Monthly Water Quality Monitoring Results, Cabbage Tree Road Sand Quarry, NSW

July 2023 Monitoring Event

NCA23R157639

20 August 2023

KLEINFELDER
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20 August 2023
NCA23R157639

Williamtown Sand Syndicate (WSS)
PO Box 898
Newcastle, NSW 2300

Attention: Darren Williams

Subject: Monthly Water Quality Monitoring Results, Cabbage Tree Road Sand Quarry, NSW
July 2023 Monitoring Event

Please find enclosed the monthly water quality monitoring results for the July 2023 monitoring event undertaken by Kleinfelder at the Cabbage Tree Road Sand Quarry, NSW (herein referred to as the 'site').

1 SCOPE OF WORK

The scope of work presented in this report includes the results from the monthly groundwater monitoring event undertaken in accordance with the NSW Environment Protection Authority (EPA) and Department of Planning and Environment (DPE) requirements for monthly water quality monitoring at the site. **Figure 1**, **Attachment 1** presents the groundwater sampling locations.

The scheduled July 2023 monitoring event included gauging of 10 monitoring wells, recording of field parameters for groundwater, and sampling from seven monitoring wells and one Wash Plant Water (WPW) sample as outlined in the Soil and Water Management Plan (SWMP, 2021) for the quarry.

2 SITE WORK

The monthly monitoring round was conducted on the 24th of July 2023 and comprised:

- Gauging of 10 monitoring wells (BH1A, BH2, BH4, BH6, BH7, BH9, BH9A, BH11, BH12A & MW239S).
- Groundwater sampling from seven monitoring wells (BH2, BH4, BH6, BH7, BH9A, BH11 & MW239S) as summarised in **Table 5** and detailed in **Attachment 2**.
- One WPW sample as summarised in **Table 6** and detailed in **Attachment 2.**

Each well location was gauged using a water level meter to determine groundwater depth (relative to the top of the well casing) and the total depth of the well in order to determine potential sand/silt inundation and potential maintenance requirements. Following gauging, a HydraSleeve was placed into the well, ensuring the top of the sleeve was located below the water column to be sampled, and suspended in place while all remaining wells were gauged. Each HydraSleeve was then removed from the well and representative groundwater samples taken.

The WPW sample was collected directly into laboratory supplied sample containers using a nitrile-gloved hand.

All samples collected were placed into an ice chilled esky and then submitted to a National Association of Testing Authorities (NATA) accredited laboratory under a chain of custody (COC) for the analytical schedule as per **Table 1**.

Table 1: Summary of Monthly Water Quality Analysis (July 2023)

Analysis	Number of Samples				
	Primary	Intra-lab (Duplicate)	Inter-lab (Triplicate)	Transport Blank	Rinsate Blank
Metals*	8	1	1	1	1
Per- and Polyfluoroalkyl Substances (PFAS) (28 analytes, standard level)	1	0	0	1	1

* Metals Suite (dissolved) – Arsenic (As), Iron (Fe), Manganese (Mn).

Table 2 provides a summary of the gauging data for July 2023. The full set of gauging data for each monitoring location is provided in **Table 13**, **Attachment 2**. Additionally, Watershed HydroGeo (2019) outlined a Trigger Action and Response Plan (TARP) to mitigate groundwater elevations that may potentially impact Cabbage Tree Road Sand Quarry operations (primarily sand excavation depths). Based on these recommendations, groundwater elevation has been shaded to correspond to triggers and actions outlined in **Table 3.** There was no instances of TARP Level Exceedances during the July monitoring event.

Table 2: Summary of Gauging Data (July 2023)

Well ID	Top of Casing (mAHD)	Depth to Water (mBTOC)	Ground-water Elevation (mAHD)	Well Total Depth Current (mBTOC)	Well Total Depth 2014 (mBTOC)	Inferred Max GW Elevation (mAHD)[1]	Difference Between Inferred Max and Measured GW Elevation (mAHD)	Comment
BH1A	8.98	5.458	3.522	12.25	N/A	4.5[2]	0.978	Gauge only
BH2	7.79	5.216	2.574	8.84	9.45	3.8	1.226	Light brown, no odour / sheen, well in good condition
BH4	3.06	1.246	1.814	5.995	6.45	3.0[3]	1.186	Clear, no odour / sheen, well in good condition
BH6	3.62	0.975	2.645	4.92	4.95	4.4	1.755	Cloudy white, moderate sulphur odour, no sheen, well in good condition
BH7	2.98	1.211	1.770	4.52	4.95	3.7	1.930	Light yellow, low sulphur odour, no sheen, well in good condition
BH9	17.75	15.916	1.834	16.099	18.8	3.0[3]	1.166	Gauge only
BH9A	10.75	8.859	1.891	12.27	16.16	3.0[3]	1.109	Light yellow, strong sulphur odour, no sheen, well in good condition
BH11	6.63	2.421	4.209	5.305	5.95	5.5	1.291	Yellow, strong sulphur odour, no sheen, well in good condition
BH12A	5.62	2.980	2.640	7.29	NA	4.0[5]	1.360	Gauge only
MW239S	3.04	0.912	2.128	3.79	4	3.9[4]	1.772	Light brown, moderate sulphur odour, no sheen, well in good condition

[1] – Sourced from Watershed HydroGeo ,2019, *Maximum Extraction Depth Management Plan, Cabbage Tree Road Sand Quarry*, May 2019.
[2] – Inferred Max Groundwater level based on former adjacent well (BH1).
[3] – Inferred Max Groundwater level based on adjacent wells (BH4 & BH9).
[4] – Inferred Max Groundwater level based on adjacent well (MW239S).
[5] – Inferred Max Groundwater level based on former adjacent well (BH12).

Table 3: Groundwater Level Monitoring TARP Rules (Watershed HydroGeo, 2019)

Level	Trigger	Action and Response	Report / Response Actions
0	Groundwater levels more than 0.5 m below *inferred* maximum historical level (**Table 2**).	Standard operations – monthly dipping of operational on-site monitoring bores.	N/A
1	Groundwater levels within 0.5 m below *inferred* maximum historical level (**Table 2**) at any on-site bore.	Weekly (or more frequent) monitoring (dipping) of groundwater levels until water level declines to below high frequency level bores listed in **Table 2**.	Internal and environmental consultant. Include note in Annual Report.
2	Groundwater levels within 0.25 m of *inferred* maximum historical level (**Table 2**) at any on-site bore.	Weekly (or more frequent) monitoring (dipping) of groundwater levels. Re-analysis and review of Minimum Extraction Level (MEL).	WSS to issue letter to DPIE, documenting groundwater level and rainfall trends, review and make recommendations regarding MEL.
3	Groundwater levels within resource area rise above previously *inferred* maximum groundwater level (**Table 2**).	Analysis of recent data by hydrogeologist, including site data and data from local HWC wells and local Defence wells (if available). Revision of MEL. Remediation of earlier excavations to revised MEL if required by DPIE.	WSS to issue letter to DPIE, DoI Water and HWC, documenting groundwater level trends, and revision (if necessary) of MEL. Letter to outline remedial options, considering access, vegetation condition in previously rehabilitated areas. Re-grading of previously rehabilitated areas if required by DPIE.

Table 4 provides a summary of the field parameters taken during the July 2023 monitoring event. All field parameters for each monitoring location are detailed in the field sheets provided in **Attachment 2**.

Table 4: Summary of Field Measurements

Borehole	Turbidity (NTU)	Temp (^{0}C)	DO (mg/L)	EC (µc/cm)	TDS (mg/L)	pH	Redox (mV)
BH1A	ND	ND	ND	ND	ND	ND	ND
BH2	40	17.4	4.14	84	64	4.57	103.7
BH4	7.71	15.3	3.41	66	53	5.18	215.7
BH6	230	17.7	8.84	230.2	174	4.91	97
BH7	50	16.3	5.6	90.6	71	4.83	159.2
BH9	ND	ND	ND	ND	ND	ND	ND
BH9A	55.5	17.8	4.13	125.6	95	4.69	195.5
BH11	133	16	5.69	102.2	80	4.45	-35.6
BH12A	ND	ND	ND	ND	ND	ND	ND
MW239S	217	15.6	4.37	84.6	67	4.53	-57
WPW2	1300	14.5	11.79	1207	980	2.65	448

ND: No Data – no sample taken

Table 5 below presents a summary of the water monitoring results for key analytes found to be elevated above the laboratory limit of reporting (LOR) for groundwater. **Table 6** presents a summary of the wash plant sample results for PFAS analytes in water. The site-specific groundwater criteria outlined in the SWMP (2021) has been applied to this monthly report including a comparison of results with previous data.

Concentrations of Iron at BH6 (6.78mg/L) were found to be in exceedance of the site-specific trigger value (4.1mg/L). This recorded concentration has decreased since the March 2023 monitoring event where BH6 recorded the highest Iron concentration at this location since monitoring began (4.76mg/L). The WPW2 sample recorded detections for PFAS compounds Perfluorohexanesulphonic acid (PFHxS) (0.01µg/L) and Perfluorooctanesulfonic acid (PFOS) (0.02µg/L) during this monitoring round. Perfluorooctanoic acid (PFOA) was not detected above the laboratory LOR, having previous been detected at LOR (0.01 mg/L) in June.

Full results summary tables, including quality assurance/quality control (QA/QC) sample analyses, are provided in **Attachment 2**. Field rinsate and trip blank samples collected by Kleinfelder did not detect any analytes above the laboratory LOR.

Review of the internal QA/QC Compliance Assessment provided by ALS, one matrix spike for Perfluorobutane sulfonic acid (PFBS) was considered not determined. Analytical data for PFBS was not compared to any assessment criteria for reaching conclusions in this report and the overall data quality is considered acceptable for interpretive use. Copies of the final NATA endorsed laboratory reports, including internal QA/QC results and chain-of-custody documentation for both laboratories are provided in **Attachment 3**.

Table 5: Groundwater Results and Screening Criteria (July 2023)

Analyte	Metals			Discussion of results relative to previous monitoring (details on specific data trends provided in Section 4 below)
	Arsenic	Iron	Manganese	
LOR	0.001	0.05	0.001	
Units	mg/L	mg/L	mg/L	
Adopted Site Specific Trigger Values (SWMP 2021)	0.003	4.1 (8.84 for BH1A)	0.136	
Samples				
BH1A	NS	NS	NS	Metals for BH1A were not sampled - gauge only.
BH2	<0.001	0.12	0.007	Metal concentrations were generally consistent with historical results and remain below the adopted criteria. BH2 is located marginally down hydraulic gradient from the current quarry operations footprint.
BH4	<0.001	0.06	0.013	Metal concentrations were generally consistent with historical variations and remain below the adopted criteria. BH4 is located down hydraulic gradient (approximately 700 m) from current quarry operations and on the southernmost boundary of the site adjacent to Cabbage Tree Road.
BH6	<0.001	6.78	0.005	Metal concentrations are generally consistent with historical results and remain below the adopted criteria, except for Iron which exceeded the site-specific trigger value. BH6 is considered up hydraulic gradient (approximately 860 m) from current quarry operations and the most north-eastern location at the site.
BH7	<0.001	0.53	0.004	Metal concentrations were generally consistent with historical results and are below the adopted criteria. BH7 is located (approximately 960 m) east of the current quarry operations.
BH9	NS	NS	NS	Metals for BH9 were not sampled - gauge only.
BH9A	<0.001	0.67	0.045	Metal concentrations were generally consistent with historical results, although concentration of manganese were noted to be marginally higher than the previous maximum value observed in this well (0.042 mg.L). All metal concentrations remained below the adopted criteria. BH9A is down gradient (approximately 700m) from current quarry operations and is on the southern-most boundary of the site adjacent to Cabbage Tree Road.
BH11	<0.001	0.86	0.002	Metal concentrations were generally consistent with historical results and below the adopted criteria. BH11 is located approximately 460 m from current quarry operations and at the most north-western point of the site.
BH12A	NS	NS	NS	Metals for BH12A were not sampled - gauge only.
MW239S	<0.001	0.25	0.005	Metal concentrations were generally consistent with historical results and below the adopted criteria. MW239S is located approximately 800 m east of the current quarry operations.

Notes:
< - Less than laboratory limit of reporting; NS – No Sample

Table 6: Wash Plant Water Sample Results and Screening Criteria

Analyte	PFAS				Discussion of results
	PFOA	PFOS	PFHxS	Sum of PFOS + PFHxS	
LOR	0.01	0.01	0.01	0.01	
Units	µg/L	µg/L	µg/L	µg/L	
Site Specific Trigger Values (SWMP 2021)	0.56	N/A	N/A	0.07	
Sample Name	Sand Wash Plant				
WPW2	<0.01	0.02	0.01	0.03	PFOS and PFHxS were detected at this location at concentrations below the adopted criteria during this reporting period. The findings for PFAS compounds are generally consistent with historical results.

Notes:
< - Less than laboratory limit of reporting
*Detection from QC sample

3 RAINWATER DATA

Table 7 presents the rainfall data from Williamtown RAAF base (Station Number: 061078, Latitude: 32.79°S; Longitude: 151.84°E; Elevation: 8 m) for the period 2022/23. The total monthly rainfall for July 2023 was recorded to be below the monthly mean and has remained stable when compared to the previous two months. Based on current rainfall data (mean and monthly totals) for July 2023, it is expected that groundwater elevations will continue to increase during the subsequent months due to a lag in groundwater response, consistent with current groundwater trend data.

Table 7: 2022-2023 Rainfall data (12-month period)

Date	Aug (22)	Sep (22)	Oct (22)	Nov (22)	Dec (22)	Jan (23)	Feb (23)	Mar (23)	Apr (23)	May (23)	Jun (23)	Jul (23)
1st	0	2.0	4.4	9	0	0	0	0.2	0	0	0	0
2nd	0.2	0	0	0	0	0	0	0	11.2	0	0	0
3rd	0	28.0	0	0	0	0	0	0	2.4	0	0	0
4th	0	4.2	0	0.4	0	0	0.6	1	3.4	0	0	2.2
5th	12.0	0.4	0	0	0	13.8	0	0	-	0	0.2	5
6th	0	0	23.4	0	0.4	5.6	0	0	6.8	0	0.8	0
7th	0	0.2	0.2	0	0	21.2	0	0	3	0	0	0
8th	0	0	6.6	0	0	4.8	0	0	10.6	4.6	0	0
9th	1.4	0.2	32.6	0	0	-	0	0	0.2	0	0.6	0
10th	18.4	2.2	0	0	0	0	0	0	0	0	0	0
11th	0.2	0	1.2	0	0	0	0.2	0	0	0	0	0
12th	0	0	0.2	0	0	0	0	0	0	0	0	0
13th	5.2	0	0	2.8	5.6	0	0	4.2	11.6	0	1.2	
14th	0.2	0.6	0.2	24.2	0	0	21.2	1.6	25.4	0.2	0.6	0
15th	0	0.2	0.2	-	0	-	1	7.4	2	0	0	0
16th	0	5.4	0	-	0.2	0	0.2	0.2	0	0	0	0
17th	0	0	0.4	0	4.2	0	0	0	0	11.4	0	5.4
18th	0	0	0	0	2.8	0	0	0	0	22.2	0	0.2
19th	0	0	0	0	3	0.2	1.8	0	0	2.2	0	0.8
20th	0	0	1.6	0	0	21.4	0.2	0	3.2	0	0	0
21st	0	0	4	0	2	0.8	0	0.6	29.4	0	0	0.4
22nd	0	7.2	3.4	0	0	9.0	45.6	0	0.8	0	0	1
23rd	0	5.4	2.2	0	0.2	4.4	35	0	0	0	3.6	0
24th	0.6	0.4	3.4	0	0.8	0	1.2	25.6	0.2	0	0.2	22
25th	0	4.6	5.6	0	0	0	0	31.4	0	0	0	1
26th	0	0.2	0.4	1.6	0	0	0	1.8	0	0.2	0	0.2
27th	0	0	0	0	0	3.6	0	0	0	45.8	0	0.2
28th	0.2	0.2	0.8	12	0	0	0.4	22.4	0	0	0	0
29th	0	0	0	0	0	0	-	8.8	0	0	1.6	0

30th	0	13.0	0	0	0	3.4	-	0.8	8.2	0	0	ND
31st	0	-	0	-	0	18.0	-	0	-	0	-	ND
Total	38.4	74.4	90.8	50.0	19.2	106.2	107.4	106	118.4	86.6	8.8	38.4
Historical Mean	72.0	60.6	76.1	82.9	77.1	99.4	118.8	128.0	109.6	108.2	121.5	75.2

Notes:
ND – no data retrieved.

4 DATA TRENDS

Data trends, based on from analyses undertaken throughout the duration of the sampling program (January 2019 – present), are provided as **Attachment 4.** Generally, groundwater elevations have increased over the last four years with a notable spike in elevation following the March 2021 and February 2022 water monitoring events. A general increase in groundwater elevations across the site occurred during 2022 and is predominantly due to the above average rainfall recorded for most months during the year. Since October 2022 groundwater elevations have decreased across the site, with a minor rebound across the March and April monitoring events most likely due to recent above average rainfall as noted in **Section 3**. Water levels between May and July have decreased slightly, with below average rainfall reported across these months.

Notable changes in data trends were observed for the following analytes;

- Iron – The reported iron concentrations at BH6 (6.78 mg/L) had been on a generally increasing trend since June 2022. The concentration reported during this monitoring event was found to be above the site-specific trigger value (4.1mg/L) and marks the highest concentration reported so far over the monitoring period.
- Field pH – Field pH results recorded at BH6 and BH9A have returned to levels within the site-specific trigger value range during this monitoring event after reporting results that fell below the range during the previous March 2023 GME.
- PFAS – PFOS and PFHxS were again detected in the WPW2 sample during the July 2023 GME. This is the sixth GME where a sample has been taken from the new sand wash plant whilst operational. These analytes were within the range expected based on historical results and all found below the site-specific trigger values.

5 CLOSING

Overall, the results suggest that since quarry operations began in August 2019, there has been negligible change in analytical results across the sampled locations. Groundwater level monitoring TARP rules, outlined in **Section 2,** recorded no exceedances at any locations during the July 2023 monitoring event.

One analyte exceedance, iron (6.78 mg/L) was recorded during the July 2023 GME and occurred at BH6, located 860m upgradient from current quarrying activities. This result is reflective of increases in iron concentration over the past year. The concentration of iron recorded in the July 2023 GME is the highest recorded over the monitoring period so far.

There is no cause to suggest that the elevated concentrations are related to quarrying activities due to the distance and upgradient location of this monitoring well. Iron concentrations have been on an increasing trend during the previous six months at this location, however this increase does not appear to have been reflected in any of the wells considered downgradient of quarrying activities. BH6 will continue to be monitored during future sampling rounds, as per Section 8.6.1 from the SWMP below.

4. Where two consecutive samples are:

a. ABOVE the adopted trigger value, BUT LESS than previous data, this may suggest an incorrectly set trigger value that does not fully account for seasonal changes. Consider updating trigger value at next management plan update.

We trust that the above report meets your requirements. If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

Kleinfelder Australia Pty Ltd

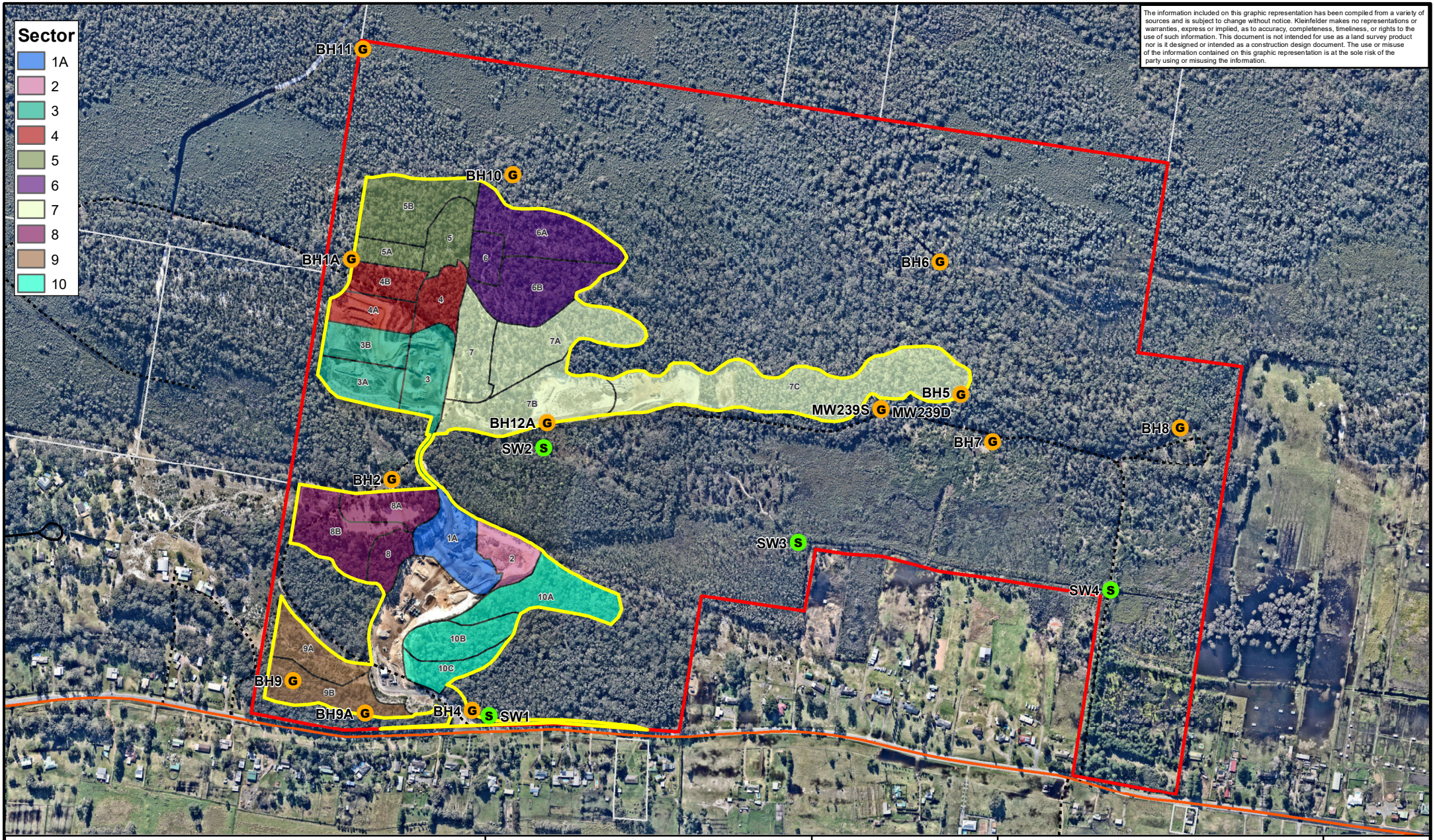
Jack Luxton

Environmental Engineer
Contaminated Land Management
jluxton@kleinfelder.com
Mobile: 0403 990 392

Attachments

Attachment 1: Figures
Attachment 2: Results tables and field records
Attachment 3: Lab results
Attachment 4: Data Trends

ATTACHMENT 1: FIGURES



Legend

- G Groundwater Sample Site
- S Surface Water Sample Site
- Quarry Project Area
- Subject Land Boundary
- Arterial Road
- Local Road
- Track

Metres
0 50 100 200 300 400 500
N

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PROJECT REFERENCE: 20232071
DATE DRAWN: 7/10/2022 14:16 Version 1
DRAWN BY: CMiskell

DATA SOURCE:
NSW DFSI - 2017
Nearmap - 2022

Monthly Monitoring Locations

Williamtown Sand Syndicate
Proposed Sand Quarry
398 Cabbage Tree Road, Williamtown

FIGURE:
1

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ATTACHMENT 2: RESULTS TABLES AND FIELD RECORDS

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 1
Groundwater - Hydrocarbons

Analyte		BTEXN								Total Petroleum Hydroc		
		Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Naphthalene	Sum of BTEX	C_6 - C_9	C_{10} - C_{14}	C_{15} - C_{28}
LOR		1.0	2.0	2.0	2.0	2.0	2.0	5.0	1.0	20	50	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date											
BH1	15-Mar-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	**1,710**	-	-
	23-Apr-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	**40**	< 50	< 100
	16-May-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	14-Jun-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Jul-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Aug-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-Sep-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Oct-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Sep-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Oct-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Dec-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Jan-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Feb-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	17-Mar-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	19-Aug-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	22-Sep-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	13-Oct-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
BH1A	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
BH2	22-Feb-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Mar-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	23-Apr-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-May-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	14-Jun-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Jul-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Aug-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-Sep-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Oct-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Sep-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Oct-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Dec-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Jan-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Feb-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	17-Mar-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	19-Aug-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	27-May-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	12-Aug-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-

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Table 1
Groundwater - Hydrocarbons

Analyte		BTEXN								Total Petroleum Hydroc		
		Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Naphthalene	Sum of BTEX	C_6 - C_9	C_{10} - C_{14}	C_{15} - C_{28}
LOR		1.0	2.0	2.0	2.0	2.0	2.0	5.0	1.0	20	50	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--	--
	16-May-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
BH3	21-Feb-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
BH4	21-Feb-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Mar-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	23-Apr-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	**250**
	16-May-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	14-Jun-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Jul-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Aug-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-Sep-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Oct-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Sep-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Oct-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Dec-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Jan-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Feb-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	17-Mar-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	19-Aug-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	27-May-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	12-Aug-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-May-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
BH5	22-Feb-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
BH6	22-Feb-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Mar-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	23-Apr-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-May-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	14-Jun-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Jul-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Aug-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-Sep-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Oct-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Sep-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Oct-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Dec-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Jan-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Feb-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	17-Mar-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-

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Table 1
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Analyte		BTEXN								Total Petroleum Hydroc		
		Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Naphthalene	Sum of BTEX	C_6 - C_9	C_{10} - C_{14}	C_{15} - C_{28}
LOR		1.0	2.0	2.0	2.0	2.0	2.0	5.0	1.0	20	50	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--	--
BH7	19-Aug-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	27-May-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	12-Aug-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-May-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
BH7	22-Feb-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Mar-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	23-Apr-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-May-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	14-Jun-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Jul-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Aug-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-Sep-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Oct-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Sep-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Oct-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Dec-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Jan-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Feb-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	17-Mar-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	19-Aug-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	27-May-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	12-Aug-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-May-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
BH8	21-Feb-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Mar-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	23-Apr-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-May-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	14-Jun-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Jul-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Aug-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-Sep-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Oct-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Sep-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Oct-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Dec-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-

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Analyte		BTEXN								Total Petroleum Hydroc		
		Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Naphthalene	Sum of BTEX	C_6 - C_9	C_{10} - C_{14}	C_{15} - C_{28}
LOR		1.0	2.0	2.0	2.0	2.0	2.0	5.0	1.0	20	50	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--	--
BH9A	14-Jan-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Feb-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	17-Mar-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	19-Aug-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	27-May-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	12-Aug-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-May-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
BH11	16-Sep-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Oct-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Dec-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Jan-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Feb-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	17-Mar-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	19-Aug-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	22-Sep-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	13-Oct-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	27-May-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	12-Aug-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-May-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	21-Feb-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Mar-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	23-Apr-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-May-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	14-Jun-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Jul-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Aug-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-Sep-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Oct-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Sep-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Oct-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Dec-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Jan-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Feb-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	17-Mar-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	19-Aug-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	22-Sep-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-

Williamtown Sand Syndicate
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Table 1
Groundwater - Hydrocarbons

Analyte		BTEXN								Total Petroleum Hydroc		
		Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Naphthalene	Sum of BTEX	C_6 - C_9	C_{10} - C_{14}	C_{15} - C_{28}
LOR		1.0	2.0	2.0	2.0	2.0	2.0	5.0	1.0	20	50	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--	--
BH12	13-Oct-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	06-Mar-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-May-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Sep-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Dec-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Jan-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Feb-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	17-Mar-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	19-Aug-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	22-Sep-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	13-Oct-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
BH12A	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
MW239S	22-Feb-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Mar-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	23-Apr-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-May-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	14-Jun-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Jul-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Aug-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	< 50	< 100
	16-Sep-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Oct-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-19	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Sep-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Oct-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Dec-20	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	14-Jan-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Feb-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	17-Mar-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	19-Aug-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	16-Nov-21	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	24-Feb-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	27-May-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	12-Aug-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	18-Nov-22	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-
	15-Feb-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-

Williamtown Sand Syndicate
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Table 1
Groundwater - Hydrocarbons

Analyte		BTEXN								Total Petroleum Hydroc		
		Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Naphthalene	Sum of BTEX	C_6 - C_9	C_{10} - C_{14}	C_{15} - C_{28}
LOR		1.0	2.0	2.0	2.0	2.0	2.0	5.0	1.0	20	50	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--	--
	16-May-23	< 1.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 1.0	< 20	-	-

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
µg/L - Micrograms per litre
BTEXN - Benzene, toluene, ethylbenzene, total xylenes, naphthalene
Bold indicates a detection above the laboratory limit of reporting
Highlighting indicates an exceedance of the corresponding criteria (highlighting corresponds to the guideline with the highest criteria value where analytical result exceeds more than one guideline)

Criteria:
SWMP 2021 - Soil and Water Management Plan, July 2021

Williamtown Sand Syndicate
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Table 1
Groundwater - Hydrocarbons

Analyte		arbons		Total Petroleum Hydrocarbons - Silica Clean-up					Total Recoverable Hydrocar			
		C_{29} - C_{36}	C_{10} - C_{36} sum	C_{10}-C_{14} - Silica Cleanup	C_{10}-C_{14} - Silica Cleanup	C_{15}-C_{28} - Silica Cleanup	C_{29}-C_{36} - Silica Cleanup	C_{10}-C_{36} Sum - Silica Cleanup	C_6 - C_{10}	C_6 - C_{10} minus BTEX (F1)	>C_{10} - C_{16}	>C_{10} - C_{16} minus Naphthalene (F2)
LOR		50	50	100	50	100	50	50	20	20	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	20	20	100	--
Sample Name	Sample Date											
BH1	15-Mar-19	-	-	-	< 50	< 100	< 50	< 50	**1,690**	**1,690**	-	-
	23-Apr-19	< 50	< 50	-	-	-	-	-	**30**	**30**	< 100	< 100
	16-May-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	14-Jun-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Jul-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Aug-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-Sep-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Oct-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Oct-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Dec-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Jan-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Feb-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	17-Mar-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	19-Aug-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	22-Sep-21	-	-	< 100	-	< 100	< 50	< 50	< 20	< 20	-	-
	13-Oct-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH1A	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH2	22-Feb-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Mar-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	23-Apr-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-May-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	14-Jun-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Jul-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Aug-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-Sep-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Oct-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Oct-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Dec-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Jan-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Feb-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	17-Mar-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	19-Aug-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	27-May-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	12-Aug-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-

Williamtown Sand Syndicate
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Table 1
Groundwater - Hydrocarbons

Analyte		arbons		Total Petroleum Hydrocarbons - Silica Clean-up					Total Recoverable Hydrocar			
		C_{29} - C_{36}	C_{10} - C_{36} sum	C_{10}-C_{14} - Silica Cleanup	C_{10}-C_{14} - Silica Cleanup	C_{15}-C_{28} - Silica Cleanup	C_{29}-C_{36} - Silica Cleanup	C_{10}-C_{36} Sum - Silica Cleanup	C_6 - C_{10}	C_6 - C_{10} minus BTEX (F1)	$>C_{10}$ - C_{16}	$>C_{10}$ - C_{16} minus Naphthalene (F2)
LOR		50	50	100	50	100	50	50	20	20	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	20	20	100	--
	16-May-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH3	21-Feb-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH4	21-Feb-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Mar-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	23-Apr-19	< 50	**250**	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-May-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	14-Jun-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Jul-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Aug-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-Sep-19	-	-	-	< 50	**130**	< 50	**130**	< 20	< 20	-	-
	15-Oct-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Oct-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Dec-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Jan-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Feb-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	17-Mar-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	19-Aug-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	**340**	< 50	**340**	< 20	< 20	-	-
	27-May-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	12-Aug-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-May-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH5	22-Feb-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH6	22-Feb-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Mar-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	23-Apr-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-May-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	14-Jun-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Jul-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Aug-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-Sep-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Oct-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Oct-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Dec-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Jan-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Feb-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	17-Mar-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 1
Groundwater - Hydrocarbons

Analyte		arbons		Total Petroleum Hydrocarbons - Silica Clean-up					Total Recoverable Hydrocar			
		C_{29} - C_{36}	C_{10} - C_{36} sum	C_{10}-C_{14} - Silica Cleanup	C_{10}-C_{14} - Silica Cleanup	C_{15}-C_{28} - Silica Cleanup	C_{29}-C_{36} - Silica Cleanup	C_{10}-C_{36} Sum - Silica Cleanup	C_6 - C_{10}	C_6 - C_{10} minus BTEX (F1)	$>C_{10}$ - C_{16}	$>C_{10}$ - C_{16} minus Naphthalene (F2)
LOR		50	50	100	50	100	50	50	20	20	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	20	20	100	--
	19-Aug-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	27-May-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	12-Aug-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-May-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	22-Feb-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Mar-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	23-Apr-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-May-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	14-Jun-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Jul-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Aug-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-Sep-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Oct-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Oct-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Oct-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH7	16-Nov-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Dec-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Jan-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Feb-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	17-Mar-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	19-Aug-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	27-May-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	12-Aug-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-May-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	21-Feb-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Mar-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	23-Apr-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-May-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	14-Jun-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Jul-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Aug-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-Sep-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Oct-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Oct-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH8	16-Nov-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Dec-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-

Williamtown Sand Syndicate
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Table 1
Groundwater - Hydrocarbons

Analyte		arbons		Total Petroleum Hydrocarbons - Silica Clean-up					Total Recoverable Hydrocar			
		C_{29} - C_{36}	C_{10} - C_{36} sum	C_{10}-C_{14} - Silica Cleanup	C_{10}-C_{14} - Silica Cleanup	C_{15}-C_{28} - Silica Cleanup	C_{29}-C_{36} - Silica Cleanup	C_{10}-C_{36} Sum - Silica Cleanup	C_6 - C_{10}	C_6 - C_{10} minus BTEX (F1)	>C_{10} - C_{16}	>C_{10} - C_{16} minus Naphthalene (F2)
LOR		50	50	100	50	100	50	50	20	20	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	20	20	100	--
	14-Jan-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Feb-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	17-Mar-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	19-Aug-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	27-May-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	12-Aug-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-May-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Oct-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Dec-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Jan-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Feb-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	17-Mar-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	19-Aug-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH9A	22-Sep-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	13-Oct-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	27-May-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	12-Aug-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-May-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	21-Feb-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Mar-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	23-Apr-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-May-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	14-Jun-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Jul-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Aug-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-Sep-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Oct-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Oct-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH11	16-Nov-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Dec-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Jan-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Feb-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	17-Mar-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	19-Aug-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	22-Sep-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-

Williamtown Sand Syndicate
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Table 1
Groundwater - Hydrocarbons

Analyte		arbons		Total Petroleum Hydrocarbons - Silica Clean-up					Total Recoverable Hydrocar			
		C_{29} - C_{36}	C_{10} - C_{36} sum	C_{10}-C_{14} - Silica Cleanup	C_{10}-C_{14} - Silica Cleanup	C_{15}-C_{28} - Silica Cleanup	C_{29}-C_{36} - Silica Cleanup	C_{10}-C_{36} Sum - Silica Cleanup	C_6 - C_{10}	C_6 - C_{10} minus BTEX (F1)	$>C_{10}$ - C_{16}	$>C_{10}$ - C_{16} minus Naphthalene (F2)
LOR		50	50	100	50	100	50	50	20	20	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	20	20	100	--
	13-Oct-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	06-Mar-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-May-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Dec-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Jan-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Feb-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH12	17-Mar-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	19-Aug-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	22-Sep-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	13-Oct-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
BH12A	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	22-Feb-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Mar-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	23-Apr-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-May-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	14-Jun-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Jul-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Aug-19	< 50	< 50	-	-	-	-	-	< 20	< 20	< 100	< 100
	16-Sep-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Oct-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-19	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Sep-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Oct-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
MW239S	16-Nov-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Dec-20	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	14-Jan-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Feb-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	17-Mar-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	19-Aug-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	16-Nov-21	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	24-Feb-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	27-May-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	12-Aug-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	18-Nov-22	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-
	15-Feb-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-

Williamtown Sand Syndicate
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Table 1
Groundwater - Hydrocarbons

Analyte		arbons		Total Petroleum Hydrocarbons - Silica Clean-up					Total Recoverable Hydrocar			
		C_{29} - C_{36}	C_{10} - C_{36} sum	C_{10}-C_{14} - Silica Cleanup	C_{10}-C_{14} - Silica Cleanup	C_{15}-C_{28} - Silica Cleanup	C_{29}-C_{36} - Silica Cleanup	C_{10}-C_{36} Sum - Silica Cleanup	C_6 - C_{10}	C_6 - C_{10} minus BTEX (F1)	>C_{10} - C_{16}	>C_{10} - C_{16} minus Naphthalene (F2)
LOR		50	50	100	50	100	50	50	20	20	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	20	20	100	--
	16-May-23	-	-	-	< 50	< 100	< 50	< 50	< 20	< 20	-	-

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
µg/L - Micrograms per litre
BTEXN - Benzene, toluene, ethylbenzene, to
Bold indicates a detection above the labora
Highlighting indicates an exceedance of the

Criteria:
SWMP 2021 - Soil and Water Management F

Williamtown Sand Syndicate
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Table 1
Groundwater - Hydrocarbons

Analyte		bons			Total Recoverable Hydrocarbons - Silica Clean-up				
		$>C_{16}$ - C_{34}	$>C_{34}$ - C_{40}	$>C_{10}$ - C_{40} (sum)	$>C_{10}$-C_{16} - Silica Cleanup	F2 - Silica Cleanup	$>C_{16}$-C_{34} - Silica Cleanup	$>C_{34}$-C_{40} - Silica Cleanup	$>C_{10}$-C_{40} - Silica Cleanup
LOR		100	100	100	100	100	100	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		100	100	--	--	--	--	--	--
Sample Name	Sample Date								
BH1	15-Mar-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	23-Apr-19	< 100	< 100	< 100	-	-	-	-	-
	16-May-19	< 100	< 100	< 100	-	-	-	-	-
	14-Jun-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Jul-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Aug-19	< 100	< 100	< 100	-	-	-	-	-
	16-Sep-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Oct-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Sep-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Oct-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Dec-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Jan-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Feb-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	17-Mar-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	19-Aug-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	22-Sep-21	-	-	-	-	< 100	< 100	< 100	< 100
	13-Oct-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	< 100	< 100	< 100
BH1A	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100
BH2	22-Feb-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Mar-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	23-Apr-19	< 100	< 100	< 100	-	-	-	-	-
	16-May-19	< 100	< 100	< 100	-	-	-	-	-
	14-Jun-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Jul-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Aug-19	< 100	< 100	< 100	-	-	-	-	-
	16-Sep-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Oct-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Sep-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Oct-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Dec-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Jan-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Feb-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	17-Mar-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	19-Aug-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	27-May-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	12-Aug-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100

Williamtown Sand Syndicate
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Table 1
Groundwater - Hydrocarbons

Analyte		bons			Total Recoverable Hydrocarbons - Silica Clean-up				
		$>C_{16}$ - C_{34}	$>C_{34}$ - C_{40}	$>C_{10}$ - C_{40} (sum)	$>C_{10}$-C_{16} - Silica Cleanup	F2 - Silica Cleanup	$>C_{16}$-C_{34} - Silica Cleanup	$>C_{34}$-C_{40} - Silica Cleanup	$>C_{10}$-C_{40} - Silica Cleanup
LOR		100	100	100	100	100	100	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		100	100	--	--	--	--	--	--
	16-May-23	-	-	-	< 100	< 100	< 100	< 100	< 100
BH3	21-Feb-19	-	-	-	< 100	< 100	< 100	< 100	< 100
BH4	21-Feb-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Mar-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	23-Apr-19	**280**	< 100	**280**	-	-	-	-	-
	16-May-19	< 100	< 100	< 100	-	-	-	-	-
	14-Jun-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Jul-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Aug-19	< 100	< 100	< 100	-	-	-	-	-
	16-Sep-19	-	-	-	< 100	< 100	**140**	< 100	**140**
	15-Oct-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Sep-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Oct-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Dec-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Jan-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Feb-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	17-Mar-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	19-Aug-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	**370**	< 100	**370**
	27-May-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	12-Aug-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-May-23	-	-	-	< 100	< 100	< 100	< 100	< 100
BH5	22-Feb-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100
BH6	22-Feb-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Mar-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	23-Apr-19	< 100	< 100	< 100	-	-	-	-	-
	16-May-19	< 100	< 100	< 100	-	-	-	-	-
	14-Jun-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Jul-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Aug-19	< 100	< 100	< 100	-	-	-	-	-
	16-Sep-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Oct-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Sep-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Oct-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Dec-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Jan-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Feb-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	17-Mar-21	-	-	-	< 100	< 100	< 100	< 100	< 100

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Table 1
Groundwater - Hydrocarbons

Analyte		bons			Total Recoverable Hydrocarbons - Silica Clean-up				
		>C_{16} - C_{34}	>C_{34} - C_{40}	>C_{10} - C_{40} (sum)	>C_{10}-C_{16} - Silica Cleanup	F2 - Silica Cleanup	>C_{16}-C_{34} - Silica Cleanup	>C_{34}-C_{40} - Silica Cleanup	>C_{10}-C_{40} - Silica Cleanup
LOR		100	100	100	100	100	100	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		100	100	--	--	--	--	--	--
BH7	19-Aug-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	27-May-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	12-Aug-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-May-23	-	-	-	< 100	< 100	< 100	< 100	< 100
BH7	22-Feb-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Mar-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	23-Apr-19	< 100	< 100	< 100	-	-	-	-	-
	16-May-19	< 100	< 100	< 100	-	-	-	-	-
	14-Jun-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Jul-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Aug-19	< 100	< 100	< 100	-	-	-	-	-
	16-Sep-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Oct-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Sep-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Oct-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Dec-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Jan-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Feb-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	17-Mar-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	19-Aug-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	27-May-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	12-Aug-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-May-23	-	-	-	< 100	< 100	< 100	< 100	< 100
BH8	21-Feb-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Mar-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	23-Apr-19	< 100	< 100	< 100	-	-	-	-	-
	16-May-19	< 100	< 100	< 100	-	-	-	-	-
	14-Jun-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Jul-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Aug-19	< 100	< 100	< 100	-	-	-	-	-
	16-Sep-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Oct-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Sep-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Oct-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Dec-20	-	-	-	< 100	< 100	< 100	< 100	< 100

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Table 1
Groundwater - Hydrocarbons

Analyte		bons			Total Recoverable Hydrocarbons - Silica Clean-up				
		$>C_{16}$ - C_{34}	$>C_{34}$ - C_{40}	$>C_{10}$ - C_{40} (sum)	$>C_{10}$-C_{16} - Silica Cleanup	F2 - Silica Cleanup	$>C_{16}$-C_{34} - Silica Cleanup	$>C_{34}$-C_{40} - Silica Cleanup	$>C_{10}$-C_{40} - Silica Cleanup
LOR		100	100	100	100	100	100	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		100	100	--	--	--	--	--	--
	14-Jan-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Feb-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	17-Mar-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	19-Aug-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	27-May-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	12-Aug-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-May-23	-	-	-	< 100	< 100	< 100	< 100	< 100
BH9A	16-Sep-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Oct-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Dec-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Jan-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Feb-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	17-Mar-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	19-Aug-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	22-Sep-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	13-Oct-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	27-May-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	12-Aug-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-May-23	-	-	-	< 100	< 100	< 100	< 100	< 100
BH11	21-Feb-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Mar-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	23-Apr-19	< 100	< 100	< 100	-	-	-	-	-
	16-May-19	< 100	< 100	< 100	-	-	-	-	-
	14-Jun-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Jul-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Aug-19	< 100	< 100	< 100	-	-	-	-	-
	16-Sep-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Oct-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Sep-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Oct-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Dec-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Jan-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Feb-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	17-Mar-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	19-Aug-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	22-Sep-21	-	-	-	< 100	< 100	< 100	< 100	< 100

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Table 1
Groundwater - Hydrocarbons

Analyte		bons			Total Recoverable Hydrocarbons - Silica Clean-up				
		$>C_{16}$ - C_{34}	$>C_{34}$ - C_{40}	$>C_{10}$ - C_{40} (sum)	$>C_{10}$-C_{16} - Silica Cleanup	F2 - Silica Cleanup	$>C_{16}$-C_{34} - Silica Cleanup	$>C_{34}$-C_{40} - Silica Cleanup	$>C_{10}$-C_{40} - Silica Cleanup
LOR		100	100	100	100	100	100	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		100	100	--	--	--	--	--	--
	13-Oct-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	06-Mar-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-May-23	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Sep-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Dec-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Jan-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Feb-21	-	-	-	< 100	< 100	< 100	< 100	< 100
BH12	17-Mar-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	19-Aug-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	22-Sep-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	13-Oct-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	< 100	< 100	< 100
BH12A	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100
	22-Feb-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Mar-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	23-Apr-19	< 100	< 100	< 100	-	-	-	-	-
	16-May-19	< 100	< 100	< 100	-	-	-	-	-
	14-Jun-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Jul-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Aug-19	< 100	< 100	< 100	-	-	-	-	-
	16-Sep-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Oct-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-19	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Sep-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Oct-20	-	-	-	< 100	< 100	< 100	< 100	< 100
MW239S	16-Nov-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Dec-20	-	-	-	< 100	< 100	< 100	< 100	< 100
	14-Jan-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Feb-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	17-Mar-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	19-Aug-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	16-Nov-21	-	-	-	< 100	< 100	< 100	< 100	< 100
	24-Feb-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	27-May-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	12-Aug-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	18-Nov-22	-	-	-	< 100	< 100	< 100	< 100	< 100
	15-Feb-23	-	-	-	< 100	< 100	< 100	< 100	< 100

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Table 1
Groundwater - Hydrocarbons

Analyte		bons			Total Recoverable Hydrocarbons - Silica Clean-up				
		$>C_{16}$ - C_{34}	$>C_{34}$ - C_{40}	$>C_{10}$ - C_{40} (sum)	$>C_{10}$-C_{16} - Silica Cleanup	F2 - Silica Cleanup	$>C_{16}$-C_{34} - Silica Cleanup	$>C_{34}$-C_{40} - Silica Cleanup	$>C_{10}$-C_{40} - Silica Cleanup
LOR		100	100	100	100	100	100	100	100
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		100	100	--	--	--	--	--	--
	16-May-23	-	-	-	< 100	< 100	< 100	< 100	< 100

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
µg/L - Micrograms per litre
BTEXN - Benzene, toluene, ethylbenzene, to
Bold indicates a detection above the labora
Highlighting indicates an exceedance of the

Criteria:
SWMP 2021 - Soil and Water Management F

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Anions and Cations										
		Sodium	Calcium	Magnesium	Potassium	Sulphate	Chloride	Fluoride	Phosphorus	Reactive phosphorus as P	Total Phosphorus	Nitrite
LOR		1.0	1.0	1.0	1.0	1.0	1.0	0.1	0.01	0.01	0.01	0.01
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		77	5	11	2	70	148	0.2	--	--	2	--
Sample Name	Sample Date											
BH1	15-Mar-19	**11**	**2.0**	**1.0**	< 1.0	< 1.0	**25**	< 0.1	-	-	-	-
	23-Apr-19	**14**	**1.0**	**2.0**	< 1.0	**4.0**	**25**	< 0.1	-	-	-	-
	16-May-19	**12**	< 1.0	**2.0**	< 1.0	**5.0**	**25**	< 0.1	-	**0.03**	< 0.01	-
	14-Jun-19	**10**	< 1.0	**2.0**	< 1.0	**3.0**	**24**	< 0.1	-	-	-	-
	16-Jul-19	**15**	< 1.0	**2.0**	< 1.0	**4.0**	**23**	< 0.1	-	-	-	-
	15-Aug-19	**14**	< 1.0	**2.0**	< 1.0	**2.0**	**21**	< 0.1	-	-	-	-
	16-Sep-19	**13**	< 1.0	**2.0**	< 1.0	**2.0**	**20**	< 0.1	-	< 0.01	**0.06**	-
	15-Oct-19	**13**	< 1.0	**2.0**	< 1.0	**2.0**	**21**	< 0.1	-	-	-	-
	18-Nov-19	**16**	< 1.0	**2.0**	< 1.0	**3.0**	**23**	**0.1**	< 0.01	< 0.01	-	-
	16-Sep-20	**13**	< 1.0	**2.0**	< 1.0	**2.0**	**21**	< 0.1	-	-	-	-
	16-Oct-20	**14**	< 1.0	**2.0**	< 1.0	**4.0**	**21**	< 0.1	-	-	-	-
	16-Nov-20	**11**	< 1.0	**2.0**	< 1.0	**5.0**	**18**	< 0.1	-	< 0.01	**0.02**	-
	16-Dec-20	**13**	< 1.0	**2.0**	**1.0**	**6.0**	**22**	< 0.1	-	-	-	-
	14-Jan-21	**12**	< 1.0	**2.0**	< 1.0	**5.0**	**23**	< 0.1	-	-	-	-
	16-Feb-21	**14**	< 1.0	**2.0**	**1.0**	**5.0**	**25**	< 0.1	-	< 0.01	< 0.01	-
	17-Mar-21	**14**	**1.0**	**2.0**	< 1.0	**4.0**	**23**	< 0.1	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	**14**	**1.0**	**3.0**	< 1.0	**10**	**23**	< 0.1	-	-	< 0.01	< 0.01
BH1A	15-Feb-23	**9.0**	< 1.0	< 1.0	< 1.0	**7.0**	**13**	< 0.1	-	< 0.01	< 0.01	-
BH2	22-Feb-19	**12**	**2.0**	**2.0**	< 1.0	**6.0**	**22**	**0.1**	-	< 0.01	**0.28**	-
	15-Mar-19	**10**	**3.0**	**2.0**	< 1.0	**7.0**	**23**	< 0.1	-	-	-	-
	23-Apr-19	**14**	**2.0**	**2.0**	< 1.0	**6.0**	**23**	< 0.1	-	-	-	-
	16-May-19	**12**	**2.0**	**2.0**	< 1.0	**21**	**22**	< 0.1	-	< 0.01	**0.26**	-
	14-Jun-19	**11**	**1.0**	**2.0**	< 1.0	**5.0**	**23**	< 0.1	-	-	-	-
	16-Jul-19	**13**	**2.0**	**2.0**	< 1.0	**9.0**	**20**	< 0.1	-	-	-	-
	15-Aug-19	**12**	**1.0**	**2.0**	< 1.0	**8.0**	**20**	< 0.1	-	-	-	-
	16-Sep-19	**11**	**2.0**	**2.0**	< 1.0	**8.0**	**18**	< 0.1	-	< 0.01	**0.28**	-
	15-Oct-19	**12**	**2.0**	**2.0**	< 1.0	**5.0**	**20**	< 0.1	-	-	-	-
	18-Nov-19	**14**	**2.0**	**1.0**	< 1.0	**7.0**	**19**	< 0.1	**0.21**	< 0.01	-	-
	16-Sep-20	**11**	**2.0**	**2.0**	< 1.0	**7.0**	**17**	< 0.1	-	-	-	-
	16-Oct-20	**11**	**2.0**	**2.0**	< 1.0	**6.0**	**16**	< 0.1	-	-	-	-
	16-Nov-20	**11**	**2.0**	**2.0**	< 1.0	**9.0**	**16**	< 0.1	-	< 0.01	**0.48**	-
	16-Dec-20	**11**	**2.0**	**2.0**	< 1.0	**7.0**	**15**	< 0.1	-	-	-	-
	14-Jan-21	**9.0**	**2.0**	**2.0**	< 1.0	**7.0**	**13**	< 0.1	-	-	-	-
	16-Feb-21	**12**	**1.0**	**1.0**	< 1.0	**8.0**	**12**	< 0.1	-	< 0.01	**0.15**	-
	17-Mar-21	**10**	**2.0**	**2.0**	< 1.0	**7.0**	**13**	< 0.1	-	-	-	-
	19-Aug-21	-	-	**2.0**	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	16-Nov-21	-	-	**2.0**	-	-	-	-	-	-	-	-
	24-Feb-22	**8.0**	**2.0**	**1.0**	< 1.0	**7.0**	**14**	< 0.1	-	-	**0.06**	< 0.01
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	**1.0**	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	**1.0**	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	**1.0**	-	-	-	-	-	-	-	-
	15-Feb-23	**9.0**	< 1.0	**1.0**	< 1.0	**6.0**	**16**	< 0.1	-	< 0.01	**0.22**	-
	16-May-23	-	-	**1.0**	-	-	-	-	-	-	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Anions and Cations										
		Sodium	Calcium	Magnesium	Potassium	Sulphate	Chloride	Fluoride	Phosphorus	Reactive phosphorus as P	Total Phosphorus	Nitrite
LOR		1.0	1.0	1.0	1.0	1.0	1.0	0.1	0.01	0.01	0.01	0.01
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		77	5	11	2	70	148	0.2	--	--	2	--
BH3	21-Feb-19	**4.0**	**4.0**	**1.0**	< 1.0	**4.0**	**10**	< 0.1	-	< 0.01	**2.76**	-
BH4	21-Feb-19	**8.0**	**2.0**	**1.0**	**1.0**	**5.0**	**17**	< 0.1	-	< 0.01	**0.19**	-
	15-Mar-19	**9.0**	**2.0**	< 1.0	< 1.0	**5.0**	**18**	< 0.1	-	-	-	-
	23-Apr-19	**10**	**2.0**	**1.0**	**1.0**	**3.0**	**19**	< 0.1	-	-	-	-
	16-May-19	**9.0**	**2.0**	**1.0**	**1.0**	**22**	**19**	< 0.1	-	< 0.01	**0.97**	-
	14-Jun-19	**6.0**	**1.0**	**1.0**	< 1.0	**4.0**	**18**	< 0.1	-	-	-	-
	16-Jul-19	**10**	**2.0**	**2.0**	**1.0**	**6.0**	**18**	< 0.1	-	-	-	-
	15-Aug-19	**8.0**	**2.0**	**1.0**	**1.0**	**5.0**	**16**	< 0.1	-	-	-	-
	16-Sep-19	**11**	**2.0**	**2.0**	< 1.0	**8.0**	**19**	< 0.1	-	< 0.01	**0.4**	-
	15-Oct-19	**10**	**1.0**	**1.0**	< 1.0	**4.0**	**18**	< 0.1	-	-	-	-
	18-Nov-19	**11**	**1.0**	**1.0**	< 1.0	**6.0**	**18**	< 0.1	**0.08**	< 0.01	-	-
	16-Sep-20	**20**	< 1.0	**2.0**	< 1.0	**11**	**31**	< 0.1	-	-	-	-
	16-Oct-20	**19**	**1.0**	**3.0**	< 1.0	**10**	**34**	< 0.1	-	-	-	-
	16-Nov-20	**18**	< 1.0	**2.0**	< 1.0	**12**	**27**	< 0.1	-	< 0.01	**0.06**	-
	16-Dec-20	**25**	**1.0**	**4.0**	< 1.0	**15**	**43**	< 0.1	-	-	-	-
	14-Jan-21	**36**	**1.0**	**4.0**	< 1.0	**23**	**54**	< 0.1	-	-	-	-
	16-Feb-21	**69**	**2.0**	**9.0**	**1.0**	**32**	**111**	< 0.1	-	< 0.01	**0.11**	-
	17-Mar-21	**77**	**2.0**	**11**	**1.0**	**26**	**128**	< 0.1	-	-	-	-
	19-Aug-21	-	-	**3.0**	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	**7.0**	**1.0**	**2.0**	< 1.0	**7.0**	**15**	< 0.1	-	-	**0.3**	< 0.01
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	**2.0**	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	**1.0**	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	**2.0**	-	-	-	-	-	-	-	-
	15-Feb-23	**10**	**1.0**	**1.0**	**1.0**	**7.0**	**18**	< 0.1	-	< 0.01	**0.11**	-
	16-May-23	-	-	**1.0**	-	-	-	-	-	-	-	-
BH5	22-Feb-19	**42**	< 1.0	**6.0**	**1.0**	**19**	**69**	**0.2**	-	< 0.01	**0.34**	-
	24-Feb-22	**40**	< 1.0	**8.0**	< 1.0	**42**	**60**	< 0.1	-	-	**0.29**	< 0.01
	15-Feb-23	**18**	< 1.0	**2.0**	< 1.0	**17**	**24**	< 0.1	-	< 0.01	**0.32**	-
BH6	22-Feb-19	**28**	**3.0**	**4.0**	**1.0**	**28**	**42**	< 0.1	-	< 0.01	**0.05**	-
	14-Mar-19	**23**	**2.0**	**4.0**	**1.0**	**17**	**37**	< 0.1	-	-	-	-
	23-Apr-19	**25**	**3.0**	**4.0**	**1.0**	**18**	**42**	< 0.1	-	-	-	-
	16-May-19	**23**	**3.0**	**4.0**	**1.0**	**18**	**45**	< 0.1	-	< 0.01	**0.13**	-
	14-Jun-19	**20**	**2.0**	**4.0**	**1.0**	**16**	**42**	< 0.1	-	-	-	-
	16-Jul-19	**23**	**2.0**	**4.0**	**1.0**	**20**	**35**	< 0.1	-	-	-	-
	15-Aug-19	**23**	**2.0**	**3.0**	**1.0**	**21**	**38**	< 0.1	-	-	-	-
	16-Sep-19	**25**	**3.0**	**3.0**	**1.0**	**21**	**38**	< 0.1	-	< 0.01	**0.15**	-
	15-Oct-19	**25**	**2.0**	**4.0**	**1.0**	**13**	**41**	< 0.1	-	-	-	-
	18-Nov-19	**27**	**3.0**	**3.0**	**1.0**	**18**	**45**	< 0.1	**0.06**	< 0.01	-	-
	16-Sep-20	**36**	**2.0**	**4.0**	**1.0**	**16**	**55**	< 0.1	-	-	-	-
	16-Oct-20	**36**	**2.0**	**5.0**	**1.0**	**12**	**64**	< 0.1	-	-	-	-
	16-Nov-20	**37**	**3.0**	**5.0**	**2.0**	**23**	**61**	< 0.1	-	**0.01**	**0.08**	-
	16-Dec-20	**46**	**3.0**	**6.0**	**2.0**	**15**	**75**	< 0.1	-	-	-	-
	14-Jan-21	**39**	**3.0**	**5.0**	**2.0**	**21**	**73**	< 0.1	-	-	-	-
	16-Feb-21	**43**	**3.0**	**6.0**	**2.0**	**18**	**72**	< 0.1	-	< 0.01	**0.1**	-
	17-Mar-21	**51**	**4.0**	**9.0**	**1.0**	**25**	**80**	< 0.1	-	-	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Anions and Cations										
		Sodium	Calcium	Magnesium	Potassium	Sulphate	Chloride	Fluoride	Phosphorus	Reactive phosphorus as P	Total Phosphorus	Nitrite
LOR		1.0	1.0	1.0	1.0	1.0	1.0	0.1	0.01	0.01	0.01	0.01
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		77	5	11	2	70	148	0.2	--	--	2	--
BH7	19-Aug-21	-	-	**5.0**	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	**30**	< 1.0	**4.0**	< 1.0	**10**	**61**	< 0.1	-	-	**0.11**	< 0.01
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	**4.0**	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	**4.0**	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	**3.0**	-	-	-	-	-	-	-	-
	15-Feb-23	**32**	< 1.0	**4.0**	< 1.0	**21**	**59**	< 0.1	-	< 0.01	**0.03**	-
	16-May-23	-	-	**3.0**	-	-	-	-	-	-	-	-
	22-Feb-19	**34**	< 1.0	**5.0**	**2.0**	**12**	**64**	**0.2**	-	< 0.01	**0.13**	-
	14-Mar-19	**36**	< 1.0	**6.0**	**2.0**	**16**	**61**	< 0.1	-	-	-	-
	23-Apr-19	**38**	< 1.0	**6.0**	**2.0**	**17**	**62**	< 0.1	-	-	-	-
	16-May-19	**35**	< 1.0	**5.0**	**2.0**	**15**	**68**	**0.2**	-	< 0.01	**0.06**	-
	14-Jun-19	**31**	< 1.0	**4.0**	**2.0**	**11**	**56**	**0.1**	-	-	-	-
	16-Jul-19	**36**	< 1.0	**5.0**	**2.0**	**12**	**46**	< 0.1	-	-	-	-
	15-Aug-19	**32**	< 1.0	**4.0**	**2.0**	**15**	**49**	**0.1**	-	-	-	-
	16-Sep-19	**27**	< 1.0	**4.0**	**1.0**	**13**	**53**	< 0.1	-	< 0.01	**0.09**	-
	15-Oct-19	**34**	< 1.0	**5.0**	**2.0**	**12**	**53**	< 0.1	-	-	-	-
	18-Nov-19	**31**	< 1.0	**5.0**	**1.0**	**15**	**56**	**0.1**	**0.02**	< 0.01	-	-
	16-Sep-20	**33**	< 1.0	**5.0**	**2.0**	**12**	**62**	**0.1**	-	-	-	-
	16-Oct-20	**34**	< 1.0	**5.0**	**2.0**	**9.0**	**64**	< 0.1	-	-	-	-
	16-Nov-20	**30**	< 1.0	**5.0**	**2.0**	**9.0**	**54**	**0.1**	-	< 0.01	< 0.01	-
	16-Dec-20	**30**	< 1.0	**6.0**	**2.0**	**9.0**	**58**	**0.1**	-	-	-	-
	14-Jan-21	**31**	< 1.0	**5.0**	**2.0**	**10**	**63**	**0.1**	-	-	-	-
	16-Feb-21	**34**	< 1.0	**6.0**	**2.0**	**12**	**64**	< 0.1	-	< 0.01	< 0.01	-
	17-Mar-21	**36**	< 1.0	**7.0**	**2.0**	**11**	**68**	< 0.1	-	-	-	-
	19-Aug-21	-	-	**3.0**	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	**17**	< 1.0	**2.0**	**1.0**	**8.0**	**25**	< 0.1	-	-	**0.12**	< 0.01
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	**2.0**	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	**2.0**	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	**1.0**	-	-	-	-	-	-	-	-
	15-Feb-23	**10**	< 1.0	**1.0**	< 1.0	**1.0**	**14**	< 0.1	-	< 0.01	**0.23**	-
	16-May-23	-	-	**2.0**	-	-	-	-	-	-	-	-
	21-Feb-19	**52**	< 1.0	**6.0**	< 1.0	**11**	**90**	< 0.1	-	< 0.01	**1.97**	-
	14-Mar-19	**45**	< 1.0	**6.0**	< 1.0	**6.0**	**76**	< 0.1	-	-	-	-
	23-Apr-19	**53**	< 1.0	**7.0**	< 1.0	**8.0**	**89**	< 0.1	-	-	-	-
	16-May-19	**47**	< 1.0	**4.0**	< 1.0	**6.0**	**81**	< 0.1	-	< 0.01	< 0.01	-
	14-Jun-19	**47**	< 1.0	**5.0**	< 1.0	**4.0**	**89**	< 0.1	-	-	-	-
	16-Jul-19	**57**	< 1.0	**5.0**	< 1.0	**70**	**121**	**0.1**	-	-	-	-
	15-Aug-19	**42**	< 1.0	**3.0**	< 1.0	**4.0**	**63**	< 0.1	-	-	-	-
	16-Sep-19	**46**	< 1.0	**3.0**	< 1.0	**4.0**	**70**	< 0.1	-	< 0.01	**0.43**	-
	15-Oct-19	**45**	< 1.0	**4.0**	< 1.0	**4.0**	**70**	< 0.1	-	-	-	-
	18-Nov-19	**49**	< 1.0	**4.0**	< 1.0	**8.0**	**80**	< 0.1	**0.58**	< 0.01	-	-
	16-Sep-20	**58**	< 1.0	**4.0**	< 1.0	**9.0**	**109**	< 0.1	-	-	-	-
	16-Oct-20	**43**	< 1.0	**4.0**	< 1.0	**12**	**70**	< 0.1	-	-	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Anions and Cations										
		Sodium	Calcium	Magnesium	Potassium	Sulphate	Chloride	Fluoride	Phosphorus	Reactive phosphorus as P	Total Phosphorus	Nitrite
LOR		1.0	1.0	1.0	1.0	1.0	1.0	0.1	0.01	0.01	0.01	0.01
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		77	5	11	2	70	148	0.2	--	--	2	--
BH8	16-Nov-20	**48**	< 1.0	**6.0**	< 1.0	**10**	**76**	< 0.1	-	< 0.01	**0.14**	-
	16-Dec-20	**35**	< 1.0	**4.0**	< 1.0	**14**	**56**	< 0.1	-	-	-	-
	14-Jan-21	**44**	< 1.0	**5.0**	< 1.0	**13**	**77**	< 0.1	-	-	-	-
	16-Feb-21	**50**	< 1.0	**6.0**	< 1.0	**17**	**79**	< 0.1	-	< 0.01	**0.14**	-
	17-Mar-21	**50**	< 1.0	**6.0**	< 1.0	**19**	**75**	< 0.1	-	-	-	-
	19-Aug-21	-	-	**7.0**	-	-	-	-	-	-	-	-
	16-Nov-21	-	-	**8.0**	-	-	-	-	-	-	-	-
	24-Feb-22	**55**	< 1.0	**5.0**	< 1.0	**54**	**70**	< 0.1	-	-	**0.3**	< 0.01
	27-May-22	-	-	**2.0**	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	**2.0**	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	**1.0**	-	-	-	-	-	-	-	-
	15-Feb-23	**16**	< 1.0	**1.0**	< 1.0	**15**	**22**	< 0.1	-	< 0.01	**0.19**	-
	16-May-23	-	-	**2.0**	-	-	-	-	-	-	-	-
BH9A	16-Sep-20	**35**	**5.0**	**5.0**	**1.0**	**41**	**38**	< 0.1	-	-	-	-
	16-Oct-20	**32**	**3.0**	**6.0**	**1.0**	**33**	**48**	< 0.1	-	-	-	-
	16-Nov-20	**23**	**2.0**	**4.0**	**1.0**	**23**	**35**	< 0.1	-	< 0.01	**0.11**	-
	16-Dec-20	**23**	**1.0**	**3.0**	**1.0**	**9.0**	**37**	< 0.1	-	-	-	-
	14-Jan-21	**24**	**1.0**	**3.0**	**1.0**	**15**	**43**	< 0.1	-	-	-	-
	16-Feb-21	**25**	**1.0**	**3.0**	**1.0**	**12**	**40**	< 0.1	-	< 0.01	**1.74**	-
	17-Mar-21	**25**	**1.0**	**3.0**	< 1.0	**12**	**35**	< 0.1	-	-	-	-
	19-Aug-21	**25**	**1.0**	**3.0**	**1.0**	**14**	**37**	< 0.1	-	< 0.01	< 0.01	-
	22-Sep-21	**22**	**1.0**	**2.0**	**1.0**	**12**	**35**	< 0.1	-	< 0.01	**0.16**	-
	13-Oct-21	**24**	< 1.0	**2.0**	**1.0**	**11**	**38**	< 0.1	-	< 0.01	**0.13**	-
	16-Nov-21	**24**	**2.0**	**3.0**	**1.0**	**17**	**32**	< 0.1	-	< 0.01	**0.05**	-
	24-Feb-22	**21**	**2.0**	**4.0**	**1.0**	**17**	**32**	< 0.1	-	-	**0.19**	< 0.01
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	**3.0**	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	**3.0**	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	**2.0**	-	-	-	-	-	-	-	-
	15-Feb-23	**18**	< 1.0	**2.0**	**1.0**	**20**	**19**	< 0.1	-	< 0.01	**0.13**	-
	16-May-23	-	-	**2.0**	-	-	-	-	-	-	-	-
BH11	21-Feb-19	**48**	< 1.0	**10**	< 1.0	**24**	**80**	**0.1**	-	< 0.01	**0.03**	-
	15-Mar-19	**26**	< 1.0	**2.0**	< 1.0	**2.0**	**52**	< 0.1	-	-	-	-
	23-Apr-19	**32**	< 1.0	**5.0**	< 1.0	**2.0**	**57**	< 0.1	-	-	-	-
	16-May-19	**29**	< 1.0	**4.0**	< 1.0	**2.0**	**55**	< 0.1	-	< 0.01	**0.01**	-
	14-Jun-19	**26**	< 1.0	**3.0**	< 1.0	< 1.0	**53**	< 0.1	-	-	-	-
	16-Jul-19	**49**	< 1.0	**8.0**	< 1.0	**8.0**	**73**	**0.2**	-	-	-	-
	15-Aug-19	**28**	< 1.0	**3.0**	< 1.0	**4.0**	**47**	< 0.1	-	-	-	-
	16-Sep-19	**27**	< 1.0	**3.0**	< 1.0	**5.0**	**46**	< 0.1	-	< 0.01	**0.12**	-
	15-Oct-19	**28**	< 1.0	**3.0**	< 1.0	**3.0**	**44**	< 0.1	-	-	-	-
	18-Nov-19	**28**	< 1.0	**3.0**	< 1.0	< 1.0	**53**	< 0.1	**2.11**	< 0.01	-	-
	16-Sep-20	**29**	< 1.0	**5.0**	< 1.0	**6.0**	**48**	< 0.1	-	-	-	-
	16-Oct-20	**29**	< 1.0	**6.0**	< 1.0	**4.0**	**61**	< 0.1	-	-	-	-
	16-Nov-20	**27**	< 1.0	**5.0**	< 1.0	**5.0**	**50**	< 0.1	-	< 0.01	**0.06**	-
	16-Dec-20	**31**	< 1.0	**6.0**	< 1.0	**7.0**	**60**	< 0.1	-	-	-	-
	14-Jan-21	**32**	< 1.0	**6.0**	< 1.0	**12**	**63**	< 0.1	-	-	-	-
	16-Feb-21	**32**	< 1.0	**5.0**	**1.0**	**12**	**55**	< 0.1	-	< 0.01	< 0.01	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Anions and Cations										
		Sodium	Calcium	Magnesium	Potassium	Sulphate	Chloride	Fluoride	Phosphorus	Reactive phosphorus as P	Total Phosphorus	Nitrite
LOR		1.0	1.0	1.0	1.0	1.0	1.0	0.1	0.01	0.01	0.01	0.01
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		77	5	11	2	70	148	0.2	--	--	2	--
	17-Mar-21	**29**	< 1.0	**6.0**	< 1.0	**17**	**48**	< 0.1	-	-	-	-
	19-Aug-21	**58**	< 1.0	**7.0**	< 1.0	**9.0**	**110**	**0.1**	-	< 0.01	**0.08**	-
	22-Sep-21	**49**	< 1.0	**6.0**	< 1.0	**12**	**101**	**0.1**	-	< 0.01	**0.01**	-
	13-Oct-21	**51**	< 1.0	**8.0**	< 1.0	**29**	**90**	< 0.1	-	< 0.01	**0.03**	-
	16-Nov-21	**37**	< 1.0	**8.0**	< 1.0	**24**	**55**	< 0.1	-	< 0.01	**0.03**	-
	24-Feb-22	**41**	< 1.0	**6.0**	< 1.0	**4.0**	**80**	< 0.1	-	-	< 0.01	< 0.01
	06-Mar-22	-	-	**3.0**	-	-	-	-	-	-	-	-
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	**2.0**	-	-	-	-	-	-	-	-
	15-Feb-23	**17**	< 1.0	**2.0**	< 1.0	< 1.0	**29**	< 0.1	-	< 0.01	**0.04**	-
	16-May-23	-	-	**2.0**	-	-	-	-	-	-	-	-
BH12	16-Sep-20	**24**	< 1.0	**7.0**	**1.0**	**22**	**38**	< 0.1	-	-	-	-
	16-Nov-20	**22**	< 1.0	**4.0**	**1.0**	**11**	**41**	< 0.1	-	< 0.01	< 0.01	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	**20**	< 1.0	**4.0**	**2.0**	**18**	**28**	< 0.1	-	-	**0.12**	< 0.01
BH12A	15-Feb-23	**16**	< 1.0	**2.0**	< 1.0	**8.0**	**29**	< 0.1	-	< 0.01	**1.74**	-
MW239S	22-Feb-19	**61**	< 1.0	**6.0**	< 1.0	**6.0**	**104**	< 0.1	-	< 0.01	**0.56**	-
	14-Mar-19	**64**	< 1.0	**6.0**	< 1.0	**2.0**	**126**	< 0.1	-	-	-	-
	23-Apr-19	**64**	< 1.0	**7.0**	**1.0**	**9.0**	**97**	< 0.1	-	-	-	-
	16-May-19	**52**	< 1.0	**6.0**	< 1.0	**13**	**88**	< 0.1	-	< 0.01	**0.43**	-
	14-Jun-19	**50**	< 1.0	**6.0**	< 1.0	**13**	**87**	< 0.1	-	-	-	-
	16-Jul-19	**52**	< 1.0	**7.0**	**1.0**	**16**	**73**	< 0.1	-	-	-	-
	15-Aug-19	**54**	< 1.0	**7.0**	< 1.0	**11**	**88**	< 0.1	-	-	-	-
	16-Sep-19	**55**	< 1.0	**6.0**	**1.0**	**14**	**85**	< 0.1	-	< 0.01	**0.32**	-
	15-Oct-19	**58**	< 1.0	**6.0**	< 1.0	**8.0**	**108**	< 0.1	-	-	-	-
	18-Nov-19	**63**	< 1.0	**6.0**	**1.0**	**8.0**	**118**	< 0.1	**0.23**	< 0.01	-	-
	16-Sep-20	**53**	< 1.0	**8.0**	**1.0**	**36**	**86**	**0.1**	-	-	-	-
	16-Oct-20	**76**	< 1.0	**9.0**	**1.0**	**17**	**148**	< 0.1	-	-	-	-
	16-Nov-20	**68**	< 1.0	**9.0**	**2.0**	**37**	**125**	< 0.1	-	< 0.01	**0.59**	-
	16-Dec-20	**68**	< 1.0	**10**	**1.0**	**24**	**126**	< 0.1	-	-	-	-
	14-Jan-21	**58**	< 1.0	**9.0**	**2.0**	**37**	**102**	< 0.1	-	-	-	-
	16-Feb-21	**66**	< 1.0	**11**	**2.0**	**38**	**124**	< 0.1	-	< 0.01	**0.58**	-
	17-Mar-21	**49**	< 1.0	**7.0**	**1.0**	**38**	**70**	< 0.1	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	**24**	< 1.0	**3.0**	< 1.0	**15**	**33**	< 0.1	-	-	**0.33**	< 0.01
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	**2.0**	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	**2.0**	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	**1.0**	-	-	-	-	-	-	-	-
	15-Feb-23	**14**	< 1.0	**2.0**	< 1.0	**7.0**	**25**	< 0.1	-	< 0.01	**0.31**	-
	16-May-23	-	-	**1.0**	-	-	-	-	-	-	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte	Anions and Cations										
	Sodium	Calcium	Magnesium	Potassium	Sulphate	Chloride	Fluoride	Phosphorus	Reactive phosphorus as P	Total Phosphorus	Nitrite
LOR	1.0	1.0	1.0	1.0	1.0	1.0	0.1	0.01	0.01	0.01	0.01
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater	77	5	11	2	70	148	0.2	--	--	2	--

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
LOR - Laboratory limit of reporting
mg/L - Milligrams per litre
µS/cm - Microsiemens per centimeter
Bold indicates a detection above the laboratory limit of reporting
Highlighting indicates an exceedance of the corresponding criteria (highlighting corresponds to the guideline with the highest criteria value where analytical result exceeds more than one guideline)

Criteria:
SWMP 2021 - Soil and Water Management Plan, July 2021

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Nitrite as N	Nitrate	Nitrate as N	Nitrite + Nitrate as N	Ammonia as N	Total Ammonia as Nitrogen	Anions and Cations				
								Total Nitrogen as N	Total Kjeldahl Nitrogen as N	Total Cations	Total Anions	Ionic Balance
LOR		0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%
WSS - Groundwater		--	--	--	--	--	0.5	5.9	--	--	--	--
Sample Name	Sample Date											
BH1	15-Mar-19	-	-	-	-	-	-	-	-	**0.66**	**0.88**	-
	23-Apr-19	-	-	-	-	-	-	-	-	**0.82**	**0.99**	-
	16-May-19	< 0.01	-	< 0.01	< 0.01	**0.11**	-	**0.3**	**0.3**	**0.69**	**1.01**	-
	14-Jun-19	-	-	-	-	-	-	-	-	**0.6**	**0.94**	-
	16-Jul-19	-	-	-	-	-	-	-	-	**0.82**	**0.95**	-
	15-Aug-19	-	-	-	-	-	-	-	-	**0.77**	**0.91**	-
	16-Sep-19	< 0.01	-	< 0.01	< 0.01	**0.12**	-	**0.3**	**0.3**	**0.73**	**0.76**	-
	15-Oct-19	-	-	-	-	-	-	-	-	**0.73**	**0.71**	-
	18-Nov-19	< 0.01	**0.01**	-	**0.01**	-	**0.13**	**0.3**	**0.3**	**0.86**	**1.19**	-
	16-Sep-20	-	-	-	-	-	-	-	-	**0.73**	**0.81**	-
	16-Oct-20	-	-	-	-	-	-	-	-	**0.77**	**0.84**	-
	16-Nov-20	< 0.01	-	< 0.01	< 0.01	-	**0.07**	**0.2**	**0.2**	**1.02**	**1.05**	-
	16-Dec-20	-	-	-	-	-	-	-	-	**0.93**	**1.16**	-
	14-Jan-21	-	-	-	-	-	-	-	-	**0.96**	**1.07**	-
	16-Feb-21	< 0.01	-	**0.02**	**0.02**	-	**0.05**	< 0.1	< 0.1	**0.8**	**1.05**	-
	17-Mar-21	-	-	-	-	-	-	-	-	**0.82**	**0.95**	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	**0.02**	-	**0.02**	**0.11**	-	**0.2**	**0.2**	**0.9**	**1.18**	-
BH1A	15-Feb-23	< 0.01	-	**0.26**	**0.26**	-	**0.04**	**0.5**	**0.2**	**0.39**	**0.51**	-
BH2	22-Feb-19	< 0.01	-	**2.76**	**2.76**	**0.05**	-	**4.0**	**1.2**	**0.79**	**0.74**	-
	15-Mar-19	-	-	-	-	-	-	-	-	**0.75**	**0.79**	-
	23-Apr-19	-	-	-	-	-	-	-	-	**0.87**	**0.77**	-
	16-May-19	< 0.01	-	**0.38**	**0.38**	**0.01**	-	**1.3**	**0.9**	**0.79**	**1.06**	-
	14-Jun-19	-	-	-	-	-	-	-	-	**0.69**	**0.75**	-
	16-Jul-19	-	-	-	-	-	-	-	-	**0.83**	**0.75**	-
	15-Aug-19	-	-	-	-	-	-	-	-	**0.74**	**0.73**	-
	16-Sep-19	< 0.01	-	**1.07**	**1.07**	**0.04**	-	**2.7**	**1.6**	**0.74**	**0.67**	-
	15-Oct-19	-	-	-	-	-	-	-	-	**0.79**	**0.67**	-
	18-Nov-19	< 0.01	**1.01**	-	**1.01**	-	**0.05**	**2.1**	**1.1**	**0.79**	**0.68**	-
	16-Sep-20	-	-	-	-	-	-	-	-	**0.74**	**0.62**	-
	16-Oct-20	-	-	-	-	-	-	-	-	**0.74**	**0.58**	-
	16-Nov-20	< 0.01	-	**2.88**	**2.88**	-	< 0.01	**4.8**	**1.9**	**0.74**	**0.7**	-
	16-Dec-20	-	-	-	-	-	-	-	-	**0.74**	**0.57**	-
	14-Jan-21	-	-	-	-	-	-	-	-	**0.66**	**0.57**	-
	16-Feb-21	< 0.01	-	**2.58**	**2.58**	-	< 0.01	**3.5**	**0.9**	**0.65**	**0.5**	-
	17-Mar-21	-	-	-	-	-	-	-	-	**0.7**	**0.53**	-
	19-Aug-21	-	-	-	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	16-Nov-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	**0.05**	-	**0.05**	**0.01**	-	**0.4**	**0.3**	**0.53**	**0.6**	-
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	< 0.01	-	**0.04**	**0.04**	-	**0.01**	**1.4**	**1.4**	**0.47**	**0.62**	-
	16-May-23	-	-	-	-	-	-	-	-	-	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Nitrite as N	Nitrate	Nitrate as N	Nitrite + Nitrate as N	Ammonia as N	Total Ammonia as Nitrogen	Anions and Cations Total Nitrogen as N	Total Kjeldahl Nitrogen as N	Total Cations	Total Anions	Ionic Balance
LOR		0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%
WSS - Groundwater		--	--	--	--	--	0.5	5.9	--	--	--	--
BH3	21-Feb-19	< 0.01	-	**0.78**	**0.78**	**0.3**	-	**5.9**	**5.1**	**0.46**	**0.54**	-
BH4	21-Feb-19	< 0.01	-	**0.35**	**0.35**	**0.04**	-	**0.6**	**0.3**	**0.56**	**0.7**	-
	15-Mar-19	-	-	-	-	-	-	-	-	**0.49**	**0.61**	-
	23-Apr-19	-	-	-	-	-	-	-	-	**0.64**	**0.6**	-
	16-May-19	< 0.01	-	**0.29**	**0.29**	< 0.01	-	**1.0**	**0.7**	**0.6**	**0.99**	-
	14-Jun-19	-	-	-	-	-	-	-	-	**0.39**	**0.59**	-
	16-Jul-19	-	-	-	-	-	-	-	-	**0.72**	**0.63**	-
	15-Aug-19	-	-	-	-	-	-	-	-	**0.56**	**0.56**	-
	16-Sep-19	< 0.01	-	**0.24**	**0.24**	**0.02**	-	**0.6**	**0.4**	**0.74**	**0.7**	-
	15-Oct-19	-	-	-	-	-	-	-	-	**0.57**	**0.59**	-
	18-Nov-19	< 0.01	**0.29**	-	**0.29**	-	< 0.01	**0.3**	< 0.1	**0.61**	**0.63**	-
	16-Sep-20	-	-	-	-	-	-	-	-	**1.03**	**1.1**	-
	16-Oct-20	-	-	-	-	-	-	-	-	**1.12**	**1.21**	-
	16-Nov-20	< 0.01	-	**0.1**	**0.1**	-	< 0.01	**0.1**	< 0.1	**0.95**	**1.03**	-
	16-Dec-20	-	-	-	-	-	-	-	-	**1.47**	**1.58**	-
	14-Jan-21	-	-	-	-	-	-	-	-	**1.94**	**2.02**	-
	16-Feb-21	< 0.01	-	< 0.01	< 0.01	-	**0.03**	< 0.1	< 0.1	**3.87**	**3.82**	**0.65**
	17-Mar-21	-	-	-	-	-	-	-	-	**4.38**	**4.21**	**1.96**
	19-Aug-21	-	-	-	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	**0.21**	-	**0.21**	**0.01**	-	**0.6**	**0.4**	**0.52**	**0.61**	-
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	< 0.01	-	**0.33**	**0.33**	-	**0.02**	**0.7**	**0.4**	**0.59**	**0.65**	-
	16-May-23	-	-	-	-	-	-	-	-	-	-	-
BH5	22-Feb-19	< 0.01	-	< 0.01	< 0.01	**0.09**	-	**3.0**	**3.0**	**2.35**	**2.34**	-
	24-Feb-22	-	**0.02**	-	**0.02**	**0.21**	-	**1.2**	**1.2**	**2.4**	**2.63**	-
	15-Feb-23	< 0.01	-	**0.01**	**0.01**	-	**0.06**	**3.9**	**3.9**	**0.95**	**1.07**	-
BH6	22-Feb-19	< 0.01	-	**0.09**	**0.09**	**0.14**	-	**0.5**	**0.4**	**1.72**	**1.77**	-
	14-Mar-19	-	-	-	-	-	-	-	-	**1.46**	**1.44**	-
	23-Apr-19	-	-	-	-	-	-	-	-	**1.59**	**1.56**	-
	16-May-19	< 0.01	-	< 0.01	< 0.01	**0.14**	-	**0.6**	**0.6**	**1.5**	**1.64**	-
	14-Jun-19	-	-	-	-	-	-	-	-	**1.32**	**1.52**	-
	16-Jul-19	-	-	-	-	-	-	-	-	**1.46**	**1.4**	-
	15-Aug-19	-	-	-	-	-	-	-	-	**1.37**	**1.51**	-
	16-Sep-19	< 0.01	-	**0.07**	**0.07**	**0.19**	-	**0.8**	**0.7**	**1.51**	**1.55**	-
	15-Oct-19	-	-	-	-	-	-	-	-	**1.54**	**1.43**	-
	18-Nov-19	< 0.01	< 0.01	-	< 0.01	-	**0.23**	**0.4**	**0.4**	**1.6**	**1.64**	-
	16-Sep-20	-	-	-	-	-	-	-	-	**2.02**	**1.9**	-
	16-Oct-20	-	-	-	-	-	-	-	-	**2.1**	**2.14**	-
	16-Nov-20	< 0.01	-	**0.01**	**0.01**	-	**0.22**	**0.3**	**0.3**	**2.22**	**2.2**	-
	16-Dec-20	-	-	-	-	-	-	-	-	**2.7**	**2.43**	-
	14-Jan-21	-	-	-	-	-	-	-	-	**2.31**	**2.5**	-
	16-Feb-21	< 0.01	-	< 0.01	< 0.01	-	**0.25**	< 0.1	< 0.1	**2.56**	**2.46**	-
	17-Mar-21	-	-	-	-	-	-	-	-	**3.18**	**2.82**	-

Williamtown Sand Syndicate
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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Nitrite as N	Nitrate	Nitrate as N	Nitrite + Nitrate as N	Ammonia as N	Total Ammonia as Nitrogen	Anions and Cations				
								Total Nitrogen as N	Total Kjeldahl Nitrogen as N	Total Cations	Total Anions	Ionic Balance
LOR		0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%
WSS - Groundwater		--	--	--	--	--	0.5	5.9	--	--	--	--
BH7	19-Aug-21	-	-	-	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	**0.02**	-	**0.02**	**0.04**	-	**0.4**	**0.4**	**1.63**	**1.93**	-
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	< 0.01	-	< 0.01	< 0.01	-	**0.03**	**0.4**	**0.4**	**1.93**	**2.1**	-
	16-May-23	-	-	-	-	-	-	-	-	-	-	-
	22-Feb-19	< 0.01	-	**0.02**	**0.02**	**0.34**	-	**2.2**	**2.2**	**1.94**	**2.06**	-
	14-Mar-19	-	-	-	-	-	-	-	-	**2.11**	**2.05**	**1.37**
	23-Apr-19	-	-	-	-	-	-	-	-	**2.2**	**2.1**	-
	16-May-19	< 0.01	-	< 0.01	< 0.01	**0.27**	-	**0.9**	**0.9**	**1.98**	**2.23**	-
	14-Jun-19	-	-	-	-	-	-	-	-	**1.73**	**1.81**	-
	16-Jul-19	-	-	-	-	-	-	-	-	**2.03**	**1.55**	-
	15-Aug-19	-	-	-	-	-	-	-	-	**1.77**	**1.85**	-
	16-Sep-19	< 0.01	-	**0.06**	**0.06**	**0.2**	-	**1.2**	**1.1**	**1.53**	**1.86**	-
	15-Oct-19	-	-	-	-	-	-	-	-	**1.94**	**1.74**	-
	18-Nov-19	< 0.01	< 0.01	-	< 0.01	-	**0.17**	**0.5**	**0.5**	**1.78**	**1.89**	-
	16-Sep-20	-	-	-	-	-	-	-	-	**1.9**	**2.0**	-
	16-Oct-20	-	-	-	-	-	-	-	-	**1.94**	**1.99**	-
	16-Nov-20	< 0.01	-	< 0.01	< 0.01	-	**0.3**	**0.6**	**0.6**	**1.77**	**1.71**	-
	16-Dec-20	-	-	-	-	-	-	-	-	**1.85**	**1.82**	-
	14-Jan-21	-	-	-	-	-	-	-	-	**1.81**	**1.98**	-
	16-Feb-21	< 0.01	-	< 0.01	< 0.01	-	**0.3**	**0.6**	**0.6**	**2.02**	**2.06**	-
	17-Mar-21	-	-	-	-	-	-	-	-	**2.19**	**2.15**	-
	19-Aug-21	-	-	-	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	**0.02**	-	**0.02**	**0.08**	-	**1.0**	**1.0**	**0.93**	**0.87**	-
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	< 0.01	-	< 0.01	< 0.01	-	**0.03**	**1.6**	**1.6**	**0.52**	**0.46**	-
	16-May-23	-	-	-	-	-	-	-	-	-	-	-
	21-Feb-19	< 0.01	-	< 0.01	< 0.01	**0.5**	-	**2.4**	**2.4**	**2.76**	**2.77**	-
	14-Mar-19	-	-	-	-	-	-	-	-	**2.45**	**2.27**	-
	23-Apr-19	-	-	-	-	-	-	-	-	**2.88**	**2.68**	-
	16-May-19	< 0.01	-	< 0.01	< 0.01	**0.12**	-	**0.4**	**0.4**	**2.37**	**2.43**	-
	14-Jun-19	-	-	-	-	-	-	-	-	**2.46**	**2.59**	-
	16-Jul-19	-	-	-	-	-	-	-	-	**2.89**	**4.87**	**26**
	15-Aug-19	-	-	-	-	-	-	-	-	**2.07**	**1.86**	-
	16-Sep-19	< 0.01	-	< 0.01	< 0.01	**0.13**	-	**1.1**	**1.1**	**2.25**	**2.06**	-
	15-Oct-19	-	-	-	-	-	-	-	-	**2.29**	**2.06**	-
	18-Nov-19	< 0.01	**0.01**	-	**0.01**	-	**0.17**	**1.3**	**1.3**	**2.46**	**2.42**	-
	16-Sep-20	-	-	-	-	-	-	-	-	**3.1**	**3.26**	**2.57**
	16-Oct-20	-	-	-	-	-	-	-	-	**2.2**	**2.22**	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Nitrite as N	Nitrate	Nitrate as N	Nitrite + Nitrate as N	Ammonia as N	Total Ammonia as Nitrogen	Anions and Cations				
								Total Nitrogen as N	Total Kjeldahl Nitrogen as N	Total Cations	Total Anions	Ionic Balance
LOR		0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%
WSS - Groundwater		--	--	--	--	--	0.5	5.9	--	--	--	--
BH8	16-Nov-20	< 0.01	-	< 0.01	< 0.01	-	**0.13**	**0.6**	**0.6**	**2.58**	**2.35**	-
	16-Dec-20	-	-	-	-	-	-	-	-	**1.85**	**1.87**	-
	14-Jan-21	-	-	-	-	-	-	-	-	**2.32**	**2.44**	-
	16-Feb-21	< 0.01	-	< 0.01	< 0.01	-	**0.12**	< 0.1	< 0.1	**2.67**	**2.58**	-
	17-Mar-21	-	-	-	-	-	-	-	-	**2.67**	**2.51**	-
	19-Aug-21	-	-	-	-	-	-	-	-	-	-	-
	16-Nov-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	**0.72**	-	**0.72**	**0.13**	-	**1.7**	**1.0**	**2.8**	**3.2**	**6.58**
	27-May-22	-	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	< 0.01	-	< 0.01	< 0.01	-	**0.06**	**1.7**	**1.7**	**0.78**	**0.93**	-
	16-May-23	-	-	-	-	-	-	-	-	-	-	-
BH9A	16-Sep-20	-	-	-	-	-	-	-	-	**2.21**	**2.06**	-
	16-Oct-20	-	-	-	-	-	-	-	-	**2.06**	**2.06**	-
	16-Nov-20	< 0.01	-	**2.35**	**2.35**	-	< 0.01	**2.8**	**0.5**	**1.46**	**1.51**	-
	16-Dec-20	-	-	-	-	-	-	-	-	**1.32**	**1.23**	-
	14-Jan-21	-	-	-	-	-	-	-	-	**1.37**	**1.52**	-
	16-Feb-21	< 0.01	-	< 0.01	< 0.01	-	**0.15**	**5.1**	**5.1**	**1.41**	**1.42**	-
	17-Mar-21	-	-	-	-	-	-	-	-	**1.38**	**1.32**	-
	19-Aug-21	< 0.01	-	< 0.01	< 0.01	-	< 0.01	**0.8**	**0.8**	**1.41**	**1.42**	-
	22-Sep-21	< 0.01	-	**0.03**	**0.03**	-	**0.25**	**1.0**	**1.0**	**1.2**	**1.36**	-
	13-Oct-21	< 0.01	-	< 0.01	< 0.01	-	**0.31**	**0.9**	**0.9**	**1.23**	**1.46**	-
	16-Nov-21	< 0.01	-	**0.04**	**0.04**	-	**0.21**	**1.1**	**1.1**	**1.42**	**1.36**	-
	24-Feb-22	-	< 0.01	-	< 0.01	**0.25**	-	**1.0**	**1.0**	**1.37**	**1.26**	-
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	< 0.01	-	< 0.01	< 0.01	-	**0.27**	**2.0**	**2.0**	**0.97**	**1.01**	-
	16-May-23	-	-	-	-	-	-	-	-	-	-	-
BH11	21-Feb-19	< 0.01	-	**0.04**	**0.04**	**0.06**	-	**1.8**	**1.8**	**2.91**	**2.76**	-
	15-Mar-19	-	-	-	-	-	-	-	-	**1.3**	**1.51**	-
	23-Apr-19	-	-	-	-	-	-	-	-	**1.8**	**1.65**	-
	16-May-19	< 0.01	-	< 0.01	< 0.01	**0.12**	-	**0.4**	**0.4**	**1.59**	**1.59**	-
	14-Jun-19	-	-	-	-	-	-	-	-	**1.38**	**1.5**	-
	16-Jul-19	-	-	-	-	-	-	-	-	**2.79**	**2.22**	-
	15-Aug-19	-	-	-	-	-	-	-	-	**1.46**	**1.41**	-
	16-Sep-19	< 0.01	-	< 0.01	< 0.01	**0.15**	-	**0.7**	**0.7**	**1.42**	**1.4**	-
	15-Oct-19	-	-	-	-	-	-	-	-	**1.46**	**1.3**	-
	18-Nov-19	< 0.01	**0.06**	-	**0.06**	-	**0.18**	**5.9**	**5.8**	**1.46**	**1.5**	-
	16-Sep-20	-	-	-	-	-	-	-	-	**1.67**	**1.48**	-
	16-Oct-20	-	-	-	-	-	-	-	-	**1.76**	**1.8**	-
	16-Nov-20	< 0.01	-	< 0.01	< 0.01	-	**0.08**	**0.5**	**0.5**	**1.58**	**1.51**	-
	16-Dec-20	-	-	-	-	-	-	-	-	**1.84**	**1.84**	-
	14-Jan-21	-	-	-	-	-	-	-	-	**1.88**	**2.03**	-
	16-Feb-21	< 0.01	-	< 0.01	< 0.01	-	**0.08**	< 0.1	< 0.1	**1.83**	**1.8**	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Nitrite as N	Nitrate	Nitrate as N	Nitrite + Nitrate as N	Ammonia as N	Total Ammonia as Nitrogen	Anions and Cations				
								Total Nitrogen as N	Total Kjeldahl Nitrogen as N	Total Cations	Total Anions	Ionic Balance
LOR		0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%
WSS - Groundwater		--	--	--	--	--	0.5	5.9	--	--	--	--
	17-Mar-21	-	-	-	-	-	-	-	-	**1.76**	**1.71**	-
	19-Aug-21	< 0.01	-	< 0.01	< 0.01	-	< 0.01	**1.4**	**1.4**	**3.1**	**3.29**	**3.0**
	22-Sep-21	< 0.01	-	**0.01**	**0.01**	-	**0.01**	**0.8**	**0.8**	**3.01**	**3.1**	**1.54**
	13-Oct-21	< 0.01	-	< 0.01	< 0.01	-	< 0.01	**0.8**	**0.8**	**2.88**	**3.14**	**4.42**
	16-Nov-21	< 0.01	-	< 0.01	< 0.01	-	< 0.01	**0.9**	**0.9**	**2.27**	**2.05**	-
	24-Feb-22	-	< 0.01	-	< 0.01	**0.02**	-	**0.6**	**0.6**	**2.28**	**2.4**	-
	06-Mar-22	-	-	-	-	-	-	-	-	-	-	-
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	< 0.01	-	< 0.01	< 0.01	-	**0.07**	**1.0**	**1.0**	**0.9**	**0.82**	-
	16-May-23	-	-	-	-	-	-	-	-	-	-	-
BH12	16-Sep-20	-	-	-	-	-	-	-	-	**1.64**	**1.57**	-
	16-Nov-20	< 0.01	-	**0.02**	**0.02**	-	< 0.01	**0.2**	**0.2**	**1.31**	**1.52**	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	**0.01**	-	**0.01**	**0.01**	-	**0.4**	**0.4**	**1.25**	**1.2**	-
BH12A	15-Feb-23	**0.02**	-	**0.02**	**0.04**	-	**0.21**	**3.2**	**3.2**	**0.86**	**0.98**	-
MW239S	22-Feb-19	< 0.01	-	< 0.01	< 0.01	**0.18**	-	**3.9**	**3.9**	**3.15**	**3.06**	**1.43**
	14-Mar-19	-	-	-	-	-	-	-	-	**3.28**	**3.64**	**5.18**
	23-Apr-19	-	-	-	-	-	-	-	-	**3.38**	**2.92**	**7.32**
	16-May-19	< 0.01	-	< 0.01	< 0.01	**0.09**	-	**1.7**	**1.7**	**2.76**	**2.75**	-
	14-Jun-19	-	-	-	-	-	-	-	-	**2.67**	**2.86**	-
	16-Jul-19	-	-	-	-	-	-	-	-	**2.86**	**2.39**	-
	15-Aug-19	-	-	-	-	-	-	-	-	**2.92**	**2.71**	-
	16-Sep-19	< 0.01	-	< 0.01	< 0.01	**0.1**	-	**1.4**	**1.4**	**2.91**	**2.69**	-
	15-Oct-19	-	-	-	-	-	-	-	-	**3.02**	**3.21**	**3.15**
	18-Nov-19	< 0.01	< 0.01	-	< 0.01	-	**0.17**	**1.2**	**1.2**	**3.26**	**3.5**	**3.48**
	16-Sep-20	-	-	-	-	-	-	-	-	**2.99**	**3.24**	**3.95**
	16-Oct-20	-	-	-	-	-	-	-	-	**4.14**	**4.57**	**4.99**
	16-Nov-20	< 0.01	-	< 0.01	< 0.01	-	**0.01**	**2.6**	**2.6**	**4.21**	**4.3**	**1.0**
	16-Dec-20	-	-	-	-	-	-	-	-	**3.81**	**4.05**	**3.15**
	14-Jan-21	-	-	-	-	-	-	-	-	**3.31**	**3.65**	**4.78**
	16-Feb-21	< 0.01	-	< 0.01	< 0.01	-	**0.06**	**2.5**	**2.5**	**4.03**	**4.29**	**3.1**
	17-Mar-21	-	-	-	-	-	-	-	-	**2.73**	**2.76**	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	**0.16**	-	**0.16**	**0.04**	-	**1.8**	**1.6**	**1.29**	**1.3**	-
	12-Apr-22	-	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	< 0.01	-	< 0.01	< 0.01	-	**0.04**	**1.5**	**1.5**	**0.77**	**0.89**	-
	16-May-23	-	-	-	-	-	-	-	-	-	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte						Anions and Cations					
	Nitrite as N	Nitrate	Nitrate as N	Nitrite + Nitrate as N	Ammonia as N	Total Ammonia as Nitrogen	Total Nitrogen as N	Total Kjeldahl Nitrogen as N	Total Cations	Total Anions	Ionic Balance
LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%
WSS - Groundwater	--	--	--	--	--	0.5	5.9	--	--	--	--

Notes:
- - Not analysed
< - Less than laboratory limit of reportin
LOR - Laboratory limit of reporting
mg/L - Milligrams per litre
µS/cm - Microsiemens per centimeter
Bold indicates a detection above the lat
Highlighting indicates an exceedance of

Criteria:
SWMP 2021 - Soil and Water Manageme

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte			Anions and Cations		Alkalinity						
		Sodium Adsorption Ratio	Sodium Adsorption Ratio	Bicarbonate	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Alkalinity as CaCO3	Total Hardness as CaCO3	Hardness	Electrical Conductivity @ 25°C
LOR		--	0.01	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units			-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date										
BH1	15-Mar-19	-	-	-	**9.0**	< 1.0	< 1.0	**9.0**	**9.0**	-	**104**
	23-Apr-19	-	-	-	**10**	< 1.0	< 1.0	**10**	**11**	-	**84**
	16-May-19	-	**1.7**	-	**10**	< 1.0	< 1.0	**10**	**8.0**	-	**105**
	14-Jun-19	-	-	-	**10**	< 1.0	< 1.0	**10**	**8.0**	-	**99**
	16-Jul-19	-	-	-	**11**	< 1.0	< 1.0	**11**	**8.0**	-	**102**
	15-Aug-19	-	-	-	**14**	< 1.0	< 1.0	**14**	**8.0**	-	**128**
	16-Sep-19	-	**1.84**	-	**8.0**	< 1.0	< 1.0	**8.0**	**8.0**	-	**102**
	15-Oct-19	-	-	-	**4.0**	< 1.0	< 1.0	**4.0**	**8.0**	-	**98**
	18-Nov-19	-	**2.26**	-	**24**	< 1.0	< 1.0	**24**	**8.0**	-	**126**
	16-Sep-20	-	-	-	**9.0**	< 1.0	< 1.0	**9.0**	**8.0**	-	**95**
	16-Oct-20	-	-	-	**8.0**	< 1.0	< 1.0	**8.0**	**8.0**	-	**88**
	16-Nov-20	-	**1.55**	-	**22**	< 1.0	< 1.0	**22**	**8.0**	-	**120**
	16-Dec-20	-	-	-	**21**	< 1.0	< 1.0	**21**	**8.0**	-	**134**
	14-Jan-21	-	-	-	**16**	< 1.0	< 1.0	**16**	**8.0**	-	**124**
	16-Feb-21	-	**1.98**	-	**12**	< 1.0	< 1.0	**12**	**8.0**	-	**116**
	17-Mar-21	-	-	-	**11**	< 1.0	< 1.0	**11**	**11**	-	**111**
	13-Oct-21	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	-	**16**	-	< 1.0	< 1.0	**16**	**15**	-	**127**
BH1A	15-Feb-23	-	**2.15**	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	-	**70**
BH2	22-Feb-19	-	**1.44**	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**91**
	15-Mar-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**16**	-	**101**
	23-Apr-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**70**
	16-May-19	-	**1.44**	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**94**
	14-Jun-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**11**	-	**91**
	16-Jul-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**90**
	15-Aug-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**11**	-	**110**
	16-Sep-19	-	**1.32**	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**96**
	15-Oct-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**102**
	18-Nov-19	-	**2.02**	-	< 1.0	< 1.0	< 1.0	< 1.0	**9.0**	-	**102**
	16-Sep-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**99**
	16-Oct-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**90**
	16-Nov-20	-	**1.32**	-	**3.0**	< 1.0	< 1.0	**3.0**	**13**	-	**119**
	16-Dec-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**105**
	14-Jan-21	-	-	-	**3.0**	< 1.0	< 1.0	**3.0**	**13**	-	**93**
	16-Feb-21	-	**2.03**	-	< 1.0	< 1.0	< 1.0	< 1.0	**7.0**	-	**89**
	17-Mar-21	-	-	-	**1.0**	< 1.0	< 1.0	**1.0**	**13**	-	**88**
	19-Aug-21	-	-	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-
	16-Nov-21	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	-	**3.0**	-	< 1.0	< 1.0	**3.0**	**9.0**	-	**70**
	12-Apr-22	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	-	**1.69**	-	**2.0**	< 1.0	< 1.0	**2.0**	**4.0**	-	**73**
	16-May-23	-	-	-	-	-	-	-	-	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte			Anions and Cations		Alkalinity						
		Sodium Adsorption Ratio	Sodium Adsorption Ratio	Bicarbonate	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Alkalinity as CaCO3	Total Hardness as CaCO3	Hardness	Electrical Conductivity @ 25°C
LOR		--	0.01	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units			-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
BH3	21-Feb-19	-	**0.46**	-	**9.0**	< 1.0	< 1.0	**9.0**	**14**	-	**60**
BH4	21-Feb-19	-	**1.15**	-	**6.0**	< 1.0	< 1.0	**6.0**	**9.0**	-	**73**
	15-Mar-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**5.0**	-	**77**
	23-Apr-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**9.0**	-	**54**
	16-May-19	-	**1.3**	-	< 1.0	< 1.0	< 1.0	< 1.0	**9.0**	-	**73**
	14-Jun-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**7.0**	-	**69**
	16-Jul-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**75**
	15-Aug-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**9.0**	-	**85**
	16-Sep-19	-	**1.32**	-	< 1.0	< 1.0	< 1.0	< 1.0	**13**	-	**95**
	15-Oct-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**7.0**	-	**85**
	18-Nov-19	-	**1.86**	-	< 1.0	< 1.0	< 1.0	< 1.0	**7.0**	-	**86**
	16-Sep-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**8.0**	-	**148**
	16-Oct-20	-	-	-	**2.0**	< 1.0	< 1.0	**2.0**	**15**	-	**133**
	16-Nov-20	-	**2.54**	-	**1.0**	< 1.0	< 1.0	**1.0**	**8.0**	-	**146**
	16-Dec-20	-	-	-	**3.0**	< 1.0	< 1.0	**3.0**	**19**	-	**193**
	14-Jan-21	-	-	-	**1.0**	< 1.0	< 1.0	**1.0**	**19**	-	**258**
	16-Feb-21	-	**4.63**	-	**1.0**	< 1.0	< 1.0	**1.0**	**42**	-	**445**
	17-Mar-21	-	-	-	**3.0**	< 1.0	< 1.0	**3.0**	**50**	-	**501**
	19-Aug-21	-	-	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	-	**2.0**	-	< 1.0	< 1.0	**2.0**	**11**	-	**74**
	12-Apr-22	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	-	**1.69**	-	< 1.0	< 1.0	< 1.0	< 1.0	**7.0**	-	**84**
	16-May-23	-	-	-	-	-	-	-	-	-	-
BH5	22-Feb-19	-	**3.59**	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**250**
	24-Feb-22	-	-	**3.0**	-	< 1.0	< 1.0	**3.0**	**33**	-	**276**
	15-Feb-23	-	**2.54**	-	**2.0**	< 1.0	< 1.0	**2.0**	**8.0**	-	**126**
BH6	22-Feb-19	-	**2.49**	-	< 1.0	< 1.0	< 1.0	< 1.0	**24**	-	**177**
	14-Mar-19	-	-	-	**2.0**	< 1.0	< 1.0	**2.0**	**21**	-	**179**
	23-Apr-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**24**	-	**136**
	16-May-19	-	**2.04**	-	< 1.0	< 1.0	< 1.0	< 1.0	**24**	-	**175**
	14-Jun-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**21**	-	**174**
	16-Jul-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**21**	-	**161**
	15-Aug-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**17**	-	**201**
	16-Sep-19	-	**2.44**	-	**2.0**	< 1.0	< 1.0	**2.0**	**20**	-	**197**
	15-Oct-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**21**	-	**202**
	18-Nov-19	-	**2.64**	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**204**
	16-Sep-20	-	-	-	**1.0**	< 1.0	< 1.0	**1.0**	**21**	-	**273**
	16-Oct-20	-	-	-	**4.0**	< 1.0	< 1.0	**4.0**	**26**	-	**249**
	16-Nov-20	-	**3.04**	-	< 1.0	< 1.0	< 1.0	< 1.0	**28**	-	**321**
	16-Dec-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**32**	-	**321**
	14-Jan-21	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**28**	-	**332**
	16-Feb-21	-	**3.3**	-	**3.0**	< 1.0	< 1.0	**3.0**	**32**	-	**316**
	17-Mar-21	-	-	-	**2.0**	< 1.0	< 1.0	**2.0**	**47**	-	**358**

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte			Anions and Cations		Alkalinity						
		Sodium Adsorption Ratio	Sodium Adsorption Ratio	Bicarbonate	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Alkalinity as CaCO3	Total Hardness as CaCO3	Hardness	Electrical Conductivity @ 25°C
LOR		--	0.01	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units			-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
BH7	19-Aug-21	-	-	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	-	< 1.0	-	< 1.0	< 1.0	< 1.0	**16**	-	**241**
	12-Apr-22	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	-	**3.31**	-	< 1.0	< 1.0	< 1.0	< 1.0	**16**	-	**265**
	16-May-23	-	-	-	-	-	-	-	-	-	-
BH7	22-Feb-19	-	**3.16**	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**213**
	14-Mar-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**271**
	23-Apr-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**205**
	16-May-19	-	**3.26**	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**235**
	14-Jun-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**16**	-	**213**
	16-Jul-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**202**
	15-Aug-19	-	-	-	**8.0**	< 1.0	< 1.0	**8.0**	**16**	-	**232**
	16-Sep-19	-	**2.79**	-	**5.0**	< 1.0	< 1.0	**5.0**	**16**	-	**222**
	15-Oct-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**252**
	18-Nov-19	-	**2.89**	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**239**
	16-Sep-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**248**
	16-Oct-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**243**
	16-Nov-20	-	**2.79**	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**245**
	16-Dec-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**265**
	14-Jan-21	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**267**
	16-Feb-21	-	**2.9**	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**270**
	17-Mar-21	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**29**	-	**279**
	19-Aug-21	-	-	-	-	-	-	-	-	-	-
	13-Oct-21	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	-	< 1.0	-	< 1.0	< 1.0	< 1.0	**8.0**	-	**124**
	12-Apr-22	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	-	**1.88**	-	**2.0**	< 1.0	< 1.0	**2.0**	**4.0**	-	**66**
	16-May-23	-	-	-	-	-	-	-	-	-	-
BH7	21-Feb-19	-	**4.44**	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**352**
	14-Mar-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**319**
	23-Apr-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**29**	-	**264**
	16-May-19	-	**4.86**	-	**1.0**	< 1.0	< 1.0	**1.0**	**16**	-	**302**
	14-Jun-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**315**
	16-Jul-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**353**
	15-Aug-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**12**	-	**260**
	16-Sep-19	-	**5.43**	-	< 1.0	< 1.0	< 1.0	< 1.0	**12**	-	**293**
	15-Oct-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**16**	-	**303**
	18-Nov-19	-	**5.06**	-	< 1.0	< 1.0	< 1.0	< 1.0	**16**	-	**316**
	16-Sep-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**16**	-	**391**
	16-Oct-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**16**	-	**268**

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte			Anions and Cations		Alkalinity						
		Sodium Adsorption Ratio	Sodium Adsorption Ratio	Bicarbonate	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Alkalinity as CaCO3	Total Hardness as CaCO3	Hardness	Electrical Conductivity @ 25°C
LOR		--	0.01	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units			-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
BH8	16-Nov-20	-	**4.1**	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**341**
	16-Dec-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**16**	-	**256**
	14-Jan-21	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**317**
	16-Feb-21	-	**4.27**	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**335**
	17-Mar-21	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**329**
	19-Aug-21	-	-	-	-	-	-	-	-	-	-
	16-Nov-21	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	-	**5.0**	-	< 1.0	< 1.0	**5.0**	**20**	-	**329**
	27-May-22	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	-	**3.0**	-	< 1.0	< 1.0	< 1.0	< 1.0	**4.0**	-	**135**
	16-May-23	-	-	-	-	-	-	-	-	-	-
BH9A	16-Sep-20	-	-	-	**7.0**	< 1.0	< 1.0	**7.0**	**33**	-	**276**
	16-Oct-20	-	-	-	**1.0**	< 1.0	< 1.0	**1.0**	**32**	-	**237**
	16-Nov-20	-	**2.16**	-	**2.0**	< 1.0	< 1.0	**2.0**	**21**	-	**195**
	16-Dec-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**15**	-	**175**
	14-Jan-21	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**15**	-	**196**
	16-Feb-21	-	**2.82**	-	**2.0**	< 1.0	< 1.0	**2.0**	**15**	-	**181**
	17-Mar-21	-	-	-	**4.0**	< 1.0	< 1.0	**4.0**	**15**	-	**164**
	19-Aug-21	-	**2.82**	-	**4.0**	< 1.0	< 1.0	**4.0**	**15**	-	**180**
	22-Sep-21	-	**2.92**	-	**6.0**	< 1.0	< 1.0	**6.0**	**11**	-	**172**
	13-Oct-21	-	**3.39**	-	**8.0**	< 1.0	< 1.0	**8.0**	**8.0**	-	**156**
	16-Nov-21	-	**2.51**	-	**5.0**	< 1.0	< 1.0	**5.0**	-	**17**	**163**
	24-Feb-22	-	-	< 1.0	-	< 1.0	< 1.0	< 1.0	**21**	-	**164**
	12-Apr-22	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	-	**2.54**	-	**3.0**	< 1.0	< 1.0	**3.0**	**8.0**	-	**141**
	16-May-23	-	-	-	-	-	-	-	-	-	-
BH11	21-Feb-19	-	**3.21**	-	< 1.0	< 1.0	< 1.0	< 1.0	**41**	-	**346**
	15-Mar-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**8.0**	-	**186**
	23-Apr-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**150**
	16-May-19	-	**3.0**	-	< 1.0	< 1.0	< 1.0	< 1.0	**16**	-	**188**
	14-Jun-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**12**	-	**175**
	16-Jul-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**33**	-	**318**
	15-Aug-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**12**	-	**197**
	16-Sep-19	-	**3.18**	-	< 1.0	< 1.0	< 1.0	< 1.0	**12**	-	**195**
	15-Oct-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**12**	-	**194**
	18-Nov-19	-	**3.3**	-	< 1.0	< 1.0	< 1.0	< 1.0	**12**	-	**193**
	16-Sep-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**223**
	16-Oct-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**218**
	16-Nov-20	-	**2.51**	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**217**
	16-Dec-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**249**
	14-Jan-21	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**264**
	16-Feb-21	-	**2.98**	-	< 1.0	< 1.0	< 1.0	< 1.0	**20**	-	**235**

Williamtown Sand Syndicate
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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte			Anions and Cations		Alkalinity						
		Sodium Adsorption Ratio	Sodium Adsorption Ratio	Bicarbonate	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Alkalinity as CaCO3	Total Hardness as CaCO3	Hardness	Electrical Conductivity @ 25°C
LOR		--	0.01	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units			-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
	17-Mar-21	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**223**
	19-Aug-21	-	**4.6**	-	< 1.0	< 1.0	< 1.0	< 1.0	**29**	-	**403**
	22-Sep-21	-	**4.18**	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**382**
	13-Oct-21	-	**3.79**	-	< 1.0	< 1.0	< 1.0	< 1.0	**33**	-	**373**
	16-Nov-21	-	**2.75**	-	< 1.0	< 1.0	< 1.0	< 1.0	-	**33**	**268**
	24-Feb-22	-	-	**3.0**	-	< 1.0	< 1.0	**3.0**	**25**	-	**260**
	06-Mar-22	-	-	-	-	-	-	-	-	-	-
	12-Apr-22	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	-	**2.4**	-	< 1.0	< 1.0	< 1.0	< 1.0	**8.0**	-	**118**
	16-May-23	-	-	-	-	-	-	-	-	-	-
BH12	16-Sep-20	-	-	-	**2.0**	< 1.0	< 1.0	**2.0**	**29**	-	**206**
	16-Nov-20	-	**2.27**	-	**7.0**	< 1.0	< 1.0	**7.0**	**16**	-	**190**
	13-Oct-21	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	-	**2.0**	-	< 1.0	< 1.0	**2.0**	**16**	-	**148**
BH12A	15-Feb-23	-	**2.26**	-	< 1.0	< 1.0	< 1.0	< 1.0	**8.0**	-	**129**
MW239S	22-Feb-19	-	**5.21**	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**329**
	14-Mar-19	-	-	-	**2.0**	< 1.0	< 1.0	**2.0**	**25**	-	**410**
	23-Apr-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**29**	-	**294**
	16-May-19	-	**4.44**	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**327**
	14-Jun-19	-	-	-	**7.0**	< 1.0	< 1.0	**7.0**	**25**	-	**334**
	16-Jul-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**29**	-	**353**
	15-Aug-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**29**	-	**359**
	16-Sep-19	-	**4.7**	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**373**
	15-Oct-19	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**404**
	18-Nov-19	-	**5.38**	-	< 1.0	< 1.0	< 1.0	< 1.0	**25**	-	**419**
	16-Sep-20	-	-	-	**3.0**	< 1.0	< 1.0	**3.0**	**33**	-	**390**
	16-Oct-20	-	-	-	**2.0**	< 1.0	< 1.0	**2.0**	**37**	-	**458**
	16-Nov-20	-	**4.78**	-	< 1.0	< 1.0	< 1.0	< 1.0	**37**	-	**489**
	16-Dec-20	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**41**	-	**484**
	14-Jan-21	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**37**	-	**430**
	16-Feb-21	-	**4.21**	-	< 1.0	< 1.0	< 1.0	< 1.0	**45**	-	**488**
	17-Mar-21	-	-	-	< 1.0	< 1.0	< 1.0	< 1.0	**29**	-	**343**
	13-Oct-21	-	-	-	-	-	-	-	-	-	-
	24-Feb-22	-	-	**3.0**	-	< 1.0	< 1.0	**3.0**	**12**	-	**159**
	12-Apr-22	-	-	-	-	-	-	-	-	-	-
	27-May-22	-	-	-	-	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-	-	-	-	-
	15-Feb-23	-	**1.98**	-	**2.0**	< 1.0	< 1.0	**2.0**	**8.0**	-	**111**
	16-May-23	-	-	-	-	-	-	-	-	-	-

Williamtown Sand Syndicate
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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Anions and Cations		Alkalinity						
	Sodium Adsorption Ratio	Sodium Adsorption Ratio	Bicarbonate	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Alkalinity as CaCO3	Total Hardness as CaCO3	Hardness	Electrical Conductivity @ 25°C
LOR	--	0.01	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Units		-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm
WSS - Groundwater	--	--	--	--	--	--	--	--	--	--

Notes:
- - Not analysed
< - Less than laboratory limit of reportir
LOR - Laboratory limit of reporting
mg/L - Milligrams per litre
µS/cm - Microsiemens per centimeter
Bold indicates a detection above the lat
Highlighting indicates an exceedance of

Criteria:
SWMP 2021 - Soil and Water Manageme

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte			Inorganics				
		Total Dissolved Solids	Total Dissolved Solids	Total suspended solids	pH	Turbidity	Phosphate Total (as P)
LOR		1.0	10	5.0	0.01	0.1	0.01
Units		mg/L	mg/L	mg/L	pH units	NTU	mg/L
WSS - Groundwater		--	--	--	--	--	--
Sample Name	Sample Date						
BH1	15-Mar-19	**68**	**129**	**78**	**5.67**	-	-
	23-Apr-19	**55**	**97**	**248**	**5.83**	-	-
	16-May-19	**68**	**164**	**80**	**5.82**	-	-
	14-Jun-19	**64**	**72**	**39**	**5.52**	-	-
	16-Jul-19	**66**	**84**	**26**	**5.62**	-	-
	15-Aug-19	**83**	**82**	**181**	**6.22**	-	-
	16-Sep-19	**66**	**88**	**108**	**5.44**	-	-
	15-Oct-19	**64**	-	-	**5.5**	-	-
	18-Nov-19	**82**	-	-	**6.29**	-	-
	16-Sep-20	**62**	**81**	**58**	**5.87**	-	-
	16-Oct-20	**57**	-	-	**5.7**	-	-
	16-Nov-20	**78**	**76**	**41**	**5.98**	-	-
	16-Dec-20	**87**	-	-	**5.76**	-	-
	14-Jan-21	**81**	-	-	**5.63**	-	-
	16-Feb-21	**75**	**89**	**20**	**5.57**	-	-
	17-Mar-21	**72**	-	-	**6.02**	-	-
	13-Oct-21	-	-	-	**5.66**	**98**	-
	24-Feb-22	**82**	-	-	**5.95**	-	< 0.01
BH1A	15-Feb-23	**46**	-	-	**4.49**	-	-
BH2	22-Feb-19	**59**	**128**	**376**	**4.87**	-	-
	15-Mar-19	**66**	**90**	**352**	**4.71**	-	-
	23-Apr-19	**46**	**84**	**575**	**4.82**	-	-
	16-May-19	**61**	**144**	**111**	**4.85**	-	-
	14-Jun-19	**59**	**51**	**215**	**4.76**	-	-
	16-Jul-19	**58**	**63**	**92**	**4.84**	-	-
	15-Aug-19	**72**	**61**	**310**	**5.2**	-	-
	16-Sep-19	**62**	**60**	**216**	**4.72**	-	-
	15-Oct-19	**66**	-	-	**5.06**	-	-
	18-Nov-19	**66**	-	-	**5.47**	-	-
	16-Sep-20	**64**	**76**	**356**	**4.85**	-	-
	16-Oct-20	**58**	-	-	**5.07**	-	-
	16-Nov-20	**77**	**91**	**952**	**5.09**	-	-
	16-Dec-20	**68**	-	-	**4.66**	-	-
	14-Jan-21	**60**	-	-	**5.04**	-	-
	16-Feb-21	**58**	**67**	**86**	**4.84**	-	-
	17-Mar-21	**57**	-	-	**5.28**	-	-
	19-Aug-21	-	-	-	-	-	-
	13-Oct-21	-	-	-	**5.09**	**101**	-
	16-Nov-21	-	-	-	-	-	-
	24-Feb-22	**46**	-	-	**5.18**	-	< 0.01
	12-Apr-22	-	-	-	-	**462**	-
	27-May-22	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-
	15-Feb-23	**47**	-	-	**4.67**	-	-
	16-May-23	-	-	-	-	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte			Inorganics				
		Total Dissolved Solids	Total Dissolved Solids	Total suspended solids	pH	Turbidity	Phosphate Total (as P)
LOR		1.0	10	5.0	0.01	0.1	0.01
Units		mg/L	mg/L	mg/L	pH units	NTU	mg/L
WSS - Groundwater		--	--	--	--	--	--
BH3	21-Feb-19	**39**	**438**	**3,800**	**5.55**	-	-
BH4	21-Feb-19	**47**	**96**	**122**	**5.4**	-	-
	15-Mar-19	**50**	**70**	**45**	**5.12**	-	-
	23-Apr-19	**35**	**61**	**147**	**5.05**	-	-
	16-May-19	**47**	**100**	**44**	**4.99**	-	-
	14-Jun-19	**45**	**36**	**186**	**4.84**	-	-
	16-Jul-19	**49**	**42**	**74**	**4.96**	-	-
	15-Aug-19	**55**	**49**	**30**	**5.01**	-	-
	16-Sep-19	**62**	**58**	**49**	**4.83**	-	-
	15-Oct-19	**55**	-	-	**4.93**	-	-
	18-Nov-19	**56**	-	-	**5.34**	-	-
	16-Sep-20	**96**	**74**	**24**	**4.66**	-	-
	16-Oct-20	**86**	-	-	**5.21**	-	-
	16-Nov-20	**95**	**90**	**15**	**4.98**	-	-
	16-Dec-20	**125**	-	-	**4.81**	-	-
	14-Jan-21	**168**	-	-	**5.23**	-	-
	16-Feb-21	**289**	**251**	**56**	**4.86**	-	-
	17-Mar-21	**326**	-	-	**5.07**	-	-
	19-Aug-21	-	-	-	-	-	-
	13-Oct-21	-	-	-	**4.51**	**56**	-
	24-Feb-22	**48**	-	-	**5.07**	-	< 0.01
	12-Apr-22	-	-	-	-	**61**	-
	27-May-22	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-
	15-Feb-23	**55**	-	-	**5.06**	-	-
	16-May-23	-	-	-	-	-	-
BH5	22-Feb-19	**162**	**211**	**458**	**4.87**	-	-
	24-Feb-22	**179**	-	-	**4.67**	-	< 0.01
	15-Feb-23	**82**	-	-	**4.64**	-	-
BH6	22-Feb-19	**115**	**144**	**41**	**4.37**	-	-
	14-Mar-19	**116**	**146**	**144**	**4.95**	-	-
	23-Apr-19	**88**	**115**	**62**	**4.64**	-	-
	16-May-19	**114**	**214**	**106**	**4.88**	-	-
	14-Jun-19	**113**	**90**	**32**	**4.82**	-	-
	16-Jul-19	**105**	**82**	**23**	**4.73**	-	-
	15-Aug-19	**131**	**104**	**16**	**4.87**	-	-
	16-Sep-19	**128**	**124**	**71**	**4.68**	-	-
	15-Oct-19	**131**	-	-	**5.17**	-	-
	18-Nov-19	**133**	-	-	**5.32**	-	-
	16-Sep-20	**177**	**121**	**49**	**4.98**	-	-
	16-Oct-20	**162**	-	-	**5.3**	-	-
	16-Nov-20	**209**	**205**	**12**	**4.45**	-	-
	16-Dec-20	**209**	-	-	**4.63**	-	-
	14-Jan-21	**216**	-	-	**4.33**	-	-
	16-Feb-21	**205**	**182**	**20**	**4.89**	-	-
	17-Mar-21	**233**	-	-	**5.07**	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte			Inorganics					
		Total Dissolved Solids	Total Dissolved Solids	Total suspended solids	pH	Turbidity	Phosphate Total (as P)
LOR		1.0	10	5.0	0.01	0.1	0.01
Units		mg/L	mg/L	mg/L	pH units	NTU	mg/L
WSS - Groundwater		--	--	--	--	--	--
	19-Aug-21	-	-	-	-	-	-
	13-Oct-21	-	-	-	**6.1**	**51**	-
	24-Feb-22	**157**	-	-	**3.92**	-	< 0.01
	12-Apr-22	-	-	-	-	**33**	-
	27-May-22	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-
	15-Feb-23	**172**	-	-	**3.95**	-	-
	16-May-23	-	-	-	-	-	-
BH7	22-Feb-19	**138**	**196**	**152**	**4.76**	-	-
	14-Mar-19	**176**	**212**	**149**	**4.73**	-	-
	23-Apr-19	**133**	**185**	**20**	**4.51**	-	-
	16-May-19	**153**	**310**	**29**	**4.87**	-	-
	14-Jun-19	**138**	**145**	**39**	**4.91**	-	-
	16-Jul-19	**131**	**164**	**61**	**5.0**	-	-
	15-Aug-19	**151**	**168**	**44**	**5.53**	-	-
	16-Sep-19	**144**	**181**	**44**	**5.07**	-	-
	15-Oct-19	**164**	-	-	**4.95**	-	-
	18-Nov-19	**155**	-	-	**4.97**	-	-
	16-Sep-20	**161**	**140**	**24**	**4.81**	-	-
	16-Oct-20	**158**	-	-	**4.87**	-	-
	16-Nov-20	**159**	**168**	**6.0**	**4.57**	-	-
	16-Dec-20	**172**	-	-	**4.34**	-	-
	14-Jan-21	**174**	-	-	**4.62**	-	-
	16-Feb-21	**176**	**161**	**9.0**	**4.54**	-	-
	17-Mar-21	**181**	-	-	**4.9**	-	-
	19-Aug-21	-	-	-	-	-	-
	13-Oct-21	-	-	-	**5.22**	**170**	-
	24-Feb-22	**81**	-	-	**4.43**	-	< 0.01
	12-Apr-22	-	-	-	-	**33**	-
	27-May-22	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-
	15-Feb-23	**43**	-	-	**4.83**	-	-
	16-May-23	-	-	-	-	-	-
	21-Feb-19	**229**	**258**	**438**	**4.46**	-	-
	14-Mar-19	**207**	**253**	**138**	**4.77**	-	-
	23-Apr-19	**172**	**223**	**121**	**4.76**	-	-
	16-May-19	**196**	**354**	**312**	**4.9**	-	-
	14-Jun-19	**205**	**194**	**83**	**4.82**	-	-
	16-Jul-19	**229**	**226**	**145**	**4.78**	-	-
	15-Aug-19	**169**	**140**	**98**	**5.0**	-	-
	16-Sep-19	**190**	**206**	**79**	**4.85**	-	-
	15-Oct-19	**197**	-	-	**5.02**	-	-
	18-Nov-19	**205**	-	-	**5.12**	-	-
	16-Sep-20	**254**	**216**	**34**	**4.79**	-	-
	16-Oct-20	**174**	-	-	**5.01**	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte			Inorganics				
		Total Dissolved Solids	Total Dissolved Solids	Total suspended solids	pH	Turbidity	Phosphate Total (as P)
LOR		1.0	10	5.0	0.01	0.1	0.01
Units		mg/L	mg/L	mg/L	pH units	NTU	mg/L
WSS - Groundwater		--	--	--	--	--	--
BH8	16-Nov-20	**222**	**212**	**14**	**4.75**	-	-
	16-Dec-20	**166**	-	-	**4.82**	-	-
	14-Jan-21	**206**	-	-	**4.76**	-	-
	16-Feb-21	**218**	**184**	**63**	**4.68**	-	-
	17-Mar-21	**214**	-	-	**4.57**	-	-
	19-Aug-21	-	-	-	-	-	-
	16-Nov-21	-	-	-	-	-	-
	24-Feb-22	**214**	-	-	**4.67**	-	< 0.01
	27-May-22	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-
	15-Feb-23	**88**	-	-	**4.93**	-	-
	16-May-23	-	-	-	-	-	-
BH9A	16-Sep-20	**179**	**310**	**1,060**	**5.78**	-	-
	16-Oct-20	**154**	-	-	**5.15**	-	-
	16-Nov-20	**127**	**142**	**2,220**	**4.93**	-	-
	16-Dec-20	**114**	-	-	**4.83**	-	-
	14-Jan-21	**127**	-	-	**4.96**	-	-
	16-Feb-21	**118**	**135**	**2,030**	**4.72**	-	-
	17-Mar-21	**107**	-	-	**5.23**	-	-
	19-Aug-21	**117**	-	-	**5.03**	-	-
	22-Sep-21	**112**	-	-	**4.99**	-	-
	13-Oct-21	**101**	-	-	**5.21**	**105**	-
	16-Nov-21	**106**	-	-	**5.51**	-	-
	24-Feb-22	**107**	-	-	**4.85**	-	< 0.01
	12-Apr-22	-	-	-	-	**289**	-
	27-May-22	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-
	15-Feb-23	**92**	-	-	**4.65**	-	-
	16-May-23	-	-	-	-	-	-
BH11	21-Feb-19	**225**	**278**	**144**	**4.67**	-	-
	15-Mar-19	**121**	**144**	**152**	**4.82**	-	-
	23-Apr-19	**98**	**135**	**112**	**4.99**	-	-
	16-May-19	**122**	**216**	**156**	**4.91**	-	-
	14-Jun-19	**114**	**107**	**136**	**4.84**	-	-
	16-Jul-19	**207**	**192**	**223**	**4.68**	-	-
	15-Aug-19	**128**	**135**	**303**	**4.88**	-	-
	16-Sep-19	**127**	**140**	**533**	**4.66**	-	-
	15-Oct-19	**126**	-	-	**4.92**	-	-
	18-Nov-19	**125**	-	-	**5.12**	-	-
	16-Sep-20	**145**	**111**	**136**	**4.61**	-	-
	16-Oct-20	**142**	-	-	**4.8**	-	-
	16-Nov-20	**141**	**146**	**100**	**4.81**	-	-
	16-Dec-20	**162**	-	-	**4.74**	-	-
	14-Jan-21	**172**	-	-	**4.41**	-	-
	16-Feb-21	**153**	**149**	**386**	**4.73**	-	-

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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte			Inorganics				
		Total Dissolved Solids	Total Dissolved Solids	Total suspended solids	pH	Turbidity	Phosphate Total (as P)
LOR		1.0	10	5.0	0.01	0.1	0.01
Units		mg/L	mg/L	mg/L	pH units	NTU	mg/L
WSS - Groundwater		--	--	--	--	--	--
	17-Mar-21	**145**	-	-	**4.66**	-	-
	19-Aug-21	**262**	-	-	**4.38**	-	-
	22-Sep-21	**248**	-	-	**4.47**	-	-
	13-Oct-21	**242**	-	-	**4.27**	**18**	-
	16-Nov-21	**174**	-	-	**4.54**	-	-
	24-Feb-22	**169**	-	-	**4.57**	-	< 0.01
	06-Mar-22	-	-	-	-	-	-
	12-Apr-22	-	-	-	-	**24**	-
	18-Nov-22	-	-	-	-	-	-
	15-Feb-23	**77**	-	-	**4.54**	-	-
	16-May-23	-	-	-	-	-	-
BH12	16-Sep-20	**134**	**118**	**446**	**5.37**	-	-
	16-Nov-20	**124**	**134**	**438**	**5.92**	-	-
	13-Oct-21	-	-	-	**5.75**	**398**	-
	24-Feb-22	**96**	-	-	**5.03**	-	< 0.01
BH12A	15-Feb-23	**84**	-	-	**4.91**	-	-
MW239S	22-Feb-19	**214**	**234**	**149**	**4.89**	-	-
	14-Mar-19	**266**	**232**	**504**	**5.02**	-	-
	23-Apr-19	**191**	**208**	**385**	**4.92**	-	-
	16-May-19	**212**	**320**	**371**	**4.87**	-	-
	14-Jun-19	**217**	**220**	**427**	**5.39**	-	-
	16-Jul-19	**229**	**188**	**70**	**4.85**	-	-
	15-Aug-19	**233**	**195**	**363**	**4.83**	-	-
	16-Sep-19	**242**	**224**	**179**	**4.66**	-	-
	15-Oct-19	**263**	-	-	**4.86**	-	-
	18-Nov-19	**272**	-	-	**4.76**	-	-
	16-Sep-20	**254**	**244**	**350**	**5.2**	-	-
	16-Oct-20	**298**	-	-	**4.73**	-	-
	16-Nov-20	**318**	**294**	**562**	**4.55**	-	-
	16-Dec-20	**315**	-	-	**4.68**	-	-
	14-Jan-21	**280**	-	-	**4.44**	-	-
	16-Feb-21	**317**	**375**	**346**	**4.61**	-	-
	17-Mar-21	**223**	-	-	**4.73**	-	-
	13-Oct-21	-	-	-	**4.87**	**295**	-
	24-Feb-22	**103**	-	-	**4.67**	-	< 0.01
	12-Apr-22	-	-	-	-	**104**	-
	27-May-22	-	-	-	-	-	-
	12-Aug-22	-	-	-	-	-	-
	18-Nov-22	-	-	-	-	-	-
	15-Feb-23	**72**	-	-	**4.63**	-	-
	16-May-23	-	-	-	-	-	-

Williamtown Sand Syndicate
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Table 2
Groundwater - Anions, Cations and Inorganics

Analyte		Inorganics				
	Total Dissolved Solids	Total Dissolved Solids	Total suspended solids	pH	Turbidity	Phosphate Total (as P)
LOR	1.0	10	5.0	0.01	0.1	0.01
Units	mg/L	mg/L	mg/L	pH units	NTU	mg/L
WSS - Groundwater	--	--	--	--	--	--

Notes:

- - Not analysed
< - Less than laboratory limit of reportin
LOR - Laboratory limit of reporting
mg/L - Milligrams per litre
µS/cm - Microsiemens per centimeter
Bold indicates a detection above the lat
Highlighting indicates an exceedance of

Criteria:
SWMP 2021 - Soil and Water Manageme

Williamtown Sand Syndicate
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Table 3
Groundwater - Dissolved Metals

Analyte		Metals															
		Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
LOR		0.001	0.001	0.001	0.05	0.0001	0.001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.01	0.01	0.005
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		0.003	0.07	0.002	0.1	0.0002	0.004	0.006	0.083	4.1	0.001	0.136	0.0001	0.02	0.01	0.01	0.085
Sample Name	Sample Date																
BH1	15-Mar-19	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	**0.004**	< 0.001	< 0.001	**13**	< 0.001	**0.014**	< 0.0001	< 0.001	< 0.01	< 0.01	**1.27**
	23-Apr-19	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	**0.004**	< 0.001	**0.002**	**10**	**0.001**	**0.015**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.363**
	16-May-19	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	< 0.001	**8.33**	< 0.001	**0.009**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.132**
	14-Jun-19	< 0.001	**0.001**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.001**	**6.31**	< 0.001	**0.009**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.074**
	16-Jul-19	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	**0.002**	**7.35**	< 0.001	**0.01**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.116**
	15-Aug-19	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	**0.002**	**7.96**	< 0.001	**0.008**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.023**
	16-Sep-19	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.004**	< 0.001	**0.001**	**8.84**	< 0.001	**0.009**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.034**
	15-Oct-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	**0.006**	-	< 0.001	**0.007**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.037**
	18-Nov-19	< 0.001	**0.001**	< 0.001	< 0.05	< 0.0001	**0.004**	< 0.001	< 0.001	**11**	< 0.001	**0.008**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.012**
	16-Sep-20	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.005**	**5.48**	< 0.001	**0.01**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.016**
	16-Oct-20	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.001**	**5.55**	< 0.001	**0.009**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.017**
	16-Nov-20	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	**0.001**	**7.05**	< 0.001	**0.012**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.045**
	16-Dec-20	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.008**	**3.21**	< 0.001	**0.011**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.077**
	14-Jan-21	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.001**	**5.21**	< 0.001	**0.013**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.032**
	16-Feb-21	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.001**	**3.24**	< 0.001	**0.015**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.652**
	17-Mar-21	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**4.0**	< 0.001	**0.027**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.596**
	24-Feb-22	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**7.7**	< 0.001	**0.018**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.106**
BH1A	15-Feb-23	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.001	**0.003**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.013**
BH2	22-Feb-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.002**	**0.14**	< 0.001	**0.021**	< 0.0001	**0.015**	< 0.01	< 0.01	**0.006**
	15-Mar-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.003**	< 0.05	< 0.001	**0.02**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	23-Apr-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.004**	**0.19**	< 0.001	**0.018**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.008**
	16-May-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.001**	**0.06**	< 0.001	**0.014**	< 0.0001	**0.001**	< 0.01	< 0.01	< 0.005
	14-Jun-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.004**	**0.08**	< 0.001	**0.009**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	16-Jul-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.008**	**0.05**	< 0.001	**0.013**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.006**
	15-Aug-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.012**	**0.08**	< 0.001	**0.011**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	16-Sep-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.008**	**0.26**	< 0.001	**0.014**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.007**
	15-Oct-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.006**	-	< 0.001	**0.011**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.007**
	18-Nov-19	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.013**	**0.08**	< 0.001	**0.011**	< 0.0001	**0.007**	< 0.01	< 0.01	**0.028**
	16-Sep-20	< 0.001	**0.012**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.026**	**0.07**	< 0.001	**0.016**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.006**
	16-Oct-20	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.013**	< 0.05	< 0.001	**0.015**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	16-Nov-20	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.02**	**0.36**	< 0.001	**0.015**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.018**
	16-Dec-20	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.011**	< 0.05	< 0.001	**0.014**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	14-Jan-21	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.006**	< 0.05	< 0.001	**0.016**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	16-Feb-21	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.021**	< 0.05	< 0.001	**0.009**	< 0.0001	**0.007**	< 0.01	< 0.01	**0.017**
	17-Mar-21	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.003**	< 0.05	< 0.001	**0.016**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.006**
	19-Aug-21	< 0.001	**0.003**	-	-	-	< 0.001	-	**0.007**	< 0.05	-	**0.015**	-	< 0.001	-	-	< 0.005
	22-Sep-21	< 0.001	-	-	-	-	-	-	-	< 0.05	-	**0.013**	-	-	-	-	-
	13-Oct-21	< 0.001	-	-	-	-	-	-	-	**0.08**	-	**0.012**	-	-	-	-	-
	16-Nov-21	< 0.001	**0.003**	-	-	-	< 0.001	-	**0.006**	< 0.05	-	-	-	< 0.001	-	-	< 0.005
	15-Dec-21	< 0.001	-	-	-	-	-	-	-	**0.05**	-	**0.008**	-	-	-	-	-
	18-Jan-22	< 0.001	-	-	-	-	-	-	-	**0.49**	-	**0.012**	-	-	-	-	-
	24-Feb-22	**0.002**	**0.003**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.001	**0.009**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	17-Mar-22	< 0.001	-	-	-	-	-	-	-	< 0.05	-	**0.01**	-	-	-	-	-
	12-Apr-22	**0.001**	-	-	-	-	-	-	-	**0.25**	-	**0.009**	-	-	-	-	-
	27-May-22	< 0.001	**0.002**	-	-	-	< 0.001	-	**0.004**	< 0.05	-	-	-	< 0.001	-	-	**0.005**
	17-Jun-22	< 0.001	-	-	-	-	-	-	-	< 0.05	-	**0.007**	-	-	-	-	-
	27-Jul-22	< 0.001	-	-	-	-	-	-	-	< 0.05	-	**0.008**	-	-	-	-	-
	12-Aug-22	< 0.001	**0.005**	-	-	-	< 0.001	-	**0.012**	< 0.05	-	-	-	**0.001**	-	-	**0.169**
	16-Sep-22	< 0.001	-	-	-	-	-	-	-	**0.15**	-	**0.009**	-	-	-	-	**0.125**
	24-Oct-22	< 0.001	-	-	-	-	-	-	-	< 0.05	-	**0.005**	-	-	-	-	**0.086**
	18-Nov-22	< 0.001	**0.004**	-	-	-	< 0.001	**0.001**	**0.002**	**0.14**	-	**0.005**	-	< 0.001	-	-	**0.086**
	14-Dec-22	< 0.001	-	-	-	-	-	-	-	**0.09**	-	**0.004**	-	-	-	-	-
	17-Jan-23	< 0.001	-	-	-	-	-	-	-	**0.12**	-	**0.005**	-	-	-	-	-
	15-Feb-23	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.002**	< 0.05	< 0.001	**0.002**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.048**
	15-Mar-23	< 0.001	-	-	-	-	-	-	-	< 0.05	-	**0.003**	-	-	-	-	-
	18-Apr-23	< 0.001	**0.003**	< 0.001	**0.05**	< 0.0001	< 0.001	< 0.001	**0.003**	**0.09**	< 0.001	**0.004**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.039**
	16-May-23	< 0.001	**0.002**	-	-	-	< 0.001	-	**0.004**	**0.08**	-	-	-	**0.001**	-	-	**0.05**
	14-Jun-23	< 0.001	-	-	-	-	-	-	-	< 0.05	-	**0.002**	-	-	-	-	-
	24-Jul-23	< 0.001	-	-	-	-	-	-	-	**0.12**	-	**0.007**	-	-	-	-	-
BH3	21-Feb-19	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.06**	< 0.001	**0.005**	< 0.0001	**0.053**	< 0.01	< 0.01	< 0.005
	21-Feb-19	< 0.001	**0.014**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.002**	**0.16**	< 0.001	**0.039**	< 0.0001	**0.018**	< 0.01	< 0.01	**0.014**
	15-Mar-19	< 0.001	**0.014**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.001**	< 0.05	< 0.001	**0.014**	< 0.0001	**0.022**	< 0.01	< 0.01	**0.043**

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Table 3
Groundwater - Dissolved Metals

Analyte		Metals															
		Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
LOR		0.001	0.001	0.001	0.05	0.0001	0.001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.01	0.01	0.005
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		0.003	0.07	0.002	0.1	0.0002	0.004	0.006	0.083	4.1	0.001	0.136	0.0001	0.02	0.01	0.01	0.085
BH4	23-Apr-19	< 0.001	**0.013**	< 0.001	**0.05**	< 0.0001	< 0.001	< 0.001	**0.002**	**0.99**	< 0.001	**0.045**	< 0.0001	**0.007**	< 0.01	< 0.01	**0.008**
	16-May-19	< 0.001	**0.013**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.27**	< 0.001	**0.022**	< 0.0001	**0.022**	< 0.01	< 0.01	**0.011**
	14-Jun-19	< 0.001	**0.012**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.038**	< 0.05	< 0.001	**0.014**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.005**
	16-Jul-19	< 0.001	**0.013**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.046**	< 0.05	< 0.001	**0.019**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.007**
	15-Aug-19	< 0.001	**0.013**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.026**	< 0.05	< 0.001	**0.018**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.007**
	16-Sep-19	< 0.001	**0.012**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.051**	**0.19**	< 0.001	**0.026**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.005**
	15-Oct-19	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.011**	-	< 0.001	**0.136**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.014**
	18-Nov-19	< 0.001	**0.011**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.005**	< 0.05	< 0.001	**0.013**	< 0.0001	**0.001**	< 0.01	< 0.01	< 0.005
	16-Sep-20	< 0.001	**0.013**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.078**	**0.06**	< 0.001	**0.012**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.006**
	16-Oct-20	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.003**	**0.25**	< 0.001	**0.021**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.018**
	16-Nov-20	< 0.001	**0.008**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.005**	**0.18**	< 0.001	**0.008**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.005**
	16-Dec-20	< 0.001	**0.011**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.002**	**0.46**	< 0.001	**0.027**	< 0.0001	**0.003**	< 0.01	< 0.01	< 0.005
	14-Jan-21	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.012**	**0.27**	< 0.001	**0.012**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.006**
	16-Feb-21	< 0.001	**0.02**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.002**	**0.94**	< 0.001	**0.023**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.008**
	17-Mar-21	< 0.001	**0.027**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.006**	**1.39**	< 0.001	**0.029**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.019**
	19-Aug-21	< 0.001	**0.011**	< 0.001	< 0.05	< 0.0001	< 0.001	**0.001**	**0.198**	**0.14**	< 0.001	**0.022**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.013**
	22-Sep-21	< 0.001	**0.009**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.172**	**0.1**	< 0.001	**0.02**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.006**
	13-Oct-21	< 0.001	**0.009**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.026**	**1.65**	< 0.001	**0.019**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	16-Nov-21	< 0.001	**0.009**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.012**	**0.38**	< 0.001	**0.021**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.006**
	15-Dec-21	< 0.001	-	-	-	-	-	-	-	**0.69**	-	**0.016**	-	-	-	-	-
	18-Jan-22	< 0.001	-	-	-	-	-	-	-	**0.52**	-	**0.018**	-	-	-	-	-
	24-Feb-22	< 0.001	**0.009**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.62**	< 0.001	**0.017**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.008**
	17-Mar-22	< 0.001	-	-	-	-	-	-	-	**0.09**	-	**0.018**	-	-	-	-	-
	12-Apr-22	< 0.001	-	-	-	-	-	-	-	**0.27**	-	**0.017**	-	-	-	-	-
	27-May-22	< 0.001	**0.011**	-	-	-	< 0.001	-	**0.097**	< 0.05	-	-	-	< 0.001	-	-	< 0.005
	17-Jun-22	< 0.001	-	-	-	-	-	-	**0.082**	< 0.05	-	**0.014**	-	-	-	-	-
	27-Jul-22	< 0.001	-	-	-	-	-	-	-	**0.09**	-	**0.014**	-	-	-	-	-
	12-Aug-22	< 0.001	**0.013**	-	-	-	< 0.001	-	**0.05**	< 0.05	-	-	-	< 0.001	-	-	**0.013**
	16-Sep-22	< 0.001	-	-	-	-	-	-	-	**0.11**	-	**0.014**	-	-	-	-	-
	24-Oct-22	< 0.001	-	-	-	-	-	-	-	**0.19**	-	**0.016**	-	-	-	-	-
	18-Nov-22	< 0.001	**0.012**	-	-	-	< 0.001	< 0.001	**0.006**	**0.13**	-	**0.016**	-	< 0.001	-	-	**0.011**
	14-Dec-22	< 0.001	-	-	-	-	-	-	-	**0.14**	-	**0.015**	-	-	-	-	-
	17-Jan-23	< 0.001	-	-	-	-	-	-	-	**0.12**	-	**0.022**	-	-	-	-	-
	15-Feb-23	< 0.001	**0.011**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.012**	**0.06**	< 0.001	**0.012**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.015**
	15-Mar-23	< 0.001	-	-	-	-	-	-	-	< 0.05	-	**0.022**	-	-	-	-	-
	18-Apr-23	< 0.001	**0.011**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.059**	**0.05**	< 0.001	**0.012**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.008**
	16-May-23	< 0.001	**0.008**	-	-	-	< 0.001	-	**0.135**	**0.09**	-	-	-	< 0.001	-	-	**0.017**
	14-Jun-23	< 0.001	-	-	-	-	-	-	**0.067**	< 0.05	-	**0.009**	-	-	-	-	-
	24-Jul-23	< 0.001	-	-	-	-	-	-	-	**0.06**	-	**0.013**	-	-	-	-	-
BH5	22-Feb-19	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**1.4**	< 0.001	**0.005**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.008**
	24-Feb-22	< 0.001	**0.024**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**1.64**	< 0.001	**0.005**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	15-Feb-23	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.47**	< 0.001	**0.002**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.018**
BH6	22-Feb-19	< 0.001	**0.03**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**1.03**	< 0.001	**0.014**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.019**
	14-Mar-19	< 0.001	**0.027**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**1.9**	< 0.001	**0.01**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.012**
	23-Apr-19	< 0.001	**0.03**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.001**	**0.96**	< 0.001	**0.01**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.022**
	16-May-19	< 0.001	**0.029**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**2.57**	< 0.001	**0.009**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	14-Jun-19	< 0.001	**0.027**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.001**	**2.86**	< 0.001	**0.008**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.008**
	16-Jul-19	< 0.001	**0.026**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.002**	**2.41**	< 0.001	**0.008**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.005**
	15-Aug-19	< 0.001	**0.026**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.001**	**2.19**	< 0.001	**0.008**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.007**
	16-Sep-19	< 0.001	**0.034**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.008**	**2.08**	< 0.001	**0.012**	< 0.0001	**0.007**	< 0.01	< 0.01	**0.035**
	15-Oct-19	< 0.001	**0.026**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	-	< 0.001	**0.009**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.006**
	18-Nov-19	< 0.001	**0.03**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**1.58**	< 0.001	**0.009**	< 0.0001	**0.008**	< 0.01	< 0.01	**0.073**
	16-Sep-20	< 0.001	**0.047**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.002**	**1.78**	< 0.001	**0.01**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.006**
	16-Oct-20	< 0.001	**0.04**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**1.84**	< 0.001	**0.011**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.007**
	16-Nov-20	< 0.001	**0.061**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**1.72**	< 0.001	**0.014**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.01**
	16-Dec-20	< 0.001	**0.07**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**1.64**	< 0.001	**0.014**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.007**
	14-Jan-21	< 0.001	**0.054**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.011**	**1.06**	< 0.001	**0.014**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.025**
	16-Feb-21	< 0.001	**0.048**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.013**	**1.18**	< 0.001	**0.012**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.012**
	17-Mar-21	< 0.001	**0.068**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**1.39**	< 0.001	**0.012**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.006**
	19-Aug-21	**0.005**	**0.037**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.55**	< 0.001	**0.004**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	22-Sep-21	**0.002**	**0.02**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.55**	< 0.001	**0.005**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	13-Oct-21	**0.002**	**0.014**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.65**	< 0.001	**0.004**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	16-Nov-21	< 0.001	**0.013**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.83**	< 0.001	**0.004**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	15-Dec-21	< 0.001	-	-	-	-	-	-	-	**0.66**	-	**0.002**	-	-	-	-	-

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 3
Groundwater - Dissolved Metals

Analyte		Metals															
		Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
LOR		0.001	0.001	0.001	0.05	0.0001	0.001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.01	0.01	0.005
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		0.003	0.07	0.002	0.1	0.0002	0.004	0.006	0.083	4.1	0.001	0.136	0.0001	0.02	0.01	0.01	0.085
BH7	18-Jan-22	< 0.001	-	-	-	-	-	-	-	**0.7**	-	**0.003**	-	-	-	-	-
	24-Feb-22	< 0.001	**0.011**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.55**	< 0.001	**0.001**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.031**
	17-Mar-22	< 0.001	-	-	-	-	-	-	-	**0.81**	-	**0.002**	-	-	-	-	-
	12-Apr-22	< 0.001	-	-	-	-	-	-	-	**3.24**	-	**0.016**	-	-	-	-	-
	27-May-22	< 0.001	**0.007**	-	-	-	< 0.001	-	< 0.001	**3.45**	-	-	-	< 0.001	-	-	< 0.005
	17-Jun-22	< 0.001	-	-	-	-	-	-	-	**2.7**	-	**0.005**	-	-	-	-	-
	27-Jul-22	< 0.001	-	-	-	-	-	-	-	**2.38**	-	**0.001**	-	-	-	-	-
	12-Aug-22	< 0.001	**0.008**	-	-	-	< 0.001	-	< 0.001	**2.38**	-	-	-	< 0.001	-	-	**0.008**
	16-Sep-22	**0.001**	-	-	-	-	-	-	-	**3.45**	-	**0.002**	-	-	-	-	-
	24-Oct-22	< 0.001	-	-	-	-	-	-	-	**3.44**	-	**0.002**	-	-	-	-	-
	18-Nov-22	< 0.001	**0.009**	-	-	-	< 0.001	< 0.001	< 0.001	**4.39**	-	**0.006**	-	**0.002**	-	-	**0.005**
	14-Dec-22	< 0.001	-	-	-	-	-	-	-	**3.23**	-	**0.012**	-	-	-	-	-
	17-Jan-23	< 0.001	-	-	-	-	-	-	-	**3.61**	-	**0.014**	-	-	-	-	-
	15-Feb-23	< 0.001	**0.009**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.002**	**3.82**	< 0.001	**0.009**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.032**
	15-Mar-23	< 0.001	-	-	-	-	-	-	-	**4.97**	-	**0.006**	-	-	-	-	-
	18-Apr-23	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**4.13**	< 0.001	**0.003**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	16-May-23	< 0.001	**0.007**	-	-	-	< 0.001	-	< 0.001	**4.56**	-	-	-	< 0.001	-	-	**0.024**
	14-Jun-23	< 0.001	-	-	-	-	-	-	-	**5.53**	-	< 0.001	-	-	-	-	-
	24-Jul-23	< 0.001	-	-	-	-	-	-	-	**6.78**	-	**0.005**	-	-	-	-	-
BH7	22-Feb-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.003**	< 0.001	**1.8**	< 0.001	**0.026**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.019**
	14-Mar-19	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	**0.001**	**0.003**	< 0.001	**1.8**	< 0.001	**0.02**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.009**
	23-Apr-19	< 0.001	**0.012**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.003**	< 0.001	**2.0**	< 0.001	**0.026**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.01**
	16-May-19	< 0.001	**0.008**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.003**	< 0.001	**2.32**	< 0.001	**0.035**	< 0.0001	**0.005**	< 0.01	< 0.01	**0.013**
	14-Jun-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.002**	< 0.001	**2.06**	< 0.001	**0.03**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.006**
	16-Jul-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.002**	< 0.001	**1.66**	< 0.001	**0.025**	< 0.0001	**0.003**	< 0.01	< 0.01	< 0.005
	15-Aug-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.002**	< 0.001	**1.54**	< 0.001	**0.023**	< 0.0001	**0.003**	< 0.01	< 0.01	< 0.005
	16-Sep-19	< 0.001	**0.016**	< 0.001	**0.06**	< 0.0001	**0.002**	**0.002**	**0.007**	**1.42**	**0.001**	**0.024**	< 0.0001	**0.02**	< 0.01	< 0.01	**0.085**
	15-Oct-19	< 0.001	**0.009**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.002**	**0.003**	-	< 0.001	**0.018**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.011**
	18-Nov-19	< 0.001	**0.016**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.002**	< 0.001	**1.1**	< 0.001	**0.015**	< 0.0001	**0.013**	< 0.01	< 0.01	**0.053**
	16-Sep-20	< 0.001	**0.013**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.002**	< 0.001	**1.67**	< 0.001	**0.021**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.006**
	16-Oct-20	< 0.001	**0.009**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.002**	< 0.001	**1.49**	< 0.001	**0.015**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.015**
	16-Nov-20	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.003**	< 0.001	**1.72**	< 0.001	**0.023**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.006**
	16-Dec-20	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.002**	< 0.001	**1.79**	< 0.001	**0.024**	< 0.0001	**0.003**	< 0.01	< 0.01	< 0.005
	14-Jan-21	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.002**	**0.004**	**1.65**	< 0.001	**0.025**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.017**
	16-Feb-21	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.002**	**0.002**	**1.74**	< 0.001	**0.025**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.013**
	17-Mar-21	< 0.001	**0.009**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.003**	< 0.001	**2.28**	< 0.001	**0.028**	< 0.0001	**0.005**	< 0.01	< 0.01	< 0.005
	19-Aug-21	**0.003**	**0.004**	< 0.001	< 0.05	< 0.0001	**0.003**	**0.001**	< 0.001	**0.79**	< 0.001	**0.006**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.006**
	22-Sep-21	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	< 0.001	**0.62**	< 0.001	**0.005**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	13-Oct-21	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	< 0.001	**0.69**	**0.002**	**0.005**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	16-Nov-21	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	< 0.001	**0.39**	< 0.001	**0.003**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.007**
	15-Dec-21	< 0.001	-	-	-	-	-	-	-	**0.47**	-	**0.002**	-	-	-	-	-
	18-Jan-22	< 0.001	-	-	-	-	-	-	-	**0.45**	-	**0.002**	-	-	-	-	-
	24-Feb-22	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	< 0.001	**0.66**	< 0.001	**0.003**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	17-Mar-22	< 0.001	-	-	-	-	-	-	-	**0.45**	-	**0.003**	-	-	-	-	-
	12-Apr-22	< 0.001	-	-	-	-	-	-	-	**0.43**	-	**0.004**	-	-	-	-	-
	27-May-22	< 0.001	**0.003**	-	-	-	**0.003**	-	< 0.001	**0.52**	-	-	-	**0.002**	-	-	**0.005**
	17-Jun-22	< 0.001	-	-	-	-	-	-	-	**0.56**	-	**0.004**	-	-	-	-	-
	27-Jul-22	< 0.001	-	-	-	-	-	-	-	**0.51**	-	**0.004**	-	-	-	-	-
	12-Aug-22	< 0.001	**0.003**	-	-	-	**0.002**	-	**0.003**	**0.56**	-	-	-	**0.002**	-	-	< 0.005
	16-Sep-22	**0.001**	-	-	-	-	-	-	-	**0.54**	-	**0.004**	-	-	-	-	-
	24-Oct-22	< 0.001	-	-	-	-	-	-	-	**0.5**	-	**0.003**	-	-	-	-	-
	18-Nov-22	**0.001**	**0.002**	-	-	-	**0.002**	< 0.001	< 0.001	**0.43**	-	**0.001**	-	**0.001**	-	-	**0.009**
	14-Dec-22	< 0.001	-	-	-	-	-	-	-	**0.32**	-	**0.002**	-	-	-	-	-
	17-Jan-23	< 0.001	-	-	-	-	-	-	-	**0.29**	-	**0.002**	-	-	-	-	-
	15-Feb-23	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.31**	< 0.001	**0.003**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.011**
	15-Mar-23	< 0.001	-	-	-	-	-	-	-	**0.34**	-	**0.003**	-	-	-	-	-
	18-Apr-23	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.002**	**0.46**	< 0.001	**0.003**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.011**
	16-May-23	< 0.001	**0.002**	-	-	-	**0.002**	-	**0.001**	**0.47**	-	-	-	**0.002**	-	-	**0.025**
	14-Jun-23	< 0.001	-	-	-	-	-	-	-	**0.44**	-	**0.003**	-	-	-	-	-
	24-Jul-23	< 0.001	-	-	-	-	-	-	-	**0.53**	-	**0.004**	-	-	-	-	-
BH7	21-Feb-19	< 0.001	**0.011**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**4.1**	< 0.001	**0.012**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.005**
	14-Mar-19	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**3.25**	< 0.001	**0.008**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	23-Apr-19	**0.001**	**0.008**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**3.2**	< 0.001	**0.009**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.008**
	16-May-19	**0.003**	**0.01**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**3.0**	< 0.001	**0.01**	< 0.0001	**0.003**	< 0.01	< 0.01	< 0.005

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 3
Groundwater - Dissolved Metals

Analyte		Metals															
		Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
LOR		0.001	0.001	0.001	0.05	0.0001	0.001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.01	0.01	0.005
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		0.003	0.07	0.002	0.1	0.0002	0.004	0.006	0.083	4.1	0.001	0.136	0.0001	0.02	0.01	0.01	0.085
BH8	14-Jun-19	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**2.5**	< 0.001	**0.005**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.006**
	16-Jul-19	**0.001**	**0.012**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**2.6**	< 0.001	**0.004**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	15-Aug-19	**0.001**	**0.008**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**1.72**	< 0.001	**0.004**	< 0.0001	**0.001**	< 0.01	< 0.01	< 0.005
	16-Sep-19	**0.001**	**0.01**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**2.06**	< 0.001	**0.005**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	15-Oct-19	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.002**	-	< 0.001	**0.009**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.011**
	18-Nov-19	< 0.001	**0.012**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.002**	**2.49**	< 0.001	**0.01**	< 0.0001	**0.013**	< 0.01	< 0.01	**0.053**
	16-Sep-20	< 0.001	**0.014**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.035**	**3.35**	**0.001**	**0.009**	< 0.0001	**0.009**	< 0.01	< 0.01	**0.039**
	16-Oct-20	**0.001**	**0.009**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**3.03**	< 0.001	**0.007**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.012**
	16-Nov-20	< 0.001	**0.013**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**3.48**	< 0.001	**0.008**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	16-Dec-20	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.001**	**2.98**	< 0.001	**0.01**	< 0.0001	**0.001**	< 0.01	< 0.01	< 0.005
	14-Jan-21	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.002**	**2.71**	< 0.001	**0.01**	< 0.0001	**0.005**	< 0.01	< 0.01	**0.009**
	16-Feb-21	**0.001**	**0.009**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.004**	**2.99**	< 0.001	**0.01**	< 0.0001	**0.006**	< 0.01	< 0.01	**0.013**
	17-Mar-21	< 0.001	**0.012**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**3.86**	< 0.001	**0.01**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	19-Aug-21	**0.003**	**0.008**	-	-	-	**0.002**	-	< 0.001	**3.72**	-	-	-	**0.002**	-	-	< 0.005
	16-Nov-21	**0.001**	**0.01**	-	-	-	**0.002**	-	< 0.001	**4.23**	-	-	-	**0.002**	-	-	< 0.005
	16-Dec-21	-	-	-	-	-	-	-	-	**3.78**	-	-	-	-	-	-	-
	24-Feb-22	**0.001**	**0.009**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**2.98**	< 0.001	**0.007**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.012**
	27-May-22	**0.001**	**0.004**	-	-	-	**0.002**	-	< 0.001	**1.1**	-	-	-	**0.001**	-	-	< 0.005
	12-Aug-22	**0.001**	**0.006**	-	-	-	**0.002**	-	< 0.001	**1.54**	-	-	-	**0.001**	-	-	**0.007**
	18-Nov-22	**0.002**	**0.004**	-	-	-	**0.002**	< 0.001	< 0.001	**1.16**	-	**0.001**	-	< 0.001	-	-	**0.008**
	15-Feb-23	**0.001**	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.001**	**0.96**	< 0.001	**0.002**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.034**
	16-May-23	**0.002**	**0.004**	-	-	-	**0.003**	-	< 0.001	**1.37**	-	-	-	**0.001**	-	-	**0.015**
BH9	16-Nov-21	< 0.001	-	-	-	-	-	-	-	< 0.05	-	**0.014**	-	-	-	-	-
BH9A	16-Sep-20	< 0.001	**0.028**	< 0.001	< 0.05	< 0.0001	< 0.001	**0.002**	**0.004**	**0.14**	< 0.001	**0.076**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.02**
	16-Oct-20	< 0.001	**0.001**	< 0.001	< 0.05	< 0.0001	< 0.001	**0.001**	**0.001**	**0.06**	< 0.001	**0.042**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.016**
	16-Nov-20	< 0.001	**0.001**	< 0.001	< 0.05	< 0.0001	< 0.001	**0.001**	**0.001**	**0.11**	< 0.001	**0.03**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.011**
	16-Dec-20	< 0.001	**0.001**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.001**	**0.31**	< 0.001	**0.024**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.006**
	14-Jan-21	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.017**	**0.14**	< 0.001	**0.025**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.011**
	16-Feb-21	< 0.001	**0.001**	< 0.001	< 0.05	< 0.0001	< 0.001	**0.001**	< 0.001	**0.35**	< 0.001	**0.024**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.006**
	17-Mar-21	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.27**	< 0.001	**0.024**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.01**
	19-Aug-21	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.26**	< 0.001	**0.03**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.006**
	22-Sep-21	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.32**	< 0.001	**0.027**	< 0.0001	**0.003**	< 0.01	< 0.01	< 0.005
	13-Oct-21	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	< 0.001	**0.51**	< 0.001	**0.033**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.021**
	16-Nov-21	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	< 0.001	**0.001**	< 0.001	**0.33**	< 0.001	**0.025**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.031**
	15-Dec-21	< 0.001	-	-	-	-	-	-	-	**0.48**	-	**0.025**	-	-	-	-	-
	18-Jan-22	< 0.001	-	-	-	-	-	-	-	**0.44**	-	**0.03**	-	-	-	-	-
	24-Feb-22	< 0.001	**0.008**	< 0.001	< 0.05	< 0.0001	< 0.001	**0.001**	< 0.001	**0.5**	< 0.001	**0.042**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.006**
	17-Mar-22	< 0.001	-	-	-	-	-	-	-	**0.32**	-	**0.036**	-	-	-	-	-
	12-Apr-22	< 0.001	-	-	-	-	-	-	-	**0.48**	-	**0.038**	-	-	-	-	-
	27-May-22	< 0.001	**0.007**	-	-	-	< 0.001	-	< 0.001	**0.35**	-	-	-	**0.003**	-	-	< 0.005
	17-Jun-22	< 0.001	-	-	-	-	-	-	-	**0.42**	-	**0.032**	-	-	-	-	-
	27-Jul-22	< 0.001	-	-	-	-	-	-	-	**0.16**	-	**0.019**	-	-	-	-	-
	12-Aug-22	< 0.001	**0.009**	-	-	-	< 0.001	-	**0.004**	**0.53**	-	-	-	**0.004**	-	-	**0.008**
	16-Sep-22	< 0.001	-	-	-	-	-	-	-	**0.54**	-	**0.031**	-	-	-	-	-
	24-Oct-22	< 0.001	-	-	-	-	-	-	-	**0.27**	-	**0.022**	-	-	-	-	-
	18-Nov-22	< 0.001	**0.007**	-	-	-	< 0.001	< 0.001	< 0.001	**0.56**	-	**0.034**	-	**0.002**	-	-	**0.012**
	14-Dec-22	< 0.001	-	-	-	-	-	-	-	**0.18**	-	**0.023**	-	-	-	-	-
	17-Jan-23	< 0.001	-	-	-	-	-	-	-	**0.49**	-	**0.035**	-	-	-	-	-
	15-Feb-23	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.001**	**0.61**	< 0.001	**0.041**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.015**
	15-Mar-23	< 0.001	-	-	-	-	-	-	-	**0.15**	-	**0.02**	-	-	-	-	-
	18-Apr-23	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.004**	**0.5**	< 0.001	**0.033**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.038**
	16-May-23	< 0.001	**0.004**	-	-	-	< 0.001	-	< 0.001	**0.26**	-	-	-	**0.002**	-	-	**0.029**
	14-Jun-23	< 0.001	-	-	-	-	-	-	-	**0.16**	-	**0.013**	-	-	-	-	-
	24-Jul-23	< 0.001	-	-	-	-	-	-	-	**0.67**	-	**0.045**	-	-	-	-	-
	21-Feb-19	< 0.001	**0.008**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.001**	< 0.001	**0.26**	< 0.001	**0.003**	< 0.0001	**0.005**	< 0.01	< 0.01	**0.031**
	15-Mar-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**1.49**	< 0.001	**0.007**	< 0.0001	**0.037**	< 0.01	< 0.01	**0.016**
	23-Apr-19	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.98**	< 0.001	**0.007**	< 0.0001	**0.07**	< 0.01	< 0.01	**0.04**
	16-May-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.97**	< 0.001	**0.006**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.024**
	14-Jun-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**0.98**	< 0.001	**0.005**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.005**
	16-Jul-19	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.47**	< 0.001	**0.003**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.007**
	15-Aug-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.001**	**0.87**	< 0.001	**0.007**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.005**
	16-Sep-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**0.79**	< 0.001	**0.008**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.012**
	15-Oct-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.004**	-	< 0.001	**0.006**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.016**
	18-Nov-19	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.95**	< 0.001	**0.008**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 3
Groundwater - Dissolved Metals

Analyte		Metals															
		Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
LOR		0.001	0.001	0.001	0.05	0.0001	0.001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.01	0.01	0.005
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		0.003	0.07	0.002	0.1	0.0002	0.004	0.006	0.083	4.1	0.001	0.136	0.0001	0.02	0.01	0.01	0.085
BH11	16-Sep-20	< 0.001	**0.014**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.005**	**0.9**	< 0.001	**0.008**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.009**
	16-Oct-20	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**1.06**	< 0.001	**0.009**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.01**
	16-Nov-20	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**0.84**	< 0.001	**0.011**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.016**
	16-Dec-20	< 0.001	**0.008**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**1.0**	< 0.001	**0.009**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.008**
	14-Jan-21	< 0.001	**0.008**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.025**	**0.56**	< 0.001	**0.006**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.018**
	16-Feb-21	< 0.001	**0.008**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.018**	**0.59**	< 0.001	**0.008**	< 0.0001	**0.007**	< 0.01	< 0.01	**0.03**
	17-Mar-21	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**0.2**	< 0.001	**0.002**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.014**
	19-Aug-21	**0.001**	**0.009**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	< 0.001	**0.62**	< 0.001	**0.003**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.047**
	22-Sep-21	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.72**	< 0.001	**0.003**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.042**
	13-Oct-21	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.69**	< 0.001	**0.005**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.037**
	16-Nov-21	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	< 0.001	**0.92**	< 0.001	**0.002**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.036**
	15-Dec-21	< 0.001	-	-	-	-	-	-	-	**0.92**	-	**0.003**	-	-	-	-	-
	18-Jan-22	< 0.001	-	-	-	-	-	-	-	**1.06**	-	**0.003**	-	-	-	-	-
	24-Feb-22	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	< 0.001	**1.25**	< 0.001	**0.003**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.036**
	06-Mar-22	< 0.001	**0.004**	-	-	-	**0.002**	-	< 0.001	**1.27**	-	-	-	**0.002**	-	-	**0.028**
	17-Mar-22	< 0.001	-	-	-	-	-	-	-	**1.06**	-	**0.004**	-	-	-	-	-
	12-Apr-22	< 0.001	-	-	-	-	-	-	-	**1.06**	-	**0.004**	-	-	-	-	-
	17-Jun-22	< 0.001	-	-	-	-	-	-	-	**1.24**	-	**0.004**	-	-	-	-	-
	27-Jul-22	< 0.001	-	-	-	-	-	-	-	**1.03**	-	**0.004**	-	-	-	-	-
	16-Sep-22	< 0.001	-	-	-	-	-	-	-	**1.14**	-	**0.004**	-	-	-	-	-
	24-Oct-22	< 0.001	-	-	-	-	-	-	-	**1.14**	-	**0.003**	-	-	-	-	-
	18-Nov-22	< 0.001	**0.002**	-	-	-	**0.003**	< 0.001	< 0.001	**1.06**	-	**0.003**	-	**0.003**	-	-	**0.042**
	14-Dec-22	< 0.001	-	-	-	-	-	-	-	**0.96**	-	**0.003**	-	-	-	-	-
	17-Jan-23	< 0.001	-	-	-	-	-	-	-	**0.86**	-	**0.003**	-	-	-	-	-
	15-Feb-23	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	**0.008**	**0.91**	< 0.001	**0.003**	< 0.0001	**0.005**	< 0.01	< 0.01	**0.076**
	15-Mar-23	< 0.001	-	-	-	-	-	-	-	**0.99**	-	**0.002**	-	-	-	-	-
	18-Apr-23	**0.001**	**0.001**	< 0.001	< 0.05	< 0.0001	**0.004**	< 0.001	< 0.001	**1.07**	< 0.001	**0.003**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.029**
	16-May-23	< 0.001	**0.002**	-	-	-	**0.003**	-	**0.001**	**1.04**	-	-	-	**0.003**	-	-	**0.065**
	14-Jun-23	< 0.001	-	-	-	-	-	-	-	**0.59**	-	**0.001**	-	-	-	-	-
	24-Jul-23	< 0.001	-	-	-	-	-	-	-	**0.86**	-	**0.002**	-	-	-	-	-
BH12	16-Nov-20	< 0.001	-	-	-	< 0.0001	**0.002**	-	**0.002**	-	< 0.001	-	< 0.0001	**0.002**	-	-	**0.017**
	24-Feb-22	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.33**	< 0.001	**0.006**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
BH12A	15-Feb-23	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.003**	< 0.001	**0.003**	**3.64**	< 0.001	**0.019**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.015**
MW239S	22-Feb-19	< 0.001	**0.007**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**1.11**	< 0.001	**0.003**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.006**
	14-Mar-19	< 0.001	**0.008**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**1.25**	< 0.001	**0.005**	< 0.0001	**0.005**	< 0.01	< 0.01	**0.008**
	23-Apr-19	< 0.001	**0.008**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**1.01**	< 0.001	**0.004**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.007**
	16-May-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.87**	< 0.001	**0.003**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	14-Jun-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.002**	**0.8**	< 0.001	**0.003**	< 0.0001	**0.001**	< 0.01	< 0.01	< 0.005
	16-Jul-19	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.87**	< 0.001	**0.003**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	15-Aug-19	< 0.001	**0.006**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**1.0**	< 0.001	**0.004**	< 0.0001	< 0.001	< 0.01	< 0.01	< 0.005
	16-Sep-19	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.002**	**0.94**	< 0.001	**0.006**	< 0.0001	**0.006**	< 0.01	< 0.01	**0.032**
	15-Oct-19	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.003**	-	< 0.001	**0.004**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.011**
	18-Nov-19	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**1.1**	< 0.001	**0.004**	< 0.0001	**0.008**	< 0.01	< 0.01	**0.03**
	16-Sep-20	< 0.001	**0.016**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.002**	**0.51**	< 0.001	**0.008**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.006**
	16-Oct-20	< 0.001	**0.009**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**1.17**	< 0.001	**0.009**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.005**
	16-Nov-20	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	**0.001**	**0.3**	< 0.001	**0.011**	< 0.0001	**0.003**	< 0.01	< 0.01	**0.021**
	16-Dec-20	< 0.001	**0.01**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**1.06**	< 0.001	**0.011**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	14-Jan-21	< 0.001	**0.011**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	**0.005**	**0.77**	< 0.001	**0.012**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.011**
	16-Feb-21	< 0.001	**0.011**	< 0.001	< 0.05	< 0.0001	**0.002**	**0.001**	**0.01**	**0.92**	< 0.001	**0.012**	< 0.0001	**0.009**	< 0.01	< 0.01	**0.014**
	17-Mar-21	< 0.001	**0.011**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.95**	< 0.001	**0.01**	< 0.0001	**0.004**	< 0.01	< 0.01	**0.009**
	19-Aug-21	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**0.53**	< 0.001	**0.006**	< 0.0001	**0.002**	< 0.01	< 0.01	< 0.005
	22-Sep-21	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**0.65**	< 0.001	**0.004**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.005**
	13-Oct-21	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.79**	< 0.001	**0.008**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.016**
	16-Nov-21	< 0.001	**0.005**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.68**	< 0.001	**0.006**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.01**
	15-Dec-21	< 0.001	-	-	-	-	-	-	-	**0.77**	-	**0.005**	-	-	-	-	-
	18-Jan-22	< 0.001	-	-	-	-	-	-	-	**0.48**	-	**0.003**	-	-	-	-	-
	24-Feb-22	< 0.001	**0.004**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.55**	< 0.001	**0.004**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.006**
	17-Mar-22	< 0.001	-	-	-	-	-	-	-	**0.48**	-	**0.005**	-	-	-	-	-
	12-Apr-22	< 0.001	-	-	-	-	-	-	-	**0.93**	-	**0.007**	-	-	-	-	-

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Table 3
Groundwater - Dissolved Metals

Analyte		Metals															
		Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
LOR		0.001	0.001	0.001	0.05	0.0001	0.001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.01	0.01	0.005
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		0.003	0.07	0.002	0.1	0.0002	0.004	0.006	0.083	4.1	0.001	0.136	0.0001	0.02	0.01	0.01	0.085
	27-May-22	< 0.001	**0.004**	-	-	-	**0.002**	-	< 0.001	**0.56**	-	-	-	**0.001**	-	-	**0.009**
	17-Jun-22	< 0.001	-	-	-	-	-	-	-	**0.36**	-	**0.004**	-	-	-	-	-
	27-Jul-22	< 0.001	-	-	-	-	-	-	-	**0.43**	-	**0.004**	-	-	-	-	-
	12-Aug-22	< 0.001	**0.002**	-	-	-	**0.002**	-	< 0.001	**0.4**	-	-	-	**0.001**	-	-	< 0.005
	16-Sep-22	< 0.001	-	-	-	-	-	-	-	**0.44**	-	**0.006**	-	-	-	-	-
	24-Oct-22	< 0.001	-	-	-	-	-	-	-	**0.38**	-	**0.004**	-	-	-	-	-
	18-Nov-22	< 0.001	**0.003**	-	-	-	**0.001**	< 0.001	< 0.001	**0.28**	-	**0.002**	-	**0.002**	-	-	**0.006**
	14-Dec-22	< 0.001	-	-	-	-	-	-	-	**0.26**	-	**0.003**	-	-	-	-	-
	17-Jan-23	< 0.001	-	-	-	-	-	-	-	**0.2**	-	**0.003**	-	-	-	-	-
	15-Feb-23	< 0.001	**0.003**	< 0.001	< 0.05	< 0.0001	**0.001**	< 0.001	< 0.001	**0.17**	< 0.001	**0.004**	< 0.0001	**0.001**	< 0.01	< 0.01	**0.019**
	15-Mar-23	< 0.001	-	-	-	-	-	-	-	**0.29**	-	**0.004**	-	-	-	-	-
	18-Apr-23	< 0.001	**0.002**	< 0.001	< 0.05	< 0.0001	**0.002**	< 0.001	< 0.001	**0.27**	< 0.001	**0.004**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.006**
	16-May-23	< 0.001	**0.002**	-	-	-	**0.002**	-	< 0.001	**0.21**	-	-	-	**0.002**	-	-	**0.027**
	14-Jun-23	< 0.001	-	-	-	-	-	-	-	**0.2**	-	**0.004**	-	-	-	-	-
	24-Jul-23	< 0.001	-	-	-	-	-	-	-	**0.25**	-	**0.005**	-	-	-	-	-

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
mg/L - Milligrams per litre
Bold indicates a detection above the laboratory limit of reporting
Highlighting indicates an exceedance of the corresponding criteria (highlighting corresponds to the guideline with the highest criteria value where analytical result exceeds more than one guideline)

Criteria:
SWMP 2021 - Soil and Water Management Plan, July 2021

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Table 4
Groundwater - PFAS

Analyte		Perfluoroalkyl Sulfonamides							Perfluoroalkyl Carboxylic Acids		Perfluoroalkyl C
		Perfluorooctane sulfonamide (FOSA)	N-Methyl-perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	Perfluorobutanoic acid (PFBA)	Perfluoro-n-pentanoic aicd (PFPeA)	Perfluorohexanoic acid (PFHxA)
LOR		0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.1	0.02	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date										
BH1	17-Mar-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH1A	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH2	22-Feb-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Oct-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Dec-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jan-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Feb-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Mar-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	19-Aug-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	27-May-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	12-Aug-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH3	21-Feb-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH4	21-Feb-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Mar-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	23-Apr-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jun-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Jul-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Aug-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Oct-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Oct-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Dec-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jan-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Feb-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Mar-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	19-Aug-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	27-May-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	12-Aug-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02

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Table 4
Groundwater - PFAS

Analyte		Perfluoroalkyl Sulfonamides							Perfluoroalkyl Carboxylic Acids		Perfluoroalkyl C
		Perfluorooctane sulfonamide (FOSA)	N-Methyl-perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	Perfluorobutanoic acid (PFBA)	Perfluoro-n-pentanoic aicd (PFPeA)	Perfluorohexanoic acid (PFHxA)
LOR		0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.1	0.02	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jun-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH5	22-Feb-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	22-Feb-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Mar-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	23-Apr-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jun-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Jul-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Aug-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Oct-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Oct-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH6	16-Nov-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Dec-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jan-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Feb-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Mar-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	19-Aug-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	27-May-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	12-Aug-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	22-Feb-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Mar-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	23-Apr-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jun-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Jul-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Aug-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Oct-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Oct-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH7	16-Nov-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 4
Groundwater - PFAS

Analyte		Perfluoroalkyl Sulfonamides							Perfluoroalkyl Carboxylic Acids		Perfluoroalkyl C
		Perfluorooctane sulfonamide (FOSA)	N-Methyl-perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	Perfluorobutanoic acid (PFBA)	Perfluoro-n-pentanoic aicd (PFPeA)	Perfluorohexanoic acid (PFHxA)
LOR		0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.1	0.02	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
BH8	16-Dec-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jan-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Feb-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Mar-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	19-Aug-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	27-May-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	12-Aug-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH8	21-Feb-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Mar-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	23-Apr-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jun-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Jul-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Aug-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Oct-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Oct-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Dec-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jan-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Feb-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Mar-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	19-Aug-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	27-May-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	12-Aug-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Oct-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Dec-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jan-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Feb-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Mar-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	19-Aug-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	22-Sep-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 4
Groundwater - PFAS

Analyte		Perfluoroalkyl Sulfonamides							Perfluoroalkyl Carboxylic Acids		Perfluoroalkyl C
		Perfluorooctane sulfonamide (FOSA)	N-Methyl-perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	Perfluorobutanoic acid (PFBA)	Perfluoro-n-pentanoic aicd (PFPeA)	Perfluorohexanoic acid (PFHxA)
LOR		0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.1	0.02	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
BH9A	13-Oct-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	27-May-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	12-Aug-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH11	21-Feb-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Oct-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Dec-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jan-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Feb-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Mar-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	19-Aug-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	22-Sep-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	13-Oct-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	06-Mar-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH12	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
BH12A	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
MW239S	22-Feb-19	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Oct-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Dec-20	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jan-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Feb-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Mar-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	19-Aug-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	22-Sep-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	13-Oct-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	27-May-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02

Williamtown Sand Syndicate
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Table 4
Groundwater - PFAS

Analyte		Perfluoroalkyl Sulfonamides							Perfluoroalkyl Carboxylic Acids		Perfluoroalkyl C
		Perfluorooctane sulfonamide (FOSA)	N-Methyl-perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	Perfluorobutanoic acid (PFBA)	Perfluoro-n-pentanoic aicd (PFPeA)	Perfluorohexanoic acid (PFHxA)
LOR		0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.1	0.02	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
	12-Aug-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
µg/L - Micrograms per litre
Bold indicates a detection above the laboratory limit of reporting

Criteria:
SWMP 2021 - Soil and Water Management Plan, July 2021

Williamtown Sand Syndicate
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Table 4
Groundwater - PFAS

Analyte		Carboxylic Acids		Perfluoroalkyl Carboxylic Acids						
		Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoate (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)
LOR		0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.56	--	--	--	--	--	--	--
Sample Name	Sample Date									
BH1	17-Mar-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
BH1A	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
BH2	22-Feb-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Oct-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Dec-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jan-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Feb-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Mar-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	19-Aug-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	27-May-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	12-Aug-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
BH3	21-Feb-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
BH4	21-Feb-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Mar-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	23-Apr-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jun-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Jul-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Aug-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Oct-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Oct-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Dec-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jan-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Feb-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Mar-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	19-Aug-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	27-May-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	12-Aug-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02

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Table 4
Groundwater - PFAS

Analyte		Carboxylic Acids		Perfluoroalkyl Carboxylic Acids						
		Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoate (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)
LOR		0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.56	--	--	--	--	--	--	--
	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jun-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
BH5	22-Feb-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	22-Feb-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Mar-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	23-Apr-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jun-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Jul-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Aug-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Oct-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Oct-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
BH6	16-Nov-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Dec-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jan-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Feb-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Mar-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	19-Aug-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	27-May-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	12-Aug-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	22-Feb-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Mar-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	23-Apr-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jun-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Jul-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Aug-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Oct-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Oct-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
BH7	16-Nov-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02

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Table 4
Groundwater - PFAS

Analyte		Carboxylic Acids		Perfluoroalkyl Carboxylic Acids						
		Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoate (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)
LOR		0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.56	--	--	--	--	--	--	--
BH8	16-Dec-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jan-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Feb-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Mar-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	19-Aug-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	27-May-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	12-Aug-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	21-Feb-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Mar-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	23-Apr-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jun-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Jul-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Aug-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Oct-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Oct-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Dec-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jan-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Feb-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Mar-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	19-Aug-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	27-May-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	12-Aug-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Oct-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Dec-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jan-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Feb-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Mar-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	19-Aug-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	22-Sep-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02

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Table 4
Groundwater - PFAS

Analyte		Carboxylic Acids		Perfluoroalkyl Carboxylic Acids						
		Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoate (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)
LOR		0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.56	--	--	--	--	--	--	--
BH9A	13-Oct-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	27-May-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	12-Aug-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
BH11	21-Feb-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Oct-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Dec-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jan-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Feb-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Mar-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	19-Aug-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	22-Sep-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	13-Oct-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	06-Mar-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
BH12	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
BH12A	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
MW239S	22-Feb-19	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Oct-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Dec-20	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jan-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Feb-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Mar-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	19-Aug-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	22-Sep-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	13-Oct-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	27-May-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02

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Table 4
Groundwater - PFAS

Analyte		Carboxylic Acids		Perfluoroalkyl Carboxylic Acids						
		Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoate (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)
LOR		0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.56	--	--	--	--	--	--	--
	12-Aug-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02

Notes:
- - Not analysed
< - Less than laboratory limit of reportin
µg/L - Micrograms per litre
Bold indicates a detection above the lat

Criteria:
SWMP 2021 - Soil and Water Manageme

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Table 4
Groundwater - PFAS

Analyte		Perfluoroalkyl Sulfonic Acids			Perfluoroalkyl Sulfonic Acids					
		Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonate (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	4:2 Fluorotelomer Sulfonate (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)
LOR		0.02	0.01	0.02	0.02	0.01	0.02	0.05	0.05	0.05
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--
Sample Name	Sample Date									
BH1	17-Mar-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
BH1A	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
BH2	22-Feb-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Oct-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Dec-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jan-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Feb-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	17-Mar-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	19-Aug-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-21	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	27-May-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	12-Aug-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
BH3	21-Feb-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
BH4	21-Feb-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Mar-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	23-Apr-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jun-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Jul-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Aug-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-19	< 0.02	-	< 0.02	< 0.02	< 0.01	**0.02**	< 0.05	< 0.05	< 0.05
	15-Oct-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Oct-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Dec-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jan-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Feb-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	17-Mar-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	19-Aug-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-21	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	**0.15**	< 0.05
	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	**0.06**	< 0.05
	27-May-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	12-Aug-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05

Williamtown Sand Syndicate
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Table 4
Groundwater - PFAS

Analyte		Perfluoroalkyl Sulfonic Acids			Perfluoroalkyl Sulfonic Acids					
		Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonate (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	4:2 Fluorotelomer Sulfonate (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)
LOR		0.02	0.01	0.02	0.02	0.01	0.02	0.05	0.05	0.05
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--
	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	**0.05**	< 0.05
	14-Jun-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
BH5	22-Feb-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	22-Feb-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Mar-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	23-Apr-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jun-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Jul-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Aug-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Oct-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Oct-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
BH6	16-Nov-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Dec-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jan-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Feb-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	17-Mar-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	19-Aug-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-21	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	27-May-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	12-Aug-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	22-Feb-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Mar-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	23-Apr-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jun-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Jul-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Aug-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Oct-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Oct-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
BH7	16-Nov-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05

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Table 4
Groundwater - PFAS

Analyte		Perfluoroalkyl Sulfonic Acids			Perfluoroalkyl Sulfonic Acids					
		Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonate (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	4:2 Fluorotelomer Sulfonate (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)
LOR		0.02	0.01	0.02	0.02	0.01	0.02	0.05	0.05	0.05
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--
BH8	16-Dec-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jan-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Feb-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	17-Mar-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	19-Aug-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-21	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	27-May-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	12-Aug-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
BH8	21-Feb-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Mar-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	23-Apr-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jun-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Jul-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Aug-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Oct-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Oct-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Dec-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jan-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Feb-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	17-Mar-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	19-Aug-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-21	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	27-May-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	12-Aug-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Oct-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Dec-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jan-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Feb-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	17-Mar-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	19-Aug-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	22-Sep-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05

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Table 4
Groundwater - PFAS

Analyte		Perfluoroalkyl Sulfonic Acids			Perfluoroalkyl Sulfonic Acids					
		Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonate (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	4:2 Fluorotelomer Sulfonate (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)
LOR		0.02	0.01	0.02	0.02	0.01	0.02	0.05	0.05	0.05
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--
BH9A	13-Oct-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-21	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	27-May-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	12-Aug-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
BH11	21-Feb-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Oct-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Dec-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jan-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Feb-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	17-Mar-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	19-Aug-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	22-Sep-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	13-Oct-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-21	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	06-Mar-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
BH12	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	**0.07**	< 0.05
BH12A	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
MW239S	22-Feb-19	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Oct-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Dec-20	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jan-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Feb-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	17-Mar-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	19-Aug-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	22-Sep-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	13-Oct-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-21	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	24-Feb-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	27-May-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05

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Table 4
Groundwater - PFAS

Analyte		Perfluoroalkyl Sulfonic Acids			Perfluoroalkyl Sulfonic Acids					
		Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonate (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	4:2 Fluorotelomer Sulfonate (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)
LOR		0.02	0.01	0.02	0.02	0.01	0.02	0.05	0.05	0.05
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--
	12-Aug-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05

Notes:
- - Not analysed
< - Less than laboratory limit of reportin
µg/L - Micrograms per litre
Bold indicates a detection above the lat

Criteria:
SWMP 2021 - Soil and Water Manageme

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Table 4
Groundwater - PFAS

Analyte		(n:2) Fluorotelomer Sulfonic Acids	Sum of PFAS		
		10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
LOR		0.05	0.01	0.01	0.01
Units		µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.07	--	--
Sample Name	Sample Date				
BH1	17-Mar-21	< 0.05	< 0.01	< 0.01	< 0.01
	24-Feb-22	< 0.05	< 0.01	< 0.01	< 0.01
BH1A	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
BH2	22-Feb-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Oct-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Dec-20	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jan-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Feb-21	< 0.05	< 0.01	< 0.01	< 0.01
	17-Mar-21	< 0.05	< 0.01	< 0.01	< 0.01
	19-Aug-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-21	< 0.05	< 0.01	< 0.01	< 0.01
	24-Feb-22	< 0.05	< 0.01	< 0.01	< 0.01
	27-May-22	< 0.05	< 0.01	< 0.01	< 0.01
	12-Aug-22	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-22	< 0.05	< 0.01	< 0.01	< 0.01
	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-23	< 0.05	< 0.01	< 0.01	< 0.01
BH3	21-Feb-19	< 0.05	< 0.01	< 0.01	< 0.01
BH4	21-Feb-19	< 0.05	< 0.01	< 0.01	< 0.01
	15-Mar-19	< 0.05	< 0.01	< 0.01	< 0.01
	23-Apr-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-19	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jun-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Jul-19	< 0.05	< 0.01	< 0.01	< 0.01
	15-Aug-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-19	< 0.05	< 0.01	< 0.01	**0.02**
	15-Oct-19	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Oct-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Dec-20	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jan-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Feb-21	< 0.05	< 0.01	< 0.01	< 0.01
	17-Mar-21	< 0.05	< 0.01	< 0.01	< 0.01
	19-Aug-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-21	< 0.05	< 0.01	**0.15**	**0.15**
	24-Feb-22	< 0.05	< 0.01	**0.06**	**0.06**
	27-May-22	< 0.05	< 0.01	< 0.01	< 0.01
	12-Aug-22	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-22	< 0.05	< 0.01	< 0.01	< 0.01

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Table 4
Groundwater - PFAS

Analyte		(n:2) Fluorotelomer Sulfonic Acids	Sum of PFAS		
		10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
LOR		0.05	0.01	0.01	0.01
Units		µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.07	--	--
	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-23	< 0.05	< 0.01	**0.05**	**0.05**
	14-Jun-23	< 0.05	< 0.01	< 0.01	< 0.01
BH5	22-Feb-19	< 0.05	< 0.01	< 0.01	< 0.01
	24-Feb-22	< 0.05	< 0.01	< 0.01	< 0.01
	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
BH6	22-Feb-19	< 0.05	< 0.01	< 0.01	< 0.01
	14-Mar-19	< 0.05	< 0.01	< 0.01	< 0.01
	23-Apr-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-19	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jun-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Jul-19	< 0.05	< 0.01	< 0.01	< 0.01
	15-Aug-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-19	< 0.05	< 0.01	< 0.01	< 0.01
	15-Oct-19	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Oct-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Dec-20	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jan-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Feb-21	< 0.05	< 0.01	< 0.01	< 0.01
	17-Mar-21	< 0.05	< 0.01	< 0.01	< 0.01
	19-Aug-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-21	< 0.05	< 0.01	< 0.01	< 0.01
	24-Feb-22	< 0.05	< 0.01	< 0.01	< 0.01
	27-May-22	< 0.05	< 0.01	< 0.01	< 0.01
	12-Aug-22	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-22	< 0.05	< 0.01	< 0.01	< 0.01
	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-23	< 0.05	< 0.01	< 0.01	< 0.01
BH7	22-Feb-19	< 0.05	< 0.01	< 0.01	< 0.01
	14-Mar-19	< 0.05	< 0.01	< 0.01	< 0.01
	23-Apr-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-19	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jun-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Jul-19	< 0.05	< 0.01	< 0.01	< 0.01
	15-Aug-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-19	< 0.05	< 0.01	< 0.01	< 0.01
	15-Oct-19	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Oct-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-20	< 0.05	< 0.01	< 0.01	< 0.01

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Table 4
Groundwater - PFAS

Analyte		(n:2) Fluorotelomer Sulfonic Acids	Sum of PFAS		
		10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
LOR		0.05	0.01	0.01	0.01
Units		µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.07	--	--
	16-Dec-20	< 0.05	< 0.01	< 0.01	< 0.01
BH8	14-Jan-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Feb-21	< 0.05	< 0.01	< 0.01	< 0.01
	17-Mar-21	< 0.05	< 0.01	< 0.01	< 0.01
	19-Aug-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-21	< 0.05	< 0.01	< 0.01	< 0.01
	24-Feb-22	< 0.05	< 0.01	< 0.01	< 0.01
	27-May-22	< 0.05	< 0.01	< 0.01	< 0.01
	12-Aug-22	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-22	< 0.05	< 0.01	< 0.01	< 0.01
	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-23	< 0.05	< 0.01	< 0.01	< 0.01
BH8	21-Feb-19	< 0.05	< 0.01	< 0.01	< 0.01
	14-Mar-19	< 0.05	< 0.01	< 0.01	< 0.01
	23-Apr-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-19	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jun-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Jul-19	< 0.05	< 0.01	< 0.01	< 0.01
	15-Aug-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-19	< 0.05	< 0.01	< 0.01	< 0.01
	15-Oct-19	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Oct-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Dec-20	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jan-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Feb-21	< 0.05	< 0.01	< 0.01	< 0.01
	17-Mar-21	< 0.05	< 0.01	< 0.01	< 0.01
	19-Aug-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-21	< 0.05	< 0.01	< 0.01	< 0.01
	24-Feb-22	< 0.05	< 0.01	< 0.01	< 0.01
	27-May-22	< 0.05	< 0.01	< 0.01	< 0.01
	12-Aug-22	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-22	< 0.05	< 0.01	< 0.01	< 0.01
	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-23	< 0.05	< 0.01	< 0.01	< 0.01
BH9	16-Oct-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Dec-20	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jan-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Feb-21	< 0.05	< 0.01	< 0.01	< 0.01
	17-Mar-21	< 0.05	< 0.01	< 0.01	< 0.01
	19-Aug-21	< 0.05	< 0.01	< 0.01	< 0.01
	22-Sep-21	< 0.05	< 0.01	< 0.01	< 0.01

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Table 4
Groundwater - PFAS

Analyte		(n:2) Fluorotelomer Sulfonic Acids	Sum of PFAS		
		10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
LOR		0.05	0.01	0.01	0.01
Units		µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.07	--	--
BH9A	13-Oct-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-21	< 0.05	< 0.01	< 0.01	< 0.01
	24-Feb-22	< 0.05	< 0.01	< 0.01	< 0.01
	27-May-22	< 0.05	< 0.01	< 0.01	< 0.01
	12-Aug-22	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-22	< 0.05	< 0.01	< 0.01	< 0.01
	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-23	< 0.05	< 0.01	< 0.01	< 0.01
BH11	21-Feb-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Oct-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Dec-20	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jan-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Feb-21	< 0.05	< 0.01	< 0.01	< 0.01
	17-Mar-21	< 0.05	< 0.01	< 0.01	< 0.01
	19-Aug-21	< 0.05	< 0.01	< 0.01	< 0.01
	22-Sep-21	< 0.05	< 0.01	< 0.01	< 0.01
	13-Oct-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-21	< 0.05	< 0.01	< 0.01	< 0.01
	24-Feb-22	< 0.05	< 0.01	< 0.01	< 0.01
	06-Mar-22	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-22	< 0.05	< 0.01	< 0.01	< 0.01
	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-23	< 0.05	< 0.01	< 0.01	< 0.01
BH12	24-Feb-22	< 0.05	< 0.01	**0.07**	**0.07**
BH12A	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
MW239S	22-Feb-19	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Oct-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-20	< 0.05	< 0.01	< 0.01	< 0.01
	16-Dec-20	< 0.05	< 0.01	< 0.01	< 0.01
	14-Jan-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Feb-21	< 0.05	< 0.01	< 0.01	< 0.01
	17-Mar-21	< 0.05	< 0.01	< 0.01	< 0.01
	19-Aug-21	< 0.05	< 0.01	< 0.01	< 0.01
	22-Sep-21	< 0.05	< 0.01	< 0.01	< 0.01
	13-Oct-21	< 0.05	< 0.01	< 0.01	< 0.01
	16-Nov-21	< 0.05	< 0.01	< 0.01	< 0.01
	24-Feb-22	< 0.05	< 0.01	< 0.01	< 0.01
	27-May-22	< 0.05	< 0.01	< 0.01	< 0.01

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Table 4
Groundwater - PFAS

Analyte		(n:2) Fluorotelomer Sulfonic Acids	Sum of PFAS		
		10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
LOR		0.05	0.01	0.01	0.01
Units		µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.07	--	--
	12-Aug-22	< 0.05	< 0.01	< 0.01	< 0.01
	18-Nov-22	< 0.05	< 0.01	< 0.01	< 0.01
	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
	16-May-23	< 0.05	< 0.01	< 0.01	< 0.01

Notes:
- - Not analysed
< - Less than laboratory limit of reportin
µg/L - Micrograms per litre
Bold indicates a detection above the lat

Criteria:
SWMP 2021 - Soil and Water Manageme

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 5
Wash Plant Water - Dissolved Metals

Analyte		Metals															
		Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc
LOR		0.001	0.001	0.001	0.05	0.0001	0.001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.01	0.01	0.005
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WSS - Groundwater		0.003	0.07	0.002	0.1	0.0002	0.004	0.006	0.083	4.1	0.001	0.136	0.0001	0.02	0.01	0.01	0.085
Sample Name	Sample Date																
WPW	19-Aug-21	< 0.001	-	-	-	-	-	-	-	< 0.05	-	**0.062**	-	-	-	-	-
	22-Sep-21	< 0.001	-	-	-	-	-	-	-	**0.08**	-	**0.051**	-	-	-	-	-
	13-Oct-21	< 0.001	-	-	-	-	-	-	-	**0.22**	-	**0.079**	-	-	-	-	-
	16-Nov-21	< 0.001	-	-	-	-	-	-	-	**0.29**	-	**0.045**	-	-	-	-	-
	15-Dec-21	< 0.001	-	-	-	-	-	-	-	**0.2**	-	**0.078**	-	-	-	-	-
	18-Jan-22	< 0.001	-	-	-	-	-	-	-	**0.56**	-	**0.038**	-	-	-	-	-
	24-Feb-22	< 0.001	-	-	-	-	-	-	-	**1.02**	-	**0.084**	-	-	-	-	-
	17-Mar-22	< 0.001	-	-	-	-	-	-	-	**0.97**	-	**0.05**	-	-	-	-	-
	12-Apr-22	< 0.001	-	-	-	-	-	-	-	**0.44**	-	**0.042**	-	-	-	-	-
	27-May-22	< 0.001	-	-	-	-	-	-	-	**0.07**	-	**0.038**	-	-	-	-	-
	17-Jun-22	< 0.001	-	-	-	-	-	-	-	**0.94**	-	**0.061**	-	-	-	-	-
	27-Jul-22	< 0.001	-	-	-	-	-	-	-	**0.27**	-	**0.038**	-	-	-	-	-
	12-Aug-22	< 0.001	-	-	-	-	-	-	-	**0.17**	-	**0.026**	-	-	-	-	-
	16-Sep-22	< 0.001	-	-	-	-	-	-	-	**0.58**	-	**0.069**	-	-	-	-	-
	24-Oct-22	**0.002**	-	-	-	-	-	-	-	**2.22**	-	**0.118**	-	-	-	-	-
	18-Nov-22	< 0.001	-	-	-	-	-	-	-	**0.56**	-	**0.066**	-	-	-	-	-
	14-Dec-22	< 0.001	-	-	-	-	-	-	-	**0.42**	-	**0.062**	-	-	-	-	-
	17-Jan-23	< 0.001	-	-	-	-	-	-	-	**0.36**	-	**0.05**	-	-	-	-	-
WPW2	15-Feb-23	< 0.001	**0.015**	< 0.001	< 0.05	< 0.0001	< 0.001	< 0.001	**0.003**	< 0.05	< 0.001	**0.004**	< 0.0001	< 0.001	< 0.01	< 0.01	**0.115**
	15-Mar-23	< 0.001	-	-	-	-	-	-	-	**0.15**	-	**0.061**	-	-	-	-	-
	18-Apr-23	< 0.001	**0.009**	< 0.001	< 0.05	< 0.0001	**0.001**	**0.001**	**0.004**	**0.6**	< 0.001	**0.049**	< 0.0001	**0.002**	< 0.01	< 0.01	**0.053**
	16-May-23	< 0.001	-	-	-	-	-	-	-	**0.28**	-	**0.07**	-	-	-	-	-
	14-Jun-23	< 0.001	-	-	-	-	-	-	-	**0.33**	-	**0.047**	-	-	-	-	-
	24-Jul-23	< 0.001	-	-	-	-	-	-	-	**0.39**	-	**0.08**	-	-	-	-	-

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
mg/L - Milligrams per litre
Bold indicates a detection above the laboratory limit of reporting
Highlighting indicates an exceedance of the corresponding criteria (highlighting corresponds to the guideline with the highest criteria value where analytical result exceeds more than one guideline)

Criteria:
SWMP 2021 - Soil and Water Management Plan, July 2021

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 6
Wash Plant Water PFAS

Analyte		Perfluoroalkyl Sulfonamides							Perfluoroalkyl Carboxylic Acids		Perfluoroalkyl C
		Perfluorooctane sulfonamide (FOSA)	N-Methyl-perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	Perfluorobutanoic acid (PFBA)	Perfluoro-n-pentanoic aicd (PFPeA)	Perfluorohexanoic acid (PFHxA)
LOR		0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.1	0.02	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--	--
Sample Name	Sample Date										
WPW	19-Aug-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	22-Sep-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	13-Oct-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Nov-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Dec-21	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Jan-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Feb-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Mar-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	12-Apr-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	27-May-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Jun-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	27-Jul-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	12-Aug-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-Sep-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Oct-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Nov-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Dec-22	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	17-Jan-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
WPW2	15-Feb-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	15-Mar-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	18-Apr-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	16-May-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	14-Jun-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02
	24-Jul-23	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02

Notes:
- - Not analysed
< - Less than laboratory limit of reporting
µg/L - Micrograms per litre
Bold indicates a detection above the laboratory limit of reporting

Criteria:
SWMP 2021 - Soil and Water Management Plan, July 2021

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Table 6
Wash Plant Water PFAS

Analyte		Carboxylic Acids		Perfluoroalkyl Carboxylic Acids						
		Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoate (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)
LOR		0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.02
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.56	--	--	--	--	--	--	--
Sample Name	Sample Date									
WPW	19-Aug-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	22-Sep-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	13-Oct-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Nov-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Dec-21	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Jan-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Feb-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Mar-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	12-Apr-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	27-May-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Jun-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	27-Jul-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	12-Aug-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-Sep-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Oct-22	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Nov-22	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Dec-22	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	17-Jan-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
WPW2	15-Feb-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	15-Mar-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	18-Apr-23	< 0.02	**0.01**	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	16-May-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	14-Jun-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02
	24-Jul-23	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02

Notes:
- - Not analysed
< - Less than laboratory limit of reportin
µg/L - Micrograms per litre
Bold indicates a detection above the lat

Criteria:
SWMP 2021 - Soil and Water Manageme

Williamtown Sand Syndicate
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Table 6
Wash Plant Water PFAS

Analyte		Perfluoroalkyl Sulfonic Acids			Perfluoroalkyl Sulfonic Acids					
		Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonate (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	4:2 Fluorotelomer Sulfonate (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)
LOR		0.02	0.01	0.02	0.02	0.01	0.02	0.05	0.05	0.05
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	--	--	--	--	--	--	--	--
Sample Name	Sample Date									
WPW	19-Aug-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	22-Sep-21	< 0.02	-	< 0.02	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	13-Oct-21	< 0.02	-	< 0.02	< 0.02	**0.01**	< 0.02	< 0.05	< 0.05	< 0.05
	16-Nov-21	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Dec-21	< 0.02	< 0.01	-	< 0.02	**0.03**	< 0.02	< 0.05	< 0.05	< 0.05
	18-Jan-22	< 0.02	< 0.01	-	< 0.02	**0.03**	< 0.02	< 0.05	< 0.05	< 0.05
	24-Feb-22	< 0.02	**0.01**	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	17-Mar-22	< 0.02	**0.01**	-	< 0.02	**0.02**	< 0.02	< 0.05	< 0.05	< 0.05
	12-Apr-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	27-May-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	17-Jun-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	27-Jul-22	< 0.02	**0.01**	-	< 0.02	**0.02**	< 0.02	< 0.05	< 0.05	< 0.05
	12-Aug-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	16-Sep-22	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	24-Oct-22	< 0.02	**0.01**	-	< 0.02	**0.02**	< 0.02	< 0.05	< 0.05	< 0.05
	18-Nov-22	< 0.02	**0.02**	-	< 0.02	**0.02**	< 0.02	< 0.05	< 0.05	< 0.05
	14-Dec-22	< 0.02	**0.01**	-	< 0.02	**0.02**	< 0.02	< 0.05	< 0.05	< 0.05
	17-Jan-23	< 0.02	**0.01**	-	< 0.02	**0.01**	< 0.02	< 0.05	< 0.05	< 0.05
WPW2	15-Feb-23	< 0.02	< 0.01	-	< 0.02	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05
	15-Mar-23	< 0.02	**0.01**	-	< 0.02	**0.02**	< 0.02	< 0.05	< 0.05	< 0.05
	18-Apr-23	< 0.02	**0.02**	-	< 0.02	**0.02**	< 0.02	< 0.05	< 0.05	< 0.05
	16-May-23	< 0.02	< 0.01	-	< 0.02	**0.03**	< 0.02	< 0.05	< 0.05	< 0.05
	14-Jun-23	< 0.02	**0.01**	-	< 0.02	**0.02**	< 0.02	< 0.05	< 0.05	< 0.05
	24-Jul-23	< 0.02	**0.01**	-	< 0.02	**0.02**	< 0.02	< 0.05	< 0.05	< 0.05

Notes:
- - Not analysed
< - Less than laboratory limit of reportin
µg/L - Micrograms per litre
Bold indicates a detection above the lat

Criteria:
SWMP 2021 - Soil and Water Manageme

Williamtown Sand Syndicate
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Table 6
Wash Plant Water PFAS

Analyte		(n:2) Fluorotelomer Sulfonic Acids	Sum of PFAS		
		10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
LOR		0.05	0.01	0.01	0.01
Units		µg/L	µg/L	µg/L	µg/L
WSS - Groundwater		--	0.07	--	--
Sample Name	Sample Date				
WPW	19-Aug-21	< 0.05	< 0.01	< 0.01	< 0.01
	22-Sep-21	< 0.05	< 0.01	< 0.01	< 0.01
	13-Oct-21	< 0.05	**0.01**	**0.01**	**0.01**
	16-Nov-21	< 0.05	< 0.01	< 0.01	< 0.01
	15-Dec-21	< 0.05	**0.03**	**0.03**	**0.03**
	18-Jan-22	< 0.05	**0.03**	**0.03**	**0.03**
	24-Feb-22	< 0.05	**0.01**	**0.01**	**0.01**
	17-Mar-22	< 0.05	**0.03**	**0.03**	**0.03**
	12-Apr-22	< 0.05	< 0.01	< 0.01	< 0.01
	27-May-22	< 0.05	< 0.01	< 0.01	< 0.01
	17-Jun-22	< 0.05	< 0.01	< 0.01	< 0.01
	27-Jul-22	< 0.05	**0.03**	**0.03**	**0.03**
	12-Aug-22	< 0.05	< 0.01	< 0.01	< 0.01
	16-Sep-22	< 0.05	< 0.01	< 0.01	< 0.01
	24-Oct-22	< 0.05	**0.03**	**0.03**	**0.03**
	18-Nov-22	< 0.05	**0.04**	**0.05**	**0.05**
	14-Dec-22	< 0.05	**0.03**	**0.04**	**0.04**
	17-Jan-23	< 0.05	**0.02**	**0.02**	**0.02**
WPW2	15-Feb-23	< 0.05	< 0.01	< 0.01	< 0.01
	15-Mar-23	< 0.05	**0.03**	**0.03**	**0.03**
	18-Apr-23	< 0.05	**0.04**	**0.05**	**0.05**
	16-May-23	< 0.05	**0.03**	**0.03**	**0.03**
	14-Jun-23	< 0.05	**0.03**	**0.03**	**0.03**
	24-Jul-23	< 0.05	**0.03**	**0.03**	**0.03**

Notes:
- - Not analysed
< - Less than laboratory limit of reportin
µg/L - Micrograms per litre
Bold indicates a detection above the lat

Criteria:
SWMP 2021 - Soil and Water Manageme

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Table 7
QAQC Dissolved Metals RPDs and Blanks

Analyte			Metals		
			Arsenic	Iron	Manganese
Units			mg/L	mg/L	mg/L
Sample Name	Sample Date	Sample Type			
TB_240723_24072023	24-Jul-23	Trip Blank	< 0.001	< 0.05	< 0.001
RB_240723_24072023	24-Jul-23	Rinsate	< 0.001	< 0.05	< 0.001
BH2_24072023	24-Jul-23	Primary	< 0.001	**0.12**	**0.007**
QC01_24072023	24-Jul-23	Duplicate	< 0.001	**0.13**	**0.007**
Relative Percentage Difference			NC	**8%**	**0%**
BH2_24072023	24-Jul-23	Primary	< 0.001	**0.12**	**0.007**
QC01A_24072023	24-Jul-23	Triplicate	< 0.001	**0.19**	**0.007**
Relative Percentage Difference			NC	**45%**	**0%**

Notes:
< - Less than laboratory limit of reporting
NC - Not calculated
mg/L - Milligrams per litre
Bold indicates a detection above the laboratory limit of reporting

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Table 8
QAQC PFAS Blanks

Analyte			Perfluoroalkyl Sulfonamides							Perfluoroalkyl Carboxylic Acids	
			Perfluorooctane sulfonamide (FOSA)	N-Methyl-perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	Perfluorobutanoic acid (PFBA)	Perfluoro-n-pentanoic aicd (PFPeA)
Units			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Sample Name	Sample Date	Sample Type									
TB_240723_24072023	24-Jul-23	Trip Blank	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02
RB_240723_24072023	24-Jul-23	Rinsate	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02	< 0.1	< 0.02

Notes:
< - Less than laboratory limit of reporting
µg/L - Micrograms per litre

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Table 8
QAQC PFAS Blanks

Analyte			Perfluoroalkyl Carboxylic Acids			Perfluoroalkyl Carboxylic Acids				
			Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoate (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)
Units			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Sample Name	Sample Date	Sample Type								
TB_240723_24072023	24-Jul-23	Trip Blank	< 0.02	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
RB_240723_24072023	24-Jul-23	Rinsate	< 0.02	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Notes:
< - Less than laboratory limit of reporting
µg/L - Micrograms per litre

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Table 8
QAQC PFAS Blanks

Analyte					Perfluoroalkyl Sulfonic Acids		Perfluoroalkyl Sulfonic Acids			
			Perfluorotetradecanoic acid (PFTeDA)	Perfluorobutanesulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluoroheptane sulfonate (PFHpS)	Perfluorooctanesulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	4:2 Fluorotelomer Sulfonate (4:2 FTS)
Units			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Sample Name	Sample Date	Sample Type								
TB_240723_24072023	24-Jul-23	Trip Blank	< 0.05	< 0.02	< 0.02	< 0.01	< 0.02	< 0.01	< 0.02	< 0.05
RB_240723_24072023	24-Jul-23	Rinsate	< 0.05	< 0.02	< 0.02	< 0.01	< 0.02	< 0.01	< 0.02	< 0.05

Notes:
< - Less than laboratory limit of reporting
µg/L - Micrograms per litre

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Table 8
QAQC PFAS Blanks

Analyte					(n:2) Fluorotelomer Sulfonic Acids	Sum of PFAS		
			6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
Units			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Sample Name	Sample Date	Sample Type						
TB_240723_24072023	24-Jul-23	Trip Blank	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01
RB_240723_24072023	24-Jul-23	Rinsate	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01

Notes:
< - Less than laboratory limit of reporting
µg/L - Micrograms per litre

Williamtown Sand Syndicate
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Table 9
Gauging Data

Well ID	Date	Well Depth (m)	TOC (mAHD)	Water Table Elevation (mAHD)	DTW (mBTOC)	Remark
BH1	27/07/2022	8.210	NM	NM	3.836	--
	12/08/2022	NM	NM	NM	NC	--
BH1A	16/09/2022	12.400	8.980	NM	3.950	--
	24/10/2022	12.266	8.980	NM	3.946	--
	18/11/2022	12.290	8.980	4.810	4.170	Gauge only
	14/12/2022	12.163	8.980	NM	4.467	--
	17/01/2023	12.181	8.980	NM	4.838	--
	15/02/2023	12.190	NM	NM	5.095	Clear
	15/03/2023	12.160	NM	NM	5.214	--
	18/04/2023	12.155	8.980	3.764	5.216	Gauge only
	16/05/2023	12.160	NM	3.688	5.292	Gauge only
	14/06/2023	12.160	NM	NM	5.188	--
	24/07/2023	12.150	NM	NM	5.458	--
BH2	27/07/2022	8.940	7.790	NM	3.893	Clear
	12/08/2022	8.000	7.790	NM	4.055	Clear
	16/09/2022	8.997	7.790	NM	4.119	Dark brown
	24/10/2022	9.952	7.790	NM	4.182	Clear
	18/11/2022	9.450	7.790	3.410	4.380	Light brown, NO, NS
	14/12/2022	8.879	7.790	NM	4.587	Very light brown
	17/01/2023	8.930	7.790	NM	4.873	Brown
	15/02/2023	8.871	NM	NM	5.058	Odor, Light brown
	15/03/2023	8.842	NM	NM	5.135	Light brown
	18/04/2023	8.861	7.790	2.703	5.087	Light brown, no odour, no sheen
	16/05/2023	8.850	NM	2.654	5.136	Brown, no odour / sheen, well in good condition
	14/06/2023	8.840	NM	NM	5.084	Clear
	24/07/2023	8.840	NM	NM	5.216	Lt brown
BH4	27/07/2022	5.980	3.060	NM	0.764	Clear
	12/08/2022	5.000	3.060	NM	0.799	Clear
	16/09/2022	5.990	3.060	NM	0.826	Light brown
	24/10/2022	6.050	3.060	NM	0.821	Clear
	18/11/2022	6.010	3.060	2.110	0.950	Clear, NO/NS
	14/12/2022	6.025	3.060	NM	1.119	Clear
	17/01/2023	6.006	3.060	NM	1.299	Clear
	15/02/2023	6.015	NM	NM	1.433	Clear
	15/03/2023	6.015	NM	NM	1.435	Clear
	18/04/2023	6.018	3.060	1.832	1.228	Clear, no odour, no sheen
	16/05/2023	5.992	NM	1.771	1.289	Clear, no odour / sheen, well in good condition
	14/06/2023	5.990	NM	NM	1.228	Slightly cloudy/clear
	24/07/2023	5.995	NM	NM	1.246	Clear
BH5	12/08/2022	0.000	7.360	NM	5.040	--
	18/11/2022	8.820	7.360	2.169	5.191	Gauge only
	15/02/2023	5.612	NM	NM	8.735	Odor, Light brown
BH6	27/07/2022	4.510	3.620	NM	0.706	Odor, Clear
	12/08/2022	4.000	3.620	NM	0.711	Odor, Clear
	16/09/2022	4.580	3.620	NM	0.716	Odor, Clear
	24/10/2022	4.554	3.620	NM	0.750	Odor, Clear
	18/11/2022	4.540	3.620	2.815	0.805	Cloudy, low sulfur odour, NS
	14/12/2022	4.530	3.620	NM	1.024	Odor, Light yellow
	17/01/2023	4.520	3.620	NM	1.239	--
	15/02/2023	4.529	NM	NM	1.353	Odor, Clear
	15/03/2023	4.535	NM	NM	1.317	Odor, Clear
	18/04/2023			NM		--

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Table 9
Gauging Data

Well ID	Date	Well Depth (m)	TOC (mAHD)	Water Table Elevation (mAHD)	DTW (mBTOC)	Remark
	16/05/2023	4.515	NM	2.48000	1.14	Clear, low Sulphur odour, no sheen, well in good condition
	14/06/2023	4.49	NM	NM	1.078	Odor, Clear
	24/07/2023	4.92	NM	NM	0.975	Odor, Cloudy white
BH7	27/07/2022	4.5	2.98	NM	0.906	Weak Odor, Light yellow
	12/08/2022	4	2.98	NM	0.945	Light yellow
	16/09/2022	4.499	2.98	NM	0.953	Yello
	24/10/2022	4.53	2.98	NM	0.94	Odor, Brown
	18/11/2022	5.5	2.98	1.89000	1.09	Light brown, low sulfur odour, NS
	14/12/2022	4.52	2.98	NM	1.278	Odor, Light yellow
	17/01/2023	4.51	2.98	NM	1.396	Odor, Light yellow, almost clear
	15/02/2023	4.52	NM	NM	1.469	Odor, Light brown
	15/03/2023	4.505	NM	NM	1.445	Odor, Lght yeloow
	18/04/2023			NM		--
	16/05/2023	4.52	NM	1.71500	1.265	Light yellow, low sulphur odour, no sheen, well in good condition
	14/06/2023	4.52	NM	NM	1.218	Light yellow
	24/07/2023	4.52	NM	NM	1.211	Weak Odor, Lt yellow
BH8	12/08/2022	0	3.88	NM	1.689	Strong Odor, Milky white
	18/11/2022	6.04	3.88	2.05500	1.825	Cloudy, low sulfur odour, NS
	15/02/2023	6.055	NM	NM	2.34	Odor, Light brown
	16/05/2023	6.025	NM	1.85800	2.022	Yellow, strong sulphur odour, no sheen, well in good condition
BH9	27/07/2022	16.19	17.75	NM	15.041	--
	12/08/2022	16	17.75	NM	15.15	--
	16/09/2022	16.145	17.75	NM	15.256	--
	24/10/2022	16	17.75	NM	15.279	--
	18/11/2022	16.32	17.75	2.29100	15.459	Gauge only
	14/12/2022	16.11	17.75	NM	15.659	--
	17/01/2023	16.24	17.75	NM	15.855	--
	15/02/2023	16.108	NM	NM	16.003	--
	15/03/2023	16.09	NM	NM	16.043	--
	18/04/2023			NM		--
	16/05/2023	16.075	NM	1.83200	15.918	Gauge only
	14/06/2023	16.1	NM	NM	15.878	--
	24/07/2023	1616.099	NM	NM	15.916	--
BH9A	27/07/2022	12.44	10.75	NM	8.202	Weak Odor, Clear
	12/08/2022	12	10.75	NM	8.295	Light yellow
	16/09/2022	12.283	10.75	NM	8.355	Odor, Light brown
	24/10/2022	12.42	10.75	NM	8.366	Clear
	18/11/2022	12.43	10.75	2.22900	8.521	Brown, NO/NS
	14/12/2022	12.295	10.75	NM	8.697	Light yellow
	17/01/2023	12.264	10.75	NM	8.869	Weak Odor, Light brown
	15/02/2023	12.235	NM	NM	9.006	Odor, Light bown
	15/03/2023	12.241	NM	NM	9.023	Light brown
	18/04/2023			NM		--
	16/05/2023	12.235	NM	1.87100	8.879	Light brown, low sulphur odour, no sheen, well in good condition
	14/06/2023	12.23	NM	NM	8.819	Weak Odor, Light yellow/clear
	24/07/2023	12.27	NM	NM	8.859	Strong Odor, Lt yellow
BH10	12/08/2022	0	6.69	NM	1.699	--
	18/11/2022	3.48	6.69	4.60000	2.09	Gauge only
	15/02/2023	3.486	NM	NM	2.919	--
	27/07/2022	5.28	6.63	NM	0.793	Strong Odor, Light yellow
	16/09/2022	5.304	6.63	NM	0.847	Odor, Yellow
	24/10/2022	4.315	6.63	NM	0.87	Odor, Yellow

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 9
Gauging Data

Well ID	Date	Well Depth (m)	TOC (mAHD)	Water Table Elevation (mAHD)	DTW (mBTOC)	Remark
BH11	18/11/2022	5.29	6.63	5.45000	1.18	Yellow, moderate sulfur odour, NS
	14/12/2022	5.302	6.63	NM	1.456	Odor, Light yellow
	17/01/2023	5.3	6.63	NM	1.794	Odor, Light yellow
	15/02/2023	5.309	NM	NM	2.053	Odor, Yellow light
	15/03/2023	5.3	NM	NM	2.199	Odor, Yellow
	18/04/2023	5.3	6.63	4.52000	2.11	Light yellow, strong sulfur odour, no sheen
	16/05/2023	5.295	NM	4.40200	2.228	Light yellow, strong sulphur odour, no sheen, well in good condition
	14/06/2023	5.28	NM	NM	2.22	Strong Odor, Yellow
	24/07/2023	5.305	NM	NM	2.421	Strong Odor, Yellow
BH12A	16/09/2022	7.337	5.62	NM	2.298	--
	24/10/2022	7.34	5.62	NM	2.291	Light brown
	18/11/2022	7.39	5.62	3.19000	2.43	Gauge only
	14/12/2022	7.37	5.62	NM	2.587	--
	17/01/2023	7.327	5.62	NM	2.713	--
	15/02/2023	7.335	NM	NM	2.903	Brown
	15/03/2023	7.31	NM	NM	2.956	--
	18/04/2023	7.312	5.62	2.74600	2.874	Gauge only
	16/05/2023	7.3	NM	2.69800	2.922	Gauge only
	14/06/2023	7.3	NM	NM	2.896	--
	24/07/2023	7.29	NM	NM	2.98	--
MW239D	18/11/2022	20.49	3.04	2.30000	0.74	Gauge only
	15/02/2023	20.5	NM	NM	1.076	--
MW239S	27/07/2022	3.8	3.04	NM	0.53	Strong Odor, Light yellow
	12/08/2022	3	3.04	NM	0.595	Odor, Cloudy yellow
	16/09/2022	3.82	3.04	NM	0.62	Odor, Yellow
	24/10/2022	3.62	3.04	NM	0.61	Odor, Clear
	18/11/2022	3.82	3.04	2.28000	0.76	Cloudy, low sulfur odour, NS
	14/12/2022	3.81	3.04	NM	0.911	Odor, Light brown
	17/01/2023	3.618	3.04	NM	1.032	Strong Odor, Brown
	15/02/2023	3.815	NM	NM	1.101	Odor, Light brown
	15/03/2023	3.805	NM	NM	1.088	Odor, Orange brown
	18/04/2023			NM		--
	16/05/2023	3.787	NM	2.10200	0.938	Light brown, moderate sulphur odour, no sheen, well in good condition
	14/06/2023	3.76	NM	NM	0.901	Odor, Clear
	24/07/2023	3.79	NM	NM	0.912	Odor, Light brown
WPW	27/07/2022	NM	NM	NM	NC	Dark cloudy brown
	12/08/2022	NM	NM	NM	NC	Light brown
	16/09/2022	NM	NM	NM	NC	Brown
	24/10/2022	NM	NM	NM	NC	Dark brown
	14/12/2022	NM	NM	NM	NC	Brown
	17/01/2023	NM	NM	NM	NC	Weak Odor, Brown
	15/02/2023	NM	NM	NM	NC	Clear
	15/03/2023	NM	NM	NM	NC	Odor, Brown
WPW2	18/04/2023	NM	NM	NM	NC	Light brown, low earthy odour, no sheen
	14/06/2023	NM	NM	NM	NC	Turbid muddy brown
	24/07/2023	NM	NM	NM	NC	Odor, Dark brown

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 10
Field Parameters

Parameters		DO	ORP	PH	SC	TDS	TEMP	TURB
Unit		mg/L	mV	pH units	uS/cm	mg/L	deg C	NTU
Well ID	Date							
BH1A	15-Feb-23	5.80	192.50	4.33	82.60	55.00	23.80	--
BH2	27-Jul-22	5.85	223.00	4.13	87.60	--	15.60	131.00
	12-Aug-22	4.34	269.70	4.52	53.00	--	16.70	15.58
	16-Sep-22	3.28	262.70	4.76	80.70	60.00	18.10	710.34
	24-Oct-22	4.55	218.80	4.71	73.60	55.00	18.50	33.87
	18-Nov-22	1.90	213.90	4.70	73.20	54.00	19.00	--
	14-Dec-22	4.14	229.70	4.79	78.60	51.00	19.30	27.86
	17-Jan-23	3.88	211.30	4.69	75.60	228.72	21.70	240.60
	15-Feb-23	4.20	300.50	4.54	70.90	50.00	21.00	133.94
	15-Mar-23	3.62	227.70	4.67	69.00	49.00	20.80	103.00
	18-Apr-23	4.84	224.50	4.88	64.60	4.60	20.20	44.80
	16-May-23	3.27	234.00	4.54	64.10	47.00	18.60	--
	14-Jun-23	3.10	258.00	4.43	79.20	52.00	17.90	0.86
	14-Jun-23	3.10	258.00	4.43	79.20	52.00	17.90	0.86
	24-Jul-23	4.14	103.70	4.57	84.00	64.00	17.40	40.00
BH4	27-Jul-22	3.00	190.70	4.60	90.20	--	14.10	121.00
	12-Aug-22	3.25	236.00	4.86	77.00	--	15.50	10.20
	16-Sep-22	5.35	163.80	5.29	75.20	60.00	15.40	34.07
	24-Oct-22	3.52	162.30	5.45	--	57.00	17.80	45.42
	18-Nov-22	3.57	170.60	5.32	80.20	62.00	16.80	--
	14-Dec-22	3.95	119.80	5.59	92.50	60.00	18.10	16.36
	17-Jan-23	1.89	159.50	5.31	128.80	91.00	20.90	8.00
	15-Feb-23	2.60	166.00	5.47	115.50	82.00	20.80	29.64
	15-Mar-23	4.46	179.00	5.22	92.50	65.00	21.00	8.26
	18-Apr-23	4.84	196.70	5.27	70.30	52.00	18.70	8.45
	16-May-23	3.96	217.90	4.84	65.50	56.00	16.80	--
	14-Jun-23	2.70	157.90	4.97	92.80	60.00	16.40	3.33
	14-Jun-23	2.70	157.90	4.97	92.80	60.00	16.40	3.33
	24-Jul-23	3.41	215.70	5.18	66.00	53.00	15.30	7.71
BH5	15-Feb-23	3.00	15.60	4.64	132.90	88.00	23.90	75.75
BH6	27-Jul-22	4.75	-104.00	4.76	225.00	--	14.20	16.80
	12-Aug-22	3.94	-80.00	5.10	217.00	--	14.20	156.00
	16-Sep-22	2.64	-112.50	5.18	229.40	71.00	18.10	101.53
	24-Oct-22	1.75	-66.80	4.01	84.30	171.00	18.30	65.70
	18-Nov-22	2.29	-85.20	4.14	224.40	156.00	21.70	--
	14-Dec-22	1.72	-45.60	4.11	232.30	151.00	21.10	35.00
	17-Jan-23	2.46	-7.00	3.82	245.50	162.00	24.50	34.06
	15-Feb-23	3.00	-57.20	4.55	233.80	148.00	26.40	88.41
	15-Mar-23	4.29	150.20	4.09	233.20	155.00	23.90	32.96
	18-Apr-23	2.64	-60.10	4.85	195.40	137.00	21.00	19.48
	16-May-23	3.45	-39.90	4.80	195.10	140.00	20.20	--
	14-Jun-23	2.90	-49.90	4.59	242.10	157.00	15.70	82.08
	14-Jun-23	2.90	-49.90	4.59	242.10	157.00	15.70	82.08
	24-Jul-23	8.84	97.00	4.91	230.20	174.00	17.70	230.00
	27-Jul-22	4.21	26.00	4.43	117.00	--	14.30	489.00
	12-Aug-22	3.98	11.00	4.84	110.00	--	14.90	110.40
	16-Sep-22	2.92	65.60	4.78	94.10	71.00	17.60	101.60
	24-Oct-22	3.52	-93.20	4.72	81.90	62.00	17.70	68.09
	18-Nov-22	3.35	-92.50	4.75	78.40	54.00	22.10	--
	14-Dec-22	3.82	-72.20	4.74	70.10	46.00	21.60	35.80

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 10
Field Parameters

Parameters		DO	ORP	PH	SC	TDS	TEMP	TURB
Unit		mg/L	mV	pH units	uS/cm	mg/L	deg C	NTU
BH7	17-Jan-23	2.98	38.00	4.49	74.10	51.00	22.00	15.49
	15-Feb-23	3.40	-50.10	4.68	70.40	45.00	25.40	70.91
	15-Mar-23	4.06	4.00	4.62	75.90	51.00	23.20	28.40
	18-Apr-23	4.02	174.30	4.80	82.90	58.00	21.00	51.83
	16-May-23	1.84	161.20	4.18	75.20	54.00	20.00	--
	14-Jun-23	2.90	99.50	4.66	87.20	57.00	16.10	184.00
	14-Jun-23	2.90	99.50	4.66	87.20	57.00	16.10	184.00
	24-Jul-23	5.60	159.20	4.83	90.60	71.00	16.30	58.00
BH8	12-Aug-22	4.20	-67.90	4.81	135.00	--	14.70	782.00
	18-Nov-22	3.40	-97.20	4.66	98.50	69.00	20.70	--
	15-Feb-23	1.70	-108.51	4.81	129.90	82.00	26.70	45.25
	16-May-23	2.72	-85.50	4.81	113.10	84.00	18.60	--
BH9A	27-Jul-22	4.93	208.50	4.11	182.80	--	16.60	52.00
	12-Aug-22	3.96	249.00	4.46	186.00	--	17.60	41.50
	16-Sep-22	3.65	241.40	4.69	132.00	99.00	18.00	45.22
	24-Oct-22	2.84	196.20	4.76	118.00	87.00	19.00	36.09
	18-Nov-22	2.04	86.30	4.79	112.00	84.00	18.10	--
	14-Dec-22	2.32	166.00	4.75	107.70	70.00	18.70	61.00
	17-Jan-23	1.94	111.50	4.73	107.40	75.00	21.40	32.20
	15-Feb-23	3.20	29.50	3.83	171.60	119.00	21.60	87.90
	15-Mar-23	4.24	171.70	4.83	103.30	72.00	21.90	51.32
	18-Apr-23	3.50	9.50	4.83	123.50	90.00	19.50	69.85
	16-May-23	6.01	44.10	4.60	103.90	80.00	17.10	--
	14-Jun-23	3.60	168.90	4.45	107.60	70.00	18.20	66.18
	14-Jun-23	3.60	168.90	4.45	107.60	70.00	18.20	66.18
	24-Jul-23	4.13	195.50	4.69	125.60	95.00	17.80	55.50
BH11	27-Jul-22	4.74	-39.00	4.20	158.00	--	14.00	9.70
	16-Sep-22	2.46	-63.90	4.54	118.40	89.00	18.00	26.30
	24-Oct-22	2.12	-92.90	4.37	120.30	90.00	18.10	23.72
	18-Nov-22	2.01	-100.50	4.47	120.70	89.00	18.80	--
	14-Dec-22	3.19	-86.00	4.48	130.20	85.00	19.10	73.00
	17-Jan-23	2.16	-80.50	4.31	133.50	89.00	23.90	5.80
	15-Feb-23	4.00	-66.50	4.45	110.10	76.00	22.10	53.17
	15-Mar-23	3.05	-43.40	4.58	102.90	71.00	21.60	4.83
	18-Apr-23	3.11	-69.50	4.61	100.10	72.00	20.10	417.60
	16-May-23	3.13	-60.00	4.45	111.10	83.00	18.40	--
	14-Jun-23	2.50	-48.90	4.38	122.90	80.00	16.60	74.09
	14-Jun-23	2.50	-48.90	4.38	122.90	80.00	16.60	74.09
	24-Jul-23	5.69	-35.60	4.45	102.20	80.00	16.00	133.00
BH12A	24-Oct-22	2.94	141.50	4.95	120.80	89.00	18.80	146.00
	15-Feb-23	2.50	167.50	4.93	138.40	90.00	24.90	287.01
MW239S	27-Jul-22	4.00	-71.00	4.32	125.00	--	14.20	175.00
	12-Aug-22	2.73	-69.00	4.60	115.00	--	15.20	310.00
	16-Sep-22	3.65	-79.71	4.83	102.40	77.00	17.90	129.37
	24-Oct-22	2.33	-117.70	4.72	86.50	65.00	18.00	83.71
	18-Nov-22	1.93	-113.00	4.74	97.30	67.00	22.00	--
	14-Dec-22	3.05	-62.00	4.62	115.40	75.00	21.50	239.00
	17-Jan-23	2.61	-9.40	4.52	100.20	67.00	23.60	105.40
	15-Feb-23	3.10	-62.60	4.51	114.20	72.00	26.60	145.00
	15-Mar-23	3.02	-4.10	4.61	102.40	70.00	22.50	206.44
	18-Apr-23	3.29	-85.00	4.78	87.20	63.00	20.10	84.02

Williamtown Sand Syndicate
July 2023
Monthly Monitoring

Table 10
Field Parameters

Parameters		DO	ORP	PH	SC	TDS	TEMP	TURB
Unit		mg/L	mV	pH units	uS/cm	mg/L	deg C	NTU
	16-May-23	2.75	-50.40	4.52	84.70	63.00	18.60	--
	14-Jun-23	2.40	-77.30	4.58	100.80	66.00	17.40	88.40
	14-Jun-23	2.40	-77.30	4.58	100.80	66.00	17.40	88.40
	24-Jul-23	4.37	-57.00	4.53	84.60	67.00	15.60	217.00
SW1	12-Aug-22	2.97	182.00	5.18	140.00	--	12.60	4.30
	18-Nov-22	0.89	154.60	5.45	99.50	78.00	15.90	--
	15-Feb-23	4.00	117.80	6.37	138.50	97.00	21.10	20.69
	16-May-23	3.58	75.70	6.34	82.40	69.00	13.30	--
SW2	12-Aug-22	1.11	-40.00	4.95	88.20	--	12.90	23.00
	18-Nov-22	2.49	122.00	4.62	82.50	61.00	18.40	--
	15-Feb-23	2.50	-27.90	4.39	137.70	90.00	23.90	80.70
	16-May-23	3.62	206.20	4.02	147.80	116.00	15.80	
SW3	12-Aug-22	1.40	41.10	3.99	259.80	--	11.90	2.80
	18-Nov-22	3.09	80.40	5.62	227.10	164.00	19.50	--
	15-Feb-23	3.00	-72.00	4.72	215.50	138.00	25.60	43.33
	16-May-23	0.98	-24.00	4.36	176.00	143.00	14.70	--
SW4	12-Aug-22	3.75	224.00	4.57	214.00	--	11.30	1.34
	18-Nov-22	3.50	130.20	4.43	217.90	149.00	22.40	--
	15-Feb-23	0.70	-74.00	5.75	253.30	172.00	22.70	4.10
	16-May-23	3.74	292.90	3.96	209.70	172.00	14.00	--
WPW	12-Aug-22	10.09	210.00	5.06	255.00	--	14.70	205.00
	16-Sep-22	9.42	174.50	4.70	208.20	149.00	20.00	1000.34
	24-Oct-22	9.11	145.40	4.73	199.40	143.00	20.20	4120.30
	18-Nov-22	8.57	209.50	4.77	253.60	167.00	24.30	--
	14-Dec-22	8.64	189.50	4.97	267.80	174.00	22.10	3055.60
	17-Jan-23	8.24	195.30	4.69	264.10	167.00	26.50	415.00
	15-Mar-23	8.29	171.90	4.83	297.20	195.00	24.70	468.50
WPW2	15-Feb-23	8.20	470.70	6.10	272.00	164.00	29.00	4.88
	18-Apr-23	8.61	203.30	5.00	226.30	163.00	20.00	56.08
	16-May-23	9.61	249.70	4.71	230.10	173.00	17.80	--
	14-Jun-23	10.70	168.30	4.46	263.50	171.00	14.60	1037.00
	14-Jun-23	10.70	168.30	4.46	263.50	171.00	14.60	1037.00
	24-Jul-23	11.79	448.00	2.65	1207.00	980.00	14.50	1300.00

KENNARDS HIRE

EQUIPMENT CERTIFICATION REPORT

PGN9003871 WATER QUALITY METER – MULTIFUNCTION (YSI)

Plant Number: 1090142

SENSOR	CONCENTRATION	SPAN 1	SPAN 2	TRACEABILITY	PASS
pH	pH 4	pH 4		# 393112	☑
	pH 7	pH 7		# 393113	☑
Conductivity	12.88 mS/cm	12.88 mS/cm		# 395556	☑
Dissolved Oxygen	Sodium Sulphite / Air	0.0ppm in Sodium Sulphite	ppm Saturation in Air	# 12110	☑
ORP	240mV	240mV	Zobell Part A	# 395557	☑
			Zobell Part B	# 395763	
Turbidity	90 NTU	90 NTU		# 403994	☑

Battery Status 100 (%)	Temperature 18.7 °C
Electrical Test & Tag (AS/NZS 3760)	Electrodes Cleaned and Checked

Note: Calibration solution traceability information is available upon request.

Please clean/decontaminate instrument and accessories before returning. A minimum 'Cleaning Fee' $55.00 (Inc GST) may apply if instrument is returned contaminated.

Checked By: Jacob Arnott Date: 19/07/23 Signed: Arnott

Accessories List:

User's Manual	pH and ORP Storage Solution	Transit Case

KLEINFELDER

HYDRASLEEVE™ SAMPLING LOG

Project Number:	Date:	Site Address:
20232071	24/7	Cabbage tree road.

Site Name:	Field Manager:	Weather Observations:
WSS	AK	Raining

Field Measurements													
Well ID	Sample Time	DTW (mbTOC)	Total Depth (mbTOC)	Sample Depth (mbTOC)	Temp (°C)	DO (mg/L)	EC (µc/cm)	TDS (mg/L)	pH	Redox (mV)	Turbidity (NTU)	Description (Odour, Colour, Sheen)
BH1A		5.458	12.25									Gauge only
BH2		5.216	8.84		17.4	4.14	84	64	4.57	103.7	40	It brown, no o/s
BH4		1.246	5.495		15.3	3.41	66	43	5.18	215.7	7.71	Clear No o/s
BH6		3.975	4.92		17.7	8.84	230.2	174	4.91	97	230	Cloudy, white and H/S odours
BH7		1.211	4.52		16.3	5.6	90.6	71	4.83	159.2	5	It yellow/brown H/S odours
BH9A		8.859	12.27		17.8	4.13	125.6	95	4.69	195.5	55.5	It yellow SL H/S odours
BH9		15.916	16.099									Gauge only
BH11		2.421	5.305		16	5.69	102.2	80	4.45	-35.6	137	yellow SL H/S odours
BH12A		2.98	7.29									Gauge only
MW2395		0.912	3.79		15.6	4.37	84.6	67	4.53	~~856~~	217	It brown mod H/S odours
WPW2		—	—		14.5	11.79	1207	980	2.65	~~448~~	1300	Dark brown H/S odours

Damaged wells (identify how damaged):

*Sample Depth is reported as bottom of hydrasleeve depth

KLEINFELDER
Bright People. Right Solutions.

QA/QC SAMPLE REGISTER

Project Number:	Site Name:	Site Address:
20232071	WSS	Cabbage tree Road.

Date:	Field Manager:
24/7	AK

Date Sampled	Field Staff	QC Sample ID	QC Sample Type	Primary Sample	Rinsate Item (Hand auger, low flow pump etc.)	Rinsate Water Batch	Analysing Lab	Analysis Requested
24/7/23	AK	RB_240723	Rinsate	-	HP		ALS	Metals dissolved + PFAS
		TB_240723	Trip blank	-	-			"
		QC01	Duplicate	BH2	-	-		Metals dissolved
		QC01A	triplicate	"	-	-	Eurofins	"

COMMENTS:

ATTACHMENT 3: LABORATORY DOCUMENTATION AND COCS

CERTIFICATE OF ANALYSIS

Work Order	: **ES2324594**	Page	: 1 of 8
Client	: **KLEINFELDER AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: AARON KING	Contact	: Graeme Jablonskas
Address	: 95 MITCHELL ROAD CARDIFF NSW 2285	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9609
Project	: 20232071	Date Samples Received	: 24-Jul-2023 15:29
Order number	: ----	Date Analysis Commenced	: 25-Jul-2023
C-O-C number	: ----	Issue Date	: 27-Jul-2023 14:42
Sampler	: AARON KING		
Site	: WSS Cabbage Tree Road		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BH2	BH4	BH6	BH7	BH9A
				Sampling date / time	24-Jul-2023 00:00	24-Jul-2023 00:00	24-Jul-2023 00:00	24-Jul-2023 00:00	24-Jul-2023 00:00
Compound	CAS Number	LOR	Unit		ES2324594-001	ES2324594-002	ES2324594-003	ES2324594-004	ES2324594-005
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L		**0.007**	**0.013**	**0.005**	**0.004**	**0.045**
Iron	7439-89-6	0.05	mg/L		**0.12**	**0.06**	**6.78**	**0.53**	**0.67**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BH11	MW239S	WPW2	QC01	RB_240723
				Sampling date / time	24-Jul-2023 00:00	24-Jul-2023 00:00	24-Jul-2023 00:00	24-Jul-2023 00:00	24-Jul-2023 00:00
Compound	CAS Number	LOR	Unit		ES2324594-006	ES2324594-007	ES2324594-008	ES2324594-009	ES2324594-010
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L		**0.002**	**0.005**	**0.080**	**0.007**	<0.001
Iron	7439-89-6	0.05	mg/L		**0.86**	**0.25**	**0.39**	**0.13**	<0.05
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	----	**0.01**	----	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	**0.02**	----	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	<0.02	----	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	----	<0.1	----	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	<0.01	----	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	<0.02	----	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	<0.05	----	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	----	<0.02	----	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BH11	MW239S	WPW2	QC01	RB_240723
				Sampling date / time	24-Jul-2023 00:00	24-Jul-2023 00:00	24-Jul-2023 00:00	24-Jul-2023 00:00	24-Jul-2023 00:00
Compound	CAS Number	LOR	Unit		ES2324594-006	ES2324594-007	ES2324594-008	ES2324594-009	ES2324594-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	----	<0.05	----	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	----	<0.05	----	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	----	<0.05	----	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	----	<0.05	----	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	----	<0.02	----	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	----	<0.02	----	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	----	<0.05	----	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	----	<0.05	----	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	----	<0.05	----	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	----	<0.05	----	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	----	**0.03**	----	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	----	**0.03**	----	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	----	**0.03**	----	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	----	**103**	----	**104**
13C8-PFOA	----	0.02	%		----	----	**102**	----	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB_240723	----	----	----	----
				Sampling date / time	24-Jul-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2324594-011	--------	--------	--------	--------
					Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		<0.001	----	----	----	----
Iron	7439-89-6	0.05	mg/L		<0.05	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TB_240723	----	----	----	----
				Sampling date / time	24-Jul-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2324594-011	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**111**	----	----	----	----
13C8-PFOA	----	0.02	%		**102**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2324594**	Page	: 1 of 7
Client	: **KLEINFELDER AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: AARON KING	Contact	: Graeme Jablonskas
Address	: 95 MITCHELL ROAD CARDIFF NSW 2285	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9609
Project	: 20232071	Date Samples Received	: 24-Jul-2023
Order number	: ----	Date Analysis Commenced	: 25-Jul-2023
C-O-C number	: ----	Issue Date	: 27-Jul-2023
Sampler	: AARON KING		
Site	: WSS Cabbage Tree Road		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 5194606)									
ES2324594-010	RB_240723	EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
ES2324586-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5194068)									
ES2324550-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.83	0.74	11.0	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.64	0.62	1.7	0% - 50%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	15.5	14.3	7.6	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.05	<0.05	0.0	No Limit
ES2324550-002	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.06	<0.05	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	13.4	13.5	0.4	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5194068)									
ES2324550-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	2.26	2.22	1.9	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	2.38	2.42	2.0	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	4.86	4.85	0.3	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.83	0.80	4.2	0% - 50%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5194068) - continued									
ES2324550-001	Anonymous	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.11	0.10	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	0.09	0.09	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.2	<0.2	0.0	No Limit
ES2324550-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.10	0.11	9.5	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	2.48	2.27	8.9	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	4.70	4.92	4.7	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.34	0.36	4.7	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.2	<0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5194068)									
ES2324550-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	0.06	0.07	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.12	<0.12	0.0	No Limit
ES2324550-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.12	<0.12	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5194068) - continued									
ES2324550-002	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5194068)									
ES2324550-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.94	0.83	11.7	0% - 50%
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	0.05	0.08	35.4	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2324550-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5194068)									
ES2324550-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	28.6	27.1	5.1	0% - 20%
ES2324550-002	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	21.1	21.2	0.4	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5194606)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	94.0	85.0	114
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	96.6	82.0	110
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.5	82.0	112
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5194068)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	98.7	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	82.6	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	96.2	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	91.0	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	97.8	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5194068)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	94.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	112	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	106	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	100	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	91.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	84.1	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5194068)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	82.8	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	86.6	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	95.7	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.7	57.6	145

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5194068) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	90.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	92.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5194068)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	98.9	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	103	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	109	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	82.5	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 5194606)							
ES2324594-001	BH2	EG020A-F: Arsenic	7440-38-2	1 mg/L	84.7	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	86.4	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5194068)							
ES2324550-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	# Not Determined	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	74.4	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	87.7	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	87.7	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	77.0	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	73.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5194068)							
ES2324550-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	91.5	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	108	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	94.1	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	105	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	90.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	94.9	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	87.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	80.5	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	88.1	72.0	134

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5194068) - continued							
ES2324550-002	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	96.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	71.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5194068)							
ES2324550-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	96.7	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	80.7	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	76.8	62.6	147
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	79.4	66.0	145
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	88.7	57.6	145
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	72.0	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	76.6	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5194068)							
ES2324550-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	88.9	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	103	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	113	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	73.8	71.4	144

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COC number:

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Client:	SITE, COC AND CONTACT DATA						Laboratory:
er Australia Pty Ltd	Site Name:	WSS Cabbage Tree Road		Sampler Name:	Aaron King		ALS
- 244 Pacific Highway	QUOTE NUMBER			Contact Number:	(+61) 457 426 013		5/585 Maitland Rd
Charlestown	Job No.:	20232071		Contact e-mail:	Aking@kleinfelder.com		Mayfield West,
NSW 2290	Required TAT:	24 hrs 48 hrs 3 days 5 days 7 days		PM e-mail:	Dkousbroek@kleinfelder.com		Newcastle NSW 2304
e: 02 4949 5200	Data QA level:	LAB minimum unless specified:		EDD Format	KLF_EFWEDD		Phone: (02) 4014 2500

STODY								Send Results to:
by (print):	A.King	Received by (print):		Relinquished:		Received by:		dkousbroek@kleinfelder.com, aking@kleinfelder.com,
(sign)		(sign)		(sign)		(sign)		
		Date / Time:	24.7.23 3pm	Date / Time:	24.7.23 1700	Date / Time:	24/7/23 1415	Suite 3, 240-244 Pacific Highway Charlestown, NSW 2290 Phone: 02 4949 5200
		Temp. (°C)	3.6	Notes:		Temp. (°C)		
		Notes:	ice present / no ice seals intact / no seal			Notes:	ice present / no ice seals intact / no seal	

ID	Lab ID	Sample Point	Sample Type	Date	Start Depth	End Depth	Units	# Containers	Organic Analytes: TRH, TPH, BTEXN (Silica Gel Clean up)	Organic Analytes	Organic Analytes	Organic Analytes	Organic Analytes	Organic Analytes	Organic Analytes	Organic Analytes	Metals: Dissolved Metals - As, Fe, Mn	Metals	Metals	Other Analytes: PFAS (28 analytes standard Level	Other Analytes: Extended Water quality suite B	Other Analytes	Other Analytes	Other Analytes	Comments
	1		Water	24/07/2023				1									X								
	2		Water	24/07/2023				1									X								
	3		Water	24/07/2023				1									X								
	4		Water	24/07/2023				1									X								
	5		Water	24/07/2023				1									X								
	6		Water	24/07/2023				1									X								
	7		Water	24/07/2023				1									X								
	8		Water	24/07/2023				3									X			X					
	9		Water	24/07/2023				1									X								
			Water	24/07/2023				1									X								please forawrd to Eurofins
	10		Water	24/07/2023				3									X			X					
	11		Water	24/07/2023				3									X			X					

E-MAILED

LAB OF ORIGIN: NEWCASTLE

Environmental Division Sydney
Work Order Reference
ES2324594

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Certificate of Analysis

Kleinfelder Australia Pty Ltd (NEWC)
Suite 3, 240-244 Pacific Hwy
Charlestown
NSW 2290

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **AARON KING**

Report **1010869-W**
Project name WSS CABBAGE TREE ROAD
Project ID 20232071
Received Date Jul 25, 2023

Client Sample ID			**QC01A**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-Jl0055467**
Date Sampled			**Jul 24, 2023**
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.001
Iron (filtered)	0.05	mg/L	0.19
Manganese (filtered)	0.005	mg/L	0.007

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals (filtered)	Sydney	Jul 27, 2023	180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
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WA 6106
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NATA# 2377 Site# 2370

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35 O'Rorke Road	43 Detroit Drive
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Auckland 1061	Christchurch 7675
Tel: +64 9 526 4551	Tel: +64 3 343 5201
IANZ# 1327	IANZ# 1290

Company Name: Kleinfelder Aust Pty Ltd (NEWCASTLE)
Address: Suite 3, 240-244 Pacific Hwy
Charlestown
NSW 2290

Project Name: WSS CABBAGE TREE ROAD
Project ID: 20232071

Order No.:
Report #: 1010869
Phone: 02 4949 5200
Fax:

Received: Jul 25, 2023 1:50 PM
Due: Aug 1, 2023
Priority: 5 Day
Contact Name: AARON KING

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic (filtered)	Iron (filtered)	Manganese (filtered)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	QC01A	Jul 24, 2023		Water	S23-Jl0055467	X	X	X
Test Counts						1	1	1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	96			80-120	Pass	
Iron (filtered)	%	114			80-120	Pass	
Manganese (filtered)	%	100			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S23-Jl0055926	NCP	%	100			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S23-Jl0061246	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron (filtered)	S23-Jl0061246	NCP	mg/L	0.06	0.06	1.8	30%	Pass	
Manganese (filtered)	S23-Jl0061246	NCP	mg/L	0.028	0.029	1.2	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Adam Bateup	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal

Glenn Jackson
Managing Director

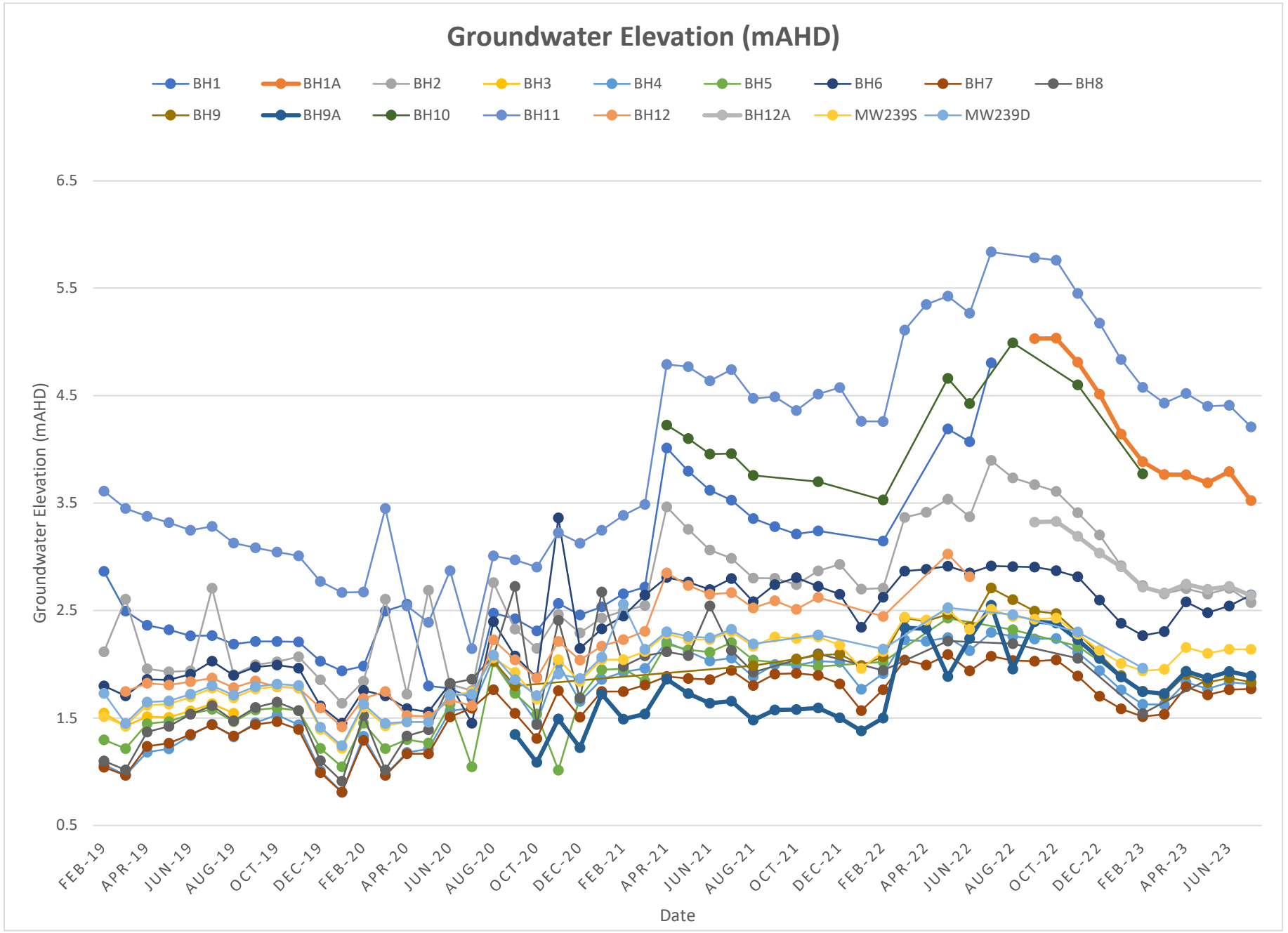
Final Report – this report replaces any previously issued Report

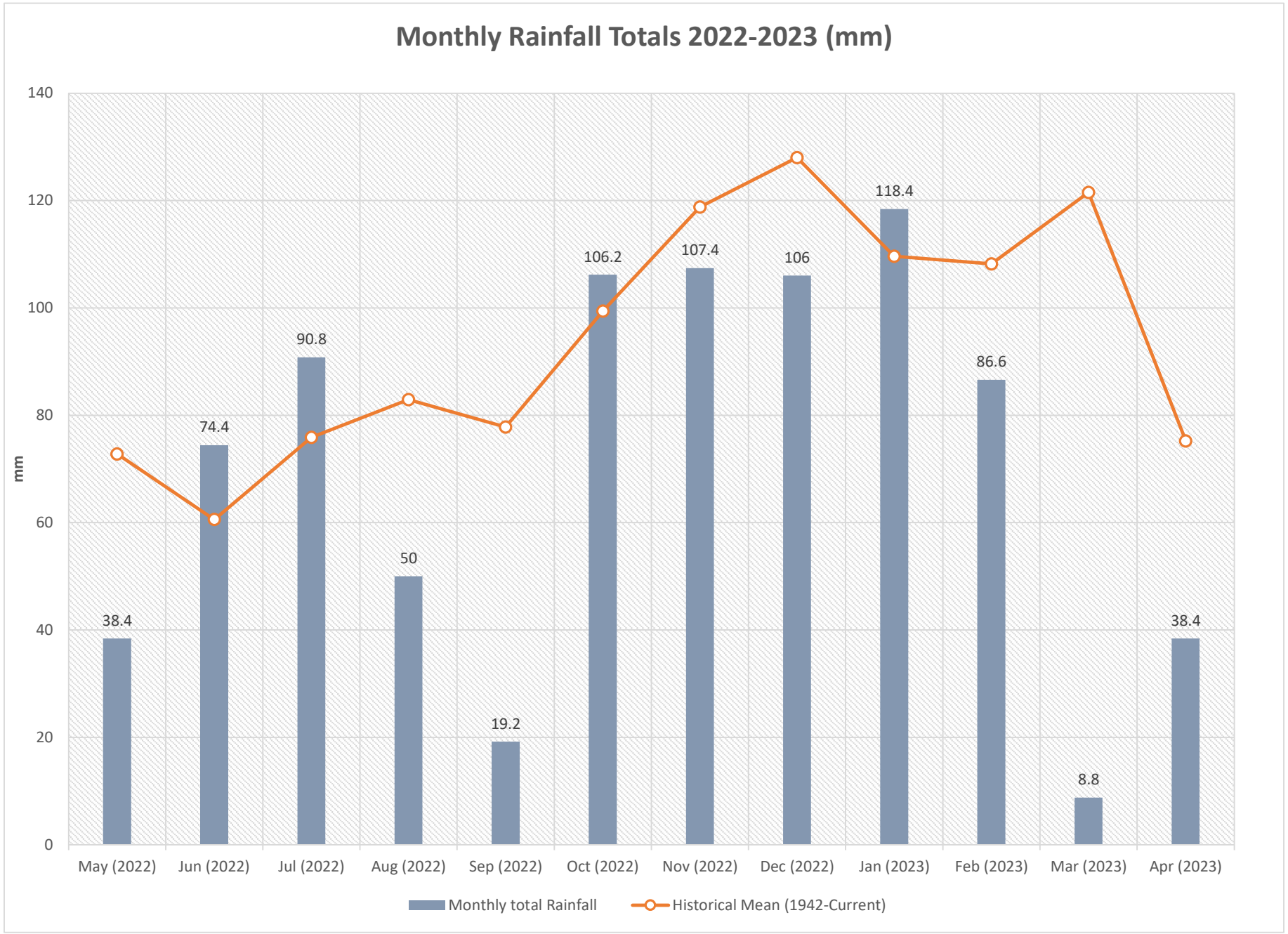
- Indicates Not Requested

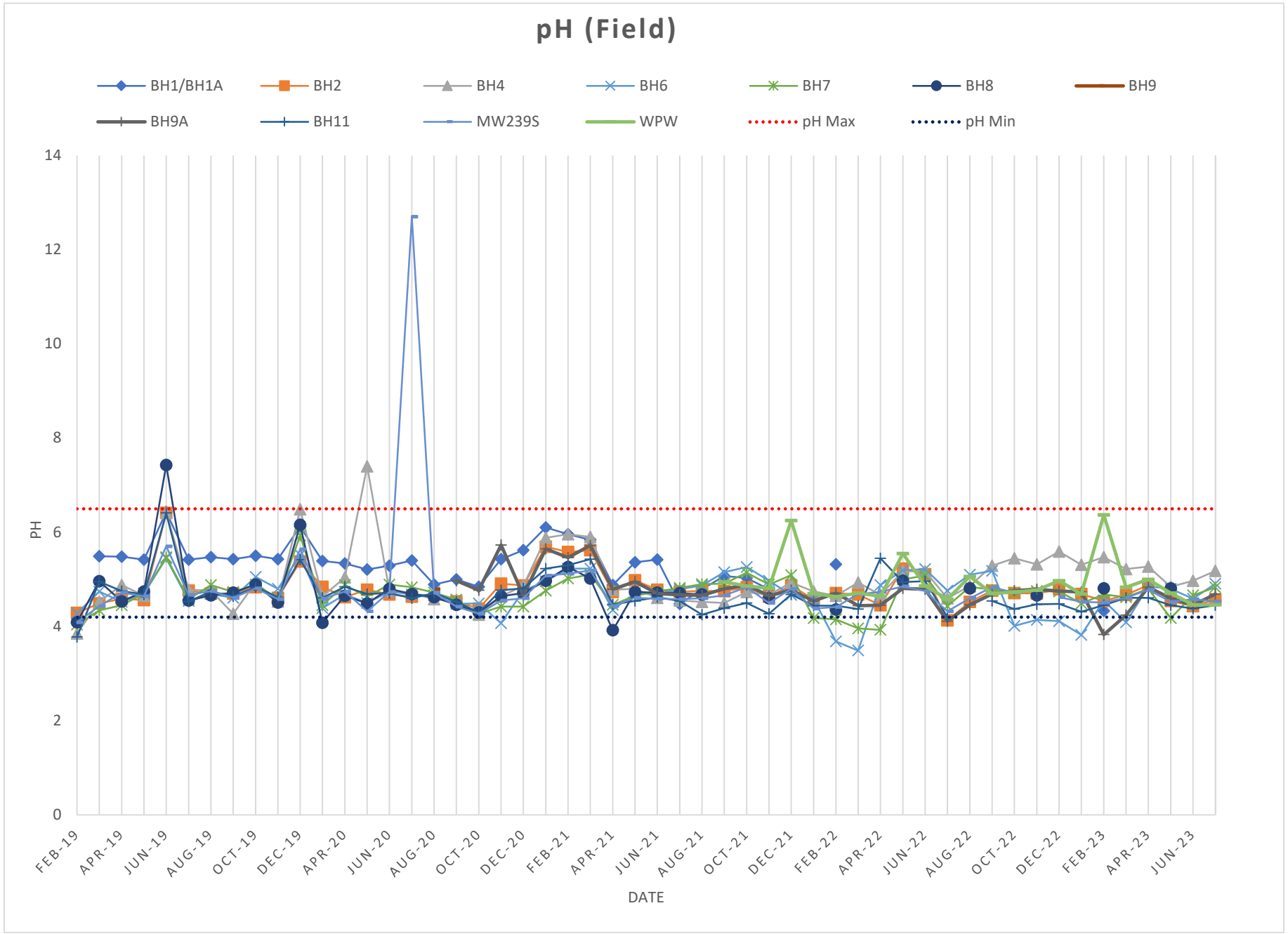
* Indicates NATA accreditation does not cover the performance of this service

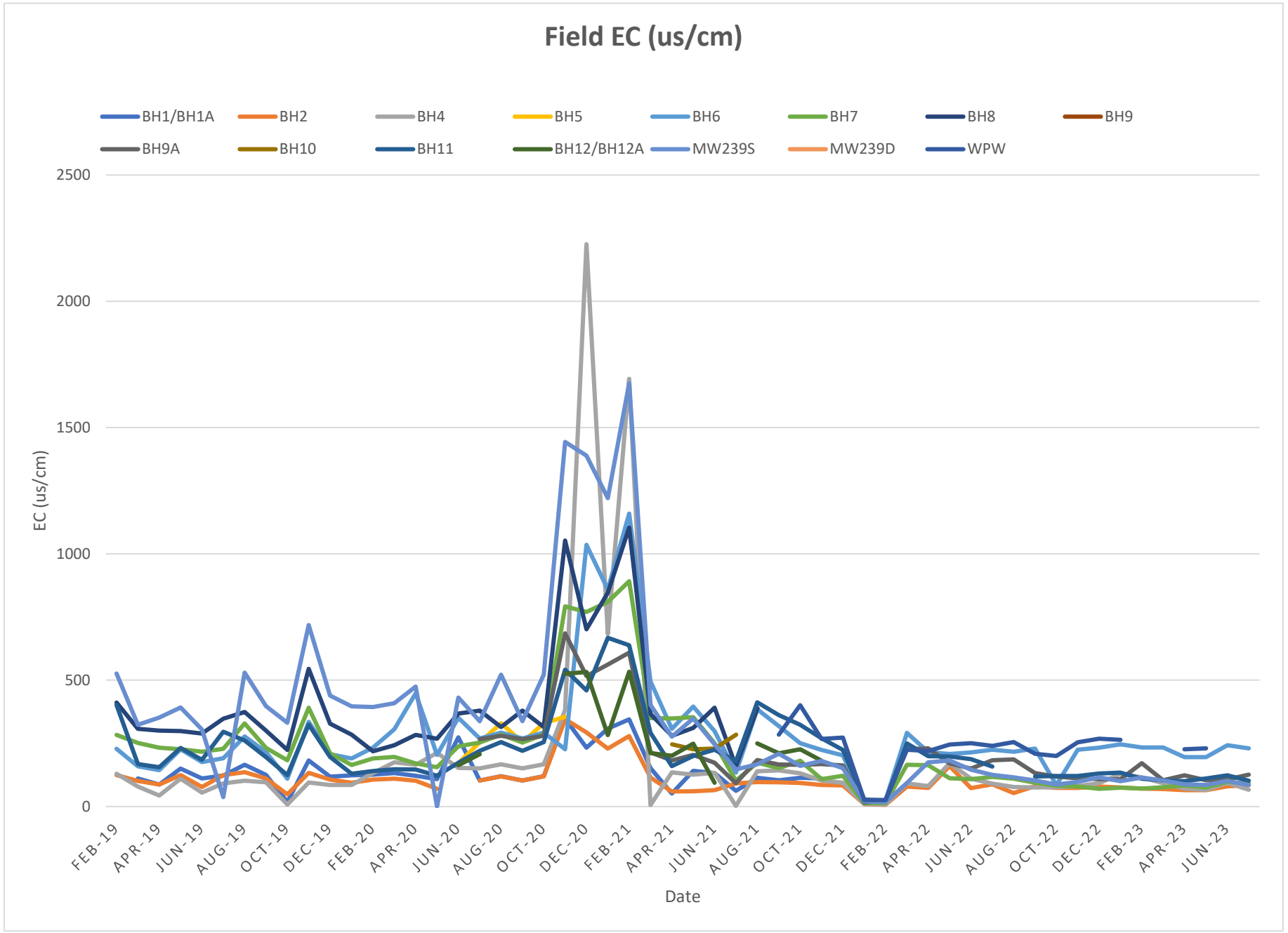
Measurement uncertainty of test data is available on request or please click here.

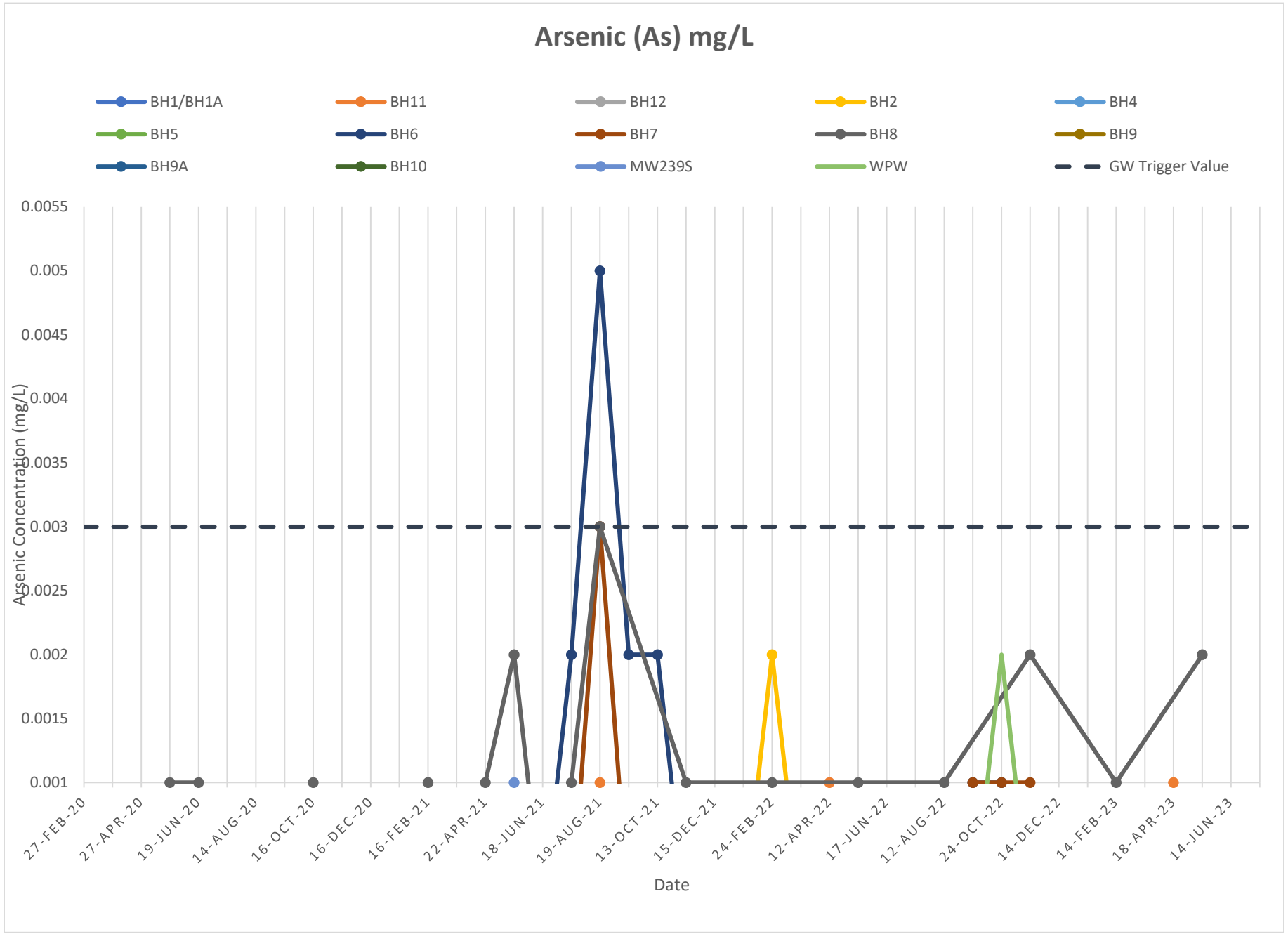
ATTACHMENT 4: DATA TRENDS

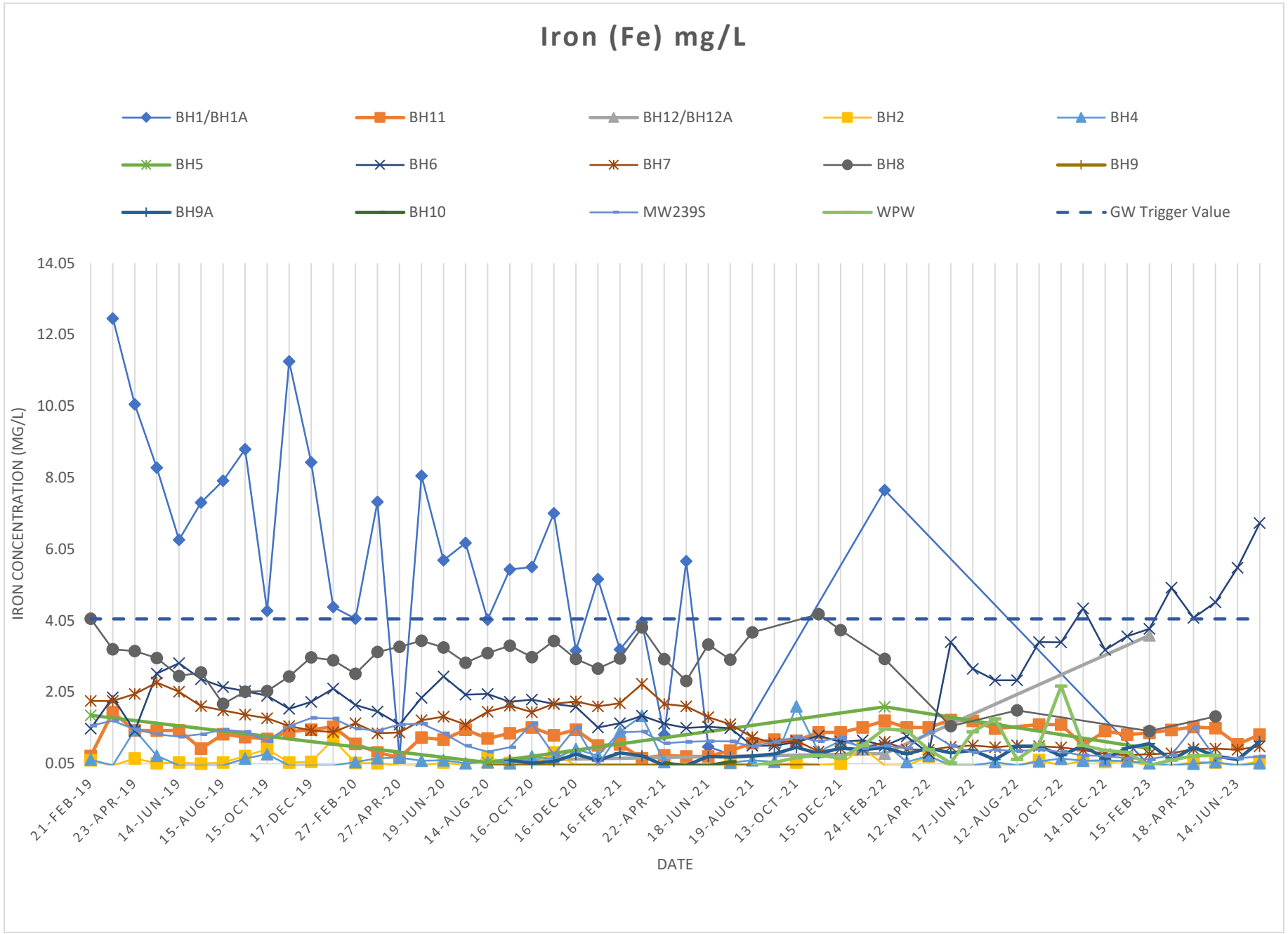

Groundwater Elevation (mAHD)
BH1
BH1A
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH9A
BH10
BH11
BH12
BH12A
MW239S
MW239D
Groundwater Elevation (mAHD)
6.5
5.5
4.5
3.5
2.5
1.5
0.5
FEB-19
APR-19
JUN-19
AUG-19
OCT-19
DEC-19
FEB-20
APR-20
JUN-20
AUG-20
OCT-20
DEC-20
FEB-21
APR-21
JUN-21
AUG-21
OCT-21
DEC-21
FEB-22
APR-22
JUN-22
AUG-22
OCT-22
DEC-22
FEB-23
APR-23
JUN-23
Date

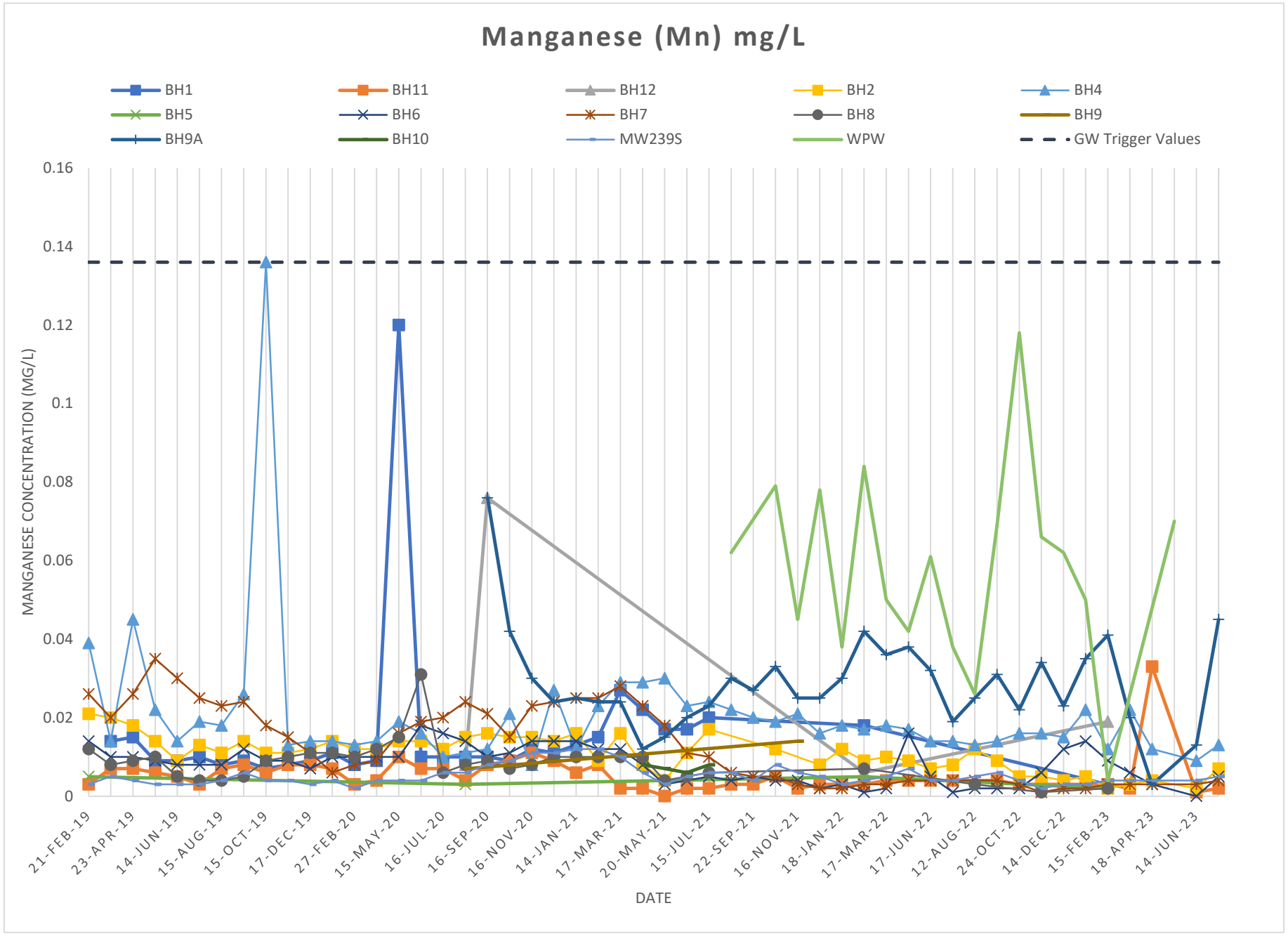

Monthly Rainfall Totals 2022-2023 (mm)
mm
140
120
100
80
60
40
20
0
38.4
74.4
90.8
50
19.2
106.2
107.4
106
118.4
86.6
8.8
38.4
May (2022)
Jun (2022)
Jul (2022)
Aug (2022)
Sep (2022)
Oct (2022)
Nov (2022)
Dec (2022)
Jan (2023)
Feb (2023)
Mar (2023)
Apr (2023)
Monthly total Rainfall
Historical Mean (1942-Current)


pH (Field)
BH1/BH1A
BH2
BH4
BH6
BH7
BH8
BH9
BH9A
BH11
MW239S
WPW
pH Max
pH Min
14
12
10
8
6
4
2
0
PH
FEB-19
APR-19
JUN-19
AUG-19
OCT-19
DEC-19
APR-20
JUN-20
AUG-20
OCT-20
DEC-20
FEB-21
APR-21
JUN-21
AUG-21
OCT-21
DEC-21
FEB-22
APR-22
JUN-22
AUG-22
OCT-22
DEC-22
FEB-23
APR-23
JUN-23
DATE


Field EC (us/cm)
BH1/BH1A
BH2
BH4
BH5
BH6
BH7
BH8
BH9
BH9A
BH10
BH11
BH12/BH12A
MW239S
MW239D
WPW
2500
2000
1500
1000
500
0
EC (us/cm)
FEB-19
APR-19
JUN-19
AUG-19
OCT-19
DEC-19
FEB-20
APR-20
JUN-20
AUG-20
OCT-20
DEC-20
FEB-21
APR-21
JUN-21
AUG-21
OCT-21
DEC-21
FEB-22
APR-22
JUN-22
AUG-22
OCT-22
DEC-22
FEB-23
APR-23
JUN-23
Date


Arsenic (As) mg/L
BH1/BH1A
BH11
BH12
BH2
BH4
BH5
BH6
BH7
BH8
BH9
BH9A
BH10
MW239S
WPW
GW Trigger Value
0.0055
0.005
0.0045
0.004
0.0035
0.003
0.0025
0.002
0.0015
0.001
Arsenic Concentration (mg/L)
27-FEB-20
27-APR-20
19-JUN-20
14-AUG-20
16-OCT-20
16-DEC-20
16-FEB-21
22-APR-21
18-JUN-21
19-AUG-21
13-OCT-21
15-DEC-21
24-FEB-22
12-APR-22
17-JUN-22
12-AUG-22
24-OCT-22
14-DEC-22
14-FEB-23
18-APR-23
14-JUN-23
Date


Iron (Fe) mg/L
BH1/BH1A
BH11
BH12/BH12A
BH2
BH4
BH5
BH6
BH7
BH8
BH9
BH9A
BH10
MW239S
WPW
GW Trigger Value
IRON CONCENTRATION (MG/L)
14.05
12.05
10.05
8.05
6.05
4.05
2.05
0.05
21-FEB-19
23-APR-19
14-JUN-19
15-AUG-19
15-OCT-19
17-DEC-19
27-FEB-20
27-APR-20
19-JUN-20
14-AUG-20
16-OCT-20
16-DEC-20
16-FEB-21
22-APR-21
18-JUN-21
19-AUG-21
13-OCT-21
15-DEC-21
24-FEB-22
12-APR-22
17-JUN-22
12-AUG-22
24-OCT-22
14-DEC-22
15-FEB-23
18-APR-23
14-JUN-23
DATE


Manganese (Mn) mg/L
BH1
BH11
BH12
BH2
BH4
BH5
BH6
BH7
BH8
BH9
BH9A
BH10
MW239S
WPW
GW Trigger Values
MANGANESE CONCENTRATION (MG/L)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
21-FEB-19
23-APR-19
14-JUN-19
15-AUG-19
15-OCT-19
17-DEC-19
27-FEB-20
15-MAY-20
16-JUL-20
16-SEP-20
16-NOV-20
14-JAN-21
17-MAR-21
20-MAY-21
15-JUL-21
22-SEP-21
16-NOV-21
18-JAN-22
17-MAR-22
17-JUN-22
12-AUG-22
24-OCT-22
14-DEC-22
15-FEB-23
18-APR-23
14-JUN-23
DATE