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SAMPLE SUBMISSION FORM: WATER CHEMISTRY TESTING

Enquiries: Ms. Helena Daniel | Section Head Water Quality

Customer Contact Information:		**FOR OFFICIAL USE**
Customer /Company Name		**Laboratory Reference No:**
Primary contact person		**Sample Condition upon Arrival at the Laboratory**
Samples submitted by		Acceptance criteria: ▪ Cooler box temperature tolerance: 0 ˚C – 10 ˚C (Applicable for effluent water and selected tests only)
Postal Address & Town		
Tel / Mobile Number		
Email Address		Sample(s) received & inspected by First Name_____ Signature: _____ Date: _____ Time: _____
Accounts contact person		
Tel / Mobile Number		
Email Address		

Financial Information:		Sample container (appropriate/not appropriate)	
Charge to Customer / Company (listed above) ☐ Other ☐ _____ Purchase Order No: _____ Quotation No (if any): _____		Cooler box temp (without CF)	
		Cooler box temp (with CF)	
		Thermometer number (used)	
		Thermometer correction factor (CF)	
Customer Account type (tick the appropriate box)		Sample(s) accepted (tick) ☐	
Credit Account ☐	**Note:** Payment to be done within 30 days	Sample(s) accepted with exception (tick) ☐	
Cash Customer ☐	**Note:** Payment to be done prior to testing	Sample(s) rejected (tick) ☐	

Analytical Instructions
Rush TAT requests must be approved by the laboratory. A surcharge will apply.

Standard Turn-Around-Time ☐ Rush Turn-Around-Time ☐

Test Report
- Test Report(s) will be emailed to primary contact by default
- Additional Test Report(s) will be emailed as specified below:

Email primary contact (tick) ☐

Other email address (tick & specify below) ☐

_____

If rejected, was the customer informed (tick)
☐ Yes ☐ No

Reason for rejection:
.....
.....
.....

Additional information/known hazards (if any)
.....
.....
.....
.....
.....
.....

Excel report required ☐

Samples accepted with exception:
I the customer agree that the sample(s) should be tested even though not in compliance with the acceptance criteria.

Customer Signature: _____

Date: _____

Customer Authorisation (compulsory)
By signing below, you agree to Analytical Laboratory Services Terms & Conditions and authorise Analytical Laboratory Services to perform the requested tests to the best of their knowledge and in accordance with specified Test Methods.

Customer Signature: _____

Date: _____

Sample receipt stamp

Note: Complete page 1-2 and all other applicable pages to your request

SAMPLE INFORMATION					FOR OFFICIAL USE
Total Number of samples:					
No.	Sample Description	Sampling Date	Sampling Time	Sample Type*	Lab Sample No.
1.					
2.					
3.					
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18.					
19.					
20.					

Sample Type Abbreviation Key

Water = W Dust samples = D Salt = S Chemicals = C Instrument = I

Please specify: Water: potable / surface / ground / RO
seawater / brine
domestic effluent: raw sewage / treated sewage / final effluent
industrial effluent: raw / treated

Sampling done by: _____

Signature: _____

Reference of the sampling method (if available): _____

Sampling Location/Vessel/Factory name: _____

Special Instructions (when applicable): sample storage/disposal, outsourced tests

_____

_____

_____

_____

Note: Complete page 1-2 and all other applicable pages to your request

CHEMICAL TESTING OF WATER SAMPLES			
Note: The laboratory will select the test parameters on behalf of the client, when a signed quotation is attached to this request form.			
No.	**Test Parameters**	**Reference Method**	**Tick**
1.	Absorbed oxygen	METH W 001 based on SANS 5220:2005	☐
2.	Acidity	METH W 002 based on AWWA 2310 B	☐
3.	Alkalinity	METH W 003 based on AWWA 2320 B	☐
4.	Ammonium	METH W 004/046 based on AWWA 4500-NH_3 F / modified Berthelot	☐
5.	Bicarbonate & Carbonate	calculated	☐
6.	Biological oxygen demand, 5-day	METH W 005 based on AWWA 5210 B	☐
7.	Biological oxygen demand, carbonaceous	METH W 006 based on AWWA 5210 B	☐
8.	Bromide & Iodide	METH W 007 based on P. Höfer	☐
9.	Chloride	METH W 008 based on AWWA 4500-Cl^- B	☐
10.	Chlorine, free and total	METH W 009 based on AWWA 4500-Cl G	☐
11.	Chlorophyll a	METH W 010 based on ISO 10260:1992 E	☐
12.	Chemical oxygen demand	METH W 011/012/013 based on AWWA 5220 D	☐
13.	Colour	METH W 014 based on AWWA Pt-Co-2120 B	☐
14.	Cyanide	METH W 015 based on AWWA 4500-CN E	☐
15.	Density	METH W 016	☐
16.	Dissolved oxygen	METH W 017 based on AWWA 4550-O G	☐
17.	Electrical conductivity	METH W 018 based on AWWA 2510 B	☐
18.	Fat, oil & grease	METH W 019 based on AWWA 5520 B	☐
19.	Fixed and volatile solids, ignited at 550°C	METH W 020 based on AWWA 2540 E	☐
20.	Fluoride	METH W 021 based on AWWA 4500-F C	☐
21.	Hardness	calculated, AWWA 2340 B	☐
22.	Hexavalent chromium	METH W 022 based on AWWA 3500-Cr B	☐
23.	Hydrolysable phosphates	METH W 023 based on AWWA 4500-P B.2 + E	☐
24.	Kjeldahl nitrogen	calculated	☐
25.	Molybdosilicate	METH W 024 based on AWWA 4500-Si C	☐
26.	Nitrate	METH W 025/026/044 based on Spectroquant / AWWA 4500-NO_3 E	☐
27.	Nitrite	METH W 0027/028/045 based on AWWA 4500-NO_2 B	☐
28.	Oxidation reduction potential (Redox)	METH W 029 based on AWWA 2580 B	☐
29.	pH	METH W 030 based on AWWA 4500-H^+ B	☐
30.	Phenols	METH W 031 based on ASTM D1783-01, B	☐
31.	Reactive phosphorous	METH W 032/047 based on AWWA 4500-P E	☐
32.	Settable solids	METH W 033 based on AWWA 2540 F	☐
33.	Sulfide	METH W 034 based on AWWA 4500-S^{2-} D	☐
34.	Sulfite	METH W 035 based on AWWA 4500-SO_3^{2-} B	☐
35.	Sulphate	METH W 036/048 based on AWWA 4500-SO_4 E / F	☐
36.	Total dissolved solids	METH W 037 based on AWWA 2540 C	☐
37.	Total nitrogen	METH W 038 based on EN ISO 11905-1:1997	☐
38.	Total phosphorous	METH W 039 based on AWWA 4500-P B.5 + E	☐
39.	Total solids	METH W 040 based on AWWA 2540 B	☐
40.	Total suspended solids	METH W 041 based on AWWA 2540 D	☐
41.	Turbidity	METH W 042 based on AWWA 2130 B	☐
42.	UV absorbing organic constituents at 254nm	METH W 043 based on AWWA 5910 B	☐

Note: Complete page 1-2 and all other applicable pages to your request

ELEMENTAL ANALYSIS BY ICP-OES			
No.	**Test Parameters**	**Reference Method**	**Tick**
1.	Aluminium	AWWA ICP-3500-Al C	☐
2.	Antimony	AWWA ICP-3500-Sb C	☐
3.	Arsenic	AWWA ICP-3500-As D	☐
4.	Barium	AWWA ICP-3500-Ba C	☐
5.	Beryllium	AWWA ICP-3500-Be	☐
6.	Bismuth	AWWA ICP-3500-Bi	☐
7.	Boron	AWWA ICP-3500-B D	☐
8.	Cadmium	AWWA ICP-3500-Cd C	☐
9.	Calcium	AWWA ICP-3500-Ca C	☐
10.	Chromium (total)	AWWA ICP-3500-Cr C	☐
11.	Cobalt	AWWA ICP-3500-Co C	☐
12.	Copper	AWWA ICP-3500-Cu C	☐
13.	Gold	AWWA ICP-3500-Au	☐
14.	Iron	AWWA ICP-3500-Fe C	☐
15.	Lead	AWWA ICP-3500-Pb C	☐
16.	Lithium	AWWA ICP-3500-Li C	☐
17.	Magnesium	AWWA ICP-3500-Mg C	☐
18.	Manganese	AWWA ICP-3500-Mn C	☐
19.	Mercury	AWWA ICP-3500-Hg	☐
20.	Molybdenum	AWWA ICP-3500-Mo C	☐
21.	Nickel	AWWA ICP-3500-Ni C	☐
22.	Potassium	AWWA ICP-3500-K C	☐
23.	Rubidium	ICP-OES	☐
24.	Selenium	AWWA ICP-3500-Se I	☐
25.	Silicon	ICP-OES	☐
26.	Silver	AWWA ICP-3500-Ag	☐
27.	Sodium	AWWA ICP-3500-Na C	☐
28.	Strontium	AWWA ICP-3500-Sr C	☐
29.	Thallium	AWWA ICP-3500-Tl C	☐
30.	Thorium	AWWA ICP-3500-Th	☐
31.	Tellurium	AWWA ICP-3500-Te	☐
32.	Tin	AWWA ICP-3500-Sn	☐
33.	Titanium	AWWA ICP-3500-Ti	☐
34.	Uranium	AWWA ICP-3500-U	☐
35.	Vanadium	AWWA ICP-3500-V C	☐
36.	Zinc	AWWA ICP-3500-Zn C	☐

INSTRUMENT VERIFICATION			
No.	**Test Parameters**	**Reference Method**	**Tick**
1.	pH, meter and probe / pocket meter	Manufacturer calibration guide	☐
2.	EC & TDS, meter and probe / pocket meter	Manufacturer calibration guide	☐
3.	Redox, meter and probe / pocket meter	Manufacturer calibration guide	☐
4.	DO, meter and probe / pocket meter	Manufacturer calibration guide	☐

Note: Complete page 1-2 and all other applicable pages to your request

CHEMICAL TESTING OF SALT SAMPLES			
No.	**Test Parameters**	**Reference Method**	**Tick**
1.	Sample preparation & preparation of aqueous extract	METH GN 002 based on SP-2.3	☐
2.	Moisture	METH GN 002 based on SP-2.4	☐
3.	Insoluble impurities	METH GN 003 based on SP-2.3	☐
4.	Chloride	METH GN 003 based on AWWA 4500-Cl^- B	☐
5.	Sulphate	METH GN 003 based on SP-2.5	☐
6.	Carbonate	BS method 1377 part 3	☐
7.	Iodine as KIO3	METH GN 004	☐
8.	Iodine as KI	METH GN 005	☐
9.	Screen analysis	METH GN 006	☐
10.	Sodium	AWWA ICP-3500-Na C	☐
11.	Potassium	AWWA ICP-3500-K C	☐
12.	Magnesium	AWWA ICP-3500-Mg C	☐
13.	Calcium	AWWA ICP-3500-Ca C	☐

TESTING OF REAGENTS AND CHEMICALS			
No.	**Test Parameters**	**Reference Method**	**Tick**
1.	Sodium hypochlorite – assay	METH GN 001 based on Powell	☐
2.	Scale – qualitative tests	METH GN 007	☐

TESTING OF DUST SAMPLES			
No.	**Test Parameters**	**Reference Method**	**Tick**
1.	Dust monitoring – quantification of dust fallout	METH W 041 based on AWWA 2540 D	☐
2.	Silica quantification	Aqua Regia digestion followed by filtration	☐
3.	Total metals	Aqua Regia digestion followed by ICP-MS scan	☐

GROUP TESTS			
No.	**Test Parameters**	**Interpretation of results based on:**	**Tick**
1.	Standard water test, including: pH, conductivity, turbidity, total dissolved solids, alkalinity, total-, calcium- and magnesium-hardness, chloride, fluoride, sulphate, nitrate, nitrite, Na, K, Mg, Ca, Mn, Fe, stability index, corrosivity index	Guidelines for the evaluation of drinking water quality for human consumption, DWA Namibia, April 1988 and South African Water Quality Guidelines, Volume 5: Agricultural water use: Livestock watering, Second Edition, 1996	☐
2.	Irrigation water test, including: pH, conductivity, alkalinity, total-hardness, chloride, fluoride, sulphate, nitrate, Na, K, Mg, Ca, Mn, Fe, Cu, Zn, B, Mo, stability index, corrosivity index, sodium absorption ratio, residual sodium carbonate, magnesium ratio	South African Water Quality Guidelines, Volume 4: Agricultural water use: Irrigation, Second Edition, 1996	☐
3.	Concrete mixing test (Fulton), including: pH, conductivity, TDS, alkalinity, chloride, sulphate	South African National Standard, SANS 51008:2006	☐
4.	Corrosion water test, including: pH, conductivity, TDS, alkalinity, chloride, sulphate, Mg, Ca, Mn, Fe		☐
5.	Annual water test (SANS 241), including: Standard water test + colour, cyanide, phenolic compounds, Cu, Zn, As, Se, Cd, Cr, Pb, Hg, Ni, Co	Guidelines for the evaluation of drinking water quality for human consumption, DWA Namibia, April 1988 and SANS 241-1:2015	☐
6.	Bottled water test (SANS 1657), including: Standard water test + As, Se, Cd, Cr, Pb	Guidelines for the evaluation of drinking water quality for human consumption, DWA Namibia, April 1988 and SANS 1657:2014 (ED 2.03)	☐
7.	Waste water test (DWA), including: pH, conductivity, oxidation reduction potential, dissolved oxygen, total dissolved solids (det.), total suspended solids, COD, BOD, total nitrogen, nitrate, nitrite, ammonium, o-phosphate, chloride, sulphate, sodium	General standard limits for Article 21 permits (effluents), as per regulation R553 of 5 April 1962	☐

Note: Complete page 1-2 and all other applicable pages to your request

GROUP TESTS			
No.	**Test Parameters**	**Interpretation of results based on:**	**Tick**
8.	Industrial waste water test: pH, conductivity, dissolved oxygen, colour, turbidity, BOD, total dissolved solids (det.), total suspended solids, FOG, COD, free cyanide, hexavalent chromium, sulphide, nitrate, nitrite, free and saline ammonium, total nitrogen, o-phosphate, alkalinity, chloride, fluoride, sulphate, Na, K, Mg, Ca, Mn, Fe, Cu, Zn, B, Cr, Cd, Pb, As, Se, U, Ni, Al, Ba, Sr, Sb, Sn, Ti, Tl, Hg	Water management Act 11 of 2013, Annexure 11 (Regulation 75)	☐
9.	Full waste water test, including: Dissolved oxygen, pH, conductivity, total dissolved solids (det.), total suspended solids, COD, BOD, absorbed oxygen, ammonium, free chlorine, sulphide, phenolic compounds, free cyanide, hexavalent chromium, fluoride, FOG, Na, Cu, Zn, B, Cr, Pb, As	General standard limits for Article 21 permits (effluents), as per regulation R553 of 5 April 1962	☐
10.	Waste water test (MunWB), including: pH, conductivity, total dissolved solids (det.), total suspended solids, COD, sulphate, total phosphate, ammonium, free cyanide, sulphide, phenolic compounds, hexavalent chromium, FOG, bromide, Fe, Mn, Cu, Zn, B, Cr, Cd, Pb, Ni, Hg	General standard limits Municipality of Walvis Bay, 2016	☐
11.	Full drinking water analysis, including: pH, conductivity, turbidity, colour, total dissolved solids, alkalinity, total-, calcium- and magnesium-hardness, chloride, fluoride, sulphate, nitrate, nitrite, ammonium, free chlorine, free cyanide, sulphide, bromide, iodine, Na, K, Mg, Ca, stability index, corrosivity index ICP-MS: Li, Be, B, Mo, Cd, Sn, Sb, Te, Ba, W, Au, Hg, Tl, Pb, Bi, U, Al, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, As, Se, Ag	Guidelines for the evaluation of drinking water quality for human consumption, DWA Namibia, April 1988	☐
ICP group tests:			
12.	SW: Na, K, Mg, Ca, Mn, Fe		☐
13.	TW: Cr, Cd, Pb, As, Se		☐
14.	Gr5: U, V, Co, Ni, Li, Rb		☐
15.	RO: Al, Si, Ba, Sr, B		☐
16.	IW: Cu, Zn, Mo, B		☐
17.	M1: Be, Sb, Sn, Th, Ti		☐

Handling of Outsourced Testing			
No.	**Test Parameters**		**Tick**
1.	ICP-MS scan, 45 elements: Li, Be, B, Sr, Zr, Mo, Cd, Sn, Sb, Te, Ba, La, W, Ir, Pt, Au, Hg, Tl, Pb, Bi, Th, U, Na, Mg, Al, Si, P, S, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, K, As, Se, Ru, Rh, Pd, Ag	Outsourced to Labolink, SA	☐
2.	PAH, including: naphthalene, acenaphthene, acenaphethylene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b+k)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene, indeno(123-cd)pyrene	Outsourced to Environmental Pollution Laboratory, SA	☐
3.	VOC, including: Mono-Aromatic Hydrocarbons: benzene, toluene, ethylbenzene, m+p-xylene, o-xylene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, n-propylbenzene, tert-butylbenzene, sec-butylbenzene, n-butylbenzene, isopropylbenzene, styrene, 4-isopropyltoluene Bromo/Chlorobenzenes: bromobenzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,3,5-trichlorobenzene Polyaromatic compound: naphthalene Volatile brominated/Chlorinated Hydrocarbons: bromoform, chloroform, carbon tetrachloride, trichloroethene (TCE), dibromomethane, dichloromethane, bromochloromethane, bromodichloromethane, dibromochloromethane, 1,2-dibromoethane, 1,2-dichloroethane, tetrachloroethane, 1,1,1-trichloroethane, 1,1,2-trichloroethane, hexachlorobutadiene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 2-chlorotoluene, 4-chlorotoluene, 1,1-dichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,2-dichloropropane, 1,3-dichloropropane, 2,2-dichloropropane, 1,2,3-trichloropropane, 1,1-dichloropropene, cis-1,3-dichloropropene, trans-1,3-dichloropropene	Outsourced to Environmental Pollution Laboratory, SA	☐

Note: Complete page 1-2 and all other applicable pages to your request

Handling of Outsourced Testing			
No.	**Test Parameters**		**Tick**
4.	sVOC, including: PAH: naphthalene, acenaphthene, acenaphethylene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b+k)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene, indeno(123-cd)pyrene Chlorinated compounds: 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 2-chloronaphthalene, hexachlorobenzene, hexachloroethane, 1,2,4-trichlorobenzene, 4-chlorophenylphenyl ether, 4-bromophenylphenyl ether Phthalates: di-n-buthyl phthalate, buthyl benyl phthalate, bis(2-ethylhexyl) phthalate	Outsourced to Environmental Pollution Laboratory, SA	☐
5.	Polar compounds, including: acetone, methanol, ethanol, acetaldehyde, methyl acetate, ethyl acetate, propyl acetate, butyl acetate, n-propanol, n-butanol, isopropyl alcohol, n-butoxyethanol	Outsourced to Environmental Pollution Laboratory, SA	☐
6.	THM, including: bromoform, chloroform, bromodichloromethane, dibromochloromethane, trichloroethene	Outsourced to Environmental Pollution Laboratory, SA	☐
7.	OC Pesticides, including: alpha-HCH, beta-HCH, gamma-HCH, delta-HCH, alpha-chlordane, gamma-chlordane, aldrin, dieldrin, endrin, heptachlor, heptachlor epoxide isomer B, methoxychlor, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT	Outsourced to Environmental Pollution Laboratory, SA	☐
8.	OP Pesticides, including: alpha-HCH, beta-HCH, gamma-HCH, delta-HCH, alpha-chlordane, gamma-chlordane, aldrin, dieldrin, endrin, heptachlor, heptachlor epoxide isomer B, methoxychlor, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT	Outsourced to Environmental Pollution Laboratory, SA	☐
9.	BTEX-GRO, including: MTBE, TAME, benzene, toluene, ethylbenzene, m+p-xylene, o-xylene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, naphthalene, GRO C6-C10	Outsourced to Environmental Pollution Laboratory, SA	☐
10.	TPH-GRO, including: C6-C10, C10-C28, C28-C40	Outsourced to Environmental Pollution Laboratory, SA	☐
11.	Vinyl Chloride	Outsourced to Environmental Pollution Laboratory, SA	☐

Note: Unless otherwise requested by the client, expression of opinion and interpretation of results will be based on guidelines / standards as per table above.

Note: Prices are specified on FM 7.1- 5