Appendix D Infrastructure Project Summary

Project	Works Dates	Location	Approx. volume of soil disturbed	Other comments
EST00736 Hangar 410 fire system repair/upgrade works	Mid 2019 to Oct 2020	Hangar 410	6000 m^3	Majority of earth works were completed in 2019 and were associated with the construction of a collection tank for wastewater from the fire suppression system.
EST03312 MWD works package	Aug 19 - Aug 20	Military Working Dog Kennel precinct, AP-2	100 m^3	Douglas Partners, Oct 2018, Report on Pre-construction Contamination Assessment Military Working Dog Works.
EST03306 EO Area Building Works	Dec 19 - Apr 20	EO precinct	3 m^3	Disturbed soil re-used on-Base.
EST01170 RAAFSFS Fire School Works	From end 2019 ongoing	Fire Training School AP-2	1100 m^3	Works include the upgrade of the fire training system, including road infrastructure, trenching and refurbishment of the holding ponds. Including soil, asphalt and concrete
EST03313 AP1-1 Building refurbishment	Jan - Nov 20	Property 1, Frog's Hollow	250 m^3	Douglas Partners, Feb 2019, Report on Pre-construction Contamination Assessment Amberley ADFIS.
LAND121 AdBlue facility works	Apr-Oct 2020	Base Vehicle Fuel Point	Unknown	Lendlease, LAND 121 Stage 2A Unite Sustainment Facilities, RAAF Base Amberley, Contamination Management Sub Plan, 11 March 2020.
25m Range works EST03293	Mar to Jul 2020	25 metre range	Unknown	Topsoil stripped and re-used, some earth disturbance for footings, contaminated sand from the bullet catcher removed.
Battlefield Airlifter project	2015 to 2022	Multiple sites	5,000 m^3	Laing O'Rourke is contractor. Multiple projects including evaporation ponds and fire main works.
Canberra bomber shelter works	May 2020	Old Front Gate	Minor	
EST5909 DFI Operations and EST05334 9FSB works initial Base contamination investigation	Jul 2020	9FSB and adjacent to DFI	Unknown	Report, Aurecon, 27 July 2020, EST05334 RAAF Amberley 9RSG Workshop Pre-Construction Contamination Assessment
EST06218 HQ CSG compound	Jul to Aug 2020	Near BLD 901	Unknown	Investigation completed by Douglas Partners.
EST04769 EOD storage works	Started 2020	Compounds 470 and 633	1,023 m^3	Aurecon, 2 December 2019, Amberley Ordnance Storage Works - waste classification of soils.
EST06218 HQ CSG compound site investigation	Started 2020	Near BLD 901	200 m^3	Technical Memorandum, Golder to St Hilliers, Proposed Movement of Soil on-base at RAAF Amberley, 9 Oct 2020.
EST04138 Defence Fuel Transformation Program Risk Reduction Works	Oct 20 to Mar 21	FF2	20 m^3	Sampling will occur during works. Soil disturbance is associated with excavation of a slab for new tank footings.
6ESR Replacing Gravel driveway with concrete within unit lines	Oct - Dec 20	6ESR	< 10 m^3	Material re-used on-Base.
P1005 NAPMP Pavement Maintenance Works	2021 – 2022	Airfield	Unknown	Pavement repairs etc. PMCA was Aurecon. Contractor was Fulton Hogan.
P1005 NAPMP Apron Reconstruction Hangar 832	2021 - 2022	Hangar 832	>4,000m^3	Refer Epic Environmental Material Classification BLD 832 Apron, 18 Dec 2020.
EST03298 Base Roads upgrade	2021	Roads	Unknown	Cardno, 4 June 2020, EST03298 Amberley Base Roads Maintenance, Soil Characterisation Report.
Construction of new STP	Q2 2023- 2024	STP	Unknown	PMCA is Jacobs, contractor is St Hilliers. Major facility upgrade.
P10 Runway upgrade	2022 ongoing	Airfield	Unknown	Fulton Hogan is contractor. Location for asphalt batching plant is being selected. Beneficial reuse of asphalt for perimeter tracks.
EST5349PH6 Growler	2022 ongoing	Various	Unknown	PMCA is Jacobs. Construction of offices. Design phase complete, site selection in process. One site environmentally sensitive area identified (Koalas). Report in process.

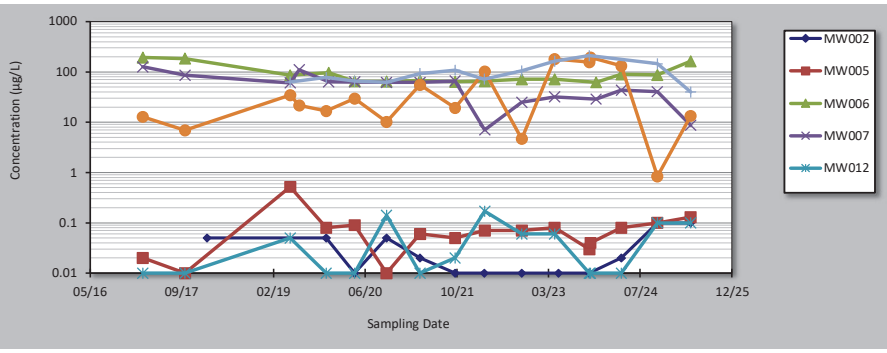
Project	Works Dates	Location	Approx. volume of soil disturbed	Other comments
DFI office works	2022-2023	Next to DFI	Unknown	Habitat clearance and excavation. PMCA Aurecon. Contractor is Apollo.
Air traffic control project	2015 ongoing	Airfield	Unknown	Location of new build has required removal of thousands of trees around the old air traffic control tower and significant excavation.
Northern perimeter fence around airfield	2022- 2023	Northern airfield	Unknown- small volume	Security fence being erected with 300-450 plinths with 600-1000mm deep postholes. Low volume of soil excavated and battered against fence.

Appendix E Trend Assessment

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	MW002	MW005	MW006	MW007	MW012	MW020	MW021
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	21-Feb-17		0.02	194	127	0.01	12.8	
2	1-Mar-17							
3	9-Oct-17		0.01	185	86.2	0.01	6.93	
4	15-Jan-18							
5	6-Feb-18							
6	7-Feb-18	0.05						
7	9-Mar-18							
8	5-Apr-18							
9	1-May-19							
10	6-May-19		0.52	86	60.6	0.05	34.6	63.4
11	25-Jun-19				110.22		21.68	
12	18-Nov-19	0.05	0.08			0.01	16.7	78.2
13	21-Nov-19							
14	2-Dec-19			96.5	64			
15	21-Apr-20	0.01	0.09	65	63.5	0.01	29.7	65.7
16	12-Oct-20	0.05	0.01	64.3	61.8	0.14	10.2	61.8
17	1-Apr-21							
18	13-Apr-21	0.02	0.06	67.3	62.6	0.01	55.4	93.4
19	21-Oct-21	0.01	0.05	64	66.3	0.02	19.3	109
20	26-Nov-21							
21	29-Mar-22	0.01						71.9
22	1-Apr-22		0.07	65.8	7.04	0.17	102	
23	20-Oct-22	0.01	0.07	71.3	25	0.06	4.66	105
24	9-Nov-22							
25	17-Apr-23		0.08	71.4	32.1	0.06	180	164
26	9-May-23	0.01						
27	10-Aug-23							
28	23-Oct-23	0.01						
29	24-Oct-23		0.03			0.01	157	211
30	30-Oct-23		0.04			0.01	194	
31	29-Nov-23			62.6	28.8			
32	15-Apr-24	0.02	0.08	89.9	43.7	0.01	132	
33	3-May-24							
34	11-Jul-24							
35	28-Oct-24	0.1	0.1	86.89	40.7	0.1	0.84	145.96
36	28-Apr-25	0.1	0.13	163.83	8.73	0.1	13.36	39.85
37								
38								
39								
40								
Coefficient of Variation:		0.96	1.33	0.48	0.60	1.08	1.15	0.50
Mann-Kendall Statistic (S):		2	31	-11	-68	26	28	24
Confidence Factor:		52.4%	91.0%	68.7%	99.9%	86.7%	86.5%	94.2%
Concentration Trend:		No Trend	Prob. Increasing	Stable	Decreasing	No Trend	No Trend	Prob. Increasing



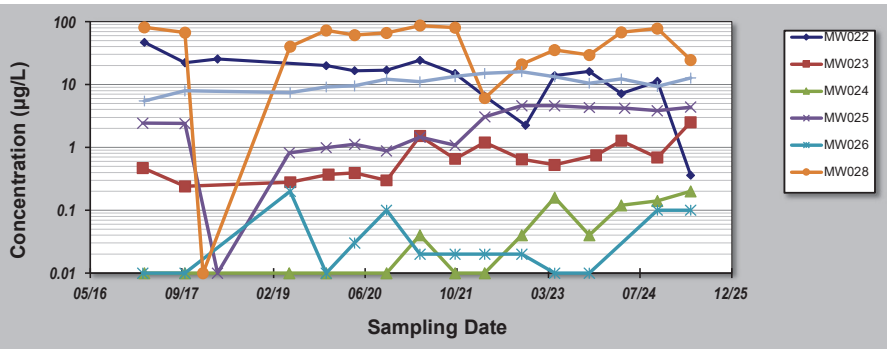
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	MW022	MW023	MW024	MW025	MW026	MW028	MW029
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	21-Feb-17		0.47		2.43	0.01		
2	1-Mar-17	47.1		0.01			80.9	5.49
3	9-Oct-17	22.2	0.24	0.01	2.4	0.01	67.1	7.94
4	15-Jan-18						0.01	
5	6-Feb-18							
6	7-Feb-18							
7	9-Mar-18							
8	5-Apr-18	25.6			0.01			
9	1-May-19			0.01	0.82			
10	6-May-19		0.28			0.2	40	7.45
11	25-Jun-19							
12	18-Nov-19	20		0.01	0.99	0.01	72.7	9.17
13	21-Nov-19							
14	2-Dec-19		0.37					
15	21-Apr-20	16.6	0.39		1.12	0.03	61.1	9.54
16	12-Oct-20	17	0.3	0.01	0.88	0.1	66	12.2
17	1-Apr-21							
18	13-Apr-21	24.4	1.51	0.04	1.45	0.02	86.7	11.1
19	21-Oct-21	15	0.66	0.01	1.08	0.02	80.5	13.4
20	26-Nov-21							
21	29-Mar-22	6.62						
22	1-Apr-22		1.2	0.01	3.06	0.02	6.06	15.1
23	20-Oct-22		0.65	0.04	4.59	0.02	20.9	16
24	9-Nov-22	2.26						
25	17-Apr-23	13.9	0.53	0.16	4.6	0.01	35.5	13.3
26	9-May-23							
27	10-Aug-23							
28	23-Oct-23							
29	24-Oct-23	16.2		0.04	4.31	0.01	29.5	10.5
30	30-Oct-23							
31	29-Nov-23		0.75					
32	15-Apr-24	7.15	1.28	0.12			68.1	12.3
33	3-May-24				4.19			
34	11-Jul-24							
35	28-Oct-24	11.21	0.69	0.14	3.84	0.1	78.02	9.35
36	28-Apr-25	0.36	2.52	0.2	4.36	0.1	24.57	12.73
37								
38								
39								
40								
Coefficient of Variation:		0.69	0.78	1.16	0.65	1.20	0.56	0.26
Mann-Kendall Statistic (S):		-71	59	57	60	10	-12	49
Confidence Factor:		>99.9%	99.9%	99.9%	99.7%	68.6%	68.7%	99.2%
Concentration Trend:		Decreasing	Increasing	Increasing	Increasing	No Trend	Stable	Increasing



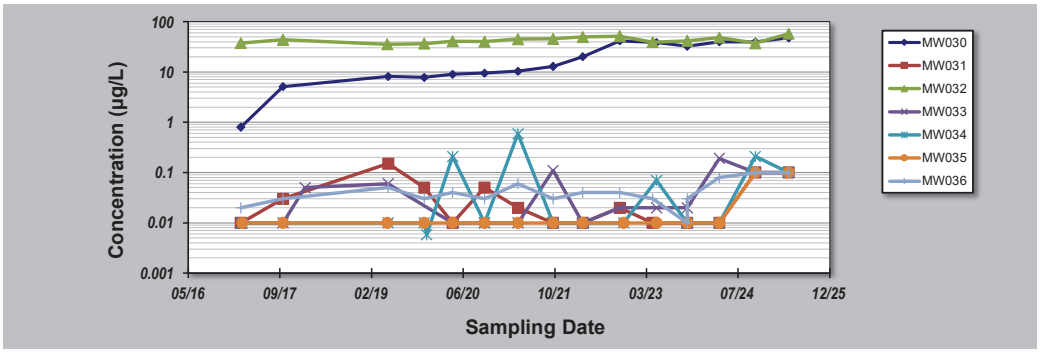
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	MW030	MW031	MW032	MW033	MW034	MW035	MW036
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	21-Feb-17	0.8	0.01	37.4	0.01			0.02
2	1-Mar-17					0.01	0.01	
3	9-Oct-17	5.13	0.03	43.7	0.01		0.01	0.03
4	15-Jan-18							
5	6-Feb-18							
6	7-Feb-18				0.05			
7	9-Mar-18							
8	5-Apr-18							
9	1-May-19			35.6			0.01	
10	6-May-19	8.11	0.15		0.06	0.01		0.05
11	25-Jun-19							
12	18-Nov-19	7.76	0.05	36.7		0.01	0.01	0.03
13	21-Nov-19							
14	2-Dec-19					0.0058		
15	21-Apr-20	8.98	0.01	40.8	0.01	0.21	0.01	0.04
16	12-Oct-20	9.48	0.05	40.1	0.01	0.01	0.01	0.03
17	1-Apr-21							
18	13-Apr-21	10.3	0.02	44.9	0.01	0.59	0.01	0.06
19	21-Oct-21	12.9	0.01	45.8	0.11	0.01	0.01	0.03
20	26-Nov-21							
21	29-Mar-22							
22	1-Apr-22	20.2	0.01	49.7	0.01	0.01	0.01	0.04
23	20-Oct-22	41.5	0.02	51.4	0.02			0.04
24	9-Nov-22					0.01	0.01	
25	17-Apr-23		0.01	39.3				0.03
26	9-May-23	38.5			0.02	0.07	0.01	
27	10-Aug-23							
28	23-Oct-23	32.5	0.01			0.01		0.01
29	24-Oct-23			41.7	0.02		0.01	0.03
30	30-Oct-23							
31	29-Nov-23							
32	15-Apr-24	39.9	0.01	48.4	0.19	0.01	0.01	0.08
33	3-May-24							
34	11-Jul-24							
35	28-Oct-24	39.66	0.1	37.12	0.1	0.21	0.1	0.1
36	28-Apr-25	47.76	0.1	57.56	0.1	0.1	0.1	0.1
37								
38								
39								
40								
Coefficient of Variation:		0.76	1.11	0.15	1.11	1.84	1.44	0.60
Mann-Kendall Statistic (S):		91	-5	41	42	24	26	37
Confidence Factor:		>99.9%	57.7%	97.7%	98.0%	87.0%	89.0%	94.7%
Concentration Trend:		Increasing	No Trend	Increasing	Increasing	No Trend	No Trend	Prob. Increasing



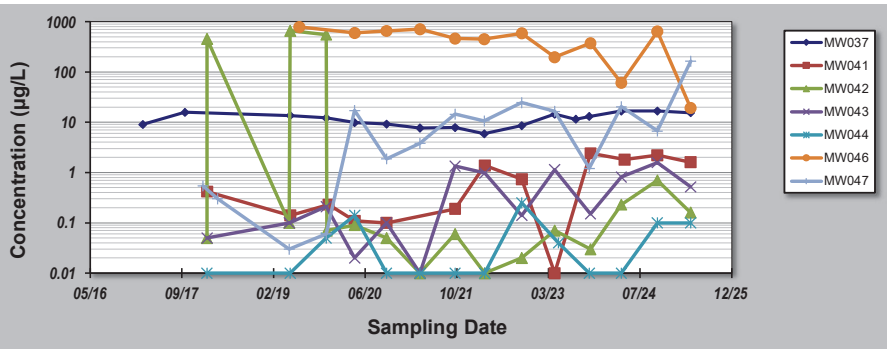
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	MW037	MW041	MW042	MW043	MW044	MW046	MW047
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	21-Feb-17	9.05						
2	1-Mar-17							
3	9-Oct-17	15.7						
4	15-Jan-18							0.54
5	6-Feb-18			0.05		0.01		
6	7-Feb-18		0.42	456	0.05			
7	9-Mar-18							
8	5-Apr-18							0.3
9	1-May-19			0.1	0.1			0.03
10	6-May-19	13.6	0.14	663		0.01		
11	25-Jun-19						784.48	
12	18-Nov-19	12.2		551	0.21	0.05		0.06
13	21-Nov-19			0.07				
14	2-Dec-19		0.23					
15	21-Apr-20	9.84	0.11	0.09	0.02	0.14	597	17.2
16	12-Oct-20	9.15	0.1	0.05	0.1	0.01	654	1.87
17	1-Apr-21							
18	13-Apr-21	7.7		0.01	0.01	0.01	707	3.8
19	21-Oct-21	7.85	0.19	0.06	1.34	0.01	462	14.5
20	26-Nov-21							
21	29-Mar-22	5.91					450	10.6
22	1-Apr-22		1.38	0.01	0.98	0.01		
23	20-Oct-22	8.56	0.74	0.02	0.14	0.25	587	24.5
24	9-Nov-22							
25	17-Apr-23	14.5	0.01	0.07	1.14		196	16.4
26	9-May-23					0.04		
27	10-Aug-23	11.5						
28	23-Oct-23	13						
29	24-Oct-23					0.01		1.21
30	30-Oct-23		2.43	0.03	0.15		373	
31	29-Nov-23							
32	15-Apr-24	16.7		0.23	0.82	0.01	60.6	20.4
33	3-May-24		1.81					
34	11-Jul-24							
35	28-Oct-24	16.7	2.2	0.7	1.58	0.1	636.29	6.67
36	28-Apr-25	15.44	1.61	0.16	0.52	0.1	19.15	163.69
37								
38								
39								
40								
Coefficient of Variation:		0.30	1.01	2.26	1.08	1.31	0.55	2.18
Mann-Kendall Statistic (S):		25	28	-15	38	16	-40	53
Confidence Factor:		85.7%	95.0%	71.5%	97.9%	79.1%	99.7%	99.6%
Concentration Trend:		No Trend	Prob. Increasing	No Trend	Increasing	No Trend	Decreasing	Increasing



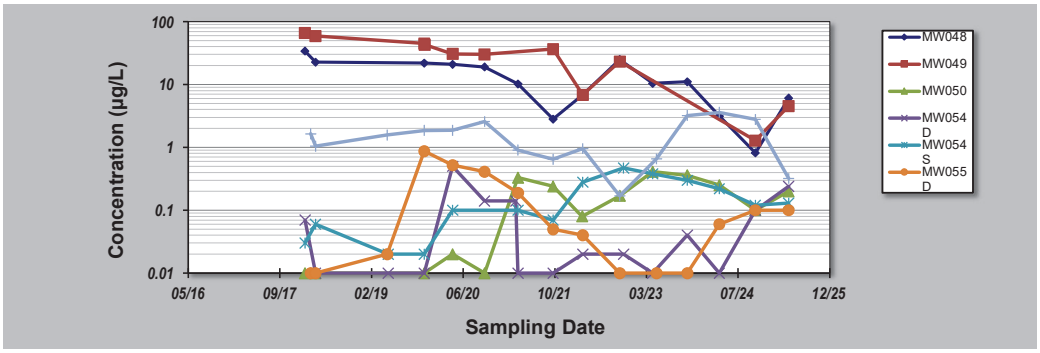
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	MW048	MW049	MW050	MW054D	MW054S	MW055D	MW055S
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	21-Feb-17							
2	1-Mar-17							
3	9-Oct-17							
4	15-Jan-18							
5	6-Feb-18	34.1	66.3	0.01				
6	7-Feb-18				0.07	0.03		
7	9-Mar-18						0.01	1.64
8	5-Apr-18	22.7	59.1	0.01	0.01	0.06	0.01	1.05
9	1-May-19						0.02	1.58
10	6-May-19				0.01	0.02		
11	25-Jun-19							
12	18-Nov-19	22	45	0.01	0.01	0.02	0.87	1.86
13	21-Nov-19		43					
14	2-Dec-19							
15	21-Apr-20	20.9	30.7	0.02	0.5	0.1	0.52	1.87
16	12-Oct-20	19	30.1	0.01	0.14		0.41	2.58
17	1-Apr-21				0.14			
18	13-Apr-21	10.2		0.33	0.01	0.1	0.19	0.91
19	21-Oct-21	2.82	36.8	0.24	0.01	0.07	0.05	0.65
20	26-Nov-21							
21	29-Mar-22	6.73		0.08				
22	1-Apr-22		6.88		0.02	0.28	0.04	0.96
23	20-Oct-22	25.1	23.2	0.17			0.01	0.17
24	9-Nov-22				0.02	0.47		
25	17-Apr-23	10.4		0.41	0.01	0.38		
26	9-May-23						0.01	0.66
27	10-Aug-23							
28	23-Oct-23							
29	24-Oct-23	11.1		0.36	0.04	0.3	0.01	3.22
30	30-Oct-23							
31	29-Nov-23							
32	15-Apr-24	3.15		0.25	0.01	0.22	0.06	3.6
33	3-May-24							
34	11-Jul-24							
35	28-Oct-24	0.82	1.28	0.1	0.1	0.12	0.1	2.78
36	28-Apr-25	6.07	4.56	0.2	0.24	0.13	0.1	0.32
37								
38								
39								
40								
Coefficient of Variation:		0.72	0.68	0.91	1.55	0.87	1.55	0.67
Mann-Kendall Statistic (S):		-53	-47	43	13	43	-2	-1
Confidence Factor:		99.8%	>99.9%	99.0%	70.3%	99.0%	52.0%	50.0%
Concentration Trend:		Decreasing	Decreasing	Increasing	No Trend	Increasing	No Trend	Stable



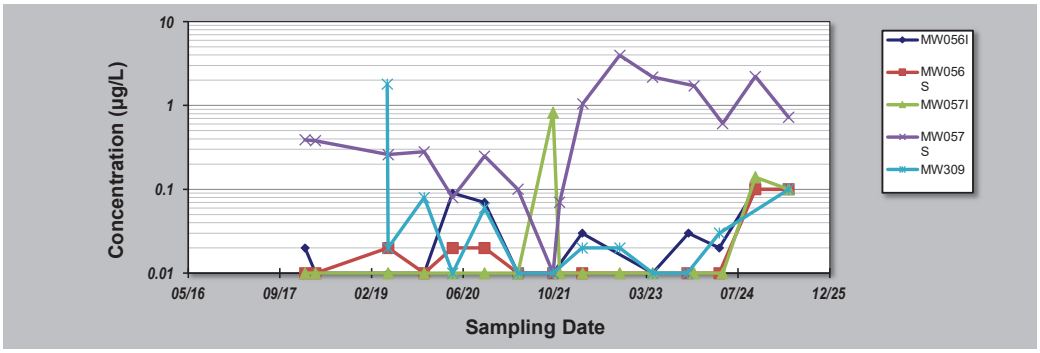
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	MW056I	MW056S	MW057I	MW057S	MW309		
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	21-Feb-17							
2	1-Mar-17							
3	9-Oct-17							
4	15-Jan-18							
5	6-Feb-18							
6	7-Feb-18	0.02	0.01	0.01	0.39			
7	9-Mar-18							
8	5-Apr-18	0.01	0.01	0.01	0.38			
9	1-May-19					1.8		
10	6-May-19	0.01	0.02	0.01	0.26	0.02		
11	25-Jun-19							
12	18-Nov-19	0.01	0.01	0.01	0.28	0.08		
13	21-Nov-19							
14	2-Dec-19							
15	21-Apr-20	0.09	0.02	0.01	0.08	0.01		
16	12-Oct-20	0.07	0.02	0.01	0.25	0.06		
17	1-Apr-21							
18	13-Apr-21	0.01	0.01	0.01	0.1	0.01		
19	21-Oct-21	0.01	0.01	0.82	0.01	0.01		
20	26-Nov-21			0.01	0.07			
21	29-Mar-22	0.03	0.01			0.02		
22	1-Apr-22			0.01	1.05			
23	20-Oct-22			0.01	3.97	0.02		
24	9-Nov-22							
25	17-Apr-23	0.01		0.01	2.18	0.01		
26	9-May-23							
27	10-Aug-23							
28	23-Oct-23							
29	24-Oct-23		0.01			0.01		
30	30-Oct-23	0.03						
31	29-Nov-23			0.01	1.72			
32	15-Apr-24	0.02	0.01			0.03		
33	3-May-24			0.01	0.61			
34	11-Jul-24							
35	28-Oct-24	0.1	0.1	0.14	2.22			
36	28-Apr-25	0.1	0.1	0.1	0.72	0.1		
37								
38								
39								
40								
Coefficient of Variation:		0.97	1.26	2.72	1.23	2.93		
Mann-Kendall Statistic (S):		29	14	24	30	-9		
Confidence Factor:		93.7%	78.2%	84.7%	90.3%	68.4%		
Concentration Trend:		Prob. Increasing	No Trend	No Trend	Prob. Increasing	No Trend		



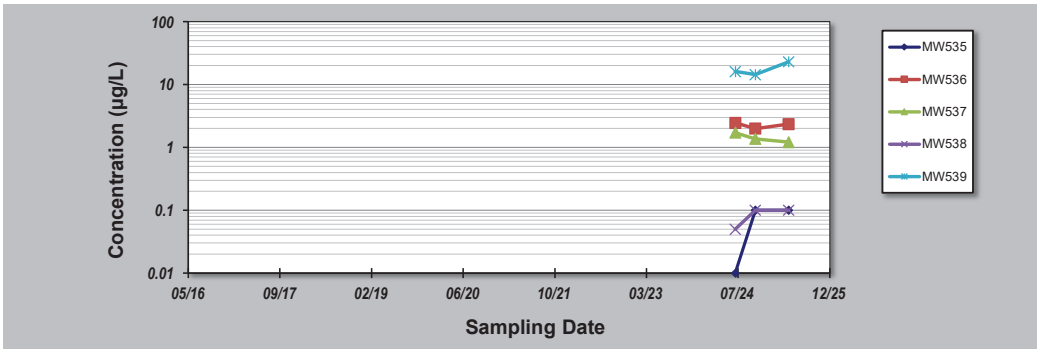
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	MW535	MW536	MW537	MW538	MW539		
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	21-Feb-17							
2	1-Mar-17							
3	9-Oct-17							
4	15-Jan-18							
5	6-Feb-18							
6	7-Feb-18							
7	9-Mar-18							
8	5-Apr-18							
9	1-May-19							
10	6-May-19							
11	25-Jun-19							
12	18-Nov-19							
13	21-Nov-19							
14	2-Dec-19							
15	21-Apr-20							
16	12-Oct-20							
17	1-Apr-21							
18	13-Apr-21							
19	21-Oct-21							
20	26-Nov-21							
21	29-Mar-22							
22	1-Apr-22							
23	20-Oct-22							
24	9-Nov-22							
25	17-Apr-23							
26	9-May-23							
27	10-Aug-23							
28	23-Oct-23							
29	24-Oct-23							
30	30-Oct-23							
31	29-Nov-23							
32	15-Apr-24							
33	3-May-24							
34	11-Jul-24	0.01	2.47	1.72	0.05	16.1		
35	28-Oct-24	0.1	1.99	1.37	0.1	14.35		
36	28-Apr-25	0.1	2.34	1.21	0.1	23.03		
37								
38								
39								
40								
Coefficient of Variation:		0.74	0.11	0.18	0.35	0.26		
Mann-Kendall Statistic (S):		2	-1	-3	2	1		
Confidence Factor:								
Concentration Trend:								



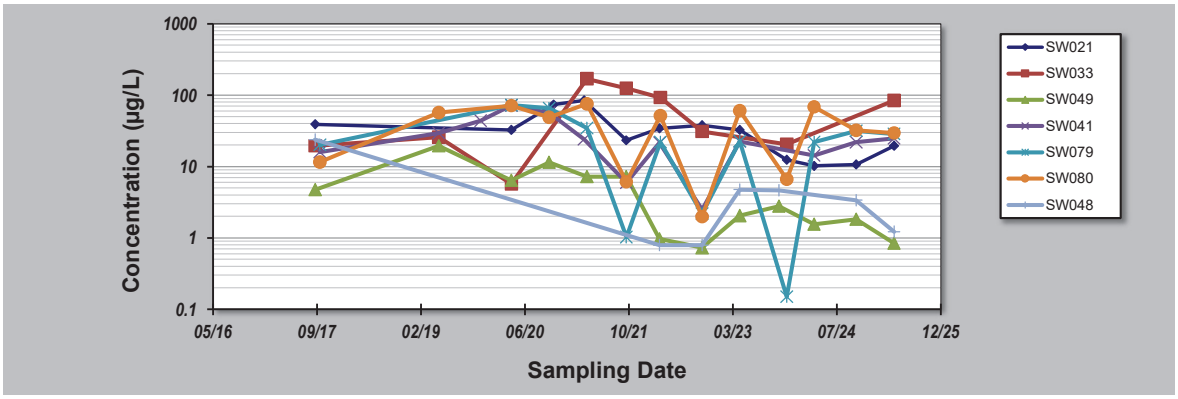
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	SW021	SW033	SW049	SW041	SW079	SW080	SW048
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	30-May-17							
2	1-Jun-17							
3	13-Sep-17	39	19.4	4.75				23.7
4	6-Oct-17				16	20.1	11.5	
5	18-Jan-18							
6	29-Apr-19							
7	1-May-19		25.8	19.5	29.5		56.9	
8	18-Nov-19				43.9			
9	20-Nov-19							
10	29-Nov-19							
11	14-Apr-20	32.4	5.7	6.4	71.8	72.2	71.3	
12	12-Oct-20			11.4	56.4	65.8	49	
13	3-Nov-20	73.6						
14	30-Mar-21	84.6			24			
15	12-Apr-21		169	7.25		34.5	75.4	
16	19-Oct-21	23.2	125	7.21	5.93	1.03	6.1	
17	28-Mar-22	34.4		0.97	21.4			0.79
18	1-Apr-22		92.3			22	51.2	
19	18-Oct-22	37.7	30.9	0.73	2.49	2.19	1.98	0.79
20	17-Apr-23	32.5		2.05	22.5	22.6	60.6	4.75
21	9-May-23							
22	10-Aug-23							
23	23-Oct-23			2.78				4.65
24	29-Nov-23	12.4	20.4			0.15	6.62	
25	9-Apr-24	10.2		1.56	14.3	21.8	68.4	
26	28-Oct-24	10.65		1.82	21.91	31.54	32.09	3.37
27	28-Apr-25	19.5	84.08	0.84	24.96	28.57	29.48	1.22
28								
29								
30								
Coefficient of Variation:		0.69	0.89	1.04	0.72	0.85	0.67	1.45
Mann-Kendall Statistic (S):		-34	4	-40	-16	-10	-8	-4
Confidence Factor:		99.0%	61.9%	99.3%	81.6%	72.7%	66.2%	66.7%
Concentration Trend:		Decreasing	No Trend	Decreasing	Stable	Stable	Stable	No Trend



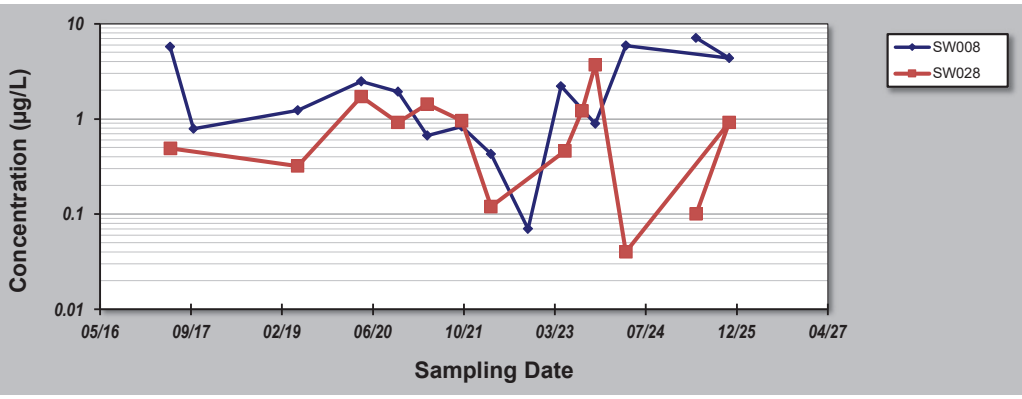
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-24	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	SW008	SW028					
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	30-May-17	5.73						
2	1-Jun-17		0.49					
3	13-Sep-17							
4	6-Oct-17	0.79						
5	18-Jan-18							
6	29-Apr-19							
7	1-May-19	1.23	0.32					
8	18-Nov-19							
9	20-Nov-19							
10	29-Nov-19							
11	14-Apr-20	2.48	1.72					
12	12-Oct-20							
13	3-Nov-20	1.93	0.92					
14	30-Mar-21							
15	12-Apr-21	0.67	1.43					
16	19-Oct-21	0.83	0.96					
17	28-Mar-22	0.43	0.12					
18	1-Apr-22							
19	18-Oct-22	0.07						
20	17-Apr-23	2.21						
21	9-May-23		0.46					
22	10-Aug-23		1.21					
23	23-Oct-23	0.89	3.7					
24	29-Nov-23							
25	9-Apr-24	5.9	0.04					
26	28-Oct-25	4.35	0.92					
27	28-Apr-25	7.1	0.1					
28								
29								
30								
Coefficient of Variation:		0.94	1.03					
Mann-Kendall Statistic (S):		15	-11					
Confidence Factor:		77.5%	72.5%					
Concentration Trend:		No Trend	No Trend					



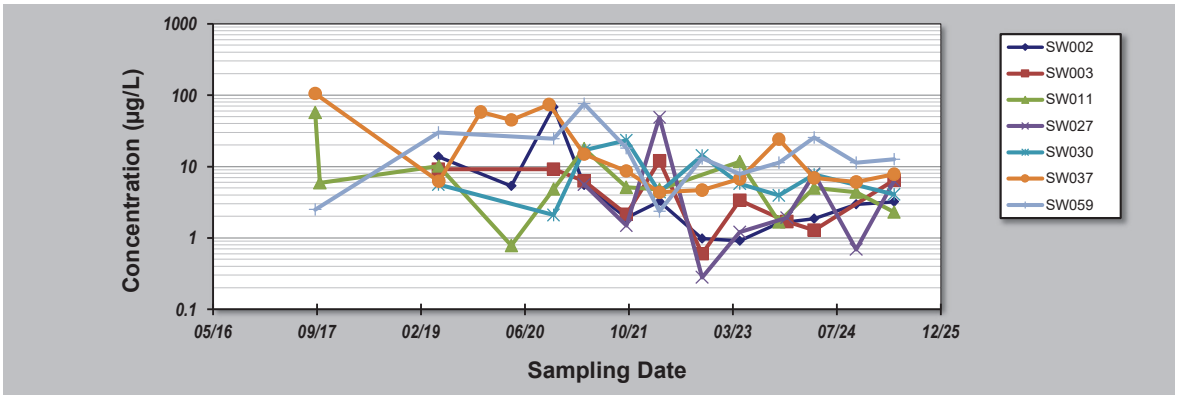
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	SW002	SW003	SW011	SW027	SW030	SW037	SW059
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	30-May-17							
2	1-Jun-17							
3	13-Sep-17			57.2			105	2.49
4	6-Oct-17			5.88				
5	18-Jan-18							
6	29-Apr-19	13.7	9.15			5.59		29.9
7	1-May-19			10.2			6.22	
8	18-Nov-19						58.1	
9	20-Nov-19							
10	29-Nov-19							
11	14-Apr-20	5.37		0.78			44.8	
12	12-Oct-20						73.8	
13	3-Nov-20	68.5	9.17	4.84		2.09		24.5
14	30-Mar-21	5.52	6.26	17.8	5.57	16.9	14.9	75.7
15	12-Apr-21							
16	19-Oct-21	1.93	2.14	5.12	1.48	23.4	8.65	18
17	28-Mar-22	3.24	12	4.78	48.8	4.37	4.34	2.36
18	1-Apr-22							
19	18-Oct-22	0.98	0.6		0.28	14.3	4.66	13
20	17-Apr-23	0.91	3.36	11.7	1.2	5.75	6.7	7.84
21	9-May-23							
22	10-Aug-23							
23	23-Oct-23	1.62		1.68		3.93	24.1	11.3
24	29-Nov-23		1.69		1.93			
25	9-Apr-24	1.86	1.29	5	7.9	7.71	6.88	25.4
26	28-Oct-24	2.95		4.36	0.69		6.07	11.31
27	28-Apr-25	3.22	6.45	2.3	6.33	4.07	7.78	12.62
28								
29								
30								
Coefficient of Variation:		2.08	0.76	1.47	1.88	0.79	1.20	1.01
Mann-Kendall Statistic (S):		-26	-15	-30	0	-5	-33	-8
Confidence Factor:		95.7%	89.2%	96.2%	46.0%	63.6%	96.0%	68.1%
Concentration Trend:		Decreasing	Stable	Decreasing	No Trend	Stable	Decreasing	No Trend



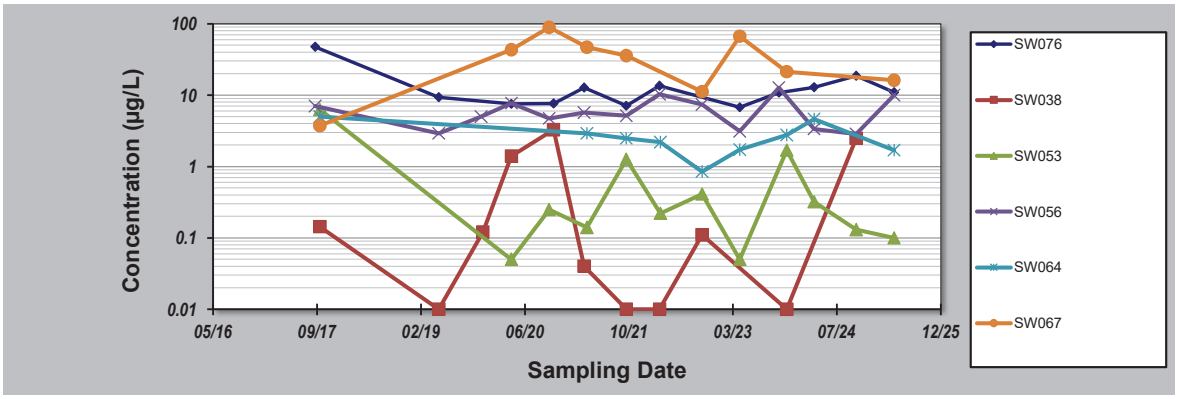
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	SW076	SW038	SW053	SW056	SW064	SW067	
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	30-May-17							
2	1-Jun-17							
3	13-Sep-17	47.4			7.03			
4	6-Oct-17		0.143	6.27		4.98	3.72	
5	18-Jan-18							
6	29-Apr-19							
7	1-May-19	9.35	0.01		2.91			
8	18-Nov-19				5.015.31			
9	20-Nov-19				4.99			
10	29-Nov-19		0.12					
11	14-Apr-20	7.51	1.39	0.05	7.73		43.2	
12	12-Oct-20			0.25	4.72		88.9	
13	3-Nov-20	7.6	3.28					
14	30-Mar-21	12.7	0.04		5.68			
15	12-Apr-21			0.14		2.92	46.8	
16	19-Oct-21	7.09	0.01	1.27	5.12	2.48	35.6	
17	28-Mar-22	13.5	0.01		10.3			
18	1-Apr-22			0.22		2.19		
19	18-Oct-22		0.11	0.41	7.39	0.85	11.2	
20	17-Apr-23	6.73		0.05	3.12	1.72	66.9	
21	9-May-23							
22	10-Aug-23							
23	23-Oct-23	10.8			12.7			
24	29-Nov-23		0.01	1.7		2.76	21.2	
25	9-Apr-24	12.9		0.32	3.36	4.64		
26	28-Oct-24	18.68	2.48	0.13	2.85			
27	28-Apr-25	10.96		0.1	9.95	1.7	16.1	
28								
29								
30								
Coefficient of Variation:		0.81	1.69	1.94	0.49	0.50	0.75	
Mann-Kendall Statistic (S):		6	-5	-11	5	-12	-4	
Confidence Factor:		63.1%	61.9%	74.9%	58.5%	87.0%	61.9%	
Concentration Trend:		No Trend	No Trend	No Trend	No Trend	Stable	Stable	



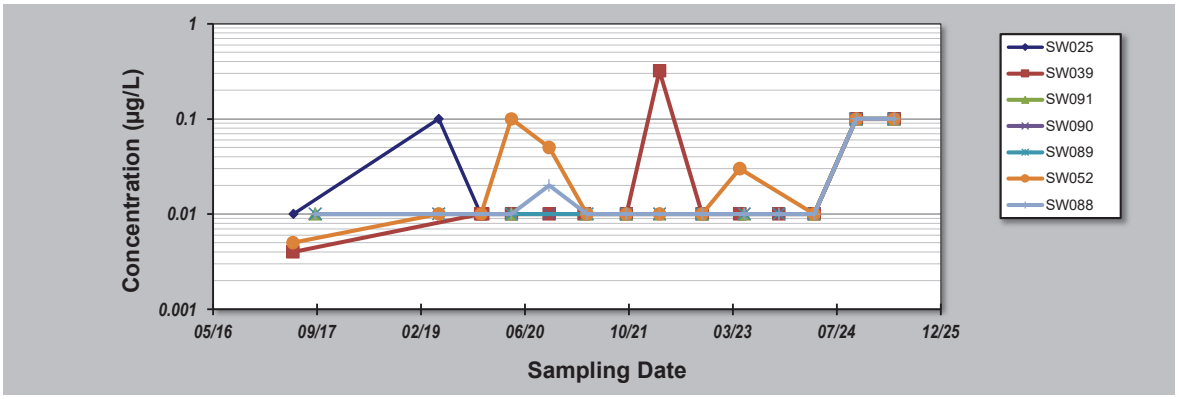
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	SW025	SW039	SW091	SW090	SW089	SW052	SW088
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	30-May-17		0.004				0.005	
2	1-Jun-17	0.01						
3	13-Sep-17			0.01	0.01	0.01		0.01
4	6-Oct-17							
5	18-Jan-18							
6	29-Apr-19							
7	1-May-19	0.1			0.01	0.01	0.01	
8	18-Nov-19	0.01	0.01					
9	20-Nov-19	0.01					0.01	
10	29-Nov-19	0.01	0.01					
11	14-Apr-20	0.01	0.01	0.01	0.01	0.01	0.1	0.01
12	12-Oct-20	0.01	0.01		0.01		0.05	0.02
13	3-Nov-20							
14	30-Mar-21		0.01					
15	12-Apr-21	0.01		0.01	0.01	0.01	0.01	0.01
16	19-Oct-21	0.01	0.01	0.01	0.01	0.01	0.01	0.01
17	28-Mar-22	0.01	0.32	0.01	0.01	0.01	0.01	0.01
18	1-Apr-22							
19	18-Oct-22	0.01	0.01	0.01	0.01	0.01	0.01	0.01
20	17-Apr-23	0.01	0.01				0.03	
21	9-May-23			0.01	0.01	0.01		0.01
22	10-Aug-23							
23	23-Oct-23	0.01	0.01		0.01	0.01		0.01
24	29-Nov-23							
25	9-Apr-24	0.01	0.01	0.01	0.01	0.01	0.01	0.01
26	28-Oct-24	0.1	0.1	0.1	0.1	0.1	0.1	0.1
27	28-Apr-25	0.1	0.1	0.1	0.1	0.1	0.1	0.1
28								
29								
30								
Coefficient of Variation:		1.35	1.92	1.36	1.42	1.40	1.11	1.35
Mann-Kendall Statistic (S):		15	33	16	22	20	26	15
Confidence Factor:		73.3%	96.0%	90.7%	89.8%	90.2%	93.6%	82.8%
Concentration Trend:		No Trend	Increasing	Prob. Increasing	No Trend	Prob. Increasing	Prob. Increasing	No Trend



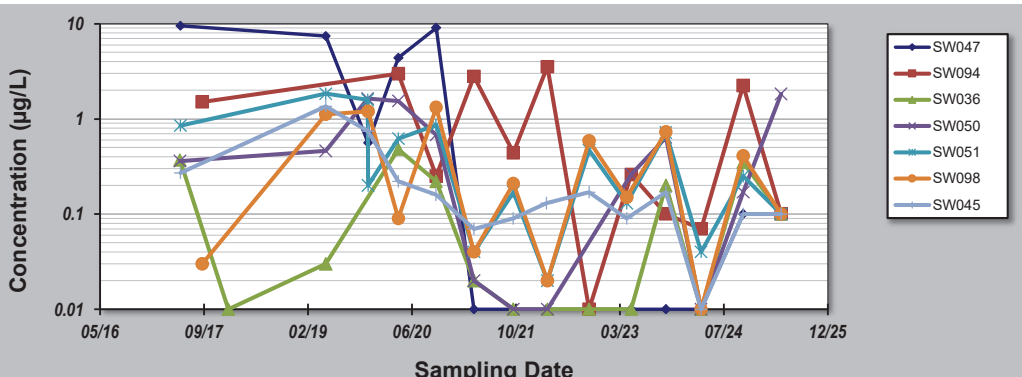
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	SW047	SW094	SW036	SW050	SW051	SW098	SW045
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	30-May-17			0.369	0.36			
2	1-Jun-17	9.49				0.85		0.27
3	13-Sep-17		1.51				0.03	
4	6-Oct-17							
5	18-Jan-18			0.01				
6	29-Apr-19							
7	1-May-19	7.44		0.03	0.46	1.84	1.12	1.36
8	18-Nov-19				1.63	1.58		
9	20-Nov-19	0.56				0.2	1.2	0.74
10	29-Nov-19							
11	14-Apr-20	4.38	2.99	0.48	1.54	0.62	0.09	0.22
12	12-Oct-20	9.08	0.25	0.22	0.68	0.86	1.32	0.16
13	3-Nov-20							
14	30-Mar-21							
15	12-Apr-21	0.01	2.8	0.02	0.02	0.04	0.04	0.07
16	19-Oct-21	0.01	0.44	0.01	0.01	0.17	0.21	0.09
17	28-Mar-22	0.01						0.13
18	1-Apr-22		3.54	0.01	0.01	0.02	0.02	
19	18-Oct-22	0.01	0.01	0.01		0.47	0.59	0.17
20	17-Apr-23					0.13	0.15	0.09
21	9-May-23	0.01	0.26	0.01	0.26			
22	10-Aug-23							
23	23-Oct-23	0.01	0.1	0.2	0.64	0.72	0.73	0.17
24	29-Nov-23							
25	9-Apr-24	0.01	0.07	0.01	0.01	0.04	0.01	0.01
26	28-Oct-24	0.1	2.24	0.35	0.17	0.25	0.41	0.1
27	28-Apr-25	0.1	0.1	0.1	1.83	0.1	0.1	0.1
28								
29								
30								
Coefficient of Variation:		1.66	1.13	1.26	1.13	1.08	1.11	1.37
Mann-Kendall Statistic (S):		-33	-21	-12	-11	-44	-11	-42
Confidence Factor:		96.0%	91.3%	72.3%	72.5%	98.4%	70.5%	98.9%
Concentration Trend:		Decreasing	Prob. Decreasing	No Trend	No Trend	Decreasing	No Trend	Decreasing



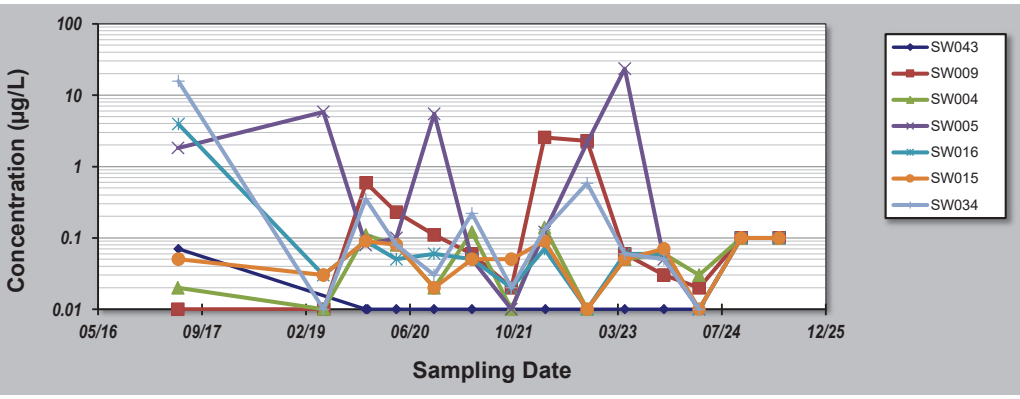
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	SW043	SW009	SW004	SW005	SW016	SW015	SW034
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)						
1	30-May-17		0.01	0.02	1.82			
2	1-Jun-17	0.07				3.92	0.05	15.7
3	13-Sep-17							
4	6-Oct-17							
5	18-Jan-18							
6	29-Apr-19				5.84	0.03	0.03	0.01
7	1-May-19		0.01	0.01				
8	18-Nov-19	0.01		0.11	0.08	0.09	0.09	0.35
9	20-Nov-19		0.59					
10	29-Nov-19	0.01						
11	14-Apr-20	0.01	0.23	0.08	0.1	0.05	0.08	0.08
12	12-Oct-20	0.01	0.11	0.02	5.44	0.06	0.02	0.03
13	3-Nov-20							
14	30-Mar-21							
15	12-Apr-21	0.01	0.06	0.12	0.05	0.05	0.05	0.22
16	19-Oct-21	0.01	0.02	0.01	0.01	0.02	0.05	0.02
17	28-Mar-22		2.56	0.14	0.12	0.07	0.09	0.13
18	1-Apr-22	0.01						
19	18-Oct-22	0.01	2.28	0.01	2.15	0.01	0.01	0.58
20	17-Apr-23	0.01	0.06	0.05	23.4	0.06	0.05	0.06
21	9-May-23							
22	10-Aug-23							
23	23-Oct-23	0.01	0.03	0.06	0.05	0.06	0.07	0.05
24	29-Nov-23							
25	9-Apr-24	0.01	0.02	0.03	0.01	0.01	0.01	0.01
26	28-Oct-24	0.1	0.1	0.1	0.1	0.1	0.1	
27	28-Apr-25	0.1	0.1	0.1	0.1	0.1	0.1	
28								
29								
30								
Coefficient of Variation:		1.28	1.93	0.75	2.23	3.13	0.56	3.13
Mann-Kendall Statistic (S):		13	5	16	-16	-1	14	-17
Confidence Factor:		74.1%	58.5%	79.1%	79.1%	50.0%	75.8%	86.0%
Concentration Trend:		No Trend	No Trend	No Trend	No Trend	No Trend	No Trend	No Trend



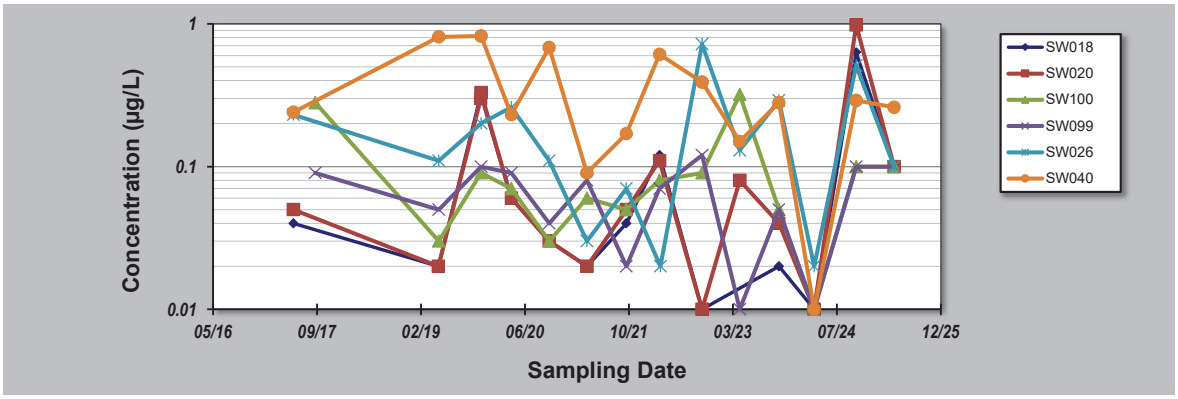
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	29-Jul-25	Job ID:	66133
Facility Name:	RAAF Base Amberley	Constituent:	Sum PFAS
Conducted By:	MC	Concentration Units:	µg/L

Sampling Point ID:	SW018	SW020	SW100	SW099	SW026	SW040
Sampling Event	Sampling Date	SUM PFAS CONCENTRATION (µg/L)					
1	30-May-17						
2	1-Jun-17	0.04	0.05			0.23	0.24
3	13-Sep-17			0.28	0.09		
4	6-Oct-17						
5	18-Jan-18						
6	29-Apr-19	0.02	0.02				
7	1-May-19			0.03	0.05	0.11	0.81
8	18-Nov-19	0.32	0.3				
9	20-Nov-19		0.33	0.09	0.1	0.2	0.82
10	29-Nov-19						
11	14-Apr-20	0.06	0.06	0.07	0.09	0.26	0.23
12	12-Oct-20	0.03	0.03	0.03	0.04	0.11	0.68
13	3-Nov-20						
14	30-Mar-21						
15	12-Apr-21	0.02	0.02	0.06	0.08	0.03	0.09
16	19-Oct-21	0.04	0.05	0.05	0.02	0.07	0.17
17	28-Mar-22	0.12	0.11	0.08	0.07		0.61
18	1-Apr-22					0.02	
19	18-Oct-22	0.01	0.01	0.09	0.12	0.72	0.39
20	17-Apr-23		0.08	0.32	0.01	0.13	0.15
21	9-May-23						
22	10-Aug-23						
23	23-Oct-23	0.02	0.04	0.05	0.05	0.29	0.28
24	29-Nov-23						
25	9-Apr-24	0.01	0.01	0.01	0.01	0.02	0.01
26	28-Oct-24	0.63	0.98	0.1	0.1	0.51	0.29
27	28-Apr-25	0.1	0.1	0.1	0.1	0.1	0.26
28							
29							
30							
Coefficient of Variation:		1.62	1.72	0.93	0.55	1.00	0.74
Mann-Kendall Statistic (S):		-3	0	9	-7	-5	-25
Confidence Factor:		54.8%	48.0%	66.6%	62.6%	58.5%	90.4%
Concentration Trend:		No Trend	No Trend	No Trend	Stable	No Trend	Prob. Decreasing



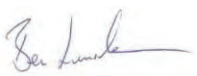
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

1.1.1.1 Document Distribution

Rev No.	Copies	Recipient	Date
A	1 x Electronic	Department of Defence	19 August 2025
B	1 x Electronic	Department of Defence	10 September 2025
C	1 x Electronic	Department of Defence	17 October 2025
D	1 x Electronic	Department of Defence	7 November 2025
E	1 x Electronic	Department of Defence	19 December 2025
0	1 x Electronic	Department of Defence	12 February 2026

1.1.1.2 Document Status

Rev No.	Author	Reviewer	Approved for Issue		
		Name	Name	Signature	Date
A	Mikayla Cover	Kane Mitchell	Kane Mithcell	Draft for comment	19 August 2025
B	Mikayla Cover	Ben Lumsden	Kane Mitchell	Draft for comment	10 September 2025
C	Mikayla Cover	Ben Lumsden	Kane Mitchell	Draft for comment	17 October 2025
D	Mikayla Cover	Ben Lumsden	Kane Mitchell	Draft for comment	7 November 2025
E	Mikayla Cover	Ben Lumsden	Kane Mitchell	Draft for comment	19 December 2025
0	Mikayla Cover	Ben Lumsden	Ben Lumsden		12 February 2026

www.jbsg.com.au

JBS&G

Adelaide
Kaurna Country | 100 Hutt St,
Adelaide, SA 5000
T: 08 8431 7113

Brisbane
Turrbal/Yuggera Country | Level 37,
123 Eagle Street, Brisbane, QLD 4000
T: 07 3211 5350

Bunbury
Wardandi Country | 177 Spencer
Street Bunbury, WA 6230
T: 08 9792 4797

Canberra
Ngunnawal Country | Level 1, The Realm
18 National Circuit Barton, ACT 2600
T: 02 6198 3278

Darwin
Larrakia Country | Suite G1, Level 1,
48-50 Smith Street, Darwin NT 0800
T: 08 8943 0600

Hobart
Muwununa/Nuenon Country | L2, 137
Liverpool Street, Hobart TAS 7000
T: 03 6208 3700

Melbourne
Wurundjeri Country | Level 19,
31 Queen Street, Melbourne VIC 3000
T: 03 9642 0599

Newcastle
Awabakal/Worimi Country | 61 / 63
Parry Street Newcastle West, NSW 2302
T: 02 8245 0300

Perth
Whadjuk Country | Allendale Square,
Level 9, 77 St Georges Terrace, WA 6000
T: 08 9380 3100

Sydney
Gadigal Country | Level 1,
50 Margaret Street, Sydney, NSW 2000
T: 02 8245 0300

Wollongong
Dharawal Country | Suite 1A, 280 - 286
Keira Street, Wollongong, NSW 2500
T: 02 4225 2647