

# 1.4 Water Quality Information

November 2022



## Hawk's Tor Pit Drought Permit Application 2022

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# 1 BACKGROUND

South West Water have started monitoring of the quality of water in Hawk's Tor Pit in case the lake needs to be re-introduced as a source of drinking water. Available results of an extended suite of analysis collected on 12th and 20<sup>th</sup> October 2022 are presented in the table below. Further, more targeted monitoring is scheduled in the coming weeks.

# 2 WATER QUALITY RISK ASSESSMENT AND MONITORING 12 AND 20 OCTOBER 2022

South West Water have currently completed a comprehensive suite of analysis of the water quality in Hawk's Tor Pit and the available results of this are presented in Table 1 below. The results cover chemical and microbiological parameters required to be tested prior to re-introduction of supplies or use of new sources.

The results to date and water risk assessment shared with the DWI indicate that the quality of water is typical of that generally experienced in surface waters in the South West and are very similar to that currently found in the various supplies presented for treatment at the proposed works.

Being very similar in nature to the sources already treated we are assured the raw water quality risks will be fully mitigated by blending and current multi-barrier treatment process at Restormel, St Cleer and De Lank Water Treatment works.

Outstanding sample results are currently being processed, however on 2 November 2022 we received Regulation 15 confirmation from the DWI for Hawk's Tor Pit.

**Table 1 Breakdown of Water Quality Analysis**

	ID	6205102	6219232
	Sampled Date	12/10/2022	20/10/2022
Parameter	Unit		
Benzo[a]Pyrene	ng/l	<0.5	
Benzo[b]Fluoranthene	ng/l	<0.5	
Benzo[ghi]Perylene	ng/l	<0.5	
Benzo[k]Fluoranthene	ng/l	<0.5	
Indeno[1 2 3-cd]Pyrene	ng/l	<0.5	

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Total PAH	ng/l	0	
Bromodichloromethane	ug/l	<0.2	
Dibromochloromethane	ug/l	<0.3	
Tetrachloroethene	ug/l	<0.2	
Tetrachloromethane	ug/l	<0.2	
Tribromomethane	ug/l	<0.2	
Trichloroethene	ug/l	<0.2	
Trichloromethane	ug/l	<0.2	
Total THM	ug/l	0	
Benzene	ug/l	<0.2	
1 2-Dichloroethane	ug/l	<0.2	
Total Trichloroethene +Tetrachloroethene	ug/l	0	
Mass Spec Comments: No Significant organics detected	ug/l	<1	
Geosmin	ng/l	3	
2-Methylisoborneol	ng/l	<1	
Atrazine	ng/l	<7	
Bentazone Tot	ng/l	<2	
Bromoxynil Tot	ng/l	<6	
Chlorotoluron	ng/l	<5	
Chlorpyrifos	ng/l	<2	
2 4-D Tot	ng/l	<10	
2 4-DB Tot	ng/l	<7	
Diazinon	ng/l	<7	
Dicamba Tot	ng/l	<10	
Dichlobenil	ng/l	<3	
Dieldrin	ng/l	<4	
Diuron	ng/l	<7	
HCH (gamma-) (Lindane)	ng/l	<11	
loxynil Tot	ng/l	<4	
Isoproturon	ng/l	<4	
Linuron	ng/l	<12	

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MCPA Tot	ng/l	<6	
MCPB Tot	ng/l	<8	
Mecoprop Tot	ng/l	<7	
Pendimethalin	ng/l	<3	
Pentachlorophenol Tot(PCP)	ng/l	<7	
Propyzamide	ng/l	<5	
Simazine	ng/l	<7	
Triclopyr Tot	ng/l	<4	
Fluroxypyr Tot	ng/l	<7	
Fenpropimorph	ng/l	<3	
Carbendazim	ng/l	<3	
Azoxystrobin	ng/l	<5	
Clopyralid Tot	ng/l	<9	
Dichlorprop Tot	ng/l	<9	
Epoxyconazole	ng/l	<16	
Asulam (Total)	ng/l	<12	
Picloram Tot	ng/l	<4	
Tebuconazole	ng/l	<7	
Diflufenican	ng/l	<3	
Cyprodinil	ng/l	<10	
Metaldehyde	ng/l	<1	
Boscalid	ng/l	<7	
Cyromazine	ng/l	<12	
Metamitron	ng/l	<10	
Propamocarb	ng/l	<9	
Quinmerac (Total)	ng/l	<2	
Total Pesticides	ng/l	0	
PFBS (375-73-5)	ng/l		
5:3 FTCA (914637-49-3)	ng/l		
3:3 FTCA (356-02-5)	ng/l		
7:3 FTCA (812-70-4)	ng/l		
6:2 FTAB (34455-29-3)	ng/l		
8:2 FTS (39108-34-4)	ng/l		
4:2 FTS (757124-72-4)	ng/l		
PFHxS (355-46-4)	ng/l		
PFDA (335-76-2)	ng/l		
PFBA (375-22-4)	ng/l		
PFHpS (375-92-8)	ng/l		
PFNA (375-95-1)	ng/l		
6:2FTS (27619-97-2)	ng/l		
PFEESA (113507-82-7)	ng/l		
PFPA (2706-90-3)	ng/l		
PFHxA (307-24-4)	ng/l		

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PFHpA (375-85-9)	ng/l		
PFOA (335-67-1)	ng/l		
PFUnA (2058-94-8)	ng/l		
PFDoA (307-55-1)	ng/l		
PFOSA (754-91-6)	ng/l		
Linear PFOS(1763-23-1)	ng/l		
Ibuprofen Tot	ng/l		
Diclofenac Tot	ng/l		
Naproxen Tot	ng/l		
NFDHA (151772-58-6)	ng/l		
PFMOBA (863090-89-5)	ng/l		
PFMOPrA (377-73-1)	ng/l		
PFecHS (133201-07-7 / 646-83-3)	ng/l		
PFDS (335-77-3)	ng/l		
PFPeS (2706-91-4)	ng/l		
PFDoS (79780-39-5)	ng/l		
PFNS (68259-12-1)	ng/l		
PFTTrDA (72629-94-8)	ng/l		
PFUnDS (749786-16-1)	ng/l		
HFPO-DA (Gen X) (13252-13-6)	ng/l		
HFPO-TA (13252-14-7)	ng/l		
DONA (919005-14-4)	ng/l		
EtFOSA (4151-50-2)	ng/l		
EtFOSE (1691-99-2)	ng/l		
NEtFOSAA (2991-50-6)	ng/l		
6:2 Cl-PFESA (756426-58-1)	ng/l		
8:2 Cl-PFESA (763051-92-9)	ng/l		
MeFOSA (31506-32-8)	ng/l		
NMeFOSAA (2355-31-9)	ng/l		
MeFOSE (24448-09-7)	ng/l		
PFTeA (376-06-7)	ng/l		
PFHxDA (67905-19-5)	ng/l		
PFODA (16517-11-6)	ng/l		
FBSA (30334-69-1)	ng/l		
FHxSA (41997-13-1)	ng/l		
Coliform (Pres) by MF	no/100ml	~80	~2500
E.coli (Pres) by MF	no/100ml	<10	~200
F.strep (Pres) by MF	no/100ml	~10	~50
Intestinal Enterococci (2 Dil) Pres	no/100ml	~10	~50

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TVC at 22/3 Day	no/ml	135	
TVC at 37/2 Day	no/ml	31	
C.perfringens (Pres) by MF	no/100ml	3	~10
No of oocysts/l	no/l	0	
Blue Green Algae Total	cells/ml	0	
Green Algae Total	cells/ml	30	
Diatoms Total	cells/ml	<10	
Chryspophytes Total	cells/ml	170	
Unicell Flagellates Total	cells/ml	120	
Other Algae Total	cells/ml	1100	
Total Algae	cells/ml	1420	
Transmittance (Filtered) at 254 nm	%	85.1	82.1
Transmittance at 254 nm	%	80	80.7
pH (Langelier Index)	pH units	10.5	
pH in Water	pH units	6.8	6.8
Cond in Water	uS/cm	62.9	62.2
Dry Residue	mg/l	44	
Alk Bicarb HCO3	mg/l	9	9
Alk Carb HCO3	mg/l	0	0
Alk Hydr HCO3	mg/l	0	0
Alk at pH 8.3 HCO3	mg/l	0	0
Alk at pH 4.5 HCO3 Water	mg/l	9	9
CO2 Free	mg/l	1.96	2.25
Hardness Ca	mg/l	1.8	1.9
Hardness Carb	mg/l	2.9	2.8
Hardness Mg	mg/l	1.9	2
Hardness Non Carb	mg/l	0.9	1.1
Hardness Tot Ca	mg/l	3.8	3.9
Colour as Pt/Co	mg/l		8.7
Turbidity	NTU	0.12	0.46
DOC L/L	mg/l		
TOC L/L	mg/l	2.52	
N Tot Water&Waste C-O	mg/l		
TON NO3 Water	mg/l	<1.6	<1.6
NH4 Tot Water	mg/l	<0.08	<0.08
NO3 NO3 Water Calc	mg/l	<1.6	<1.6
NO2 NO2 Water	mg/l	<0.017	<0.017
Chloride Water	mg/l	14	17
PO4 Ortho P Water	ug/l	<16.5	
SiO2 Diss Water	mg/l	4.7	

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F Tot	ug/l	<100	
SO4 Diss Water	mg/l	<2.4	
BrO3 Total	ug/l	<0.15	
Al Diss Water	ug/l	22.2	
Al Tot Water	ug/l	33.9	29
As Tot Water	ug/l	1.5	
B Tot Water	ug/l	<7.1	
Ba Tot Water	ug/l	2.86	
Ca Tot Water	mg/l	1.8	1.9
Cd Diss Water	ug/l	<0.06	
Cd Tot Water	ug/l	<0.06	<0.06
Cr Diss Water	ug/l	<0.8	
Cr Tot Water	ug/l	<0.8	<0.8
Cu Diss Water	ug/l	4.47	
Cu Tot Water	ug/l	<1.9	<1.9
Fe Diss Water	ug/l	71.9	
Fe Tot Water	ug/l	112	105
Hg Tot Water	ug/l	<0.04	
K Tot Water	mg/l	1	1
Mg Tot Water	mg/l	1.2	1.2
Mn Diss Water	ug/l	16.4	
Mn Tot Water	ug/l	22.6	21.9
Na Tot Water	mg/l	8.2	8.4
Ni Diss Water	ug/l	<3.3	
Ni Tot Water	ug/l	<3.3	<3.3
Pb Diss Water	ug/l	<0.08	
Pb Tot Water	ug/l	<0.08	<0.08
Sb Tot Water	ug/l	<0.05	
Se Tot Water	ug/l	<0.52	
Zn Diss Water	ug/l	<21	
Zn Tot Water	ug/l	<21	<21
Rn-222 Tot Water	Bq/l		
Gross Alpha Tot Water	Bq/l	<0.02	
Gross Beta Tot Water	Bq/l	<0.054	
Tritium Water	Bq/l		
CN Tot Clean CO	ug/l		