



Report Period

5/12/2025

19/03/2026

Macka's Sand Groundwater Monitoring Quarterly Review

Licence Information:

Environment Protection Licence (EPL) Number: 13218

Licence Holder: Macka's Sand Pty Ltd

Licencee Address:

Licensee:

Macka's Sand Pty Ltd

2684 Nelson Bay Rd

Salt Ash NSW 2318

Premises:

Macka's Sand Extraction and Processing Facility

Off Nelson Bay Road

Salt Ash NSW 23118

Link to the full licence on the EPA website:

[https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?](https://apps.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=77948&SYSUID=1&LICID=13218)

DOCID=77948&SYSUID=1&LICID=13218

Anniversary Date: **30-Jun**

VGT began sampling and testing for Macka's Sand 18/03/2024
Trigger Values sourced from Macka's Sand SWMP V6. November 2011

Results above nominated SWMP Trigger Level shown in RED

Results less than reporting limit are reported as '<PQL', and are calculated as
a result of half the PQL with the exception of:

<2 = 0.0055, <1 = 0.005, <10 = 0.10 , <20 = 0.20

Quarterly Groundwater Monitoring Macka's Sand - EPL 13218

Review Against Groundwater Investigation Trigger Values

Quarterly Exceedances

April 2026

Date	Sample Description	Analyte	Value	Trigger Value
19/03/2026	SP1	Turbidity	80.00	50
19/03/2026	SP2	Depth	2.98	2.80

Annual Exceedances

2025

Date	Sample Description	Analyte	Value	Trigger Value
19/03/2026	SP2	Depth	2.98	2.80
19/03/2026	SP1	Turbidity	80.00	50

Trigger Values from Macka's Sand SWMP. Table 5.3 and Table 5.5
SWMP last updated: November 2011

Quarterly Groundwater Monitoring Macka's Sand - EPL 13218

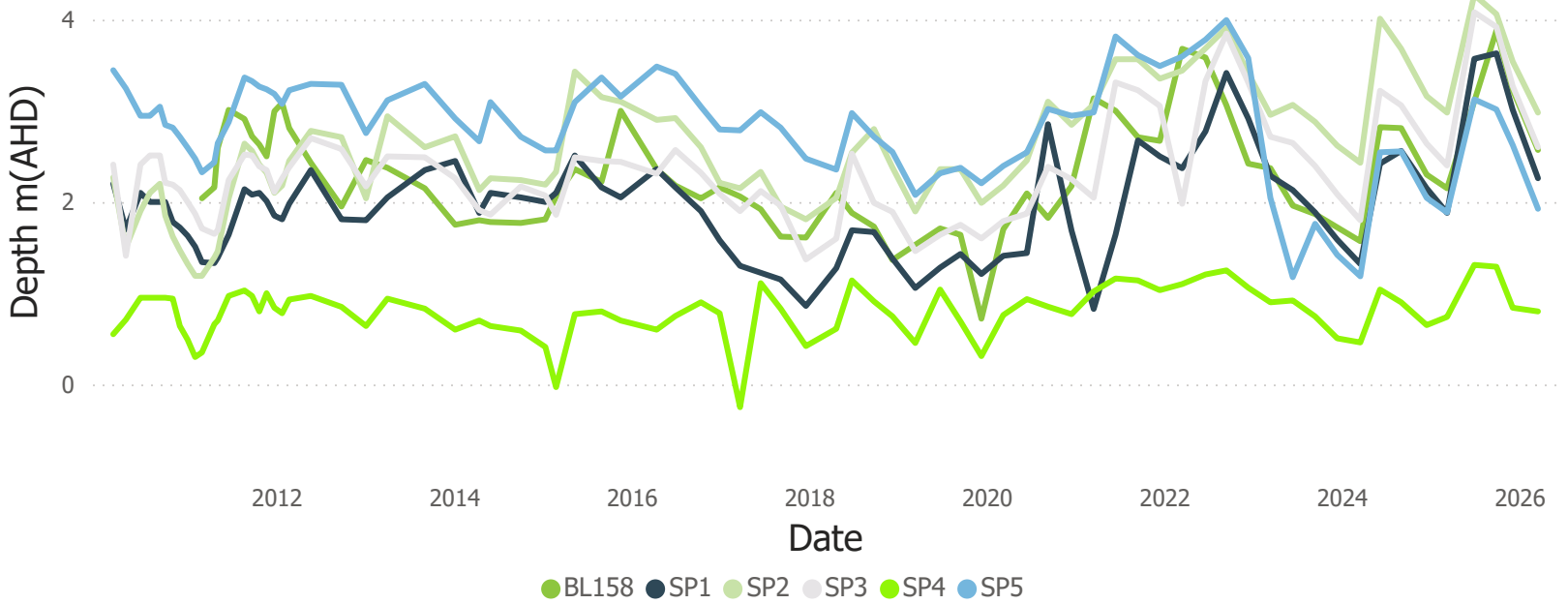
Sampling and Report Comments

Date	Sample Description	Sample Preservation	Sampling Method	Sampling Comments
19/03/2026	SP1	AS5667.1	AS5667.11, Bail	
19/03/2026	SP4	AS5667.1	AS5667.11, Bail	
19/03/2026	SP2	AS5667.1	AS5667.11, Pump	
19/03/2026	SP3	AS5667.1	AS5667.11, Pump	
19/03/2026	SP5	AS5667.1	AS5667.11, Pump	
19/03/2026	BL158	AS5667.1	AS5667.11, Pump	Mild sulphurous odour

Macka's Sand - EPL 13218

Depth

m(AHD)



Date	BL158	SP1	SP2	SP3	SP4	SP5
14/06/2023	1.96	2.13	3.07	2.65	0.92	1.17
14/09/2023	1.87	1.89	2.88	2.40	0.75	1.76
14/12/2023		1.59	2.62	2.09	0.51	1.42
18/03/2024	1.57	1.32	2.43	1.80	0.46	1.18
7/06/2024	2.82	2.42	4.01	3.22	1.04	2.55
2/09/2024	2.81	2.56	3.68	3.06	0.90	2.56
16/12/2024	2.30	2.15	3.16	2.64	0.65	2.05
10/03/2025	2.15	1.88	2.98	2.40	0.74	1.89
30/06/2025		3.57	4.27	4.08	1.31	3.13
29/09/2025	3.88	3.63	4.06	3.92	1.29	3.02
5/12/2025	3.23	3.01	3.54	3.27	0.84	2.63
19/03/2026	2.57	2.26	2.98	2.60	0.80	1.92

Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

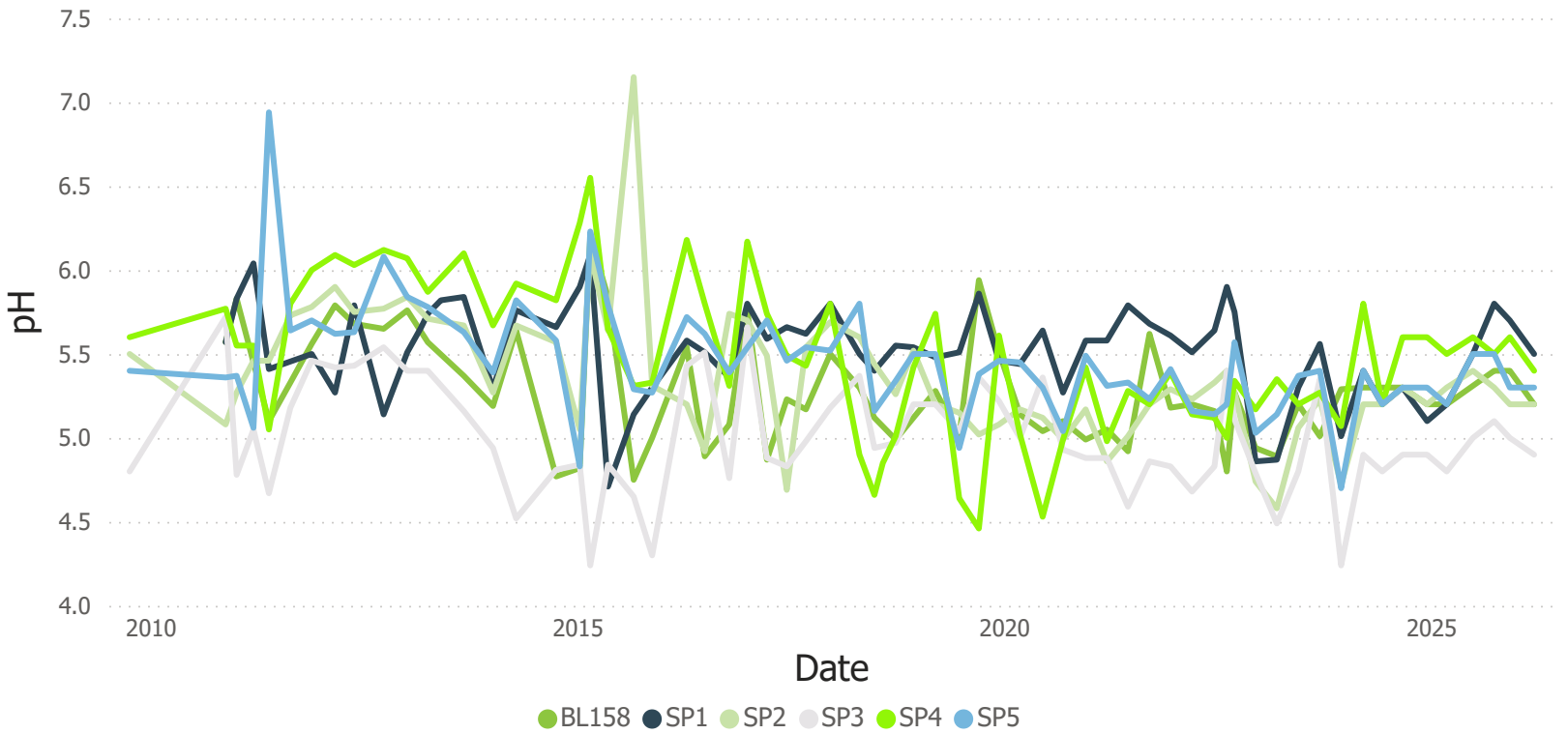
Current Annual Return

30/06/2025-29/06/2026

Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	2.57	2.26	2.98	2.60	0.80	1.92
Average	3.39	3.22	3.78	3.56	1.11	2.74
Max	3.88	3.63	4.27	4.08	1.31	3.13

Macka's Sand - EPL 13218

pH



Date	BL158	SP1	SP2	SP3	SP4	SP5
14/06/2023	5.20	5.30	5.06	4.80	5.20	5.37
14/09/2023	5.01	5.56	5.23	5.35	5.27	5.40
14/12/2023	5.29	5.01	4.72	4.24	5.07	4.70
18/03/2024	5.30	5.40	5.20	4.90	5.80	5.40
7/06/2024	5.30	5.20	5.20	4.80	5.20	5.20
2/09/2024	5.30	5.30	5.30	4.90	5.60	5.30
16/12/2024	5.20	5.10	5.20	4.90	5.60	5.30
10/03/2025	5.20	5.20	5.30	4.80	5.50	5.20
30/06/2025		5.50	5.40	5.00	5.60	5.50
29/09/2025	5.40	5.80	5.30	5.10	5.50	5.50
5/12/2025	5.40	5.70	5.20	5.00	5.60	5.30
19/03/2026	5.20	5.50	5.20	4.90	5.40	5.30

Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

Current Annual Return

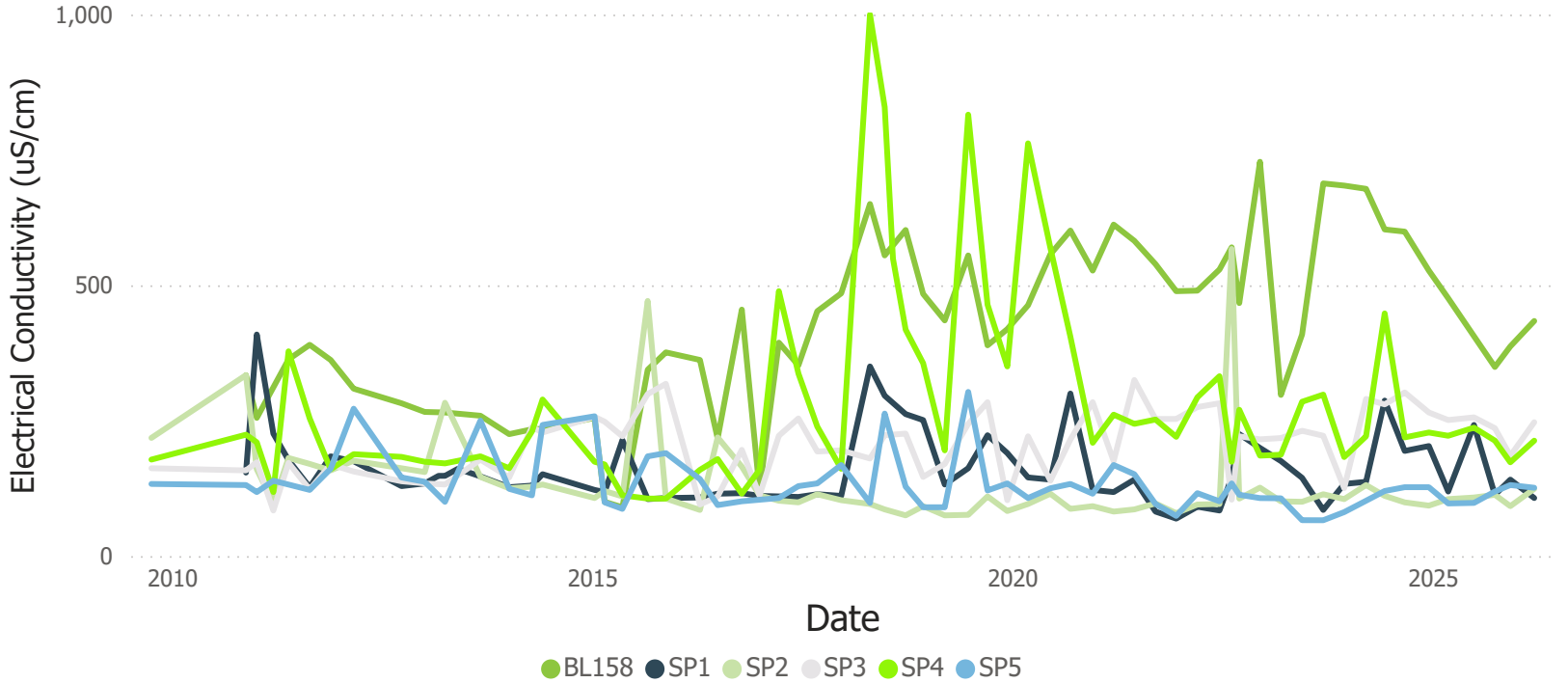
30/06/2025-29/06/2026

Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count pH	4	5	5	5	5	5
Min pH	5.20	5.50	5.20	4.90	5.40	5.30
Average pH	5.35	5.66	5.28	5.02	5.52	5.42
Max pH	5.40	5.80	5.40	5.10	5.60	5.50

Macka's Sand - EPL 13218

Electrical Conductivity

(uS/cm)



Date	BL158	SP1	SP2	SP3	SP4	SP5
14/06/2023	409	144	100	231	285	66
14/09/2023	688	85	114	222	298	66
14/12/2023	684	133	105	125	183	81
18/03/2024	678	137	131	290	221	102
7/06/2024	603	287	111	280	448	120
2/09/2024	599	194	99	302	219	127
16/12/2024	527	203	93	265	228	127
10/03/2025	476	119	105	251	222	97
30/06/2025		242	108	256	237	98
29/09/2025	349	113	113	236	213	119
5/12/2025	387	141	92	185	173	131
19/03/2026	434	107	124	247	213	126

Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

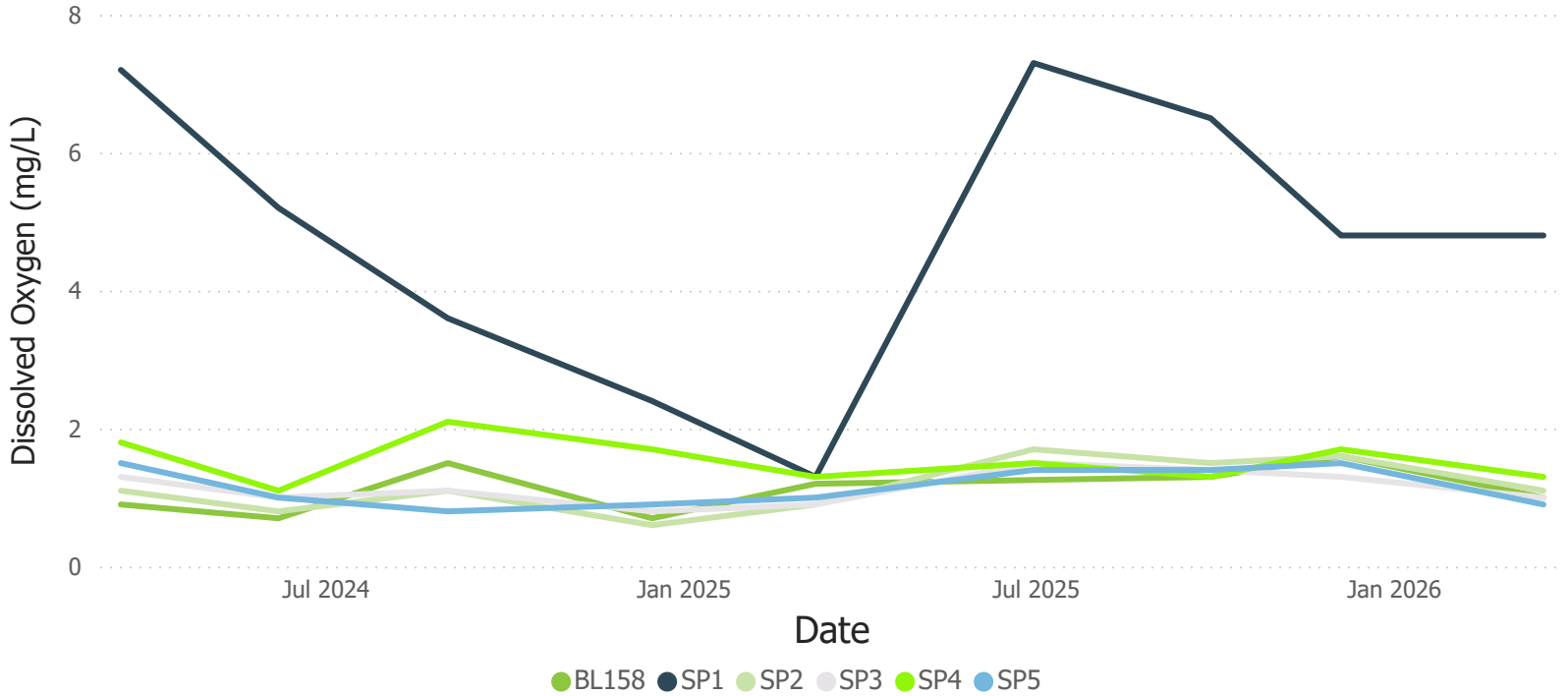
Current Annual Return

30/06/2025-29/06/2026

Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	349.00	107.00	92.00	185.00	173.00	98.00
Average	379.75	143.20	110.00	232.00	209.80	118.60
Max	434.00	242.00	124.00	256.00	237.00	131.00

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Dissolved Oxygen (mg/L)



Date	BL158	SP1	SP2	SP3	SP4	SP5
18/03/2024	0.90	7.20	1.10	1.30	1.80	1.50
7/06/2024	0.70	5.20	0.80	1.00	1.10	1.00
2/09/2024	1.50	3.60	1.10	1.10	2.10	0.80
16/12/2024	0.70	2.40	0.60	0.80	1.70	0.90
10/03/2025	1.20	1.30	0.90	0.90	1.30	1.00
30/06/2025	1.20	7.30	1.70	1.50	1.50	1.40
29/09/2025	1.30	6.50	1.50	1.40	1.30	1.40
5/12/2025	1.60	4.80	1.60	1.30	1.70	1.50
19/03/2026	1.00	4.80	1.10	1.00	1.30	0.90

Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

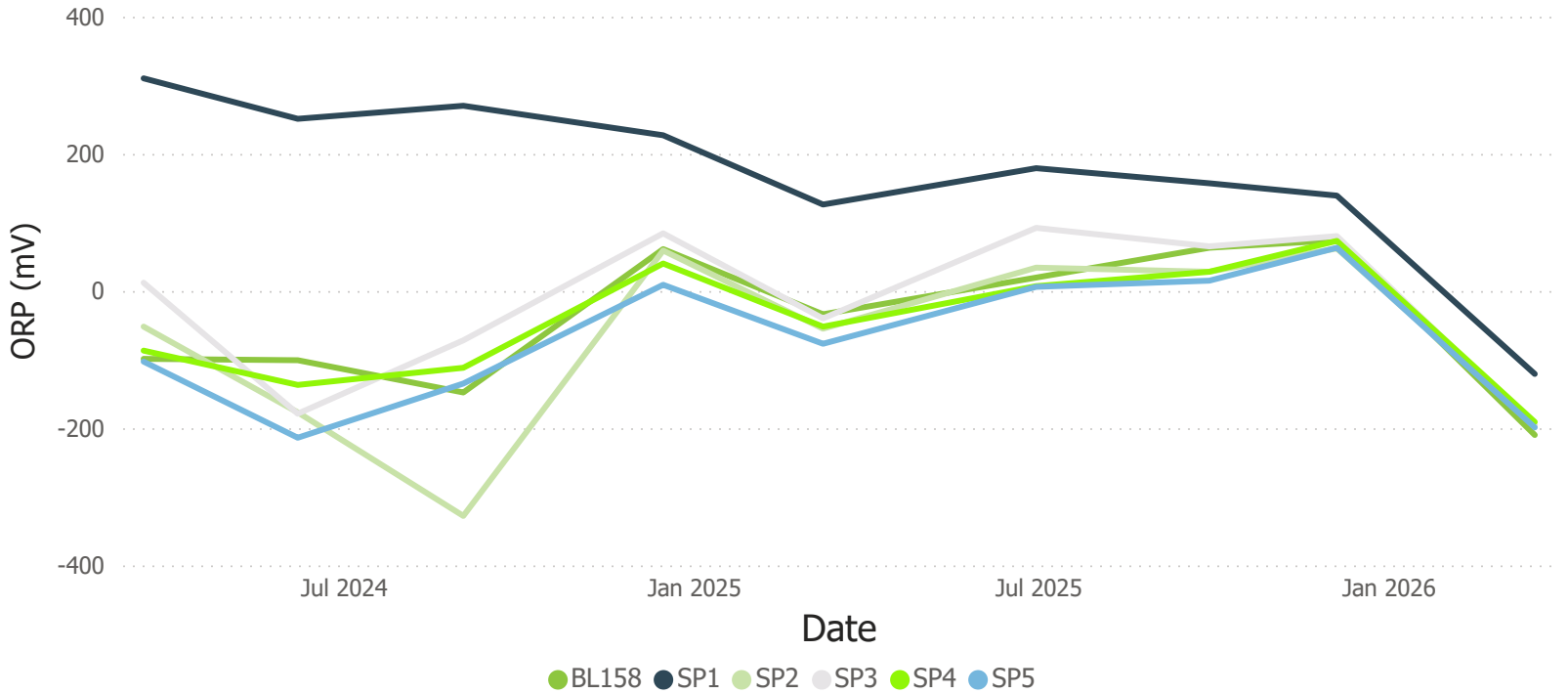
Current Annual Return

30/06/2025-29/06/2026

Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	1.00	4.80	1.10	1.00	1.30	0.90
Average	1.30	5.98	1.48	1.32	1.42	1.32
Max	1.60	7.30	1.70	1.50	1.70	1.50

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Oxygen Reduction Potential (mV)



Date	BL158	SP1	SP2	SP3	SP4	SP5
18/03/2024	-99	310	-52	12	-87	-103
7/06/2024	-101	251	-177	-179	-137	-214
2/09/2024	-148	270	-328	-72	-112	-135
16/12/2024	61	227	59	84	40	9
10/03/2025	-34	126	-55	-40	-52	-77
30/06/2025	179	179	34	92	7	6
29/09/2025	63	157	28	65	28	15
5/12/2025	74	139	62	80	73	63
19/03/2026	-210	-121	-196	-197	-191	-199

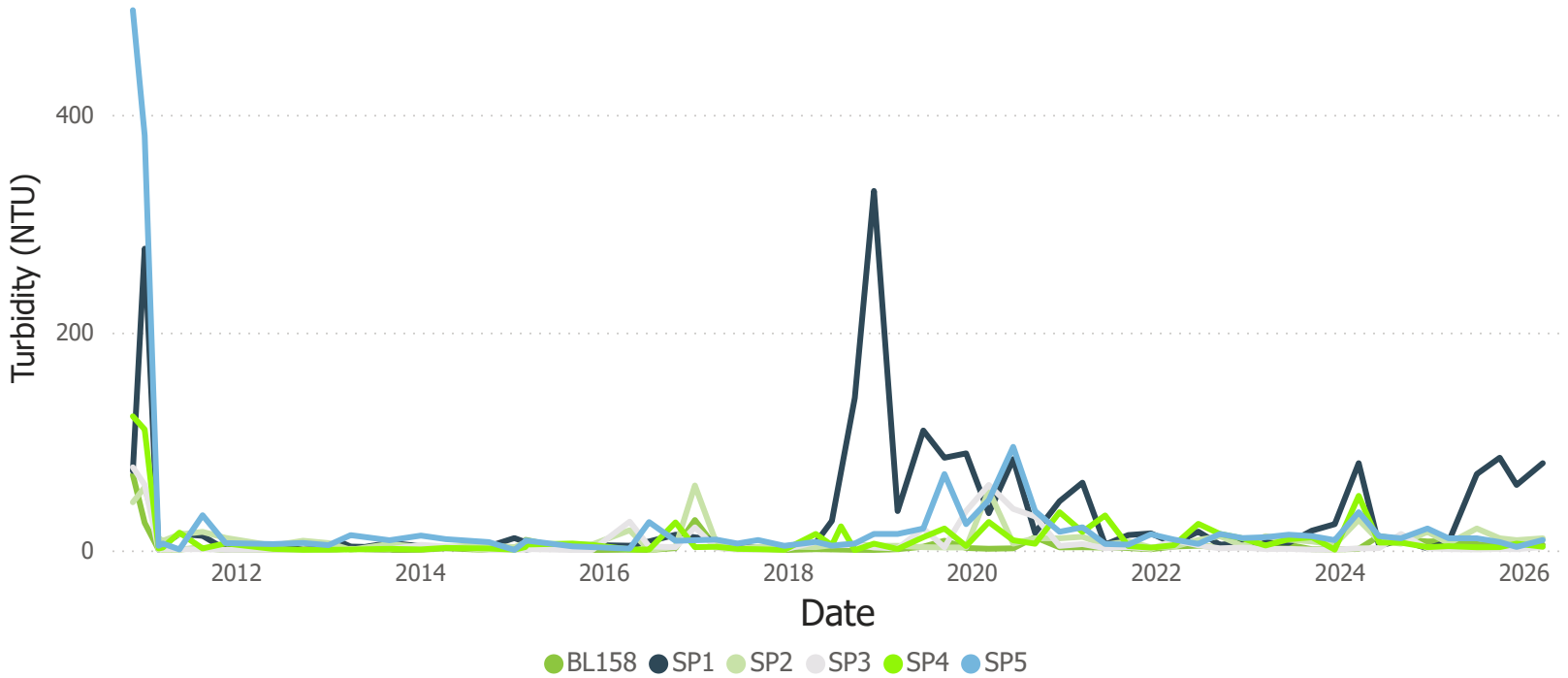
Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

Current Annual Return						
30/06/2025-29/06/2026						
Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	-210.00	-121.00	-196.00	-197.00	-191.00	-199.00
Average	-2.50	102.20	-8.80	21.00	-11.00	-20.00
Max	74.00	179.00	62.00	92.00	73.00	63.00

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Turbidity (NTU)



Date	BL158	SP1	SP2	SP3	SP4	SP5
14/06/2023	5.00	6.80	9.70	1.30	10.10	14.30
14/09/2023	1.00	18.00	8.10	0.60	12.00	13.00
14/12/2023	0.80	24.00	5.20	0.70	0.60	9.30
18/03/2024	1.30	80.00	28.00	1.70	50.00	35.00
7/06/2024	13.00	4.20	8.80	2.00	7.10	13.00
2/09/2024	10.00	9.30	6.00	15.00	7.00	11.00
16/12/2024	8.10	1.80	17.00	1.90	2.90	20.00
10/03/2025	8.40	7.70	6.40	1.10	3.80	11.00
30/06/2025		70.00	20.00	0.80	2.80	11.00
29/09/2025	3.50	85.00	11.00	1.30	2.90	7.50
5/12/2025	3.00	60.00	9.30	1.00	6.10	3.10
19/03/2026	4.90	80.00	11.00	3.00	3.30	9.40

Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

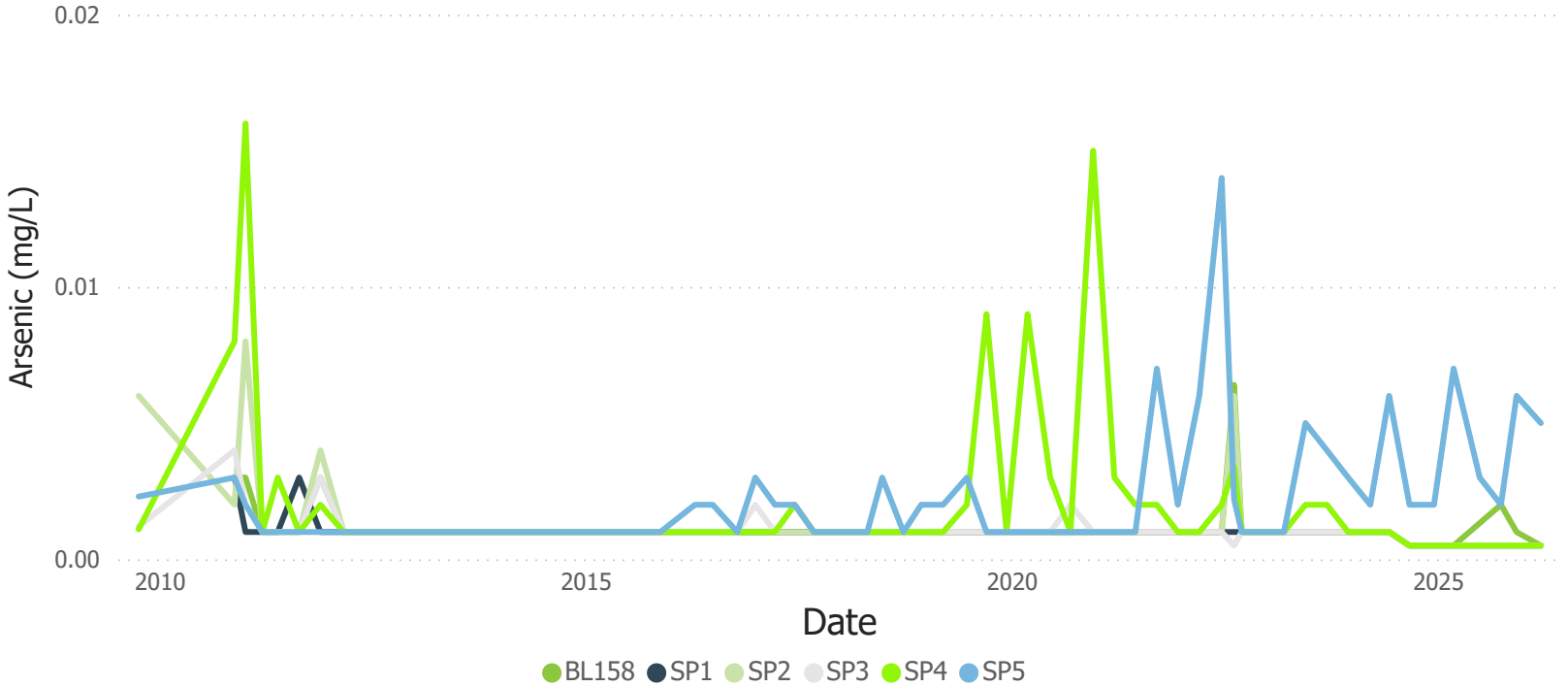
Current Annual Return

30/06/2025-29/06/2026

Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	3.00	60.00	9.30	0.80	2.80	3.10
Average	3.73	76.00	12.46	1.48	3.60	7.70
Max	4.90	85.00	20.00	3.00	6.10	11.00

Macka's Sand - EPL 13218

Arsenic (mg/L)

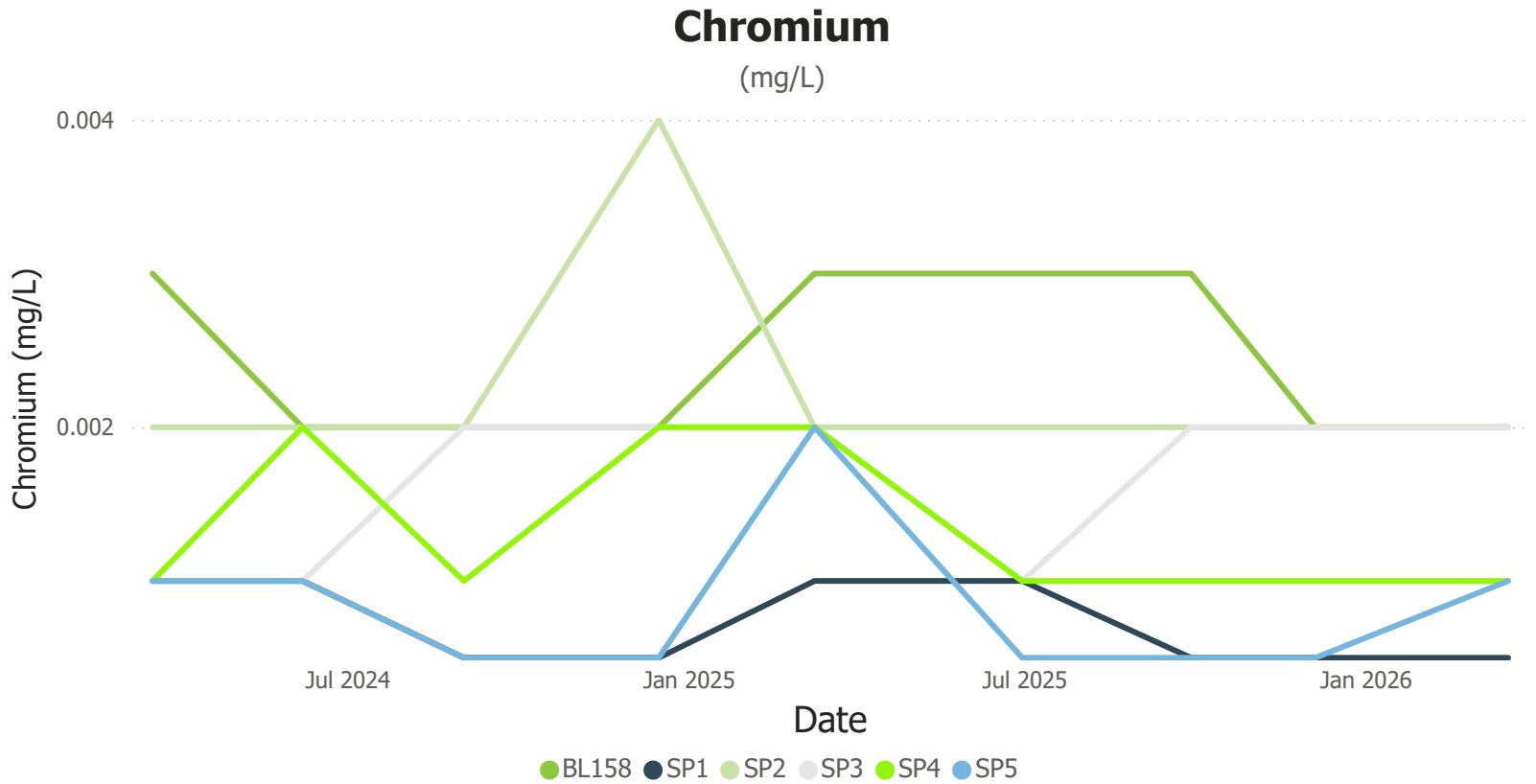


Date	BL158	SP1	SP2	SP3	SP4	SP5
14/06/2023	0.001	0.001	0.001	0.001	0.002	0.005
14/09/2023	0.001	0.001	0.001	0.001	0.002	0.004
14/12/2023	0.001	0.001	0.001	0.001	0.001	0.003
18/03/2024	0.001	0.001	0.001	0.001	0.001	0.002
7/06/2024	0.001	0.001	0.001	0.001	0.001	0.006
2/09/2024	<0.001	<0.001	<0.001	<0.001	<0.001	0.002
16/12/2024	<0.001	<0.001	<0.001	<0.001	<0.001	0.002
10/03/2025	<0.001	<0.001	<0.001	<0.001	<0.001	0.007
30/06/2025		<0.001	<0.001	<0.001	<0.001	0.003
29/09/2025	0.002	<0.001	<0.001	<0.001	<0.001	0.002
5/12/2025	0.001	<0.001	<0.001	<0.001	<0.001	0.006
19/03/2026	<0.001	<0.001	<0.001	<0.001	<0.001	0.005

Above nominated SWMP Stage 1 Trigger Level
 Above nominated SWMP Stage 2 Trigger Level

Current Annual Return						
30/06/2025-29/06/2026						
Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	<0.001	<0.001	<0.001	<0.001	<0.001	0.002
Average	0.001	<0.001	<0.001	<0.001	<0.001	0.004
Max	0.002	<0.001	<0.001	<0.001	<0.001	0.006

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Date	BL158	SP1	SP2	SP3	SP4	SP5
7/06/2024	0.002	0.001	0.002	0.001	0.002	0.001
2/09/2024	0.002	<0.001	0.002	0.002	0.001	<0.001
16/12/2024	0.002	<0.001	0.004	0.002	0.002	<0.001
10/03/2025	0.003	0.001	0.002	0.002	0.002	0.002
30/06/2025		0.001	0.002	0.001	0.001	<0.001
29/09/2025	0.003	<0.001	0.002	0.002	0.001	<0.001
5/12/2025	0.002	<0.001	0.002	0.002	0.001	<0.001
19/03/2026	0.002	<0.001	0.002	0.002	0.001	0.001

Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

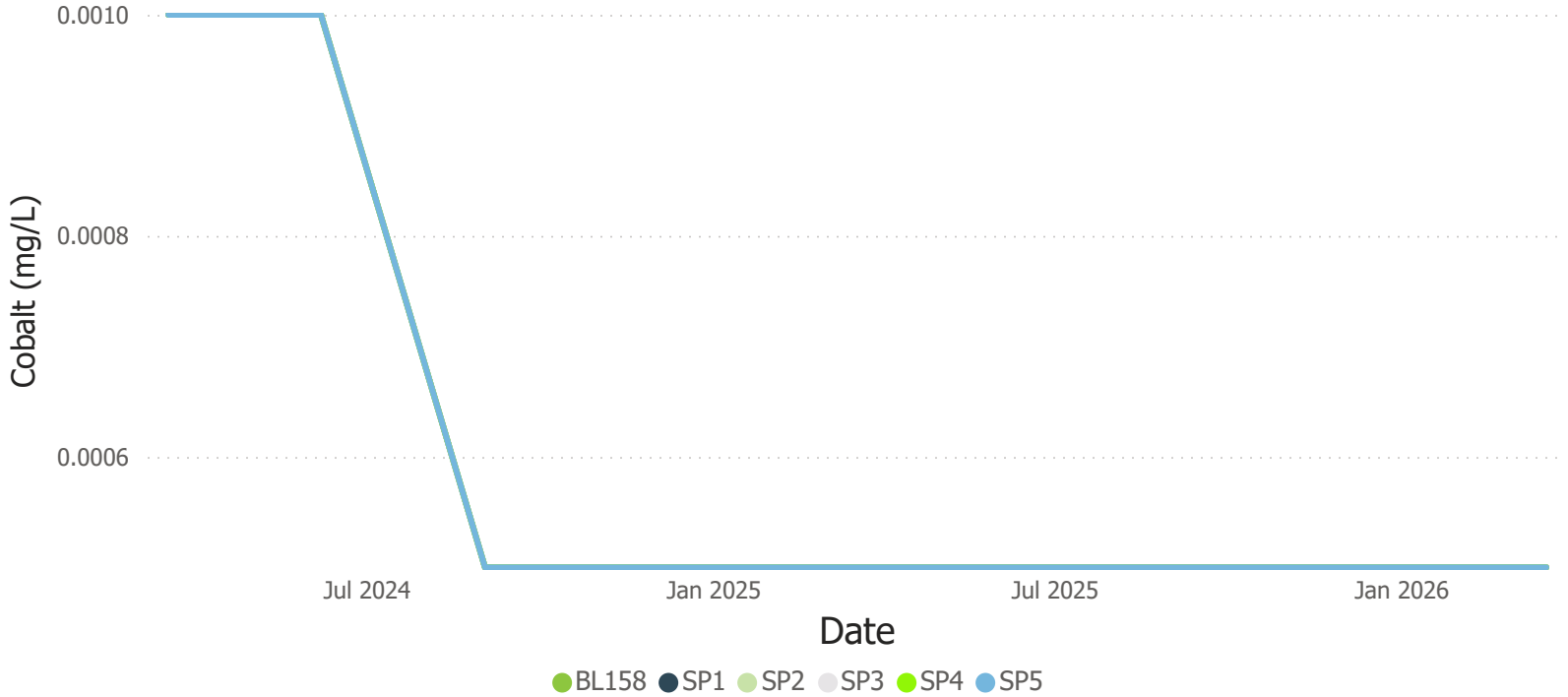
Current Annual Return

30/06/2025-29/06/2026

Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	0.002	<0.001	0.002	<0.001	<0.001	<0.001
Average	0.003	<0.001	0.002	0.002	<0.001	<0.001
Max	0.003	<0.001	0.002	0.002	<0.001	<0.001

Macka's Sand - EPL 13218

Cobalt (mg/L)



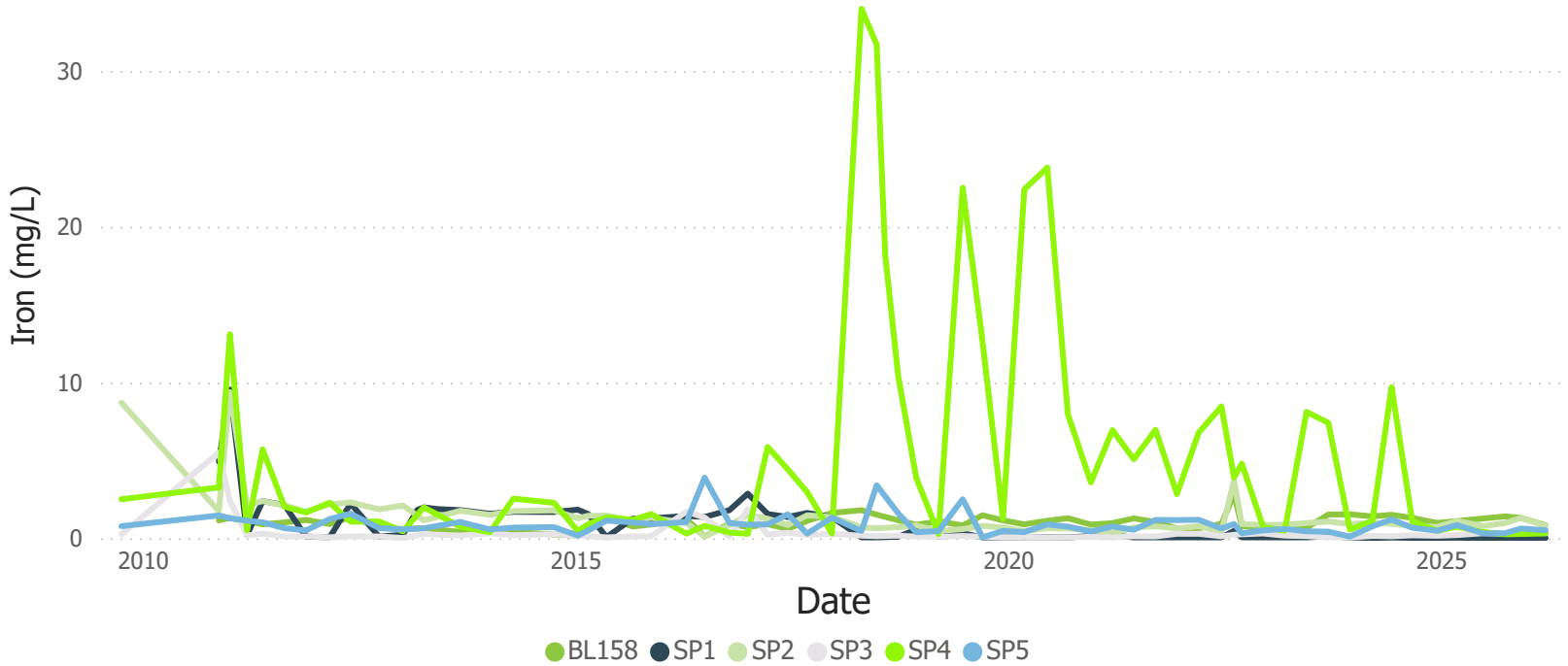
Date	BL158	SP1	SP2	SP3	SP4	SP5
7/06/2024	0.001	0.001	0.001	0.001	0.001	0.001
2/09/2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
16/12/2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10/03/2025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
30/06/2025		<0.001	<0.001	<0.001	<0.001	<0.001
29/09/2025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
5/12/2025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
19/03/2026	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Above nominated SWMP Stage 1 Trigger Level
 Above nominated SWMP Stage 2 Trigger Level

Current Annual Return						
30/06/2025-29/06/2026						
Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	0.002	<0.001	0.002	<0.001	<0.001	<0.001
Average	0.003	<0.001	0.002	0.002	<0.001	<0.001
Max	0.003	<0.001	0.002	0.002	<0.001	<0.001

Macka's Sand - EPL 13218

Iron (mg/L)



Date	BL158	SP1	SP2	SP3	SP4	SP5
14/06/2023	0.66	0.05	0.97	0.13	8.11	0.44
14/09/2023	1.52	0.12	1.07	0.05	7.41	0.42
14/12/2023	1.53	0.05	0.90	0.05	0.55	0.10
18/03/2024	1.40	0.01	1.00	0.14	1.10	0.76
7/06/2024	1.50	0.04	0.92	0.12	9.70	1.20
2/09/2024	1.30	0.02	0.79	0.18	1.10	0.67
16/12/2024	0.98	0.02	0.73	0.15	0.47	0.48
10/03/2025	1.10	0.03	1.10	0.20	0.74	0.84
30/06/2025		0.01	0.78	0.32	0.39	0.30
29/09/2025	1.40	0.01	0.97	0.27	0.25	0.32
5/12/2025	1.30	0.01	1.30	0.31	0.27	0.62
19/03/2026	0.83	0.01	0.80	0.34	0.30	0.51

Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

Current Annual Return

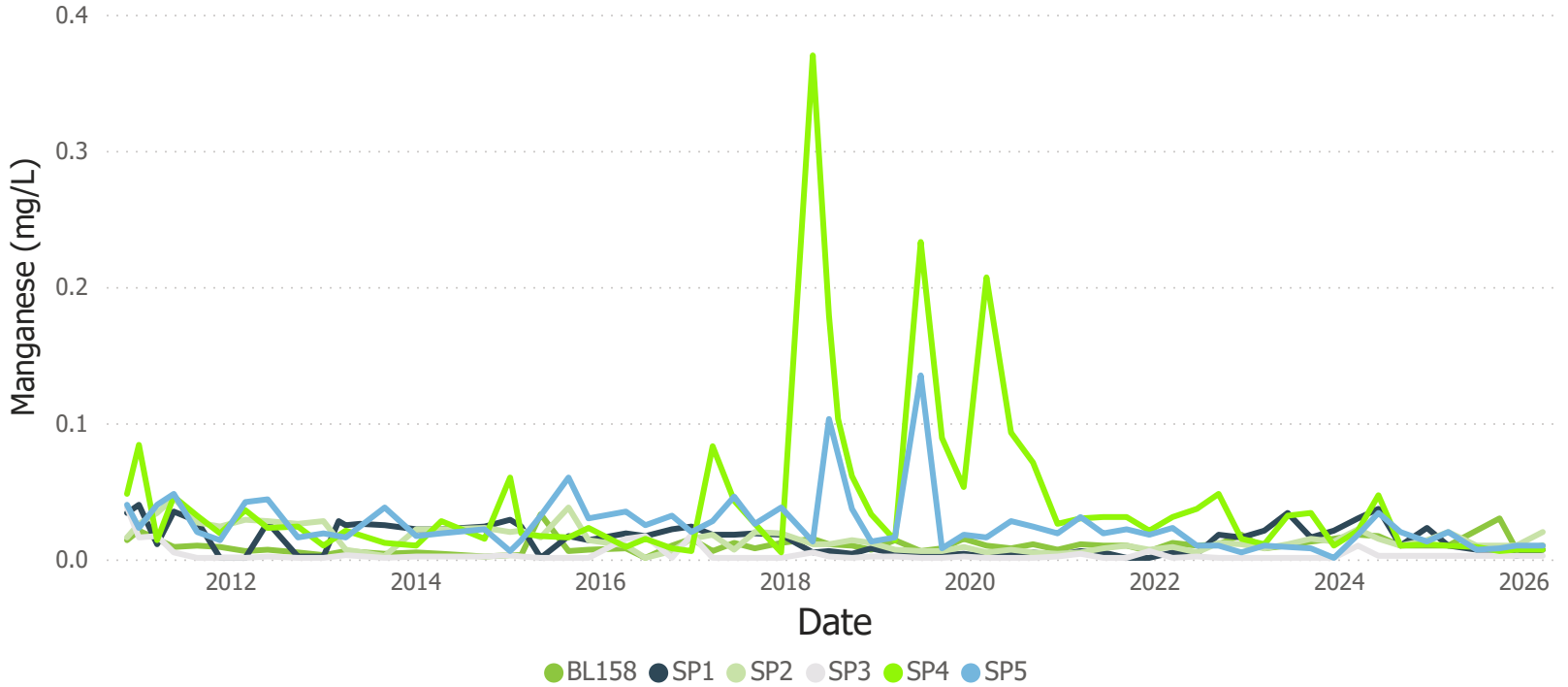
30/06/2025-29/06/2026

Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	0.83	0.01	0.78	0.27	0.25	0.30
Average	1.23	0.01	0.96	0.30	0.29	0.41
Max	1.40	0.01	1.30	0.34	0.39	0.62

Macka's Sand - EPL 13218

Manganese

(mg/L)



Date	BL158	SP1	SP2	SP3	SP4	SP5
14/06/2023	0.010	0.034	0.011	0.001	0.032	0.009
14/09/2023	0.013	0.016	0.015	0.001	0.034	0.008
14/12/2023	0.015	0.021	0.013	0.001	0.010	0.001
18/03/2024	0.018	0.030	0.022	0.010	0.021	0.018
7/06/2024	0.017	0.037	0.015	0.003	0.047	0.034
2/09/2024	0.010	0.010	0.010	0.003	0.010	0.020
16/12/2024	0.010	0.023	0.014	0.003	0.011	0.013
10/03/2025	0.010	0.010	0.020	0.003	0.010	0.020
30/06/2025		0.007	0.010	0.003	0.009	0.007
29/09/2025	0.030	0.007	0.010	0.003	0.006	0.008
5/12/2025	0.007	0.003	0.010	0.003	0.007	0.010
19/03/2026	0.010	0.007	0.020	0.003	0.007	0.010

Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

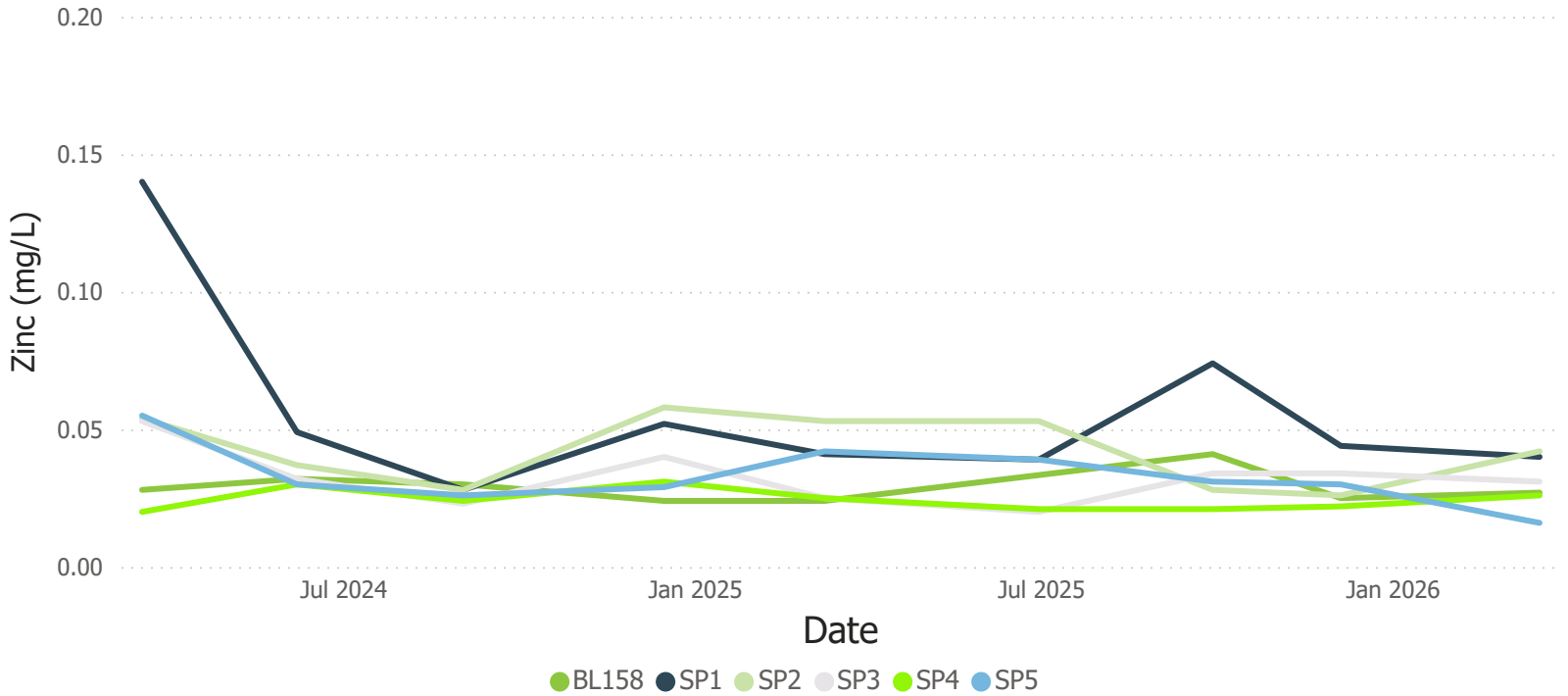
Current Annual Return

30/06/2025-29/06/2026

Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	0.007	<0.005	0.010	<0.005	0.006	0.007
Average	0.019	0.006	0.012	<0.005	0.007	0.009
Max	0.030	0.007	0.020	<0.005	0.009	0.010

Macka's Sand - EPL 13218

Zinc (mg/L)



Date	BL158	SP1	SP2	SP3	SP4	SP5
18/03/2024	0.028	0.140	0.054	0.053	0.020	0.055
7/06/2024	0.032	0.049	0.037	0.032	0.030	0.030
2/09/2024	0.030	0.028	0.028	0.023	0.024	0.026
16/12/2024	0.024	0.052	0.058	0.040	0.031	0.029
10/03/2025	0.024	0.041	0.053	0.025	0.025	0.042
30/06/2025	0.039	0.039	0.053	0.020	0.021	0.039
29/09/2025	0.041	0.074	0.028	0.034	0.021	0.031
5/12/2025	0.025	0.044	0.026	0.034	0.022	0.030
19/03/2026	0.027	0.040	0.042	0.031	0.026	0.016

Above nominated SWMP Stage 1 Trigger Level

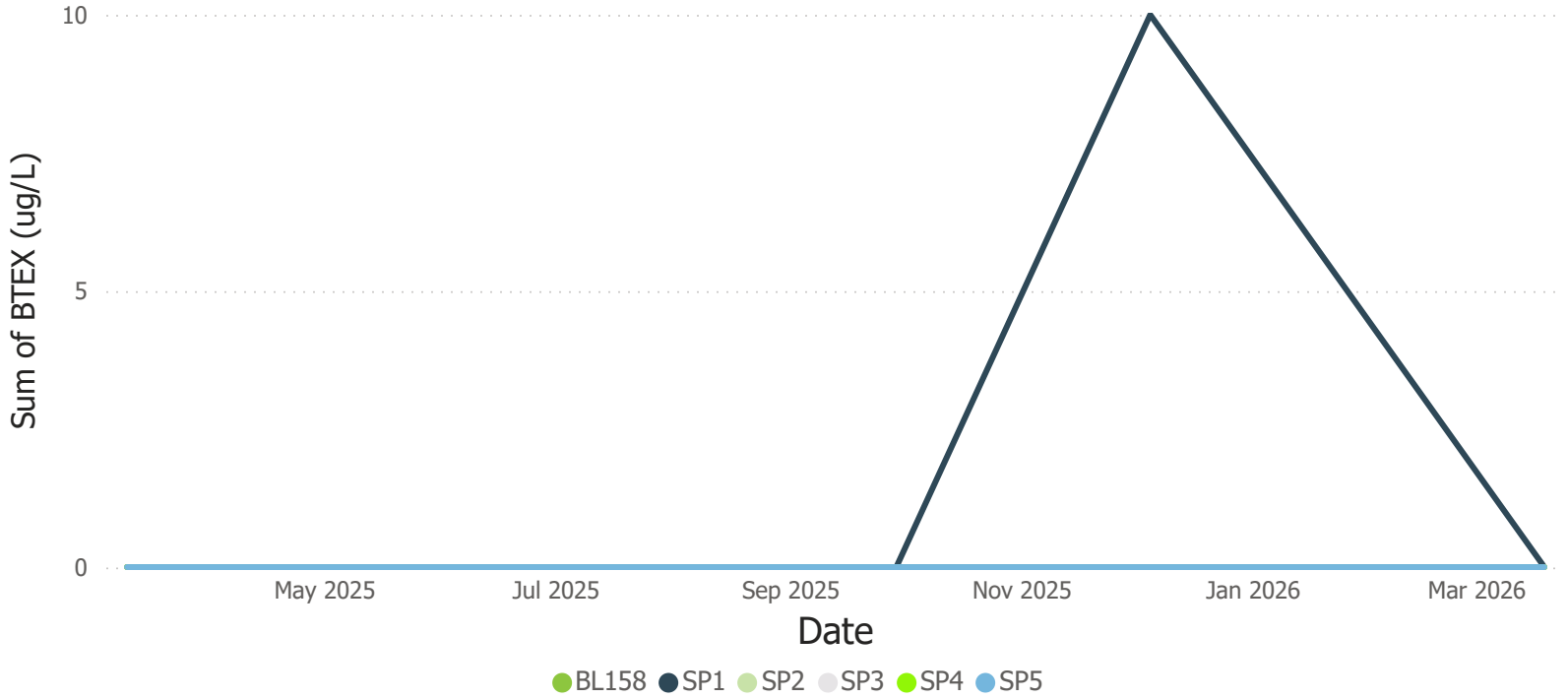
Above nominated SWMP Stage 2 Trigger Level

Current Annual Return						
30/06/2025-29/06/2026						
Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	0.025	0.039	0.026	0.020	0.021	0.016
Average	0.034	0.054	0.035	0.031	0.022	0.029
Max	0.041	0.074	0.053	0.034	0.026	0.039

Macka's Sand - EPL 13218

Sum of BTEX

(ug/L)



Date	BL158	SP1	SP2	SP3	SP4	SP5
30/06/2025		<2	<2	<2	<2	<2
29/09/2025	<2	<2	<2	<2	<2	<2
5/12/2025	<2	10	<2	<2	<2	<2
19/03/2026	<2	<2	<2	<2	<2	<2

Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

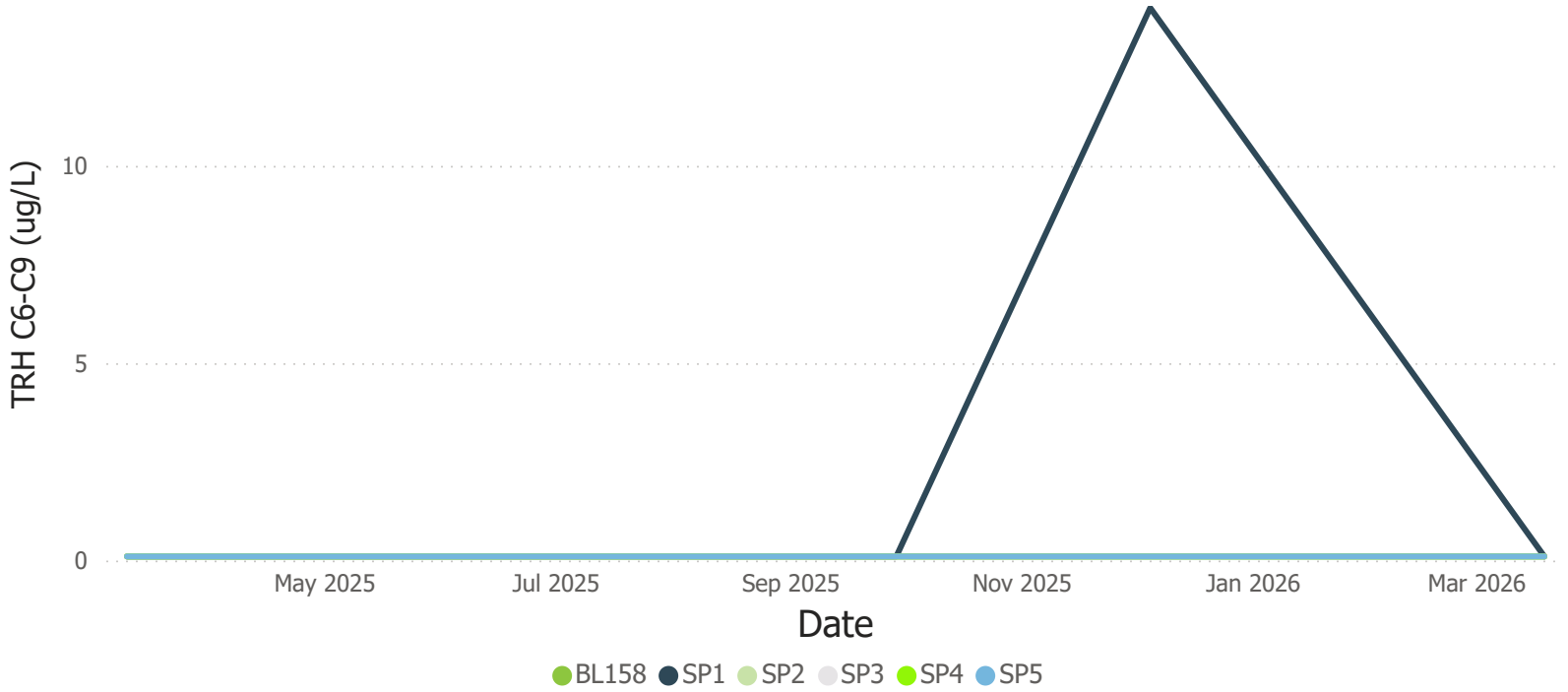
Current Annual Return

30/06/2025-29/06/2026

Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	0.01	0.01	0.01	0.01	0.01	0.01
Average	0.01	2.00	0.01	0.01	0.01	0.01
Max	0.01	10.00	0.01	0.01	0.01	0.01

Macka's Sand - EPL 13218

TRH C6-C9 (ug/L)



Date	BL158	SP1	SP2	SP3	SP4	SP5
30/06/2025		<10	<10	<10	<10	<10
29/09/2025	<10	<10	<10	<10	<10	<10
5/12/2025	<10	14	<10	<10	<10	<10
19/03/2026	<10	<10	<10	<10	<10	<10

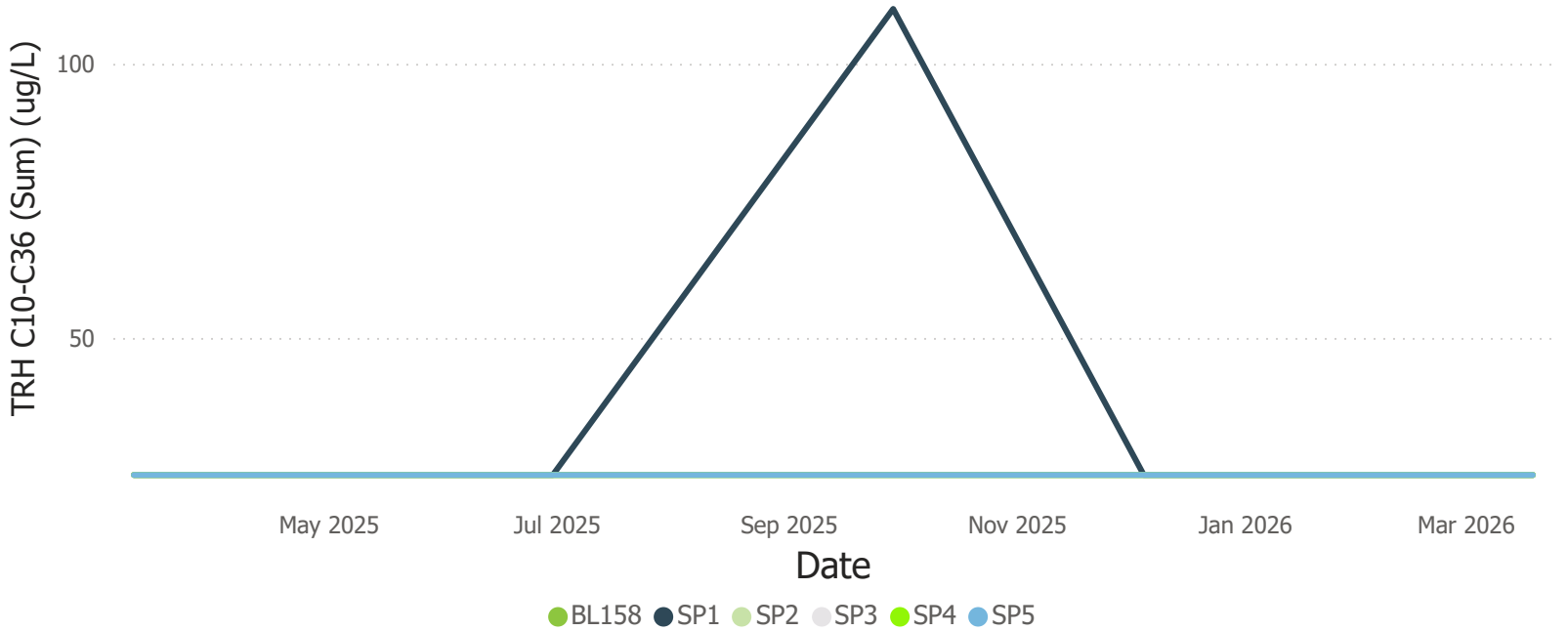
Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

Current Annual Return						
30/06/2025-29/06/2026						
Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	0.10	0.10	0.10	0.10	0.10	0.10
Average	0.10	2.88	0.10	0.10	0.10	0.10
Max	0.10	14.00	0.10	0.10	0.10	0.10

Macka's Sand - EPL 13218

TRH C10-C36 (Sum) (ug/L)



Date	BL158	SP1	SP2	SP3	SP4	SP5
30/06/2025	<50	<50	<50	<50	<50	<50
29/09/2025	<50	110	<50	<50	<50	<50
5/12/2025	<50	<50	<50	<50	<50	<50
19/03/2026	<50	<50	<50	<50	<50	<50

Above nominated SWMP Stage 1 Trigger Level

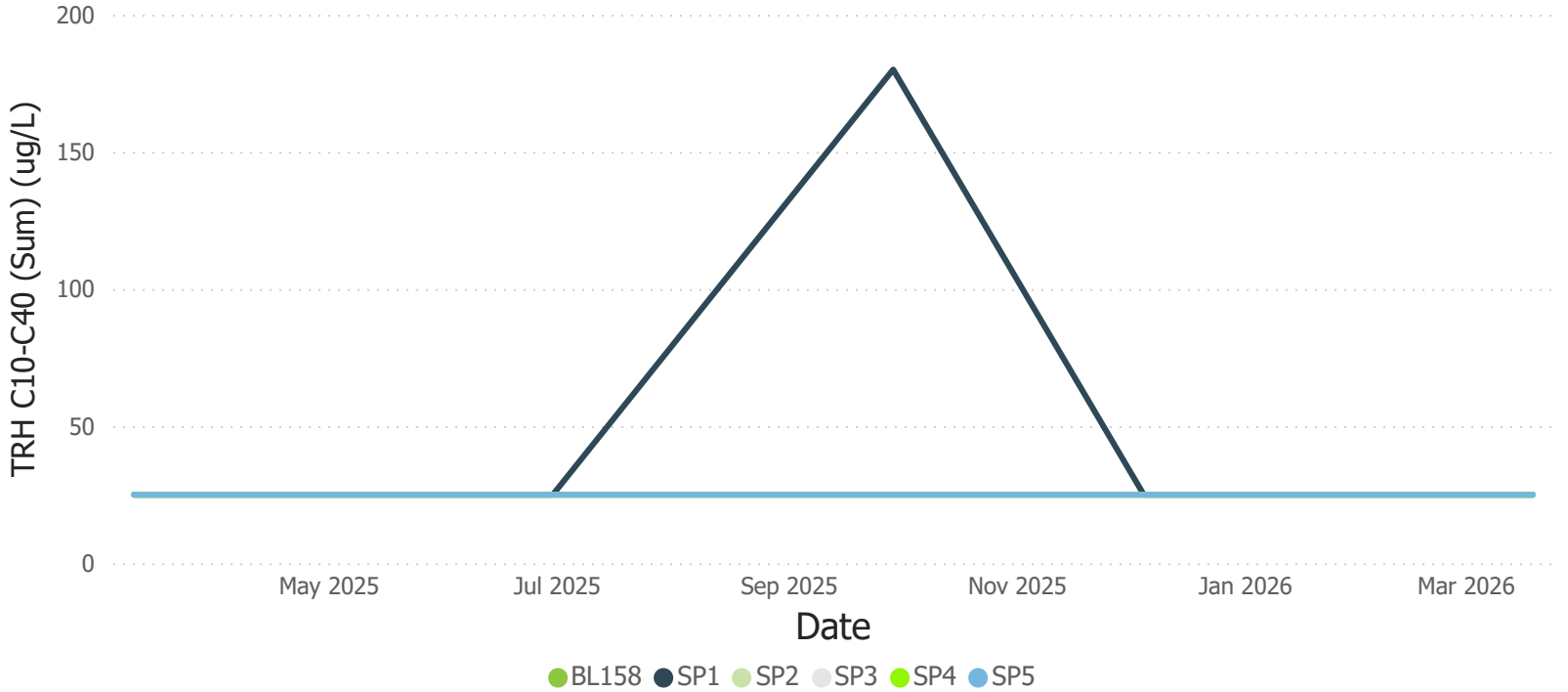
Above nominated SWMP Stage 2 Trigger Level

Current Annual Return						
30/06/2025-29/06/2026						
Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	25.00	25.00	25.00	25.00	25.00	25.00
Average	25.00	59.00	25.00	25.00	25.00	25.00
Max	25.00	110.00	25.00	25.00	25.00	25.00

Macka's Sand - EPL 13218

TRH C10-C40 (Sum)

(ug/L)



Date	BL158	SP1	SP2	SP3	SP4	SP5
30/06/2025		<50	<50	<50	<50	<50
29/09/2025	<50	180	<50	<50	<50	<50
5/12/2025	<50	<50	<50	<50	<50	<50
19/03/2026	<50	<50	<50	<50	<50	<50

Above nominated SWMP Stage 1 Trigger Level

Above nominated SWMP Stage 2 Trigger Level

Current Annual Return

30/06/2025-29/06/2026

Statistic	BL158	SP1	SP2	SP3	SP4	SP5
Count	4	5	5	5	5	5
Min	25.00	25.00	25.00	25.00	25.00	25.00
Average	25.00	87.00	25.00	25.00	25.00	25.00
Max	25.00	180.00	25.00	25.00	25.00	25.00