MULTIQUIP
QUARRIES

Ardmore Park Quarry

Environmental Monitoring Report

1 January 2021 - 31 December 2021

Site information

Site Name	Ardmore Park Quarry
Address	5152 Oallen Ford Road, Bungonia NSW, 2580
Project Approval	PA 07_0155 (Mod 3)
Environmental Licence	EPL 13213

Licensee information

Name	CEAL Limited (Multiquip Quarries)
Registered Address	260 Tenth Avenue, Austral NSW, 2079
Post Address	PO Box 4, Austral, 2079
Australian Business Number	44 101 930 714
Email	enquiries@multiquip.com.au
Phone	02 9606 0557

Background

The Ardmore Park Quarry Project (the quarry) is a sand and basalt rock quarry located at 5152 Oallen Ford Road, near the village of Bungonia in the NSW Southern Tablelands. The quarry site is approximately 20 km south of the town of Marulan, and 200 km south-west of Sydney. The quarry is operated by CEAL Limited trading as Multiquip Quarries (Multiquip).

The quarry is currently approved to extract up to 400,000 tonnes of mixed quarry products per year, until June of 2039. Quarried materials are transported via road to Sydney, Canberra, the NSW South Coast and regional customers.

The quarry operates under Project Approval 07_0155 (the approval) and Environment Protection Licence 13213 (the EPL). Copies of the current version of both documents can be accessed at Multiquip Quarries website <www.mqquarry.com.au>. Both the approval and the licence require the implementation of certain environmental monitoring programs, to ensure that the project remains compliant with established environmental impact criteria.

This document contains some of the key environmental monitoring results collected by the quarry on an ongoing basis. It does not describe the quarry's compliance criteria or the environmental performance of the project in the context of its ongoing approval-related obligations. Multiquip Quarries is required by Schedule 5(10) of the Project Approval to publish environmental monitoring results as they are obtained. This report has additionally been prepared in accordance with the EPL and with reference to the *Requirements for publishing pollution monitoring data* prepared by the NSW Environment Protection Authority (EPA, 2013).

A summary of the typical environmental monitoring undertaken by the quarry as well as the locations of sampling sites and indicative frequencies of sampling can be found within the Environmental Monitoring Program, available on the Multiquip Quarries website.

A more detailed presentation and discussion of monitoring results in context with the performance criteria and predicted impacts of the quarry is provided in the Annual Review. The Annual Review is prepared in March of each year to describe the activities and environmental performance of the project for the preceding calendar year. All previous Annual Reviews can be found on the Multiquip Quarries website.
An Annual Return, detailing the results of each year's environmental monitoring is lodged to the NSW EPA directly at the conclusion of each reporting year. The Annual Return contains details of any incidents or non-compliances with the quarry's EPL. Copies of each year's Annual Return, in addition to a copy of the current and previous versions of the EPL can be found at the NSW EPA's website <https://www.epa.nsw.gov.au/>.
Readers should note that monitoring requirements may vary throughout the life of the quarry as a consequence of updates to the approval, EPL and site management plans. Changes to the in-force monitoring regime are discussed in each Annual Review.
A list of the environmental parameters currently required to be measured on an ongoing basis by the quarry is presented in Table 1 below.

Table 1 - Environmental monitoring requirements

Parameter	Sample Type	Assessed By
Deposited Dust	Bottled sample	NATA approved laboratory
Particulate Matter (PM)	Continuous PM2.5 and PM10 monitoring station	Autonomous PM monitoring station located on quarry site
Standing Water Level (SWL)	Measure of water level depth within monitoring bores	Physical measurement – water level meter
Water quality	Bottled samples, collected from monitoring bores and springs	NATA approved laboratory
Spring flow rate	Measure of flow rate of selected spring features on multiple adjoining properties	Autonomous logger and visual/physical assessment
Noise	Attended noise survey	Third party consultant
Meteorological/Weather monitoring	Diverse weather specific parameters including temperature, humidity, wind speed/direction etc.	Autonomous weather monitoring station located on quarry site
Community complaints	Register of community complaints	Register kept on site, maintained by Multiquip staff

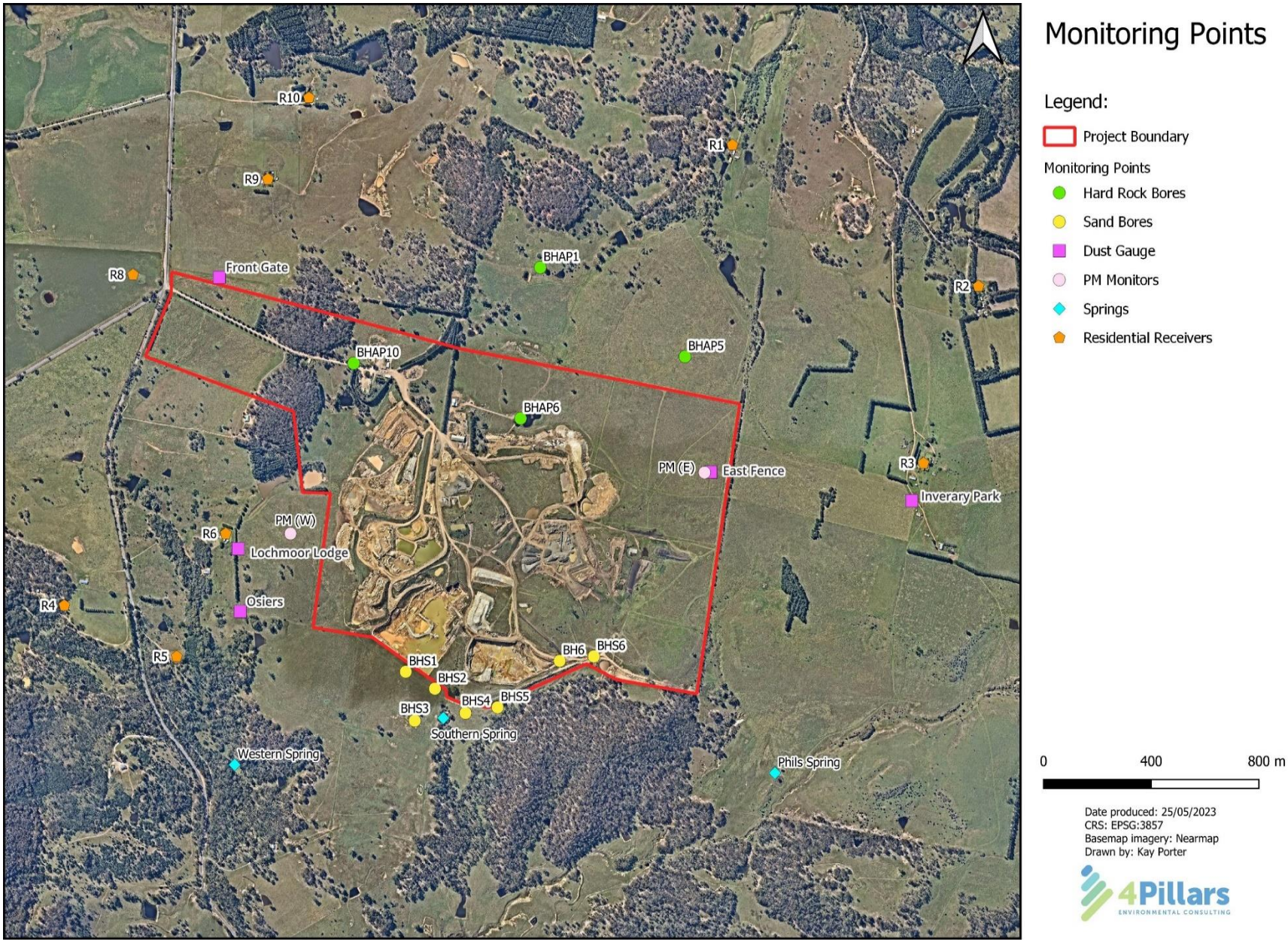


Figure 1: Ardmore Park monitoring locations (relevant to the data represented in this report).

Deposited Dust

Month	EPL#	Name	Ash Content (g/m²/month)	Combustible Matter (g/m²/month)	Total Soluble Matter (g/m²/month)	Total Insoluble Matter (g/m²/month)	Total Solids (g/m²/month)
Jan-21	1	Inverary Park	8	45	2.4	53	55.4
Jan-21	2	Olsiers	17	33	0.4	50	50.4
Jan-21	3	Lochmore Lodge	2.4	24	0.3	26	26.3
Jan-21	4	Front Entrance	2.3	19	0.4	22	22.4
Jan-21		East Fence	12	28	1.4	39	40.4
Feb-21	1	Inverary Park	0.1	0.5	1.1	0.6	1.7
Feb-21	2	Olsiers	1.1	0.9	0.8	2	2.8
Feb-21	3	Lochmore Lodge	0.2	0.5	1.2	0.7	1.9
Feb-21	4	Front Entrance	0.4	0.9	0.9	1.4	2.3
Feb-21		East Fence	0.2	0.5	0.1	0.7	0.8
Mar-21	1	Inverary Park	0.1	1	1.7	1.1	2.8
Mar-21	2	Olsiers	0.4	0.3	2.5	0.7	3.2
Mar-21	3	Lochmore Lodge	0.1	0.1	3.2	0.2	3.4
Mar-21	4	Front Entrance	4.8	0.3	3.2	5.1	8.3
Mar-21		East Fence	2	0.8	4.9	2.7	7.6
Apr-21	1	Inverary Park	4.7	21	22	25	47
Apr-21	2	Olsiers	0.3	0.3	1.1	0.5	1.6
Apr-21	3	Lochmore Lodge	0.1	0.1	2.9	0.3	3.2
Apr-21	4	Front Entrance	0.7	0.3	1.1	0.9	2
Apr-21		East Fence	4.7	5.8	2.4	10	12.4
May-21	1	Inverary Park	1.1	1.4	4.8	2.5	7.3
May-21	2	Olsiers	0.1	0.2	3.6	0.3	3.9
May-21	3	Lochmore Lodge	0.5	0.2	3.4	0.7	4.1
May-21	4	Front Entrance	0.4	0.1	2.5	0.5	3
May-21		East Fence	16	7.5	16	23	39
Jun-21	1	Inverary Park	0.1	0.1	1.8	0.1	1.9
Jun-21	2	Olsiers	0.4	0.1	1.1	0.5	1.6
Jun-21	3	Lochmore Lodge	0.1	0.1	1	0.1	1.1

Deposited Dust

Month	EPL#	Name	Ash Content (g/m²/month)	Combustible Matter (g/m²/month)	Total Soluble Matter (g/m²/month)	Total Insoluble Matter (g/m²/month)	Total Solids (g/m²/month)
Jun-21	4	Front Entrance	0.3	0.1	1.2	0.4	1.6
Jun-21		East Fence	1.2	1.4	9	2.6	11.6
Jul-21	1	Inverary Park	0.1	0.2	3.6	0.3	3.9
Jul-21	2	Olsiers	0.1	0.1	3	0.2	3.2
Jul-21	3	Lochmore Lodge	0.1	0.1	3.1	0.1	3.2
Jul-21	4	Front Entrance	0.5	1.4	4.3	2	6.3
Jul-21		East Fence	1.1	2.5	4.3	3.6	7.9
Aug-21	1	Inverary Park	0.1	0.3	0.7	0.3	1
Aug-21	2	Olsiers	0.1	0.1	0.7	0.1	0.8
Aug-21	3	Lochmore Lodge	0.1	0.2	1.3	0.2	1.5
Aug-21	4	Front Entrance	0.9	1.8	1.8	2.7	4.5
Aug-21		East Fence	0.1	0.2	1.2	0.2	1.4
Sep-21	1	Inverary Park	0.6	0.2	4	0.8	4.8
Sep-21	2	Olsiers	0.1	0.1	2.9	0.1	3
Sep-21	3	Lochmore Lodge	0.3	0.2	3.8	0.5	4.3
Sep-21	4	Front Entrance	0.8	0.2	9.1	1	10.1
Sep-21		East Fence	1.1	1.4	7.5	2.5	10
Oct-21	1	Inverary Park	1.4	1.7	1.5	3.1	4.6
Oct-21	2	Olsiers	0.7	0.1	1.1	0.8	1.9
Oct-21	3	Lochmore Lodge	0.8	0.1	1.9	0.9	2.8
Oct-21	4	Front Entrance	1.3	7.3	12	8.6	20.6
Oct-21		East Fence	5.1	7.7	13	13	26
Nov-21	1	Inverary Park	2	3.4	3.3	5.4	8.7
Nov-21	2	Olsiers	0.6	0.3	1.4	0.9	2.3
Nov-21	3	Lochmore Lodge	0.1	1.2	1.9	1.3	3.2
Nov-21	4	Front Entrance	<0.1	0.3	0.1	0.3	0.4
Nov-21		East Fence	0.3	<0.1	0.6	0.3	0.9
Dec-21	1	Inverary Park	1	3.4	8.3	4.4	12.7

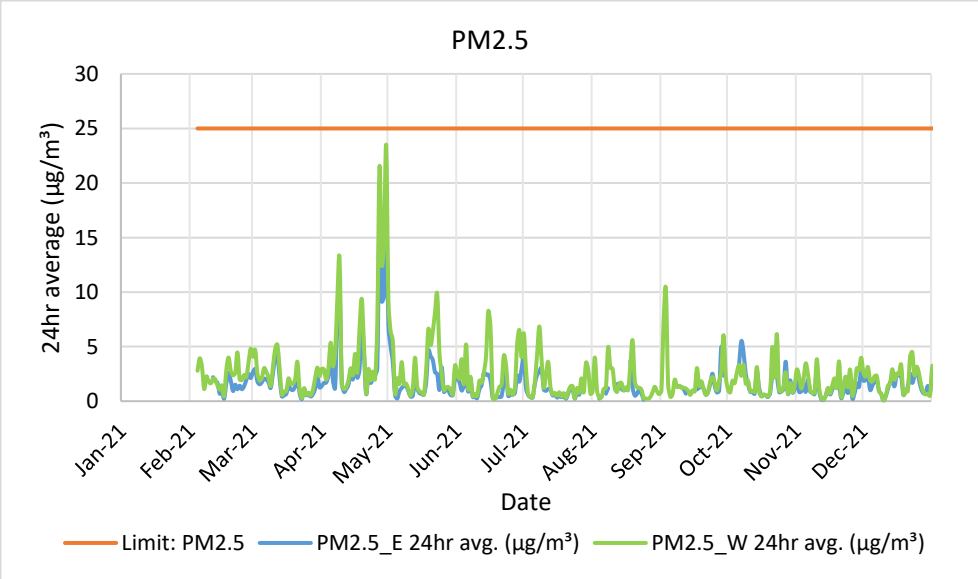
Deposited Dust

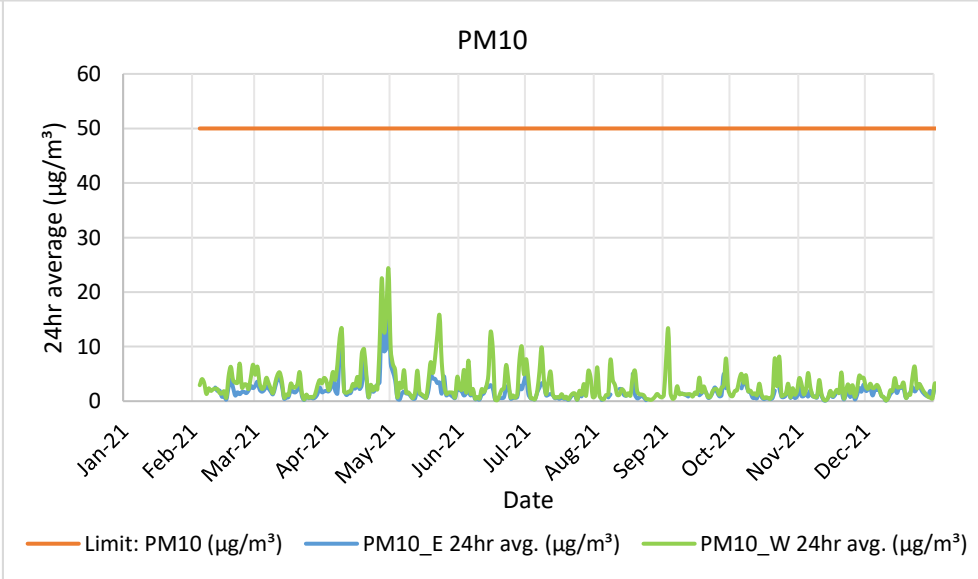
Month	EPL#	Name	Ash Content (g/m²/month)	Combustible Matter (g/m²/month)	Total Soluble Matter (g/m²/month)	Total Insoluble Matter (g/m²/month)	Total Solids (g/m²/month)
Dec-21	2	Olsiers	0.4	0.9	1	1.2	2.2
Dec-21	3	Lochmore Lodge	0.5	1.6	1.1	2.1	3.2
Dec-21	4	Front Entrance	0.7	4.4	8.4	5.1	13.5
Dec-21		East Fence	<0.1	<0.1	0.9	0.1	1

Particulate Matter (PM) - 24hr Average

Month	PM2.5_E 24hr avg. (µg/m³)	PM10_E 24hr avg. (µg/m³)	PM2.5_W 24hr avg. (µg/m³)	PM10_W 24hr avg. (µg/m³)	Limit: PM10 (µg/m³)	Limit: PM2.5 (µg/m³)
Jan-21					50/24hr	25/24hr
Feb-21	1.51	1.84	2.50	3.20	50/24hr	25/24hr
Mar-21	1.59	1.84	2.21	2.70	50/24hr	25/24hr
Apr-21	4.28	4.46	5.84	6.48	50/24hr	25/24hr
May-21	1.88	2.14	3.17	4.06	50/24hr	25/24hr
Jun-21	1.31	1.47	2.54	3.37	50/24hr	25/24hr
Jul-21	1.07	1.23	1.83	2.39	50/24hr	25/24hr
Aug-21	0.89	0.98	1.53	1.82	50/24hr	25/24hr
Sep-21	1.39	1.54	2.05	2.45	50/24hr	25/24hr
Oct-21	1.13	1.39	2.27	1.74	50/24hr	25/24hr
Nov-21	1.14	1.32	2.29	1.83	50/24hr	25/24hr
Dec-21	1.50	1.66	1.92	2.25	50/24hr	25/24hr
Annual Average	**1.61**	**1.81**	**2.56**	**2.93**	**25/yr**	**8/yr**

Yellow cells indicate unavailable data.





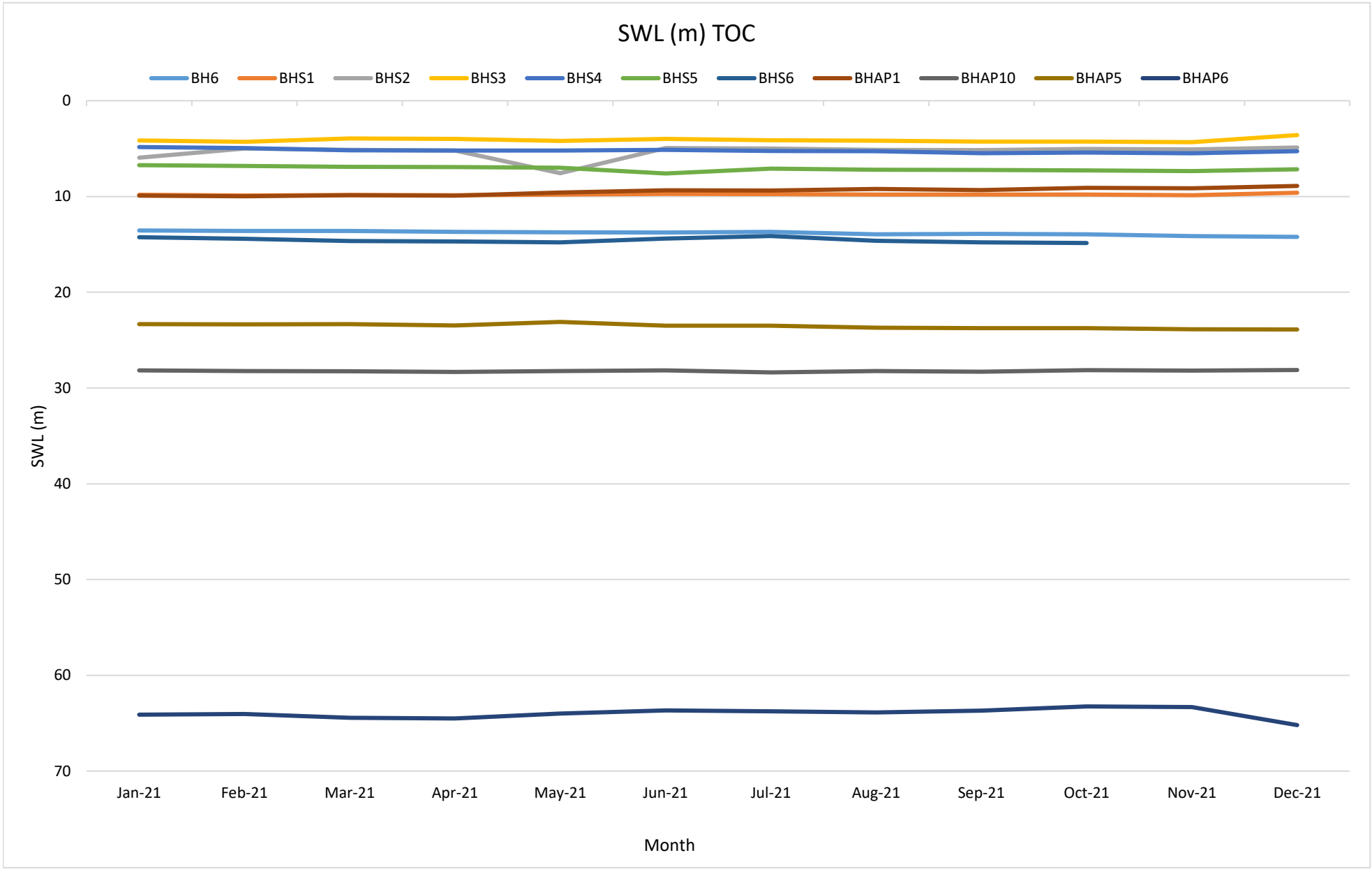
Standing Water Level (SWL) Sand Bores

Bore	BH6	BHS1	BHS2	BHS3	BHS4	BHS5	BHS6
Jan-21	13.55	9.83	5.96	4.16	4.84	6.73	14.25
Feb-21	13.6	9.9	5	4.29	4.94	6.82	14.42
Mar-21	13.6	9.84	5.14	3.95	5.18	6.91	14.66
Apr-21	13.7	9.86	5.2	3.99	5.2	6.93	14.7
May-21	13.75	9.8	7.57	4.2	5.2	7	14.8
Jun-21	13.76	9.72	4.94	3.98	5.14	7.6	14.4
Jul-21	13.69	9.76	4.99	4.12	5.24	7.1	14.13
Aug-21	13.94	9.8	5.13	4.18	5.27	7.21	14.63
Sep-21	13.9	9.8	5.16	4.27	5.48	7.23	14.79
Oct-21	13.94	9.8	5.03	4.26	5.42	7.29	14.86
Nov-21	14.13	9.87	5.08	4.33	5.49	7.36	
Dec-21	14.22	9.61	4.89	3.59	5.28	7.17	

Yellow cells indicate unavailable data. BHS6 not accessible Nov-Dec 2021.

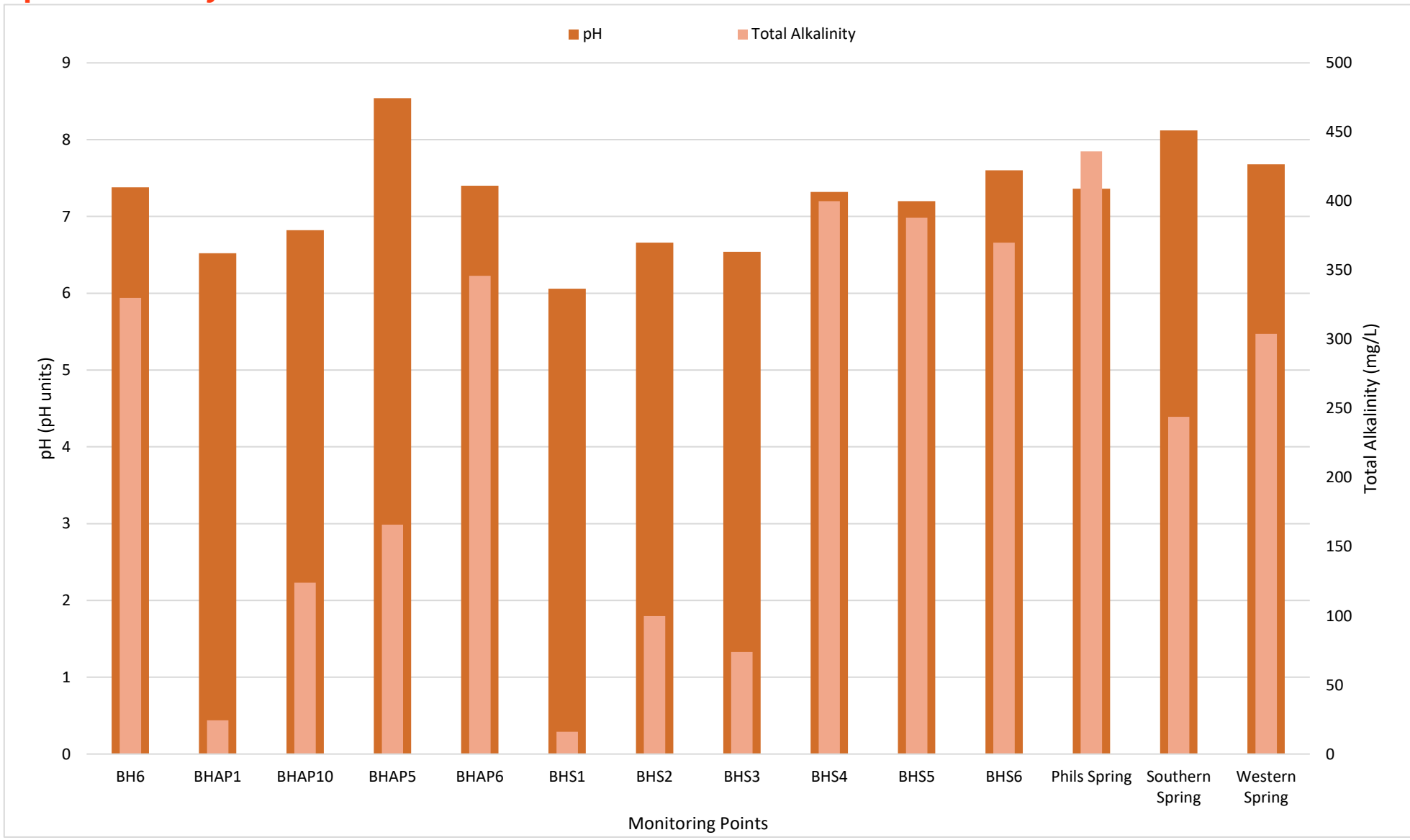
Standing Water Level (SWL) Hard Rock Bores

Bore	BHAP1	BHAP10	BHAP5	BHAP6
Jan-21	9.92	28.16	23.32	64.11
Feb-21	9.98	28.22	23.35	64.03
Mar-21	9.87	28.26	23.32	64.43
Apr-21	9.91	28.32	23.48	64.5
May-21	9.6	28.24	23.1	64
Jun-21	9.35	28.17	23.5	63.67
Jul-21	9.39	28.37	23.5	63.75
Aug-21	9.21	28.24	23.71	63.87
Sep-21	9.33	28.3	23.76	63.7
Oct-21	9.09	28.14	23.76	63.25
Nov-21	9.14	28.18	23.86	63.32
Dec-21	8.9	28.12	23.89	65.2


SWL (m) TOC
BH6
BHS1
BHS2
BHS3
BHS4
BHS5
BHS6
BHAP1
BHAP10
BHAP5
BHAP6
0
10
20
30
40
50
60
70
SWL (m)
Jan-21
Feb-21
Mar-21
Apr-21
May-21
Jun-21
Jul-21
Aug-21
Sep-21
Oct-21
Nov-21
Dec-21
Month

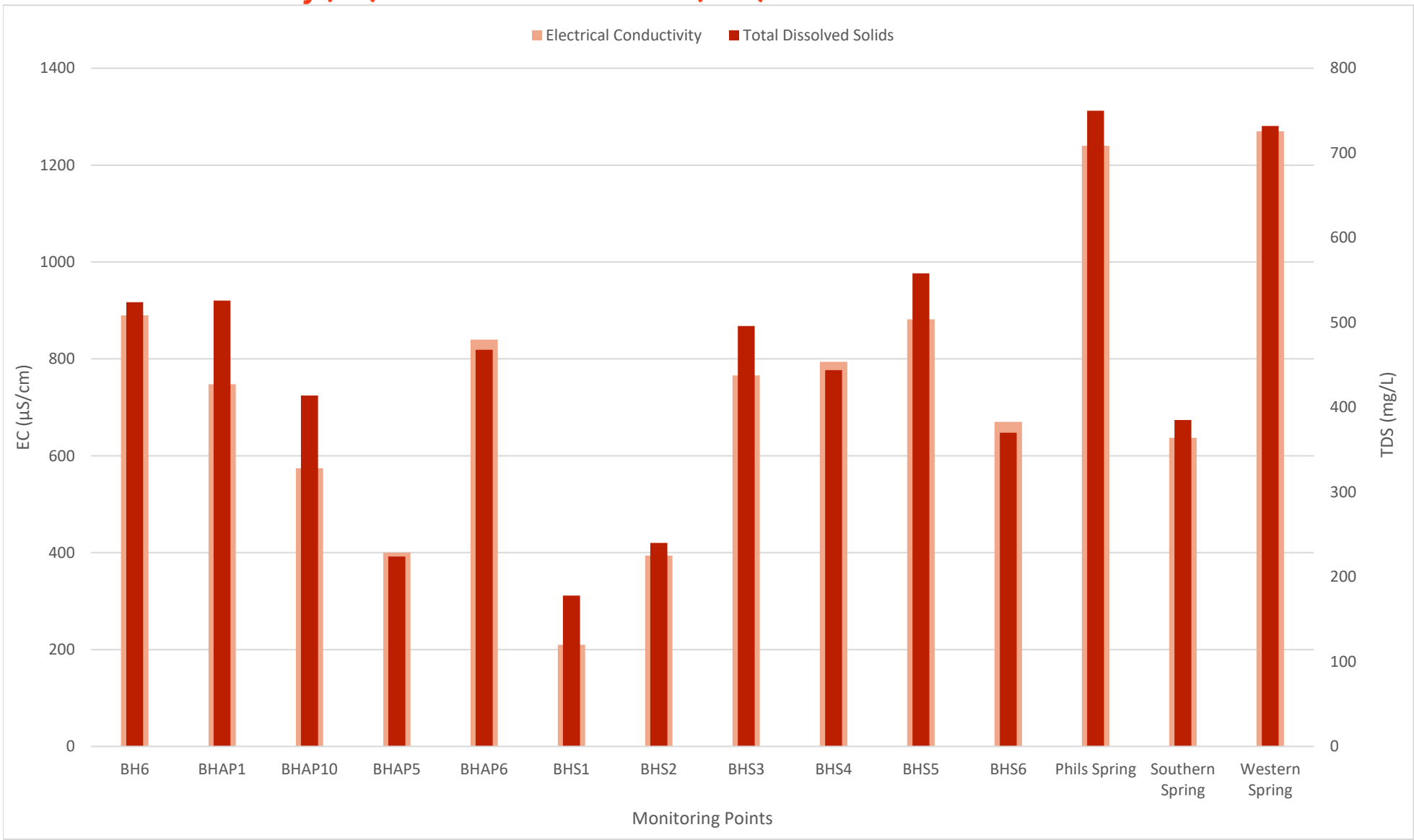
Water Analysis - Annual Running Average

pH & Alkalinity



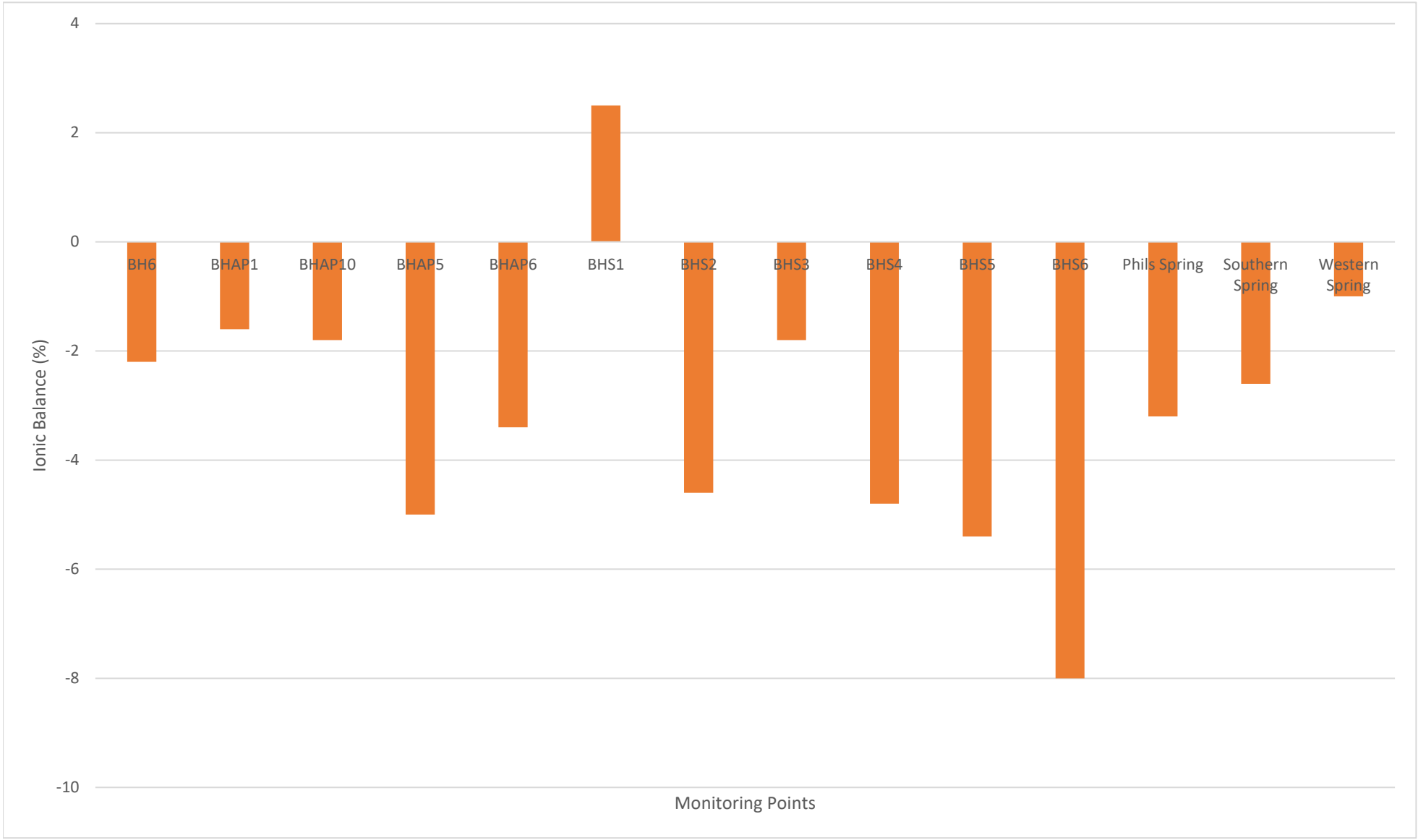
Water Analysis - Annual Running Average

Electrical Conductivity (EC) & Total Disolved Solids (TDS)



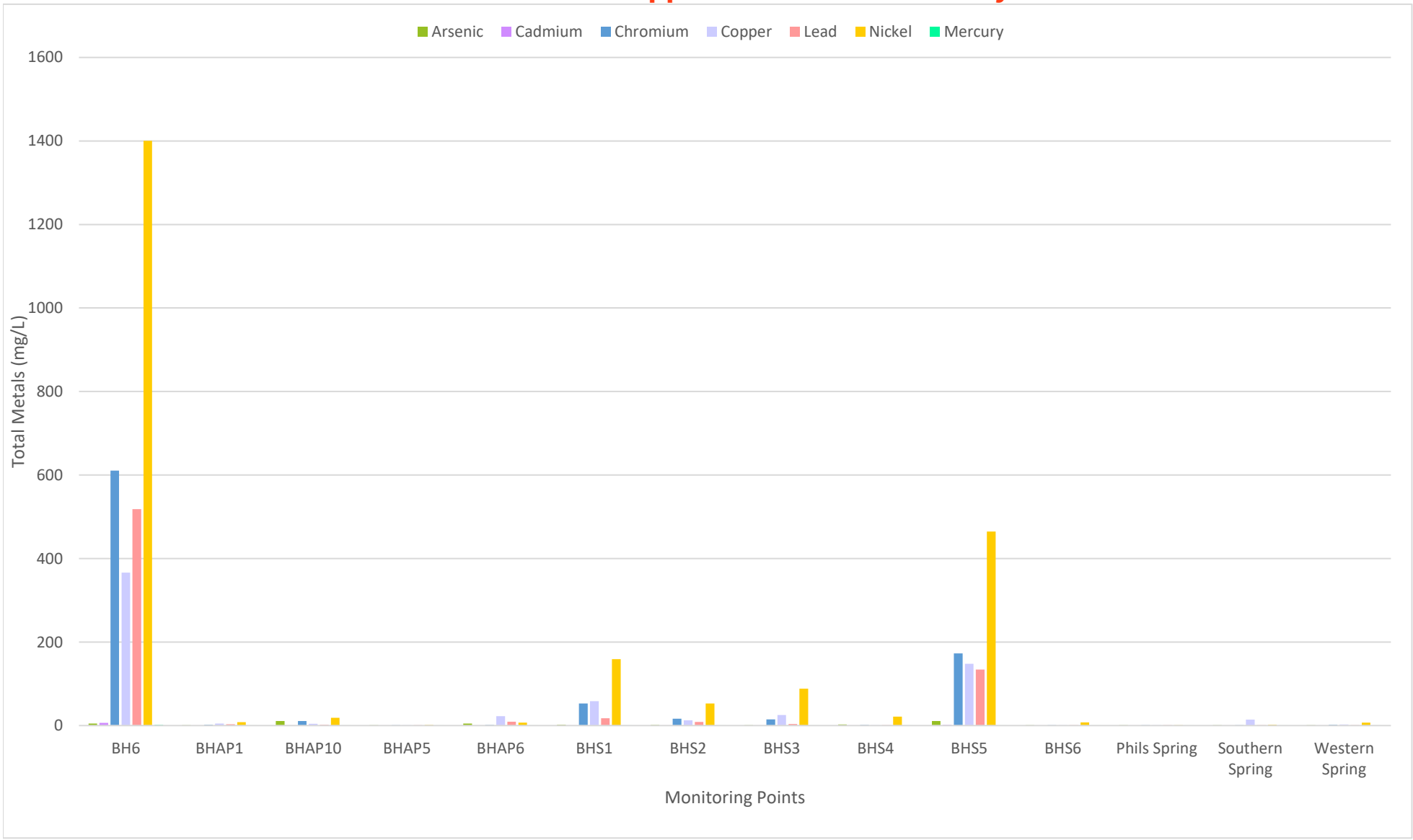
Water Analysis - Annual Running Average

Ionic Balance



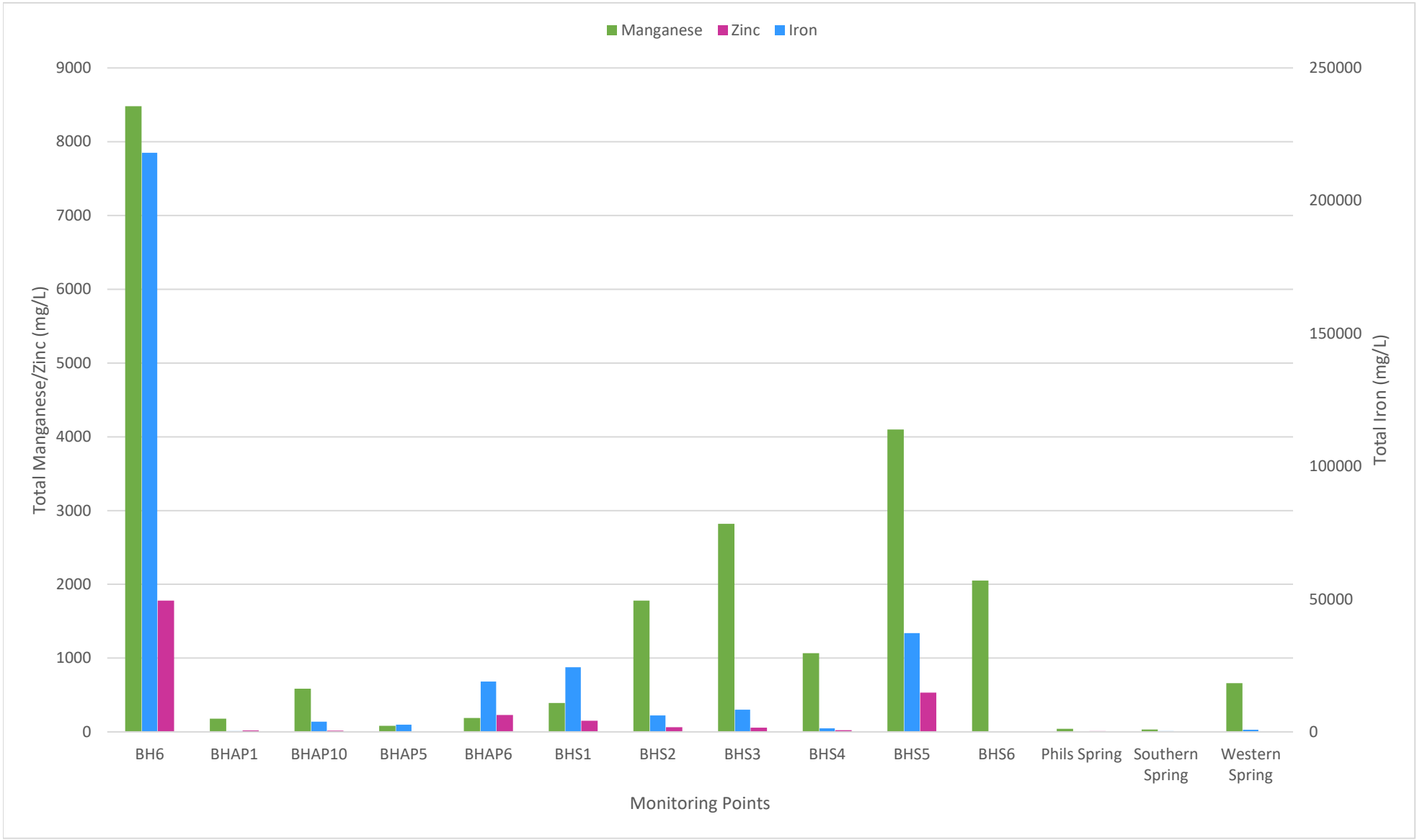
Water Analysis - Annual Running Average

Total Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury



Water Analysis - Annual Running Average

Total Metals - Manganese, Zinc, Iron



Water Analysis - Annual Running Average

Hydrocarbons & BTEXN

Spring Flow Rate (L/day)

Month	Phils Spring	Southern Spring	Western Spring
Jan-21			
Feb-21			
Mar-21			
Apr-21			
May-21			
Jun-21			
Jul-21			
Aug-21			
Sep-21			
Oct-21			
Nov-21			
Dec-21	6171.43	9600.00	0.00

Note: Phils Spring flow rate is determined by the V-notch weir automated logger, Southern and Western Spring flow rates are estimated manually.