

9 December 2025

Project No. 33250

Hodgson Planning Consultants
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Attention: Vance Hodgson
By email: vance@hpcplanning.co.nz
Cc: Liam Scarborough; Liam@scarbrocivil.co.nz

Dear Vance,

362 JONES ROAD, HUNUA, AUCKLAND – STREAM WATER QUALITY BASELINE SAMPLING

1.0 INTRODUCTION

Scarbro Environmental Ltd (SEL) are currently applying for resource consent for a proposed Managed Fill (MF) facility at 362 Jones Rd, Hunua, occupying about 12ha of the 25.2ha site, including associated drains and sediment ponds. The MF comprises two separate areas of 9ha and 2ha (excluding drains and sediment ponds) on the northern and southern sides of the site, respectively, with corresponding estimated fill volumes of 720,000m³ and 70,000m³. The two MF areas are shown in Figure 1.

As part of this work and in response to a Section 92 request from Council, FTL have undertaken sampling of the streams that run through the site on three separate occasions to provide baseline water quality data, pre-filling operations. The three sampling rounds were undertaken on 7th October, 10th November, 19th November 2025. The final sampling event (19th November 2025) was undertaken following significant rainfall (>20mm) to capture a larger scale event. This letter reports on all three sampling rounds.

2.0 STORMWATER DRAINAGE AND RECEIVING ENVIRONMENT

The site is located at the top of the Slippery Creek catchment and is split into three sub-catchments, drained by three stream tributaries that flow to the west or north-west. The two northern flow paths run into the Hays Creek dam, the discharge of which combines with the southern flow path and then runs to the west through the Hunua Gorge to the Manukau Harbour (receiving environment) near Drury township. These flow paths are shown in Figure 1.

For the northern area, the western overland flow path (OLFP) drains a catchment of 15.6ha at the site boundary and combines with the eastern OLFP (10.1ha at site boundary), approximately 400m beyond the site boundary, to form a combined OLFP with a total catchment area of 54.3ha. Both catchments include upgradient off-site areas.

For the southern area, Auckland Council GeoMaps shows two OLFPs within the site boundary, comprising western (5.3ha) and eastern (14.1ha) OLFPs that exit the site via the south-western corner. The eastern OLFP receives significant runoff from upgradient properties and Jones Road, and features a farm crossing over the stream with a 600mm diameter culvert.

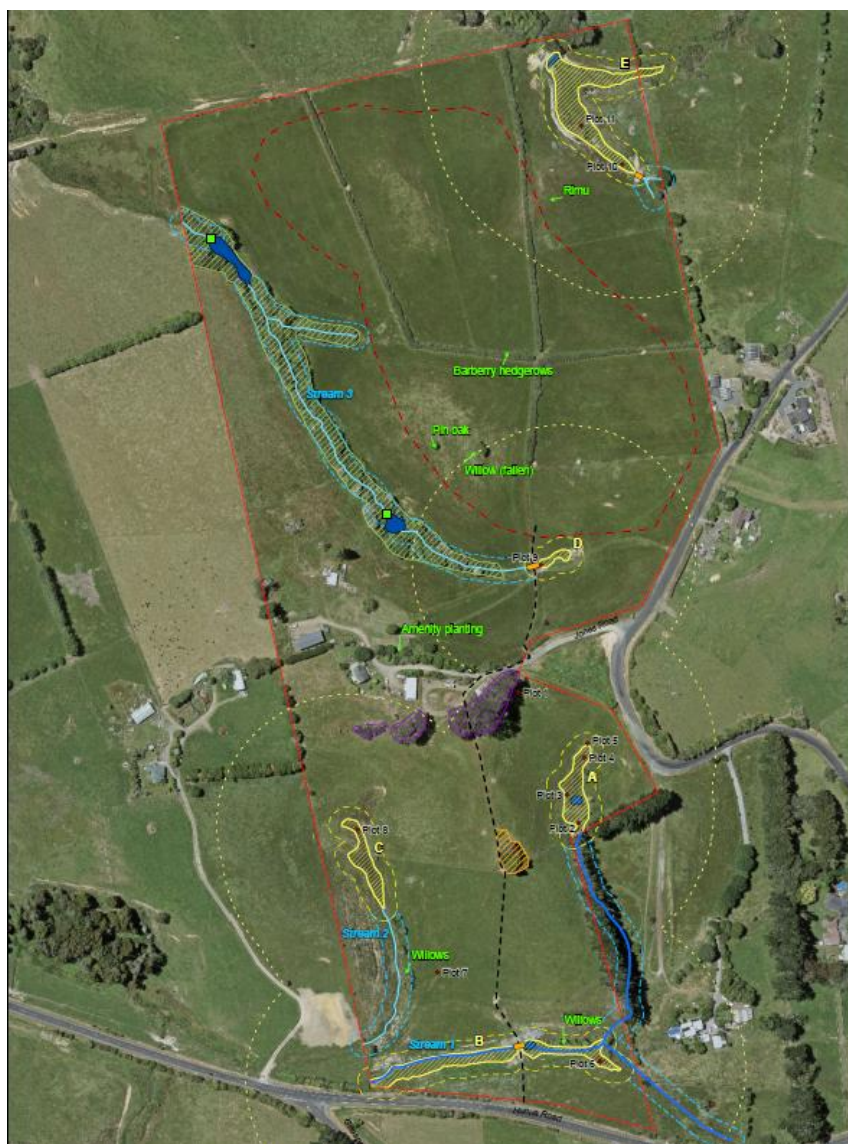


Figure 2: Wetlands (yellow shaded areas) identified within site from Boffa Miskell Ecological Investigation

3.0 SURFACE WATER SAMPLING LOCATIONS

Surface water sampling locations are summarised below in Table 1, comprising:

- Upstream sampling locations where the flow path collects runoff from upgradient properties, so that the effect of upstream sourced off-site runoff can be determined on stormwater quality. This applies to S1, S3 and S4.
- Downstream sampling locations, so that the effects of runoff sourced from the site itself can be determined on stormwater quality, by comparison with corresponding upstream sampling results.

Table 1: Stream Water Sampling Locations

Stream	Area	Sub-catchment	Upstream	Downstream
S1	Southern	Eastern	S1 (US)	S1 (DS)
S2		Western	None	S2
S3	Northern	Western	S3 (US)	S3 (DS)
S4		Eastern	S4 (US Nth), S4 (US Sth)	S4 (DS)

The locations of these stream sampling points is shown in Figure 3 and on drawing 33250/502 at a larger scale.

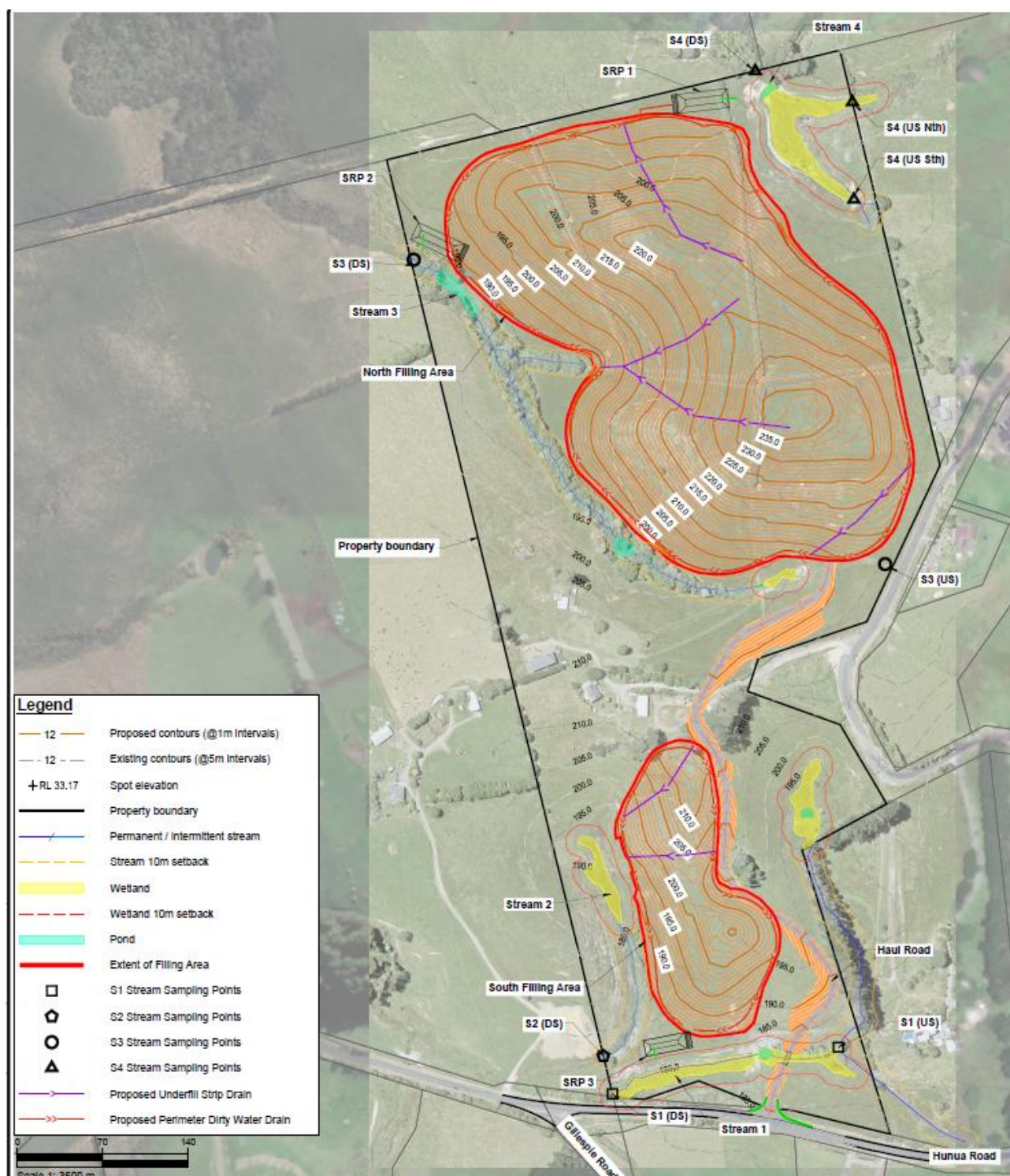


Figure 3: Stream Sampling Locations

4.0 SAMPLING METHODOLOGY

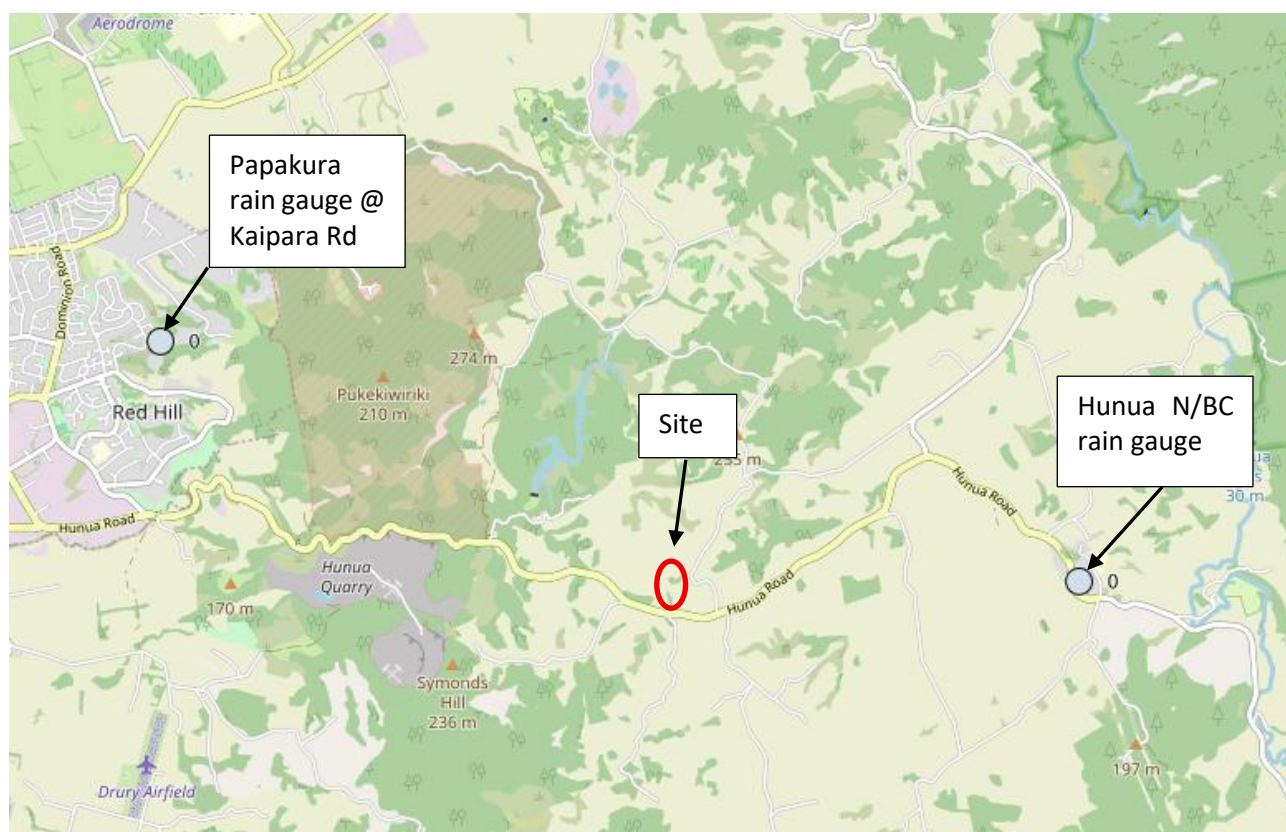
Water sampling was undertaken by FTL Environmental Scientists on the dates/times and for the weather conditions reported in Table 2 below.

Table 2: Summary Sampling Log

Sampling Round:	Date & Time:	Weather Conditions:	Nearest Rain Gauge	Rainfall Recorded
First Round Baseline Assessment	07/10/2025 10:50 – 13:40	Overcast, following recent rainfall	Hunua Nursery/Bowling Club @ 750010	6/10/25: 3mm 7/10/25: 11.5mm (to 10am); no further rainfall till 6pm
Second Round Baseline Assessment	10/11/2025 12:00-14:45	Overcast, following recent rainfall	Hunua Nursery/Bowling Club @ 750010	09/11/25: 73.5mm 10/11/25: 4.5mm
Third Round Baseline Assessment	19/11/2025 12:00-14:00	Overcast, following recent rainfall	Hunua Nursery/Bowling Club @ 750010	18/11/25: 46.5mm 19/11/25: 9.0mm

Note: Rain Gauge data and recorded rainfall obtained from the Auckland Council Environmental data portal.

Rainfall data from the nearest Auckland Council rainfall gauge (Hunua Nursery/Bowling Club (rainfallcontinuous@750010) has been collected for all three sampling events and is also summarised in Table 2. Refer to Figure 4 and the rainfall gauge figures in Appendix A for further details.

**Figure 4: Location of Nearby Auckland Council Rain Gauges relative to Site**

During each sampling round, a single surface water sample was collected from each of the eight sampling points, downstream to upstream.

Surface water sampling was undertaken by lowering a grab sampler jug into the centre of the stream to receive direct flow to collect the sample at each location. Each full jug was then poured into the pre-labelled sampling containers at each sampling location. The stream water was observed to be visibly clear with consistent stream flow at the eight sampling points. Between the sampling points, stagnant water was

observed with a reflective sheen on the surface within a marshy environment filled with vegetation and generally high-water levels (following significant rainfall), as well as a large pond halfway down the watercourse. Between sampling events the jug was completely emptied and cleaned with wet wipes (if any sediment was noted on or in jug).

During all sampling rounds, the stream was observed generally in good ecological condition. In localised areas, evidence of historic stock movements through the stream was observed (S1 (US), S3 (US), and S4 (DS)). In location S4 (DS), various concrete debris was observed in the stream to dissipate stream flows and reduce erosion. Generally, the streams were observed to be free-flowing with some small areas of stagnant flow (pools). No visual evidence of contamination was noted during the sampling event. The in-situ YSI field data collected during the sampling event are presented below in Table 3.

Table 3: YSI Probe field results

Date	Stream Location	Temp (°C)	Baro (mmHg)	DO (%)	DO (mg/L)	SPC (uScm)	C (uScm)	pH	ORP (mV)	Turbidity (FNU)
07/10/2025	S1 (US)	13.8	739	88.7	9.17	98.9	77.8	6.66	57.7	38.44
	S2 (DS)	13.9	738.7	80.7	8.33	80.5	63.5	7.47	57.5	33.37
	S2 (DS)	14.1	738.9	90.7	9.34	38.3	30.3	6.91	14.7	13.66
	S4 (US Sth)	16.3	738.6	96.3	9.45	94.1	78.3	7.32	78.8	16.83
	S4 (US Nth)	15.4	739.3	95.2	9.52	66.8	54.5	7.47	83.8	22.56
	S4 (DS)	16.5	739	93.8	9.16	66.1	55.4	6.93	55.5	24.97
	S3 (US)	14.1	736.3	92	9.46	111.2	88	6.81	105.9	18.6
	S3 (DS)	14	739	81.3	8.37	65.5	51.7	6.15	77.2	30.16
10/11/2025	S1 (US)	18.7	987.4	84.1	7.86	95.7	-	6.28	115.6	8.37
	S1 (DS)	19.1	987.9	61.8	5.71	84.3	-	6.57	138.5	18.76
	S2 (DS)	20.5	987.7	71.2	6.40	89.8	-	6.21	72.6	28.33
	S4 (US Sth)	18.0	986.0	64.4	6.10	94.7	-	6.38	108.0	12.52
	S4 (US Nth)	20.8	986.6	83.3	7.45	63.1	-	6.78	90.8	6.80
	S4 (DS)	20.4	986.9	84.6	7.64	71.8	-	6.86	86.8	7.24
	S3 (US)	21.2	983.5	98.2	8.72	99.8	-	6.52	136.3	24.65
	S3 (DS)	17.3	987.8	53.0	5.09	71.4	-	6.37	65.7	8.41
19/11/2025	S1 (US)	18.0	990.9	88.0	8.33	94.4	-	7.41	134.7	11.72
	S1 (DS)	17.9	990.8	78.7	7.47	81.9	-	7.40	170.2	7.02
	S2 (DS)	19.8	990.7	90.2	8.24	8.35	-	7.40	167.5	7.21
	S4 (US Sth)	19.1	988.6	91.2	8.44	77.1	-	7.35	148.1	29.59
	S4 (US Nth)	17.3	989.2	89.7	8.61	69.3	-	7.33	141.6	10.79
	S4 (DS)	17.8	989.8	90.0	8.55	58.5	-	7.36	149.5	18.45
	S3 (US)	18.5	986.1	84.8	7.94	112.7	-	7.37	145.3	15.84
	S3 (DS)	16.3	989.9	82.2	8.06	67.4	-	7.25	176.1	8.67

Across all three sampling events, the results indicate there is mild to moderate turbidity with a low oxidising potential, which is also reflected in the relatively neutral pH readings.

All water samples were sent to Hill Laboratories Ltd, an accredited IATA laboratory, under standard chain of custody procedures, for analysis.

5.0 ANALYSIS METHODOLOGY

The surface water samples were analysed for pH, total suspended solids (TSS), turbidity, total heavy metals and TPHs (total petroleum hydrocarbons). Surface water quality results have been compared to the ANZECC Australian and New Zealand Guidelines for Fresh and Marine Water Quality – Trigger Values for the Protection of 80% and 95% of Freshwater Species. Dissolved heavy metals were also tested for in the first sampling round.

Analytical results are summarised below and the laboratory transcripts are provided as Appendix B.

Results Summary: Jones Road Managed Fill

	Date	ANZECC 80% FW	ANZECC 95% FW	7-Oct-25								
	Revised Sample Name			S1 (US)	S1 (DS)	S2 (DS)	S3 (US)	S3 (DS)	S4 (US Sth)	S4 (US Nth)	S4 (DS)	
	Lab Number:			4004213.1	4004213.2	4004213.3	4004213.4	4004213.5	4004213.6	4004213.7	4004213.8	
Turbidity	NTU			40	38	14	16.8	36	18.2	17	24	
pH	pH units			6.4	6.4	6.3	7	6.3	6.7	6.3	6.5	
Total Suspended Solids	g/m3			44	26	9	8	35	13	19	27	
Heavy metals, dissolved, trace As,Cd,Cr,Cu,Ni,Pb,Zn												
		0.14	0.013									
Dissolved Arsenic	g/m3			< 0.0010	< 0.0010	< 0.0010	0.0011 #1	< 0.0010	< 0.0010	< 0.0010	< 0.0010	
Dissolved Cadmium	g/m3	0.0008	0.0002	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	
Dissolved Chromium	g/m3	0.04	0.001	< 0.0005	< 0.0005	< 0.0005	0.0007	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
Dissolved Copper	g/m3	0.0025	0.0014	0.001	0.0015	0.0006	0.0035	0.0008	0.0016	0.0007	0.0007	
Dissolved Lead	g/m3	0.0094	0.0034	0.00024	0.00022	0.00012	0.00045	0.00028	0.00042	0.00017	0.00022	
Dissolved Nickel	g/m3	0.017	0.011	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
Dissolved Zinc	g/m3	0.031	0.008	0.005	0.0058	0.0028	0.0045	0.0037	0.0042	0.0027	0.0015	
Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn												
Total Arsenic	g/m3	0.14	0.024	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	
Total Cadmium	g/m3	0.0008	0.0002	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053	
Total Chromium	g/m3	0.04	0.001	0.00071	0.00097	< 0.00053	0.00095	0.00066	< 0.00053	0.00057	0.00077	
Total Copper	g/m3	0.0025	0.0014	0.00144	0.00182	0.00068	0.0041	0.00123	0.00172	0.00094	0.00094	
Total Lead	g/m3	0.0094	0.0034	0.00106	0.00104	0.00031	0.00081	0.00133	0.00064	0.00053	0.00063	
Total Nickel	g/m3	0.017	0.011	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	
Total Zinc	g/m3	0.031	0.008	0.0062	0.008	0.0028	0.007	0.0061	0.0045	0.003	0.008	
Total Petroleum Hydrocarbons in Water												
C7 - C9	g/m3			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
C10 - C14	g/m3			< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	
C15 - C36	g/m3			< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	
Total (C7 - C36)	g/m3			< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	
Avg												
	Dissolved/Total	Cu		0.694	0.824	0.882	0.854	0.650	0.930	0.745	0.745	0.791
		Pb		0.226	0.212	0.387	0.556	0.211	0.656	0.321	0.349	0.365
		Zn		0.806	0.725	1.000	0.643	0.607	0.933	0.900	0.188	0.725

Results Summary: Jones Road Managed Fill

	Date	ANZECC 80% FW	ANZECC 95% FW	10-Nov-25							
	Sample Name:			S1 (US)	S1 (DS)	S2 (DS)	S3 (US)	S3 (DS)	S4 (US Sth)	S4 (US Nth)	S4 (DS)
	Lab Number:			4028402.1	4028402.2	4028402.3	4028402.4	4028402.5	4028402.6	4028402.7	4028402.8
Turbidity	NTU			9.1	2.9	11.9	17.6	8.8	14.7	8.8	5.9
pH	pH units			6.6	6.6	6.4	7.1	6.3	6.4	6.6	6.7
Total Suspended Solids	g/m3			6	8	24	8	10	16	15	7
Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn											
Total Arsenic	g/m3	0.36	0.024	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
Total Cadmium	g/m3	0.0008	0.0002	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053
Total Chromium	g/m3	0.04	0.001	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053
Total Copper	g/m3	0.0025	0.0014	0.00137	0.00104	0.00102	0.006	0.001	0.00058	0.0007	0.00055
Total Lead	g/m3	0.0094	0.0034	0.00056	0.00029	0.00044	0.00081	0.00051	0.00028	0.00043	0.00021
Total Nickel	g/m3	0.017	0.011	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053
Total Zinc	g/m3	0.031	0.008	0.0044	0.0057	0.0039	0.0089	0.0056	0.0021	0.0032	0.0036
Total Petroleum Hydrocarbons in Water											
C7 - C9	g/m3			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
C10 - C14	g/m3			< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
C15 - C36	g/m3			< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Total (C7 - C36)	g/m3			< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7

	Date	ANZECC 80% FW	ANZECC 95% FW	19-Nov-25							
	Sample Name:			S1 (US)	S1 (DS)	S2 (DS)	S3 (US)	S3 (DS)	S4 (US Sth)	S4 (US Nth)	S4 (DS)
	Lab Number:			4036367.1	4036367.2	4036367.3	4036367.4	4036367.5	4036367.6	4036367.7	4036367.8
Turbidity	NTU			15.7	6.2	8.6	13.3	9.7	29	22	15.5
pH	pH units			6	6.1	6.2	6.6	6	6.4	6.2	6.4
Total Suspended Solids	g/m3			13	4	5	5	4	28	50	19
Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn											
Total Arsenic	g/m3	0.36	0.024	< 0.0011	< 0.0011	< 0.0011	0.0015	< 0.0011	< 0.0011	< 0.0011	< 0.0011
Total Cadmium	g/m3	0.0008	0.0002	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053
Total Chromium	g/m3	0.04	0.001	< 0.00053	< 0.00053	< 0.00053	0.00071	< 0.00053	0.00061	< 0.00053	< 0.00053
Total Copper	g/m3	0.0025	0.0014	0.00128	0.0012	< 0.00053	0.0047	0.00097	0.0031	0.00135	0.00151
Total Lead	g/m3	0.0094	0.0034	0.00054	0.00023	0.00019	0.00098	0.00047	0.00126	0.00094	0.00051
Total Nickel	g/m3	0.017	0.011	< 0.00053	< 0.00053	< 0.00053	0.00054	< 0.00053	< 0.00053	< 0.00053	< 0.00053
Total Zinc	g/m3	0.031	0.008	0.0067	0.0053	0.0022	0.0079	0.0045	0.0059	0.0055	0.0048
Total Petroleum Hydrocarbons in Water											
C7 - C9	g/m3			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
C10 - C14	g/m3			< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
C15 - C36	g/m3			< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Total (C7 - C36)	g/m3			< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7

Results Summary: Jones Road Managed Fill

Note:

1. ANZECC freshwater 95% level of protection criteria. Triggers are specified as total values, but strictly apply to dissolved species.
2. ANZECC freshwater 80% level of protection criteria. Triggers are specified as total values, but strictly apply to dissolved species.
3. Total Ammoniacal-N trigger value derived using formula provided in ANZECC & ARMCANZ (2000) - see table below notes

Underlined:	above ANZECC 95% Freshwater guideline values
	above ANZECC 80% & 95% Freshwater guideline values
Grey	below laboratory limit of detection
ND	not detected
- :	not tested for

6.0 DISCUSSION

6.1 First Round Baseline Assessment Results

- pH from lab results indicates a relatively neutral environment (6.3-7.0 range);
- Turbidity ranged from 13-38 FNU & 14-40 NTU across all sampling locations, indicating a mild to moderate turbid environment.
- TSS ranged from 8-44g/m³ across all sampling locations.
- ORP results ranged from 14-105, indicating an environment with low oxidative potential.
- Dissolved Oxygen readings were all in the “healthy” range, with all DO readings above 8mg/L and all with oxygen saturation over 80%.
- Specific conductivity (SPC) and conductivity (C) field results indicate an environment with good water quality.
- The concentrations of dissolved and total copper detected in S1 (DS), S3 (US) and S4 (US Sth) were elevated above the ANZECC trigger value for the protection of 95% of freshwater species. Additionally, the concentration of total copper detected in S1 (US) was elevated above the ANZECC trigger value for the protection of 95% of freshwater species. Furthermore, the concentration of dissolved and total copper in S3 (US) also exceeded ANZECC trigger value for the protection of 80% of freshwater species. The most likely copper source is considered to be road runoff from short portions of Jones Road that drains to Streams 3 (S3) and 4 (S4) and from a short portion of Hunua Road that drains to Stream 1 (S1).
- ANZECC trigger level criteria strictly apply to dissolved metal species, rather than total metals. Total metals comprises both dissolved and particulate species. Comparison of dissolved versus total metal levels shows that most copper and zinc were present in dissolved form (73-79%), while lead was present more in particulate form (63%). For the future baseline assessments, analysis was only conducted for total metals, as this was considered sufficient for baseline stream water quality characterisations.
- No TPHs were recorded above the laboratory analytical limit of detection.

6.2 Second Round Baseline Assessment Results

- pH from lab results indicates a relatively neutral environment (6.21-7.10 range);
- Turbidity ranged from 6.8-28.33 FNU and 2.9-17.6 NTU across all sampling locations, indicating a low to mildly turbid environment.
- TSS ranged from 6-24g/m³ across all sampling locations.
- ORP results ranged from 65.7-138.5, indicating an environment with low oxidative potential.
- Dissolved Oxygen readings were between the “moderate” to “healthy” range, with most sampling locations DO readings above 6mg/L and oxygen saturation over 60%. However, at location S3 (DS), the DO reading was 5.09mg/L, with an oxygen saturation of 53%, indicating a decreased level of oxygen.
- Specific conductivity (SPC) field results indicate an environment with good water quality.
- Total heavy metals were all less than the laboratory trace detection limit for arsenic, cadmium, chromium, and nickel.
- The concentrations of total copper and zinc detected in S3 (DS) were elevated above the ANZECC trigger value for the protection of 95% of freshwater species. Furthermore, the concentration of total copper detected in S3 (DS) was elevated above the ANZECC trigger value for the protection of 80% of freshwater species.

- As this location is adjacent to Jones Road, the most likely source of these elevations is considered to be road runoff that drains to Stream 3 (S3 (US)).
- No TPHs were recorded above the laboratory analytical limit of detection.

6.3 Third Round Baseline Assessment Results

- pH from lab results indicates a relatively neutral environment (6.0-6.6 range);
- Turbidity ranged from 7.02-29.59 FNU and 6.2 and 29.0 NTU across all sampling locations, indicating a low to mildly turbid environment.
- TSS ranged from 4-50g/m³ across all sampling locations.
- ORP results ranged from 134.7-176.1, indicating an environment with low oxidative potential.
- Dissolved Oxygen readings were within the “healthy” range, with most sampling locations DO readings above 8mg/L and oxygen saturation over 80%. Notably, location S1 (DS) had a DO reading of 7.47 mg/L and an oxygen saturation of 78.7%, and location S4 (US) had a DO reading of 7.94 mg/L.
- Specific conductivity (SPC) field results indicate an environment with good water quality.
- Total heavy metal concentrations were below the laboratory trace detection limit for cadmium.
- The concentrations of total copper detected in S3 (US), S4 (US Sth), and S4 (DS) were elevated above the ANZECC trigger value for the protection of 95% of freshwater species. Furthermore, the concentrations of total copper detected in S3 (US) and S4 (US Sth) were also elevated above the ANZECC trigger value for the protection of 80% of freshwater species. Again, the most likely copper source is considered to be road runoff from short portions of Jones Rd that drains to Streams 3 (S3) and 4 (S4).
- No TPHs were recorded above the laboratory analytical limit of detection.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The first baseline assessment was undertaken by FTL on the 7th October 2025. Results from all eight sampling points found that all samples generally had mild to moderate turbidity and TSS concentrations, consistent with recent rainfall, while only copper, lead and zinc were detected above laboratory trace detection levels. Dissolved and total copper levels exceeded ANZECC trigger values for the protection of 95% and 80% of freshwater species in four samples (S1 (US), S1 (DS), S3 (US), S4 (US Sth)) and one sample (S3 (US)) respectively, with this being attributed to offsite road runoff. No TPHs were detected above laboratory analytical detection limits.

The second baseline assessment was undertaken by FTL on the 10th November 2025. Results from all eight sampling points found that all samples generally had low to mild turbidity, with only total copper, lead, and zinc detected above laboratory analytical detection levels. Additionally, the concentrations of total copper and zinc in one location (S3 (US)) exceeded ANZECC trigger values for the protection of 95% (copper and zinc) and 80% (copper) of freshwater species, with this being attributed to offsite road runoff. No TPHs were detected above laboratory analytical detection limits.

The third and final baseline assessment was undertaken by FTL on the 19th November 2025, following heavy rainfall (>20mm) to capture a larger scale event. Results from all eight sampling points found that all samples generally had mild to moderate turbidity, with low oxidative potential, and relatively neutral pH readings. The concentrations of total copper in three locations (S3 (US), S4 (US Sth), and S4 (DS)) exceeded the ANZECC trigger values for the protection of 95% of freshwater species. Furthermore, the concentrations of total copper in two of those locations (S3 (US) and S4 (US Sth)) exceeded the ANZECC trigger values for the

protection of 80% of freshwater species. Again, all exceedances were attributed to offsite road runoff. No TPHs were detected above laboratory analytical detection limits.

Following the all three rounds of baseline sampling (18th October, 10th November, and 19th November 2025), only concentrations of copper and zinc were identified in exceedance of the ANZECC trigger values for the protection of 95% and 80% of freshwater species. However, in all instances, the elevations were attributed to off-site road runoff.

8.0 LIMITATIONS

Copyright of this report is held by Fraser Thomas Ltd. The professional opinion expressed herein has been prepared solely for, and is furnished to our client, on the express condition that it will only be used for the works and the purpose for which it is intended.

No liability is accepted by this firm or by any principal, or director, or any servant or agent of this firm, in respect of its use by any other person, and any other person who relies upon any matter contained in this report does so entirely at its own risk. This disclaimer shall apply notwithstanding that this report may be made available to any person by any person in connection with any application for permission or approval, or pursuant to any requirement of law.

Yours faithfully

FRASER THOMAS LIMITED



Prepared, reviewed and verified by Sean Finnigan

Director - Environmental

BE, MEngSci, PhD, MIPENZ, CPEng, IntPE

Certified Environmental Practitioner – Contaminated Soil (Cert0820)

Attached

Appendix A: Rainfall Gauge Figures

Appendix B: Laboratory Transcripts

Appendix C: Site Inspection Photos

Appendix A

Rainfall Guage Figures

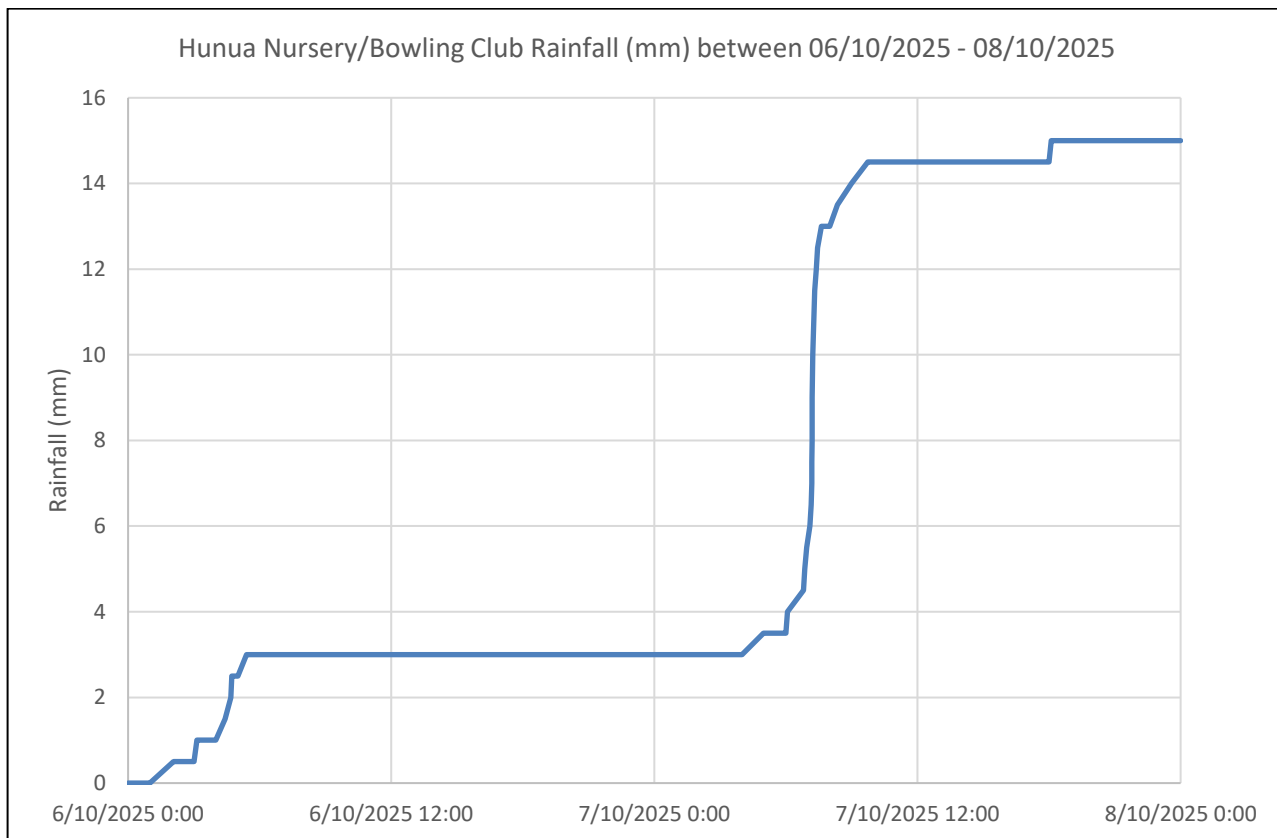


Figure 5: Hunua Nursery/Bowling Club Rain Gauge Rainfall – 6th and 8th October 2025

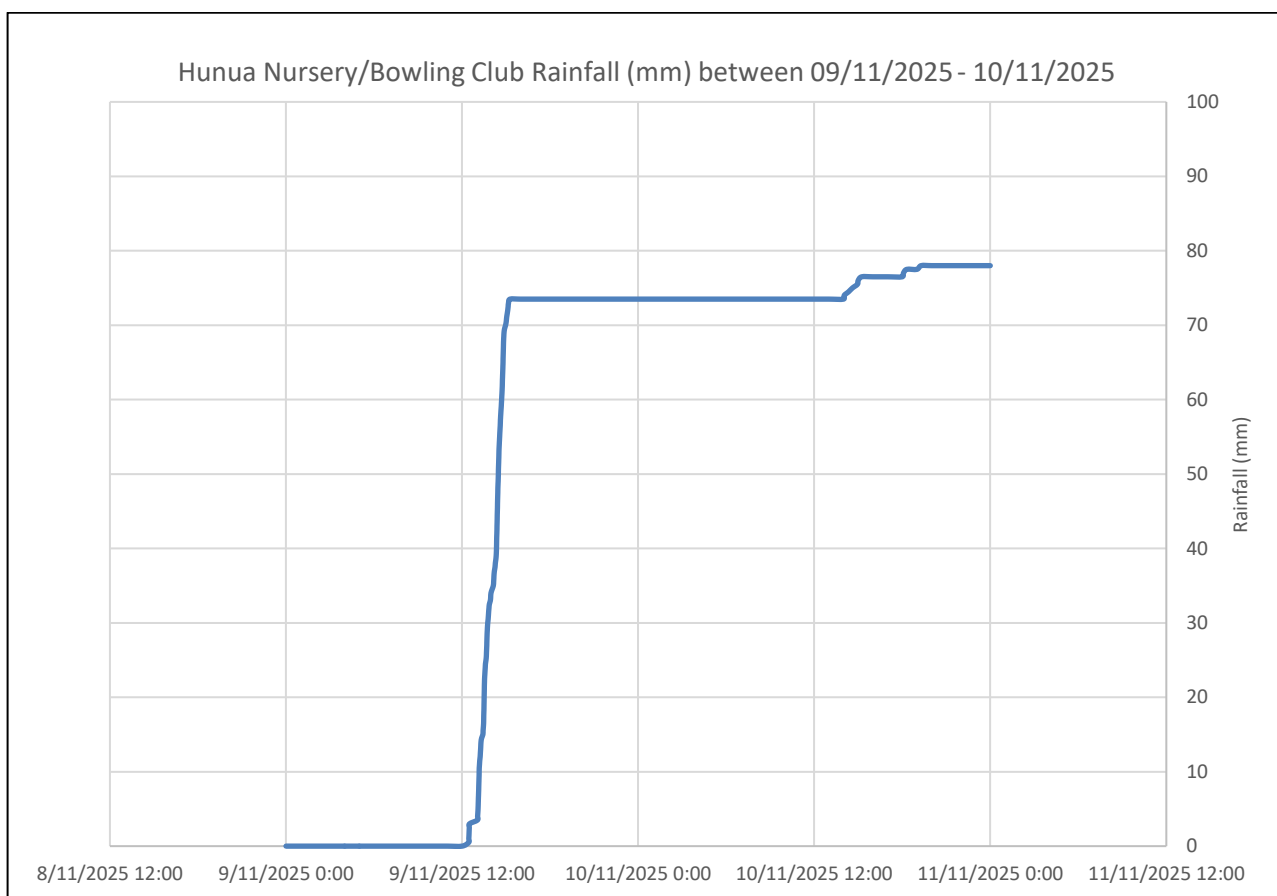


Figure 6: Hunua Nursery/Bowling Club Rain Gauge Rainfall – 9th and 10th November 2025

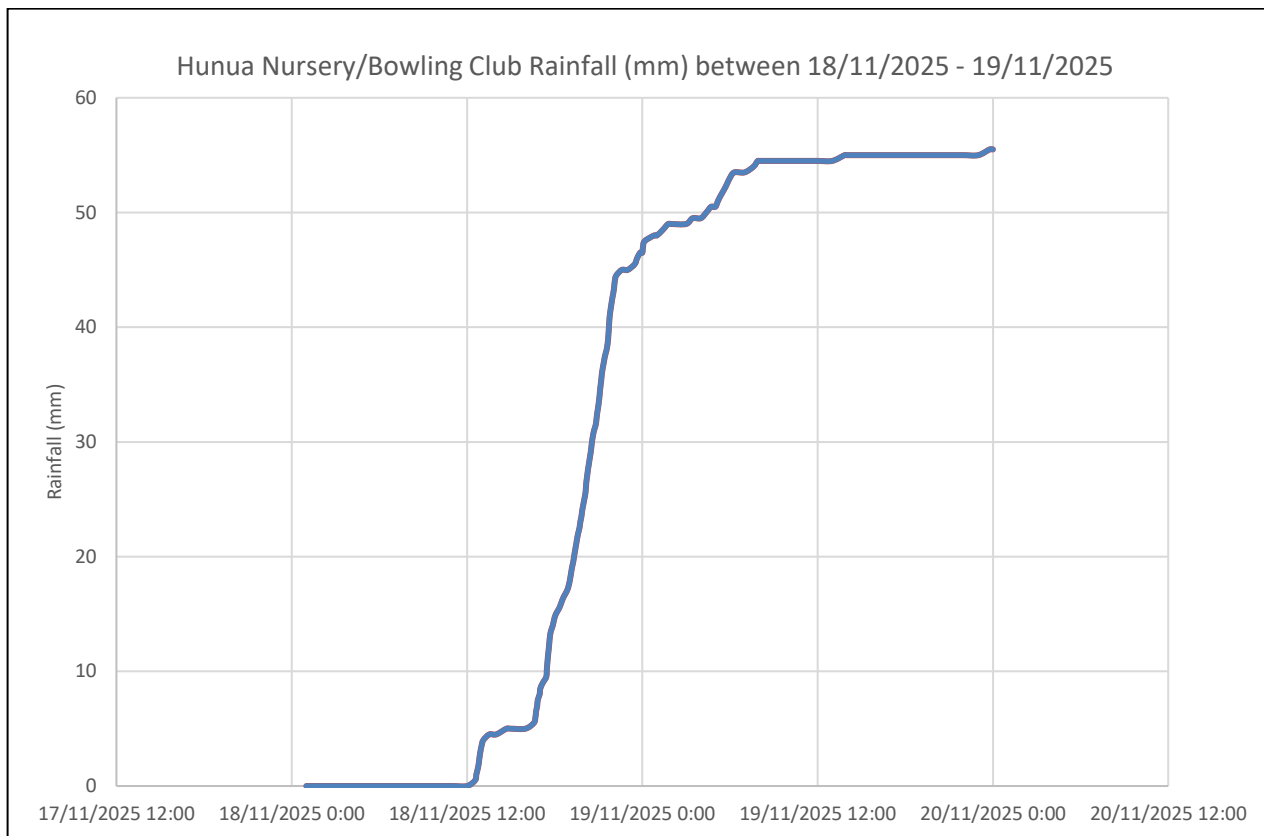


Figure 7: Hunua Nursery/Bowling Club Rain Gauge Rainfall – 18th and 19th November 2025

Note: Rain Gauge data and recorded rainfall obtained from the Auckland Council Environmental data portal.

Appendix B

Laboratory Transcripts

Certificate of Analysis

Page 1 of 3

Client:	Fraser Thomas Limited	Lab No:	4004213	SPV2
Contact:	Elliot Bish	Date Received:	09-Oct-2025	
	C/- Fraser Thomas Limited	Date Reported:	21-Oct-2025	(Amended)
	PO Box 204006	Quote No:	92882	
	Highbrook	Order No:	PO001457	
	Auckland 2161	Client Reference:	33250	
		Submitted By:	Elliot Bish	

Sample Type: Aqueous

Sample Name:	S1 (US) 07-Oct-2025 11:20 am	S1 (DS) 07-Oct-2025 10:50 am	S2 (DS) 07-Oct-2025 11:00 am	S3 (US) 07-Oct-2025 12:20 pm	S3 (DS) 07-Oct-2025 12:00 pm
Lab Number:	4004213.1	4004213.2	4004213.3	4004213.4	4004213.5

Individual Tests

Turbidity	NTU	40	38	14.0	16.8	36
pH	pH Units	6.4	6.4	6.3	7.0	6.3
Total Suspended Solids	g/m ³	44	26	9	8	35

Heavy metals, dissolved, trace As,Cd,Cr,Cu,Ni,Pb,Zn

Dissolved Arsenic	g/m ³	< 0.0010	< 0.0010	< 0.0010	0.0011 #1	< 0.0010
Dissolved Cadmium	g/m ³	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Dissolved Chromium	g/m ³	< 0.0005	< 0.0005	< 0.0005	0.0007	< 0.0005
Dissolved Copper	g/m ³	0.0010	0.0015	0.0006	0.0035	0.0008
Dissolved Lead	g/m ³	0.00024	0.00022	0.00012	0.00045	0.00028
Dissolved Nickel	g/m ³	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Dissolved Zinc	g/m ³	0.0050	0.0058	0.0028	0.0045	0.0037

Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn

Total Arsenic	g/m ³	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
Total Cadmium	g/m ³	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053
Total Chromium	g/m ³	0.00071	0.00097	< 0.00053	0.00095	0.00066
Total Copper	g/m ³	0.00144	0.00182	0.00068	0.0041	0.00123
Total Lead	g/m ³	0.00106	0.00104	0.00031	0.00081	0.00133
Total Nickel	g/m ³	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053
Total Zinc	g/m ³	0.0062	0.0080	0.0028	0.0070	0.0061

Total Petroleum Hydrocarbons in Water

C7 - C9	g/m ³	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
C10 - C14	g/m ³	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
C15 - C36	g/m ³	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Total hydrocarbons (C7 - C36)	g/m ³	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7

Sample Name:	S4 (US Sth) 07-Oct-2025 1:40 pm	S4 (US Nth) 07-Oct-2025 1:30 pm	S4 (DS) 07-Oct-2025 1:20 pm
Lab Number:	4004213.6	4004213.7	4004213.8

Individual Tests

Turbidity	NTU	18.2	17.0	24
pH	pH Units	6.7	6.3	6.5
Total Suspended Solids	g/m ³	13	19	27

Heavy metals, dissolved, trace As,Cd,Cr,Cu,Ni,Pb,Zn

Dissolved Arsenic	g/m ³	< 0.0010	< 0.0010	< 0.0010
Dissolved Cadmium	g/m ³	< 0.00005	< 0.00005	< 0.00005
Dissolved Chromium	g/m ³	< 0.0005	< 0.0005	< 0.0005
Dissolved Copper	g/m ³	0.0016	0.0007	0.0007



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Sample Type: Aqueous				
Sample Name:		S4 (US Sth) 07-Oct-2025 1:40 pm	S4 (US Nth) 07-Oct-2025 1:30 pm	S4 (DS) 07-Oct-2025 1:20 pm
Lab Number:		4004213.6	4004213.7	4004213.8
Heavy metals, dissolved, trace As,Cd,Cr,Cu,Ni,Pb,Zn				
Dissolved Lead	g/m ³	0.00042	0.00017	0.00022
Dissolved Nickel	g/m ³	< 0.0005	< 0.0005	< 0.0005
Dissolved Zinc	g/m ³	0.0042	0.0027	0.0015
Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn				
Total Arsenic	g/m ³	< 0.0011	< 0.0011	< 0.0011
Total Cadmium	g/m ³	< 0.000053	< 0.000053	< 0.000053
Total Chromium	g/m ³	< 0.00053	0.00057	0.00077
Total Copper	g/m ³	0.00172	0.00094	0.00094
Total Lead	g/m ³	0.00064	0.00053	0.00063
Total Nickel	g/m ³	< 0.00053	< 0.00053	< 0.00053
Total Zinc	g/m ³	0.0045	0.0030	0.0080
Total Petroleum Hydrocarbons in Water				
C7 - C9	g/m ³	< 0.10	< 0.10	< 0.10
C10 - C14	g/m ³	< 0.2	< 0.2	< 0.2
C15 - C36	g/m ³	< 0.4	< 0.4	< 0.4
Total hydrocarbons (C7 - C36)	g/m ³	< 0.7	< 0.7	< 0.7

Analyst's Comments

#1 It has been noted that the result for the dissolved fraction was greater than that for the total fraction, but within analytical variation of the methods.

Amended Report: This certificate of analysis replaces report '4004213-SPv1' issued on 17-Oct-2025 at 1:49 pm.
Reason for amendment: Amended sample Id's and added testing as per clients request.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1-8
Turbidity	Analysis by Turbidity meter. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1-8
pH	pH meter. APHA 4500-H ⁺ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1-8
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5µm), gravimetric determination. APHA 2540 D (modified) : Online Edition.	3 g/m ³	1-8
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B : Online Edition.	-	1-8
Heavy metals, dissolved, trace As,Cd,Cr,Cu,Ni,Pb,Zn	0.45µm Filtration, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.00005 - 0.0010 g/m ³	1-8
Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.000053 - 0.0011 g/m ³	1-8
Total Petroleum Hydrocarbons in Water			
C7 - C9	Solvent extraction, GC-FID analysis. In-house based on US EPA 8015.	0.10 g/m ³	1-8
C10 - C14	Solvent extraction, GC-FID analysis. In-house based on US EPA 8015.	0.2 g/m ³	1-8
C15 - C36	Solvent extraction, GC-FID analysis. In-house based on US EPA 8015.	0.4 g/m ³	1-8
Total hydrocarbons (C7 - C36)	Calculation: Sum of carbon bands from C7 to C36. In-house based on US EPA 8015.	0.7 g/m ³	1-8

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 10-Oct-2025 and 21-Oct-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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A handwritten signature in purple ink, consisting of a large stylized 'K' followed by the name 'Harrison' in a cursive script.

Kim Harrison MSc
Client Services Manager - Environmental

Certificate of Analysis

Page 1 of 2

Client:	Fraser Thomas Limited	Lab No:	4028402	SPV1
Contact:	Elliot Bish C/- Fraser Thomas Limited PO Box 204006 Highbrook Auckland 2161	Date Received:	11-Nov-2025	
		Date Reported:	17-Nov-2025	
		Quote No:	92882	
		Order No:	PO001472	
		Client Reference:	33250	
		Submitted By:	Mathew Cherrie	

Sample Type: Aqueous

Sample Name:	S1 (US) 10-Nov-2025	S1 (DS) 10-Nov-2025	S2 (DS) 10-Nov-2025	S3 (US) 10-Nov-2025	S3 (DS) 10-Nov-2025
Lab Number:	4028402.1	4028402.2	4028402.3	4028402.4	4028402.5

Individual Tests

Turbidity	NTU	9.1	2.9	11.9	17.6	8.8
pH	pH Units	6.6	6.6	6.4	7.1	6.3
Total Suspended Solids	g/m ³	6	8	24	8	10

Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn

Total Arsenic	g/m ³	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
Total Cadmium	g/m ³	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053
Total Chromium	g/m ³	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053
Total Copper	g/m ³	0.00137	0.00104	0.00102	0.0060	0.00100
Total Lead	g/m ³	0.00056	0.00029	0.00044	0.00081	0.00051
Total Nickel	g/m ³	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053
Total Zinc	g/m ³	0.0044	0.0057	0.0039	0.0089	0.0056

Total Petroleum Hydrocarbons in Water

C7 - C9	g/m ³	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
C10 - C14	g/m ³	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
C15 - C36	g/m ³	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Total hydrocarbons (C7 - C36)	g/m ³	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7

Sample Name:	S4 (US Sth) 10-Nov-2025	S4 (US Nth) 10-Nov-2025	S4 (DS) 10-Nov-2025
Lab Number:	4028402.6	4028402.7	4028402.8

Individual Tests

Turbidity	NTU	14.7	8.8	5.9
pH	pH Units	6.4	6.6	6.7
Total Suspended Solids	g/m ³	16	15	7

Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn

Total Arsenic	g/m ³	< 0.0011	< 0.0011	< 0.0011
Total Cadmium	g/m ³	< 0.000053	< 0.000053	< 0.000053
Total Chromium	g/m ³	< 0.00053	< 0.00053	< 0.00053
Total Copper	g/m ³	0.00058	0.00070	0.00055
Total Lead	g/m ³	0.00028	0.00043	0.00021
Total Nickel	g/m ³	< 0.00053	< 0.00053	< 0.00053
Total Zinc	g/m ³	0.0021	0.0032	0.0036

Total Petroleum Hydrocarbons in Water

C7 - C9	g/m ³	< 0.10	< 0.10	< 0.10
C10 - C14	g/m ³	< 0.2	< 0.2	< 0.2
C15 - C36	g/m ³	< 0.4	< 0.4	< 0.4
Total hydrocarbons (C7 - C36)	g/m ³	< 0.7	< 0.7	< 0.7



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Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1-8
Turbidity	Analysis by Turbidity meter. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1-8
pH	pH meter. APHA 4500-H ⁺ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1-8
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5µm), gravimetric determination. APHA 2540 D (modified) : Online Edition.	3 g/m ³	1-8
Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.000053 - 0.0011 g/m ³	1-8
Total Petroleum Hydrocarbons in Water			
C7 - C9	Solvent extraction, GC-FID analysis. In-house based on US EPA 8015.	0.10 g/m ³	1-8
C10 - C14	Solvent extraction, GC-FID analysis. In-house based on US EPA 8015.	0.2 g/m ³	1-8
C15 - C36	Solvent extraction, GC-FID analysis. In-house based on US EPA 8015.	0.4 g/m ³	1-8
Total hydrocarbons (C7 - C36)	Calculation: Sum of carbon bands from C7 to C36. In-house based on US EPA 8015.	0.7 g/m ³	1-8

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 12-Nov-2025 and 17-Nov-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

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Kim Harrison MSc
Client Services Manager - Environmental

Certificate of Analysis

Page 1 of 2

Client:	Fraser Thomas Limited	Lab No:	4036367	SPV1
Contact:	Mathew Cherrie C/- Fraser Thomas Limited PO Box 204006 Highbrook Auckland 2161	Date Received:	20-Nov-2025	
		Date Reported:	28-Nov-2025	
		Quote No:	141637	
		Order No:	PO001489	
		Client Reference:	33250	
		Submitted By:	Mathew Cherrie	

Sample Type: Aqueous

Sample Name:	S1 (US) 19-Nov-2025	S1 (DS) 19-Nov-2025	S2 (DS) 19-Nov-2025	S3 (US) 19-Nov-2025	S3 (DS) 19-Nov-2025
Lab Number:	4036367.1	4036367.2	4036367.3	4036367.4	4036367.5

Individual Tests

Turbidity	NTU	15.7	6.2	8.6	13.3	9.7
pH	pH Units	6.0	6.1	6.2	6.6	6.0
Total Suspended Solids	g/m ³	13	4	5	5	4

Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn

Total Arsenic	g/m ³	< 0.0011	< 0.0011	< 0.0011	0.0015	< 0.0011
Total Cadmium	g/m ³	< 0.000053	< 0.000053	< 0.000053	< 0.000053	< 0.000053
Total Chromium	g/m ³	< 0.00053	< 0.00053	< 0.00053	0.00071	< 0.00053
Total Copper	g/m ³	0.00128	0.00120	< 0.00053	0.0047	0.00097
Total Lead	g/m ³	0.00054	0.00023	0.00019	0.00098	0.00047
Total Nickel	g/m ³	< 0.00053	< 0.00053	< 0.00053	0.00054	< 0.00053
Total Zinc	g/m ³	0.0067	0.0053	0.0022	0.0079	0.0045

Total Petroleum Hydrocarbons in Water

C7 - C9	g/m ³	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
C10 - C14	g/m ³	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
C15 - C36	g/m ³	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Total hydrocarbons (C7 - C36)	g/m ³	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7

Sample Name:	S4 (US Sth) 19-Nov-2025	S4 (US Nth) 19-Nov-2025	S4 (DS) 19-Nov-2025
Lab Number:	4036367.6	4036367.7	4036367.8

Individual Tests

Turbidity	NTU	29	22	15.5
pH	pH Units	6.4	6.2	6.4
Total Suspended Solids	g/m ³	28	50	19

Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn

Total Arsenic	g/m ³	< 0.0011	< 0.0011	< 0.0011
Total Cadmium	g/m ³	< 0.000053	< 0.000053	< 0.000053
Total Chromium	g/m ³	0.00061	< 0.00053	< 0.00053
Total Copper	g/m ³	0.0031	0.00135	0.00151
Total Lead	g/m ³	0.00126	0.00094	0.00051
Total Nickel	g/m ³	< 0.00053	< 0.00053	< 0.00053
Total Zinc	g/m ³	0.0059	0.0055	0.0048

Total Petroleum Hydrocarbons in Water

C7 - C9	g/m ³	< 0.10	< 0.10	< 0.10
C10 - C14	g/m ³	< 0.2	< 0.2	< 0.2
C15 - C36	g/m ³	< 0.4	< 0.4	< 0.4
Total hydrocarbons (C7 - C36)	g/m ³	< 0.7	< 0.7	< 0.7



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Summary of Methods

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Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	1-8
Turbidity	Analysis by Turbidity meter. APHA 2130 B (modified) : Online Edition.	0.05 NTU	1-8
pH	pH meter. APHA 4500-H ⁺ B (modified) : Online Edition. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1-8
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5µm), gravimetric determination. APHA 2540 D (modified) : Online Edition.	3 g/m ³	1-8
Heavy metals, totals, trace As,Cd,Cr,Cu,Ni,Pb,Zn	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B : Online Edition.	0.000053 - 0.0011 g/m ³	1-8
Total Petroleum Hydrocarbons in Water			
C7 - C9	Solvent extraction, GC-FID analysis. In-house based on US EPA 8015.	0.10 g/m ³	1-8
C10 - C14	Solvent extraction, GC-FID analysis. In-house based on US EPA 8015.	0.2 g/m ³	1-8
C15 - C36	Solvent extraction, GC-FID analysis. In-house based on US EPA 8015.	0.4 g/m ³	1-8
Total hydrocarbons (C7 - C36)	Calculation: Sum of carbon bands from C7 to C36. In-house based on US EPA 8015.	0.7 g/m ³	1-8

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 21-Nov-2025 and 26-Nov-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.

Ara Heron BSc (Tech)
Client Services Manager - Environmental

Appendix C

Site Inspection Photographs

7th October 2025
Sampling Event



S4 (US Sth) looking downstream



S4 (US Sth) looking upstream facing east



S4 (US Nth) looking downstream



S4 (US Nth) looking upstream

7th October 2025
Sampling Event



S4 (DS) looking downstream



S4 (DS) looking upstream



S3 (US) looking downstream



S3 (US) looking upstream

7th October 2025
Sampling Event



S3 (DS) looking downstream



Pond upstream of S3 (DS)



S1 (US) looking downstream



S1 (DS) looking upstream



S2 (DS) looking downstream

7th October 2025
Sampling Event



S2 (US) looking upstream



S3 (DS) Downstream Aspect

10th November 2025
Sampling Event



S4 (DS) Downstream Aspect



S4 (DS) Upstream Aspect



S4 (US Nth) Upstream Aspect



S4 (US Nth) Downstream Aspect

10th November 2025
Sampling Event



S4 (US Sth)



S4 (US Sth) Downstream Aspect



S3 (US) Downstream Aspect

10th November 2025
Sampling Event



S1 (DS) Upstream Aspect



S1 (DS) Downstream Aspect



S2 (DS) Downstream Aspect



S2 (DS) Upstream Aspect



S2 (DS) Visual Sheen

10th November 2025
Sampling Event



S1 (US) Downstream Aspect



S3(DS) Downstream Aspect

19th November 2025
Sampling Event



S3(DS) Upstream Aspect



S3(DS) Upstream Pond



S4(DS) Upstream Aspect



S4(DS) Downstream Aspect

19th November 2025
Sampling Event



S4(US Nth) Upstream Aspect



S4(US Nth) Downstream Aspect



S4(US Sth) Upstream Aspect



S4(US Sth) Downstream Aspect

19th November 2025
Sampling Event



S3 (US) Downstream Aspect



S1(DS) Downstream Aspect



S1(DS) Upstream Aspect



S2(DS) Downstream Aspect

19th November 2025
Sampling Event



S2(DS) Upstream Aspect



S1(US) Upstream Aspect



S1(US) Downstream Aspect