge go bontšha setšhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphedi yeo e emelago phihlelelong ya noka. Go na le hlokego ya go bea RQO ya nomoro ya bontši bja diphoofolo/dinonyane ka motheo wa datha yeo e lego gona goba e kgobokeditšwego.
						Dimakroinbetheporeiti tša ka gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hiokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tlhahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = C ≥ 62% SASS ≥ 140 ASPT ≥ 5.5
							Tlhokomelo ya EWR ya dikelelo tša tiase le komelelo: Matlabas Zyn Kloof go MAT_EWR1 go la A41A	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo.	Dikelelo tša komelelo (m³/s) Oct 0.053 Nov 0.057
		Headwaters Mothlabatsi (Matlabas-Zyn-Kloof, peatlands)	17a_3		Bokae	Dikelelo tša tiase			

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la Tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
		(A41A)					NIMAR = $5.23 \times 10^{-6} \text{m}^3$ Legoro la REC=A Tlhokomelo ya dikelelo tša tlase le dikelelo tša komelelo e swanetše gore e amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Tlhokomelo ya Matlabas Zyn Kloof ka nako ya dinyakišišo payolotši Dec 0.063 Jan 0.075 Feb 0.094 Mar 0.086 Apr 0.076 May 0.065 Jun 0.065 Jul 0.061 Aug 0.060 Sep 0.056	0.030 0.037 0.041 0.037 0.031 0.030 0.033 0.032 0.031 0.030
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše gore e kaonafatšwe go tloga legorong la B la tswalano ya diphedi le tikologo ya tšona go ša legorong la A.	Intekse ya Potego ya Madulo	Potego ya Madulo a kgauswi le Meetse EC = A ≥ 90%
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe legorong la B la tswalano ya diphedi le tikologo ya tšona	Intekse ya Potego ya Madulo, Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAIEC = B ≥ 82%
					Payotha	Hlapi	Setšhaba sa dihlapu se swanetše gore se hlokomelwe gare ga legoro la B la tswalano ya diphedi le tikologo ya tšona. Tlhokomelo ya kelelo go akaretša magoro a belosithi ya kelelo le bontši mabapi le mehuta yeo e ithekagilego ka kelelo.	Intekse ya Tlhahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya diphedi le tikologo ya tšona la hlapi = B FRAI ≥ 82% Mohlala wa 5+ wa mehuta go ya ka matsapa a mohlala. Mohlala wa 8 wa AURA ka nako ya matsapa a mohlala

Taolana 20: Maikemišetšo a Boleng bja Mothopo a Diyuniti tša Mothopo go DINOKA le MATAMO mabapi le Tlhahlobo yeo e Tseenelelanago ya Yuniti ya Tlhahlobo 17b: MATLABAS / LIMPOPO

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tlhalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo		
17b: MATLABAS	II	Matlabas (A41D, A41C)	17b_1	B/C	Bokae	Dikelelo tša tiase	Tlhokomelo ya EWR ya dikelelo tša tiase le komelelo: Matlabas go MAT_EWR4 go la A41C NMAR = $35.58 \times 10^6 \text{m}^3$ Legoro la REC=B Tlhokomelo ya dikelelo tša tiase le dikelelo tša komelelo e swanetše gore e amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Dikelelo tša motheo Dikelelo tša tlhokomelo le dikelelo tša komelelo. Tlhokomelo ya tahllo ya Noka ya Matlabas ka nako ya dinyakišišo payolotši	Tlhokomelo ya dikelelo tša tiase (m³/s)	Dikelelo tša komelelo (m³/s)	Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
									0.151	0.007	
									0.178	0.016	
									0.225	0.072	
									0.285	0.092	
									0.398	0.100	
									0.339	0.110	
									0.266	0.077	
									0.208	0.066	
									0.192	0.061	
									0.178	0.056	
									0.166	0.034	
									0.151	0.008	
								Othofosfeiti (PO ₄) bjalo ka Fosforase	≤ 0.050 dimilikramo/litara (mg/l) (50 th persente)		
					Boleng	Diphepo	Phatlalatšo ya ka gare ga meetse ya diphepo e swanetše gore e hlokomelwe go hlokomela bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse, le go hlokomela seemo sa tswalano ya diphedi le tikologo ya tšona.	Naetireiti (NO₃⁻) le Naetraete (NO₂⁻) bjalo ka Naetrotsene	≤ 0.07 dimilikramo/litara (50 th persente)		
									≤ 40 milliSiemens/mitara (mS/m) (95 th persente)		
					Matswai		Phatlalatšo ya ka gare ga meetse ya letswai e swanetše gore e hlokomelwe go šireletša seemo sa bjale sa tswalano ya diphedi le tikologo ya tšona le	Go swara mohlagaase Salfeti	≤ 20 dimilikramo/litara (50 th persente)		

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							bophelo bja tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.		
							Phapaphapano ya pH e swanetše gore e hlokomelwe ka gare ga ditekanyetšo tšeo di beilwego go thekga tswalano ya diphedi ya ka gare ga meetse le dinyakwa tša mošomiši wa meetse.	Phapaphapano ya pH	6.5 (5 th persente) le 8.5 (95 th persente)
							Tlahlolo ya mothahlahli go bontšha seemo sa bjale sa ka gare ga meetse e a hlokega.	Turbidity	Phapaphapano ya 10% ya thatlatšo ya setlolo e dumeletšwe.
						Ditšhilafatši tša diphapaphapano tša sešeme	Maemo a oketšene yeo e tološitšwego a swanetše gore a amogelwe go thekga tswalano ya diphedi le tikologo ya tšona ya ka gare ga meetse.	Oketšene yeo e tološitšwego	≥ 6 dimililikramo/litara (mg/l)
							Diphatlatšo tša ditšhilafatši ga se tša swanela go hlola kotsi bophelong bja batho le diphedi tša ka gare ga meetse.	Aluminium (Al)	≤ 0.062 dimililikramo/litara (mg/l) (95 th persente)
								Mankanese (Mn)	≤ 0.15 dimililikramo/litara (mg/l) (95 th persente)
								Ayone (Fe)	≤ 0.1 dimililikramo/litara (mg/l) (95 th persente)
								Lead (Pb) ya go tia	≤ 0.0057 dimililikramo/litara (mg/l) (95 th persente)

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
								Khopha (Cu) hard Nikele (Ni) Khopalte (Co) Zink (Zn)	≤ 0.0048 dimililikramo/litara (mg/l) (95th persente) ≤ 0.07 dimililikramo/litara (mg/l) (95th persente) ≤ 0.05 dimililikramo/litara (mg/l) (95th persente) ≤ 0.002 dimililikramo/litara (mg/l) (95th persente)
					Madulo	Ka gare ga meetse	Phapaphapano ya madulo e swanetše legorong la B la tswalano ya diphedi le tikologo ya tšona. Go šireletša potego ya ka gare ga meetse ka go laola dithulano tšeo di theilwego godimo ga mabu. Kgokagano ya Noka ya Limpopo e swanetše gore e hlokomelwe.	Intekse ya potego ya madulo, mkgwa wa tlhahlobo ya madulo a kokešego le mkgwa (Rapid Habitat Assessment Method and Model (RHAMM))	Potego ya Madulo a gare ga meetse EC = B $\geq$ 82%
						Madulo a kgauswi le meetse	Dimela tša kgauswi le meetse di swanetše gore di hlokomelwe legorong la B la tswalano ya diphedi le tikologo ya tšona.	Intekse ya Potego ya Madulo, Intekse ya Tlhahlobo ya Karabo ya Dimela	VEGRAI EC = B $\geq$ 82%
					Payotha	Hlapi	Setšhaba sa dihapi se swanetše gore se hlokomelwe ka gare ga legoro la B la tswalano ya diphedi le tikologo ya tšona. Tlhokomelo ya belosithi ya kelelo le šireletšo ya legoro la bontši mabapi le mehuta yeo e amegago	Intekse ya Tlhahlobo ya Karabo ya Hlapi (Fish Response Assessment Index (FRAI))	Legoro la tswalano ya iphedi le tikologo ya tšona la hlapi = B FRAI $\geq$ 82% Mohlala wa 13+ wa mehuta ka nako ya matsapa a mohlala

IUA	Legoro	Noka	Yuniti ya Mothopo	Legoro la tswalano ya diphedi le tikologo ya tšona	Karolwana	Karolwana ya gare	Tihalošo ya RQO	Sebontšhi	Tekanyetšo ya Dipalo
							ka pela (go amega ka pela mabapi le kelelo: LMOL, BIMB le go kgetha madulo: PCAT. Phihlelo ye ya noka e swanetše gore e hlokomelwe go šoma bjalo ka madulo a dinonyane tša ka gare ga meetse le ditšhaba tša diphedi tša ka gare ga meetse ka mokgwa wa bolaodi bja maleba bja madulo. Tlhokomelo ya lefelo la kgauswi le meetse.	Dinonyane tša ka gare ga meetse/ mehuta ya diphedi ya go bontšha	Tlhahlobo ya mothalohlali e swanetše gore e direge go bontšha setšhaba sa dinonyane tša ka gare ga meetse le mehuta ya diphedi yeo e emelago phihlelong ya noka. Go na le hlokego ya go bea RQO ya nomoro ya bontši bja diphoofolo/dinonyane ka motheo wa datha yeo e lego gona goba e kgobokeditšwego.
						Dimakroinbetheporeiti tša ka gare ga meetse	Kgoboketšo ya dimakroinbetheporeiti e swanetše gore e hlokomelwe ka gare ga legoro la C la tswalano ya diphedi le tikologo ya tšona goba go kaonafatšwa.	Intekse ya Tlhahlobo ya Karabo ya Makroinbetheporeiti, le Mohuta wa 5 wa Sesteme ya go Skora ya Afrika Borwa (Macroinvertebrate Response Assessment Index, and the South African Scoring System Version 5 (SASS5)).	MIRAI EC = C ≥ 62% SASS ≥ 120 ASPT ≥ 5.0

Tafolana 21: Maikemišetšo a Boleng bja Mothopo a DIHLOPHA TŠE BOHLOKWA TŠA MIEHLAKA go Diyuniti tša Methopo yeo e kgethilwego go Diyuniti tša Mothopo go Mokolo, Matlabas, Crocodile (West) le Marico WMA

Diyuniti tšeo di tsenelelanago tša Tlhahlobo	RU	Monola/Lefelo	Kokwane yebohlokwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
1: UPPER CROCODILE / HENNOPS / HARTEBEESSPOORT	1_1	Khomplekse ya Morero Bronkhorstfontein (Morero)	Bokae	Pherimetha ya go koloba ya Pan bjalo ka ge go metarilwe go tloga teskthopong tswalanong le go na ga pula..	Dithulano tša bokae bja meetse di swanetše gore di laolwe e sego go nyatša bohlokwa bja tswalano ya dipheci le tikologo ya tšona bja diseteme tše tša pan. Go ntšha, goba dikeletšo tša matirelo di swanetše gore di lekanyetšwe go dipan gore bontši le nako ya lefula di hlokomelwe ka gare ga phapano ya mengwaga ya go na ga pula ya godimo, bogare le tiase.	Go kopantšha mmepe wa motheo wa teskthopo ya maleba mabapi le diseteme pele go ka thomišwa tlhokomelo go šomišwa seswantšho sa kgopolo sa bjale le go bontšha pherimetha yeo e kolobilego tswalanong le go na ga pula ka nako mabapi le dipan tšeo di kgethilwego. Go bušetša tše tša ka godimo mengwa ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba ge e le gore go bile le diphetogo tše kgolo tswalanong ka gare ga pherimetha ya go koloba le go na ga pula ka nako go di pans tšeo di kgethilwego.
			Boleng	pH, go swara mohlagase, TDS, Palomoka ya Alkalinitithi bjalo ka CaCO ₃ , Sodiumo, Khalsiamo, Maknesiamo, Salfeti, Ione, Kloraele, Phothasiamo, Maknesiamo, Mankanese, Aluminiamo, Fosforase, Silikha, Floraete, Amonia le Naetraete.	Dithulano tša khwalithi ya meetse disestemeng tša dipan di swanetše gore di lekanyetšwe go netefatša gore khemistri ya meetse le sedimente e dula ka gare ga phapano ya mothaloahlali (phatlalatšo ya anione le khathione tswalanong ya bolumu ya pan) mabapi le mohuta wa pan ye ya khemistri ya meetse.	Mabapi le dipan tšeo di kgethilwego, mohlala wa mengwaga ye 3-5.
			Madulo	Legoro la PES la teskthopo (ka motheo wa lefelo la khwanthithihibi ya gare ka motheo wa nhla ya gare ya bogolo ya diyuniti tša Dipan ka moka khomplekseng ya monola.	Legoro la PES ya ka gare ya motheo wa bontši bja motheo wa lefelo la C/D le swanetše gore le hlokomelwe.	Go dira tlhahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo ga lefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tlhahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesteme.

Diyuniti tšeo di tsenelelanago tša Tlhahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
	1_1 1_2	Khomphlekse ya Monola wa Rietvlei Dibeli tša fase tšeo di fiwe tsela le tšeo di sa fiwago tsela (Channelled and Unchannelled valley bottom (peatland))	Bokae	Go tlatša go go feletšego.	Go tlatša ga sa ruri go a hlokega go hlokomela phiti. Dikelelo di swanetše gore di be ka mokgwa wo o lego gore ga di hlole kotsi sebopegong/tseomofotšing ya sešeme ya monola.	Nako ya tlhahlobo ya madulo e bontšha gore naa sešeme e sa tletše le gore phiti e sa le gona.
				Legoro la PES ya teskthopo (ka motheo wa nhla ya khwanthithethibi ya gare ya monola. Katološo le phatlalatšo ya phiti le dišhaba tša mehuta ya dibjalo tšeo di bopago diphiti monoleng.	Dimela tša monola le tša mofotšhi di swanetše gore di hlokomelwe go šireletša semelo sa sešeme. Dišhaba tša go fapafapana tša mehuta ya dibjalo tša phiti di swanetše gore di hlokomelwe. Legoro la B la PES ya gare ya motheo wa lefelo, le ge e le gore legoro la maleba leo le ka hwetšagalago e le B/C. Phatlalatšo ya phiti le katološo e swanetše gore e seke ya fetoga goba ya oketšega.	Go kopantšha mmepe wa motheo wa teskthopo ya maleba mabapi le diseteme pele go ka thomišwa tlhokomelo go šomišwa seswantšho sa kgopolo sa bjale le go bontšha pherimetha yeo e kolobilego tswalanong le go na ga pula ka nako mabapi le dipan tšeo di kgethiwego.
			Madulo			Go dira tlhahlobo ya PES ya teskthopo le go bontšha nhla ya gare yeo e theilwego godimo ga lefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tlhahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša nhla tša dikokwane tše kgollo. Nako ya tlhahlobo ya madulo e bontšha/go lekanyetša ge aba katološo ya phiti ka gare ga sešeme e fetogile. Go lekanyetša mehuta ya dibjalo tšeo di bopago phiti. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sešeme.
	1_3	Glen Austin Pan (Depression / Pan)	Bokae	Dipherimetha tša go koloba tša Pan go foga mmepeng wa teskthopo tswalanong ya go na ga pula ka nako.	Dithulano tša bokae bja meetse di swanetše gore di laolwe e sego go nyatša bohlokwa bja tswalano ya dipheci le tikologo ya tšona bja diseteme tše tša pan. Go nšha, goba dikeletšo tša matirelo di swanetše gore di lekanyetšwe go dipan gore	Go kopantšha mmepe wa motheo wa teskthopo ya maleba mabapi le diseteme pele go ka thomišwa tlhokomelo go šomišwa seswantšho sa kgopolo sa bjale le go bontšha pherimetha yeo e kolobilego tswalanong le go na ga pula ka nako mabapi le dipan tšeo di kgethiwego.
						Go bušetša tše tša ka godimo mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go

Diyuniti tšeo di tsenelelanago tša Tliahlobo	RU	Monolia/Lefelo	Kokwane yebohlakwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
					bontši le nako ya lefula di hlokomelwe ka gare ga phapano ya mengwaga ya go na ga pula ya godimo, bogare le tšase.	hlahloba ge e le gore go bile le diphetogo tše kgolo tswalanong gare ga pherimetha ya go koloba le go na ga pula ka nako go dipan tšeo di kgethiwego.
				pH, go swara mohlagaase, TDS, Palomoka ya Alkalinitiyi, bjalo ka CaCO ₃ , Sodiamo, Khalsiamo, Maknesiamo, Salfeti, Ayone, Tloraete, Phothasiamo, Maknesiamo, Mankanese, Aluminiamo, Fosforase, Silikha, Floraete, Amonia le Naetraete.	Dithulano tša khwalithi ya meetse disestemeng tša dipan di swanetše gore di lekanyetšwe go netefatša gore khemistri ya meetse le sedimente e dula ka gare ga phapano ya mothalohlali (phatlalatsi ya anione le khathione tswalanong ya bolumu ya pan) mabapi le mohuta wa pan ya khemistri ya meetse	Mohlala wa mengwaga ye 3-5.
				Legoro la PES la teskthopo (ka motheo wa lefelo la khwanthithethibi ya gare ka motheo wa nhla ya gare ya bogolo ya diyuniti tša Pans-lebelela mokgwa wa Kotze, 2016a le 2016b).	Legoro la C/D la PES ya gare ya motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke D.	Go dira tliahlobo ya PES ya teskthopo le go bontšha nhla ya k gare yeo e theilwego godimo galetelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tliahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa seesteme.
			Payooha	Kgodišo ya setšhaba sa Giant Bullfrogs.	Go hlokomela kgodišo ya setšhaba sa Giant Bullfrogs ka gare ga pan.	Go kgonthišetša go tloga direkotong tša go hlokomela le direkoto tša go bona tša di bullfrogs tše kgolo le ditragalo tša kgodišo tšeo di ngwadiwego.
			Bokae	Go tlatša go go feletšego.	Go tlatša ga sa ruri go a hlokega go hlokomela phiti. Dikelelo di swanetše gore di be ka mokgwa wo o lego gore ga di hlole kotsi sebopegong/tseomofološing ya seesteme ya monola.	Go bontšha gore naa seesteme e tletše le gore phiti e sa le gona naa.
	1_4	Colbyn Valley Wetland Dibeli tša fase tšeo di filwego tsela le tšeo di sa fiwago tsela (Channelled				

Diyunithi tšeo di tsenelelanago tša Tihahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
		and Unchannelled valley bottom (peatland)		Legoro la PES ya teskthopo (ka motheo wa nhla ya khwanthithethibi ya gare ya monola. Katološo le phatlalatšo ya phiti le dišhaba tša mehuta ya dibjalo tšeo di bopago diphiti monoleng.	Dimela tša monola le tša mofolotši di swanetše gore di hlokomelwe go šireletša semelo sa sisteme. Dišhaba tša go fapafapana tša mehuta ya dibjalo tša phiti di swanetše gore di hlokomelwe, go akaretša dišhaba tša maleba tša mehuta ya dibjalo yeo e bopago phiti. Legoro la B/C la PES ya ka gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C. Phatlalatšo ya phiti le katološo e swanetše gore e seke ya fetoga goba ya oketšega.	Go kopantšha mmepe wa motheo wa teskthopo ya maleba mabapi le disisteme pele go ka thomišwa tlhokomelo go šomišwa seswantšho sa kgopolo sa bjale le go bontšha/go lekanyetša gore katološo ya phiti le mehuta ya dibjalo tšeo di bopago phiti. Go dira tihahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Nako ya tihahlobo ya madulo e bontšha/go lekanyetša gore naa katološo ya phiti ka gare ga sisteme e fetogile. Go lekanyetša mehuta ya dibjalo tšeo di bopago phiti. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sisteme.
4: HEX / WATERKLOOFSPRUIT / VAALKOP	4_6	Monola wa Waterkloofspruit Dibeli tšeo di sa fiwago (Unchannelled valley bottom)	Bokae	Go tlatša go go feletšego.	Go tlatša ga sa ruri go a hlokega go hlokomela phiti. Dikelelo di swanetše gore di be ka mokgwa wo o lego gore ga di hlole kotsi sebopegong/tseomofolotšing ya sisteme ya monola.	Go bontšha gore naa sisteme e tletše le gore phiti e sa le gona naa.
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya khwanthithethibi ya gare ya monola. Katološo le phatlalatšo ya	Dimela tša monola le tša mofolotši di swanetše gore di hlokomelwe go šireletša semela sa sisteme le phapaphapano ka moka e swanetše gore e hlokomewe	Go kopantšha mmepe wa motheo wa teskthopo ya maleba mabapi le disisteme pele go ka thomišwa tlhokomelo go šomišwa seswantšho sa kgopolo sa bjale le go bontšha/go lekanyetša gore katološo ya phiti le mehuta ya dibjalo tšeo di bopago phiti gare ga sisteme.

Diyuniti tšeo di tsenelelanago tša Tliahlobo	RU	Monolia/Lefelo	Kokwane yebohlakwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
5: ELANDS / VAALKOP	5_1	Khomplekse ya Koster Pan Depressions / Pans	Bokae	phiti le ditšhaba tša mehuta ya dibjalo tšeo di bopago diphiti monoleng	go akaretša ditšhaba tša maleba tša mehuta ya dibjalo tšeo di bopago phiti. Legoro la A la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke A/B. Phatlalatšo ya phiti le katološo e swanetše gore e seke ya fetoga goba ya oketšega.	Go dira tliahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthetša ka go dira tliahlobo ya maleba ya PES ya dipans tšeo di kgethilwego le go tšea diswantšho tša nthla tša dikokwane tše kgolo. Nako ya tliahlobo ya madulo e bontšha/go lekanyetša gore naa katološo ya phiti ka gare ga seseteme e fetogile. Go lekanyetša mehuta ya dibjalo tšeo di bopago phiti. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa seseteme.
				Dipherimetha tša go koloba tša Pan go tloga mmepeng wa teskthopo tswalanong ya go na ga pula ka nako.	Dithulano tša bokae bja meetse di swanetše gore di laolwe e sego go nyatša bohlokwa bja tswalano ya diphedi le tikologo ya tšona bja diseteme tše tša pan. Go ntšha, goba dikelešo tša matirelo di swanetše gore di lekanyetšwe go dipan gore bontši le nako ya lefula di hlokomelwe ka gare ga phapano ya mengwaga ya go na ga pula ya godimo, bogare le tlase. Dithulano tša khwalithi ya meetse disistemeng tša dipan di swanetše gore di lekanyetšwe go netefatša gore khemistri ya meetse le	Go kopantšha mmepe wa motheo wa teskthopo ya maleba mabapi le diseteme pele go ka thomišwa thokomelo go šomišwa seswantšho sa kgopolo sa bjale le go bontšha pherimetha yeo e kolobilego tswalanong le go na ga pula ka nako mabapi le dipan tšeo di kgethilwego. Go bušetša tše tša ka godimo mengwa ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba ge e le gore go bile le diphetogo tše kgolo tswalanong ka gare ga pherimetha ya go koloba le go na ga pula ka nako go dipan tšeo di kgethilwego. Mabapi le dipan tšeo di kgethilwego, mohlala wa mengwaga ye 3-5.

Diyunithi tšeo di tsenelelanago tša Tlhalobolo	RU	Monola/Lefelo	Kokwane yebhlokwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
6a: KLEIN MARICO / KROMELLEMBOOG 8: MALMANIESLOOP	6_1 8_1	Khomplekse ya Monola Buffelshoek Dibeli tša fase tšeo di filwego tsela le tšeo di sa fiwago tsela (Channelled and Unchannelled valley bottom)	Bokae	Phothasiamo, Maknesiamo, Mankanese, Aluminiamo, Fosforase, Silikha, Floraete, Amonia le Naetraete.	sedimente e dula ka gare ga phapano ya mothahlahli (phatlalatšo ya anione le khathione tswalanong ya bolumu ya pan) mabapi le mohuta wa pan ye ya khemistri ya meetse.	Go dira tlhalobolo ya PES ya tesktshopo le go bontšha nhla ya gare yeo e theilwego godimo galetelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tlhalobolo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo.
				Legoro la PES la tesktshopo (ka motheo wa lefelo la khwanthitheithibi ya gare ka motheo wa ntsha ya gare ya bogolo ya diyunithi tša Dipan ka moka khomplekseng ya monola.	Legoro la B/C la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C.	Go bušetša se mengwaga ye 3-5 le go hlaloba le go bega se ka pono ya go hlaloba gore naa go bile le diphetogo seemong sa sisteme.
				Ditšhupetšo tša meetse a tlase ga mabu di a dirišwa (lebelela ditšhupetšo tša meetse a tlase ga mabu RU 6_1 le 8_1).	Kelelo ya motheo yeo e tšwelago pele e swanetše gore e hlakomelwe go netefatša gore sisteme e dula e sa fetoge.	Ditekanyetšo tša nomoro tša meetse a tlase ga mabu di a dirišwa (lebelela ditekanyetšo tša nomoro tša meetse a tlase ga mabu).
				Ditšhupetšo tša kelelo di swanetše gore di bontšhwe.	Di RQO tša meetse a tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a tlase ga mabu).	Go tšea Poloko ya monola ye bohlokwa mabapi le sisteme le go bontšha dinyakwa tša kelelo ya tswalano ya dipheidi le tikologo ya tšona tša monola. Šomiša tše go bea Tekanyetšo ya Dipalo ya karolwana ya bokae bja meetse ya di RQO.
				Ditšhupetšo tša Noka le tša meetse a tlase ga mabu di a dirišwa (lebelela ditšhupetšo tša meetse a tlase ga mabu).	Di RQO tša noka le meetse a tlase ga mabu di a dirišwa (lebelela di RQO tša noka le meetse a tlase ga mabu).	Ditekanyetšo tša nomoro tša noka le meetse a tlase ga mabu di a dirišwa (lebelela ditekanyetšo tša nomoro tša noka le meetse a tlase ga mabu). Tsošološo ya tše ka motheo wa wa dipolelo tša karolwana ya khwalithi ya meetse ya Poloko ya Monola ye bohlokwa. S
6a: KLEIN MARICO / KROMELLEMBOOG 8: MALMANIESLOOP	6_1 8_1	Khomplekse ya Monola Buffelshoek Dibeli tša fase tšeo di filwego tsela le tšeo di sa fiwago tsela (Channelled and Unchannelled valley bottom)	Boleng	Legoro la PES ya tesktshopo (ka motheo wa nhla ya ka gare ka motheo wa lefelo la	Legoro la C la PES ya ka gare la motheo wa lefelo, le ge e le gore kgonagalo ya	Go dira tlhalobolo ya PES ya tesktshopo le go bontšha nhla ya gare yeo e theilwego godimo galetelo mabapi le khomplekse ya monola. Go
				gare ka motheo wa lefelo la		

Diyuniti tšeo di tsenelelanago tša Tlhalobolo	RU	Monola/Lefelo	Kokwane yebhlokwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
	6_1 8_1	Paardenvallei Wetland Complex (Malmaniesloop) Dibeli tšeo di filwego tsela le tšeo di sa fiwago tsela (Channelled and Unchannelled valley bottom)		khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la BAS ke C/D.	kgonthišetša ka go dira tlhalobolo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa seysteme.
			Lefelo la tšhireletšo	Dišhupetšo tša meetse a tiase ka ga mabu di a šomišwa (lebelela dišhupetšo tša meetse a ka tiase ga mabu).	Di RQO tša meetse a ka tiase ga mabu di a dirišwa (lebelela di RQO tša meetse a tiase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tiase ga mabu di a dirišwa.
			Bokae	Dišhupetšo tša meetse a tiase ga mabu di a šomišwa (lebelela dišhupetšo tša meetse a tiase ga mabu). Dišhupetšo tša kelelo ya godimo ga mabu di swanetše gore di bontšhwe.	Kelelo ya motheo yeo e tšwelago pele e swanetše gore e hlokomelwe go nefeletša gore seysteme e dula e sa fetoge. Di RQO tša meetse a ka tiase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tiase ga mabu).	Ditekanyetšo tša nomoro tša meetse a tiase ga mabu di a dirišwa. Go tšea Poloko ya monola ye bohlokwa mabapi le seysteme le go bontšha dinyakwa tša kelelo ya tswalano ya diphelele le tikologo ya tšona tša monola. Šomiša tše go bea Tekanyetšo ya Dipalo ya karoliwana ya bokae bja meetse ya di RQO.
			Boleng	Dišhupetšo tša noka le tša meetse a tiase ga mabu di a dirišwa (lebelela dišhupetšo tša noka le tša meetse a tiase ga mabu).	Di RQO tša noka le meetse a ka tiase ga mabu di a dirišwa (lebelela di RQO tša noka le meetse a tiase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tiase ga mabu di a dirišwa (lebelela dišhupetšo tša nomoro tša meetse a ka tiase ga mabu). Tsošološo ya tše ka motheo wa dipolelo tša karoliwana ya khwalithi ya meetse ya Poloko ya Monola ye bohlokwa.
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya ka gare ka motheo wa lefelo la khwanthithethibi ya ka gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la C/D la PES ya ka gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke D.	Go kopantšha mmepe wa motheo wa teskthopo ya maleba mabapi le disesteme pele go ka thomišwa thokomelo go šomišwa seswantšho sa kgopolo sa bjale le go bontšha pherimetha yeo e kolobilego tswalanong le go na ga pula nako mabapi le dipan tšeo di kgethilwego.

Diyunithi tšeo di tsenelelanago tša Tlhalobolo	RU	Monolia/Lefelo	Kokwane yebohlakwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
						Go dira tlhalobolo ya PES ya tesktshopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tlhalobolo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Nako ya tlhalobolo ya madulo e bontšha/go lekanyetša gore naa katološo ya phiti ka gare ga sisteme e fetogile. Go lekanyetša mehuta ya dibjalo tšeo di bopago phiti. Go bušetša se mengwaga ye 3-5 le go hlaloba le go bega se ka pono ya go hlaloba gore naa go bile le diphetogo seemong sa sisteme.
			Lefelo la tšhireletšo	Ditšhupetšo tša meetse a ka tlase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a ka tlase ga mabu).	Di RQO tša meetse a tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a tlase ga mabu).	Ditekanyetšo tša nomoro tša meetse a tlase ga mabu di a dirišwa.
		Marico Eye Wetland (Kaaloo se Loop)	Bokae	Ditšhupetšo tša meetse a ka tlase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a tlase ga mabu).	Kelelo ya motheo yeo e tšwelago pele e swanetše gore e hlokomelwe go netefatša gore sisteme e dula e sa fetoge.	Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu di a dirišwa.
	7_1	Beli ya fase yeo e fiwego tsela le yeo e sa fiwago tsela (Unchannelled valley bottom (peatland))		Ditšhupetšo tša kelelo ya godimo ga mabu di swanetše gore di bontšhwe.	Di RQO tša meetse a tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a tlase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu di a dirišwa.
7: KALOOG-SE-LOOP			Boleng	Ditšhupetšo tša noka le tša meetse a ka tlase ga mabu di a dirišwa (lebelela ditšhupetšo tša noka le tša	Ditšhupetšo tša noka le tša meetse a ka tlase ga mabu di a dirišwa (lebelela ditšhupetšo tša noka le tša	Ditekanyetšo tša nomoro tša meetse aka tlase ga mabu di a dirišwa (lebelela ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu). Tsošološo ya tše ka motheo wa dipolelo tša

Diyuniti tšeo di tsenelelanago tša Tlhalhlobo	RU	Monolia/Lefelo	Kokwane yebohlokwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
				meetse a ka tlase ga mabu).	meetse a ka tlase ga mabu).	karolwana ya khwalithi ya meetse ya Poloko ya Monola ye bohlokwa.
			Madulo	Legoro la PES la teskthopo (ka motheo wa lefelo la khwanthithethibi ya gare ka motheo wa ntsha ya gare ya bogolo ya diyuniti tša Dipan-lebelela mokgwa wa Kotze, 2016a le 2016b).	Legoro la A/B la PES ya ka gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke B.	Go dira tlhalhlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tlhalhlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Nako ya tlhalhlobo ya madulo e bontšha/go lekanyetša gore naa katoloso ya phiti ka gare ga sešeme e fetogile. Go lekanyetša mehuta ya dibjalo tšeo di bopago phiti. Go bušetša se mengwaga ye 3-5 le go hlaloba le go bega se ka pono ya go hlaloba gore naa go bile le diphetogo seemong sa sešeme.
			Lefelo la tšhireletšo	Ditšhupetšo tša meetse a ka tlase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a ka tlase ga mabu).	DI RQO tša meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tlase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu di a dirišwa.
	7_1	Rietspruit Wetland Beli ya fase yeo e filiwego tsela le yoe e sa fiwago tsela (Channelled and Unchannelled valley bottom)	Bokae	Ditšhupetšo tša meetse a ka tlase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a ka tlase ga mabu).	Kelelo ya motheo yeo e tšwelago pele e swanetše gore e hlokomelwe go nefeletša gore sešeme e dula e sa fetoge. DI RQO tša meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tlase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu di a dirišwa.

Diyuniti tšeo di tsenelelanago tša Tihahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
			Boleng	Dišhupetšo tša noka le tša meetse a ka tiase ga mabu di a dirišwa (lebelela dišhupetšo tša noka le tša meetse a ka tiase ga mabu).	Di RQO tša noka le meetse a ka tiase ga mabu di a dirišwa (lebelela di RQO tša noka le meetse a tiase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tiase ga mabu le noka di a dirišwa.
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya khwanthithethibi ya gare ya monola.	Legoro la PES leo le theilwego godimo ga lefelo la bogolo la C.	Go dira tihahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo ga lefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo.
			Lefelo la tšhireletšo	Dišhupetšo tša meetse a ka tiase ga mabu di a šomišwa (lebelela dišhupetšo tša meetse a ka tiase ga mabu).	Di RQO tša meetse a ka tiase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tiase ga mabu).	Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sefeme.
			Bokae	Dišhupetšo tša meetse a ka tiase ga mabu di a šomišwa (lebelela dišhupetšo tša meetse a ka tiase ga mabu).	Kelelo ya motheo yeo e tšwelago pele e swanetše gore e hlokomelwe go neletša gore sefeme e dula e sa fetoge, le gore kelelo ya meetsee dula e na le kabo ya meetse.	Ditekanyetšo tša nomoro tša meetse a ka tiase ga mabu di a dirišwa.
	7_1	Tufa Waterfall (Tufa)				

Diyuniti tšeo di tselelanago tša Tliahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
8: MALMANIESLOOP	8_1	Malmanieloop Wetland Complex Beli ya fase yeo e filwego tsela le yeo e sa fiwago tsela (Channelled and Unchannelled valley bottom (peatland))	Boleng	pH, go swara mohlagaše, TDS, Palomoka ya Alkalinitithi bjalo ka CaCO ₃ , Sodiamo, Khalsiamo, Maknesiamo, Salfeti, Ayone, Kloraele, Phothasiamo, Maknesiamo, Mankanese, Aluminiamo, Fosforase, Silikha, Floraete, Amonia le Naetraete.	Maemo a letswai ga se a swanela go oketšega. Diphatalatši di swanetše gore di hlokomelwe maemong go go hwetša seemo sa maleba /se se botse sa go ba le khalseamo khaponeiti.	Go swara mohlagaše: ≤ 50 mS/m Mokgwa wa ngwaga wa lebaka le le telele ga se wa swanela go fihlelela persente ya 95 th (55 mS/m). Tlhokomelo ya ga bedi ka ngwaga ya dikarolwana tše kgolo (dimakro elemente).
				Ditšhupetšo tša meetse a tlase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a ka tlase ga mabu).	Di RQO tša meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tlase ga mabu).	Ditekanyetšo tša dinomoro tša meetse a ka tlase ga mabu di a dirišwa.
			Bokae	Ditšhupetšo tša meetse a ka tlase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a ka tlase ga mabu).	Kelelo ya motheo e swanetše gore e hlokomelwe go netafatsa gore seseme e dula e sa fetoge le gore dimela tša kgauswi le meetse ga di fetoge sehleleng ka moka sa selemo, le gore lefelo le dula le tletše ngwaga ka moka. Se ke se nyakwa sa go kgonthišetša dihaetrofaete go fetša modikologo wa tšona wa bophelo le go tšweletša go hlokomela phiti ya ka sesetsemeng. Di RQO tša meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tlase ga mabu).	Ditekanyetšo tša dinomoro tša meetse ka a tlase ga mabu di a dirišwa. Go tšea Poloko ya monola ye bohlokwa mabapi le seseme le go bontšha dinyakwa tša kelelo ya tswalano ya dipheidi le tikologo ya tšona tša monola. Šomiša tše go bea kraetheria ya nomoro ya karolwana ya bokae bja meetse ya di RQO.
			Boleng	Ditšhupetšo tša noka le tša meetse a ka tlase ga mabu di a dirišwa (lebelela ditšhupetšo tša noka le tša meetse a ka tlase ga mabu).	Di RQO tša meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tlase ga mabu le noka).	Ditekanyetšo tša dinomoro tša meetse a ka tlase ga mabu. Tsošološo ya tše ka motheo wa dipolelo tša karolwana ya khwalithi ya meetse ya Poloko ya Monola ye bohlokwa.

Diyuniti tšeo di tsenelelanago tša Tlhahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
				Legoro la PES ya teskthopo (ka motheo wa nhla ya ka gare ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola). Katološo ya kabo ya phiti le ditšhaba tša mehuta ya dibjalo yeo e bopago phiti monoleng.	Dimela tša monola le tšeomofolotši di swanetše gore di hlokomelwe go šireletša semela sa sešeme le phapaphapano ka moka e swanetše gore e hlokomelwe go akaretša ditšhaba tva maleba tša mehuta ya dibjalo tšeo di bopago phiti. Legoro la B la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C. Phatlalatšo ya phiti le katološo e swanetše gore e seke ya fetoga goba ya oketšega.	Go kopantšha mmepe wa motheo wa teskthopo ya maleba mabapi le disesteme pele go ka thomišwa thokomelo go šomišwa seswantšho sa kgopolo sa bjale le go bontšha/go lekanyetša gore katološo ya phiti le mehuta ya dibjalo tšeo di bopago phiti gare ga sešeme. Go dira tlhahlobo ya PES ya teskthopo le go bontšha nthla ya gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tlhahlobo ya maleba ya PES ya di pans tveo di kgethilwego le go tšea diswantšho tša nthla tša dikokwane tše kgolo. Nako ya tlhahlobo ya madulo e bontšha/go lekanyetša gore naa katološo ya phiti gare ga sešeme e fetogile. Go lekanyetša mehuta ya dibjalo tšeo di bopago phiti. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sešeme.
			Madulo		Di RQO tša meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tlase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu di a dirišwa.
			Lefelo la šireletšo	Ditšhupetšo tša meetse a ka tlase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a ka tlase ga mabu).		

Diyunithi tšeo di tšenelelanago tša Tihahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
8: MALMANIESLOOP 9: MOLOPO	8_1 9_2	Khomplekse ya monola wa noka ya Molopo Bei ya fase yeo e fiwago tsela (Channelled and Unchannelled valley bottom (peatland))	Bokae	Ditšhupetšo tša meetse a ka tiase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a ka tiase ga mabu).	Kelelo ya motheo e swanetše gore e hlokomelwe go netefatša gore sešeme e dula e sa fetoge le gore dimela tša kgausi le meetse ga di fetoge sehleleng ka moka sa selemo le gore lefelo le dula le tletše ngwaga ka moka. Se ke se nyakwa sa go kgonthišetša di haeterofaete go fetša modikologo wa tšona wa bophelo le go tšweletša go hlokomela phiti ya seštemeng.	Ditekanyetšo tša nomoro tša meetse a ka tiase ga mabu di a dirišwa.
				Ditšhupetšo tša kelelo ya godimo ga mabu di swanetše gore di bontšhwe.	Go tšea Poloko ya monola ye bohlokwa mabapi le sešeme le go bontšha dinyakwa tša kelelo ya tšwalano ya diphelele le tikologo ya tšona tša monola. Šomiša tše go bea kraetheria ya nomoro ya karolwana ya bokae bja meetse ya di RQO.	Go tšea Poloko ya monola ye bohlokwa.
			Boleng	Ditšhupetšo tša noka le tša meetse a ka tiase ga mabu di a dirišwa (lebelela ditšhupetšo tša noka le tša meetse a ka tiase ga mabu).	Di RQO tša meetse a ka tiase ga mabu le noka di a dirišwa (lebelela di RQO tša meetse a tiase ga mabu le noka).	Ditekanyetšo tša nomoro tša meetse a ka tiase ga mabu. Tsošološo ya tše ka motheo wa dipolelo tša karolwana ya khwalithi ya meetse ya Poloko ya Monola ye bohlokwa.
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya ka gare mabapi le diyunithi ka moka tša khomplekse ya monola).	Dimela tša monola le tša mofoloti di swanetše gore di hlokomelwe go šireletša semela sa sešeme le phapaphapano ka moka e swanetše gore e hlokomewe go akaretša ditšhaba tša maleba tša mehuta ya dibjalo tšeo di bopago phiti.	Go kopantšha mmepe wa motheo wa teskthopo ya maleba mabapi le diseteme pele go ka thomišwa tlhokomelo go šomišwa seswantšho sa kgopolo sa bjale le go bontšha/go lekanyetša gore katološo ya phiti le mehuta ya dibjalo tšeo di bopago phiti ka gare ga sešeme.
				Katološo ya kabo ya phiti le ditšhaba tša mehuta ya dibjalo yeo e bopago phiti monoleng.	Legoro la B la PES ya ka gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C/D.	Go dira tihahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo ga lefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo.
						Nako ya tihahlobo ya madulo e bontšha/go lekanyetša gore naa katološo ya phiti ka gare ga sešeme e fetogile. Go lekanyetša mehuta ya dibjalo tšeo di bopago phiti.

Diyuniti tšeo di tsenelelanago tša Tliahlobo	RU	Monola/Lefelo	Kokwane yebohllokwa	Go bontšha	Tliahlošo ya RQO	Tekanyetšo ya Dipalo
8: MALMANIESLOOP	8_1	Monola wa Vergenoegd Beli ya fase yeo e filwego tsela le yeo e sa fiwago tsela (Channelled and Unchannelled valley bottom)				Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa seseteme.
			Lefelo la tšhireletšo	Dišhupetšo tša meetse a ka tlase ga mabu di a šomišwa (lebelela dišhupetšo tša meetse a ka tlase ga mabu).	Di RQO tša meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tlase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu di a dirišwa.
			Bokae	Dišhupetšo tša meetse a ka tlase ga mabu di a šomišwa (lebelela dišhupetšo tša meetse a ka tlase ga mabu). Dišhupetšo tša kelelo ya godimo ga mabu di swanetše gore di bontšhwe.	Kelelo ya motheo yeo e tšwelago pele e swanetše gore e hlokomelwe go nefeitša gore seseteme e dula e sa fetoge. Di RQO tša meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tlase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu di a dirišwa. Go tšea Poloko ya monola ye bohlokwa mabapi le seseteme le go bontšha dinyakwa tša kelelo ya tswalano ya diphegi le tikologo ya tšona tša monola. Šomiša tše go bea kraetheria ya nomoro ya karoliwana ya bokae bja meetse ya di RQO
			Boleng	Dišhupetšo tša noka le tša meetse a ka tlase ga mabu di a dirišwa (lebelela dišhupetšo tša noka le tša meetse a ka tlase ga mabu).	Di RQO tša noka le meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša noka le meetse a ka tlase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu. Tsošološo ya tše ka motheo wa dipolelo tša karoliwana ya khwalithi ya meetse ya Poloko ya Monola ye bohlokwa.
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la B/C la PES ya ka gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C.	Go dira tliahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo ga lefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tliahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa seseteme.

Diyunithi tšeo di tšenelelanago tša Tlhalobho	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
9: MOLOPO	9_2	Khomplekse ya monola ya Noka ya Middle Molopo Channelled valley bottom	Lefelo la tšhireletšo	Ditšhupetšo tša meetse a tiase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a ka tiase ga mabu).	Di RQO tša meetse a ka tiase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tiase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tiase ga mabu di a dirišwa.
			Bokae	Ditšhupetšo tša meetse a ka tiase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a tiase ga mabu). Ditšhupetšo tša kelelo ya godimo ga mabu di swanetše gore di bontšhwe.	Kelelo ya motheo yeo e tšwelago pele e swanetše gore e hlokomelwe go netefatša gore sefeme e dula e sa fetoge. Di RQO tša meetse a ka tiase ga mabu di a dirišwa (lebelela di RQO tša meetse a tiase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tiase ga mabu di a dirišwa. Go tšea Poloko ya Monola ye bohlokwa yeo e kgokaganego le Monola wo tee wa Noka ya Molopo le go bontšha dinyakwa tša kelelo ya tswalano ya diphelele le tikologo ya tšona tša monola.
			Boleng	Ditšhupetšo tša noka le tša meetse a ka tiase ga mabu di a dirišwa (lebelela ditšhupetšo tša noka le tša meetse a ka tiase ga mabu).	Di RQO tša noka le meetse a ka tiase ga mabu di a dirišwa (lebelela di RQO tša noka le meetse a tiase ga mabu).	Ditekanyetšo tša nomoro tša noka le meetse a ka tiase ga mabu di a dirišwa (lebelela dithekanyetšo tša nomoro tša noka le meetse a ka tiase ga mabu). Tsošološo ya tše ka motheo wa dipolelo tša karolwana ya khwalithi ya meetse ya Poloko ya Monola ye bohlokwa.
			Madulo	Legoro la PES la teskthopo (ka motheo wa lefelo la khwanthithethibi ya gare ka motheo wa nhla ya ka gare ya bogolo ya diyuniti tša Pans-lebelela mokgwa wa Kotze, 2016a le 2016b). Katološo ya kabo ya phiti le ditšhaba tša mehuta ya dibjalo yeo e bopago phiti monoleng.	Dimela tša monola le tša mofoloti di swanetše gore di hlokomelwe go sireletša semela sa sefeme le phapaphapano ka moka e swanetše gore e hlokomelwe go akaretša ditšhaba tša maleba tša mehuta ya dibjalo tšeo di bopago phiti. Legoro la PES ya C/D le godimo ga motheo wa magareng le ge ele gore motheo wa BAS o ka ba go D.	Go kopantšha mmepe wa motheo wa teskthopo ya maleba mabapi le disefeme pele go ka thomišwa tlhokomelo go šomišwa seswantšho sa kgopolo sa bjale le go bontšha/go lekanyetša gore katološo ya phiti le mehuta ya dibjalo tšeo di bopago phiti gare ga sefeme. Go dira tlhalobho ya PES ya teskthopo le go bontšha nhla ya gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tlhalobho ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Nako ya tlhalobho ya madulo e bontšha/go

Diyuniti tšeo di tsenelelanago tša Tihahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
10: DINOKANA EYE / NGOTWANE DAM	9_3 9_5	Khomplekse ya Monola wa Noka ya Tlase ya Molopo River Beli ya fase yeo e filwego tsela (Channelled valley bottom)	Madulo	Legoro la PES ya tesktshopo (ka motheo wa nthla ya gare ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la PES la D ka motheo wa godimo ga lefelo ka bogolo bja gare.	lekanyetša gore naa katološo ya phiti ka gare ga sešeme e fetogile. Go lekanyetša mehuta ya dibjalo tšeo di bopago phiti. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sešeme.
						Go dira tihahlobo ya PES ya tesktshopo le go bontšha nthla ya gare yeo e theilwego godimo ga lefelo mabapi le khomplekse ya monola. Go kgonthšetša ka go dira tihahlobo ya maleba ya PES ya di pans tveo di kgethilwego le go tšea diswantšho tša nthla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sešeme.
						Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu di a dirišwa. Go tšea Poloko ya monola ye bohlokwa mabapi le sešeme le go bontšha dinyakwa tša kelelo ya tswalano ya diphelele le tikologo ya tšona tša monola. Šomiša tše go bea Tekanyetšo ya Dipalo ya karolwana ya bokae bja meetse ya di RQO
						Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu. Tsošološo ya tše ka motheo wa diphelele tša karolwana ya khwalithi ya meetse ya Poloko ya Monola ye bohlokwa.
	10_1	Monola wa Dinokana Beli ya fase yeo e filwego tsela le yeo e sa fiwago tsela le Hilislope sipheitše ya mo go thapilego (Unchannelled and Channelled valley bottom and Hillslope seepage wetlands)	Bokae	Ditšhupetšo tša meetse a ka tlase ga mabu di a šomišwa (lebelela ditšhupetšo tša meetse a ka tlase ga mabu). Ditšhupetšo tša kelelo ya godimo ga mabu di swanetše gore di bontšhwe.	Kelelo ya motheo yeo e tšwelago pele e swanetše gore e hlokomelwe go nefeletša gore sešeme e dula e sa fetoge. Di RQO tša meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tlase ga mabu).	Go dira tihahlobo ya PES ya tesktshopo le go bontšha nthla ya gare yeo e theilwego

Diyuniti tšeo di tselelanago tša Tlhahlobo	RU	Monola/Lefelo	Kokwane yebohllokwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
	10_1	Monola Ngotwane Beli ya fase yeo e sa fiwago tsela (Unchannelled valley bottom)	Lefelo la tšhireletšo	ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	gore kgonagalo ya Legoro la BAS ke C.	godimo galefelo mabapi le khomphlekse ya monola. Go kgonthišetša ka go dira tlhahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša ntsha tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesteme.
				Dišhupetšo tša meetse a ka tlase ga mabu di a šomišwa (lebelela dišhupetšo tša meetse a ka tlase ga mabu).	Di RQO tša meetse a ka tlase ga mabu di a dirišwa (lebelela di RQO tša meetse a ka tlase ga mabu).	Ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu di a dirišwa (lebelela ditekanyetšo tša nomoro tša meetse a ka tlase ga mabu).
			Madulo	Legoro la PES ya tesktshopo (ka motheo wa ntsha ya gare ka motheo wa lefelo la khwanthithethibi ya khomplekse ya monola).	Legoro la B/C la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C.	Go dira tlhahlobo ya PES ya tesktshopo le go bontšha ntsha ya ka gare yeo e theilwego godimo galefelo mabapi le khomphlekse ya monola. Go kgonthišetša ka go dira tlhahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša ntsha tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesteme

Diyuniti tšeo di tsenelelanago tša Tlhahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
11: GROOT MARICO / SEASONAL TRIBUTARIES	11_b_2	Noka ya fase yeo e Lenkwane Wetland Beli ya fase yeo e sa fiwago tsela yeo e kopantšwego le Floodplain (Unchannelled valley bottom linked to Floodplain)	Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya khomplekse ya monola).	Legoro la PES la B ka motheo wa godimo ga lefelo ka bogolo bja gare.	Go dira tlhahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomphlekse ya monola. Go kgonthšetša ka go dira tlhahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša ntsha tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesteme
12: BIERSPRUIT	12_1	Khomplekse ya Monola wa Kolobeng Beli ya fase yeo e fiwego tsela le Floodplain (Channelled valley bottom and floodplain)	Bokae Madulo	Katološo le tšwelelo ya lefula tswalanong le go na ga pula letangwaneng. Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya khomplekse ya monola).	Mafula a a hlokega go hlola lefelo la lefula ka go fa mmušo wa go koloba wo o hlokegago go thekga dimela tša leelo la lefula, kudu mabjant a haetrofaethiki ya fakhalthibi, disetše le di difopo tšeo di ithekilego ka lefula mabapi le modikologo wa bophelo bja tšona.	Go šomiša seswanetšho seo se lego gona, go beeletša katološo le bontši bja lefula tswalanong le go na ga pula monoleng. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya ditlhahlobo ge e le gore go na le diphetogo tše dingwe tšeo di lego gona tswalanong ya katološo ya lefula le ditiragalo tša go na ga pula.
13: MAMMATHA	13_3 17_b_1	Noka ya Lower Crocodile	Bokae	Katološo le tšwelelo ya lefula tswalanong le go na ga pula	Mafula a a hlokega go hlola lefelo la lefula ka go fa	Go šomiša seswanetšho seo se lego gona, go beeletša katološo le bontši bja lefula tswalanong

Diyuniti tšeo di tsenelelanago tša Tliahlobo	RU	Monola/Lefelo	Kokwane yebohlokwa	Go bontšha	Tliahlošo ya RQO	Tekanyetšo ya Dipalo
		Lefelo la lefula		letangwaneng.	mmušo wa go koloba woo o hlokegago go thekga dimela tša leelo la lefula, kudu mabjang a haetrofaethiki ya fakhalthibi, disetše le di difopo tšeo di ithekilwego ka lefula mabapi le modikologo wa bophelo bja tšona.	le go na ga pula monoleng. Go bušeletša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya ditliahlobo ge e le gore go na le diphetogo tše dingwe tšeo di lego gona tswalanong ya katološo ya lefula le ditragalo tša go na ga pula.
			Boleng	Ditšhupetšo tša noka di a dirišwa (lebelela ditšhupetšo tša noka).	Di RQO tša Noka di a dirišwa (lebelela di RQO tša noka).	Ditekanyetšo tša nomoro tša Noka di a dirišwa (lebelela ditekanyetšo tša noka).
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya khomplekse ya monola).	Legoro la B/C la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C.	Go dira tliahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthetša ka go dira tliahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša ntsha tša dikokwane tše kgolo. Go bušeletša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya ditliahlobo ge e le gore go na le diphetogo tše dingwe tšeo di lego gona tswalanong ya katološo ya lefula le ditragalo tša go na ga pula.
			Payotha	Tlhokomelo ya lefelo la kgauswi le meetse la go ba le mehuta ya go fapafapana.	Phapaphapano ka moka ya setraktšha le mehuta ka moka ya lefelo la kgauswi le meetse e swanetše gore e hlokomelwe.	Go šomiša tlhokomelo ya tliahlobo yeo e theilwego godimo ga lefelo, setraktšha le phapaphapano ya mehuta ya lefelo la kgauswi le meetse mafelong ao a kgetheflego lefelong la lefula. Go tšea diswantšho tšeo di tiilego tša dikokwane tše kgolo. Go bega se mengwageng ye 3-5.
14: TOLWANE / KULWANE / MORETELE / KLIPVOOR	14_1	Lefelo la lefula la Noka ya Apies	Bokae	Katološo le tšwelelo ya lefula tswalanong le go na ga pula letangwaneng..	Mafula a a hlokega go hlola lefelo la lefula ka go fa mmušo wa go koloba wo o hlokegago go thekga dimela tša leelo la lefula, kudu mabjang a haetrofaethiki ya fakhalthibi, disetše le di difopo tšeo di ithekilwego ka	Go šomiša seswantšho seo se lego gona, go beeletša katološo le bontši bja lefula tswalanong le go na ga pula monoleng. Go bušeletša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya ditliahlobo ge e le gore go na le diphetogo tše dingwe tšeo di lego gona tswalanong ya katološo ya lefula le ditragalo tša go na ga pula.

Diyuniti tšeo di tsenelelanago tša Tlhahlobo	RU	Monola/Lefelo	Kokwane yebhlokwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
	14_1 14_2 14_3 14_4	Lefelo la lefula la Noka ya Moretele			lefula mabapi le modikologo wa bophelo bja tšona.	
			Boleng	Ditšhupetšo tša noka di a dirišwa.	DI RQO tša Noka di a dirišwa.	Ditekanyetšo tša nomoro tša Noka di a dirišwa
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthitheithibi ya khomplekse ya monola).	Legoro la B/C la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C.	Go dira tlhahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthšetša ka go dira tlhahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša nthla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesteme
			Bokae	Katološo le tšwelelo ya lefula tswalanong le go na ga pula letangwaneng.	Mafula a a hlokega go hlola lefelo la lefula ka go fa mmušo wa go koloba woo o hlokegago go thekga dimela tša leelo la lefula, gagolo mabjang a haetrofaethiki ya fakhalithibi, disetše le di difopo tšeo di ithekgilego ka lefula mabapi le modikologo wa bophelo bja tšona.	Go šomiša seswaneišho seo se lego gona, go beeletša katološo le bontši bja lefula tswalanong le go na ga pula monoleng. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya ditlhahlobo ge e le gore go na le diphetogo tše dingwe tšeo di lego gona tswalanong ya katološo ya lefula le ditiragalo tša go na ga pula.
			Boleng	Ditšhupetšo tša noka di a dirišwa.		
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthitheithibi ya khomplekse ya monola).	Legoro la B la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C.	Go dira tlhahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthšetša ka go dira tlhahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša nthla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesteme

Diyuniti tšeo di tselelanago tša Tlhahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
			Payotha	Lebelo la pego la mehuta ya dinonyane tšeo di ithekgilego ka meetse/monola.	Phapaphapano ka moka ya setrakišha le mehuta ka moka ya lefelo la kgauswi le meetse e swanetše gore e hlokomelwe.	Go kgonthišetša go tšwa direkotong tša go tihokomelo le go bontšha goo go ngwadiwego go tšwa go datha yeo e lego gona ya pego ya avifanuale. Go bušetša se mengwaga ye 3-5.
			Bokae	Katološo le tšwelelo ya lefula tswalanong le go na ga pula letangwaneng.	Mafula a a hlokega go hloia lefelo la lefula ka go fa mmušo wa go koloba wo o hlokegago go thekga dimela tša leelo la lefula, kudu mabjang a haetrofaethiki ya fakhaithibi, disetše le di difopo tšeo di ithekgilego ka lefula mabapi le modikologo wa bophelo bja tšona.	Go šomiša seswanetšho seo se lego gona, go beeletša katološo le bontši bja lefula tswalanong le go na ga pula monoleng. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya dithahlobo ge e le gore go na le diphego tše dingwe tšeo di lego gona tswalanong ya katološo ya lefula le ditiragalo tša go na ga pula.
	14_3	Plat Floodplain River	Boleng	Dišhupetšo tša noka di a dirišwa	Di RQO tša Noka di a dirišwa.	Ditekanyetšo tša nomoro tša Noka di a dirišwa
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithithibi ya khomplekse ya monola).	Legoro la B/C la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C.	Go dira tlhahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tlhahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša ntsha tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphego seemong sa sešeme
	14_4	Pan ya Tswaing Crator	Madulo	Lebelo la pego la mehuta ya dinonyane tšeo di ithekgilego ka meetse/monola.	Phapaphapano ka moka ya setrakišha le mehuta ka moka ya lefelo la kgauswi le meetse e swanetše gore e hlokomelwe.	Go kgonthišetša go tšwa direkotong tša go tihokomelo le go bontšha goo go ngwadiwego go tšwa go datha yeo e lego gona ya pego ya avifanual. Go bušetša se mengwaga ye 3-5. Go tšea tlhahlobo ya PES ya teskthopo le go bontšha nhla ye kgolo yeo e theilwego godimo

Diyuniti tšeo di tsenelelanago tša Tliahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
		Depression / Pan		ka motheo wa lefelo la khwanthithethibi ya khomplekse ya monola).	gore kgonagalo ya Legoro la BAS ke B.	ga lefelo ya monola. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sešeme
15: UPPER MOKOLO	15_1	Khomplekse ya Monola wa Noka ya Upper Mokolo Beli ya fase yeo e fiwago tsela le yeo e sa fiwago tsela le Hillslope le seepheitše le mo go nago le monola (Channelled and Unchannelled valley bottom and Hillslope seepage wetlands)	Madulo	Legoro la PES ya tesktshopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la C la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C/D.	Go dira tliahlobo ya PES ya tesktshopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomphleke ya monola. Go kgonthišetša ka go dira tliahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sešeme
		Khomplekse ya Monola wa Noka ya Klein Sand Beli ya fase yeo e fiwago tsela le yeo e sa fiwago tsela le Hillslope le seepheitše le mo go nago le monola (Channelled and Unchannelled valley bottom and Hillslope seepage wetlands)	Payotha	Go ba gona goo go tšwelago pele ga di Blue Cranes ka gare ga dipenthads (disekwere tša diminete tše 5x5- yuniti ya go mepa yeo e šomišitšwego go SABAP2) go akaretša menola.	Go ba gona goo go tšwelago pele ga di Blue Cranes go swanetše gore go hlokomelwe.	Ka go šomiša datha yeo e tšweleditšego ke Projeke ya Atlas ya Dinonyane ya Afrika Borwa ya 2 (South African Bird Atlas Project 2, SABAP2), go ba gona ga di Blue Cranes ka gare ga dipenthads go swanetše gore go kgothaletšwe ka go netafata gore lebelo la go bega la godimo go fetiša 5% le a hlokomelwa mabapi le dipenthads tšeo di amegago (2425_2800 le 2425_2805).
	15_1	Khomplekse ya Monola wa Noka ya Klein Sand Beli ya fase yeo e fiwago tsela le yeo e sa fiwago tsela le Hillslope le seepheitše le mo go nago le monola (Channelled and Unchannelled valley bottom and Hillslope seepage wetlands)	Madulo	Legoro la PES ya tesktshopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya khomplekse ya monola).	Legoro la PES la C ka motheo wa godimo ga lefelo ka bogolo bja gare.	Go dira tliahlobo ya PES ya tesktshopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomphleke ya monola. Go kgonthišetša ka go dira tliahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sešeme

Diyunithi tšeo di tšenelelanago tša Tihahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
		bottom and Hillslope seepage wetlands)	Payotha	Go ba gona goo go tšwelago pele ga di Blue Cranes ka gare ga diphenhads (disekwere tša diminete tše 5x5- yuniti ya go mepa yeo e šomišitšwego go SABAP2) go akaretša menola.	Go ba gona goo go tšwelago pele ga di Blue Cranes go swanetše gore go hlokomelwe.	Ka go šomiša datha yeo e tšweledišego ke Projeke ya Atlas ya Dinonyane ya Afrika Borwa ya 2 (South African Bird Atlas Project 2, SABAP2), go ba gona ga di Blue Cranes ka gare ga diphenhads go swanetše gore go kgothalešwe ka go netafaša gore lebelo la go bega la godimo go fetiša 5% le a hlokomelwa mabapi le diphenhads tšeo di amegago (2425_2800 le 2425_2805).
	15_2	Khomplekse ya Monola wa Noka ya Frikkiesloot Beli ya fase yoe e fiwago tsela le yeo e sa fiwago tsela (Channelled and Unchannelled valley bottom)	Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la B/C la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C.	Go dira tihahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo ga lefelo mabapi le khomphlekse ya monola. Go kgonthišetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nthla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesteme
	15_2	Khomplekse ya Monola wa Groofonteinspruit Beli ya fase yeo e fiwago tsela le yeo e sa fiwago tsela le Hillslope le seepheitše le mo go nago le monola (Channelled and Unchannelled valley bottom and Hillslope seepage wetlands)	Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la PES la C ka motheo wa godimo ga lefelo ka bogolo bja gare.	Go dira tihahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo ga lefelo mabapi le khomphlekse ya monola. Go kgonthišetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nthla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesteme
			Payotha	Go ba gona goo go tšwelago pele ga di Blue Cranes ka gare ga diphenhads (disekwere tša diminete tše 5x5- yuniti ya go mepa yeo e šomišitšwego go SABAP2) go akaretša menola.	Go ba gona goo go tšwelago pele ga di Blue Cranes go swanetše gore go hlokomelwe.	Ka go šomiša datha yeo e tšweledišego ke Projeke ya Atlas ya Dinonyane ya Afrika Borwa ya 2 (South African Bird Atlas Project 2, SABAP2), go ba gona ga di Blue Cranes ka

Diyuniti tšeo di tsenelelanago tša Tliahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tliahlošo ya RQO	Tekanyetšo ya Dipalo
	15_5	Khomplekse ya Monola wa Grootspuit Beli ya fase yeo e fiwago tsela le yeo e sa fiwago tsela le Hillslope le seepheitse le mo go nago le monola (Channelled and Unchannelled valley bottom and Hillslope seepage wetlands)	Madulo	5x5- yuniti ya go mepa yeo e šomišitšwego go SABAP2) go akaretša menola		gare ga diphenhads go swanetše gore go kgothaletšwe ka go netefatša gore lebelo la go bega la godimo go fetiša 5% le a hlokomelwa mabapi le diphenhads tšeo di amegago.
				Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthitheithibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la B/C la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C.	Go dira tliahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomphlekse ya monola. Go kgonthišetša ka go dira tliahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesteme
			Payotha	Go ba gona goo go tšwelago pele ga di Blue Cranes ka gare ga diphenhads (disekwere tša diminete tše 5x5- yuniti ya go mepa yeo e šomišitšwego go SABAP2) go akaretša menola	Go ba gona goo go tšwelago pele ga di Blue Cranes go swanetše gore go hlokomelwe.	Ka go šomiša datha yeo e tšweleditšego ke Projeke ya Atlas ya Dinonyane ya Afrika Borwa ya 2 (South African Bird Atlas Project 2, SABAP2), go ba gona ga di Blue Cranes ka gare ga diphenhads go swanetše gore go kgothaletšwe ka go netefatša gore lebelo la go bega la godimo go fetiša 5% le a hlokomelwa mabapi le diphenhads tšeo di amegago (2425_2800 le 2425_2805).
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthitheithibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la C/D la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke D.	Go dira tliahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomphlekse ya monola. Go kgonthišetša ka go dira tliahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesteme
	15_5	Khomplekse ya Monola wa Sandspruit Beli ya fase yeo e fiwago tsela le yeo e sa fiwago tsela le Hillslope le seepheitse le mo go nago le monola (Channelled and Unchannelled valley bottom and Hillslope seepage wetlands)	Payotha	Go ba gona goo go tšwelago pele ga di Blue Cranes ka gare ga diphenhads	Go ba gona goo go tšwelago pele ga di Blue Cranes go swanetše gore go	Ka go šomiša datha yeo e tšweleditšego ke Projeke ya Atlas ya Dinonyane ya Afrika Borwa ya 2 (South African Bird Atlas Project 2, SABAP2), go ba gona ga di Blue Cranes ka gare ga diphenhads go swanetše gore go kgothaletšwe ka go netefatša gore lebelo la go bega la godimo go fetiša 5% le a hlokomelwa mabapi le diphenhads tšeo di amegago (2425_2800 le 2425_2805).

Diyuniti tšeo di tselelanago tša Tihahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
				(disekwere tša diminete tše 5x5- yuniti ya go mepa yeo e šomišitšwego go SABAP2) go akaretša menola	hlokomelwe.	SABAP2), go ba gona ga di Blue Cranes ka gare ga diphentšads go swanetše gore go kgothalešwe ka go netafatsa gore lebelo la go bega la godimo go fetiša 5% le a hlokomelwa mabapi le diphentšads tšeo di amegago (2425_2800 le 2425_2805).
	15_5	Khomplekse ya monola wa Noka ya Sand Beli ya fase yeo e fiwago tsela le yeo e sa fiwago tsela le Hillslope le seepheitše le mo go nago le monola (Channelled and Unchannelled valley bottom and Hillslope seepage wetlands)	Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthitheitibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la C/D la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke D.	Go dira tihahlobo ya PES ya teskthopo le go bontšha nhla ya gare yeo e theilwego godimo galefelo mabapi le khomphlekse ya monola. Go bušeletša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa seseme. Go kgonthšetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo.
			Payotha	Go ba gona goo go tšwelago pele ga di Blue Cranes ka gare ga diphentšads (disekwere tša diminete tše 5x5- yuniti ya go mepa yeo e šomišitšwego go SABAP2) go akaretša menola	Go ba gona goo go tšwelago pele ga di Blue Cranes go swanetše gore go hlokomelwe.	Ka go šomiša datha yeo e tšweleditšego ke Projeke ya Atlas ya Dinonyane ya Afrika Borwa ya 2 (South African Bird Atlas Project 2, SABAP2), go ba gona ga di Blue Cranes ka gare ga diphentšads go swanetše gore go kgothalešwe ka go netafatsa gore lebelo la go bega la godimo go fetiša 5% le a hlokomelwa mabapi le diphentšads tšeo di amegago (2425_2800 le 2425_2805).
	15_5	Khomplekse ya monola wa Noka ya Sand Beli ya fase yeo e fiwago tsela le yeo e sa fiwago tsela le Hillslope le seepheitše le mo go nago le monola (Channelled and Unchannelled valley bottom and Hillslope seepage wetlands)	Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthitheitibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la C la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C/D.	Go dira tihahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomphlekse ya monola. Go kgonthšetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša ntlha tša dikokwane tše kgolo. Go bušeletša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa seseme

Diyunithi tšeo di tsenelelanago tša Tihahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
16: LOWER MOKOLO	16_1 16_5_2	Lefelo la lefula la Noka ya Tambotie	Bokae	Katološo le tšwelelo ya lefula tswalanong le go na ga pula letangwaneng	Mafula a a hlokega go hlola lefelo la lefula ka go fa mmošo wa go koloba woo o hlokegago go thekga dimela tša leelo la lefula, kudu mabjang a haetrofaethiki ya fakhalthibi, disetše le di difopo tšeo di ithekigilego ka lefula mabapi le modikologo wa bophelo bja tšona.	Go šomiša seswanetšho seo se lego gona, go beeletša katološo le bontši bja lefula tswalanong le go na ga pula monoleng.
				Ditšhupetšo tša noka tša RU 16_5_2 le ditšhupetšo tša meetse a tiase ga mabu go ya ka diakhwifaya tša aluviale tša lefelo la lefula tša RU 16_4 le tšona di a dirišwa.	Ditšhupetšo tša noka tša RU 16_5_2 le ditšhupetšo tša meetse a tiase ga mabu go ya ka diakhwifaya tša aluviale tša lefelo la lefula tša RU 16_4 le tšona di a dirišwa.	Go bušeletša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya ditlhahlobo ge e le gore go na le diphetogo tše dingwe tšeo di lego gona tswalanong ya katološo ya lefula le ditragalo tša go na ga pula.
			Boleng	Ditšhupetšo tša noka tša RU 16_5_2 le ditšhupetšo tša meetse a tiase ga mabu go ya ka diakhwifaya tša aluviale tša lefelo la lefula tša RU 16_4 le tšona di a dirišwa.	Ditšhupetšo tša di RQO tša Noka tša RU 16_5_2 le di RQO tša meetse a tiase ga mabu go ya ka diakhwifaya tša aluviale tša RU 16_4 di a dirišwa.	Ditšhupetšo tša noka tša RU 16_5_2 le ditšhupetšo tša meetse a tiase ga mabu go ya ka diakhwifaya tša aluviale tša lefelo la lefula tša RU 16_4 le tšona di a dirišwa.
			Madulo	Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la A/B la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke B/C.	Go dira tlhahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo ga lefelo mabapi le khomphleke ya monola. Go kgonthišetša ka go dira tlhahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo.
			Payotha	Lebelo la pego la mehuta ya dinonyane tša datha ye khubedu tšeo di ithekigilego ka Monola/meetse.	Phapaphapano ka botlalo le ditšhaba tša mehuta ya dinonyane tša datha ye khubedu tšeo di ithekigilego ka lefelo la lefula e swanetše	Go bušeletša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sešeme
				Tlhokomelo ya lefelo la	Go kgonthišetša go tšwa direkoting tša tlhokomelo le dipolelo tša direkoto go tšwa diponong tšeo di lego gona tša data ya pego ya avifanual.	Go dira tlhahlobo ya PES ya teskthopo le go

Diyunuti tšeo di tšenelelanago tša Tihahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
	16_3	Monola 2 wa Rietspruit Beli ya fase yeo e sa fiwago tsela le yeo e sa fiwago tsela (Channelled and Unchannelled valley bottom)	Madulo	kgauswi le meetse la mehuta ya go fapafapana.	gore e hlokomelwe. Phapaphapano ka moka ya mehuta e swanetše gore e hlokomelwe.	bontšha nhla ya gare yeo e theilwego godimo galefelo mabapi le khomphlekse ya monola. Go kgonthišetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša ntiha tša dikokwane tše kgolo Go bega se mengwaga ye 3-5.
				Ditšhuoetšo tša noka di a dirišwa.	Di RQO tša noka di a dirišwa.	Ditekanyetšo tša nomoro tša noka di a dirišwa.
				Ditšhuoetšo tša noka di a dirišwa.	Di RQO tša noka di a dirišwa.	Ditekanyetšo tša nomoro tša noka di a dirišwa.
				Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la PES la C ka motheo wa godimo ga lefelo ka bogolo bja gare	Go dira tihahlobo ya PES ya teskthopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomphlekse ya monola. Go kgonthišetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethilwego le go tšea diswantšho tša ntiha tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sesitame
	16_5_2	Lefelo la lefula la Mokolo River Lefelo la lefula, diphešene, meetse a morago le menola ya go nwelela.	Bokae	Katološo le tšwelelo ya lefula tswalanong le go na ga pula letangwaneng	Mafula a a hlokega go hlola lefelo la lefula ka go fa mmošo wa go koloba woo o hlokegago go thekga dimela tša leelo la lefula, kudu mabjang a haetrofaethiki ya fakhalthibi, disetše le di difopo tšeo di ithekigilego ka lefula mabapi le modikologo wa bophelo bja tšona. Lefula le meetse gare ga aquifer ya aluviale le yona e thekga mehlare ya kgauswi le meetse kgauswi le dinthla tša lefelo la lefula.	Go šomiša seswantšho seo se lego gona, go beeletša katološo le bontši bja lefula tswalanong le go na ga pula monoleng. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya dithahlobo ge e le gore go na le diphetogo tše dingwe tšeo di lego gona tswalanong ya katološo ya lefula le ditragalo tša go na ga pula.
				Ditšhuoetšo tša noka tša RU 16_5_2 le ditšhuoetšo tša	Ditšhuoetšo tša di RQO tša Noka tša RU 16_5_2 le di	Ditšhuoetšo tša noka tša RU 16_5_2 le ditšhuoetšo tša meetse a ka tlase ga mabu go

Diyunithi tšeo di tsenelelanago tša Tihahlobo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
17a: MO THL ABA / TSI / MA MPA			Boleng	meetse a ka tlase ga mabu go ya ka diaquifer tša aluviale tša lefelo la lefula tša RU 16_4 le tšona di a dirišwa.	RQO tša meetse a ka tlase ga mabu go ya ka diaquifer tša aluviale tša RU 16_4 di a dirišwa.	ya ka diaquifer tša aluviale tša lefelo la lefula tša RU 16_4 le tšona di a dirišwa.
				Ditšhupetšo tša noka tša RU 16_5_2 le ditšhupetšo tša meetse a ka tlase ga mabu go ya ka diaquifer tša aluviale tša lefelo la lefula tša RU 16_4 le tšona di a dirišwa.	Ditšhupetšo tša di RQO tša Noka tša RU 16_5_2 le di RQO tša meetse a ka tlase ga mabu go ya ka diaquifer tša aluviale tša RU 16_4 di a dirišwa.	Ditšhupetšo tša noka tša RU 16_5_2 le ditšhupetšo tša meetse a tlase ga mabu go ya ka diaquifer tša aluviale tša lefelo la lefula tša RU 16_4 le tšona di a dirišwa.
				Legoro la PES ya teskthopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka tša khomplekse ya monola).	Legoro la B/C la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke C.	Go dira tihahlobo ya PES ya teskthopo le go bontšha nhla ya gare yeo e theilwego godimo ga lefelo mabapi le khomplekse ya monola. Go galefelo mabapi le khomplekse ya monola. Go PES ya di pans tveo di kgethiwego le go tšea diswantšho tša ntlha tša dikokwane tše kgolo. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sešeme
			Payotha	Lebelo la pego la mehuta ya dinyanyane tša datha ye khubedu tšeo di ithekigilego ka Monola/meetse. Tlhokomelo ya lefelo la kgauswi le meetse la mehuta ya go fapafapana.	Phapaphapano ka botlalo le ditšhaba tša mehuta ya dinyanyane tša datha ye khubedu tšeo di ithekigilego ka lefelo la lefula e swanetše gore e hlokomelwe. Phapaphapano ka moka ya mehuta e swanetše gore e hlokomelwe.	Go kgonthišetša go tšwa direkotong tša tlhokomelo le dipolelo tša direkoto go tšwa diponong tšeo di lego gona tša datha ya pego ya avifanuai. Go dira tihahlobo ya PES ya teskthopo le go bontšha nhla ya gare yeo e theilwego godimo ga lefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le go tšea diswantšho tša nhla tša dikokwane tše kgolo. Go bega tše tša ka godimo mengwaga ye 3-5.
				Ditšhupetšo tša meetse a tlase ga mabu go ya ka diaquifer tša aluviale tša lefelo la lefula tša RU 16_4 di a dirišwa.	Ditšhupetšo tša meetse a tlase ga mabu go ya ka diaquifer tša aluviale tša lefelo la lefula tša RU 16_4 di a dirišwa.	Ditekanyetšo tša ditšhupetšo tša meetse a tlase ga mabu go ya ka diaquifer tša aluviale tša lefelo la lefula tša RU 16_4 di a dirišwa.
				Go tšala ga sa ruri.	Go tšala ga sa ruri go a hlokega go hlokomela phiti. Dikelelo di swanetše gore di	Nako ya tihahlobo ya madulo go bontšha gore naa sešeme e sa tšetše le gore phiti e sa le

Diyuniti tšeo di tsenelelanago tša Tihahlobo	RU	Monolia/Lefelo	Kokwane yebhlokwa	Go bontšha	Tihalošo ya RQO	Tekanyetšo ya Dipalo
17b: MATLABAS / LIMPOPO	17_b_1	Lefelo la lefula la Noka ya Lower Matlabas			be ka mokgwa woo o lego gore di ka se hlole kotsi sebopegong/tseomofolotšing ya sisteme ya monola.	gona naa.
			Madulo	Legoro la PES ya tesktshopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya khomplekse ya monola).	A Dimela tša monola le tša mofolotši di swanetše gore di hlokomelwe go šireletša semela sa sisteme le phapaphapano ka moka e swanetše gore e hlokomewe go akaretša ditšhaba tša maleba tša mehuta ya dibjalo tšeo di bopago phiti. Legoro la A la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke A/B.	Go tšea tihahlobo ya PES ya tesktshopo le go bontšha nhla ya ka gare yeo e theilwego godimo ga lefelo mabapi le monola. Go kgonthišetša ka go tšea tihahlobo ya PES ya lefelo ya monola. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sisteme.
			Bokae	Katološo le tšwelelo ya lefula tswalanong le go na ga pula letangwaneng	Mafula a a hlokega go hlola lefelo la lefula ka go fa mmušo wa go koloba woo o hlokegago go thekga dimela tša leelo la lefula, gagolo mabjang a haetrofaethiki ya fakhalithibi, disetše le di difopo tšeo di ithekgilego ka lefula mabapi le modikologo wa bophelo bja tšona. Lefula le meetse ka gare ga akhwifaya ya aluviale le yona e thekga mehlare ya kgauswi le meetse kgauswi le dinhla tša lefelo la lefula.	Go šomiša seswanetšho seo se lego gona, go beeletša katološo le bontši bja lefula tswalanong le go na ga pula monoleng. Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya ditihahlobo ge e le gore go na le diphetogo tše dingwe tšeo di lego gona tswalanong ya katološo ya lefula le ditiragalo tša go na ga pula.
			Boleng	Ditšhupetšo tša noka di a dirišwa.	Di RQO tša noka di ama.	Melawana ya noka ya tekano ya dipalo e a amega.
			Madulo	Legoro la PES ya tesktshopo (ka motheo wa nhla ya gare ka motheo wa lefelo la khwanthithethibi ya gare mabapi le diyuniti ka moka	Legoro la A/B la PES ya gare la motheo wa lefelo, le ge e le gore kgonagalo ya Legoro la BAS ke B.	Go dira tihahlobo ya PES ya tesktshopo le go bontšha nhla ya ka gare yeo e theilwego godimo galefelo mabapi le khomplekse ya monola. Go kgonthišetša ka go dira tihahlobo ya maleba ya PES ya dipan tšeo di kgethiwego le

Diyuniti tšeo di tsenelelanago tša Tlhaloblo	RU	Monola/Lefelo	Kokwane yebohlakwa	Go bontšha	Tlhalošo ya RQO	Tekanyetšo ya Dipalo
				tša khomplekse ya monola).		go tšea diswantšho tša ntšha tša dikokwane tše kgolo.
						Go bušetša se mengwaga ye 3-5 le go hlahloba le go bega se ka pono ya go hlahloba gore naa go bile le diphetogo seemong sa sešeme.
			Payotha	Tlhokomelo ya lefelo la kgauswi le meetse la mehuta ya go fapafapana.	Phapaphapano ka moka ya mehuta e swanetše gore e hlakomelewe.	Go šomiša seswanetšho seo se lego gona, go beeletša katološo le bontši bja lefula tswalanong le go na ga pula monoleng. Go tšea diswantšho tša dikokwane tše kgolo. Go bega se mengwaga ye 3-5.

Tafolana 22: Maikemišetšo a Boleng bja Mothopo a MEETSE A KA TLASE GA MABU diyuniting tšeo di kgethilwego go Diyuniti tšeo di tsenelelanago tša Tlhaloblo 1: UPPER CROCODILE / HENNOPS / HARTEBEEESPPOORT

IUA	Yuniti ya meetse a tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja Mothopo	Go bontšha/ go meta	Numerical Limit
IUA1: Upper Crocodile/Hennops/Hartbeespoort	RU - G1	1_1, 1_2, 1_3, 1_8 and 1_9.	Bokae	Mekgwa ya kelelo ya meetse a ka tlase ga mabu ya dielebeišene tša phisometriki diyuniting tša diakhwifaya ga se ya swanela go bušetšwa morago go tšwa thokong ya kelelong ya hlago mabapi le kgamollo ya selegae (disesteme tša Hennops, Rietvlei le Bloubankspruit).	Bogolo bja maemo a meetse a ka tlase ga mabu (maemo a phisometriki go bontšha mokgwa wa kelelo ka methopo ya meetse a godimo ga mabu). Tlhokomelo ya maemo a meetse ya tatelano ya nako (kgwedi ka kgwedi) kgahlanong le go ntšha le go na ga pula. Go ntšha meetse a ka tlase ga mabu gare ga mafelo ao a beeditšwego go tšwa nokeng/monoleng/ leihlong).	Disesteme tša akhwifaya ya dolomaete: maemo a go itaiša ga se a swanela go ya tlase ga >6 m tlase ga bogolo bja maemo a meetse a ~22 m (1_1 – 1_2), ~20 m (1_3), ~15 m (1_9), le ~34 m (1_8) lefelong la akhwifaya ya dolomaete. Lebelo la maemo a meetse le swanetše gore le be tlase ga 0.75 m/a. Lefelo la go ntšha: le swanetše gore le laolwe ka gare ga rediase ya 1000 m go tšwa mahlong a kelelo. Go ntšha ga ngwaga ga se gwa swanela go fetiša bogare bja 65% bja go ntšha ga ngwaga (i.e. SI of 65%);
				Go ntšha go go swarelelago Mahlong a Grootfontein-Rietvlei le Pretoria. Tekanyetšo ya meetse a ka tlase ga mabu (tsenyo ya diakhwifaya le go ntšha) e hloka gore e hlahlobje mabapi le medikologo ya go koloba le go oma (go kgonthšetša mafelo a	Palo ya di intekse tša kgatelelo (Tšhomišo ya Yuniti ya Akhwifaya ge e arogantšhwa le Tsenyo ya Yuniti ya Akhwifaya) e bontšhwa bjalo ka persente.	

IUA	Yuniti ya meetse a tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja Mothopo	Go bontšha/ go meta	Numerical Limit
				meetse a tlase ga mabu ka dinako tša komelelo).		
				Khwalithi ya metse ya akhwifaya e hlokometšwe go thekga kabo ye botse ya meetse a tšhomišo ya gae.	Diphepo- Naetireiti ($\text{NO}_3\text{-N}$, mg/l). Tlhokomelo ya gabeli ka ngwaga ya tše kgolo tšeo di ralokago karolo (dikokwane tša makro). Matswai – Go swara mohlagaase (TDS, mg/l). Tlhokomelo ya gabeli ka ngwaga ya tše kgolo tšeo di ralokaro karolo (dikokwane tša makro).	Naetireiti: tlase ga 1.0 mg/l. Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela persente ya 50 th (i.e. 0.9 $\text{NO}_3\text{-N}$ mg/l). Go swara mohlagaase ≤ 30 mS/m; Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela persente ya 95 th (i.e. 60 mS/m).
		Boleng		Seemo sa khwalithi ya meetse sa setlogo sestemeng ya akhwifaya ya dolomaete keelong ya tlase go tloga Tweepies Spruit le Bloubank se swanetše gore se hlokomelwe. (Kamego ya bjale ya $\text{EC}=220$ mS/m, $\text{SO}_4=965$ mg/l, le $\text{NO}_3\text{-N}=3.3$ mg/l, dithekanyetšo tše bohlokwa tša gare). Go swara seemo sa khwalithi ya meetse se se botse Mahlong a Dolomaete ya Grootfontein-Rietvlei le Pretoria.	EC, Disalfeiti le dinaetireete (setlogo sa AMD) lefelong la meetse a magolo (Tweepies Spruit) Tlhokomelo ya khwalithi ya meetse ya kgwedi ka kgwedi mothopong (ditahlo tša TCTA WTW).	Tweepiespruit (RU 1.8): Ditshupetšo tša khwalithi ya meetse tša lebaka le le telele: Maemo a EC = 220 mS/m; Phatlalatšo ya $\text{SO}_4 = 200$ mg/l; le Phatlalatšo ya $\text{NO}_3\text{-N} = 3.3$ mg/l.
					EC, pH, SO_4 le $\text{NO}_3\text{-N}$ di šomišitšwego e be le le ditshupetšo tša khwalithi ya meetse.	Lebaka le le telele la tekanyetšo-lebaka le le telele la ga tee ngwageng: EC: 25 mS/m–27 mS/m (95 th persente); SO_4 : <4.5 mg/l–6.4 mg/l SO_4 (95 th persente); $\text{NO}_3\text{-N}$: 0.9 mg/l–1.0 mg/l (95 th persente).
					Phokotšo ya rediase ya khuetšo (r) ka lebaka la go ntšha	Maemo a meetse a lekanyetšitšwe go yuniti ya karolo ya gare ya dolomaete.
					Botelele go tšwa nokeng (L)	Tiragalo e swanetše gore e be >500 m.
					Botelele go tšwa monoleng (L)	Tiragalo e swanetše gore e be >1000 m.
					Botelele go tšwa Leihlong la Dolomaete (L)	Tiragalo e swanetše gore e be >1000 m.
					Tshwarelelo ya mabu (tekanyetšo ya go thala tlase, L, go šireletša meago/ditšela/di infrastraktšha)	Tekanyetšo ya 6 m yuniting ya karolo ya gare, mohlomongwe ge e le gore go dumeletšwe.
			Lefelo la šireletšo	Disesteme tša akhwifaya tša dolomaete (Hennops le Bloubankspruit, Menola ya Rietvlei, Grootfontein-Rietvlei le Mahlo a Pretoria): Dinyakwa tša tšhireletšo ya mothopo wa meetse tše itšego di swanetše gore di be dipeelano tša itihahlobo go WUL.		

Tafolana 23: Maikemišetšo a Boleng bja Mothopo a MEETSE A TLASE GA MABU diyuniting tšeo di kgethilwego go Diyuniti tšeo di tselelanago tša Tlhahlobo 2: MAGALIES

IUA	Yuniti ya Meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng ya Mothopo	Go bontšha/go meta	Tekanyetšo ya Nomoro
MALONEY'S EYE		2_1; 2_3	Bokae	Maloney's Eye – kelelo yeo e tšwelago pele tahleng ya leihlo (meetse a magolo a sesterne ya Noka ya Magalies).	Maemo a meetse a ka tlase ga mabu (melete ya meetse) letangwaneng la leihlo, i.e. bogolo bja maemo a meetse a tlase ga mabu go itloga mabung;	Maemo a go tšala ga akhwifaya ya dolomaete ga se a swanela go theogela tlase go fetiša 6 m tlase ga bontši bja maemo a meetse bja ~65 m lefelong la letangwana la Maloney's eye;
					Dibolumu tša kelelo go Maloney's Eye (ge di bapatšwa le go na ga pula, mekgwa ya maemo a meetse le go ntšha letangwaneng la leihlo (i.e. Karolong ya Steenkoppies); Go ntšha meetse a ka tlase ga mabu gare ga mafelo a tšhireletšo ao a beeditšwego go Maloney's Eye (meetseng a molete le kelelo ya tlase go ya ka lenaneo la tlhokomelo).	Bolumu ya kelelo go Maloney's Eye ga se ya swanela go ba tlase ga ~4 Mm ³ /a (i.e. puno ya pele ga 1974 ya lebaka le le telele go tloga ka ngwaga wa 1908-1973).
	RU - G2		Boleng	Tekanyetšo ya meetse a tlase ga mabu (tsenyo ya akhwifaya le go ntšha ga go nošetša).	Go ntšha meetse a ka tlase ga mabu gare ga mafelo a tšhireletšo ao a beeditšwego go Maloney's Eye (meetseng a molete le kelelo ya tlase go ya ka lenaneo la tlhokomelo).	Lefelo la go ntšha: le tla laolwa le kelelo leihlong ka rediase ya 1000 m go tšwa lefelong la molete.
				Ditekanyetšo tša Naetretiti lefelong la go tsenya di swanetše gore di hlokomelwe go thekga bašomiši ba meetse a magaeng.	Diphepo – Naetretiti (NO ³ -N, mg/l). Tlhokomelo ya ga bedi ka ngwaga.	Tekanyetšo ya tekanyetšo ya SI (<=65%); le bogolo bja kgato ya kelelo lefelong la tahllo (leihlong): <- 0.50 m/a) gare ga ditragalo tša tahllo ya ngwaga.
				Kgonthišetšo ya seemo sa khwalithi ya meetse Leihlong la Maloney le Noka ya Lower Magalies.	Disafeti (AMD ya setlogo) lefelong la meetse a magolo go la Randfontein Spruit le Bloubaank Spruit ka kgokagano yeo e ka kgonegago gare ga moliwane wa A21D le A21F (Fractured Tarlton dyke).	Naetretiti: tlase ga: 0.5 mg/l. Mokgwa wa ngwaga wa lebaka le le telele ga se wa swanela go fihla persente ya 95 th (0.5 mg/l)
				Maemo a matswai ga se a swanela go oketšega. Diphatlatšo di swanetše gore di hlokomelwe maamong go kgonthišetša seemo se se botse sa khwalithi ya meetse.	Leiswai – Go swara mohlagaase (TDS), mg/l. Tlhokomelo ya ga bedi ka ngwaga ya dikarolwana tše kgolo (dikokwane tša makro).	SO ₄ : tlase ga 5 mg/l. Mokgwa wa ngwaga wa lebaka le le telele ga se wa swanela go fihla persente ya 95 th (7.5 mg/l)
						Go swara mohlagaase ≤26 mS/m; Mokgwa wa ngwaga wa lebaka le le telele ga se wa swanela go fihla persente ya 95 th (30 mS/m)
			Lefelo la tšhireletšo	Mafelo a tšhireletšo a moliwane a tla tlišwa, i.e. botselele ka gare	Lebaka la Phokotšo ya Noka	Tekanyetšo ya <=5% ya mothopo wa meetse wa mnola/godimo ga mabu

IUA	Yuniti ya Meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng ya Mothopo	Go bontšha/go meta	Tekanyetšo ya Nomoro
				ga tiragalo le leihlo/molete. Kudu mabapi le disesteme tša akhwifaya ya dolomaete (Maloney's Eye le kelelo ya tlase ya Noka).	Botelele go tšwa nokeng (L).	Tiragalo yeo e laolwago ge <500 m go tšwa kgamollong ya kelelo ya tlase
					Botelele go tšwa Leihlong la Dolomaete (L).	Tiragalo yeo e laolwago ge <1000 m go tšwa kgamollong ya kelelo ya tlase.
					Botelele go tloga monoleng (L).	Tiragalo yeo e laolwago ge e le gore <1000 m go tloga kgamollong ya kelelo ya tlase.
					Go ba gabotse ga mabu (DCU tekanyetšo ya tlase, L) (Meago/ditsela/di infrastraktiša).	Ka tekanyetšo ya yuniti ya karolwana ya ka gare ya 6 m, mohlomongwe ge e le gore go dumeletšwe ka mokgwa wo mongwe.

Tafolana 24: Maikemišetšo a Boleng bja Mothopo a MEETSE A TLASE GA MABU diyuniting tšeo di kgethilwego go Diyuniti tšeo di tsenelelanago tša Tlhahlobo 3: CROCODILE / ROODEKOPJES

IUA	Yuniti ya meetse a tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja Mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
IUA3: (Upper) Noka ya Crocodile (Alluvial Aquifers)	RU – G3 Karolo ya Noka ya Aluviale	3_1 le 3_2	Bokae	Tlhokomelo ya maemo a meetse a tatelano ya nako (L) ka gare ga inthakranula ya selegae le akhwifayayo e senyegilego go hloma tirišano ya meetse a noka ya akhwifaya; dithahlobo tša maemo a meetse (seemo sa pizometriki ya segae).	Maemo a meetse- bogolo bja maemo a meetse a ka tlase ga mabu sestemeng ya akhwifaya ya aluviale. Mekgwa ya maemo a meetse a tlase ga mabu; le kradiante ya maemo a meetse a tlase ga mabu gamollong.	Kradiane ya meetse a tlase ga mabu ya pušetšo morago lefelong la 500 m ga se ya dumelelwa. Lebelo la khutšo ya meetse le swanetše gore le be ka tlase ga 1.0 m/a.
				Tekanyetšo ya meetse (phetišetšo ya meetse).	Ditekanyetšo tša meetse tše botse/tše mpe, bolumu (Q); phuhlamo ya kelelo lefelong la kelelo ya tlase.	Ditahlegelo tša meetse a godimo ga mabu seteiseneng sa gauging di swanetše gore di lekane le go ntšha goo go dumeletšwego go tšwa nokeng.
			Boleng	Seemo sa tekanyetšo ya meetse sestemeng ya inthakranula le akhwifaya yeo e senyegilego	Palo ya di intekse tša kgatelelo (Tšhomišo ya Yuniti ya Aquifer/Tsentšho ya Yuniti ya Aquifer) bjalo ka persente.	Tekanyetšo ya bohlokwa bja SI (</=65%).
				Ditekanyetšo tše bohlokwa tša Naetreiti lefelo la go tsentšha di swanetše gore di hlokmelwe go thekga bašomiši ba meetse a ka gae.	Diphepo- Naetreiti (NO ³ -N, mg/l). Tlhokomelo ya ga bedi ngwageng.	Naetreiti: tlase ga 6.0 mg/l; Mokgwa wa lebaka lele e telele ga se wa swanela go finlelela persente ya 95 th .
				Go laola pušetšo morago ya dikelelo tša nošetšo go tšwa sestemeng ya akhwifaya ya aluviale. Maemo a letswai ga se a swanela go	Matswai- go swara mohlagaše Tlhokomelo ya kgwedi ka kgwedi Go hlokomela khwalithi ya dikelelo tša pušetšo morago go tšwa lefelong la	Go swara mohlagaše ≤75 mS/m; (persente ya 95 th)

IUA	Yuniti ya meetse a tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja Mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
				oketšega. Diphatalatši di swanetše gore di hlokomelwe maamong a go hwetša seemo se se botse sa khwalithi ya meetse.	aluviale. SAR ya meetse a aquifer ya aluviale	
			Lefelo la tšhireletšo	Tshireletšo ya sešeme ya inthakranula (aluviale) le akhwifaya yeo e senyegilego ka gare ga dinoka tša Central Crocodile le Rose Spruit go ya ka tirišano ya Sw-Gw	Lebaka la phuhlamo ya noka (go laola botelele ka gare ga mothopo wa meetse a godimo ga mabu le mafelo a botse).	Go fokotša dithulano go iša go <5% ya go ntšha goo go thekgilwego ke methopo ya meetse a godimo ga mabu.
				Ditragalo tša tšhomišo ya mabu tšeo di amago akhwifaya ya inthakranula.	Go bontšha ditragalo ka moka tša tšhomišo ya mabu lefelong la lefelo la lefula le sešeme ya akhwifaya ya inthakranula.	Go fokotša ditragalo go ya ka letšatši la 50 (makropayale) le 365 (go taelutha) ya lefelo la tšhireletšo ya khwalithi ya meetse (L).

Tafolana 25: Maikemišetšo a Boleng bja Mothopo a MEETSE A TLASE GA MABU diyuniting tšeo di kgethilwego go Diyuniti tšeo di tselelanago tša Tlhaloblo 6a: Table 26: KLEIN MARICO / KROMELLEEMBOOG

IUA	Yuniti ya Meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
6a: Klein Marico Eyes	RU – G6	6_1,	Bokae	Mekgwa ya kelelo ya meetse a ka tlase ga mabu go ya ka motheo wa dielebešene tša phizometriki diyuniting tša diakhwifaya ga se ya swanela go bušetšwa morago go tšwa thokong ya kelelo ya yona ya hlago go iša dikgamollong tša selegae (Noka ya Upper Klein, Noka ya Marico, Rhenosterfontein Spruit, le Lower Malmari Loop).	Maemo a meetse- bogolo bja maemo a meetse a ka tlase ga mabu go tloga mabung. Thokomelo ya maemo a meetse a tatelano ya nako (ka kgwedi) kgahlanong le go ntšha le go na ga pula	Disetme tša akhwifaya ya dolomaete: maemo a go tšatša ga se a swanela go ya tlase ga >6 m tlase ga bogolo bja maemo a meetse a ~21 m lefelong la aquifer ya dolomaete. Lebelo la maemo a meetse le swanetše gore le be tlase ga 0.75 m/a.
				Tekanyetšo ya meetse a tlase ga mabu (tseletšo ya aquifer le go ntšha ga go nošetša) e hloka gore e hlalobje mabapi le medikologo ya go koloba le go oma (go kgonthišetša mafelo a meetse a tlase ga mabu ka nako ya komelelo).	Palo ya intekse ya kgatelelo (Tšhomišo ya Yuniti ya Akhwifaya/Tsentšo ya Yuniti ya Akhwifaya) bjalo ka diperesente.	Go ntšha ga ngwaga ga se gwa swanela go fetiša bogare bja 65% bja go ntšha ga ngwaga (i.e. SI ya 65%);
			Boleng	Bohlokwa bja Naetreiti bo swanetše gore bo hlokomelwe go thekga bašomiši ba meetse a ka gae (khwalithi ya maleba-ye botse).	Diphepo- Naetreiti (NO ³ -N, mg/l). Thokomelo ya ga bedi ngwageng.	Naetreiti: tlase ga 0.3 mg/l. Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela persente ya 95 th (1.2 mg/l)

IUA	Yuniti ya Meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
				Floraete- dithulano go bašomišigodimo.	Floraete (F, mg/l)	Floraete: ~0.2 mg/l. Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela peresente ya 50 th (0.2 mg/l).
				Maemo a leswai ga se a swanela go oketšega. Diphatlalatšo di swanetše gore di hlokomelwe maamong go kgonthišetša seemo se se botse sa khwalithi ya meetse.	Matswai – Go swara mohlagaase (TDS), mg/l). Tlhokomelo ya gabedi ka ngwaga ya tše kgolo tšeo di ralokaro karolo (dikokwane tša makro). Phatlalatšo ya Na-Cl go tšwa ditiragalong tša moepo matangwaneng a leihlo la segae	Go swara mohlagaase ≤50 mS/m; Mokgwa wa ngwaga wa lebaka le le telele ga se swa swanela go fihla peresente ya 95 th (60 mS/m)
				Kudu diseteme tša akhwifaya ya dolomaete (leelo la go nošetša); Dinyakwa tše itšego tša tšhireletšo ya mothopo wa meetse di swanetše gore di be dipeelano tša tlhahlobo go WUL;	Matangwana a mmepe (dihethe) a leihlo le go akaretša tekanyetšo ya go ntšha ga kabo ye kgolo ya meetse. Tekanyetšo ya go ntšha ga maemo a meetse yuniting ya karolwana ya dolomaete. Tekanyetšo ya lefelo la go nošetša bogolong bja lefelo (ha's). Botelele go tšwa seitemeng ya noka ya selegae	Thibelo ya go ntšha ka motheo wa tirišo ya mokgwa wa intekse ya kgatelelo. Bogolo bja 6 m (ge e le gore go dumeletšwe ka mokgwa wo mongwe) Tekanyetšo ya 9% ya lefelo la mong (ha's) Tiragalo e swanetše gore e be >500 m.
			Lefelo la tšhireletšo		Botelele go tšwa Leihlong la dolomaete (L)	Tiragalo e swanetše gore e be >1000 m, ge le gore go dumeletšwe ka mokgwa wo mongwe.
					Go ba gabotse ga mabu (DCU ya tekanyetšo ya tlase, L) (Meago/ditela/di infrafraktšha).	Tekanyetšo ya 6 m ya yuniti ya karolwana.

Tafolana 26: Maikemišetšo a Boleng bja Mothopo a MEETSE A TLASE GA MABU diyuniting tšeo di kgethilwego go Diyuniti tšeo di tselelelanago tša Tlhahlobo 7: Tafola 27: KAALOOG-SE-LOOP

IUA	Yuniti ya meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja Mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
Rietsonn Loop, Kaaloo	RU – G6	7_1,	Bokae	Go meta go go tšwelago pele ga kelelo mahlong ao a kgethilwego a dolomaete i.e. Bokkraal Nr 1 ka Noka ya Vanstratensvlei (datha ya kelelo fela go tloga ka 1907 go isa go 1943!).	Mollwane wa lefelo la letangwana la leihlo (mollwane wa borwa woo o sa bonagalego); Maemo a meetse- bogolo bja maemo a meetse a ka tlase ga mabu go tloga	Diseteme tša akhwifaya ya dolomaete: maemo a go tlatša ga se a swanela go ya tlase ga >6 m tlase ga bogolo bja maemo a meetse a ~21 m lefelong la akhwifaya ya dolomaete. Lebelo la maemo a meetse le swanetše gore le be

IUA	Yuniti ya meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja Mothopo	Go bontšha/ go meita	Tekanyetšo ya nomoro
				(Tahlo yengwe ya bohlokwa ya Noka ya Upper Groot Marico ke Rietspruit (ka Noka ya Vanstratensvlei)); (Hlokomela: go na le mahlo a didolomaete a mangwe a mmalwa lefelong, efela ga go na tshedimošo yeo e lego gona, ntle le Rhenosterfontein, yeo e welago gare ga A31D QC).	mabung; Thhokomelo ya maemo a meetse a tatelano ya nako (ka kgwedi) kgahlanong le go ntšha le go na ga pula, le Go ntšha ga meetse a ka tlase ga mabu gare ga lefelo leo le beeditswego go tloga nokeng/monolamo/mothopo)	tlase ga 0.75 m/a. Lefelo la go ntšha: le tla laolwa le kelelo leihlong ka rediase ya 1000 m go tšwa lefelong la molete
				Tekanyetšo ya meetse a tlase ga mabu (tsentšho ya akhwifaya le go ntšha ga go nošetša) e hloka gore e hlalobje mabapi le medikologo ya go koloba le go oma (go kgonthišetša mafelo a meetse a ka tlase ga mabu ka nako ya komelelo).	Palo ya intekse ya kgatelelo (Tšhomišo ya Yuniti ya Akhwifaya/Tsentšho ya Yuniti ya Akhwifaya) bjalo ka diperesente	Go ntšha ga ngwaga ga se gwa swanela go fetiša bogare bja 65% bja go ntšha ga ngwaga (i.e. SI ya 65%);
				Bohlokwa bja Naetreiti bo swanetše gore bo hlokomelwe go thekga bašomiši ba meetse a ka gae (khwailithi ya maleba-ye botse).	Diphepo- Naetreiti (NO ³ -N, mg/l). Thhokomelo ya ga bedi ngwageng.	Naetreiti: tlase ga 0.5 mg/l. Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela peresente ya 75 th (0.5 mg/l)
			Boleng	Floraete- dithulano go bašomiši- maemo a floraete yeo e lego godimo	Floraete (F, mg/l) Fluoride (F, mg/l) Thhokomelo ya ga bedi ngwageng.	Floraete: ~0.1 mg/l. Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela peresente ya 95 th (1.0 mg/l).
				Maemo a letswai ga se a swanela go oketšega. Diphatalatšo di swanetše gore di hlokomelwe maemong go kgonthišetša seemo se se botse sa khwalithi ya meetse.	Matswai – Go swara mohlagase (TDS), mg/l). Thhokomelo ya gabedi ka ngwaga ya tše kgolo tšeo di ralokaro karolo (dikokwane tša makro).	Go swara mohlagase ≤50 mS/m; Mokgwa wa ngwaga wa lebaka le le telele ga se swa swanela go fihla peresente ya 95 th (55 mS/m)
				Mafelo a tšhireletšo a mohlwane a tla fihlwa i.e. botelele go tloga tiragalong le molete/leihlo. Kudu mabapi le diseteme tša aquifer tša dolomaete (Marico Eye's le kelelo ya tlase ya Noka ya Klein Marico).	Matangwana a mmepe (dihethe) a Leihlo le go akaretša tekanyetšo ya go ntšha ga kabo ye kgolo ya meetse. Tekanyetšo ya lefelo la go nošetša bogolong bja lefelo (ha's).	Thibelo ya go ntšha ka motheo wa tirišo ya mokgwa wa intekse ya kgatelelo. Tekanyetšo ya 9% ya lefelo la mong (ha's)
			Lefelo la tšhireletšo		Botelele go tšwa sestemeng ya noka ya selegae Botelele go tšwa Leihlong la dolomaete (L)	Tiragalo e laolwa ge ele gore <500 m go tšwa kgamollong ya kelelo ya tlase Tiragalo e laolwa ge e le gore <1000 m go tšwa kgamollong ya kelelo ya tlase.

IUA	Yuniti ya meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja Mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
					Botelele go tloga monoleng (L).	Tiragalo e laolwa ge e le gore <1000 m go tloga kgamollong ya tlase.
					Tekanyetšo ya maemo a meetse a tlase yuniting ya karolwana ya dolomaete.	Tekanyetšo ya 6 m ya yuniti ya karolwana ya gare.

Tafolana 27: Maikemišetšo a Boleng bja Mothopo a MEETSE A TLASE GA MABU diyuniting tšeo di kgethilwego go Diyuniti tšeo di tselelanago tša Tlhaloblo 8: Tafola 28 MALMANIESLOOP

IUA	Yuniti ya Meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
8: Malmannie Se Loop	RU – G8	8_1	Khwanthithi	Mekgwa ya kelelo ya meetse a ka tlase ga mabu go ya ka motheo wa dielebeišene tša phizometriki diyuniting tša diakhwifaya ga se ya swanela go bušetšwa morago go tšwa thokong ya kelelo ya yona ya hlago go iša dikgamollong tša selegae (Malmannie Eye Se Loop). Mafelo a tahllo (i.e. Malmannie Eye, Malmannie-Noupoort, Doornplaas Eye, Rietpoort Eye le Doornfontein Eye) a swanetše gore a šireletšwe kgahlanong le phuhlamo ya tafola ya meetse).	Maemo a meetse- bogolo bja maemo a meetse a ka tlase ga mabu go tloga mabung. Tlhokomelo ya maemo a meetse a tatelano ya nako (ka kgwedi) kgahlanong le go ntšha le go na ga pula, le Go ntšha ga meetse a ka tlase ga mabu ka gare ga lefelo leo le beeditšwego go tloga nokeng/monola/mothopong)	Diseteme tša akhwifaya ya dolomaete: maemo a go tšatša ga se a swanela go ya tlase ga >6 m tlase ga bogolo bja maemo a meetse a ~21 m lefelong la akhwifaya ya dolomaete. Lebelo la maemo a meetse le swanetše gore le be tlase ga 0.75 m/a. Lefelo la go ntšha: le swanetše gore le hlokomelwe (go 1000 m ya melete ya leihlo).
				Tekanyetšo ya meetse a ka tlase ga mabu (tsentsho ya akhwifaya le go ntšha ga go nošetša) e hloka gore e hlahlobje mabapi le medikologo ya go koloba le go oma (go kgonthišetša mafelo a meetse a ka tlase ga mabu ka nako ya komelelo). Mananeo a maleba a nošetšo a swanetše gore a tšweletšwe le go dirišwa ka dinako ka moka (tumelelano ya 100%). Seemo sa tekanyetšo ya meetse	Go ntšha- bolumu (Q). Tatelano ya nako ya maemo a meetse a pula a seeteme ya akhwifaya. Tekanyetšo ya meetse a ka tlase ga mabu ya ngwaga (tsentsho ya akhwifaya le go ntšha ga nošetšo) e swanetše gore e be ya medikologo ya go koloba le go oma. Palo ya intekse ya kgatelelo (Tšhomišo ya Yuniti ya Akhwifaya/Tsentsho ya Yuniti ya Akhwifaya) bjalo ka diperesente	Go ntšha ga ngwaga ga se gwa swanela go fetiša bogare bja 65% bja go ntšha ga ngwaga (i.e. SI ya 65%);

IUA	Yuniti ya Meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/go meta	Tekanyetšo ya nomoro
				Bohlokwa bja Naetreiti bo swanetše gore bo hlokomelwe go thekga bašomiši ba meetse a ka gae (persente ya 95 th = 18 mg/l).	Diphepo- Naetreiti (NO ³ -N, mg/l). Tlhokomelo ya ga bedi ngwageng.	Naetreiti: tlase ga 1.0 mg/l. Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela persente ya 75 th (3.5 mg/l);
			Bokae	Maemo a letswai ga se a swanela go oketšega. Diphatalatšo di swanetše gore di hlokomelwe maamong go kgonthišetša seemo se se botse sa khwalithi ya meetse.	Matswai – Go swara mohlagaase Tlhokomelo ya kgwedi ka kgwedi tahlolong	Go swara mohlagaase ≤50 mS/m; Mokgwa wa ngwaga wa lebaka le le telele ga se swa swanela go fihla persente ya 95 th (85 mS/m)
				Floraete- dithulano go bašomiši- maemo a floraete yeo e lego godimo	Floraete (F, mg/l) Fluoride (F, mg/l) Tlhokomelo ya ga bedi ngwageng.	Floraete: ~0.1 mg/l. Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela persente ya 95 th (1.0 mg/l).
			Lefelo la tšhireletšo	Disesteme tša akhwifaya ya dolomaete ye e itšego (i.e. Malmari Eye, Malmari-Noupoort, Doornplaas Eye, Rietpoort Eye, le Doornfontein Eye); Dinyakwa tše itšego tša tšhireletšo ya mothopo wa meetse di swanetše gore di be dipeelano tša tlhahlobo go WUL;	Tekanyetšo ya maemo a meetse a tlase yuniting ya karolwana ya dolomaete. Lebaka la Phuhlamo ya Noka	Bogolo bja 6 m (ge e le gore go dumeletšwe ka mokgwa wo mongwe) Tekanyetšo ya <1=5% ya mothopo wa meetse wa monola/godimo ga mabu Tekanyetšo ya 9% ya lefelo la mong (ha's
					Tekanyetšo ya lefelo la go nošetša bogolong bja lefelo (ha's).	Swanetše gore e be >1000 m, ntle le ge e le gore go dumeletšwe mabapi le dikabo tše ntsi tša meetse.

Taolana 28: Maikemišetšo a Boleng bja Mothopo a MEETSE A TLASE GA MABU diyuniting tšeo di kgethilwego go Diyuniti tšeo di tselelelanago tša Tlhahlobo 9: MOLOPO

IUA	Yuniti ya meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/go meta	Tekanyetšo ya nomoro
9: Noka ya Upper Molopo	RU – G9	9_1 le 9_2	Bokae	Mekgwa ya kelelo ya meetse a ka tlase ga mabu go ya ka motheo wa diebešene tša phizometriki diyuniting tša diakhwifaya ga se ya swanela go bušetšwa morago go tšwa thokong ya kelelo ya yona ya hlago go iša dikgamollong tša selegae	Maemo a meetse- bogolo bja maemo a meetse a ka tlase ga mabu go tioga mabung; Tlhokomelo ya maemo a meetse a tatelano ya nako (ka kgwedi) kgahlanong le go ntšha le go na ga pula, le Go ntšha ga meetse a ka tlase ga mabu ga lefelo leo le beeditšwego go	Disesteme tša akhwifaya ya dolomaete: maemo a go tlatša ga se a swanela go ya tlase ga >6 m tlase ga bogolo bja maemo a meetse a ~19 m lefelong la aquifer ya dolomaete. Lebello la maemo a meetse le swanetše gore le be tlase ga 0.75 m/a.

IUA	Yuniti ya meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/go meta	Tekanyetšo ya nomoro
				(i.e. Malapo Eye) e swanetše gore e šireletšwe kgahlanong le phuhlamo ya tafola ya meetse (i.e. tabng ya Grooffontein Eye le Bodibe Eye).	tlaga nokeng/monola/mothopong)	Lefelo la go ntšha: le swanetše gore le hlokomelwe (go 1000 m ya disesteme tša aquifer tša Karst).
				Tekanyetšo ya meetse a ka tlase ga mabu (tsentšho ya akhwifaya le go ntšha ga go nošetša) e hloka gore e hlalobje mabapi le medikologo ya go koloba le go oma (go kgonthišetša mafelo a meetse a ka tlase ga mabu ka nako ya komelelo). Mananeo a maleba a nošetšo a swanetše gore a tšweletšwe le go dirišwa ka dinako ka moka (tumelelano ya 100%). Seemo sa tekanyetšo ya meetse	Go ntšha- bolumu (Q). Tatlano ya nako ya maemo a meetse a pula a sesteme ya akhwifaya. Tekanyetšo ya meetse a tlase ga mabu ya ngwaga (tsentšho ya akhwifaya le go ntšha ga nošetšo) e swanetše gore e be ya medikologo ya go koloba le go oma.	Go ntšha ga ngwaga ga se gwa swanela go fetiša bogare bja 65% bja go ntšha ga ngwaga (i.e. SI ya 65%);
					Palo ya intekse ya kgatelelo (Tšhomišo ya Yuniti ya Akhwifaya/T sentšho ya Yuniti ya Akhwifaya) bjalo ka diperesente	
				Bohloka bja Naetreiti bo swanetše gore bo hlokomelwe go thekga bašomiš ba meetse a ka gae (Methopo ya temo ya Naetreiti)	Diphepo- Naetreiti ($\text{NO}_3\text{-N}$, mg/l). Thokomelo ya ga bedi ngwageng. Thokomelo ya kgwedi ka kgwedi ditešeneng tša DWS tša gauging.	Naetreiti: tlase ga 1.0 mg/l. Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela peresente ya 95 th (3.0 mg/l);
		Boleng		Maemo a letswai ga se a swanela go oketšega. Diphatlalatšo di swanetše gore di hlokomelwe maamong go kgonthišetša seemo se se botse sa khwalithi ya meetse.	Matswai – Go swara mohlaga Thokomelo ya kgwedi ka kgwedi ditešeneng tša DWS tša gauging	Go swara mohlaga se 50 mS/m; Mokgwa wa ngwaga wa lebaka le le telele ga se swa swanela go fihla peresente ya 95 th (80 mS/m)
				Ditšhilafatši ša temo/intasteri mabapi le Molopo, Grooffontein, Itsoseng (Bodibe) Eyes.	Diphatlalatšo tša disalfeti SO_4 Thokomelo ya kgwedi ka kgwedi ya khwalithi ya meetse mafelong a mothopo (Mahlo le mafelo a molete).	SO_4 tlase ga 5.0 mg/l; Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela peresente ya 95 th (30 mg/l);
	Lefelo la tšhireletšo			Tšhireletšo ya diakhwifaya tša inthakranula le diakhwifaya tšeo di senyegilego: Tšhireletšo ya dikarolo tša tlase tša Madibe, Polfontein Spruit le Noka ya Molopo kgahlanong ya tšhilatšo ya intasteri/temo/makropayale.	Botelele go tloga tseleng ya kgamollo: go ka motheo wa nako ya go sepelela ya matšatši a 50 (makropayale) le nako ga go taelutha ya matšatši a 365 (dikarolwana tšeo di sego tša okaniki). Botelele go tloga lefelong la tahllo la mahlo a dolomaete: ka motheo wa nako	<1000 m ya tšhireletšo ya lefelo (diakhwifaya tša DLMT) <500 m ya tšhireletšo ya lefelo (diakhwifaya tša letlapa la go tia) <1000 m ya šhireletšo ya lefelo (di aquifer tša letlapa la go tia)

IUA	Yuniti ya meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/go meta	Tekanyetšo ya nomoro
					ya go sepela ya matšatši a 50 (makropayale) le nako ya go taelutha ya matšatši a 365 (dikarolwana tšao di sego tša okaniki).	

Taolana 29: Maikemišetšo a Boleng bja Mothopo a MEETSE A TLASE GA MABU diyuniting tšeo di kgathilwego go Diyuniti tšeo di tsenelanelano tša Tihahlobo 10: Table 30: DINOKANA EYE / LETAMO LA NGOTWANE

IUA	Yuniti ya meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
IUA10: Dinokana Eye	RU – G10	10_1	Bokae	Mafelo a tahllo (i.e. Mahlo/dinoka) a swanetše gore a šireletšwe kgahlanong le phuhlamo ya tafola ya meetse).	Maemo a meetse: Tlhokomelo ya maemo a meetse a taelano ya nako (kgwedi ka kgwedi) kgahlanong le go ntšha le go na ga pula.	Diseseme tša akhwifaya ya dolomaete: maemo a go tlatša ga se a swanela go ya tlase ga >6 m tlase ga bogolo bja maemo a meetse a ~24 m lefelong la akhwifaya ya dolomaete.
				Seemo sa tekanyetšo ya meetse (molawana wa tšhomišo ya meetse lefelong la go tsentsha)	Kelo ya kelelo tahlong ya leihlo. Palo ya intekse ya kgatelelo (Tšhomišo ya Yuniti ya Akhwifaya/Tsentsho ya Yuniti ya Akhwifaya) bjalo ka diperesente	Lebelo la maemo a meetse le swanetše gore le be tlase ga 0.75 m/a.
				Bohlokwa bja Naetreiti bo swanetše gore bo hlokomelwe go thekga bašomiši ba meetse a ka gae	Diphapo- Naetreiti (NO ³ -N, mg/l). Tlhokomelo ya ga bedi ngwageng.	Lefelo la go ntšha: le swanetše gore le hlokomelwe (go 1000 m ya radiase go tloga moleteng wa leihlo) .
				Floraete- dithulano go bašomiši- maemo a floraete yeo e lego godimo	Floraete (F, mg/l)Fluoride (F, mg/l) Tlhokomelo ya ga bedi ngwageng.	Go ntšha ga ngwaga ga se gwa swanela go fetiša bogare bja 65% bja go ntšha ga ngwaga (i.e. SI ya 65%);
			Boleng			Naetreiti: tlase ga 1.0 mg/l. Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela peresente ya 95 th (1.1 mg/l);
						Floraete: ~0.15 mg/l. Mokgwa wa ga tee ngwageng wa lebaka le le telele ga se wa swanela go fihlelela

IUA	Yuniti ya meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
				Matswai: Diphatlalatši di swanetše gore di hlokomelwe maemong go kgonthiša seemo sa khwalithi ya meetse se se botse.		peresente ya 95 th (0.5 mg/l).
				Dinyakwa tše itšego tša tšhireletšo ya mothopo wa meetse di swanetše gore di be dipeelano tša tihahlobo go WUL;		Go swara mohlagase ≤45 mS/m; Mokgwa wa ngwaga wa lebaka le le telele ga se swa swaneta go fihla peresente ya 95 th (55 mS/m)
			Lefelo la tšhireletšo	Go ba gabotse ga tlaleletšo lefelong la letangwana la Mahlo a DMLT.		Thibelo ya go ntšha ka motheo wa tiragatšo ya mokgwa wa intekse ya kgatelelo.
						Bogolo bja 6 m (ge e le gore go dumeletšwe ka mokgwa wo mongwe)
						Tekanyetšo ya 9% ya lefelo la mong (ha's
						Swanetše gore e be > 1000 m, ntle le ge e le gore go dumeletšwe mabapi le dikabo tše ntši tša meetse.

Taolana 30: Maikemišetšo a Boleng bjaMothopo a MEETSE A TLASE GA MABU diyuniting tšeo di kgethilwego go Diyuniti tšeo di tselelelanago tša Tihahlobo 13: LOWER CROCODILE

IUA	Yuniti ya meetse a tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
13: Noka ya Lower Crocodile	Karolo ya Noka ya Aluviale ya RU – G13	13_1 and 13_3	Bokae	Go fokotša go tšea meetse a godimo ga mabu ge go ntšhwa meetse ka gare ga melete ya meetse lefelong la lefula la diseteme tša diakhwifaya tša aluviale (go swanetše gore go be le tekanyetšo ya kgole).	Kradiente ya maemo a meetse a tlase ga mabu gare ga sisteme ya akhwifaya ya inthakranula; le Mekgwa ya maemo a meetse a ka tlase ga mabu disetemeng tša akhwifaya tša inthakranula.	Kradiente ya meetse a tlase ga mabu ya pušetšo morago (noka mabapi le molete wa meetse/molete lefelong la 500m kgauswi le seteme se se golo ga se wa dumeletwa. Lebelo la maemo a meetse le swanetše gore le be tlase ga 1.0 m/a.
					Kelo ya kelelo ya moela/noka: dipeletšo tše botse/tše mpe tša meetse:bolumu (Q); Phuhlamo ya kelelo mafelong a kelo ya kelelo ya tlase.	Ditahlegelo tša meetse a godimo ga mabu di swanetše gore di lekane le go ntšha goo go dumeletšwego go tšwa nokeng (go akaretša ditahlegelo tva evaphotranspirešene).

IUA	Yuniti ya meetse a tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a Boleng bja mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
				Seemo sa tekanyetšo ya meetse a tlase ga mabu le sisteme ya aquifer yeo e senyegilego	Palo ya intekse ya kgatelelo (Tšhomišo ya Yuniti ya Akhwifaya/Tsentšo ya Yuniti ya Akhwifaya) bjalo ka dipersente	Go ntšha ga ngwaga ga se gwa swanela go fetiša bogare bja 65% bja go ntšha ga ngwaga (i.e. SI ya 65%);
				Bohlokwa bja Naetreiti bo swanetše gore bo hlokomelwe go thekga bašomiši ba meetse a ka gae	Diphepo- Naetreiti (NO ³ -N, mg/l). Tlhokomelo ya ga bedi ngwageng.	Naetreiti: 1.0 mg/l. (95 th persente)
			Boleng	Matswai ao a tološišwego mothopong wa meetse a tlase ga mabu: go laola khwalithi ya kelelo ya pušetšo morago ya nošetšo go tšwa sistemeng ya akhwifaya ya inthakranula (aluviale). Diphatlalatšo di swanetše gore di hlokomelwe maemong go kgonthišetša seemo se se botse sa khwalithi ya meetse.	Matswai – Go swara mohlagase Tlhokomelo ya kgwedi ka kgwedi/beke ka beke Khwilithi ya sisteme ya akhwifaya ya inthakranula ya aluviale. SAR ya meetse a akhwifaya ya aluviale	Go swara mohlagase: ≤ 85 mS/m (95 th persente) SAR: gare ga tekanyetšo ya maleba ya meetse a go nošetša.
				Botelele bjo bo nnyane go tšwa mothopong wa meetse wa godimo ga mabu moo meetse a ka tlase ga mabu a ka ntšhwago gona (ka motheo wa sisteme ya akhwifaya ya inthakranula (aluviale).	Lebaka la Phuhlamo ya Noka.	Go fokotšha go ntšha ga gare ga molete wa meetse/molete go iša go 5% ya kelelo methopong ya meetse a godimo ga mabu (ntheng ya go ntšha).
			Lefelo la tšhireletšo	Ditiragalo tša tšhomišo ya mabu tšeo di ka amago aquifer ya aluviale. Go bontšha tšhireletšo ya lefelo (i.e. botelele go twa mothopong ya meetse ya godimo ga mabu) sistemeng ya aquifer ya inthakranula ya aluviale go ya ka tšhepedišo ya tšhlatatšo ya makropayale le intasteri /temo.	Mokgwa wa khwalithi ya meetse (tšhepedišo ya makropayale mabapi le mothopo wa meetse a godimo ga mabu); Mokgwa wa bokae bja meetse (thulano ya meetse a godimo ga mabu mola go ntšha go twa sistemeng ya aquifer ya inthakranula ya aluviale.	Tekanyetšo ya meetse ya pele(1): lefelo la matsatši a 50 (makropayale, botelele gare ga tiragalo le mothopo wa meetse a godimo ga mabu. Tekanyetšo ya bokae bja meetse(2): Lefelo la tšhireletšo ya khwalithi ya meetse ya matsatši a 365 (taelusene) (L).

Tafolana 31: Maikemišetšo a Boleng bja Mothopo a MEETSE A TLASE GA MABU diyuniting tšeo di kgethilwego go Diyuniti tšeo di tselelanago tša Tlhalobelo 16: LOWER MOKOLO

IUA	Yuniti ya meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a boleng bja mothopo	Go bontšha/go meta	Tekanyetšo ya nomoro
16: Sandloop & Mokololo	RU – G16_4	16_4	Bokae	Go fokotšha phuhlamano (phokotšo) ya go tlala ga akhwifaya (maemo a meetse).	Maemo a meetse a akhwifaya ya tatelano ya nako lefelong la kgauswi le le emelago lefelo la setlogo tšwetšong pele ye e itšego i.e. lefelo la moepo, lefelo la intasteri le tšwetšopele ya intasteri).	Lebelo la maemo a meetse le swanetše gore le be tlase ga 0.5 m/a lefelong la tšhupetšo la tiragalo yeo e itšego.
				Seemo sa tekanyetšo ya meetse a ka tlase ga mabu selemeng ya akhwifaya (kelelo ya gare le kelelo ya ka ntle).	Intekse ya kgatelelo (Tšhomišo ya yuniti ya akhwifaya/ Tsentšo ya yuniti ya akhwifaya), lefelo la kantle la tiragalo.	Go ntšha ga ngwaga ga se gwa swanela go fetiša bogare bja 65% bja go ntšha ga ngwaga (i.e. SI ya 65%) lefelong la tšhupetšo.
			Boleng (Hlokomela gore ditekanyetšo tša setlogo tša dikokwane tše bohlokwa tša khemokhale di ka ba selo sa hlago gomme di swanetše gore di dumelwe, i.e. EC, NO ₃ -N, Cl, SO ₄ , le F).	Go ba le esiti ga meetse a ka tlase ga mabu ka kgamollo ya letlapa la esiti (Acidity of groundwater with regard to acid rock drainage potential (high in areas of coal mining and UCG's)	Bohlokwa bja pH ya meetse a ka tlase ga mabu lefelong le le itšego la Tšhupetšo.	Bohlokwa bja pH gare ga 6.1 le 8.2 lefelong la tšhupetšo.
				Diphepo ka gare ga meetse a tlase ga mabu tšeo di amago bophelo bja moreki.	Phatlalatšo ya Naetreiti (NO ₃ -N) meetseng a tlase ga mabu lefelong le le itšego la tšhupetšo (T3)	Naetreiti: ≤35 mg/l lefelong la tšhupetšo Mokgwa wa lebaka le le telele wa ngwaga ga se wa swanela go fihlelela 50 th peresente + 10% (~40 mS/m) – go ya ka dithuto tša selegae.
				Matswai ao a tološitšwego methopong ya meetse a ka tlase ga mabu– thokomelo ya Medupi/Grootgeluk le dinetweke tše dingwe tšeo di tswalanago le thulano.	Letswai: go swara mohlagaase ga meetse a tlase ga mabu lefelong le le itšego la tšhupetšo (T3).	Go swara mohlagaase ≤200 mS/m lefelong la tšhupetšo. Mokgwa wa lebaka le le telele wa ngwaga ga se wa swanela go fihlelela 50 th peresente + 10% (~220 mS/m) – go ya ka dithuto tša selegae.
				Dielemente tša di makro khemikhale tšeo di tološitšwego ka gare ga meetse a ka tlase ga mabu.	Phatlalatšo ya Kloraeete Cl meetseng a ka tlase ga mabu lefelong le le itšego la tšhupetšo (T3).	Tloraeete: ≤300 mg/l lefelong la tšhupetšo Mokgwa wa lebaka le le telele wa ngwaga ga se wa swanela go fihlelela 50 th peresente + 10% (~330 mS/m) – go ya ka dithuto tša selegae.
				Meetse a Maene wa Esiti le methopo ya meetse a godimo ga mabu	Phatlalatšo ya salfeti (SO ₄) meetseng a ka tlase ga mabu lefelong le le itšego la tšhupetšo (T3)	SO ₄ : ≤200mg/l lefelong la tšhupetšo. Mokgwa wa lebaka le le telele wa ngwaga ga se wa swanela go fihlelela 50 th peresente + 10% (~220 mS/m) – go ya ka dithuto tša selegae.
				Diphatlatšo tša floraete meetseng a ka tlase ga mabu ao a abelwago bašomiši ba magaeng.	Phatlalatšo ya Floraete meetseng a ka tlase ga mabu lefelong le le itšego la tšhupetšo (T3)	Floraete: ≤2.5 mg/l lefelong la tšhupetšo. Mokgwa wa lebaka le le telele wa ngwaga ga se wa swanela go fihlelela 50 th peresente + 10% (~2.7 mg/l) – go ya ka dithuto tša selegae.

IUA	Yuniti ya meetse a ka tiase ga mabu	RU	Karolwana ya gare	Maikemišetšo a boleng bja mothopo	Go bontšha/go meta	Tekanyetšo ya nomoro
				Maemo a go tlatša ga akhwifaya	Maemo a meetse ao a beilwego mabapi le lefelo la dinhla tše tharo (3)..	T1–Lefelo la tiragalo: phuhlamo ya maemo a meetse ao a hlokegago a tiragalo. T2–Lefelo la moliwane: lebelo la khušo ya maemo a meetse le swanetše gore le be tiase ga 1.0 m/a. T3–Lefelo la setlogo goba tšhupetšo: lebelo la khušo ya maemo a meetse le swanetše gore le be tiase ga 0.5 m/a.
			Lefelo la šireletšo	Go ya ka dipeeletšo tša khwalithi ya meetse.	Diphaametha tva khwalithi ya meetse tšeo di beilwego mabapi le lefelo la dinhla tše tharo (3).	T1–Lefelo la tiragalo, maemo a phatlalatšo ka lebaka la thulano ya (persente ya 95 ya khwalithi ya meetse go QC): pH: 5.0 to 9.5; NO ₃ -N: 60 mg/l; Letswai EC: 600 mS/m; Tioraete: 1500 mg/l; Disalfaete: 800 mg/l; le Floraete: 6.4 mg/l. T2–Lefelo la moliwane: le dumelela go fihlela peresente ya 75 ya go thekga ke thuto ya setlogo sa lefelo la moliwane – ditekanyetšo tša nnete tšeo di bonwego go QC A42J: pH: 6.7 to 8.1; NO ₃ -N: 35 mg/l; Letswai EC: 340 mg/l; Tioraete: 650 mg/l; Salfaete: 250 mg/l; le Floraete: 2.5 mg/l. T3–Lefelo la setlogo goba tšhupetšo: go dumelela go fihlela go peresente ya 50 + 10% ya dikarolwana tše kgolo bjalo ka ge go bontšhišwe ka godimo (khwalithi).
				Go fokotša go swarwa ga meetse a ka godimo ga mabu ge go ntšhwa meetse meleteng ya meetse tefelong la lefula la sisteme ya akhwifaya ya aluviale (go swanetše gore go be le tekanyetšo ya botelele).	Maemo a meetse go diakhwifaya: kradiente ya maemo a meetse a ka tiase ga mabu gare ga sisteme ya akhwifaya ya inthakranula; le Mekgwa ya maemo a meetse a ka tiase ga mabu disistemeng tša akhwifaya ya inthakranula.	Kradiente ya meetse a tiase ga mabu ya pušetšo morago tefelong la 500 m kgauswi le seteme se se golo e dumeletšwe. Mekgwa ya maemo a meetse yeo e sego < 1.0 m/a
16: Mokololo Mainstem	RU – G16	16_5_2	Bokae	Seemo sa tirišano gare ga methopo ya Swater le Gwater.	Dipeeletšo tše botse/tše mpe tša tekanyetšo ya meetse: bolumu (Q);	Ditahlegelo tša meetse a godimo ga mabu di swanetše gore di lekane le go ntšha goo go

IUA	Yuniti ya meetse a ka tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a boleng bja mothopo	Go bontšha/go meta	Tekanyetšo ya nomoro
					phuhlamo ya kelelo mafelong a kelelo ya tlase.	dumeletšwego go tšwa nokeng (go akaretša ditahlegelo tša evaphotranspirešene).
				Ditekanyetšo tša meetse a ka tlase ga mabu sistemeng ya inthakranula le akhwifaya yeo e senyegilego	Palo ya intekse ya kgatelelo (Tšhomišo ya Yuniti ya Akhwifaya/Tsenišho ya Yuniti ya Akhwifaya) bjalo ka diperesente	Go ntšha ga ngwaga ga se gwa swanela go fetiša bogare bja 65% bja go ntšha ga ngwaga (i.e. SI ya 65%);
			Boleng (Hlokomela gore ditekanyetšo tša selogo tša dikokwane tše bohlokwa tša khemokhale di ka ba selo sa hlago gomme di swanetše gore di dumelwe, i.e. EC, NO ₃ -N, Cl, SO ₄ , le F).	Diphepo- Naetreiti	Tlhokomelo ya kgwedī diteišene tša DWS. Go hloma phatlalatšo ya naetreiti ya hlago mothopong wa meetse.	Naetreiti: 0.5 mg/l. (95 th persente)
				Matswai ao a tološitšwego mothopong ya meetse a tlase ga mabu-	Letswai- go swara mohlagaase Go hloma phatlalatšo ya naetreiti ya hlago mothopong wa meetse.	Go swara mohlagaase: ≤ 55 mS/m (95 th persente)
				Meetse a Moepo wa Esiti a mehuta ya matlapa ya tlase ga mabu ya esiti	Maemo a phatlalatšo ya disalfeiti Sulphates (SO ₄) meetse a ka tlase ga mabu. Go hloma phatlalatšo ya salfeiti mothopong wa meetse.	SO ₄ : ≤ 80 mg/l. (95 th persente)
				Go fokotša go hwetša meetse a ka godimo ga mabu ge go ntšhwa meetse meleteng ya meetse lefelong la lefula disistemeng tša akhwifaya tša aluviale (go swanetše gore go be le botelele bja tekanyetšo).	Lebaka la phuhlamo ya Noka sistemeng ya khwifaya ya aluviale ya Mokolo (L).	Go fokotša Naetreiti: 1.0 mg/l. (95 th persente) a go ntšha gare ga meetse ka tlase ga 5% ya kelelo mothopong ya meetse (lefelong le le itšego la go ntšha).
			Lefelo la tšhireletšo	Ditragalo tša tšhomišo ya mabu tšeo di ka amago sisteme ya akhwifaya ya inthakranula ya aluviale.	Mokgwa wa khwalithi ya meetse (tšhepedišo ya makropayale mabapi le mothopo wa meetse). Mokgwa wa bokae bja meetse mola go ntšhwa go tšwa sistemeng ya akhwifaya ya inthakranula ya aluviale.	Tekanyetšo ya khwalithi ya meetse (1): lefelo la matsatši a 50 (makropayale), botelele gare ga tiragalo le mothopo wa meetse wa godimo ga mabu. Tekanyetšo ya khwalithi ya meetse (2): Lefelo la tšhireletšo ya khwalithi ya meetse ya matsatši a 365 (taelušene) (L).

Tafolana 32: Maikemišetšo a Boleng bja Mothopo a MEETSE A TLASE GA MABU diyuniting tšeo di kgethilwego go Diyuniti tšeo di tsenelelanago tša Tliahlobo 17b:
Tafola 32: MATLABAS / LIMPOPO

IUA	Yuniti ya meetse a tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a boleng bja mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
IUA 17: MATABAS	RU – G17_b_2	17_b_2	Bokae	Go fokotša phuhlamo (phokotšo) ya go tšala ga akhwifaya (maemo a meetse).	Maemo a meetse sestemeng ya akhwifaya; Ditente tša maemo a meetse a ka fase ga mabu.	Lebelo la maemo a meetse le swanetše gore le be tlase ga 0.5 m/a lefelong la tšhupetšo la tiragalo yeo e itšego.
				Seemo sa tekanyetšo ya meetse a tlase ga mabu sestemeng ya akhwifaya;	Tekanyetšo ye botse goba ye mpe ya meetse.	Go ntšha ga ngwaga ga se gwa swanela go fetiša bogare bja 65% bja go ntšha ga ngwaga (i.e. SI ya 65%) lefelong la tšhupetšo.
				Palo ya intekse ya kgatelelo (Tšhomišo ya Yuniti ya Akhwifaya/Tsentšo ya Yuniti ya Akhwifaya) bjalo ka diperesente		
			Boleng (Hlokomela gore ditekanyetšo tša setlogo tša dikokwane tše bohlokwa tša khemikhale di ka ba selo sa hlago gomme di swanetše gore di dumelwe, i.e. EC, NO ₃ -N, Cl, SO ₄ le F).	Diphepo ka gare ga meetse a ka tlase ga mabu tšeo di amago bophelo bja moreki	Phatlalatšo ya Naetreiti (NO ₃ -N) meetse a tlase ga mabu lefelong le le itšego la tšhupetšo (T3)	Naetreiti: ≤3.0 mg/l lefelong la tšhupetšo Mokgwa wa lebaka le le telele wa ngwaga ga se wa swanela go fihlelela 70 th peresente + 10% (~33 mg/l) – go ya ka dithuto tša segae.
				Matswai ao a tološitšwego methopong ya meetse a tlase ga mabu-	Letswai: go swara mohlagaase ga meetse a tlase ga mabu.	Go swara mohlagaase ≤140 mS/m lefelong la tšhupetšo. Mokgwa wa lebaka le le telele wa ngwaga ga se wa swanela go fihlelela 75 th peresente + 10% (~155 mS/m) – go ya ka dithuto tša segae.
				Dielemente tša di makro khemikhale tšeo di tološitšwego gare ga meetse a ka tlase ga mabu.	Phatlalatšo ya Tloraete Cl meetse a ka tlase ga mabu lefelong le le itšego la tšhupetšo (T3).	Tloraete: ≤145 mg/l lefelong la tšhupetšo Mokgwa wa lebaka le le telele wa ngwaga ga se wa swanela go fihlelela 75 th peresente + 10% (~160 mg/l) – go ya ka dithuto tša segae.
				Tšweletšo ya meetse a moepo wa esiti go tšwa matlapeng a go ba le esiti; le go thibela phuhlamo ya ka moso ya meetse a moepo go mabapi le methopo ya meetse a godimo ga mabu.	Phatlalatšo ya salifeiti (SO ₄) meetse a ka tlase ga mabu lefelong le le itšego la tšhupetšo (T3)	SO ₄ : ≤85mg/l lefelong la tšhupetšo. Mokgwa wa lebaka le le telele wa ngwaga ga se wa swanela go fihlelela 75 th peresente + 10% (~94 mg/l) – go ya ka dithuto tša segae.
				Diphatlalatšo tša floraete meetse a tlase ga mabu ao a abelwago bašomiši ba magaeng.	Phatlalatšo ya Floraete meetse a ka tlase ga mabu lefelong le le itšego la tšhupetšo (T3)	Floraete: ≤1.3 mg/l lefelong la tšhupetšo. Mokgwa wa lebaka le le telele wa ngwaga ga se wa swanela go fihlelela 75 th peresente + 10% (~1.4 mg/l) – go ya ka dithuto tša segae.
				Maemo a go tšala a akhwifaya	Maemo a meetse ao a beilwego lefelong	T1-lefelo la tiragalo: phuhlamo ya maemo a

IUA	Yuniti ya meetse a tlase ga mabu	RU	Karolwana ya gare	Maikemišetšo a boleng bja mothopo	Go bontšha/ go meta	Tekanyetšo ya nomoro
					la nhla tše tharo.	meetse e hlokegago mabapi le tiragalo. T2–Lefelo la mollwane: lebelo la khutšo ya meetse le swanetše gore le be tlase ga 1.0 m/a. T3–Lefelo la setlogo goba tšhupetšo: lebelo la khutšo ya meetse ga se la swanela go feta 0.5 m/a.
				Go ya ka dipeeletšo tša khwalithi ya meetse.	Dipharametha tša khwalithi ya meetse tšeo di beilwego lefelong la dinhla tše tharo.	T1–Lefelo la tiragalo, maemo a phatlalatšo a magolo ka lebaka la thulano (go ya ma motheo wa sete ya data lefelong leo le amegago): pH: 5.0 to 9.5; NO ₃ -N: 60 mg/l; Letswai EC: 600 mS/m; Klorae: 1500 mg/l; Disalfaete: 800 mg/l; le Floraete: 6.4 mg/l. T2–Lefelo la mollwane: le dumelela go fihlela peresente ya 75 ya go thekga ke thuto ya setlogo sa lefelo la mollwane – ditekanyetšo tša nnete tšeo di bonwego go QC A42J: pH: 7.2 – 7.8 NO ₃ -N: 8.0 mg/l; Letswai EC: 200 mg/l; Tloraete: 300 mg/l; Salfaete: 170 mg/l; le Floraete: 1.8 mg/l. T3–Lefelo la setlogo goba tšhupetšo: go dumelela go fihlela go peresente ya 75 ya ditekanyetšo tša setlogo go QC A41E: T3–Lefelo la setlogo goba la tšhupetšo: le dumelela go fihlela go peresente ya 50 + 10% ya dikokwane tše kgolo bjalo ka ge go bontšhišwe ka godimo (lebelela khwalithi ka godimo).

Printed by and obtainable from the Government Printer, Bosman Street, Private Bag X85, Pretoria, 0001
Contact Centre Tel: 012-748 6200. eMail: info.egazette@gpw.gov.za
Publications: Tel: (012) 748 6053, 748 6061, 748 6065