Combined Dataset

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

								Strata (PFA/MG)	PFA	PFA	PFA
								Sample Reference	RBH136	RTP183	RBH125
								Date Sampled	08/02/2024	13/02/2024	28/02/2024
								Depth	2.50-2.60	0.40-0.60	4.00-4.50
Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS	Number of Exceedances				
Antimony (dissolved)	µg/l	1.7	Non		5		1		**8.10**	1.70	
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	12 (16*)		**37.00**	**26.00**	**31.00**
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	4		0.80	2.30	0.90
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***	1				0.43
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***	1		**78**	43.00	
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**	(10*)				**0.50**
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***			1.00	1.00	1.00
Sulphate	mg/l	0.045	-		**250**	**400**	11		**349**	**350**	**449**
Selenium (dissolved)	µg/l	4	Non		**10**		4		7	4	**10**
Vanadium (dissolved)	µg/l	1.7	-			**20**	1		17	9	**29**

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS	PFA RBH137 27/02/2024 2.00-2.50	PFA RTP136 14/02/2024 2.20-2.40	PFA RTP138 15/02/2024 1.50-1.70	PFA RTP151 12/02/2024 0.50-0.70
Antimony (dissolved)	µg/l	1.7	Non		5					
Arsenic (dissolved)	µg/l	1	Haz	1	10	50	69.00	20.90	29.90	2.61
Chromium (Cr III)	µg/l	0.4	Non	5	50	4.7	0.40	0.40	13.00	0.76
Copper (bioavailable)	µg/l	0.7	-		2000	1*	1.04	0.14	0.77	0.05
Manganese (dissolved)	µg/l	0.06	-		50	123*				
Mercury	µg/l	0.5	Haz	0.01	1	0.07	0.50	0.50	0.50	0.50
Lead (total)	µg/l	1	Haz	1	10	1.2*	1.00	1.80	1.00	2.40
Sulphate	mg/l	0.045	-		250	400	540	2.2	350	0.77
Selenium (dissolved)	µg/l	4	Non		10		7.8	7.5	6	4
Vanadium (dissolved)	µg/l	1.7	-			20				

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

							MG	MG	MG	PFA
							RTP143	RTP166	RBH124	RBH126
							20/02/2024	19/02/2024	14/02/2024	19/02/2024
							0.90-1.00	1.80-1.90	0.1-0.2	1.0-1.5
Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS				
Antimony (dissolved)	µg/l	1.7	Non		5					
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	**1.66**	**37.50**	1.00	**31.0**
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	0.40	4.30	0.40	0.50
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***	0.20	0.36	0.83	0.55
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***				
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**	**0.50**	**0.50**	**0.50**	**0.50**
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***	1.00	1.00		
Sulphate	mg/l	0.045	-		**250**	**400**	17	**250**	**1590**	172
Selenium (dissolved)	µg/l	4	Non		**10**		4	4	4	4
Vanadium (dissolved)	µg/l	1.7	-			**20**			5	9.8

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS	PFA RTP134 14/02/2024 3.5-3.7	PFA RTP135 15/02/2024 4.2-4.4	PFA RTP137 14/02/2024 2.6-2.8	PFA RTP140 15/02/2024 3.2-3.4
Antimony (dissolved)	µg/l	1.7	Non		5		1.70	1.70	1.70	1.70
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	**51.0**	**54.0**	**56.0**	**29.0**
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	**5.60**	**6.30**	3.60	**4.70**
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***				
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***				
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**				
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***				
Sulphate	mg/l	0.045	-		**250**	**400**	**285**	242	189	**255**
Selenium (dissolved)	µg/l	4	Non		**10**		4	4	**10**	**14**
Vanadium (dissolved)	µg/l	1.7	-			**20**				

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

							PFA	PFA	Topsoil	Topsoil
							RTP177	RTP186	RTP151	RTP183
							19/02/2024	14/02/2024		
							3.0-3.2	2.5-2.7	0.10-0.30	0.00-0.10
Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS				
Antimony (dissolved)	µg/l	1.7	Non		5			1.70		
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	**4.80**	**5.90**	5.42	14.15
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	0.40	1.80	1.29	0.68
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***	0.53			
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***				
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**	**0.50**		0.10	0.10
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***			1.39	1.39
Sulphate	mg/l	0.045	-		**250**	**400**	**491**	**326**		
Selenium (dissolved)	µg/l	4	Non		**10**		**33**	7.2	3	3
Vanadium (dissolved)	µg/l	1.7	-			**20**	14		4.12	32.05

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

							PFA RTP151	PFA RTP186	PFA RTP134	PFA RTP137
							0.50-0.70	1.50-1.70	0.50-0.70	1.60-1.80
Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS				
Antimony (dissolved)	µg/l	1.7	Non		5		0.34	2.69	3.75	2.59
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	3.31	30.11	48.18	39.14
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	3.49	1.13	1.20	0.98
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***				
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***	9.10	18.19	12.34	11.04
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**				
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***	0.25	1.07	1.29	0.94
Sulphate	mg/l	0.045	-		**250**	**400**	9.33	173	100	313
Selenium (dissolved)	µg/l	4	Non		**10**		9	8	3	8
Vanadium (dissolved)	µg/l	1.7	-			**20**	25.18	20.60	21.98	27.47

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

							PFA RTP135	PFA RTP140	PFA RTP154	PFA RTP166
							3.20-3.40	2.20-2.40	0.90-1.10	0.80-0.90
Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS				
Antimony (dissolved)	µg/l	1.7	Non		5		2.86	3.21	3.75	3.34
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	42.16	36.13	39.14	39.14
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	1.11	1.20	1.18	1.31
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***				
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***	15.59	16.89	12.34	20.79
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**				
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***	1.00	1.23	1.39	1.20
Sulphate	mg/l	0.045	-		**250**	**400**	400	113	253	32
Selenium (dissolved)	µg/l	4	Non		**10**		3	8	12	10
Vanadium (dissolved)	µg/l	1.7	-			**20**	29.76	27.47	32.05	27.47

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

							PFA	PFA	PFA	PFA
							RTP177	RBH129	RBH126	RBH143
							1.20-1.30	6.50-6.60	0.10-0.30	2.50-2.60
Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS				
Antimony (dissolved)	µg/l	1.7	Non		5		3.17	2.52	1.33	3.04
Arsenic (dissolved)	µg/l	1	Haz	1	10	50	36.13	25.59	15.66	33.12
Chromium (Cr III)	µg/l	0.4	Non	5	50	4.7	1.37	1.11	0.54	1.22
Copper (bioavailable)	µg/l	0.7	-		2000	1*				
Manganese (dissolved)	µg/l	0.06	-		50	123*	19.49	18.84	12.99	13.64
Mercury	µg/l	0.5	Haz	0.01	1	0.07				
Lead (total)	µg/l	1	Haz	1	10	1.2*	1.17	1.42	0.55	1.20
Sulphate	mg/l	0.045	-		250	400	220	493	187	447
Selenium (dissolved)	µg/l	4	Non		10		3	7	3	3
Vanadium (dissolved)	µg/l	1.7	-			20	13.97	29.76	4.81	29.76

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

							MG RTP153	MG RTP186	MG RTP134	MG RTP154
							0.20-0.40	4.00-4.20	0.10-0.30	0.50-0.70
Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS				
Antimony (dissolved)	µg/l	1.7	Non		5					
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	2.83	39.14	4.52	5.12
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	0.26	1.33	0.65	0.37
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***				
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***				
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**	0.10	0.10	0.10	0.10
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***	0.16	1.29	1.10	0.31
Sulphate	mg/l	0.045	-		**250**	**400**				
Selenium (dissolved)	µg/l	4	Non		**10**		5	3	3	
Vanadium (dissolved)	µg/l	1.7	-			**20**	8.93	7.78	29.76	

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS	MG RTP150	MG RTP177	MG RTP166	MG RBH125
							1.10-1.20	3.00-3.10	1.80-1.90	0.00-0.10
Antimony (dissolved)	µg/l	1.7	Non		5					
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	39.14			12.35
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	1.31			2.03
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***				
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***				
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**	0.10			0.50
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***	1.36			4.86
Sulphate	mg/l	0.045	-		**250**	**400**				
Selenium (dissolved)	µg/l	4	Non		**10**			3	13	0
Vanadium (dissolved)	µg/l	1.7	-			**20**		12.82	29.76	0.02

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

							PFA RTP136	PFA RTP136		
							0.20-0.40	2.2-2.4		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS			**Min**	**Max**
Antimony (dissolved)	µg/l	1.7	Non		5		3.24	0.01	0.01	8.10
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	36.13	0.06	0.06	69.00
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	1.09		0.26	13.00
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***			0.05	1.04
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***			9.10	78.00
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**			0.10	0.50
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***	1.20		0.16	4.86
Sulphate	mg/l	0.045	-		**250**	**400**	460	1	0.77	1590.00
Selenium (dissolved)	µg/l	4	Non		**10**				0.01	33.00
Vanadium (dissolved)	µg/l	1.7	-			**20**			0.02	32.05

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS	**Average**	**90th %ile**	**Std Deviation**	**90% UCL**
Antimony (dissolved)	µg/l	1.7	Non		5		2.58	3.75	1.630	5.26
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	26.54	48.74	18.202	56.48
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	1.88	4.42	2.377	5.79
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***	0.49	0.85	0.320	1.02
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***	21.59	36.34	18.183	51.50
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**	0.34	0.50	0.201	0.67
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***	1.23	1.46	0.809	2.56
Sulphate	mg/l	0.045	-		**250**	**400**	292.28	491.00	290.640	770.39
Selenium (dissolved)	µg/l	4	Non		**10**		6.64	10.93	5.474	15.65
Vanadium (dissolved)	µg/l	1.7	-			**20**	19.21	29.76	10.521	36.51

Thorpe Marsh Green Energy Hub: Battery Energy Storage System (BESS)

Analytical Parameter (Water Analysis)	Units	Limit of detection	Haz / Non-Haz	MRV	Groundwater resource potential - risk based standards to protect potable water supply potential	Freshwater AA EQS	**90% UCI**
Antimony (dissolved)	µg/l	1.7	Non		5		3.19
Arsenic (dissolved)	µg/l	1	Haz	**1**	10	50	31.45
Chromium (Cr III)	µg/l	0.4	Non	**5**	**50**	**4.7**	2.53
Copper (bioavailable)	µg/l	0.7	-		**2000**	**1***	0.67
Manganese (dissolved)	µg/l	0.06	-		**50**	**123***	30.2
Mercury	µg/l	0.5	Haz	**0.01**	**1**	**0.07**	0.43
Lead (total)	µg/l	1	Haz	**1**	**10**	**1.2***	1.48
Sulphate	mg/l	0.045	-		**250**	**400**	380.88
Selenium (dissolved)	µg/l	4	Non		**10**		8.16
Vanadium (dissolved)	µg/l	1.7	-			**20**	22.73