Prepared for Christchurch City Council Co No.: N/A



Stormwater Basin Environmental Investigation

Comprehensive Stormwater Network Discharge Consent (CRC190445)

27-May-2022 CCC Stormwater Basins Doc No. 60649177 - 3.2.4 Commercial-in-Confidence

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Stormwater Basin Environmental Investigation

Comprehensive Stormwater Network Discharge Consent (CRC190445)

Client: Christchurch City Council

Co No.: N/A

Prepared by

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27-May-2022

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Quality Information

Document Stormwater Basin Environmental Investigation

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Prepared by Simon Hay

Reviewed by Terry Widdowson

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Rev	Revision Date	Details	Authorised		
			Name/Position	Signature	
A	20-May-2022	DRAFT Report. Awaiting final lab result	Simon Hay Principal Environmental Scientist		
В	27-May-2022	FINAL	Simon Hay Principal Environmental Scientist		

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1.0 Introduction

AECOM New Zealand Limited (AECOM) was engaged by Christchurch City Council (CCC) to undertake a groundwater investigation at three stormwater infiltration basins in Christchurch. The basins were Awatea Basin, Kakapo Basin and Outlook Place Basin located at Awatea Road, Miromiro Place and Outlook Place respectively ('the sites'). Site figures are presented in **Appendix A**.

1.1 Background

The investigation was undertaken to satisfy conditions of the new Comprehensive Stormwater Network Discharge Consent (CSNDC), granted in December 2019 by Environment Canterbury (ECan) to CCC. The CSNDC serves as a global consent enabling CCC to discharge water and contaminants to land and water from the stormwater network. The CSNDC contains conditions for monitoring, technical studies and reporting. The consent condition relevant to this investigation are as follows:

Consent condition 49:

'The Consent Holder shall implement the EMP attached to this consent, with the purpose of monitoring whether the Receiving Environment Objectives and Attribute Target Levels are being met.'

The Environmental Monitoring Programme (EMP)¹ provides details on regular city-wide groundwater monitoring to be completed by CCC as part of the consent. The EMP also sets out a draft methodology for a "Detailed Study" to be initiated to assess localised changes in groundwater levels, and the flow and the quality of any nearby springs arising from the discharge of stormwater to three infiltration basin facilities.

This groundwater investigation has been undertaken in general accordance with the draft methodology for a "Detailed Study" set out in Sections 3.2.3 and 3.3.1 of the EMP.

1.2 Objectives

The purpose of this groundwater investigation is to assess changes in groundwater level and groundwater quality at the sites to satisfy the objectives specified in Section 3.1 of the EMP as follows:

- Measure whether stormwater discharges are causing adverse effects on groundwater quality or quantity.
- Determine compliance with the conditions of the consent.
- Inform stormwater mitigation (while stormwater mitigation is not within AECOM's scope, this report will assist in informing stormwater mitigation).

¹ Environmental Monitoring Programme for the Comprehensive Stormwater Network Discharge Consent, Version 7, prepared by CCC, CTN Consulting Ltd, Aquatic Ecology Limited, PDP Limited and Boffa Miskell on behalf of CCC dated August 2020

2.0 Scope of Work

To meet the investigation objectives, AECOM completed the following scope of work:

- Installation of seven groundwater monitoring wells as follows:
 - Engagement of a specialist service locator and the completion of service clearance.
 - Supervision of the drilling and installation of two groundwater monitoring wells in Kakapo Basin, two groundwater monitoring wells in Outlook Place Basin, and three groundwater monitoring wells in Awatea Basin in accordance with the CCC Statement of Work.
 - Development and sampling of the groundwater monitoring wells using a submersible pump.
- Deployment of telemetry enabled data loggers in each of the seven monitoring wells to monitor standing water level (SWL) and electrical conductivity (EC) for the monitoring period.
- Installation of a telemetry enabled vented level logger in the centre of each stormwater basin (three in total) at depths of approximately 0.05 to 0.15 m below ground level (bgl) in a screened PVC standpipe. The standpipes were used to monitor the depth of stormwater in each basin to assist in the programming of the monthly monitoring events. Loggers were operational for 10 months due to delays commencement of this project and delays in sourcing the loggers due to the Covid-19 global pandemic.
- Surveying of the location, top of casing (TOC) elevation and ground elevation for the seven monitoring wells, location and TOC elevation for the three basin loggers, and location of the three telemetry transmitters. Surveying was completed by Eliot Sinclair.
- Completion of twelve groundwater monitoring events (one per month) from June 2021 to May 2022. Where possible, groundwater monitoring was undertaken following rainfall events and following subsequent stormwater discharge to ground, as indicated by the telemetry data from the basin loggers.
- Collection of surface water samples, where surface water was present in the infiltration basins.
- Preparation of this report, specifically to present the extent and magnitude of any effects on groundwater arising from the operation of the stormwater basins, with particular reference to the Attribute Target Limits in the CSNDC.

3.0 Methodology

Fieldwork was completed under the supervision of an experienced environmental scientist in accordance with AECOM procedures. A site-specific safety, health and environmental management plan (SHEMP) was prepared for the works.

3.1 Groundwater Monitoring Well Drilling

The groundwater monitoring well drilling methodology is summarised in Table 1.

Table 1 Groundwater Monitoring Well Drilling Summary

Date	Activity	Method
9 April 2021	Service Clearance	Service clearance information and plans from local utility providers was obtained in accordance with AECOMs procedures.
		Underground service clearance was undertaken by a licensed service locator (Canterbury Locating Specialist Limited).
14 – 16 April 2021	Drilling	Bores were advanced to 1.5 m bgl using hydro-vacuum excavation by Hydrotech Ltd in accordance with AECOM procedures. Bores were drilled to target depth (approximately 2 m beyond groundwater strike) using a DT45 Sonic Coring Rig by McMillan Drilling Limited.
		Three bores (Loc 1, Loc 2 and Loc 3) were drilled in the Awatea Basin to a maximum depth of 8.9 m bgl; two bores (Loc 4 and Loc 5) were drilled in the Kakapo Basin to a maximum depth of 13.6 m bgl; and two bores (Loc 6 and Loc 7) were drilled in the Outlook Basin to a maximum depth of 6.0 m bgl.
14 – 16 April 2021	Soil Logging	Soils were logged as prescribed in AS1726:2017. Encountered soils are described in bore logs in Appendix C .
14 – 16 April 2021	Well Installation	Groundwater monitoring wells were constructed with a 50 mm PVC pipe with depths ranging between 5.8 m bgl and 13.6 m bgl. Screens were installed with lengths of 4 m at Outlook Place Basin, 6 m at Awatea Basin and 9 m at Kakapo Basin, to allow for fluctuations in local groundwater level at the sites.
		Groundwater monitoring wells were installed with above ground standpipes inside lockable steel monuments. Well construction details are presented in Table T1 , Appendix B and bore logs are presented in Appendix C .
14 – 19 April 2021	Well Development	Wells were developed by removing between 32.5 and 46 L of groundwater utilising a submersible pump and disposable bailer.
14 April 2022	Survey	Surveying of the location, TOC elevation and ground elevation for the seven monitoring wells, and the TOC elevation for the three basin loggers was undertaken by Elliot Sinclair. Surveying was completed using CDD datum, Mount Pleasant 2000 circuit. The survey report is presented in Appendix F .
16 and 17 June 2021	Installation of pressure transducers	Following delays in shipping, the telemetry enabled data loggers were deployed in each of the seven monitoring wells to monitor SWL and EC for a 10-month period.
		A telemetry enabled vented level logger was installed in the centre of each stormwater basin (three in total) to depths of approximately 0.05 to 0.15 m bgl in a screened PVC standpipe. Telemetry data is presented in Appendix B .

3.2 Monthly Monitoring Methodology

The groundwater monitoring methodology is described in Table 2.

Table 2 Groundwater Monitoring Summary

Activity/Item Details	
Well Gauging	The SWL in each monitoring well was gauged using an oil/water interface.
Groundwater Purging and Sampling	Wells were purged of at least three well volumes of groundwater using a battery powered submersible pump with dedicated tubing. Purged groundwater was discharged to surface within the stormwater basin. Water quality parameters (pH, EC, redox potential, dissolved oxygen and temperature) were measured using a YSI water quality meter. Purging continued until water quality parameters stabilised (+/- 10% for dissolved oxygen, +/- 3% for EC, +/- 0.05 for pH, +/- 10 mV for redox, +/- 0.2 °C for temperature). Groundwater samples were collected directly into laboratory prepared sample bottles using disposable polyethylene tubing. Field filtering was not undertaken. Field sampling forms are presented in Appendix D .
Sample preservation and analysis	Groundwater samples were placed in laboratory-supplied bottles containing preservatives, as required. Samples were stored on ice (<4°C) in a chilly bin while on site and during transit to the laboratory. Samples were transported to the CCC wastewater laboratory on the day of sampling under standard chain of custody (CoC) procedures. Samples were submitted for analysis of <i>E.coli</i> , total coliforms, dissolved metals (copper, lead and zinc) and EC. Laboratory reports (as received) and CoC information is presented in Appendix E .
Decontamination Procedures	Equipment used across monitoring wells (submersible pump and interface probe) was decontaminated with Decon 90 solution and then rinsed with potable water between sampling of monitoring wells.

4.0 Investigation Findings

The soil conditions encountered beneath the sites during the installation of the monitoring wells are summarised below.

4.1 Awatea Basin

Silts and sandy silts were present from surface to depths of 0.01 m bgl (Loc 3) to 2.8 m bgl (Loc 1), underlain by gravels and gravelly sands to depths of 6.0 m bgl (Loc 3) to 8.9 m bgl (Loc 2). A layer of sands (overlain by 300 mm of silty clay at Loc 1) was encountered beneath the gravels/gravelly sands at Loc 1 and Loc 3.

Groundwater was encountered between 6.7 and 7.7 m bgl.

4.2 Kakapo Basin

Lithology generally consisted of silts and sand from surface to depths of 2.7 m bgl (Loc 5) to 3.9 m bgl (Loc 4). These were underlain by gravels and sandy gravels to target depth of 13.5 m bgl (Loc 4) and 10.5 m bgl (Loc 5). Silty clay was encountered beneath the sandy gravels from 10.5 m bgl to target depth (13.5 m bgl) at Loc 5.

Groundwater was encountered at approximately 11.1 m bgl.

4.3 Outlook Basin

Lithology generally consisted of topsoil in the upper 0.2 m, underlain by rounded cobbles and gravels and sandy gravels to target depth (6 m bgl).

Groundwater was encountered between 1.84 and 2.44 m bgl.

5.0 Attribute Target Levels

Groundwater analytical data for copper, lead, zinc and electrical conductivity has been compared to the attribute target levels specified in Schedule 9 of the CSNDC, in accordance with section 3.4 of the EMP. The attribute target levels are presented in **Table 3**.

E.coli counts were not assessed under the attribute target level in this investigation as drinking water supply sampling was not in this scope of work. However analytical data for *E.coli* and total coliforms is presented in **Table T3**, **Appendix B**.

 Table 3
 Receiving Environment Objectives and Attribute Target Levels for Groundwater and Springs (Schedule 9, CRC190445)

Objective	Attribute	Attribute Target Level
Protect drinking water quality	Copper, lead, zinc and <i>Escherichia coli</i> concentrations in drinking water	Concentrations to not exceed: Dissolved copper: 0.5 mg/L Dissolved lead: 0.0025 mg/L Dissolved zinc: 0.375 mg/L No statistically significant increase in the concentration of <i>Escherichia coli</i> at drinking water supply wells.
Avoid widespread adverse effects on shallow groundwater quality	Electrical conductivity in groundwater	No statistically significant increase in electrical conductivity.

5.1 Statistically significant

To assess for statistically significant increases in EC, Mann-Kendall (M-K) time trend analysis with a statistical significance of 5% was used. The analysis was undertaken using ProUCL software (version 5.1), where the relevant definitions are as follows:

p-value = the probability that the null hypothesis is true²³

Where the null hypothesis (H₀) is:

There will be no change in EC across the investigation time period.

In summary, where p>0.05, the null hypothesis can be rejected and a statistically significant increase in EC with time, is present.

² Dzone.com/articles/what-is-p-value-in-layman-terms

³ P-value = In statistical hypothesis testing, the p-value associated with an observed value, t_{observed} of some random variable T used as a test statistic is the probability that, given that the null hypothesis is true, T will assume a value as or more unfavourable to the null hypothesis as the observed value t_{observed}. The null hypothesis is rejected for all levels of significance, α greater than or equal to the p-value (USEPA. ProUCL Version 5.1 User Guide. Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations (October 2015)).

6.0 Trend Analysis & Discussion

The following subsections present and discuss the extent and magnitude of any effects arising from the infiltration of stormwater to shallow groundwater beneath the sites.

6.1 Awatea Basin

Analytical results for Awatea basin are presented in **Table T2**, **Appendix B**. Groundwater elevation and EC are plotted against rainfall data in **Appendix B**. The data range for the key analytes for Awatea basin is summarised in **Table 4**.

Analyte / Measurement	Minimum	Maximum
Groundwater elevation (m CDD)	23.85	27.35
E.C (µs/cm)	<1	20
Copper (mg/L)	<0.0001	0.0018
Lead (mg/L)	<0.0001	0.00036
Zinc (mg/L)	<0.0001	0.01
E.Coli (MPN/100ml)	<1	20
Total Coliforms (MPN/100ml)	<10	<24,000

Table 4 Summary of Analyte Concentrations – Awatea Basin

Note: EC and groundwater elevation data from loggers. Remaining data is from CCC laboratory analytical results.

6.1.1 Groundwater Elevation

There appears to be a good correlation between rainfall events and increased groundwater level beneath the basin. This correlation is expected as the purpose of the infiltration basins is to capture surface water from the broader area and allow it to infiltrate to ground.

Groundwater level data is not available beyond 15 March 2022 as the downhole data loggers deployed in the three monitoring wells were damaged or malfunctioned. The cause of the data logger failures is unknown.

Trend analysis shows that there is expected correlation between rainfall events and increases in groundwater levels within the unconfined aquifer beneath the study area. Groundwater level trends are increasing (Loc 2), decreasing (Loc 1) and slightly increasing (Loc 3) over the 10-months of data logger data.

6.1.2 Metals

The attribute target levels for dissolved copper (0.5 mg/L), lead (0.0025 mg/L) and zinc (0.375 mg/L) were not exceeded during the 12-months of monthly monitoring.

Dissolved copper concentrations ranged from below laboratory limit of reporting (LOR) to 0.0018 mg/L. Concentrations remain at least two orders of magnitude below the attribute target level.

Dissolved lead was detected above laboratory LOR on only one occasion (October 2021) in two locations. Concentrations remain at least one order of magnitude below the attribute target level.

Dissolved zinc concentrations ranged from below laboratory LOR to 0.01 mg/L. Concentrations remain up to two orders of magnitude below the attribute target level.

Tabulated and graphed analytical data is presented in Appendix B.

6.2 Kakapo Basin

Analytical results for Kakapo basin are presented in **Table T2**, **Appendix B**. Groundwater elevation and EC are plotted against rainfall data in **Appendix B**. The data range for the key analytes for Awatea basin is summarised in **Table 5**.

Table 5 Summary of Analyte Concentrations – Kakapo Basin

Analyte / Measurement	Minimum	Maximum
Groundwater elevation (m CDD)	21.72	25.50
E.C (µs/cm)	189.7	279.2
Copper (mg/L)	<0.0001	0.00071
Lead (mg/L)	<0.0001	0.00063
Zinc (mg/L)	<0.0001	0.0029
E.Coli (MPN/100ml)	<1	<10
Total Coliforms (MPN/100ml)	<1	1,600

Note: EC and groundwater elevation data from loggers. Remaining data is from CCC laboratory analytical results.

6.2.1 Groundwater Elevation

There is expected correlation between rainfall events and increases in groundwater levels within the unconfined aquifer beneath the study area. However, the correlation is weaker at Kakapo basin with only three rainfall events (>30 mm daily rainfall) correlating with an increase in groundwater level.

Changes in groundwater elevation at Kakapo basins as a response to rainfall were smaller (i.e. November 2021 rainfall event reported a groundwater elevation increase of approximately 0.2 m at Kakapo basin compared to up to 2 m at Awatea basin). Additionally, the responses to rainfall events were also pronounced at Kakapo basin with groundwater elevation spiking and dropping more slowly.

The 'less spikey' plot of groundwater elevations at Kakapo basin suggests that groundwater beneath the site may be hydraulically connected to the adjacent Arcon Stream. In this situation, groundwater levels would be influenced by stream flow (i.e. potentially increased surface water flows from July to November 2021) in addition to the artificial loading from stormwater infiltration.

Trend analysis shows that groundwater elevation was stable across the 10-month monitoring period beneath Kakapo Basin.

6.2.2 Metals

The attribute target levels for dissolved copper, lead and zinc were not exceeded during the 12-months of monthly monitoring.

Dissolved copper concentrations ranged from below laboratory LOR to 0.00071 mg/L. Concentrations remain at least three orders of magnitude below the attribute target level.

Dissolved lead was only reported above laboratory LOR on two occasions at Loc 4. Concentrations remain at least one order of magnitude below the attribute target level.

Dissolved zinc concentrations ranged from below laboratory LOR to 0.0029 mg/L. Concentrations remain up to four orders of magnitude below the attribute target level.

6.3 Outlook Place

Table 6 Summary of Analyte Concentrations – Outlook Basin

Analyte / Measurement	Minimum	Maximum
Groundwater elevation (m CDD)	26.5978	27.2851
E.C (µs/cm)	43.2	393.6
Copper (mg/L)	0.00019	0.0031

Analyte / Measurement	Minimum	Maximum
Lead (mg/L)	<0.0001	0.0006
Zinc (mg/L)	<0.0001	0.0037
E.Coli (MPN/100ml)	<1	20
Total Coliforms (MPN/100ml)	1	2,600

Note: EC and groundwater elevation data from loggers. Remaining data is from CCC laboratory analytical results.

6.3.1 Groundwater Elevation

There was correlation between rainfall events and increases in groundwater levels (Loc 6), with some responses occurring from minor rainfall events (<10 mm daily rainfall), which may reflect the shallow groundwater levels beneath the basin. The less pronounced correlation at Loc 7 may reflect its close proximity (20 m) to Lake Roto Kohatu.

Trend analysis shows that groundwater level was declining over the monitoring period. However, the decrease is relatively small (less than 0.2 m), and this could be attributed to natural (seasonal) fluctuations in groundwater level.

6.3.2 Metals

The attribute target levels for dissolved copper, lead and zinc were not exceeded during the 12-months of monthly monitoring.

Dissolved copper concentrations ranged from below laboratory LOR to 0.0031 mg/L. Concentrations remain three to four orders of magnitude below the attribute target level.

Dissolved lead concentrations ranged from below laboratory LOR to 0.0006 mg/L. Concentrations remain at least one order of magnitude below the attribute target level.

Dissolved zinc concentrations ranged from below laboratory LOR to 0.0037 mg/L. Concentrations remain up to four orders of magnitude below the attribute target level.

6.4 Electrical Conductivity

Review of the p values (<0.05) reported in the M-K tests reported no statistically significant increasing trends in groundwater beneath the three basins.

While the M-K testing reported 'statistically significant evidence of an increasing trend' for EC in groundwater at a 95% confidence interval in all seven monitoring wells, this refers to the presence of a monotonic (upward) trend over time in all seven wells rather than a statistically significant increasing trend as defined in **Section 5.0**.

The M-K test outputs are presented in **Appendix B**.

6.5 Springs

A review of the 'Spring Location' layer on Canterbury Maps⁴ reported one spring in close proximity (<500 m from the basin) to Outlook basin (440 metres east). However, the mapped spring is located beneath Johns Road. No springs were identified in close proximity to Awatea or Kakapo basins. Assessment of water quality in Arcon Stream or Lak Roto Kohatu, located adjacent to Kakapo basin and Outlook basin respectively, was not included in the statement of work informing this investigation.

⁴ <u>https://mapviewer.canterburymaps.govt.nz/</u> accessed on 5 May 2022.

7.0 Conclusion

7.1 Groundwater Quality

Based on the analytical data and monitoring well logger data for the total investigation period of June 2021 to May 2022 in comparison to the attribute target levels, the operation of the three infiltration basins in this investigation does not appear to have an adverse effect on the quality of shallow groundwater beneath the basins.

There were no exceedances of the attribute target levels for metals (copper, lead and zinc) in groundwater during the 12 monthly sampling events.

Surface water samples collected from the basins (where water was present at the time of sampling) did not report concentrations of analytes above the attribute target levels. While the attribute target levels are not applicable to surface water within the basin, the data provides some assurance that stormwater discharging into the basins is currently not resulting in deterioration of groundwater quality.

No statistically significant trends were reported for EC in groundwater beneath the basins

Analysis of groundwater quality in upgradient and downgradient wells at each basin was not completed as groundwater flow direction at each basin could not be adequately inferred. However, water quality and quantity (groundwater elevation) between wells within each basin was broadly consistent.

7.2 Groundwater Quantity

Overall, there appears to be a good correlation between rainfall events and increased groundwater elevation at all three basins. This is expected as the infiltration basins are designed to capture surface water from the broader area and allow for rapid infiltration to ground.

Rainfall data plotted with both groundwater elevation and standing water levels in the basins (Appendix B) reported a good correlation with rainfall events as low as 2-4 mm correlating with standing water in the basins. The correlation indicates that the infiltration basins are operating as required with rainfall events resulting in water levels registered at the basin followed by rapid infiltration to groundwater which reports short term increases in groundwater elevation.

The logger at Awatea basin malfunctioned resulting in no data for a five-month period from 3 September 2021 to 28 February 2022. No data is available from 15 March due to a separate fault with the broader Awatea basin system.

7.3 Effects on Electrical Conductivity and Springs

There does not appear to be any adverse effects on the water quality or quantity of nearby springs from the operation of infiltration basins at the three basins.

There were no statistically significant increasing trends in EC in groundwater beneath the three basins.

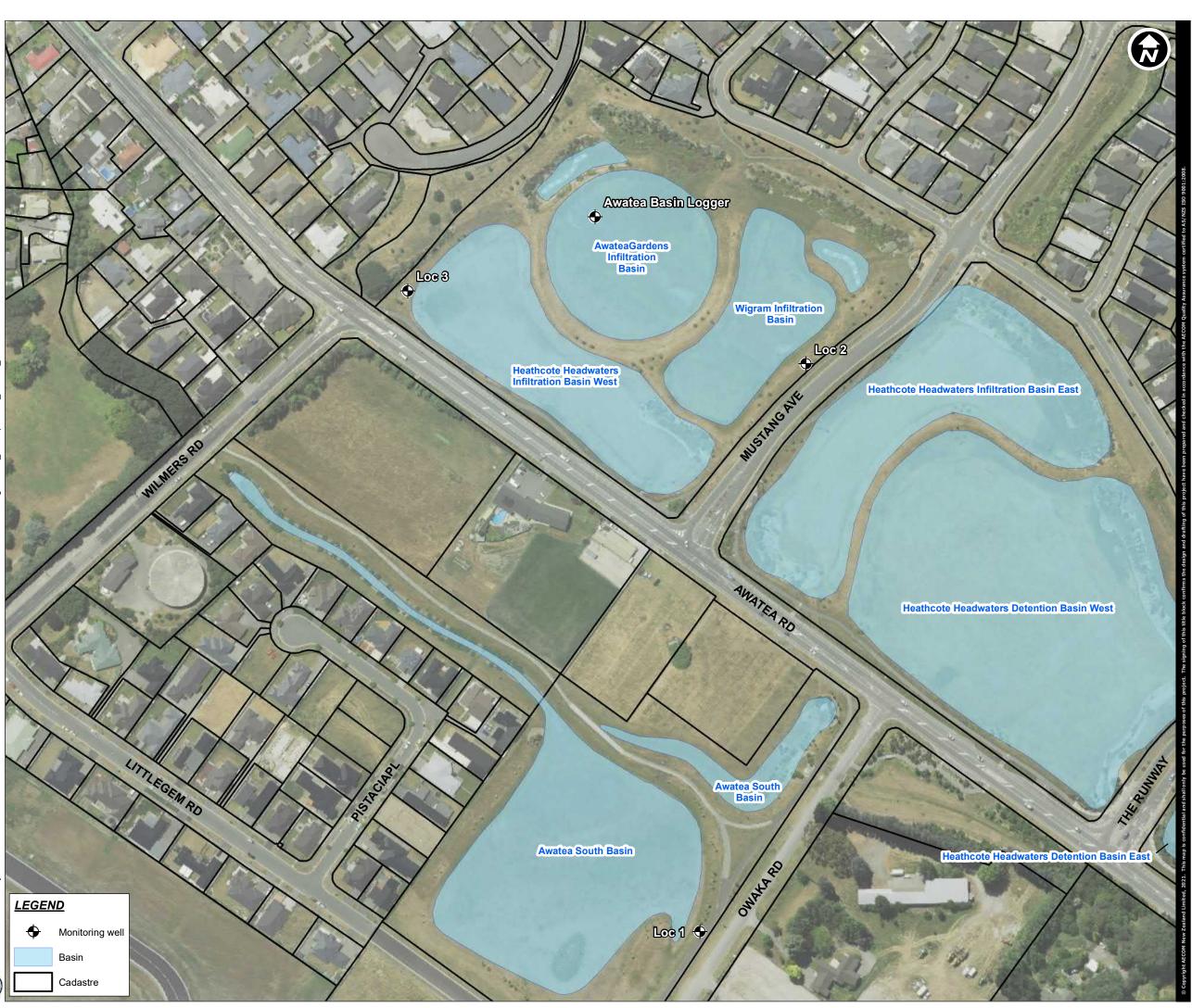
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- c) This conclusion is based solely on the scope of work agreed between AECOM and Christchurch City Council and described in **Section 2.0** of this Report.
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- f) The assessment carried out for the purposes of the Report have been undertaken, and the Report has been prepared, in accordance with normal prudent practice and by reference to applicable environmental regulatory authority and industry standards, guidelines and assessment criteria in existence at the date of this Report.
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Figures



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PROJECT

STORMWATER BASIN ENVIRONMENTAL INVESTIGATION, CSNDC

CLIENT

CHRISTCHURCH CITY COUNCIL

CONSULTANT

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SPATIAL REFERENCE

Scale:			1:2,0	00 (A3	3 size)		
20	10	0	20	40	06	60	80
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Map features depicted in terms of NZTM 2000 projection

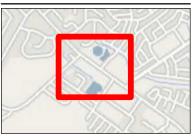
PROJECT MANAGEMENT

Approved	AC	Date	5/18/2022
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Designed	SD	Date	5/18/2022
Drawn	SD	Date	5/18/2022

ISSUE/REVISION

Α	5/18/2022	DRAFT
Rev	Date	Description

KEY PLAN



PROJECT NUMBER 60649177 SHEET TITLE SITE LOCATION PLAN, AWATEA BASIN MAP NUMBER

FIGURE 1





PROJECT

STORMWATER BASIN ENVIRONMENTAL INVESTIGATION, CSNDC

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			m

Map features depicted in terms of NZTM 2000 projection

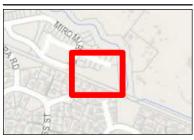
PROJECT MANAGEMENT

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Drawn	SD	Date	5/18/2022

ISSUE/REVISION

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Α	5/18/2022	DRAFT
Rev	Date	Description

KEY PLAN



PROJECT NUMBER 60649177 SHEET TITLE SITE LOCATION PLAN, KAKAPO BASIN MAP NUMBER

FIGURE 2







PROJECT

STORMWATER BASIN ENVIRONMENTAL INVESTIGATION, CSNDC

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Scale:		1:400 (A3 size)	
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			m

Map features depicted in terms of NZTM 2000 projection

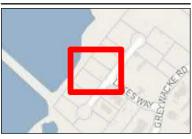
PROJECT MANAGEMENT

Approved	AC	Date	5/18/2022
Checked		Date	5/18/2022
Designed	SD	Date	5/18/2022
Drawn	SD	Date	5/18/2022

ISSUE/REVISION

Α	5/18/2022	DRAFT
Rev	Date	Description

KEY PLAN



PROJECT NUMBER 60649177 SHEET TITLE SITE LOCATION PLAN, OUTLOOK BASIN MAP NUMBER

FIGURE 3

Appendix **B**

Tables & Graphs

Table T1 Groundwater Monitoring Well Construction Details

Basin ID	Well ID	Construction/ Installation Date	Northing	Easting	Ground Elevation (m CDD)	Top of Casing (mASL)	Top of Well Screen (mbgs)	Top of Well Screen (mASL)	Bottom of Well Screen (mbgs)	Bottom of Well Screen (mASL)	Well Depth (mbgs)	Well Depth (mASL)	Lithology of Screened Interval
	Loc 1	15-Apr-21	385097.307	803519.956	30.62	31.10	2.90	27.72	8.90	21.72	8.90	21.72	Gravelly Sand, Silty Clay, Sand
Awatea	Loc 2	16-Apr-21	385158.736	803843.788	30.73	31.21	2.80	27.93	8.80	21.93	8.80		Sandy Gravel, Gravels
Basin	Loc 3	15-Apr-21	384931.610	803886.268	30.82	31.28	2.90	27.92	8.90	21.92	8.90	21.92	Gravelly Sand, Gravels, Sand
	Awatea Basin Logger	13-Jun-21	385038.646	803928.278	27.93	27.98	-	-	-	-	-	-	-
Kakapo	Loc 4	14-Apr-21	384786.008	806629.867	34.81	35.16	4.63	30.18	13.63	21.18	13.63	21.18	Sand, Cobbles, Sandy Gravel, Gravel
Basin	Loc 5	13-Apr-21	384900.015	806608.725	34.64	35.11	4.35	30.29	13.35	21.29	13.35	21.29	Sand, Gravels, Gravelly Sand/Sandy Gravel
Dasiri	Kakapo Basin Logger	13-Jun-21	384861.478	806601.497	33.11	33.15	-	-	-	-	-	-	-
Outlook	Loc 6	14-Apr-21	387938.060	814123.516	28.33	28.77	1.30	27.03	5.80	22.53	5.80	22.53	Gravels
Basin	Loc 7	14-Apr-21	387878.516	814142.755	28.51	28.99	1.50	27.01	5.96	22.55	5.96	22.55	Gravels
Dasin	Outlook Basin Logger	13-Jun-21	387922.261	814121.779	27.20	27.23	-	-	-	-	-	-	-

Notes: CDD - Christchurch Drainage Datum

Table T2 Groundwater Gauging Results

Basin ID	Well ID	Purge Date	SWL (m btoc)	Temp. (°C)	DO (mg/L)	EC (µScm)	рН	Redox (mV)	Comments
		1-Jun-21	5.170	12.7	(mg/L) 10.09	26.6	6.67	262.3	Low turbidity, cloudy, no odour
		23-Jun-21	6.548	12.3	8.58	46.7	6.78	181.4	Cloudy, minor turbidity
		5-Aug-21	6.091	11.2	9.73	39.1	6.32	302.4	No odour,moderate turbidity, clear
		6-Oct-21 10-Nov-21	6.020 6.315	<u>10.1</u> 11.0	9.29 7.39	58.6 158.1	N/A** 5.87	73.2	Clear, sl turbidity, no odour Brown, mod turbidity, no odour
	1	1-Dec-21	6.420	11.8	8.39	100.1	N/A**	-787.3	Clear, no turbidity, no odour
	Loc 1	22-Dec-21	6.010	15.1	9.12	63.4	5.46	26.4	Clear, no turbidity, no odour
		14-Jan-22	6.490	14.3	5.61	133.1	6.25	5.9	Moderate turbidity, cloudy, no odour
		17-Feb-22 10-Mar-22	5.900 6.390	17.6 16.6	7.77	59.2 111.8	6.56 6.13	162.0 74.9	Slightly turbid, slightly cloudy, no odour Brown, no odour, mod - high turbidity
		6-Apr-22	6.420	15.9	6.44	138.8	5.99	171.1	Clear, low/no turbidity, no odour
		5-May-22	6.520	15.8	5.09	184.9	5.83	113.0	Clear, no odour, no turbidity
		1-Jun-21	2.840	12.5	9.95	29.4	6.12	202.2	Low turbidity, no odour
		23-Jun-21 5-Aug-21	5.756 5.795	11.2	6.55 7.25	51.1 43.9	6.09 6.55	129.5 161.8	Clear, turbidity Clear, no turbidity, no odour
		5-Oct-21	6.100	11.0	2.64	90.8	N/A**	-6.9	Clear, sl turbidity, no odour
		11-Nov-21	6.340	11.5	2.11	109.6	5.71	104.9	Clear, no odour, no turbidity
atea Basin	Loc 2	1-Dec-21	6.240	11.8	4.67	76.5	15.88**	-863.3	Clear, no odour, no turbidity
		21-Dec-21 14-Jan-22	5.420 6.400	15.1 14.3	6.05 0.86	64.1 90.4	5.67 6.11	34.4 307.0	Clear, no turbidity, no odour Clear, no odour, no turbidity
		17-Feb-22	5.050	17.4	6.47	42.8	6.90	58.2	Clear, no odour, no turbidity
		10-Mar-22	6.370	16.4	4.70	89.3	5.95	235.6	Brown, no odour, mod - high turbidity
		6-Apr-22	6.390	15.8	1.54	93.5	5.59	196.6	Cloudy, sl. brown, no odour
-		5-May-22 1-Jun-21	6.560	15.5	0.78	94.8	5.49	107.3	Clear, no odour, no turbidity
		1-Jun-21 23-Jun-21	2.585 5.670	14.9 14.2	2.76	73.9	6.04 5.87	138.0 84.8	Clear, no odour Clear, low to no turbidity
		5-Aug-21	5.605	13.2	0.95	86.6	6.08	194.6	Clear, low turbidity
		6-Oct-21	5.900	13.4	1.28	227.2	N/A**	24.5	Clear, no turbidity, no odour
		11-Nov-21	6.355 6.200	13.0	1.39	274.1	6.19	85.3	Brown-Clear, mod turbidity, no odour
	Loc 3	1-Dec-21 22-Dec-21	6.200 5.440	13.3 13.3	1.58 4.39	235.1 140.7	15.83** 6.06	-838.9 -4.5	Brown, high turbidity, no odour Clear, no odour, no turbidty
		13-Jan-22	6.370	13.6	1.20	258.2	6.02	227.9	Cloudy, moderate turbidity, no odour
		17-Feb-22	5.040	14.9	4.97	77.7	6.90	31.2	Clear, no odour, no turbidity
		10-Mar-22	6.380	15.2	4.49	232.5	6.55	259.2	Brown, mod turbidity, no odour
		6-Apr-22 5-May-22	6.370 6.580	14.6 14.7	2.88	164.1 167.6	5.79 5.73	187.9 88.2	Brown, moderate turbidity, no odour Clear, no odour, no turbidity
		2-Jun-21	11.110	13.2	7.09	168.0	6.53	135.6	Moderate turbidity, cloudy, no odour
		24-Jun-21	10.788	13.2	6.65	223.2	6.72	102.8	Clear, low turbidity
		6-Aug-21	10.173	13.2	7.24	162.8	7.07	237.5	Clear, no odour, no turbidity
		6-Oct-21 11-Nov-21	9.670 9.940	13.9 13.4	7.14 8.14	244.1 242.1	N/A** 6.60	69.8 77.6	Clear, no odour, no turbidity Clear, no odour, no turbidity
	1 4	30-Nov-21	10.170	13.6	7.51	239.5	15.82**	-926.5	Brown, no odour, moderate turbidity
	Loc 4	21-Dec-21	10.100	13.9	7.68	258.0	6.49	77.1	Cloud, mod-high turbidity, no odour
		13-Jan-22	10.235	13.5	7.03	263.8	6.37	186.8	Moderate turbidity, cloudy, no odour
		16-Feb-22 9-Mar-22	10.150 10.080	13.4 12.6	7.83	257.2 255.6	6.79 6.32	110.1 115.7	Clear, no odour, no turbidity Cloudy, turbid, brown, no odour
		5-Apr-22	9.935	13.5	9.07	262.2	6.28	176.3	Clear, no turbidity, no odour
apo Basin		4-May-22	10.090	13.7	7.40	252.2	6.33	55.5	SI. turbidity, clear, no odour
		2-Jun-21	11.105	13.3	7.40	134.6	7.02	254.9	Low turbidity, no odour
		24-Jun-21 6-Aug-21	10.780 10.185	13.6 13.2	6.72 6.91	182.6 162.8	6.68 6.88	76.5	Clear, no turbidity Clear, no odour, no turbidity
		6-Oct-21	9.680	13.8	7.36	234.3	N/A**	88.9	SI. turbidity, clear, no odour
		10-Nov-21	9.940	13.1	8.04	233.0	6.94	19.1	Clear, no odour, no turbidity
	Loc 5	30-Nov-21	10.160	13.2	7.91	231.4	15.83**	-966.2	Brown, moderate turbidity, no odour
		21-Dec-21 13-Jan-22	10.100 10.240	13.4 13.3	8.13 7.22	215.5 256.2	6.42 6.39	143.9 177.8	Cloudy, no odour, no turbidity Clear, no odour, no turbidity
		16-Feb-22	10.240	13.4	7.99	181.3	6.27	108.5	Clear, slightly to moderately turbid
		9-Mar-22	10.090	14.9	4.88	75.2	6.85	28.7	Cloudy, mod - high turbidity, no odour, brown
		5-Apr-22	9.945	13.7	8.66	255.1	6.35	182.8	Clear, sl. turbidity, no odour
		4-May-22	10.100	13.4	7.37	250.3	6.33	43.7	Clear, no odour, no turbidity
		2-Jun-21 23-Jun-21	1.810 1.850	10.9 10.3	6.73 5.19	41.8 79.4	6.92 6.90	143.8 131.8	Clear, no odour Clear, no turbidity
		6-Aug-21	1.815	9.0	7.11	55.1	7.73	66.4	Clear, no odour no turbidity
		5-Oct-21	1.885	12.0	4.55	77.1	N/A**	65.7	Clear, sl turbidity, no odour
		10-Nov-21	2.075	13.9	1.56	133.2	6.87	117.8	Clear, no odour, no turbidity Clear, no turbidity, no odour
	Loc 6	30-Nov-21 21-Dec-21	2.130 1.945	15.76 16.9	0.76	102.6 115.9	15.76** 6.46	-1109.9 69.7	Clear, no turbidity, no odour Clear, no odour, no turbidity
		14-Jan-22	2.115	18.9	0.69	138.8	6.56	41.8	Clear, no odour, no turbidity
		16-Feb-22	1.790	17.0	1.92	92.8	6.39	111.0	Clear, no turbidity
		10-Mar-22	1.960	18.0	4.11	119.8	7.04	124.3	Light brown, mod - high turbidity, no odour
		5-Apr-22 4-May-22	1.965 2.080	18.6 16.6	1.25 0.54	120.1	6.31 6.38	167.8 27.5	Clear, no odour, no turbidity Clear, no turbidity, no odour
ook Basin		2-Jun-21	1.800	12.9	1.09	84.7	6.9	178.1	Clear, no odour
		23-Jun-21	1.810	11.3	0.53	98.7	6.94	128.9	Clear, no turbidity
		6-Aug-21	1.800	8.8	1.07	64.8	7.79	12.9	Clear, no odour no turbidity
		5-Oct-21 10-Nov-21	1.895 2.095	12.3 16.4	4.92	106.1 116.0	N/A** 6.31	108.1 84.0	Clear, no odour, no turbidity Clear, no turbidity, no odour
	1.0-7	30-Nov-21	2.160	18.3	2.37	90.8	15.68**	-1080.7	Clear, no turbidity, no odour
	Loc 7	21-Dec-21	1.950	18.5	0.85	119.7	6.95	211.8	Clear, no odour, no turbidity
		14-Jan-22	2.145	20.7	0.75	106.1	6.63	125.3	Clear, no odour, no turbidity
		16-Feb-22	1.800	20.3	1.23	126.7	7.22	71.7	Clear, no odour, no turbidity
		10-Mar-22 5-Apr-22	1.960 1.960	18.9 18.4	3.70 0.95	112.8 115.2	7.16 6.53	138.4 180.7	Moderate turbidity, cloudy, no odour, clear to light bro Clear, sl. turbidity, no odour
		4-May-22	2.060	15.9	0.49	134.4	6.43	3.9	Clear, no turbidity, no odour
 degrees cel 	below top of ca								

Table T3	Groundwater Analytical Results
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Conductivity Lead Dissolved Zinc Dissolved Copper Dissolved Total Coliforms MP Attribute Target Levels (CRC190445) 550 0.5 0.0025 0.375 AECOM Basin ID Lab number Date sar 2110430 2112326 2115234 2119421 2121605 35.1 44.8 54.0 54.3 168.0 140.0 59.8 1-Jun-21 23-Jun-21 100 Loc 1 Loc 1 <20 0.00065 <0.00010 <0.0001 5-Aug-21 6-Oct-21 10-Nov-21 11-Dec-21 11-Dec-21 11-Dec-21 11-Jan-22 7-Feb-22 11-Jan-21 23-Jun-21 11-Nov-21 11-Nov-21 11-Nov-21 11-Dec-21 23-Jun-21 12-S-Aug-21 6-Oct-21 11-Dec-21 23-Jun-21 23-Jun-21 12-S-Aug-22 5-Aug-22 5-Aug-22 5-Aug-22 1-Jun-21 12-S-Aug-21 10-Nar-22 5-Aug-21 10-Nar-22 Loc 1 Loc 1 Loc 1 Loc 1 Loc 1 Loc 1 0.00036 0.0011 0.00091 0.00018
0.00075
0.00076
0.00037 2123231 2124888 0.0018 Loc 1 2200734 129.0 0.0014 2202885 2204570 2206032 2207449 2110440 47.1 239.0 140.0 237.0 36.5 0.00067 0.00043 0.00043 0.00032 0.00085 0.0015 0.00012 0.0013 0.0013 0.0003 Loc 1 Loc 1 Loc 1 Loc 2 Loc 3 Lo 23 350 20 2110440 2112327 2115235 2119424 2121608 2123232 2124889 2200735 2202886 2204571 2206033 0.00085 0.0010 0.00065 0.00091 0.00093 0.0012 0.00093 0.0010 49.5 61.0 80.7 106.0 74 10 0.00096 0.0011 0.0030 0.0024 0.0028 0.0026 0.0034 0.0011 0.00064 0.0028 0.0028 0.0034 0.0034 0.00013 <0.00010 <0.00010 <0.0010 <0.00010 <0.00010 <0.00010 <0.00010 <0.00010 270 Loc 2 60.5 87.2 38.2 87.7 87.7 <0.00010 0.00077 0.00099 0.00081 0.00012 0.00020 <0.00010 2207450 2110441 vatea Bas 83. 2110441 2112328 2115236 2119420 2121609 2123233 0.0021 0.0021 0.0037 0.0041 0.0052 10 10 0.00030 215 168 237 >2,400 Loc 3 2123233 2124890 2200696 2202887 0.00033 0.00041 0.00029 0.00018 0.0032 130 24.7 110 69 234 148.0 >24,000 2204572 2206034 0.00058 <0.00010 <0.00010 0.010 6-Apr-22 5-May-22 1-Jun-21 23-Jun-21 5-Aug-21 6-Oct-21 11-Nov-21 Loc 3 Loc 3 Awatea Basin Awatea Basin Awatea Basin Awatea Basin Awatea Basin Awatea Basin
 9
 0.00030

 2
 0.00019

 15,000
 0.0013

 >2400
 0.0015

 11,000
 0.0013

 N/A*
 0.0028

 No sample collected, no water in ba

 No sample collected, no water in ba
 2207451 2110442 2112329 2115237 156.0 17.2 24.5 35.0 28.8 0.0034 0.029 0.02 0.067 0.092 320 75 400 N/A* <0.00010 <0.00010 2119417 0.00015 11-Nov-21 1-Dec-21 21-Dec-21 14-Jan-22 17-Feb-22 10-Mar-22 No sample collected, no water in basin >24000 0.013 No sample collected, no water in basin Awatea Basir Awatea Basin 2202888 34.6 320 <0.00010 0.027 Awatea Basin Awatea Basin Awatea Basin 10-Mar-22 5-Apr-22 5-May-22 2-Jun-21 24-Jun-21 6-Aug-21 6-Oct-21 11-Nov-21 ected, no water in ba ected, no water in ba <0.00010 <0.00010</p> Loc 4 Loc 4 Loc 4 Loc 4 Loc 4 Loc 4 2110530 2112379 2115238 2119419 2122008 200.0 214.0 207.0 233.0 251.0 460 24 0.00063 0.00032 6 0.00012 0.00071 0.00012 0.00055 30-Nov-21 21-Dec-21 13-Jan-22 16-Feb-22 9-Mar-22 Loc 4 Loc 4 Loc 4 0.00030 258 250 25.8 2123162 2124765 14 Loc 4 2202836 2204544 2205971 240 263 257.0 0.00019 Loc 4 Loc 4 Loc 4 Loc 5 Loc 5 Loc 5 Loc 5 Loc 5 0.00079 <1 41 24 730 1,000 38 5-Apr-22 4-May-22 2207366 2110531 2112380 2115239 2119418 239 162 176 0.00120 2-Jun-21 24-Jun-21 6-Aug-21 6-Oct-21 11-Nov-21 2 <0.00010 <0.00010 <0.00010 0.00036 0.00011 0.00016 0.00011 242.0 242.0 244 208 25.2 166 2122009 Loc 5 0.00290 0.00032 0.00064 0.00110 30-Nov-21 21-Dec-21 13-Jan-22 16-Feb-22 2122003 2123163 2124766 2200698 2202837 Loc 5 akapo Bas <0.00010 1.600 16-Feb-22 9-Mar-22 5-Apr-22 5-Apr-22 1-Jun-21 1-Jun-21 6-Oct-21 11-Dec-21 11-Dec-21 11-Dec-21 14-Jan-22 10-Mar-22 5-Apr-22 4-May-22 4-May-22 2202837 2204545 2205972 2207367 166 245 246.0 239.0 0.00110 0.00034 0.0013 0.0010 0.00018 10 160 <0.00010 No sample collected, no water in basir Loc 5 Kakapo Basin No sample collected, no water in basin Pano no normal panter in basin No sample collected, no water in basin Kakapo Basir 4-May-22 Kakapo Basin 0.00015 2-Jun-21 23-Jun-21 6-Aug-21 5-Oct-21 2110532 2112331 2115240 0.00070 Loc 6 4 260 53.3 96.0 79.0 0.0005 0.00018 0.00084 2115240 2119423 2121604 2123164 2124767 2200737 2202838 2204573 2205973 0.00077 0.0014 0.00037 0.00057 0.00052 0.00052 0.00090 0.00050 0.00041 0.00022 68.5 128.0 124.0 106.0 132.0 81.0 113.0 111.0 0.00060 5-Oct-21 10-Nov-21 30-Nov-21 21-Dec-21 14-Jan-22 16-Feb-22 10-Mar-22 5-Apr-22 4-May-22 <0.00000 <0.00010 <0.00010 <0.00010 <0.00010 <0.00010 <0.00010 <0.00010</pre> 0.0023 0.0010 0.00120 0.00140 0.0010 Loc 6 180 610 2,600 0.00099 20 0.00010 2205973 2207368 2110533 2112332 2115241 2119422 2121601 2123165 2124768 2200738 2200738 2204574 220574 Loc 7 Loc 7 Loc 7 Loc 7 Loc 7 0.00033 0.00019 0.00021 4-May-22 134. 0.00068 4-May-22 2-Jun-21 23-Jun-21 6-Aug-21 5-Oct-21 10-Nov-21 21-Dec-21 14-Jan-22 16-Feb-22 10-Mar-22 5-Aur 22 96. 92. 100 <0.00010 0.00029 0.00026 0.00027 0.0031 0.00023 0.00042 0.00040 0.00025 0.00025 0.00025 0.00017 0.00170 <0.00010</p>
0.00190
0.00370
0.0010
0.00080
0.00034 Loc 7 Loc 7 Loc 7 Loc 7 Loc 7 Outlook Basin Loc 7 101 250 260 83 190 5 5-Apr-22 4-May-22 Loc 7 Loc 7 0.00062 0.0013 2205974 2207369 106.0 127.0 13 2110534 2112330 2115242 0.0023 0.0013 0.0026 2-Jun-21 23-Jun-21 Outlook Basin Outlook Basin 86.3 89.0 10 250 240 0.00016 89.2 0.00010 water in b 6-Aug-21 6-Oct-21 utlook Basir utlook Basin 210 sample c 11-Nov-21 Outlook Basin No sample collected, no water in basi No sample collected, no water in basi 1-Dec-21 Outlook Basin 21-Dec-21 Outlook Basin 14-Jan-22 Outlook Basin 16-Feb-22 Outlook Basin Outlook Basir No sample collected, no water in basin No sample collected, no water in basin No sample collected, no water in basin 24,000 0.00040 No sample collected, no water in basin No sample collected, no water in basin 2202840 105 390 <0.00010 0.00086 16-Feb-22 Outlook Basin 10-Mar-22 Outlook Basin 5-Apr-22 Outlook Basin 5-May-22 Outlook Basin

No sample collected, no water in basin

Motes: mg/L - milligrams per litre µScm - microsiemens per centimetre MPN/100 mL - Most Probably Number per 100 ml Due to a lab error, there are no test results for E.coli and total coliforms

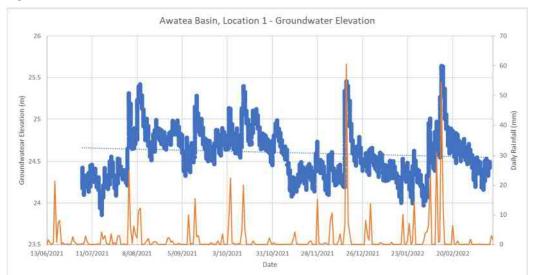


Figure 1 Groundwater Elevation, Awatea Basin Location 1¹



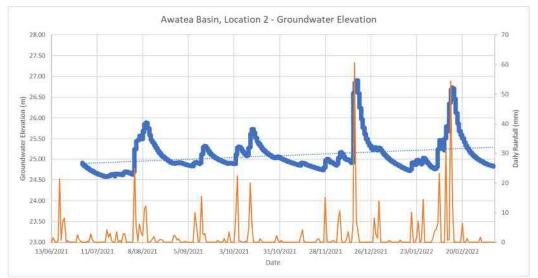
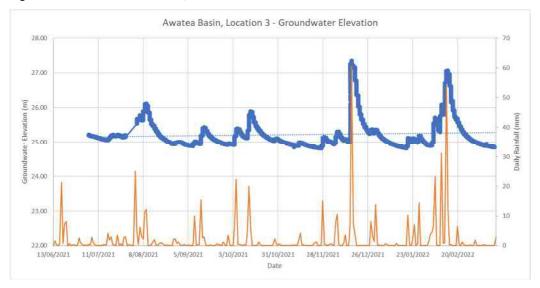
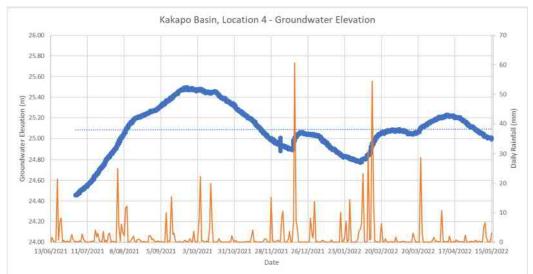


Figure 3 Groundwater Elevation, Awatea Basin Location 3¹

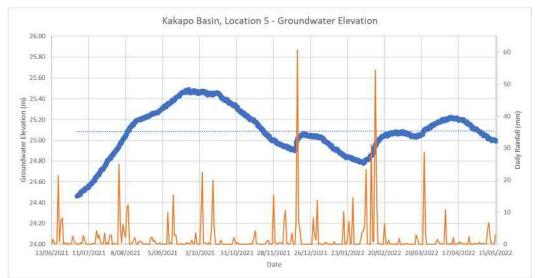


¹ Rainfall data sourced from NIWA Cliflo Database on 16 May 2022.









 $^{^{\}rm 2}$ $^{\rm 2}$ Rainfall data sourced from NIWA Cliflo Database on 16 May 2022.

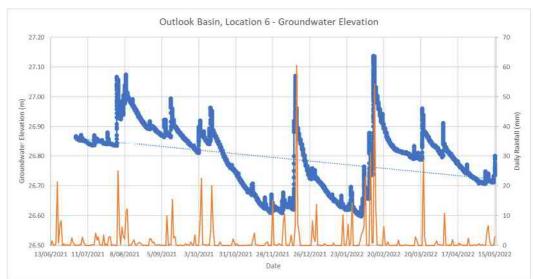
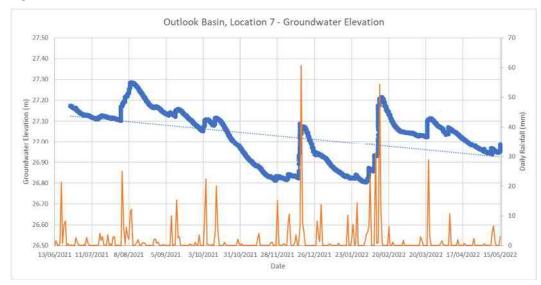
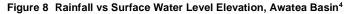


Figure 6 Groundwater Elevation, Outlook Basin Location 6³





³ Rainfall data sourced from NIWA Cliflo Database on 16 May 2022.



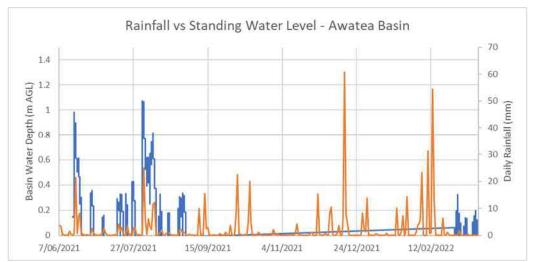


Figure 9 Rainfall vs Surface Water Level Elevation, Kakapo Basin⁴

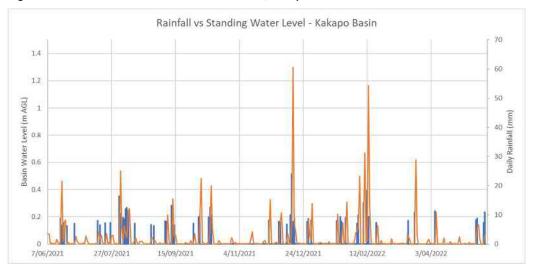
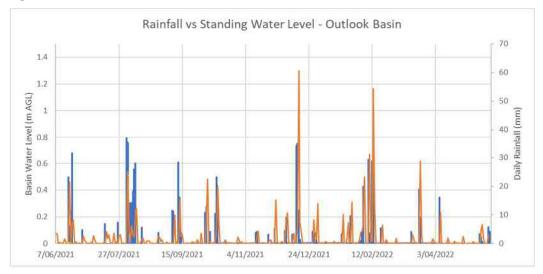


Figure 10 Rainfall vs Surface Water Level Elevation, Outlook Basin⁴



^{4 4} Rainfall data sourced from NIWA Cliflo Database on 16 May 2022.



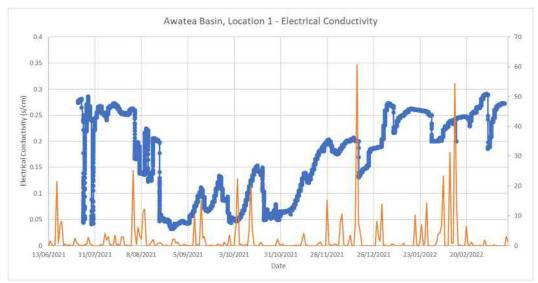
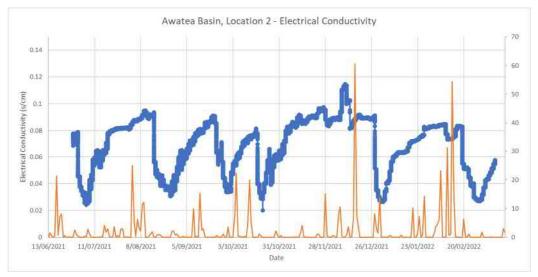
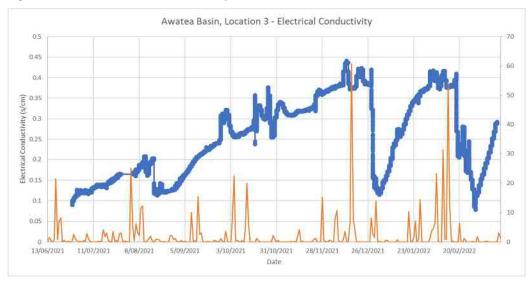


Figure 12 Rainfall vs Electrical Conductivity, Awatea Basin⁵







 $^{\rm 5}$ Rainfall data sourced from NIWA Cliflo Database on 16 May 2022.

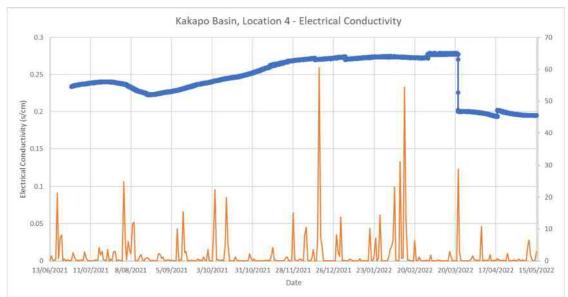
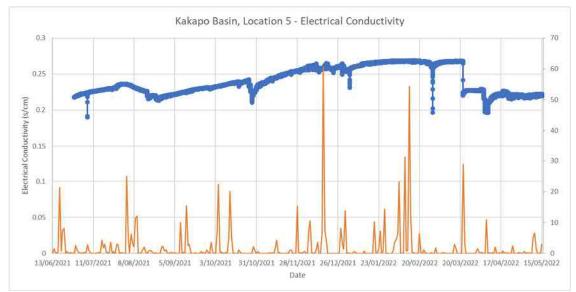


Figure 14 Rainfall vs Electrical Conductivity, Kakapo Basin⁶





⁶ Rainfall data sourced from NIWA Cliflo Database on 16 May 2022.

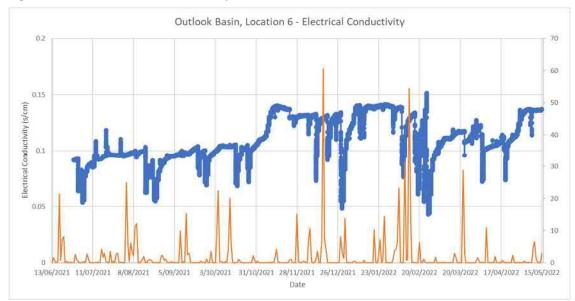
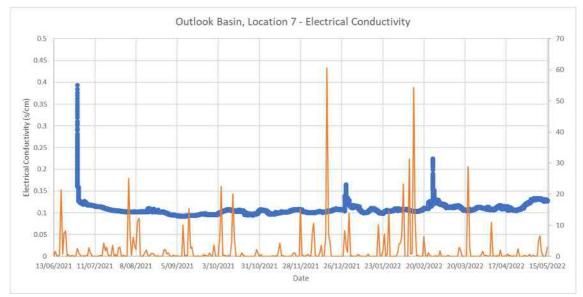
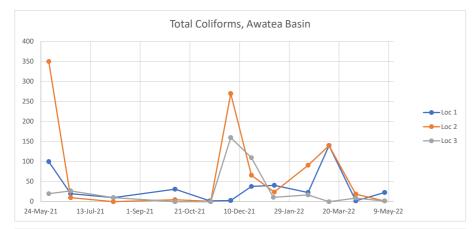


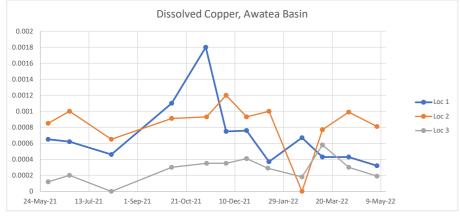
Figure 16 Rainfall vs Electrical Conductivity, Outlook Basin⁷

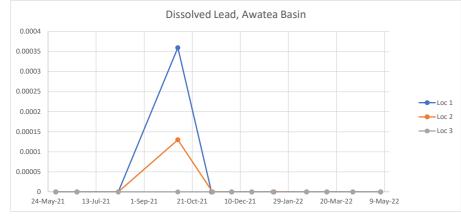


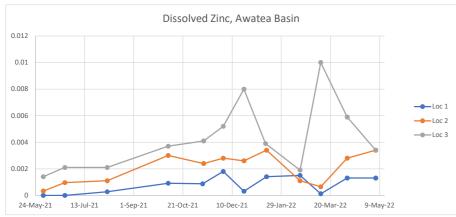


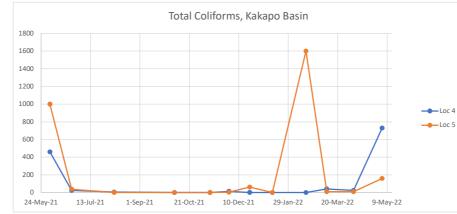
⁷ Rainfall data sourced from NIWA Cliflo Database on 16 May 2022.

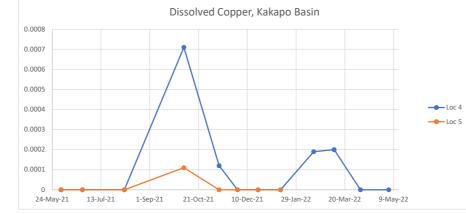


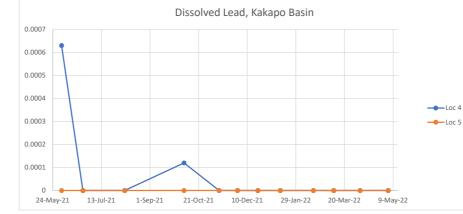


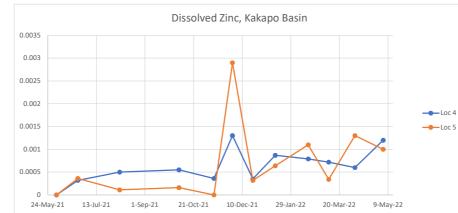


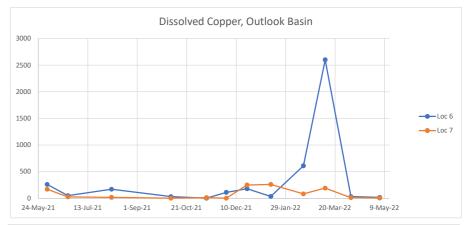


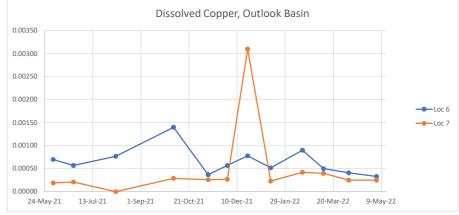


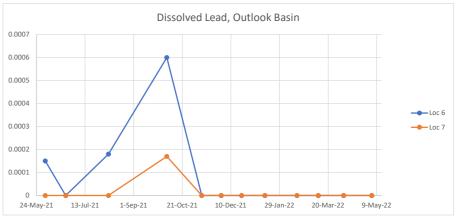


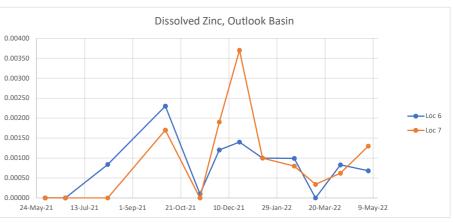


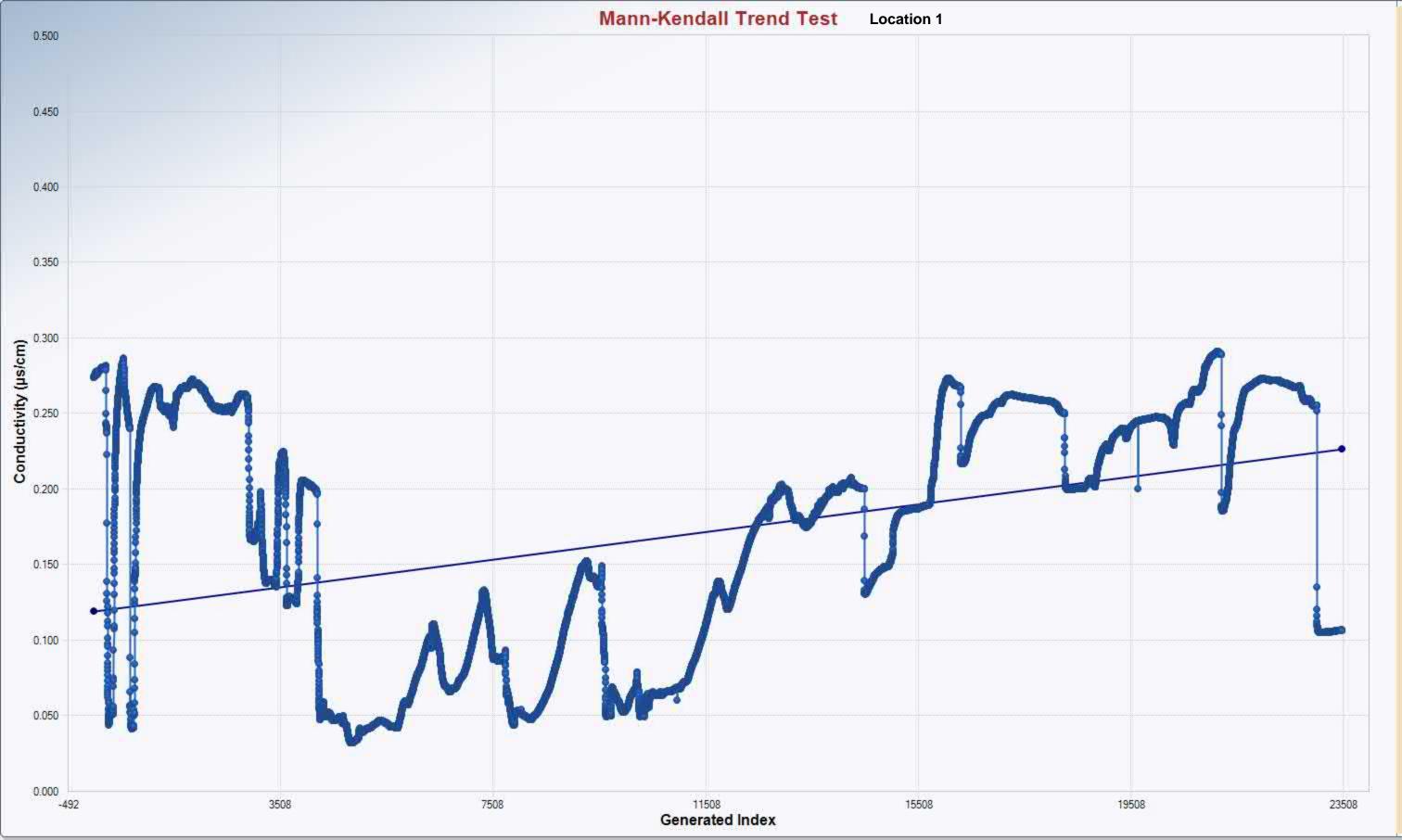












n	23,482
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	1,199,485.4354
Standardized Value of S	74.9209
M-K Test Value (S)	89,866,502
Appx. Critical Value (0.05)	1.6449
Approximate p-value	0.0000

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.1188



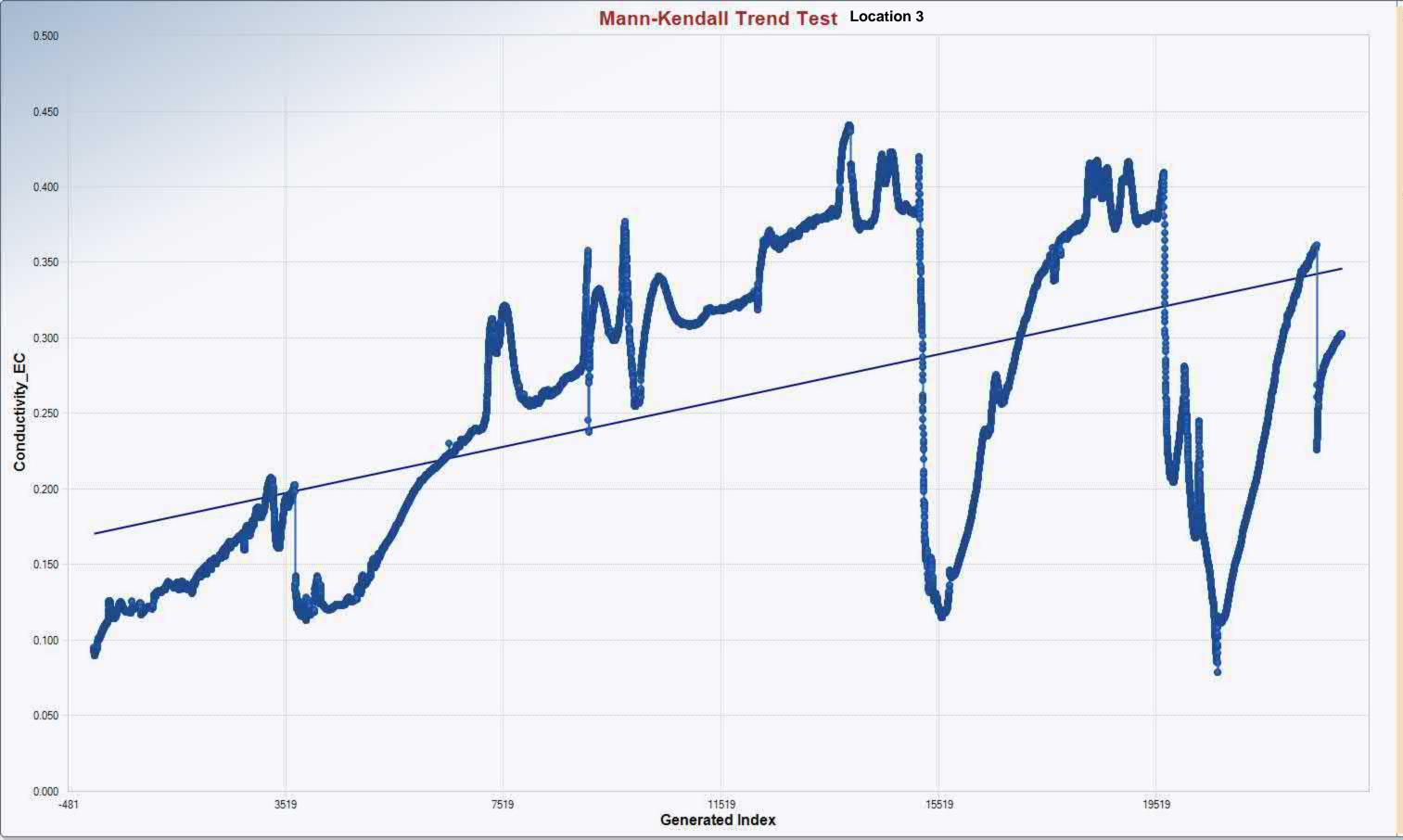
Mann-Kendall Trend Test Location 2

Mann-Kendall Trend Analysis

n	23,488
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	1,199,941.1188
Standardized Value of S	6.8921
M-K Test Value (S)	8,270,135
Appx. Critical Value (0.05)	1.6449
Approximate p-value	0.0000

OLS Regression Line (Blue)

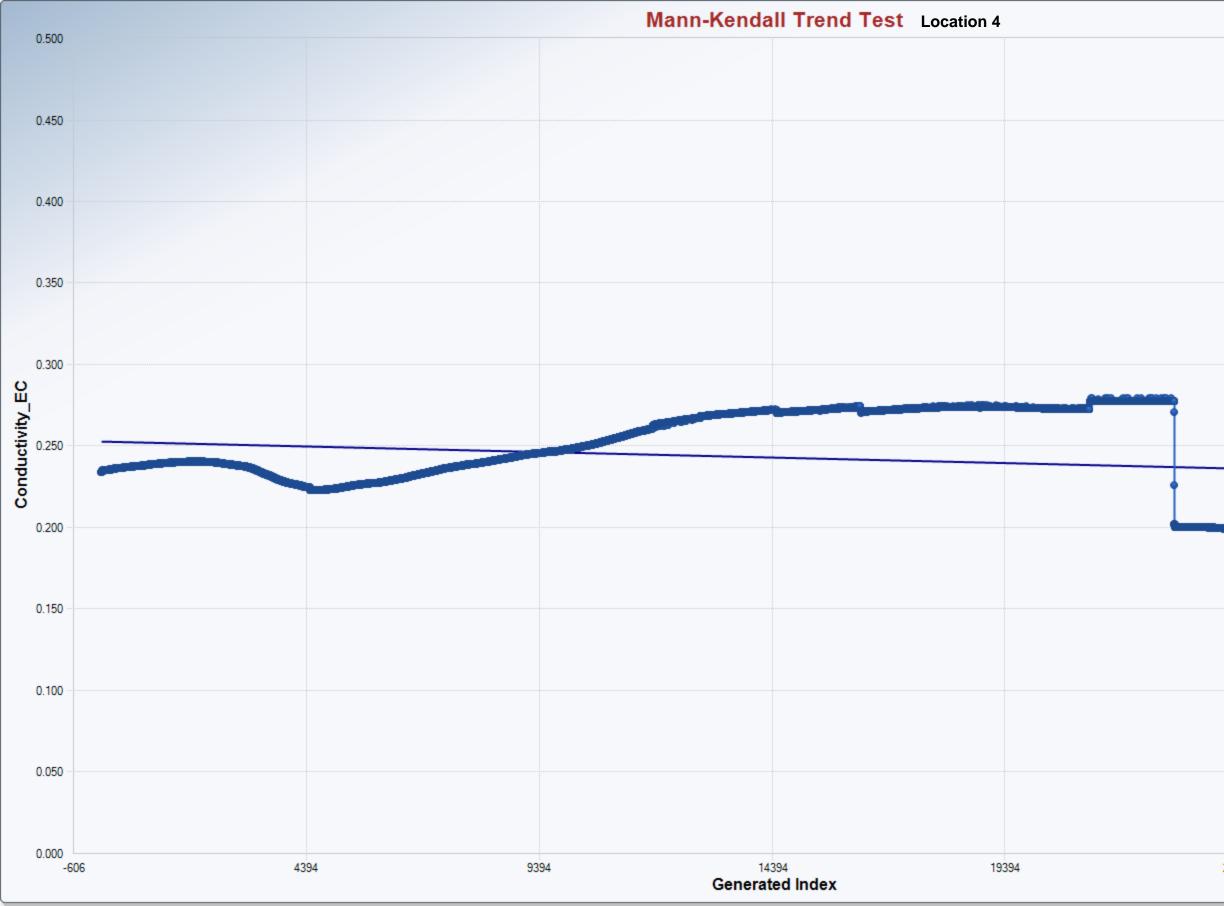
OLS Regression Slope	0.0000
OLS Regression Intercept	0.0676



n	22,934
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	1,157,744.0613
Standardized Value of S	101.6492
M-K Test Value (S)	117,683,733
Appx. Critical Value (0.05)	1.6449
Approximate p-value	0.0000

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.1705



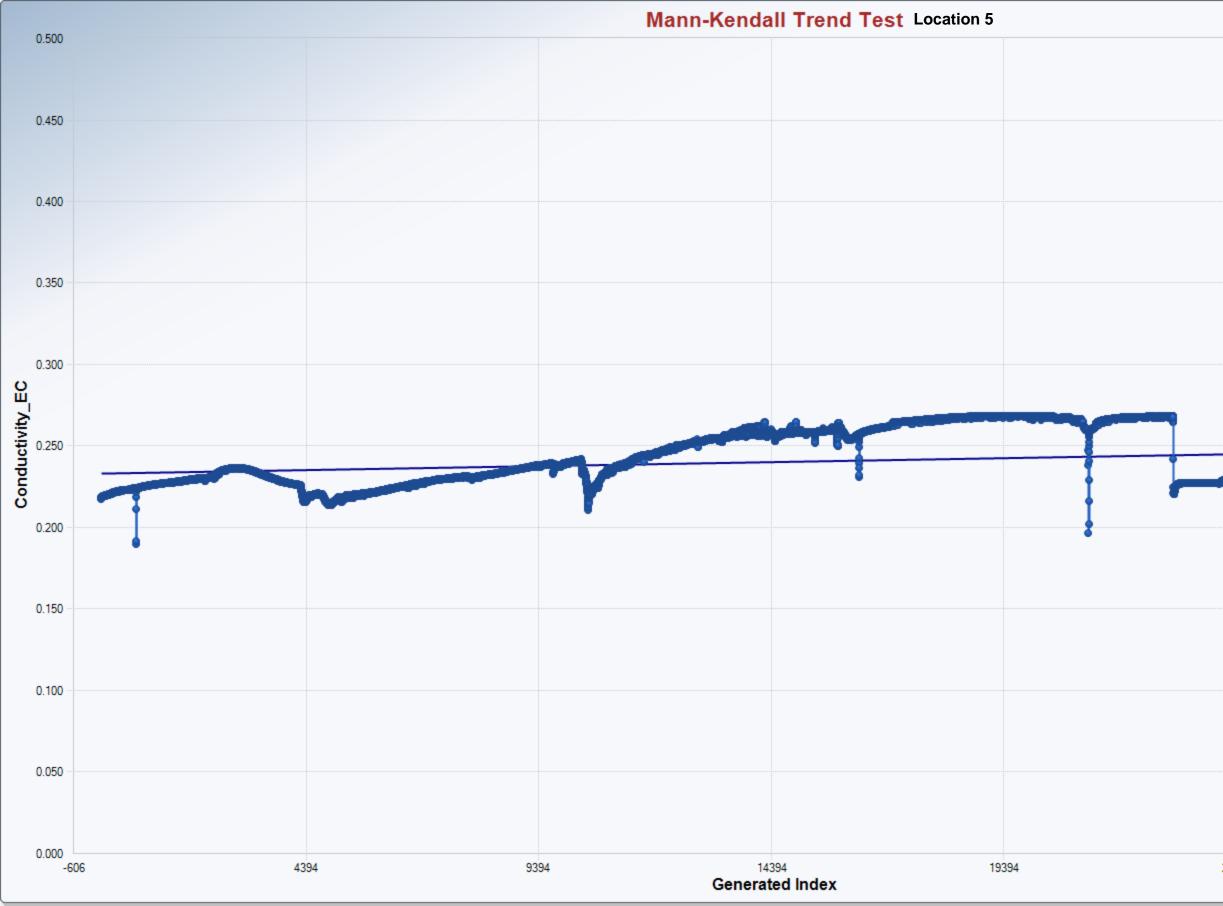
n	28,894
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	1,637,201.5283
Standardized Value of S	38.3388
M-K Test Value (S)	62,768,304
Appx. Critical Value (0.05)	1.6449
Approximate p-value	0.0000

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.2527

Statistically significant evidence of an increasing trend at the specified level of significance.

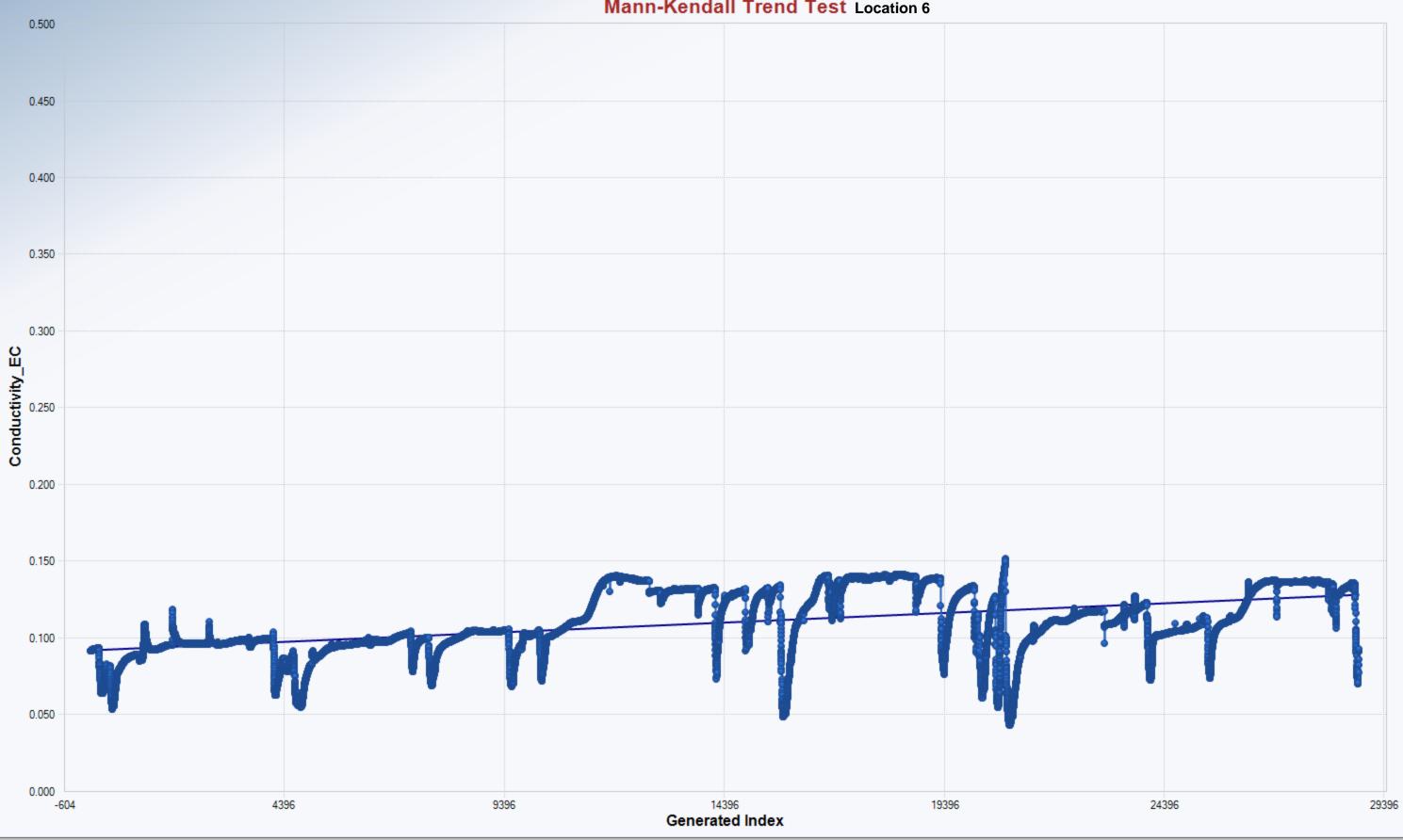
29394



n	28,922
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	1,639,555.0700
Standardized Value of S	64.3960
M-K Test Value (S)	105,580,865
Appx. Critical Value (0.05)	1.6449
Approximate p-value	0.0000

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.2334



Mann-Kendall Trend Test Location 6

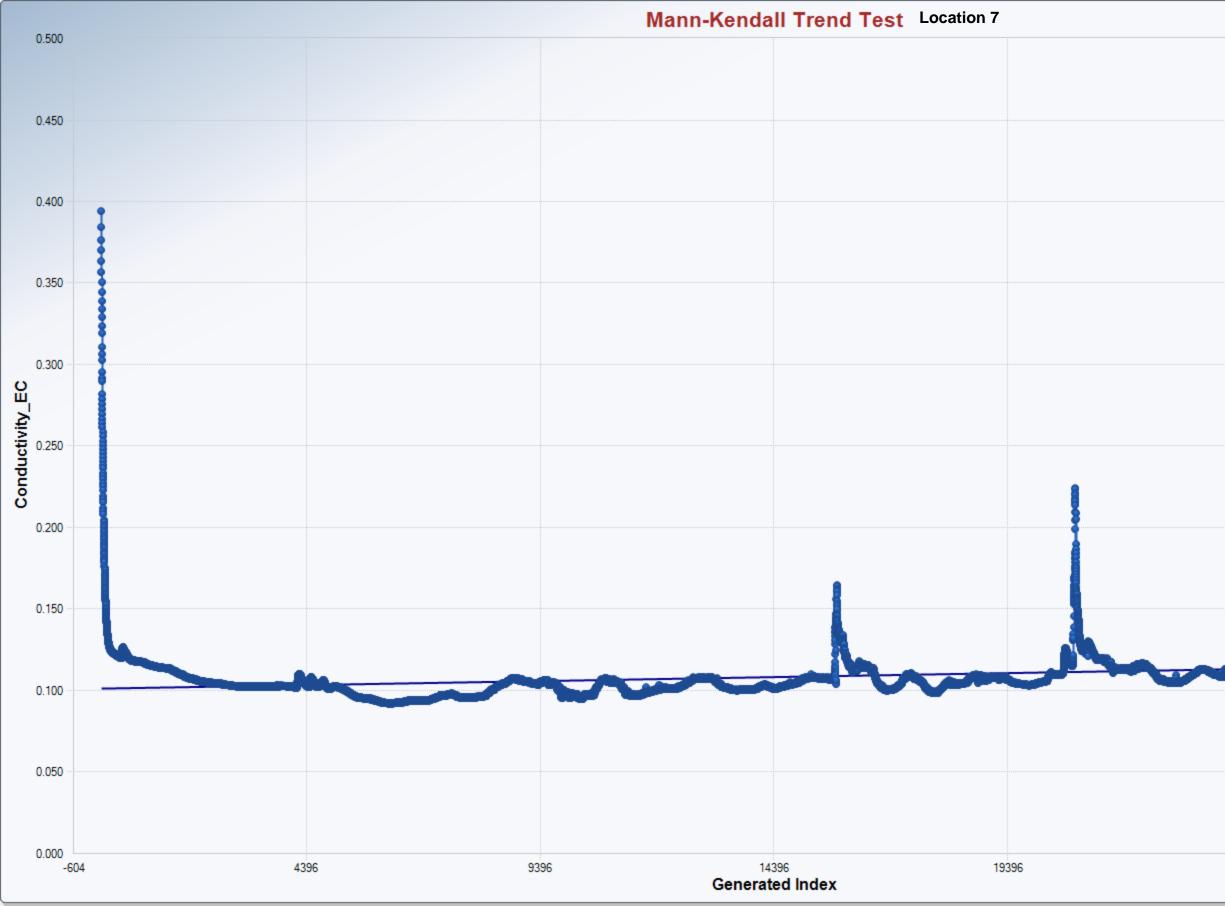
Mann-Kendall Trend Analysis

n	28,823
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	1,631,160.9608
Standardized Value of S	104.2379
M-K Test Value (S)	170,028,860
Appx. Critical Value (0.05)	1.6449
Approximate p-value	0.0000

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.0922

Statistically significant evidence of an increasing trend at the specified level of significance.



Mann-Kendall Trend Analysis

n	28,818
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	1,630,723.0445
Standardized Value of S	94.4126
M-K Test Value (S)	153,960,860
Appx. Critical Value (0.05)	1.6449
Approximate p-value	0.0000

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.1010

Statistically significant evidence of an increasing trend at the specified level of significance.

Appendix C

Bore Logs



HOLE IDENTIFICATION

Location 1

Client	
. .	

DRILLHOLE LOG ENVIRONMENTAL LOC 1 - LOC 7 WELL INSTALLATION GINT LOGS. GPJ TEST_ENVIRODRILLHOLE. GDT 21/03/22

Christchurch City Council

Project

CCC SW Basin Investigation Project number 60649177

Co-ordinates

Location

CCC Stormwater Basins (Awatea, Kakapo, Outlook)

thod	SAMPLING & TESTING		MPLING & TESTING			LING & TESTING			SAMPLING & TESTING			SAMPLING & TES				MATERIAL DESC		N				u
Excavation Method	0-100%	Sample ID	Analysis	PID (ppm)	Depth	Graphic Log	consistency, relative density, wate	r content, plasticity, grading,	GEOLOGICAL DESCRIPTION	STAINING ODOURS AND COMMENT	6	Groundwater	 Well Construction 									
VAC EX					- - - - - - - - - - - - - - - - - - -	х ВI		hard, organics present (roots). y graded, medium grained, loose.	Sandy SILT													
					- - - - - - - - - - - - - - - - - - -				Sand													
								aded, loose, cobbles present, rounded.	SAND Gravel													
Sonic					5		irey GRAVELLY SAND	aded, loose, cobbles present, rounded.	Gravely													
									Gravel			$\overline{\nabla}$										
					- 8	hi G	rey SILTY CLAY, brown igh plasticity, round cob rey, fine SAND, wet ilt lense at 8.0 to 8.2 m	n and orange mottling, moist, moderately stiff, bles and gravels present	Sand SilSan&LAY			—										
					9																	
De	Pipth 2m	IDWATER (-	OBSE Read	RVAT ling	TONS Date -	3	Date logged 15/04/2021 Logged SH Checked	Remarks		Driller Method Started Finished		Drill (202 (202	1									
							SH			Page	1 (of	1									

Date Printed: 21/03/2022



HOLE IDENTIFICATION

Location 2

Client

DRILLHOLE LOG ENVIRONMENTAL LOC 1 - LOC 7 WELL INSTALLATION GINT LOGS.GPJ TEST_ENVIRODRILLHOLE: GDT 21/03/22

Christchurch City Council

Project

CCC SW Basin Investigation Project number 60649177

Co-ordinates

Location

CCC Stormwater Basins (Awatea, Kakapo, Outlook)

pou		SAMPLING & TESTING		& TESTING MATERIAL DESCRIPTION	SL		,		Ľ								
Excavation Method	0-100%	Sample ID	Analysis	PID (ppm)	Depth	Graphic Log	(consistency, relative density, wate etc)	r content, plasticity, grading,	GEOLOGICAL DESCRIPTION	STAINING/ ODOURS AND COMMENTS	S	Groundwater	 Well Construction 				
VAC EX					- - - - - - - - - - - - - - - - - - -	× ^ × ^ × ^ × × × × × × ×	mottling.	d, organics present (roots), minor orange	Silt								
lic							rounded. Silt to coarse SAND Grey SANDY GRAVELS, rounded.	slightly moist, moderate dense, well graded,	Sandy gravel								
Sonic						Grey GRAVELS, rounded		vel Gravel									
				-7	-7	- 7 - - -	- 7 - 7 	- 7	- 7	- - - -	· · · · · · · · · · · · · · · · · · ·	Grey GRAVELLY SAND, slightly moist, moderate dense, well graded, rounded.	Sandy gravel			 	
							Grey, GRAVELS, rounde	d cobbles and pebbles, moderately graded	Gravel								
					9												
D		DWATER (DBSE	RVAT	TIONS Date		Date logged 16/04/2021 Logged SH Checked	Remarks	·	Method Started Finished		Drill 2021 2021					
							SH			Page	1 of	f 1					

Date Printed: 21/03/2022



HOLE IDENTIFICATION

Location 3

С	lie	e	n	t
			_	

DRILLHOLE LOG ENVIRONMENTAL LOC 1 - LOC 7 WELL INSTALLATION GINT LOGS. GPJ TEST_ENVIRODRILLHOLE. GDT 21/03/22

Christchurch City Council

Project

CCC SW Basin Investigation Project number 60649177

Co-ordinates

Location

CCC Stormwater Basins (Awatea, Kakapo, Outlook)

and the set of t	SAMPLING & TESTING				MATERIAL DESC	RIPTION	ΞĻ		.,		Ľ			
1 1 <td>Excavation Method</td> <td>0-100%</td> <td>Sample ID</td> <td>Analysis</td> <td>PID (ppm)</td> <td>Depth</td> <td>Graphic Log</td> <td>(consistency, relative density, wate etc)</td> <td>er content, plasticity, grading,</td> <td>GEOLOGICAL DESCRIPTION</td> <td>ODOURS AND</td> <td>6</td> <td>Groundwater</td> <td> Well Construction </td>	Excavation Method	0-100%	Sample ID	Analysis	PID (ppm)	Depth	Graphic Log	(consistency, relative density, wate etc)	er content, plasticity, grading,	GEOLOGICAL DESCRIPTION	ODOURS AND	6	Groundwater	 Well Construction
30 Image: Standard GRAVELIS with sand Image: Standard GRAVELIS with sand and cotables increasing with disp. Image: Standard GRAVELIS with sand and cotables increasing with disp. Image: Standard GRAVELIS with sand and cotables increasing with disp. Image: Standard GRAVELIS with sand and cotables increasing with disp. Image: Standard GRAVELIS with sand and cotables increasing with disp. Image: Standard GRAVELIS with sand and cotables increasing with disp. Image: Standard GRAVELIS with sand and cotables increasing with disp. Image: Standard GRAVELIS with sand and cotables increasing with disp. Image: Standard GRAVELIS with sand and small to large tourided gravel and cotables Image: Standard GRAVELIS with sand and small to large tourided gravel and cotables Image: Standard GRAVELIS with sand and small to large tourided gravel and cotables Image: Standard GRAVELIS with sand and small to large tourided gravel and cotables Image: Standard GRAVELIS with sand and small to large tourided gravel and cotables Image: Standard GRAVELIS with sandard with cotables Image: Standard GRAVELIS wi						-	* * * * * * * * * * • • • •			aveBilt				
git -2 <	AC EX													
git -2 <										andy				
III IIII III IIII IIIII IIIII IIIII IIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Sonic													
III III <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Gravel</td> <td></td> <td>-</td> <td>Ţ</td> <td></td>										Gravel		-	Ţ	
III IIII IIIII IIIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII						8			ately graded, wet, son	Sand				
GROUNDWATER OBSERVATIONS Depth _ Reading Date Date logged Remarks Driller McMillan 6.726m 15/04/2021 Logged SH Logged Started 12/04/2021 Rig Started Started 12/04/2021 Rig Started						9								
Logged Rig SH Checked Checked Finished 15/04/2021	GF De	GROUNDWATER OBSERVATIONS				TONS Date	;		Remarks	I	Driller	McMill	lan	
Checked Finished 15/04/2021	6.7	.726m -						Logged				Rig		4



HOLE IDENTIFICATION

Location 4

Client

Christchurch City Council

Project

CCC SW Basin Investigation Project number 60649177

Co-ordinates

Location

CCC Stormwater Basins (Awatea, Kakapo, Outlook)

SAMPLING & TESTING						MATERIAL DESCRIPTION			STAINING/		r	ion	
Excavation Method	0-100%	Sample ID	Analysis	PID (ppm)	Depth	Graphic Log	(consistency, relative density, water etc)	content, plasticity, grading,	GEOLOGICAL DESCRIPTION	ODOURS AND COMMENT	6	Groundwater	 Well Construction
VAC EX					- - - - - - - - - - - - - - - 1 - - - -		Grey SILT, hard, dry, orga and gravel	anics present (roots), occasional round pebble	Sit				
						**************************************		nor clay content, grey and tan mottling	Silt				
					-2	n		se, slightly moist, poorly graded, grey and tan	Sand				
					 E	s	SAND with gravels, well g						
					-3	0.000 C			Sand Gradend				
					- 			aded, loose, angular to sub-rounded, some	Gravel				
			6			lar to rounded, gravels to cobbles	Gravel						
Sonic		I -7 -3 -3 I -7 -3 I -7	Dense sandy layer at 8.5	ded, decreasing sand content	Sandy gravel								
GR De		DWATER (DBSE Read	RVAT ding	IONS Date	; ;	Date logged	Remarks	ļ I	Driller	McMi	llan	<u></u> E:22
	-			-			14/04/2021 Logged			Method	Sonic Rig		
							SH			Started Finished	13/04		
							Checked SH			Pinished		/202	

DRILLHOLE LOG ENVIRONMENTAL LOC 1 - LOC 7 WELL INSTALLATION GINT LOGS.GPJ TEST_ENVIRODRILLHOLE: GDT 21/03/22



HOLE IDENTIFICATION

Location 4

Client
Project

DRILLHOLE LOG ENVIRONMENTAL LOC 1 - LOC 7 WELL INSTALLATION GINT LOGS. GPJ TEST_ENVIRODRILLHOLE. GDT 21/03/22

Christchurch City Council

CCC SW Basin Investigation

Project number 60649177

Co-ordinates

Location CCC Stormwater Basins (Awatea, Kakapo, Outlook)

por	SAMPLING & TESTING						MATERIAL DESC	RIPTION	Γ			c
Sonid Excavation Method	0-100%	Sample ID	Analysis	PID (ppm)	Depth	5	(consistency, relative density, wate etc)		GEOLOGICAL DESCRIPTION	STAINING/ ODOURS AND COMMENTS	Groundwater	 Well Construction
Sonio					- $ -$		GRAVELS, grey, well gra	ded, decreasing sand content	Sandy gravel		Ţ	
					-1			Denocle				
De	GROUNDWATER OBSERVATIONS Depth _ Reading Date 11.09m -					<u> </u>	Date logged 14/04/2021 Logged SH	Remarks	· · · ·	Method Sor Rig	/illan ic Drill)4/202	
							Checked			Finished 14/0		
							SH			Page 2	of	2

Date Printed: 21/03/2022



HOLE IDENTIFICATION

Location 5

Client	
D	

Christchurch City Council

Project

CCC SW Basin Investigation Project number 60649177

Location

Co-ordinates

CCC Stormwater Basins (Awatea, Kakapo, Outlook)

lethod		SAMPLING	& TES	TING		0	MATERIAL DESC (consistency, relative density, wate		ION	STAINING	6/	er tion
Excavation Method	0 - 100%	Sample ID	Analysis	PID (ppm)	Depth	Graphic Log	etc)		GEOLOGICAL DESCRIPTION	ODOURS AND COMMENT	S I	Groundwater Well Construction
VACEX					- - - - - - - - - - - - - - - - - - -		Grey SILT, hard, dry, org	anics present (roots), rare round cobbles.	Sit			
					-2		Brown, silty CLAY with g plasticity.	rey and orange mottling, moist, stiff, moderate	СLAY			
							Brown grey SAND, slight mottling.	ly moist, loose, fine sand, poorly graded, orange	Sand			
					- 3		Grey GRAVELS, sub rou graded.	nded to sub angular, cobbles present, well	Grave			
					- - - - - - - - - - - - - - - - - - -		Grey GRAVELLY SAND, cobbles	slightly moist, loose, well graded, occasional	Gravelly SAND			
Sonic							Grey SANDY GRAVEL, I recovered, subrounded to	ravels present.	Sandy gravel			
		DWATER C	DBSEI Read	RVAT ling	TONS Date	<u> </u>	Date logged 13/04/2021	Remarks	· ·	Driller	McMilla	
							Logged			Method Started	Sonic E Rig 12/04/2	
							SH Checked			Finished		
							SH			Page	1 of	2

DRILLHOLE LOG ENVIRONMENTAL LOC 1 - LOC 7 WELL INSTALLATION GINT LOGS. GPJ TEST_ENVIRODRILLHOLE. GDT 21/03/22



Christchurch City Council

CCC SW Basin Investigation

Client

Project

LOG OF DRILLHOLE

HOLE IDENTIFICATION

Location 5

Co-ordinates

Location

n CCC Stormwater Basins (Awatea, Kakapo, Outlook)

F	Proje	ect numbe	er 6	0649	9177				Kal	kapo, Outlook)		
thod		SAMPLING	& TES	TING			MATERIAL DESC		SF			L.
Sonid Excavation Method	0 - 100%	Sample ID	Analysis	PID (ppm)	Depth	Graphic Log	(consistency, relative density, wate etc)	r content, plasticity, grading,	GEOLOGICAL DESCRIPTION	STAINING/ ODOURS AND COMMENTS	/at	 Well Construction
Sonice								oose, fines washed out by rig and not o rounded, cobbles ntly moist, moderately stiff, high plasticity, trace	Silty CLAY		Ţ	
					-14							
De		H DWATER (-	OBSE Read	RVA1 ding	TONS Date -	3	Date logged 13/04/2021	Remarks	,	Method S	McMillan Sonic Drill	
							Logged SH			Started 1	Rig 2/04/202	21
							Checked			Finished 1		
							SH			Page	2 of	2



HOLE IDENTIFICATION

Location 6

С	lie	er	h	t
_				

DRILLHOLE LOG ENVIRONMENTAL LOC 1 - LOC 7 WELL INSTALLATION GINT LOGS. GPJ TEST_ENVIRODRILLHOLE. GDT 21/03/22

Christchurch City Council

Project

CCC SW Basin Investigation Project number 60649177

Co-ordinates

Location

CCC Stormwater Basins (Awatea, Kakapo, Outlook)

204		SAMPLING	& TES	TING			MATERIAL DESC		ΣĻ	OTAINING	,	Ę
Evention Mathe		Sample ID	Analysis	PID (ppm)	Depth	Graphic Log	(consistency, relative density, wate etc)	ar content, plasticity, grading,	GEOLOGICAL DESCRIPTION	STAINING/ ODOURS AND COMMENTS	S	Groundwater Well Construction
							Rounded cobbles		Ni Ni			
	VAC EX						Pea gravel layer Rounded boulders		Gravel			
					- 2		GRAVEL, sub-rounded, l	loose to angular, well graded.	Gravel		<u>\</u>	
	Sonic 						Sandy GRAVEL, brown,	coarse grained sands, well graded, loose	Sandy gravel			
					5		Grey GRAVEL, fines was	shed out by rig and not recovered.	Gravel			
					7							
					9							
	GROUN Depth	H NDWATER (-	OBSEI Read	RVAT ling	TONS Date	I ;	Date logged	Remarks	-, 1	Driller	McMilla	an
	1.84m				-		13/04/2021 Logged			Method	Sonic E Rig 12/04/2	Drill
							SH Checked			Started Finished		
							SH			Page	1 of	f 1

Date Printed: 21/03/2022



HOLE IDENTIFICATION

Location 7

Client

DRILLHOLE LOG ENVIRONMENTAL LOC 1 - LOC 7 WELL INSTALLATION GINT LOGS.GPJ TEST_ENVIRODRILLHOLE.GDT 21/03/22

Christchurch City Council

Project

CCC SW Basin Investigation

Co-ordinates

CCC Stormwater Basins (Awatea, Kakapo, Outlook) Location

F	Proje	ect numbe	er 6	0649	9177				Kaka	apo, Outlook)	,	·
ethod		SAMPLING	G & TES	TING			MATERIAL DESC		AL ION	STAINING/		tion
Excavation Method	0 - 100%	Sample ID	Analysis	PID (ppm)	Depth	Graphic Log	(consistency, relative density, wate etc)		GEOLOGICAL DESCRIPTION	ODOURS AND COMMENTS	Groundwater	 Well Construction
					-	******* VV VV	Grey sandy SILT, dry org Rounded COBBLES	ganics present				
VAC EX					- - - - - - 1 - 1				Cobbles			
					-		GRAVEL, grey, sub-round	ded, well grades, loose, medium grained				
					2				Gravel		Ţ	
Sonic					- 3			dense, well graded, some cobbles				
					- - - -	0,0,0,0 ,0,0,0,0 ,0,0,0,0 ,0,0,0,0			Ğ			
					5		Sandy, gravelly COBBLE	ES, well graded, sub-rounded.	Sandy Cobbles			
GR		IDWATER	U OBSE Rear	RVA ⁻	L LONS Date	1 S	Date logged	Remarks	I	Driller M	lcMillan	
	14m	_			-		14/04/2021 Logged			R	onic Dril ig 2/04/202	
							SH Checked			Finished 1		
							SH			Page		

Date Printed: 21/03/2022

Appendix D

Field Sampling Forms

4

ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

								Bon	Bore ID: Loca	Location 1
Project Name:	CCC Stormwater Basins		Project Number:	60649177 - 3.2.3	.2.3	PM Name:		S Hay San	Sample Date:	
Client:	CCC		Project Location:	Anatea	Basin	FleIdwork Staff:		Sigmon	Well Development or Well Sampling Event? (circle)	pling Event? (circle
	General Bore Information			Parame	te.	Decontamination	ination	Sampling Method	Hydrasleeve	info.
Date of GW Level: 5	5-2- B	Bore Radius (mm):		Chem Kit Serial No.:	£.	Decontaminated	2	Low Flow Pump rate:	Hydrasleeve Size:	e: Monitoring sequence
6	0q 1	Screen Interval (m): 2.9-8.0		Chem Kit Model:	8	M Dedicated		Intake depth:	Hydrasleeve Type:	order):
Bore Depth (m-pvc): 4	596	Casing Radius (mm): 25	- ,	Corrected Redox:	Y / N	FI Disposable		Bailer In Hydrasleeve	Sampling Depth (m-pvc):	Gauging
P	/	Cover Type (datic/slick up):		(The correction to apply is probe dependent)	oly is probe depende	1	peglify)	Peristaltic Pump	Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):	В	Bore Locked (YES/NO):		Parameter method:	1: T Downhole		×	Other (specify)	Sampling Start Time:	Hydrasleeve out
	K	Key Type (if applicable):	le):		Retrieved			Submersible		Parameters
Calculated bore volume (L):	1	Includes/ excludes bore annulus (circle)	bore annulus (ci		# purge volumes removed:	emoved:	Tota	Total purged volume (L):		
					Water Qua	Water Quality Parameters				
Time Cumulative Vol.		Pump Rate	DO	E.C. (mS/cm or	DH	Redox	Temp °C		Odour, Colour, Turbidity	
Valifored (L)	in (r) (in-har)		(ppm or mgr.)	(S/cm)		(m)				
0:40 ×	Resin	5	NISIO	A						
×	0		0	1						
84 48	6,125		55%	39.1 6	6.11 2	40.61	1.1	No adaul, mod.	mod turbaity, clear	
1:09	6125	¢.	10,01	39.1 6	616 20	46,2 1	T.I	4	1 1 1	1
				39.1 6	1		1.			
N.				39-1 6	26 2	73-X 1	1.7	-	\$	
5			052	39.0 2	28 2	86.9 1	1.2		5	
2			s	39.0 6	29 2	93.6	11.2	-		
119			9.79	39.0 6	6.31 20	NI	11.2			
2			9.73	39.1 6	32 3	02.4 1	12			
×	< Sanab	o collec	rd	11:23	Q.M Y		14			
		3				_			·	
	Acceptable Pa	Acceptable Parameter Range:	± 10%	± 3%	±0.05	± 10 mV	±0.2 °C	± 10% 1	±10% turbidity (if using a turbidity meter)	
Analytes Sampled for:	oled for:		Bottles Collected	ected		QA/QC In	QA/QC Information		Field Commets	
Field Filtered: Unfilt	Unfiltered:	x 40 mL Vial (HCI)	x 60 m	x 60 mL Ferrous x 6	x 60 mL metals (HNO))	F		Bore volume calculation,	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	correction etc.
~		x 40 mL Viat (H ₂ SO ₄	-		x 250 mL Plastic			Sanding a	Sampling a thereway 7.62 by	7.62 5
				0				Whi Zanak - 4	10212-1-10	
A. A.	No of the second	Ap	Approval and Distribution	ution				11 1 100 000 1.00	0.000 000	ころし
SUL		5Aug-21		Charles Name		1			1	1.6.1.
Heldwork Staff Signature	signature	Date		Cnecker Name	Checker Name and Signature		Date	13,096×3 + 39.200 L	39.2000	
	Divisof Manager Signation	Date	- Nindalla	Distribution: Project Central File				-		

FOM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

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Client:			Project I continue.	P	4	Fieldwork Staff		C ing	Wall Deplement on Wall	Campling Event9 (nin)
	General Bore	Information		Parame	Parameter Info.	Decontamination	mination	Sampling Method	Hydrasleeve info,	sleeve info.
Date of GW Level:	- セズー2	Bore Radius (mm):		Chem Kit Serial No .:				F1 Low Flow Pump rate:	Hydrasleeve Size:	e: Monitoring sequence
Depth to GW (m-pvc):	0: 5-7 BAG)	Screen Interval (m):	11: 2.8-8.8	Chem Kit Model:		M Dedicated	_	Intake depth:	Hydrasleeve Type:	order):
Bore Depth (m-pvc):	0	Casing Radius (mm):	20	Corrected Redox:	X: Y / N	FI Disposable	sable F1	Bailer		0
Depth to Product (m-pvc):	-pvc):	Cover Type (datic/stick up):	stick up):	(The correction to a	(The correction to apply is probe dependent)	3	Other (specify)	Peristattic Pump		-
Product Thickness (m):	m):	Bore Locked (YES/NO):	/NO):	Parameter method:	od: 🗂 Downhole	1	of the	Other (specify)	Sampling Start Time:	e
4		Key Type (if applicable):	:able):		+		~	Submarble		Parameters
Calculated bore volume	olume (L):	Includes/ excludes bore	es bore annulus (circle)		# purge volumes removed:	s removed:	То	Total purged volume (L):		1 and 1
					Water Q	Water Quality Parameters	ers			
Time Cum Re	Cumulative Vol. SWL Removed (L) (m-pvc)	VL Pump Rate	e (ppm or mg/t)	E.C. (mS/cm or µS/cm)	рH	Redox (mV)	Temp °C		Odour, Colour, Turbidity	
H WY 0001	H& L							liew, no t	tophily inso	odsur
1:02	25	c	7.68	43.2	フル	145.8	In H	(11.	
104		•	7.63	42.2	2011	149.9	10.4			
1:06	_		7.65	H 24	6:78 1	1:35	05	1		
201			7,30	9.24	× -	44.9	h'ol			
01-10			7.30	43.8	1 22.0	471	10.4			
- Think [5]2			2	43.7	6.68	51.6	10-4			
7181		10.00	7.28	554	1 659	55.8	10.4			
1:16		7 1	7.27	13.9	1 45	61-1	5-4			
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XA)	Sample	collected	at	1220	×					
ſ										
	Accentati	Danmatar	+ 10.02	1 381	+ 0.05	+ 10 m/	+000	+	+ 10% turbully (if using a turbidity meter)	teri
Analytes S	Analytes Sampled for:	l for:	p.	llected		QA/QC	QA/QC Information		Field Commets	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCI)		x 60 mL Ferrous	x 60 mL metals (HNO ₃)	O ₃)		Bore volume calcul	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	redox correction etc.
/	H.	2 VAO ML VIAI (H2SO4)	L P	x 100 mL Amber	x 250 mL Plastic			4× 69.065	4× (9065-5.795) x3	
			Approval and Distribution	bution				i Va		
Fieldwork S	Fieldwork Staff Signature	Date		Checker Na	Checker Name and Signature	ſ	Date		774715	
Project Mi	Project Manager Signature	Date	Distr	Distribution: Project Central File	ntral File					
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ANZ FQM - Groundwater Sampling and Purging Record

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- Tenninger	COC Otomwater Dasins		Filuject Multiper.	00043111 - 3.2.3	3.4.3	P IN INGINE.		ЭНау	Sample Date:	
Client:	CCC		Project Location:	Awale		Fieldwork Staff:	ff:		Well Development or Well Sampling Event? (circle)	mpling Event? (circle)
Date of GW Level:				Chem Kit Serial No :	neter mito.	Decontamination		Dounaid Buildure	Hudraelaova Ciza:	Monitoring sequence
Depth to GW (m-pvc):		Screen Interval (m):	2.9- 2.9	Chem Kit Model:		r r	aleu	Low riow rutip tate.	Hydrasleeve Type:	followed (number in
Bore Depth (m-pvc):	0	Casing Radius (mm):	25	Corrected Redox:	X: Y / N		-	Bailer F1 Hydrasleeve		Gauging
Depth to Product (m-pvc):		Cover Type (galic/slick up)		(The correction to a	(The correction to apply is probe dependent)	-	-	altic Pump		Hydrasleeve in
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method:	od: FI Downhole	Ę	X	Other (specify)	Sampling Start Time:	Hydrasleeve out
	Ke	Key Type (if applicable):	ile):		M. Retrieved	_	2	om relole		Parameters
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)	bore annulus (c		# purge volumes removed:	removed:		Total purged volume (L):		
					Water Qu	Water Quality Parameters				
Time Cumulative Vol. Removed (L)	e Vol. SWL d (L) (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C		Odour, Colour, Turbidity	
2:05 Segin	in r	CAM								
	5.63	1								
784 81:2	29.9 7		411	86.4 6	6.22 8	210.2	2.2			
2.20			5603	5.98	2 808	04121	2			
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2:24			095	1 0.98	1 30-9	04.6 I	2			1 a
(SAMPLE	= Collect	al at	2:2	p. en	¥					
(
		1.2								
	Acceptable Pa	Acceptable Parameter Range:	±10%	± 3%	± 0.05	± 10 mV	±0.2 °C	11 主 10	± 10% turbidity (if using a turbidity meter)	
Analytes Sampled for:	led for:		Bottles Collected	lected		QA/QC I	QA/QC Information		Field Commets	
Field Filtered: Unfilt		x 40 mL Vial (HCI) x 40 mL Vial (H SO ₄)	D ₄) x 60 1	x 60 mL Ferrous x	x 60 mL metals (HNO ₂) x 250 mL Plastic	<u>.</u>		Bore volume calculat	Bore volume calculation, bore condition, fate of tubing, redox correction etc. $8 \cdot 570 - 5 \cdot 605$ $\times 3 =$	x correction etc.
		INVLYANS	Approval and Distribution	ution		-		12		
								7 2. CS	261	
Fieldwork Staff Signature	ignature	Date		Checker Nan	Checker Name and Signature		Date	5		
Project Manager Signature	Cionsturo	Data						als Pian	in Kindler L	22

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ANZ FQM - Groundwater Sampling and Purging Record

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Prestrative OCC Demunant Rule Prest Number Prest Nu	h gray	Sample it 11.92m						405-EM1)	24AN(EV)-405-FM1 COM - Groundwater Sampling and Purging Record (OdAN/EV)-405-FM1)	Sampling and Purgin	24AN(EV)-405-FM1
CCC Shormwater Basins CCC Project Learnine Internet Kold (17): 3.23 PM Name: Final Net Internet Final Net Inte		62			entral File	bution: Project Co	Distri	Date	nature	ct Manager Sig	Proje
CCC Stormwater Basins Project Number: Individual State Project Number: Individual State Project Number: Project Numer: Project Number: Pro	564 (45	Date	ſē	ame and Signatu	Checker N:		Date	ure	rk Staff Signat	Fieldwo
CCC Stormwater Basins Project Number: Pro	N 1 1 1 0					bution	proval and Distri	Ap			
CCC Stommater Basins Project Number: Opport Location: Project Number: Opport Number: Project Number: Proje	- 10-1777 23 2	ULD SI / YH				Windy A		Kudonal Marals	1	11.1	
CCC Stommwahr Basins Project Number: Proje					x 250 mL Plastic	mL Amber	×	x 40 mL Vial (H SC	4	X	
CCC Stommaater Basins Project Number: Proj	ore condition, fate of tubing, redox correction etc.	Bore volume calculation, bo		10 ₃)	x 60 mL metals (HN	nL Ferrous	x 60 r	x 40 mL Vial (HCI)	Г	Unfiltered	Field Filtered:
CCC Stomwater Basins Project Number: Op/G49177 - 3.2.3 PM Name: Stranuska Information Discontanination Stranuska Information Discontanination Discontanination Stranuska Information Discontanination Discontanination Stranuska Information Discontanination Discontanination Stranuska Information Discontaninated Flaxwork Stati Concented Redox: Y I Method Stranuska Information Discontaninated Flaxwork Stati Stranuska Inf	Field Commets		QC Information	QA/0		lected	Bottles Col		or:	es Sampled f	Analyt
	bidity (if using a turbidity meter)	± 10% tur	± 0.2 °C	± 10 mV	± 0.05	± 3%	± 10%	ameter Range:	ceptable Para	Ą	
CCC Stomwater Basins Project Number: 0060177 - 3.2.3 PM Name: S Hay General Bore Information Folget Location: Count of the Screen Information Semen Information Informati											
CCC Stomwater Basins Project Location: Forder 177 - 3.2.3 PM Name: S Hay Concertal Bore Information Project Location: Forder 100 Parameter Into. Decontaminated Fordework Staff: Stampling Method A.Y. 2.1 Bore Radius (mm): Chem Kit Serial No.: Fordework Staff: Decontaminated F1 Decontaminated F1 Low Flow Funge rate: 3.4 7 O Cover Type (affic fung): Cover Fift Model: Cover Fift Model: T0 Declated F1 Low Flow Funge rate: Intake depth: Cover Type (affic fung): Cover Explosition: Parameter method: F1 Dow Flow Funge rate: Intake depth: We fit Struct Cover Type (affic funge: Cover Flow Funge rate: T1 How Flow Funge rate: Intake depth: We fit Includes/ excludes bore annulus (circle) # purge volumes removed: T1 Dother (specify) Water We fit Struct Dother (specify) Intake depth: Model: Tabury (Water Total purged volume (1): Water Guality Excludes Dother (specify) Ken											
	4										
			13.2	37.	1	2	7.24				7:05
			13.2	235-1	208	162.8	7.25				2:03
CCC Stormwater Basins Project Number: 60649177 - 3.2.3 PM Name: S Hay CCC Frederic Information Project Location: Value Staff: Staff Staff General Bore Information Bore Radius (mm): Chem Kit Serial No.: Fledwork Staff: Staff Staff General Bore Information Bore Radius (mm): Chem Kit Model: Fledwork Staff: Staff Intake depth: Generation: Cover Type (if applicable): Corrected Redox: Y / N Declicated Fledwork Staff: Declicated Fledwork Staff: Intake depth: c): Cover Type (if applicable): Corrected Redox: Y / N Disposable Fledwork Staff: Dedicated Fledwork Staff Intake depth: c): Includes/ excludes bore annulus (circle) Parameter method: Fl Downhole M Disposable Fl Edwork Staff: Materna wet(1): Includes/ excludes bore annulus (circle) # purge volumes cenvered: Total purged volume (1): Materna metric Swit Includes/ excludes bore annulus (circle) # purge Could by Materna			13.2	• :		167.8	7.29				201pm
			13.2	4	7.00	162.5	7.26				-
CCC Stormwater Basins Project Number: Project Location: Project Locati:			132	2202	7.00	162.6	7.27				1:SJW
CCC Stormwater Basins Project Number: 60649177 - 3.2.3 PM Name: S Hay CCC Project Location: Project Location: Parameter Info. Perodecontamination Sampling Method GCC Bore Radius (mm): Chem Kit Serial No.: Parameter Info. Decontamination Sampling Method Arrow Casing Radius (mm): Chem Kit Serial No.: Fi Decontaminated Fi Low Flow Pump rate: C:: Cover Type (adicefficit up: Chem Kit Model: Delicated Intake depth: C:: Cover Type (adicefficit up: (The corrected Redox: Y / N) Disposable Fi Bailer Fi Hydraslee c): Cover Type (adicefficit up: (The corrected Redox: Y / N) Disposable Fi Bailer Fi Hydraslee c): Cover Type (adicefficit up: (The correction to apply is probe dependent) Fi Other (specifi/) Penstaltic Pump ¹ Watera Retrieved Key Type (if applicable): Parameter method: Fi Downhole Motera Other (specifi/) Vatera wed (L) SML Nump Rate (ppm or mg/L) (mSicm or mg/L) PH Redox <t< td=""><td></td><td></td><td>13.1</td><td>211-1</td><td>7.03</td><td>102.5</td><td>7.18</td><td>0</td><td></td><td>H8 6</td><td>155 m</td></t<>			13.1	211-1	7.03	102.5	7.18	0		H8 6	155 m
CCC Stornwater Basins Project Number: 60649177 - 3.2.3 PN Name: S Hay CCC Project Location: Project Location: Parameter Into. Parameter Into. Decontaminated Teldwork Staff: Stampling Method General Bore Interval (m): Main: Parameter Into. Parameter Into. Decontaminated F1 Low Flow Pump rate: General Bore Bore Radius (mm): Main: Main: Parameter Into. Decontaminated F1 Low Flow Pump rate: General Bore Screen Interval (m): Main: Main: Fieldwork Staff: Decontaminated F1 Low Flow Pump rate: Intake depth: Screen Interval (m): Main: Main: Main: Main: Main: Main: Fieldwork Staff: Decontaminated F1 Low Flow Pump rate: Intake depth: Intake depth: Intake depth: Decire F1 Bailer F1 Hydraslee c): Cover Type (adit-fick tup: Corrected Redox: Y / N Noticer (specify) P eristaltic Pump ¹ Waterra down mg/L </td <td></td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td>)</td> <td></td> <td>-</td> <td>6</td> <td>12071</td>		2)		-	6	12071
CCC Stornwater BasinsProject Number:60649177 - 3.2.3PM Name:S HayCCCProject Location:Project Location:P	lour, Colour, Turbidity	Q	Temp °C	Redox (mV)	рН	(mS/cm or µS/cm)	DO (ppm or mg/L)	Pump Rate	SWL (m-pvc)	Cumulative Vol. Removed (L)	
CCC Stormwater Basins Project Number: 60649177 - 3.2.3 PM Name: S Hay CCC Project Location: Project Locatio: Project Location: Project L			neters	Juality Paran	Water (1					
CCC Stornwater BasinsProject Number:60649177 - 3.2.3PM Name:S HayCCCProject Location:Project Location:Fieldwork Staff:Project Number:Seriel Month Staff:Ceneral Bore InformationPore Radius (mm):Parameter Info.DecontaminatedFieldwork Staff:Screen Interval (m):Chem Kit Serial No.:Fi DecontaminatedFi Low Flow Pump rate:Screen Interval (m):Chem Kit Model:DedicatedIntake depth:Casing Radius (mm):Corrected Redox:Y / NDisposableFi BailerCover Type (gluc fick up:(The correction to apply is probe dependent)Fi Other (specify)Peristaltic Pump ^{Fi} WaterraBore Locker (FS)NO):Parameter method:Fi DownholeV Other (specify)Vi terraKey Type (if applicable):Key Type (if applicable):Parameter method:Fi DownholeVi Other (specify)		tal purged volume (L):		s removed:	# purge volume		ore annulus (c	ides/ excludes b	Inclu	e volume (L):	Calculated bor
CCC Stornwater BasinsProject Number:60649177 - 3.2.3PM Name:S HayCCCProject Location:Project Location:Fieldwork Staff:Project Number:Seriel Nork Staff:Ceneral Bore InformationProject Location:Parameter Info.DecontaminationDecontaminationStructureBore Radius (mm):Chem Kit Serial No.:FiDecontaminatedFiScreen Interval (m):Screen Kit Model:FiDedicatedIntake depth:Casing Radius (mm):Corrected Redox:Y / NDisposableFiBailerriCover Type (galictick up:Cine correction to apply is probe dependent)FiDenistaltic Pump ¹ WaterraBore Locker (YESNO):Parameter method:FiDownholeViOther (specify)Waterra	Parameters	Subara Baradi	0	/ed	M Retriev		Ÿ	Type (if applicable	Key		
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CCC Stomwater Basins Project Number: 60649177 - 3.2.3 PM Name: S Hay CCC Project Location: VAK I/b K Assing the staff: Fieldwork Staff: <		Bailer FI Hydrasleeve	1	M Dis	Y /	Corrected Red	9	ng Radius (mm):	+O Casi	-	Bore Depth (m-
Name: CCC Stomwater Basins Project Number: 60649177 - 3.2.3 PM Name: S Hay CCC Project Location: MALLER State Fieldwork Staff: S Hay CCC Project Location: MALLER State Fieldwork Staff: S Hay General Bore Information Parameter Info. Decontamination S ampling Method FGW Level: Bore Radius (mm): Chem Kit Serial No.: V Decontaminated F1 Low Flow Pump rate:			dicated			Chem Kit Model	63-1363	en Interval (m): 4	Scree	-	Depth to GW (m
Name: CCC Stomwater Basins Project Number: 60649177 - 3.2.3 PM Name: S Hay CCC Project Location: MALARS Fieldwork Staff: Market Staff: Market Staff: General Bore Information Parameter Info. Decontamination Sampling Method	Hydrasleeve Size: followed (number in	Low Flow Pump rate:			No.:	Chem Kit Serial		Radius (mm):	21 Bore	el: braus	Date of GW Lev
Name: CCC Stormwater Basins Project Number: 60649177 - 3.2.3 PM Name: S Hay CCC Project Location: VAX4/b & S.S.Y. Fieldwork Staff: Fie	Hydrasleeve into.	Sampling Method	Itamination	Decor	meter Info.	Para		nation	Bore	G	
CCC Stormwater Basins Project Number: 60649177 - 3.2.3 PM Name: S Hay Sample Date:	Development or Well Sampling Event? (circle)		rk Staff:	Fieldwor	o Basin	Kakle	t Location:	Projec		000	Client:
		Hay	e	PM Name	- 3.2.3	60649177	t Number:		Stormwater Ba	000	Project Name:
		Bore									

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FQM - Groundwater Sampling and Purging Record

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Date of GW Level: Client: Calculated bore volume (L): Depth to Product (m-pvc): Bore Depth (m-pvc): Depth to GW (m-pvc): ²ield Filtered: Product Thickness (m): roject Name: 12:48 2:50 225 2246 2240 CH1 Time Sind Fieldwork Staff Signature Analytes Sampled for: Project Manager Signature **Cumulative Vol** A Re Removed (L) 48 6 4-A-S Unfiltered KE 15. CCC **General Bore Information** CCC Stormwater Basins 21 Acceptable Parameter Range: 281 800 5 (m-pvc) Casing Radius (mm): Includes/ excludes bore annulus (circle) Key Type (if applicable): Bore Locked (YES/NO): Screen Interval (m): 4.35-13.35 Chem Kit Model: Cover Type (gate/stick up) Bore Radius (mm): x 40 mL Vial (HCI) (40 mL Vial (H SO) Pump Rate blogilin Date Date Project Number: Project Location: Approval and Distribution DO (ppm or mg/L) 2 69 0 635 and to **Bottles Collected** ± 10% 94 2 9 **Distribution:** Project Central File x 60 mL Ferrous U x 100 mL Amber Hungane's 334 :52 Parameter method: FI Downhole (The correction to apply is probe dependent) Corrected Redox: Y / N Chem Kit Serial No .: (mS/cm or µS/cm) 62-8 62. 62 100. 3 **Checker Name and Signature** ± 3% EC. 60649177 - 3.2.3 KANAPA ISasin 2 Parameter Info. 6-93 # purge volumes removed: 2007 x 250 mL Plastic x 60 mL metals (HNO) ± 0.05 46 5 ò V FI Retrieved 모 2 **Quality Para** 14-2 2 09 120 ± 10 mV 0 2 (mV) Other (specify) FI Disposable Decontaminated F1 Low Flow Pump rate: Dedicated Intake dept Fieldwork Staff: PM Name: Thomas Decontamination **QA/QC** Information N ±0.2 °C 3 2 Temp °C Date J V Other (specify) Peristaltic Pump Waterra FI Bailer Total purged volume (L): Supplements S Hay C. Verman 4× (13.800-10.185) ×3 Jample 42 (3,615) Sampling Method Intake depth: Bore volume calculation, bore condition, fate of tubing, redox correction etc. rı Hydrasleeve Ordow man 11.150 m ± 10% turbidity (if using a turbidity meter) Well Development or Well Sampling Event? (circle) Bore ID: Sample Date: Odour, Colour, Turbidity Field Commets Hydrasleeve Size: Sampling Depth (m-pvc): Hydrasleeve Install time: Hydrasleeve Type: Sampling Start Time: 35.2H= 2X(Hydrasieeve info: Monitoring sequence Localson 5 Re inden followed (number in not. Gauging Hydrasleeve out Hydrasleeve in Parameters order):

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Q4AN(EV)-405-FM1

Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016 9:40 field Filtered: Depth to GW (m-pvc): Date of GW Level: 125 am Calculated bore volume (L): Product Thickness (m): Bore Depth (m-pvc): 0.08m Depth to Product (m-pvc): ^sroject Name 44 CP ESS. Ident 0 224 Time Fieldwork Staff Signature Analytes Sampled for: Project Manager Signature Cumulative Vol. Removed (L) ¥. Unfiltered: Xy General Bore Information CCC CCC Stormwater Basins Acceptable Parameter Range: mag 512 SWL (m-pvc) Includes/ excludes bore annulus (circle) Cover Type (patic (tick up): Bore Locked (YES/NO): Casing Radius (mm): Bore Radius (mm): Key Type (if applicable): Screen Interval (m): 1-3-5-8 x 40 mL Vial (HCI) K 40 mL Vial (H SO Pump Rate Date LA-SIN Date Project Number: Project Location: 7.16 7.50 7:23 A A 8 (ppm or mg/L) **Bottles Collected** 7:46 an 2 ± 10% 8 **Distribution:** Project Central File x 60 mL Ferrous x 100 mL Amber 532 52 3 Parameter method: T Downhole 55 5 (The correction to apply is probe dependent) Corrected Redox: Y / N Chem Kit Model: Х Chem Kit Serial No .: (mS/cm or µS/cm) **Checker Name and Signature** #3% w. E.C. 60649177 - 3.2.3 Outawn Parameter Info x 250 mL Plastic x 60 mL metals (HNO₃) 219 # purge volumes removed: ± 0 05 77 30 72 42 3 및 Retrieved ひろう Water 525 64 53 23 **Quality Param** 0 2 ± 10 mV Redox (mV) Decontaminated Dedicated * TOther (specify) N FI Disposable C TUDA Fieldwork Staff: PM Name: QA/QC Information Decontamination 5 9.0 q. C 9.0 9.0 2 T-C 9 ± 0.2 °C Date Temp °C C VI Other (specify) Peristaltic Pump Waterra Total purged volume (L): FI Bailer FI Low Flow Pump rate: march angre 4x (6-08-1815) x3 = 121.18 L S Hay Sampling a 4.14m by FRUMA Redox = 66 No adour, Clear, No Sampling Method Bore volume calculation, bore condition, fate of tubing, redox correction etc. Intake depth: FI Hydrasleeve ± 10% turbidity (if using a turbidity meter) Well Development or Well Sampling Event? (circle) Sample Date: Bore ID: r Odour, Colour, Turbidity Field Commets Sampling Depth (m-pvc): Sampling Start Time Hydrasleeve Install time: Hydrasleeve Size: Hydrasleeve Type: Jupian Hydrasleeve into. Lorantes Monitoring sequence followed (number in Gauging Parameters Hydrasleeve out Hydrasleeve in order): 6

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Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

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151 22	4 (6.34-1.80) x 3				Anorthe Alloca	-	Rowit-1	E M	ta	
Bore volume calculation, pore containing, take of tuning, respondence correction etc.	Bore volume ca		2	× 50 mL metals (HNO)	x 60 mL Ferrous		x 40 mL Vial (HCI)		Untiltered	Field Filtered:
Field Commets		QA/QC Information			ollected	Bottles Collected		lor:	Analytes sampled for:	Analy
± 10% turbidity (if using a turbidity meter)		± 0.2 °C	± 10 mV	± 0.05	± 3%	± 10%	Acceptable Parameter Range:	cceptable P		
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A STATE STATE		0,0	5	7.83 1	64.2	1.03			-	10% H G
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Aurover thy	シシシン	1						1.80	60 -	0:33
dour clas	No e				2 A	Porn	Refur	100		10:15
Odour, Colour, Turbidity		Temp °C	Redox (mV)	рн	(mS/cm or µS/cm)	DO (ppm or mg/L)	Pump Rate	(m-pvc)	Cumulative Vol Removed (L)	Time
		meters	Water Quality Parameters	Water C						
	Total purged volume (L):	Т	s removed:	# purge volumes removed:	(circle)	ore annulus	Includes/ excludes bore annulus	In	Calculated bore volume (L):	alculated bo
	Submision	0	\vdash	Retrieved		•):	Key Type (if applicable):	K		
Sampling Start Time:	VI_Other (specify)	1	_	thod: FI Downhole	Parameter method:	Ξ.	Bore Locked (YES/NO):	B	ss (m):	Product Thickness (m):
Hydrasleeve Instal time:	Peristaltic Pump Waterra	ify		(The correction to apply is probe dependent)	(The correction t	(up):	Cover Type (gatic/stick up)	0	xt (m-pvc):	Depth to Product (m-pvc):
rasleeve Sampling Depth (m-pvc): 0	F1 Bailer F1 Hydrasleeve	Ű		dox: Y / N	Corrected Redox:	25	Casing Radius (mm):	1	pvc):	Bore Depth (m-pvc):
Hydrasleeve Type: orden:	Intake depth:	Dedicated		el:	Chem Kit Model:	3-3-96	Screen Interval (m):	1.80	n-pvc):	Depth to GW (m-pvc):
Hydrasleeve Size:	FI Low Flow Pump rate:	-	<u>%</u>	al No.:	Chem Kit Serial No .:		Bore Radius (mm):	-21 B	rel: 6 Aus	Date of GW Level:
	Sampling Method	Decontamination	Deco	Parameter Info.	Par		Bore Information	eral Bore Inf	General	
opment	E. Reisman	Fieldwork Staff:	Fieldwo	100VC Kasa	02	Project Location:		G	000	Client:
Sample Date: 6-Aug-21	S Hay	ne:	PM Name:	7 - 3.2.3	60649177 - 3.2.3	Project Number:		CCC Stormwater Basins	cc	Project Name:

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Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

Project Manager Signature

Date

Distribution: Project Central File

Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

Client: Ceneral Bore Informatio Date of GW Level: 6-16-121 Bore Radiu Depth to GW (m-pvc): 6-16-22 Screen Inte Bore Depth (m-pvc): 6.022 Casing Rad Depth to Product (m-pvc): Cover Type Product Thickness (m): Bore Locke	SUL + I Project Number:	vber:	264	4218h	PM Name:		S. (te	Sample Date:	R-12-21	
500-11 1000		ation:		1 1 1 1	Fieldwork Staff:	Staff:	CC	Well Development or Well Sampling Event? (circle)	ell Sampling Eve	t? (circle)
1-21 P-02	irmation	1 1 1 1 1	Parai	teter Info.	Deconta	Decontamination	Sampling Method	Hydr	rasleeve info.	
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54.1	Screen Interval (m): 2-9	-8.9	Chem Kit Model:		P Dedic	Dedicated	Intake depth:	Hydrasleeve Type:	10	ordesh:
	Casing Radius (mm): 25		Corrected Redox:	x: Y / N	FI Dispo		FI Bailer FI Hydrasleeve	/e Sampling Depth (m-pvc):	Ö	ing
	Cover Type (galic/stock up):		(The correction to a	to apply is probe dependent)		ify)	F Peristaltic Pump	Hydrasleeve Install time:		Hydrasleeve in
X	Bore Locked (ES/NO):	Pa	rameter metho	Parameter method: FI Downhole		-		Sampling Start Time:	Hyd	Hydrasleeve out
	Key Type (if applicable):			Retrieved			Surgene alse		Para	Parameters
Calculated bore volume (L): Inc	Includes/ excludes bore annulus (circle)	annulus (circi		# purge volumes removed:	emoved:		Total purged volume (L):			
				Water Qua	· Quality Parame	ters			and the second se	
Time Cumulative Vol. SWL Removed (L) (m-pvc)	Pump Rate (ppm	(ppm or man)	E.C. (mS/cm or µS/cm)	Hd	Redox (mV)	Temp °C		Odour, Colour, Turbidity		
50 1 6.02)					Clear , St. F	hickory, no	volev	
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	9	5	582	NA V	1 4	10.1				
C 6.60	9.4		N.S.	N/X S	85.4	10.1				
4 6.04	94	~	5.22	NILL OU	1.1	1.01				
a 6.04	9.3	4	58.6	1141 7	7.9	1 01				
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23 6.04	9	9.29 5	58.6	N/A 7	3.2	10.1				
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Analytes Sampled for:	•	Eothes Collect		000	GAIDE	Information	A DI DI PACIFICATION CALLON	Field Commets	(1000)	A COLUMN
Field Filtered:			L	Contraction in Co		CALING.			a redax correction etc	
	x 40 mL Vial (H ₂ SO ₄) x 40 mL Vial (H ₂ SO ₄)	x 00 mL Amber		x 250 mL Plastic	<u></u>		r (d :	9 45-1 m	A.	
A CONTRACTOR OF A CONTRACTOR O	Approval	Approval and Distribution	u					500	n R	
1	6/012.						K			p
Fieldwork Staff Signature	Date		Checker Nan	Name and Signature		Date	1	HILLI Due	0-0	
Project Manager Signature	Date	Distributi	Distribution: Project Central File	tral File					No.	- 1 -1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-

04ANIEV)-405-FM1 FCM - Groundwater Sampling and Purging Record (04AN(EV)-405-FM1) Revision 2 July 12, 2016

Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

Project Name: (CC S	SW Project	Project Number:	666	471PU0	PM Name:	me:	Since the	Sample Date: S	12.2
	Project	Project Location:	ILC.	SU	Fieldw	Fieldwork Staff:	6. Casain	Well Development or Well Sampling Event? (circle)	ampling Event2 (chrol
General Bor	e Information	all a state	Para	meter Info.	Deci	contamination	Sampling Method	Hydrasle	eve info.
Date of GW Level: 5-10-2			Chem Kit Serial No.:	No.:	4	Decontaminated	FI Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence
Depth to GW (m-pvc): 🔏 📔 🔗 🔊	Screen Interval (m):	2888	Chem Kit Model:		Ł	Dedicated	Intake depth:	Hydrasleeve Type:	order):
Bore Depth (m-pvc): Q, 2 O	Casing Radius (mm):		Corrected Redox:	ож: Ү / N	L.	Disposable	FI Bailer FI Hydrasleeve	/e Sampling Depth (m-pvc):	Gauging
Depth to Product (m-pvc):	Cover Type (gatic/stck un):		The correction to	(The correction to apply is probe dependent)		(Á)	F Peristaltic Pump F Waterra	Hydrasleeve install time:	Hystasleeve in
Product Thickness (m):	Bore Locked (CES/NO):		arameter met	Parameter method: FI Downhole				Sampling Start The:	Hydrasleeve out
	Key Type (if applicable):			Retrieved	peved		Subuck ble	/	Parameters
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	ore annulus (ci		# purge volumes removed:	es removed:		Total purged volume (L):		
	A DESCRIPTION OF			Water	Quality Par	ameters	and all all all all all all all all all al		COLUMN STORY
Time Cumulative Vol. SWL Removed (L) (m-pvc)	Pump Rate	(ppm or mgl)	E.C. (mS/cm or µS/cm)	Hd	Redox (mV)	Temp °C		Odour, Colour, Turbidity	
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3 612		2,68	90.09	16 15	4.9	0.1)			
2:13 6-17		202	96.9	16.30	-6.1	11.0			
		2.64	20.9	16.32	-6.4	11.0			
14 617		264	90 8	634	5	11-0			
				1					
Acceptable	Acceptable Parameter Range:	± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	La l'astra d'anna an	± 10% turbidity (if using a turbidity meter)	UNE AND AND A
Analytes Sampled for:	D. States and	Bottles Coll	Collected	Sector 11	QA	QA/QC Information	on	Field Commets	STATE THE
Field Filtered: Unfiltered:	x 40 mL Vial (HCI)		x 60 mL Ferrous	x 60 mL metals (HNO ₃)	VO ₃)		Bore volume calculati	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	ox correction etc.
-	x 40 mL Vial (H SO.)		x 100 mL Amber	x 250 mL Plastic			& 4x(9.20	\$ 4x(9.20-6.10) x}]/
NI	App	Approval and Distribution	ution			N - 1 - N			
Lal M	12-01-5						Sumpley	*+	いたい
Fieldwork Staff Signature	Date		Checker Na	Checker Name and Signature	Le la	Date			
Project Manager Signature	Deta								

Q4AN[EV]-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

To Pure Page 1 of 1

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Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record i

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Casing Radus (mm): Z-5 Corrected Redox: Y / N T Discoseble Cover Type (dapt)(ES)(0): Re correction to apply is prote orgendiem) Parameter method: To Discoseble To Discoseble Cover Type (dapt)(ES)(0): Re correction to apply is prote orgendiem) Representation To Discoseble To Discoseble Key Type (dapt)(ES)(0): Representation Representation Representation To Discoseble To Discoseble Representation Representation Representation Representation Representation Representation Representation Representation Representation Representation Representation Representation Representation Representation Representation Representation Representation Representation Representation	Intake depth:	Hydrasleeve Type:	rollowed (number in order):
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Includes/ excludes bore annulus (cicle) # purge volumes removed: Starts Pump Rate Do Ext With removed Temp or Revolution Image Pump Rate Image Pump removed Temp or Revolution Image Pump Rate Image Pump removed Temp or Revolution Pump Rate Image Pump Rate Image Pump removed Starts Do.idet 228/11 N/M YI. i.e. Revolution Image Starts I.13 Pump Rate I.13 Pump Rate IS.'H Image Starts I.13 Pump Rate Pump Rate IS.'H Image IS.'H Starts I.12 Proved Proved IS.'H IS.'H IS.'H Starts I.12 Proved IS.'H IS.'H IS.'H IS.'H Starts I.12 Proved IS.'H IS.'H IS.'H IS.'H Starts I.12 Proved IS.'H IS.'H	Subres th		Parameters
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9:35 5:43.5 0.64 213.1 M4 18.3 22.1 5:43.5 1:14 20:1 30:1 41.6 22.1 5:43.5 1:24 227.2 11.4 30:1 22.1 5:43.5 1:24 227.2 11.4 30:1 22.1 5:43.5 1:24 227.2 11.4 30:1 23.1 5:43.5 1:24 227.2 11.4 30:1 23.1 5:43.5 1:24 227.2 11.4 30:1 23.1 5:43.5 1:24 227.2 11.4 20:1 23.1 5:44 1:28 227.1 11.4 20:1 23.1 5:44 1:28 21.12 11.4 20:1 23.1 5:44 1:28 21.12 11.4 20:1 23.1 5:44 1:28 21.12 11.4 20:1 23.1 5:44 1:28 21.12 11.4 10:1 23.1 5:44 1:28 21.1 11.4 10:1 23.3 5:44 1:28 11.28 21.1 10:1 13.3 5:44 10.6 10:1 10:1 10:1 Analytes Sampled for: <td< td=""><td>11</td><td>2</td><td></td></td<>	11	2	
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With Stars I:14 P77:4 With % With 5:435 1:24 227:2 With 8:5 With 5:435 1:24 227:2 With 24:5 With 2:4 1:24 227:2 With 24:5 With 2:4 1:24 2:27:2 With 24:5 With 2:4 1:28 1:27:2 With 24:5 With 2:4 1:28 1:27:2 With 24:5 With 2:4 1:28 1:27:2 1:27:2 1:27:2 Mailytes Sampled for: Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10n Analytes Sampled for: Active Som Learois ± 0.05 ± 10n Analytes Sampled for: Actives Soliceted Actives Soliceted 1 1 Analytes Sampled for: Actives of ont. wall (HSO,4) × 100 ml withered: × 250 ml. Plastic 1 Active Active X 100 ml withered: X 40 ml vial (HSO,4) X 100 ml withered: Active	H Clear As hu	Side hand oder	
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Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

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x 100 mL Amber		Bore volume calculation, t	Bore volume calculation, bore condition, fate of tubing, redox correction etc.
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04aNIEV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

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			nformation Par	A	1735			Bore Locked (KES/NO): Parameter me	Key Type (if applicable):	Includes/ excludes bore annulus (circle)				-	7.38 234.8	38	+	0		± 10%	Bottles Collecte	x 40 mL Vial (HCI) x 60 mL Ferrous	x 40 mL Viai (H ₃ SO ₄) x 100 mL Amber	Approval and Distribution	122	

Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1)

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Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

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Depth to Product (m-pvc):		Cover Type (gatic/stic/up)		(The correction to	(The correction to apply is probe dependent)	_	(Å)	Peristaltic Pump F Waterra	a Hydrasleeve Install true:	bere:	Hydrasleeve in	
Product Thickness (m):	ā	Bore Locked (KES/NO):		Parameter met	Parameter method: F Downhole	-	-	Other (specify)	Sampling Start Time:	e:	Hydrasteeve out	
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Cumulative Vol. Removed (L)	I. SWL (m-pvc)	Pump Rate	(ppm or mg/t)	E.C. (mS/cm or µS/cm)	Hđ	Redox (mV)	Temp °C		Odour, Colour, Turbidity	A		
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¥\$	I Gul	3 04							>			_
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			4. 66	76 8	15.14	55 6	12,0					_
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			4.61	76.01	5.23	60.00	12.0					_
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Field Filtered: Unfiltered:		x 40 mL Vial (HCI)		x 60 mL Ferrous	x 60 mL metals (HNO ₃)	40 ₃)		Bore volume calc	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	bing, redox con	ection etc.	
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Q4AN[EV]-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

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Mores (m): Bore Locked (YESNO): Parameter method: P Downiols M Other (special): Key Type (if applicable): Key Type (if applicable): Key Type (if applicable): S La Yange (if applicable): T Consultation of the image of the	Waterra Hydrasleeve Install time:	Hydrasleeve in
Key Type (if applicable): Via Retrieved Subvicit Dore volume (L): Includes low amulus (ricle) # unge outmest emmoned: Total purged vol Commation vol. (move) Pump faile (pm or (mg)) (move) Total purged vol Commation vol. (move) Pump faile (pm or (mg)) (move) Pump faile (pm or (mg)) Commation vol. (move) Pump faile (pm or (mg)) (move) Pump faile (pm or (mg)) Commation vol. (move) Pump faile (pm or (mg)) (move) Pump faile (pm or (mg)) Command (D) (move) Pump faile (pm or (mg)) (move) Pump faile (pm or (mg)) Commond (D) (fight faile) Pum faile (pm or (mg)) (pic) (pic) (pm or (mg)) Commond (D) (fight faile) Pic (fight faile) Pic (fight faile) Pic Commond (D) (fight faile) (fight faile) (fight faile) Pic Pic (fight faile) Commond (D) (fight faile) (fight faile) (fight faile) Pic Pic (fight faile) Commond (D) (fight faile) (fight faile) (fight faile) Pic Pic (fight faile) <td></td> <td>Hydrasleeve out</td>		Hydrasleeve out
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Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10 mV ± 0.2 °C Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10 mV ± 0.2 °C Yees Sampled for: Bottles Collected ± 0.05 ± 10 mV ± 0.2 °C ± 0.2 °C Yees Sampled for: Bottles Collected ± 0.05 ± 10 mV ± 0.2 °C ± 0.2 °C Version x 40 mL Vial (Hcl) x 60 mL Ferrous x 60 mL metals (HNO ₃) ± 0.2 °C P Anner x 50 mL Plastic QA/QC Information QA/QC Information QA/QC Information P Approval and Distribution Approval and Distribution X 60 mL metals (HNO ₃) X 60 mL metals (HNO ₃) P Approval and Distribution Tencker Name and Signature Date Date D		
Ytes Sampled for: Bottles Collected Advance Unfiltered: x 40 mL Vial (HCI) x 60 mL Ferrous x 60 mL metals (HNO ₃) Value x 40 mL Vial (HSO ₄) x 100 mL Amber x 250 mL Plastic Approval and Distribution 37- (C-2) Checker Name and Signature Date	1 4 6 0 1 4 4 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Unfiltered: x 40 mL Vial (HCl) x 60 mL Ferrous x 60 mL metals (HNO ₃) x 40 mL Vial (H, SO ₄) x 100 mL Amber x 250 mL Plastic Approval and Distribution Approval and Distribution f - (O - 2) Checker Name and Signature Date Checker Name and Signature	Trove turbitury (ir using a turbitury meter) Field Commets	
And Market A contraction A contraction X 40 mL Vial (H,SO4) X 100 mL Amber X 250 mL Plastic Approval and Distribution Approval and Distribution Approval and Distribution X - (C - 2) Checker Name and Signature Date	Bore volume calculation, bore condition fate of tubing redox correction at	dox corraction atc
Approval and Distribution Approval and Distribution Image: Solution of the second se		
Approval and Distribution f - (O - 2) Date Checker Name and Signature Date		
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Project Manager Signature Date Distribution: Project Central File	02 × 3 - 54.06	L /

Q4AN(EV)-405-FM1 FDM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

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ANZ FQM - Groundwater Sampling and Purging Record

AECOM

Q4AN(EV)-405-FM1

13

Client: CC General Bore Information Date of GW Level: W-1/21 Bore Radius Depth to GW (m-pvc): 03/5 Screen Inten Bore Depth (m-pvc): 3, 47 Casing Radiu Depth to Product (m-pvc): Cover Type (Product Thickness (m): Bore Locked	Project Location:					1 2 1
ineral Bore 1		1 - A - A - A			1-01	1-11
1-21	1100 C 100 C	manat	Fieldwork Staff:		Well Development or Well Sampling Event? (circle	npling Event? (circ
11	cilitation.	Parameter Into.	Decontamination	Sampling Method	Hydrasleev	te info.
41	Bore Radius (mm);	Chem Kit Serial No.: 0551	nated	F1 Low Flow Pump rate:	Hydrasleeve Size:	e: Monitoring
1	Screen Interval (m):	Chem Kit Madel:	Dedicated	Intake denth:	Hydrasteeve Tvpe	sequence followed
/	Casing Radius (mm):	Corrected Redox: Y / N		FI Bailer FI Hydrasteeve		Gaucing
/	Cover Type (gatic/stick up):	(The correction to apply is probe dependent) P I Other (specify)		altic Pump	1	el eneclearbalt
	Bare Locked (YES/NO);	Parameter method: F1 Downhole				Analisation
/	Key Type (if applicable):	Retrieved		• Outer (specify)	Setulation oracle interest	Hydrasleeve out
Calculated bore volume (L): In	Includes/ excludes bore annulus (circle)	is (circle) # purge volumes removed:		Total purged volume (L)		rarameters
			meters	110000		
Time Cumulative Vol. SWL Removed (L) (m-pvc)	Pump Rate (ppm or (mail)	E.C. (mS/cm or "S/cm)	Redox Temp °C (mV)		Odour, Colour, Turbidity	
15 486 6315	1.1.1	168.10 5.21	1747 110	20.0	88 L .	
20 6.315		122 5.47	1	DIGNAN, MOR TUCEIOUNY	TUREIGUN INO	U DODO
	7.42	162.5 5	20 11			
630	7.46	7 5 56	1.2			
25 0.2%	02-02		0 - 1/2		<u>.</u>	
(1-0)	CHINDIT - V	111/ x c U . 6 c H	2.11 1.			
	S A X A C	mered (40)				
	0					
Acceptable Pa	Acceptable Parameter Range; ± 10%	1±3% ± 0.05	± 10 mV ± 0.2 °C	10%0	± 10% furbidity of reside a furbidity environment	
ytes Sa	Bottles Collected	ollected	QA/QC Information		Field Commets	
Field Filtered: Unfiltered:	x 40 mL Vial (HCI) x 60	x 60 mL Ferrous x 60 mL metals (HNO.)		Bore volume calculation.	Bore volume calculation, bore condition, fate of trihing, redox correction, of	traction of
	x 40 mL Vial (H ₅ SO ₄) x 10	x 100 mL Amber x 250 mL Plastic				
					/	
1211-120-1-120-112-1	Approval and Distribution	ribution		- H K / G r	H x (9.42 - (212)	d
				- - -	(() (× V
Fieldwork Staff Signature	Date	Checker Name and Signature	Date	10		
Project Manager Signature	Date	Distribution: Project Control Cilo			1707.	

O4AN(EV)-405-FM1 FOM - Groudwaler Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Client: General B Date of GW Level: II-11-21 Depth to GW (m-pvc): 6.3-1 Bore Depth (m-pvc): 9.1 Depth to Product (m-pvc): Product Thickness (m):	11						TAL TAL	The second	1
	1	Project Location:	(sart)	Ker Barr	Fieldwork Staff:	taff:	E.C. We	Well Development or Well Sampling Event? Scircle	pling Event? Scirc
late of GW Level: II-11-21 Lapth to GW (m-pvc): 6.341 Jone Depth (m-pvc): 9.1(Depth to Product (m-pvc): Product Thickness (m):	Bore Information		Parar	Parameter Info.	Decontamination	mination	Sampling Method	Hydrasicove Info.	e info.
	Bore Rad	Bore Radius (mm):	Chem Kit Serial No.:	No.: 7555	N. Decor	N Decontaminated	FI Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence followed
D)()	Screen In	Screen Interval (m):	Chem Kit Model:	er sx	1 Dedicated	ated	Intake depth:	Hydrasleeve Type:	(number in order):
Septh to Product (m-p%c): Product Thickness (m):	Casing R.	Casing Radius (mm):	Corrected Redox:	ж: Y / N	Disposable	sable FI		Sampling Depth (m-pvc):	Gauging
Product Thickness (m);	Cover Ty	Cover Type (gatic/stick up):	(The correction to .	(The correction to apply is probe dependent) P. Other (specify)	dent) I Other	(specify)	Peristaltic Pump ¹ Waterra	Hydrasleeve Install time:	Hydrasleeve in
	Bore Loch	Bore Locked (YES/NO):	Parameter meth	Parameter method: FI Downhole	٩	E	Other (specify)	Sampling Start Time:	Hydrasleeve out
/	Key Type	Key Type (if applicable):		PARetrieved	P				Parameters
Calculated bore volume (L):	Includes	Includes/ excludes bore annulus (circle)		# purge volumes removed:	removed:		Total purged volume (L):		
				Water Qu	Water Quality Parameters				
Time Cumulative Vol. (n	SWL Pi (m-pvc)	Pump Rate (ppm or ngr)	E.C. (mS/cm or µS/cm)	Hd	Redox (mV)	Temp °C		Odour, Colour, Turbidity	
1:55 260 6-	6.34	7.70	109.6	125	736	(اربى	Clter, no ochwr	w. as terbidh	
-	4	244	10:30	67, 5	81.9	li.S		1	
~	12.0	2.54	1-5-301	5 99 5	13.7	11-5			
	200	257	1.701	5.67 0	9-2-	1.6			
2	12	7.34	1094	0	10	11.5			
2:20 6.	24	2.10	0.201	5.70 6	33.8	112			
0,22 CIC	2.2	2.09	109.601	571 16	000	1(5			
1:24 6-3	34	2-11	109.6	5.71 W	104.0	11.5			
	-				- 1				
	MANA	E lout	S	2:25	-				
-									
Accepte	Acceptable Parameter Range:	ter Range: ± 10%	±3%	± 0/05	± 10 mV	±0.2.0	± 10%01	± 10% turbidity (rf using a turbidity meter)	
Analytes Sampled for:		Bottles Collected	collected		QA/QC	QA/QC Information		Field Commets	
Field Filtered: Unfiltered:	× 40	x 40 mL Viat (HCt) x 6 x 40 mL Viat (H ₅ SO ₄) x 1	x 60 mL Ferrous x 100 mL Amber	x 50 mL metals (HNO ₃) x 250 mL Plastic	10		Bore volume calculation.	Bore volume calculation, bore condition, fate of tubing, redox correction etc. Liv / g / V - f	
0 1		and Die	Netribution				4 12/1	0 0 0	
UNK Staff Signature		10121	Checker Na	Checker Name and Signature		Date	- BH 08	045	
Droject Manader Signature	ļ		Distribution: Drojact Cantral Eila	ontrol Eile					

Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

Q4AN(EV)-405-FM1

S.V. Project Number R.A.G.UG177 PM Name: S.H.S.V. Sample Date: 11-11-22		Project Location: ANSLOS SS Fieldwork Staff: E. C. S. C. Well Development or Well Sampling Event? (circle)	Parameter Info. Decontamination Sampling Method Hydrasi2=ve info	Bore Radius (mm): Chem Kit Serial No.: USS / W Decontaminated r1 Low Flow Pump rate: Hydrasteeve Size: Monitoring	Intake depth: Hydrasleeve Type:	PI Bailer FI Hydrasleeve Sampling Depth (m-pvc)	Cover Type (gaticondection): (The correction to apply is probe dependent) of Other (specify) 🗙 Peristaltic Pump ¹¹ Waterra Hydrasleeve Install time: Hydrasleeve in Pydrasleeve in the correction to apply is probe dependent) of the correction of	E	Key Type (if applicable): Retrieved Parameters	Includes/ excludes bore annulus (circle) # purge volumes removed: Total purged volume (L):	Water Quality Parameters	Pump Rate DO (ppm or ngd) DO (mSion or (msion) PH (mV) Redox Temp °C Temp °C	367 281.0 626 83.7 17-1 Rain marker 3d, re advor	608 46.8 13.1 New March		145 7245 6.70 85. X 13.0	0 6.20 ×6.4 1	1.39 2741 619 853 13.0	(alloser i 05.)			± 3% ± 0.05 ± 10	Bottles Collected QA/QC Information Field Commets	x 40 mL Vial (HCl) x 60 mL Ferrous x 60 mL metals (HNO ₂) Bore volume calculation; bore condition, fals of tubing, redox correction etc.	x 40 mL Vial (H,SO ₄) x 100 mL Amber x 250 mL Plastic	Approval and Distribution	
Project Name:	1	Client: 7 C		Date of GW Level: 11-11-21	Depth to GW (m-pvc): 6.35	Bore Depth (m-pvc): 🤸 옷식 🤈	Depth to Product (m-pvc): 🗸	Product Thickness (m):	1	Calculated bore volume (L):		Time Cumulative Vol. SWL Removed (L) (m-pvc)	12:40 24 6.42		12:56 647	24.9 25:20	(iab but	mage 6.4	Strupe			Acceptat	Analytes Sampled for:	Field Filtered: Unfiltered:			

04AN(EV)-405-FM1 FOM - Groundwater Sampling and Purging Record (04AN(EV)-405-FM1) Rewision 2 July 12, 2016

Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

Client: Project Location: MCC Marce Information Date of GW Level: I -1 -2.1 Bore Information Dere Radius (mm): Chem Kit Serial No.: Depth to GW (m-pvc): MC - 4 - 0 Screen Interval (m): Chem Kit Serial No.: Depth to GW (m-pvc): MC - 4 - 0 Screen Interval (m): Chem Kit Serial No.: Depth to GW (m-pvc): MC - 4 - 0 Screen Interval (m): Chem Kit Serial No.: Depth to Focula (m-pvc): MC - 7 - 2 Bore Locked (m): Chem Kit Serial No.: Product Thickness (m): Bore Locked (m): Cover Type (ff applicable): Prameter method: Product Thickness (m): Bore Locked (m): Pump Rate Pump Rate Pump Rate In: 10 Locut A: 4 - 5 S. 6 - 5 2 - 4 - 3 6 In: 10 Locut A: 4 - 5 S. 6 - 5 2 - 4 - 3 6 In: 10 Locut A: 4 - 5 S. 6 - 5 2 - 4 - 3 6 In: 12 A: 4 - 5 S. 6 - 5 2 - 4 - 3 6 6 In: 12 A: 4 - 5 S. 1 - 7 7 6 7 7 7 6 In: 15 A: 4 - 5 S. 1 - 7 S. 1 - 7 2 7 7 7 6 In: 15	ter Into. ter Into. γ / N γ / N		Reletwork start: C. C. Sampling Method Decontamination Sampling Method W Decontaminated F1 N Detrementers F1 N Detrementers F1 N D F1 N D F2 N D F3 N D F3 N D F3 N D F3 N D F4 N D N D N D N D N D N D N D N D N D N D N D <	Well Development or Well Sampling Event? (cibble Hydrasiceux into Hydrasiceux into Rydrasiceux into Hydrasiceux into Rydrasiceux into Hydrasiceux into Rydrasiceux into Hydrasiceux into Hydrasi Hydrasiceux into Hydrasiceux into Hydrasiceux into Hyd	pling Event? (cipte inc. sequence followed fruimber in orden): Aydrasteeve in Hydrasteeve out Parameters
General Bore Information IT-11-2.1 Bore Radius (mm): PUC: Coreen Interval (m): PUC: Cover Type (garticity with applicable): PUC: Cover Type (garticity with applicable): PUC: Bore Locked (Paplicable): PUC: Bore Locked (Paplicable): PUC: Rev Type (garticity with applicable): PUC:			Naterra	Hydrasieeve Siz Hydrasieeve Tyy Sampling Depth Hydrasieeve Ins Sampling Start 1 Dolour, Colour, Turb	Annitoring sequence follower (number in order) Gauging Hydrasleeve ou Parameters
A: 44 O Screen Interval (m): PUC: Screen Interval (m): PUC: Cover Type (gatic/st/ck up); PUC: Eare Locked (Taplicable); Pump Rate Intervel Imme (L): Includes/ excludes bore annulus; Imme (L): Imme (L): Imme (L): Imme (L): Imme (L): Imme (L): Imme (L): Imme (L): Imme (L): <td></td> <td></td> <td>Vaterra Adrasleeve</td> <td>odour, Colour, Turbid</td> <td></td>			Vaterra Adrasleeve	odour, Colour, Turbid	
H.I. G Casing Radius (mm): Pvc): Cover Type (gaticity(Xruu)): Bore Looked (Taplicable): Bore Looked (Taplicable): Iume (L): Includes/ excludes bore annulus (importance voi annulus (importance interverse i	lox: Y / N Lup I apply is probe dependent) 11 (thod: F1 Downhole T1 Retrieved # purge volumes removed # Purge volumes removed		even and a second se	Sampling Depth (n Hydrasleeve Instal Sampling Start Tin Odour, Colour, Turbid	
Cover Type (gatic/s/cK.u)). Bore Locked (E3/NO): Key Type (if applicable): Key Type (if applicable): Revi Pump Rate (if applicable): Pump Rate pom or mail available State Acceptable Parameter Range:	apply is probe dependent) 11 (thod: F1 Downhole F1 Retrieved # purge volumes removed Water Quality Part Water Quality Part 0.47773.1 0.47773.1 0.47773.1 0.47773.1 0.472733.1 0.47275.1 0.47275.1 0.47275.1 0.47275.1 0			ampling Start Tin , colour, turbiti	
Bore Locked (E) NO: Rey Type (if applicable): me (L): Includes/ excludes bore annulus two voi. SWL Pump Rate Do ed (L) (m-pwc) Pump Rate DO ed (L) (m-pwc) S (c) S (c) L 9.450 S 19 S 19 9.450 2.14 S (c) S 19 7.450 2.14 S (c) S 19 7.450 2.14 S (c) S 19 7.450 2.14 S (c) S (c) 8.14 2.14 S (c)<	thot: FI Downhole FI Retrieved # purge volumes removed Water Quality Paramoved 0.47 0.47 73.1 0.47 73.1 0.47 73.1 0.47 73.1 0.47 73.1 0.47 73.1 0.47 73.1 0.47 73.1		7	ampling Start Tin	
Key Type (if applicable): Mather (applicable): Includes/ excludes bore annulus (arcle) Sime Exclusion SW Pump Rate ppm or majo ms. Exclosed Ray O Sib 2472.3 2472.3 Ray S Sib 2472.3 2472.0 Ray S Sib 2472.0 2472.0 Ray S <td>FI Retrieved # purge volumes removed Water quality Parage Water quality Parage PH Redox PH 73.1 C-47 73.1 C-47 73.1 C-47 73.1 C-42 72.3 C-400 71.2 C-400 71.4 C-400 71.4</td> <td>Temper 1.3.4 1.3.4 1.3.4 1.3.4 1.3.4 1.3.4</td> <td>000</td> <td>r, colour, Turbio</td> <td></td>	FI Retrieved # purge volumes removed Water quality Parage Water quality Parage PH Redox PH 73.1 C-47 73.1 C-47 73.1 C-47 73.1 C-42 72.3 C-400 71.2 C-400 71.4 C-400 71.4	Temper 1.3.4 1.3.4 1.3.4 1.3.4 1.3.4 1.3.4	000	r, colour, Turbio	
Includes/ excludes hore annulus (circle) SWL (mpwc) Pump Rate Do (ppm or fing) EC. 9.45 8.65 242.3 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 8.14 742.0 11 9.45 8.14 242.0 9.45 8.14 242.0 9.45 8.14 242.0 8	# purge volumes removed Water Quality Part Water Quality Part PH Redox PH Redox PH T3.1 G. 47 T3.1 G. 47 T3.1 G. 47 T3.1 G. 47 T3.1 G. 46 72.3 G. 40 77.6	тереся Телрес 1.3.4 1.3.4 1.3.4 1.3.4 1.3.4	200	r, colour, Turbid	Tur y
Cumutative Vol. SWL Pump Rate DO E.C. Removed (L) (m-pvc) Pump Rate ppm or (mgl) (mStem) Removed (L) (m-pvc) 8:65 2472.3 6 Removed (L) 9:45 8:65 2472.3 6 Removed (L) 9:45 8:14 242.0 6 Removed (L) 9:45 8:13 247.0 6 Removed (L) 9:45 8:14 242.0 6 Rev 5 8:14 242.0 6 6 Rev 6 8:14 242.0 6 6 Rev 6 8:14 242.0 6 6 Rev 7 8:14 242.0 6 6 Rev 7 8:14 242.0 6 6 Rev 7 8:14 242.0<	Water Quality Parameter Water Quality Parameter pH Redox pH Redox pH Redox pH 73.1 b.47 73.1 b.47 73.1 b.47 73.1 b.42 74.2 b.53 72.3 b.640 71.5 b.600 71.5	emp °C	000	, colour, Turbid	TU Y
Cumutative Vol. Removed (1) SWL (m-pvc) Pump Rate DO (aStime) St. C DO (aStime) Material (aStime) (m. pvc) (m. pvc) S. (S 247.3 C <t< td=""><td>A LAT</td><td>Temp 13.4 13.4 13.4</td><td>Do och</td><td>Colour, Turbid</td><td>TIL Y</td></t<>	A LAT	Temp 13.4 13.4 13.4	Do och	Colour, Turbid	TIL Y
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	A LINE	7.51 7.51 7.51 7.51 7.51	50	2	ditry
9.45 8.28 241.4 6. 9.45 8.22 247.0 6. 9.45 8.19 247.0 6. 9.45 8.14 242.1 6. 9.45 8.14 242.1 6. 9.45 8.14 242.1 6. 9.45 8.14 242.1 6. 9.45 8.14 242.1 6. 9.45 8.14 242.1 6. 9.45 8.14 242.1 6. 9.45 8.14 242.1 6. 9.45 8.14 242.1 6. 9.45 8.14 242.1 6. 9.45 8.14 24.7 11: 3. 9.45 8.14 24.7 11: 3. 9.45 8.14 24.7 11: 3. 9.45 8.14 24.7 11: 3. 9.45 8.14 24.7 11: 3. 9.45 8.14 8.14 11: 3. 9.45 8.14 8.14 11: 3. 9.45 8.14 8.14 11: 3. 9.45 8.14 8.14 11: 3. 9.45 8.14 8.14 11: 3. 9.45 8.1		13.4 13.4 13.4 13.4			-
4.4.5 8.22 247.0 6. 4.4.5.8 8.19 242.0 6. 9.4.5.9 8.19 242.0 6. うはいびに グレビビモサン 11:3: 		13.4			
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ofable Parameter Range: ±3%					
ofable Parameter Range: ±3%					
ofable Parameter Range: ±3%					
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otable Parameter Range: ±10% ±3%					
otable Parameter Range: ±10% ±3%					
	± 0.05 ± 10 mV	±0.2 °C	± 10%01 ±	± 10% turbidity (if using a turbidity meter)	
	QA	QA/QC Information		Field Commets	
	x 60 mL metals (HNO ₃)		Bore volume calculation,	Bore volume calculation, bore condition, fate of tubing, redox correction etc	prection etc.
x 40 mL Vial (H ₅ SO ₄) x 100 mL Amber x 250	x 250 mL Plastic				
			L. / 111-2	2001 00	
11 11 Approval and Distribution	all of the other and the			1 4 940 / XY	
11/11/24			10 6		[.
Urfieldwork Staff Signature Date Checker Name	Checker Name and Signature	Date	72 7.2	4× (1.21)×3 - 50.52 L	521
Project Manager Signature Date Distribution: Project Central File	Central File			4	mo

Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

Project Name:	ICC CN		Project Number:	600	EIVIT)	W Md	PM Name:	2		Cample Date:		
Cliant.	41.30		Designed configure	eck a	51	-			A.L.	Mall Development		101
	100		LOCAUOUS	Lovan.	JANNY LANG	Non D	Fieldwork Statt:	1	USM2.A	Well Development or Well Sampling Event? (circle	Well Samp	ling Event? (circ
Date of GW Level:		Boro Dodino America		Chem Kit Serial No -	Serial No -	5			Sampling Method	Hudraclaava Siza	UNASIGENE INTO	Monitoring
10		Screen Interval (m):		Chem Kit Model:		=	Dedicated	-	ntow runp rate. Intaba danth:	Hvdrasleeve Tvpe:		sequence followed
_		Casing Radius (mm):		Corrected Redox:	ox: Y / N	X	N Disnocable	FI Bailer		1	-DVC):	Gauging
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		The correction to	apply is probe de	pendent) I	(The correction to apply is probe dependent) I Other (specify)	M. Peris	aftic Pump		time:	Hydradeeve in
Product Thickness (m):	B	Bore Locked (YES/NO):		arameter met	Parameter method: FI Downhole	nhole		FI Other (specify)	r (specify)	Sampling Start Time;		Hydrasleeve out
	K	Key Type (if applicable):			FI Retrieved	eved						Parameters
Calculated bore volume (L):	r	Includes/ excludes bore annulus (circle)	ore annulus (c	ircle)	# purge volumes removed:	tes remove	÷	Total pure	Total purged volume (L):			
					Water	Water Quality Parameters	rameters					
Time Cumutative Vol. Removed (L)		Pump Rate	(ppm o mgd)	E.C. (mSlam or	Hd	Redox (mV)	Temp °C	U		Odour, Colour, Turbidity	ĸ	ALCONT A
9-26 486	L 944	/	2428	231.7	7.06	0.0	13.1					
9:25	-	-	\$12	1.222	86.01	2.22	13					
9:30			530	1.722	6.98	2.6	3.					
9:35			010	2328	6.94	15.5	13.	-				
a-un			6.09	2329	6.94	16.	t w					
4:45			HU-2	233.6	694	19.1	13.1	-				
	554	SAMPLE COT	lected	9:50	6							
	J			10								
	_							-				
	Acceptable Pa	Acceptable Parameter Range:	= 10%	主3%	± 0.05	± 10 mV	1 +02.0		100	± 10% turbidity (if using a turbidity meter)	(y-meter)	
Analytes Sampled for:	led for:		Bottles Colle	Collected		a	QA/QC Information	ion		Field Commets		
Field Filtered: Unfi	Unfiltered:	x 40 mL Vial (HCI)	x 60 ml	x 60 mL Ferrous	x 60 mL metals (HNO,)	(FONF		. 11	Bore volume calculation	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	bing, redox con	rection etc.
		x 40 mL Vial (H ₂ SO ₄)		x 100 mL Amber	x 250 mL Plastic							
											0	
	10 0 10 ST	App	Approval and Distribution	ution		E Solo	TOTAL ST		T × C 3 × L	x C [3.80-9 94] x	~ ~ ~	
Fieldwork Staff Signature	Signature	Date	Į	Checker N	Checker Name and Signature	ure	Date		1-1-1-	10,201	~	
Droioof Monorat Similar	er Sinnafure	Date	Distrib	Distriktion: Orainal Cala					と	コンノ	-	

04AN(EV)405-FM1 FOM - Groundwater Sampling and Purging Record (04AN(EV)-405-FM1) Revision 2 July 12, 2016

ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

General Bore Information		Project Location:	14-00 14-00 Parame	1 - reverse	Fleidwork Staff: Decontamin	leidwork Staff: Decontamination	Flor Mathod	Well Development or Well Sampling Event? (circle Hydrasleeve info.	or Well Sampling Event? Hydrasleeve info.
12/ 8	Bore Radius (mm): Screen Interval (m):		Chem Kit Serial No.: Chem Kit Model:	al No.: el:	L De	C Decontaminated	T Decontaminated T Low Flow Pump rate: Dedicated		10 as
	Casing Radius (mm): Cover Type (gatic/stick up):	:(dn	Corrected Redox: (The correction to app	Corrected Redox: Y / N Y Disposable (The correction to apply is probe dependent) A Other (specify)	spendent) A Oth		I Bailer I Hydrasteeve V , Peristattic Pump ¹ Waterra	eve Sampling Depth (m-pvc): Hydrasleeve Install tme:): Gauging : Hydrasleeve in
<u> </u>	Bore Locked (YES/NO): Kev Type (if applicable):		Parameter m	Parameter method: FI Downhole	inhole		FI Other (specify)	Sampling Start Time:	Hydrasleeve out Parameters
	Includes/ excludes bore annulus (circle)	ore annulus	circle)	# purge volumes removed:	nes removed:		Total purged volume (L):		
SWL		00	EC.	Water	Water Quality Parameters			and the second distance	
(m-pvc)	Pump Rate	(bbm or might	(mSicm or	Æ	(Am)	Temp*C		Odour, Colour, Turbidity	
2.075		4.52 2.08	133.2	6.90	121.5	13.9	1 Clears No	oburing turbidu	L'HUP.
2-075		1.81	133.3	6.88	120.3	13.9			
2.070	2	0، 1	133-3	6.98	119.3	13.9			
2.07		1.59	2.68	1 2 9	12:4	2.0			
C107	1	<u>۱</u>	1.2.	10-01	5-1-1	12.01			
1114			20						
table F	Acceptable Parameter Range:	# 10 [%]	%E #	± 0.05	± 10 mV	± 0.2 °C		± 10% turbidity (if using a turbidity meter)	eter)
		Bottles Col	Collected		QA/Q	QA/QC Information	u l	Field Commets	
	x 40 mL Vial (HCI) x 40 mL Vial (H ₅ SO ₄)		4 60 mL Ferrous 4 100 mL Amber	x 60 mL metals (HNO _A) x 250 mL Plastic	("ONH		Bore volume calcul	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	I, redox correction etc.
							4×16.1	(6.125-2.075) K3	1
	App	Approval and Distri	istribution			a state of			>
-1	Date	ļ	Checker A	Checker Name and Signature	ture	Date	-18-	8-6C/	
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O4AN(EV)→05-FM1 FQM - Groundwater Sampling and Purging Record (O4AN(EV)→05-FM1) Revision 2 July 12, 2016

ANZ FQM - Groundwater Sampling and Purging Record

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			たた1010マク 1	PM Name:	N FV	Sample Date: 10-1	1
Project Name:	1 Sac	Sher Muraky Project Number:	1 / 1 J MAO	Fieldwork Staff:	I Parking	Well Development or Well Sampling Event2 Tcircle	oling Event24ci
Client:	CC.	Project Location:	Tar Rucory	Decontamination	Sampling Method	Hydrasleeve into	isto.
Gene	General Bore Information	formation			CI I ow Flow Primo rate:	Hydrasleeve Size:	sequence followed
Date of GW Level: 10-11-		Bore Radius (mm);	Chem Kit Serial No.:	LIAIREN		Hvdrasleeve Type:	(number in order):
(c): V	200 S	Screen Interval (m):	Chem Kit Model:	T	IIIrav	T	Gauoing
~		Casing Radius (mm):	Corrected Redox: Y / N	N Disposable	FI Bailer FI Tyorasiedve		Hundactooun in
9		Cover Type (gatic/stick up):	(The correction to apply is probe dependent) P Other (specify)		N Peristattic Pump Waterra		the observe out
Lieptin to Prioudul (III-pvu).		Bore Locked (YES/NO):	Parameter method: FI Downhole		FI Other (specify)	Sampling Start Lime:	
Product I hickness (m):		Key Tyme (if applicable):	FI Retrieved				Parameters
I omilian and Earling of	ł	Includes/ evolutes have annulus (circle)	# brude		Total purged volume (L):		
Calculated bore volutite / - /-				Water Quality Parameters			A Start of Long
Time Cumulative Vol.	L SWL	Pump Rate DO	EC. PH	Redox Temp "C		Odour, Colour, Turbidity	
ad	(m-pvc)	on under	1 1 1 M	1 1 1 0	1/1000 000	an hich dity No	Judeor
9: 40 000 000 1 00 1	2095	5.69	0 2.0 0.011		1.1	-	
a-have	1.015	1.59	'	2.2 16.7			
122 CL.h	2 22 5	4-7-	1110.7. 6.25	73.6 10.1			
10.5	1-1-1	1.2		10.2 110.41			
44.1	2-047		1 - 1	2.01 10.X			
10:00	4,045	-		27 122			
10:05	2045		ġ				
01.01	2.095	5 1.19	BIE-0 0-91B				
b:15	2.09	5 1.19	116.0 6.51 8				
	1 CAI	PANALE I DUECT	(d) 10:15]				
9	Accentable	Accentable Parameter Range: ± 10%	±3% ±0.05	± 10 mV ± 0.2 °C		= 10% turbidity (if using a turbidity meter)	
Analytes Sampled for:	d for:	Bottl	es Collected	QA/QC Information		FIEID COMMERS	correction etc.
Etiald Filtered: Unfiltered:	:pa	x 40 mL Vial (HCI)	x 60 mL Ferrous x 60 mL metals (HNO ₃)	1	DOLE VOIDUE CERTIN	The second	
		x 40 mL Vial (H ₂ SO ₄)	x 100 mL Amber x 250 mL Plastic		4×1C	4×16375-7 055)~2	N
				T			1 LT
	1000	Annoval and Distribution	Distribution				
TO DO TO THE DOLLAR						2× × × × × × ×	1212121
Fieldwork Staff Signature	nature	Date	Checker Name and Signature	Date			
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04aN(EV).405-FM1 FQM - Groundwater Sampling and Purging Record (04AN(EV).405-FM1) Revision 2 July 12, 2016

Revision 2 July 12, 2016	FQM - Groundwater Sampling and Purging Record (Q4AN	Q4AN(EV)-405-FM1
	V(EV)-405-FM1)	

Project Manager Signature

Date

Distribution: Project Central File

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-]	17/12/26	Luv/ 2/									1
\sim	5 6. 14 N			ŀ			Annroval and Distribution	100	4		
~	x / (2 2) - ()	HV/GL						and and	5	2	/
	~				x 250 mL Plastic		x 100 mL Amber	x 40 mL Vial (H ₂ SO ₄)	Ţ	N	
correction etc.	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	Bore volume calculation, b		3)	x 60 mL metals (HNO ₃)		x 60 mL Ferrous	x 40 mL Vial (HCl)	L	Unfiltered:	Field Filtered:
	Field Commets	9	QA/QC Information	QA/Q		cted	Bottles Collected			Analytes Sampled for:	Analyte
	10% iurbidity (if using a turbidity meter)	#	± 0:2 *0	± 10.mV	± 0.05	±3%	± 10%	neter Range:	Acceptable Parameter Range:	Acc	
	*										
			ing	787.3	- 85.5	10-1.4 15.	105	op	6. 72		110
			11,8	185.8	1	124-6 15.	8.38 1	8	6.42		1:05
			11.5	1-432	5.88 -	104.5 15	(UL)		6.42		1:00
			112	790.3	5.68 -	104.5 15	R.39 1	8	6.42		N:55
			168	147.2	15.88 -	04.4 15	1 24-8	0	6.42	19.0	12:50
	Odour, Colour, Turbidity		Temp *C	Redox (mV)	뫄	E.C. InSign or InSign)	(ppm or mg/L)	Pump Rate (p)	SWL (m-pvc)	Cumulative Vol. Removed (L)	Time
			eters	Water Quality Parameters	Water Qui						
		Total purged volume (L):		removed:	# purge volumes removed		e annulus (cir	Includes/ excludes bore annulus (circle)	Includ	volume (L):	Calculated bore volume (L):
Parameters				-	F1 Retrieved			Key Type (if applicable):	Key Ty		
Hydrasleeve ou	Sampling Start Time:	T Other (specify)			FI Downhole	Parameter method: FI Downhole	R.	Bore Locked (YES/NO):	Bore L	s (m):	Product Thickness (m):
Hydrasleeve in	Hydrasleeve Install time:	altic Pump		lent) FI Othe	/ is probe depend	(The correction to apply is probe dependent) FI Other (specify)		Cover Type (gatic/stick up)	Cover	m-pve):	Depth to Product (m-pv
Gauging	Sampling Depth (m-pvc):	FI Bailer FI Hydrasleeve	Disposable	N Disp	Y / N	Corrected Redox:	0	Casing Radius (mm):	Ì	o): 9.42	Bore Depth (m-pvc):
(number in order):	Hydrasleeve Type:	Intake depth:	Dedicated	• Dedi	pipers	Chem Kit Model: 👔	Q	Screen Interval (m):		WC): 6.42	Depth to GW (m-pvc):
Monitoring	Hydrasleeve Size:	Ft Low Flow Pump rate:	Decontaminated	N Deco	21Sh	Chem Kit Serial No::	5	Bore Radius (mm):	Bore F	4211	Date of GW Level:
1110.	inaducation in the second s	DOLINGIA MULTING		NUIDADEI	and in the second s						

ANZ FQM - Groundwater Sampling and Purging Record

Project Name:

CC SW 3

Project Location: Project Number:

Krister 606-4177

Client:

223

PM Name: Fieldwork Staff:

E.Re.sna NAL

Bore ID: Sample Date:

joightin 1

Q4AN(EV)-405-FM1

AECOM

Sample Date: 1/1/2/24 Well Development or/Well Sampling Event? (circle

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Revision 2 July 12, 2016	FQM - Groundwater Sampling and Purging Re	Q4AN(EV)-405-FM1
	ecord (Q4AN(EV)-405-FM1)	

Project Mana	Fieldwork Staff Signature			/	/	Field Filtered:	ytes Sa							10:00	2/0	9.2.	12 Shib				Calculated hore volume (1):	i ioanot i filotatooo (iii).	Product Thickness /m):	Denth to Droduct (m w	Bore Dorth (m-pvc).	Date of GW Level:	Data of Ciwi Laurah	Client:	Project Name:	
Project Manager Signature	ff Signature	V	1	57	5	Unfiltered:	mpled for:	Acceptable					e	200	10	22	10.0	Î	Cumulative Vol. SWI	uiiie (L).		,	, indi	201.6	6.47	12/21	General Bore Information	100	1145	
Date	Date		N 320 N	2× 100 m	x 40 mL Vial H-SO	× 40 mL Vial (HCI)		Acceptable Parameter Range:									L	c) Pump Rate		Includes/ excludes bore annulus (circle)	here's the state of the state o	Key Type (if epolicable):	Boro Locked (VESNIC)	Casing Radius (mm):	Screen Interval (m):	Bore Radius (mm):	Information		Pro Pro	
	1	Approval and Distribution	r L			CEC I	Bottles Collected						7.07	112	444	7.81	204	(ppm or mg/t)	3	s bore annulus (NO):	aick up):			6.1	S	Project Location:	Project Number:	
Distribution: Drokent Central File	Checker Nan	oution				x 60 mL Ferrous x	lected	= 3%					1.01	201	1.07	10.0	15.8	(mSicm or uSicm)	E,C,			Parameter method:	(The correction to a	Corrected Redox:	Chem Kit Model:	Chem Kit Serial No .:	Parar	Avalea	60649.	
tral File	Checker Name and Signature				x 250 mL Plastic	x 60 mL metals (HNO ₁)		± 0.05					Q&-Cl	2.88	15.28	- 00-61	88	Ŧ	Andrea C	# purge volumes removed	Retrieved		y is pro	X X Z	Pro rivs	10: VSI	Parameter Info.	a Bisin	22/411	
						(^k C	QA/QC	± 10 mV					2.500	260.1	861.7	1/00%	-853.9	(mV)	water quality Parameters	s removed:	ed			V Disposable	F Dedicated		Deconta	Fieldwork Staff	3 PM Name:	
	Date						QA/QC Information	±0.2 °C	C				11.8	1-2	ll-x	19	11.8	Temp *C	lers			2	Other (specify)		ated	Decontaminated F1	Decontamination	staff:		
11.46×2	4× (2.865) ×3 =		5 × 142 9- 301 6 7 × 1			Bore volume calculation, b		± 10% tui									Cleve no odour	0		Total purged volume (L):		Other (specify)	Peristaltic Pump " Waterra		Intake depth:	Low	hod	Elesings We	SHAV San	Bor
11.46×3 - 240201	5) ×2 =		く × < h2.c)		Bore volume calculation, bore condition, fate of tubing, redox correction etc.	Field Commets	± 10% turbidity (if using a turbidity meter)									notebdby	Odeur, Colour, Turbidity				Sampling Start Time:	Hydrasleeve Install time:	Sampling Depth (m-pvc):	Hydrasleeve Type:	Hydrasleeve Size	Hydrasicova	opment	Date:	Bore ID:
-						rrection etc.															Parameters	Hydrasleeve out	Hydrasleeve	Gabging	order):	e Monitoring sequenc	inio.	pling Event? (circ	JUSITISITIC	

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ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Manager Signature Date Distribution: Project Central File	Fieldwork Staff Signature HVUL Checker Name and Signature Date 44 (2 -4)	Approval and Distribution		X 40 mL Vial (H ₂ SO ₄) X 100 mL Amber X 250 mL Plastic	Field Filtered: Unfiltered: x 40 mL Vial (HCI) x 60 mL Ferrous x 60 mL metals (HNO ₃) Bore volume calculation, bore c	Analytes Sampled for: Bottles Collected QA/QC Information Fie	Acceptable Parameter Range: ±10% ±3% ±0.05 ±10 mV ±0.2 °C ±10% urbidity		W.40 6.23 1.58 235.1 15.85 -838.9 13.3 M	11:35 6.27 1.54 235.2 15.87 -841.4 17.3	130 6.23 1.57 235.6 15.83 -837.9 13.7	4	11:20 623 1.56 234.0 1583 -846.1 13.2	6.23 1.63 2345 1583 -8330 17.2	back	Kows illingy	Time Cumulative (vol.) SWL Pump Rate DO E.C. Redox Redox Temp *C Odour, Removed (L) (m-pvc) Pump Rate (ppm or mgl) (mSkinn or petty) pH Redox Temp *C Odour,	Water Quality Parameters	Calculated bore volume (D): Includes/ excludes bore annulus (circle) # purge volumes removed: Total purged volume (L):	F1 Other (specify)	c): Cover Type (gatic/stick up): (The correction to apply is probe dependent) 11 Other (specify) 🚺 Peristaltic Pump 11 Waterra	Casing Radius (mm): Corrected Redox: V / N Ny Disposable F1 Bailer F1 Hydrasleeve): 6.70 Screen Interval (m): Chem Kit Model: 7,/s 8/25 /1 Dedicated Intake depth:	Love Low Plow Pump rate:	121 Bore Radius (mm): 25 Chem Kit Serial No.: X 77 Va Decontrainanted Fill and Elan Directory	Parameter Info. Decontamination Sampling Method 2.1 Bore Radius (mm): 2X Chem Kit Serial No.: VX for the formation of
	Date 44		4. (86-		Bore volume		±0.2.10		-9	-	-9	4		833.0 17.2	13.2 Cher instri	+ Cla		ameters		F1 Other (specify)	Y Peristaltic Pump * W	FI Bailer FI Hy		inated FI Low	OTTAIN FUNCTION	
	2 ×4) ×3 ~		6.7 / ~ ~	7	calculation, bore condition, fate of tubing, redox correction etc.	Field Commets	10% turbidity (if using a turbidity meter)	4		X					5	1 Ad addres high horburch	Odour, Colour, Turbidity			Sampling Start Time: Hydrasleeve out	_	Sampling Depth (m-pvc):	Hydrasleeve Type: sequence tollowed (number in order):	Hydrasleeve Size: Monitoring	TYDIABICEVE INTO.	

ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Client:	Project Number:	606441	PM Name:	S.Hay San	Sample Date: 30-11-2	12
General	Bore Information	Kellers Ba	Fieldwork Staff:	E-R We	Well Development or Well Sampling Event? (circle)	ing Events (circ
Date of GW Level: 30/11/21		49		bor	Hydrasieeve in	no.
/c):	1		Decontaminated	Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence
Bore Depth (m-pvc):	Casing Badilus (mm):	99	Dedicated	Intake depth:	Hydrasleeve Type:	order):
21	Cover Type (natio/stick up):		Disposable		Sampling Depth (m-pvc):	Gauging
Product Thickness (m):	Bore Locked (YES/NO)	s pro	Other (specify)	Peristattic Pump	Hydrasleeve Install time:	Hydrasleeve in
	Key Type (if applicable):			Other (specify)	Sampling Start Time:	Hydrasleeve out
Calculated bore volume (L):	B.					Parameters
	III IVIAGES) EXCINCES DOLE ALITIO	annuus (circie) # purge volumes removed: Water Quality Par	amatare	Total purged volume (L):		
Time Cumulative Vol. Removed (L)	(m-pvc) Pump Rate (ppm or A	PH	Redox (mV) Temp °C	0	Odour, Colour, Turbidity	
1 7 25 WOM &	5.8 410	- 78.51 E.FEC 7	7.21 5.220		1	111
1:45 10	10.17 7.64	78×14 15.82	978 - 12 (0	1 / on or /	100 0000 1000 101 200	(AIDIG
1:50 10	10.17 7.60	238.9 15.82 -	5	1 Joons SUL JAON	Innain ou	
1:55 10.		239.3 15.82	121 20			
1.10	10.17 7.51	5 15-82 -	26.5 1			
	(Sintarl					
		S Charles and	l'ar.			
Accept	Acceptable Parameter Range: ± 10%	± 3% ± 0.05	± 10 mV + 0.2 %C	1 100/ to		
Analytes Sampled for:	Bottles	The state is the	VQC Inf	m 4/01 +	 Field Commets 	
Field Filtered:	x 40 mL Vial (HCI)	x 60 mL Ferrous x 60 mL metals (HNO ₃)		Bore volume calculation, bo	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	tion etc.
X	O ₄ j			4× (14.28-10.17)×3	5x(t)	
han	Approval and Distribution	Vistribution				J
11				(II-L) Xh	x > = 49.21	~
Fieldwork Staff Signature	Date	Checker Name and Signature	Date		_	(
Project Manager Signature	Date	Distribution. Droject Control Dis			1 to large	L

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Page 1 of 1

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Project Name:	111 <	-	Project Number:	LIDNAVY	4 T DI	PM Name:		SUAY	Sample Date: 🐇	30-11-21
Cilent:	C.C		Project Location:	Kalanc	n Rasu	Fieldwork Staff:	1	0	Well Development or Well Sampling Event? (circle)	Sampling Event? (circle,
	General Bore In	formation	Contraction in the	Para	6	Decontamina	ination	Sampling Method	Hydrast	Hydraslceve info.
Date of GW Level: 30-	12-11	Bore Radius (mm):	25	Chem Kit Serial No.:	TSA FON	Z 🕅 Decont	Decontaminated	Low Fl	Hydrasleeve Size:	Monitoring sequence
Depth to GW (m-pvc):	O-lio abel	Screen Interval (m):	1	Chem Kit Model:	1 Pite Plus	I.I	led	Intake depth:	Hydrasleeve Type:	order):
_	-1	Casing Radius (mm):		Corrected Redox:	2	Z	able	Bailer		Gauging
PVC	6 11 1	Cover Type (gatic/stick up):	ck up):	(The correction to	ly is probe	_	specify) 🔨	Peristaltic Pump		Hydrasleeve in
Product Thickness (m):		Bore Locked (YES/NO):	ö	Parameter method:	hod: FI Downhole	_			Sampling Start Time:	Hydraskeve out
		Key Type (if applicable):	le):		7	eved	_	0000		Parameters
Calculated bore volume (L):		Includes/ excludes bore annulus	re annulus	(circle)	# purge volumes removed:	es removed:	Total	tal purged volume (L):		
The second s		the all and the second	ALC: NOT ALC		Water	Quality Paramete	SJ			A A BARRANNA
		-		E.C.		and the second se				
Time Cumulative Vol. Removed (L)	d (L) (m-pvc)	Pump Rate	(ppm or mg/L)	(mS/cm or µS/cm)	рН	Redox (mV)	Temp °C		Odour, Colour, Turbidity	
12:15 48 1	- 10.17		8.06	230.7	15.83	-966.2	13.2	Brown llow du	red hibidity	
irw	10.17		7.96	231.1	15.83	-966.5	13.2	1 locus no tubidity	1 No odour	
12 25	10.17		7.96	221.1	1583	-96-1	3.2			
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	(SAMAPL	PUE TRUEN	1 at 12	22						
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Field Filtered: Unfilt	Unfiltered:	× 40 mL Vial (HCi)		x-60-mL Ferrous	x 60 mL metals (HNO ₃)			Bore volume calcula:	Bore volume calculation, bore condition, fate of tubing, redox correction etc	dox correction etc.
2	~ *	x 40 mL vial (H SO		x 100 mL Amber	x 250 mL Plastic					
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		1000	Approval and Distribution	Ibution	Distant and	V Providence I		1× (1>4	4 - 10-16) X S	
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Project Manager Signature	er Signafure	Date	Dist	Distribution: Project Central File	entral File					
	of organization								Comments and	l

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FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

AECOM

Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

Fieldwork Staff: Decontamination Decontaminated Dedicated Disposable Other (specify)	Controlling Method Sampling Method Intake depth: Intake depth: FI Bailer FI Hydrasleev Peristatic Pump ¹ Waterra Other (specify)		mpling Eyent? (circle mino followed (number in orden): Gauging Hydrasleeve in
econtamination Decontaminated Dedicated Disposable Other (specify)	Sampling Method Sampling Method Intake depth: Intake depth: Bailer FI Hydrasleev Peristaltic Pump ^T Watema	Hydrasleeve Size: Hydrasleeve Size: Hydrasleeve Type: Sampling Depth (m-pvs): Hydrasleeve Install time:	Monitoring sequence followed (number in orden): Gauging Hydrasleeve in
	Low Flow Pum Intak		Monitoring sequence followed (number in orden): Gauging Hydrasleeve in
	Peristattic Pump Other (specify)		followed (number in order): Gauging Hydrasleeve in
	Bailer Peristaltic Pump Other (specify)		orden): Gauging Hydrasleeve in
	Peristaltic Pump Other (specify)		Hydrasleeve in
		Compling Chot Time:	Hydrasleeve in
		compiling Grant Time.	Hydrasieeve out
# purge volumes removed:	Total purged volume (L):		rarameters
arameters		The second second second	ALC: NOT
Redox Temp *		Odour, Colour, Turbidity	
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1 15.		Con 1000	er.
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9 N.J.1	4		
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A/QC Informatio	ALCONTRACT NO.	Eichel Commoto	
		tion condition for fit to	Constant and a second se
		pore condition, rate of tubing, redox c	orrection etc.
	4x (6.13-	712/2	
Date	ц х х х	X	
	10712	12 1 3 H	Je C
emoved: ally Par (mV) (mV) (mV) (mV) (mV) (mV) (mV)	anneters Temp * <i>I I S</i> . <i>4</i> <i>I S</i> . <i>7</i> <i>I S</i> . <i>7</i> <i>S</i> . <i>7</i> <i>S</i> . <i>7</i> <i>I S</i> . <i>7</i> <i>I S</i> . <i>7</i> <i>S</i> . <i></i>	Total purged vo Imeters Temp °C 15.4 15.4 15.4 15.76 15.76 15.76 15.76 15.76 4 4 4 4 4 4 4 4 4 4 4 4 4	Total purged volume (L): $f(x) = \int_{a}^{a} \int_{a}^{a} \int_{a}^{b} \int$

Q4AN(EV)-405-FM1

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ANZ FQM - Groundwater Sampling and Purging Record Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

Field Filtered:

Unfiltered: نۍ ۲

x 40 mL Vial (HCI) x 40 mL Vial (H₂SO₄) 300 Anter 24

Z x 100 mL Amber x 60 mL Ferrous

x 60 mL metals (HNO₃) x 250 mL Plastic

Bottles Collected ± 10%

39

10:05

± 10 mV

QA/QC Information

Analytes Sampled for:

Acceptable Parameter Range:

Fieldwork Staff Signature

Date

Checker Name and Signature

Date

50

2

HY 6-36-2.16

x

1

Bore volume calculation, bore condition, fate of tubing, redox correction etc.

Field Commets

Approval and Distribution

Project Manager Signature

Date

Distribution: Project Central File

			1			<u>.</u>		Inclu	Key	Bore	Cove	Casi	Scre	Bore	Infor		F	1
						Pump Rate		Includes/ excludes bore annulus (circle)	Key Type (if applicable):	Bore Locked (YES/NO):	Cover Type (gatic/stick up):	Casing Radius (mm):	Screen Interval (m):	Bore Radius (mm):	nformation		Proje	
	2.37	2.35	2.34	2.82	2.41	DO or mg/L		bore annulus	le):	9	ck up):			25		Project Location:	Project Number:	
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	15.68	15.68	15.68	15.68	15.68	PH	Water	# purge volumes removed	FI Retrieved	Parameter method: IT Downhole	o apply is probe de	dox: Y / N	, ë	il No.:	Parameter Info.	WT160K/AN	LEIDHO	
	-1080.7	-1077.2	-1093.5	15.68 -943.4	2.056-	Redox (mV)	Water Quality Parameters	nes removed:	ieved	nhole	(The correction to apply is probe dependent) F Other (specify)	Disposable	FI Dedicated	M De	Decon	Away & Fieldwork Statt	649177/32.3 PM Name:	
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	18	Ła	11		chevi da			Total purged volume (L):		Other (specify)	K Peristaltic Pump 1 Waterra	FI Bailer FI Hy	Intake depth:	Ft Low Flow Pump rate:	Sampling Method	EPIDI	ATT'S	
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	V	u	11	11	colovilass	Odour, Colour, Turbidity				Sampling Start Time:	Hydrasleeve Install time:	Sampling Depth (m-pvc):	Hydrasleeve Type:	Hydrasleeve Size:	Hydra	Well Development or Well Sam	Date:	
									Parameters	Hydrasleeve out			(number in order):	-		ell Sampling Event? (circle	30-11-21	Las Des T
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2.17 2.17 Product Thickness (m):

alculated bore volume (L):

Time

Cumulative Vol. Removed (L)

epth to Product (m-pvc):

Depth to GW (m-pvc): $2 - 10 - b_{2}$

Date of GW Level: 30-11-21

General Bore

56

Bore ID: Sample Date:

Lachen 7

Project Name:

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3ore Depth (m-pvc):

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ANZ FQM - Groundwater Sampling and Purging Record

Page 1 of 1

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Q4AN(EV)-405-FM1

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Page 1 of 1

ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

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Client: CCC		Project 1 ocation.					S.HAY	Sample Date:	10101
Genar	al Bore Infor	maillen	-	ULU OW BASINS	Fieldwork Staff:	k Staff:	E. Reisman	Well Development or Well Sampling Error 2 strate	Sampling Events Sim
Date of GW Level: 22/17/2		Born Dodine Amerika	J	Parameter Info.	Decor	contamination	Sampling Method	and the second se	anipility Event (circ
Depth to GW (m-pvc): C H2		Screen Interval (m)-				Decontaminated	FI Low Flow Pump rate:	Hydrasteeve Size:	Monitoring sequence
Bore Depth (m-pvc): 9,7		Casing Radius (mm)-		242	å	Dedicated	Intake depth:	Hydrasleeve Type:	followed (number in
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Product Thickness (m):	B	Bore I onload /VEC/MON.		(intercontrol to apply is probe dependent)		fy)	F Peristaltic Pump F Waterra	Hvdrasleeve Install time.	Buller
(A-1)	alog	LUCKED (TES/NU):	Param	Parameter method: FI Downhole				Sampling Start Time:	
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Field Filtered: Unfiltered:		١.				Information		Field Commets	N. A. C. M. S. M.
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	×	x 40 mL Vial (H _{SO})	x 100 mL Amber	x 250 mL Plastic					ox correction etc.
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Project Manager Signature	 	Date	Distribution						200
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Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

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Addition Developed enclosed Increasion may by proceeded on the proceeded of the processor of the pr	3ore Depth (m-p		U	asing Radius (mm):		Corrected Ro	1 / X :xope	E		E	IIIIdu	Т		order):
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Project Name:			Project Number:	6064917	606491 / / Task 3.2.3	PM Name:		SHAY	Sample Date:
Client:	ccc		Project Location:	CCC SW Basins	Basins	Fieldwork Staff:	Staff:	man	Vell Development or Well
	General Bore I	information	「「「「「「」」	Rd I	ameter Info.	Decori	anthation	line Mathod	wei beveicpillelit of wei Sampling Event? (circle)
Date of GW Level: 2	1-12-21	Bore Radius (mm):	25	Chem Kit Serial No .:	U1SV	Dec	Decontaminated FI	- 8	Hydrasleeve Size
Depth to GW (m-pvc):	10.10	Screen Interval (m):	1):	Chem Kit Model:	FI	2		- Low riow runp late:	Hydrasleeve Jize.
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Depth to Product (m-pvc):		Cover Type (gatic/stick up):	/stick up):	(The correction t	ly is probe	-			
Product Thickness (m):	1,	Bore Locked (YES/NO):	S/NO):	Parameter method:	thod: FI Downhole		(Kinade) iaino	1.1	Compling Close Time:
	. /	Key Type (if applicable):	able):			eved		Uner (specity)	Sampling Start Time:
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Time Cumulative Vol. Removed (L)	red (L) SWL (m-pvc)	s) Pump Rate	e (ppm or mg/t.)	E.C. (mS/cm or µS/cm)	PH	Redox (mV)	Temp °C		Odour, Colour, Turbidity
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Analytes Samp	pled for:		Bottles Collected	offected	A Thursday	QAVOC	QA/QC Information	H IC	Field Commets
Field Filtered: Unfi	Unfiltered:	x 40 mL Vial (HCI)		x 60 mL Ferrous	x 60 mL metals (HNO ₃)			Bore volume calculation	Bore volume calculation, bore condition, fate of tubing, redox correction etc.
		× 40 mL Vial (H ₂ SO ₄)			x 250 mL Plastic				,
The state state			Approval and Distribution	ribution	INVE - LO	The second second	and a Constant of	- 7×1 14.27	- (n 1.) / x3 -
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Project Manager Signature	er Signature	Date	Dist						

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ANZ FQM - Groundwater Sampling and Purging Record

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	Information		Para	meter Info.	Deco	Decontamination	ine Method		Inpling Event? (circle
	Bore Radius (mm): 25		Chem Kit Serial No .:	No.:		Decoptaminated	FI Low Flow Pump rate:	Hvdrasleeve Size:	Monitoring sequence
1. 10. iU m by	Screen Interval (m):	0	Chem Kit Model:		0	Dedicated	Intake depth:	Hydrasleeve Type.	followed (number in
Donth to Dendricet (m much)	Casing Radius (mm):		Corrected Redox	ж: Y / N	-		FI Bailer FI Hydrasleeve		Gauging
	Cover Type (gatic/stick up):		he correction to	(The correction to apply is probe dependent)		P Other (specify)	F Peristaltic Pump F	Hydrasleeve Install time:	Hudrasleeve in
/	Bore Locked (YES/NO):		Parameter method: FI	iod: FI Downhole	-			Sampling Start Time:	Hvdrasleevereut
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Calculated bore volume (L): 46.674 Includes/ excludes bore annulus (circle)	ncludes/ excludes bore	e annulus (circ		# purge volumes removed	s removed:	1	الح ه		
		and the second second	C. MARINE	Water Q	tuality Para	meters			
Time Cumulative Vol. SWL Removed (L) (m-pvc)	Pump Rate	(ppm or for)	E.C. (mS/cm or uS/cm)	표	Redox (mV)	Temp °C		Odour, Colour, Turbidity	「二大学の二十
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Field Filtered: Unfiltered:	x 40 mL Vial (HCI)	x 60 mL Ferrous	S	x 60 ml metals /HNO				Preid Commets	South States
	x 40 mL Vial (H _{SO4})	x 100 mL Amber		x 250 mL Plastic					irrection etc.
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Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12: 2016

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Q4AN(EV)-405-FM1

Hydrasleeve Size: Hydrasleeve Type.

Intake depth:

Decontaminated FI Low Flow Pump rate:

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Chem Kit Serial No.: VS Parameter

2

Casing Radius (mm): Screen Interval (m): Bore Radius (mm):

> 1-945 •

Depth to GW (m-pvc): Bore Depth (m-pvc):

Date of GW Level:

Dedicated

Chem Kit Model: VST Ro Corrected Redox: Y / N

Sampli E. Reisman S.HAY

> Fieldwork Staff: Decontam

PM Name:

60649177 Task 3.2.3 CCC SW Basins

Project Location: Project Number:

CCC SW Basins CCC

Project Name: Client:

Well Development or Well Sampling Event? (circle)

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Sample Date: Bore ID:

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A LOT ALL ALL ALL ALL ALL ALL ALL ALL ALL AL			AND THAT	STATES IN THE REAL PROPERTY.	North Barrier	Water Q	luality Paran	ieters			
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	(ppm or mgu)	E.C. (mS/cm or uS/cm)	Hd	Redox (mV)	Temp °C	0	Odour, Colour, Turbidity	
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Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

FQM - Groundwater Sampling and Purging Record ANZ

Q4AN(EV)-405-FM1

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Monthly Constrained Part Representation Part Representation Part Representation (Prop. 1) And	C-STATE	General Bd	ore Inform	ation	11 - 12 C	Par	ameter info.		Decontaminatio	E E	Sampling Method		Hydraisleaw	a Info
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Q4AN(EV)-405-FM1

		Project Location:	CCC SW Basins	CCC SW Basins	PM Name: Fieldwork Staff:	S.HAY F Reisman	Sample Date: 14-1.	4-1-23
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	Here Internation	A CALL CALL	Para	ameter Info.	Decontaminatio		weil bevelopitiett of weil sampling syent? (circle)	pling event? (circle)
Date of GVV Level: 19-1-21	Bore Radius (mm): 1	1m): 2く	Chem Kit Serial No .:	INO: VKA 7	No Decontaminated	2	Hudrachavia Citat	Monitoring sequence
Depth to GW (m-pvc): 0.49	Screen Interval (m):	l (m): / *	Chem Kit Model:	+ Pro Pus	- 1		Hydrasleeve Tyne	followed (number in
Bore Depth (m-pvc): 9,42	Casing Radius (mm):	(mm):	Corrected Redox:	4	Disposable	FI Bailer FI Hydrasleeve		Gaurino
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	atic/stick up):	(The correction to	(The correction to apply is probe dependent)	-	Peristaltic Pump		Hudraelaevo in
Product Thickness (m):	Bore Locked (VES/NO):	ES/NO):	Parameter method:	hod: FI Downhole		N.	Sampling Start Time:	Hydrosloovo aut
/	Key Type (if applicable):	plicable):			ā	Supra Ribe	Generation Science and Contraction	Domester out
Calculated bore volume (L):	10	Includes/ excludes bore annulus (circle)	(circle)	# purge volumes removed:	removed:	Total purged volume (L):		r alallieters
To any other that we have	South Langue	LEAST TOTAL ST		Water Qu	failty Parameters		The second second second second second	
Time Cumulative Vol. Removed (L)	SWL Pump Rate	tate (ppm or mg/L)	E.C. (mS/cm or µS/cm)	PH	Redox Temp °C (mV)	P°C	Odour, Colour, Turbidity	St.Coort and
1:56 36 0	NHA	5.73	121.5	613	61 143	Matin S	1) Odenn I	/
Nr.00 C.	il a	00-ja	1-5,51	6.23 6	5.4 14	2 aler Lill	T	1
12:05 6.	ila	5.67	1.41		~		hanse Line	
10:10 6	6.11	5.6	133-11	5 503	8 14	6		
C	in	Slet	123.1	972 5	8	1.		
12/20	Save	whe aledo	ed at	11:20				
	-							
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Accept	Acceptable Parameter Range:	nge: ± 10%	± 3%	± 0.05	10 mV + 10 mV			
lytes Sampled			liected	のないのであると	NQC Info	H.	Field Commets	State of the state
Field Filtered: Unfiltered:	x 40 mL Vial (HCI)		x 60 mL Ferrous	x 60 mL metals (HNO ₃)		Bore volume calculation	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	ection etc.
	x 40 mL Vial (H ₂ SO ₄)			x 250 mL Plastic)
							0) (C - 1) (C) - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	6
		Approval and Distribution	DUBUD	The later of the second second	The state in sector			
Fieldwork Staff Signature	Date	1	Checker Na	Checker Name and Signature	Date	0	[
Project Manager Signature								

Open Progen Location Torong Progen Location <	Project Name: C	CCC SW Basins	Project	Project Number:	60640177 Tool 3 3				Bore ID:	
Virtual Encoder <				Location:	CCC SW Basins		ume:	S.HAY)ate:	
Min (mprop): Min Section (manual of manual	Date of GW Level:	B			Parameter In	To. Dec	OTK Staft:	E. Reisman	Well Development or Well St	Impling Events (ci-
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	C		creen Interval (m):			安 七	inated	78	Hydrasie	ve liniu.
Status (n) Concertinge (balacidative) Conconceritinge (balacidative) Concerting	1.		asing Radius (mm):		3	2	Dedicated	Intska Aanth.	Hydrasleeve Size:	Monitoring seque
$\frac{ \operatorname{show su(n)}}{ \operatorname{show su(n)}} = \frac{ \operatorname{show su(n)}}{ show su$	repth to Product (m-pvc):	0	over Type (gatic/stick u		ected Kedox: Y	2		Bailer		Order):
Above volume (1): YC Key Type (# argunatab); The relevance F argune volumes removed: Y argune volumes remo	roduct Thickness (m):	Bo	pre Locked (YES/NO):		correction to apply is pro	-		Peristaltic Pump		Gauging
Conversion Statute would be reading by a minute (crice) Figure would be reading by a minute (crice) Statute (crice) Figure would be reading by a minute (crice) Statute (crice) Figure would be reading by a minute (crice) Statute (crice) Figure would be reading by a minute (crice) Statute (crice) Figure would be reading by a minute (crice) Statute (crice) Figure would be reading by a minute (crice) Statute (crice) Figure would be reading by a minute (crice) Statute (crice) Figure would be reading by a minute (crice) Statute (crice) Statute (crice) Statute (crice) Figure would be reading by a minute (crice) Statute (cri	alculated here		y Type (if applicable):			Τ		11 id	Sampling Stort T	Hydrasleeve i
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	aiopiated Dote volume (L)	36	cludes/ excludes borr	e annulue (simolo		Retrieved			company start little:	Hydrasleeve o
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$						olumes removed:	7	tal purged volume (1).		Parameters
Knowod (L) (mp) Path (mo) (ms) (ms) (ms) (ms) (ms) (ms) (ms) (ms						fater Quality Para	meters	Frigor volume (L).		
		1				Redox (mV)	Temp °C		2	and the second second
A A <td>l</td> <td>070</td> <td></td> <td></td> <td>5</td> <td>200 7</td> <td>iG tr</td> <td></td> <td>Caour, Colour, Turbidity</td> <td></td>	l	070			5	200 7	iG tr		Caour, Colour, Turbidity	
A A <td>150</td> <td>10-40</td> <td>17</td> <td>6</td> <td>2</td> <td>-F</td> <td>1174</td> <td>+ '</td> <td>nd</td> <td></td>	150	10-40	17	6	2	-F	1174	+ '	nd	
Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10mV ± 0.2 °C Millered: × 40 mL Vial (HC) Bottles Collected ACCeptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10mV ± 0.2 °C Unfiltered: × 40 mL Vial (HS), × 100 mL renois × 60 mL melas (HNO), ± 0.2 °C HO Contromation Unfiltered: × 40 mL Vial (HS), × 100 mL renois × 60 mL melas (HNO), ± 0.2 °C Unfiltered: × 40 mL Vial (HS), × 100 mL renois × 60 mL melas (HNO), ± 0.2 °C Unfiltered: × 40 mL Vial (HS), × 100 mL renois × 60 mL melas (HNO), ± 0.2 °C Unfiltered: × 40 mL Vial (HS), × 100 mL renois × 60 mL melas (HNO), ± 0.2 °C Unfiltered: × 40 mL Vial (HS), × 100 mL renois × 60 mL melas (HNO), ± 0.0 °C Manager Signature - - - - - Ont Staff Signature - - - - - Date - - - - - Date - - - - -	2001	De un	0	83	n	359.7	142		/	
Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10 mV ± 0.2 °C Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10 mV ± 0.2 °C Vicis Sampled for: × 40 mL Vial (HC) × 60 mL Ferousis × 60 mL meals (HNO_3) ± 0.05 ± 10 mV ± 0.2 °C Vicis Signature × 40 mL Vial (H,SO_3) × 100 mL Amber × 250 mL Plastic OV/OCT information	1:30	1	0	55	F	ntvs	142			
Acceptable Parameter Range: ±10% ±3% ±0.05 ±10 mV ±0.2 °C Nes Sampled for: <u>x40 mL Vial (HC)</u> bottles Collected <u>0.005 ±10 mV</u> ±0.2 °C <u>vial 3 di mL Vial (HC)</u> <u>x00 mL Ferous</u> <u>x60 mL meals (HNO.)</u> <u>vial 5 lignature</u> <u>Approval and Distribution</u> <u>vial 5 lignature</u> <u>Date</u> <u>0.05 ± 10 mV</u> ±0.2 °C <u>vial 1 di mL Vial (HSO.)</u> <u>x100 mL Amber</u> <u>x250 mL Plassic</u> <u>0.00C Information</u> <u>and 1 stribution</u> <u>1 di mL Vial (HSO.)</u> <u>1 di mL Amber</u> <u>1 di mL Vial (HSO.)</u> <u>1</u>		-	0		4 6.11	222	142			
Acceptable Parameter Range: ± 10% ± 0.05 ± 10mV ± 0.2% Muniltered: × 40 mL Vial (HC) × 60 mL Ferrous × 60 mL melais (HNO ₂) × 40 mL vial (H,SO ₄) × 60 mL melais (HNO ₂) Muniltered: × 40 mL vial (H,SO ₄) × 00 mL Amber × 50 mL Plastic QAVOC Information Muniltered: × 40 mL vial (H,SO ₄) × 00 mL Amber × 50 mL Plastic QAVOC Information Muniltered: × 40 mL vial (H,SO ₄) × 00 mL Amber × 250 mL Plastic QAVOC Information Muniltered: × 40 mL vial (H,SO ₄) × 00 mL Amber × 250 mL Plastic QAVOC Information Muniltered: × 40 mL vial (H,SO ₄) × 00 mL Amber × 250 mL Plastic QAVOC Information Muniltered: × 40 mL vial (H,SO ₄) × 100 mL Amber × 250 mL Plastic QAVOC Information Muniltered: × 40 mL vial (H,SO ₄) × 100 mL Amber × 250 mL Plastic QAVOC Information Muniltered: × 40 mL vial (H,SO ₄) × 100 mL Amber × 250 mL Plastic QAVOC Information Muniltered: × 40 mL vial (H,SO ₄) × 100 mL Amber × 250 mL Plastic QAVOC Information Muniltered: × 40 mL vial (H,SO ₄) × 100 mL Amber × 250 mL Plastic QAVOC Information Muniltered: × 40 mL vial (H,					-21	00/-0	11.2			
Acceptable Parameter Range: ± 10% ± 0.05 ± 10 mV ± 0.2 °C Unfiltered: X 40 mL Vial (H(C)) K 60 mL Ferous X 60 mL metals (HNO ₂) X 00 mL vial (H(SO ₂)) X 00 mL metals (HNO ₂) Vite Staff Signature Mul 2 Topoval and Distribution Viter Name and Signature Date									196 <u>-</u>	
Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10 mV ± 0.2 °C Vies Sampled for: X40 mL Viai (HCI) Notes Collected X40 mL viai (HCI) × 60 mL rensus × 60 mL metals (HNO ₅) Unfiltered: X40 mL Viai (H,SO ₄) × 100 mL Amber × 250 mL Plastic QA/QC Information With Signature Upproval and Distribution Checker Name and Signature Date										
Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10 mV ± 0.2 °C Vies Sampled for: Bottles Collected OM/OC Information Unfiltered: × 40 mL Vial (HC) × 60 mL Ferrous × 60 mL metals (HNO ₃) OM/OC Information Unfiltered: × 40 mL Vial (HSO ₄) × 60 mL Amber × 250 mL Plastic OM/OC Information Vies Staff Signature MU2 Approval and Distribution Checker Name and Signature Date										
Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10 mV ± 0.2 °C ytes Sampled for: Bottles Collected OM/OC Information Unfiltered: × 40 mL Vial (HC)) × 60 mL Ferous × 60 mL metals (HNO ₃) OM/OC Information Unfiltered: × 40 mL Vial (HSO ₄) × 60 mL ferous × 60 mL metals (HNO ₃) OM/OC Information Unfiltered: × 40 mL Vial (HSO ₄) × 100 mL Amber × 250 mL Plastic OM/OC Information Orth Staff Signature Pate Checker Name and Signature Date										
ytes Sampled for: Ytes Collected ± 0.05 ± 10 mV ± 0.2 °C Unfiltered: x 40 mL Vial (H_SO_4) x 60 mL Ferrous x 60 mL metals (HNO_5) QAQC Information Vial x 40 mL Vial (H_SO_4) x 100 mL Amber x 250 mL Plastic QAQC Information Mont Approval and Distribution Approval and Distribution Yea Yea Checker Name and Signature Date Qate Yea	Acc	ceptable Para		$\left \right $						
Unfiltered: x 40 mL Vial (HC)) x 60 mL Femous x 60 mL metals (HNO ₃) x 40 mL Vial (HSO ₄) x 100 mL Amber x 250 mL Plastic Approval and Distribution Approval and Distribution Y York Staff Signature Y Date Checker Name and Signature Date	ytes Sampled).		Collecte		± 10 mV	±0.2 °C	± 10%	turbidity (if using a turbidity motor)	
Approval and Distribution Image: Date Checker Name and Signature Date 4			(40 mL Vial (HCI)	x 60 mL Ferrous		Service -	Intolmination	「「「「「「「」」」	Field Commets	
Approval and Distribution		×	(40 mL Vial (H ₂ SO ₄)	x 100 mL Ambe				Bore volume calculation,	bore condition, fate of tubing, redox con	rection etc.
Approval and Distribution	A	F		H				4 VIOIE IL	~ / ~ >	
Date Checker Name and Signature Date	1 CAL			and Distribution				(/ (I·I) - 6. I	N	
Date Date	Fleidwork Staff Signatury		+	Char	ker Namo and Otto			48 (7:75)	×7 221	
				ADILA ADILA		TUFA				

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				105K			Bore ID:	Inchan 2
Project Name:	ric Su b	SASVA Project Number:	# 60X	オイリンか。	PM Name:	へぶち	Date:	D - U
Client:			on: CCC	Brans	Fieldwork Staff:	Elesna	opment	ampling Event? (circ
	General Bore Information	pation	Par	<u>е</u>	Decontamination	Sampling Method	Hydrasle	eve info.
Date of GW Level:	12-1	Bore Radius (mm): 2 S	Chem Kit Serial No.	0	M Decontaminated	FI Low Flow Pump rate:	Hydrasleeve Size:	e: followed (number In
		Casing Radius (mm):	Corrected Redox:		Distosable	The Anitor Intake depth:	eve Sampling Devin (m-nvc):	Gaucino
Depth to Product (m-pvc):		Cover Type (gatic/stick up):	(The correction t	(The correction to apply is probe dependent)	Other (specify)	Peristaltic Pump		Hydrasleeve in
Product Thickness (m):	Bore I	Bore Locked (YES/NO):	Parameter method:	thod: FI Downhole		V Other (specify)	Sampling Start Time:	Hydrasleeve out
	Кеу Т	Key Type (if applicable):		FI Retrieved		ANEmarc		Parameters
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)	inulus (circle)	# purge volumes removed:	moved:	Total purged volume (L):		
Time Cumulative Vol.				Water Gua				
	d (L) (m-pvc)	(ppm or mgr)	(ner) (sem)	3	A dura (Au)		Unour, Colour, Lurbidity	
210	6.37	06	6 262.0	6.02 219	2.2 135	Cluby, madante	. turbally no about	ž
205	6-37	06	2 2618	16 729	5 21 9.10	6	11	
QU : C	6.27	040	8 2611	6.02 26	1.0 13.6			
2-15	037	1	2 760-0	6.01 5	269 135			
220	しいす	0.4	s Way	Co. 20 02	521 24			
2:25	634	1:03	248.8	602 72	5.50 414			
7:30	0.37	21.1	2	20 20 3	2.8 136			
2:35	6-2-7	1.2	2.82 0	60 22	79 13.6			
	SA	vere tryler	135					
	1							
	Acceptable Parameter Range:		# 10% ± 3%	± 0.05	± 10 mV ± 0.2 °C		± 10% turbidity (if using a turbidity meter)	
ytes S			Bottles Collected		QA/QC Information		Field Commets	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCI) x 40 mL Vial (H ₂ SO ₄)	x 60 mL Ferrous x 100 mL Amber	x 60 mL metals (HNO ₃) x 250 mL Plastic		Bore volume calcula	Bore volume calculation, bore condition, fate of tubing redox correction etc.	ox correction etc.
		Approval a	Approval and Distribution		Contract In 199			
Fieldwork Staff Signature	Signature	Date	Checker N	Checker Name and Signature	Date	N		
Draigot Managor Cignature	2							

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Page 1 of 2

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Q4AN(EV)-405-FM1

100.00			44640000	14 2 J. C Mah			boie in.	12 m 1
Client: Bit Count and	1.61	Project Number: Project Location:	John Call		PM Name: J Fieldwork Staff:	F Reisman W	Sample Date: 73-11-23 Well Development or Well Sampling Event? (circle)	Inding Event? (circle
General Bore	ation	3	Par	fo.		Ing Mathod	Hydrasies	and a state of the
Date of GW Level: 3/-7/	Bore Radius (mm):	5	Chem Kit Serial No.:	INO: YST 7	X Decontaminated	F⊽¥ Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence
Depth to GW (m-pvc): 10.235	Screen Interval (m):	1	Chem Kit Model:	el: Pr Pus		Intake depth:	Hydrasleeve Type:	followed (number in order):
Bore Depth (m-pvc):	Casing Radius (mm):		Corrected Redox:	dox: Y / N	W Disposable	Fi Bailer Fi Hydrasleeve	Sampling Depth (m-pvc):	Gauging
Depth to Product (m-pvc):	Cover Type (gatic/stick up):		(The correction to	(The correction to apply is probe dependent)	Other (specify)	altic Pump	Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):	Bore Locked (YES/NO):		Parameter method:	thod: FI Downhole	-	M Other (specify)	Sampling Start Time:	Hydrasleeve out
,	Key Type (if applicable):			FI Retrieved		C		Parameters
Calculated bore volume (L): Wb. 3K	Includes/ excludes bore annulus	re annulus (c	(circle)	# purge volumes removed:		Total purged volume (L):		
	The second se			Water Qui	ameters	Structure and and and	and the second second	
Time Cumulative Vol. SWL Removed (L) (m-pvc)	Pump Rate	DO (ppm or mg/b)	E.C. (mS/cm or (uS/cm)	рH	Redox (mV) Temp °C		Odour, Colour, Turbidity	
12:15 48 (1) 10.24	2	7.74	63.8	6-44 2	208.9 3.5	Ma Tulbudy 1 31	hrybawn (no of	050
ino .		h7.t	263.7	6.37 2	208-91 13-5	2	odour netucida	4
12:25		2.11	263.8	6.42 22	5-51 8-50	1		
12:30		7.05	263.8	6.38 18	8.4 135			
12:35		7.02	y	1 25	1.0 13.5			
12:46		2.63	263-8	-37	186-8 135			
	1 SHOULD	RUE THURK	D	- Yorn (
					-			
	Acceptable Parameter Range:	± 10%	± 3%	± 0.05	± 10 mV ± 0.2 °C		± 10% turbidity (if using a turbidity meter)	ALL AND
Analytes Sampled for:	ないというないのか	Bottles Collected	lected		QA/QC Information		Field Commets	
Field Filtered:	x 40 mL Vial (HCI)	х 60 п	x 60 mL Ferrous	x 60 mL metals (HNO ₃)		Bore volume calculation,	Bore volume calculation, bore condition, fate of tubing, redox correction etc	rection etc.
	x 40 mL Vial (H ₂ SO ₄)		x 100 mL Amber	x 250 mL Plastic		to puse:		
							>	
A PART OF STATES	Арр	Approval and Distribution	oution		And the second	-01417 X/	10.235 × 3	
Fieldwork Staff Signature	Date	Ĩ	Checker N	Checker Name and Signature	Date	(3.865)		15.34 -
Project Manager Signature	Date	Distrit	Distribution: Project Central File	entral File				٢

Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

^{ANZ} FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name:						/				
Client:	100	Pr	Project Location:	Miramines	restruct	Fieldwork Staff:	taff:	K. R. S. Man	Well Development or Well Sampling Event? (circle)	bling Event? (circl
and a start of the	General Bore	e Information		Parar	neter Info.	Decontai	mination	hod	Hydrasleeve	info.
Date of GW Level:	3-1-21	Bore Radius (mm):	25	Chem Kit Serial No .:	No.:	M Decor	Decontaminated	Low Flow Pump rate:		Monitoring sequence
Depth to GW (m-pvc):	10.24mbs	Screen Interval (m):):	Chem Kit Model:		P Dedicated	ated	Intake depth:	Hydrasleeve Type:	tollowed (number in
Bore Depth (m-pvc):	13	Casing Radius (mm):	n):	Corrected Redox:	N / A 1X	Tisposable	sable F1	Bailer 🖅 Hydrasleeve	Sampling Depth (m-pvc):	Gauging
Depth to Product (m-pvc):	/	Cover Type (gatic/stick up):	stick up):	(The correction to a	(The correction to apply is probe dependent)		Other (specify)	altic Pump	Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):	n):	Bore Locked (YES/NO):	/NO):	Parameter method:	od: FI Downhole		X	Other (specify)	Sampling Start Time:	Hydrasleeve out
		Key Type (if applicable):	able):		Retrieved	ed	X	Shrupsible pump		Parameters
Calculated bore volume (L): 44-4	lume (L): 444	Includes/ exclude	Includes/ excludes bore annulus (circle)		# purge volumes removed:	s removed:	Tota	31		
East and a	Services without	The state of the s	The second second		Water C	uality Paramet	ers			
Time Cumu Ren	Cumulative Vol. SWL Removed (L) (m-pvc)	VL Pump Rate	(ppm or mg/L)	E.C. (mS/cm or µS/cm)	рн	Redox (mV)	Temp °C		Odour, Colour, Turbidity	
10:20 4	20 119	1	7.34	256.4	6.34	181.91	13.8	Claudy mod hubally	ins dow (First Pare buck	se bucher)
10:35	-		7.29	2564	6.36	180.2	13 300	(levins a lour mi		
6:40			7.25	26.2	1 389	8.24	13.2			
10:45			7.26	226.2	35	1.8t	2			
02:20			\sim	256-2	10.39	8-441	12.3			
		Some	ict (slector	1000	٩.					
		5			e					
							(195).			
	Acceptab	Acceptable Parameter Range:	je: ± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	1 %00 F	± 10% turbidity (if using a turbidity meter)	INVESTIGATION OF
Analytes Sa	Sampled for:		Bottles	Collected		QAVQC	C Information	We want and the second	Field Commets	「ないない」
Field Filtered:	Unfiltered:	x 40 mL Vial (HCI)		x 60 mL Ferrous	x 60 mL metals (HNO ₁)	0,)		Bore volume calculation,	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	rection etc.
		x 40 mL Vial (H ₂ SO ₄)		x 100 mL Amber	x 250 mL Plastic			SKARH NOWING	*	
1	ALL MALES		Approval and Distribution	bution	The state of			1. (1. (1. (1. (1. (1. (1. (1. (1. (1. (1 > (12.11- 10.24) < 3 -	
1 pc		13-1-2						in.		
Fieldwork Staff Signature	laff Signature	Date	1	Checker Na	Checker Name and Signature	æ	Date	721	K	
Project Mar	Project Manager Signature	Date	Distri	Distribution: Project Central File	ntrał File			USL PURED	S	

Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

Client: (CC	SV SSV Project Number	27-5/2 In 1000	PW Name:	S HOTT Sur	Sample Date: 14-
	General Bore Information	Parameter Info.	Fieldwork Staff: Decontamination	Sampling Mathad	Well Development or Well Sampling Event? (circle
Date of GW Level: 14/11 2	Bore Radius (mm):	Chem Kit Serial No.: YSIT	_	FI Low Flow Pump rate:	Hydrasleeve Size:
Depth to GW (m-pvc):2 115	Screen Interval (m):	Chem Kit Model: 20 VVS	** Dedicated	Intake depth:	Hydrasleeve Typ
Bore Depth (m-pvc): 6 135	Casing Radius (mm):	Corrected Redox: Y / N	_	FT Bailer FT Hydrasleeve	Sampling Depth (m-pvc):
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent) # Other (specify)		Peristaltic Pump	Hydrasleeve Install time:
	Key Type (if applicable):	Parameter method: 11 Downhole	K	Other (specify)	Sampling Start Time:
Calculated bore volume (L):				1000000	
	internation excludes polic attituitus (circle)	Hind #	and the first statement	Total purged volume (L):	
Time Cumulative Vol. 2	SWL Pump Rate DO	E.C.	Water Quality Parameters		
		µS/cm)			Comment immediate
10.30 204 21	12 1.59	139.1 6.59 43.5	5 18.9	Clearing adar no	tuba. S
	50.2	139.0 6.56 42	1 18.5		
11. 20 27.11	12	138.6 0.56 411.	9 J.F. 9		
10:45 2.1	21.0	128.9 6.56 41	9 18- S		
10:50 2.1	12 0.64	XX 6.56 41.	0 17.1		
10:55	1	1101 WIN 10:85			
	5-				
Acceptat	Acceptable Parameter Range: ± 10%	+ 300 + 0.05 L			
Analytes Sampled for:	Bo	- 0000	QA/QC Information	H01%01+	To% turbidity (if using a turbidity mater) Field Commets
Field Filtered:	x 40 mL Vial (HCl) x 6 x 40 mL Vial (H ₂ SO ₄) x 1	x 60 mL Ferrous x 60 mL metals (HNO ₃) x 100 mL Amber x 250 mL Plastic		Bore volume calculation, bc	Bore volume calculation, bore condition, fate of tubing, redox correction etc.
al	Approval and Distribution	tribution		4×6.135-	6-135-2.115 X
Fieldwork Staff Sidnature	1				
Project Manager Signature	Date	Checker Name and Signature	Date	2 48.04	18.04 750 Corever

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^{ANZ} FQM - Groundwater Sampling and Purging Record

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Client: CCC	ĸ	Proje	Project Location:	CCC SW Basins	Basins	Fieldwork Staff:	k Staff:	E. Reisman	Well Development or Well Sampling Events / circle	noling Events (circ
644	Terrare Terrar	THERE	The State of the State	Para	ineter into.	Decor	ntemination	ling Method	Hydrastee	a Info
Depth to GW (m-pvc): 7	20	Bore Radius (mm): Screen Interval (m):	8	Chem Kit Serial No.:	40.: YS		Decontaminated	FI Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence
Bore Depth (m-pvc): 6-5		Casing Radius (mm):		Corrected Redox:	ox: Y / N	1		Intak		order):
Depth to Product (m-pvc):		Cover Type (gatic/stick up):	ck up):	(The correction to	ly is probe	- 7	-			Gauging
Product Thickness (m):	Bore	Bore Locked (YES/NO):		Parameter method:	hod: FI Downhole		(Ainade) ioino	Other (specify)	Sampling Start Time:	Hydrasleeve in
	Key	Key Type (if applicable):	e):		FI Retrieved	eved	-	Jan ak la		- t- conce out
Calculated bore volume (L):		Includes/ excludes bore annulus	re annulus	(circle)	# purge volumes removed:	les removed:	-	Total purged volume (L):		Parameters
2			3	E.C.	Water	Quality Paran	sielers	all and a second first		a water the second
Time Cumulative Vol. Removed (L)	i. SWL (m-pvc)	Pump Rate	(ppm or mg/L)	(mS/cm or µS/cm)	рH	Redox (mV)	Temp °C		Odour, Colour, Turbidity	
9:00 BOC	2.15		1-60	106.2	6.64	123-5	20.8%	- Class in shows	N hildste	and the second second second
205	215		614	106.0	6.63	123-5	20.7		1 marsh	
01	1.15		0.88	100.0	29.9	1745	20.7			
4.15	2.15		58.0	106-1	Sec. 14	125.2	20.7			
9:20	2.15		D. Ja	106-1	222	175.2	20.7			
9:26	2.15		のよう	Inf. 1		125.3	20.7			
	(9:25 5	AMPLED	EC-TE	1	•				
A	Acceptable Parameter Range:	meter Range:	± 10%	± 3%	± 0.05	± 10 mV	±0.2 °C	+ 40%	Analysis, New York, Alastan, and a	
ytes Sampled	for:	Statute of	Bottles Coll	ected	A WEAR AND A	5	C Information	# 10%	turolativ (ir using a turbidity meter) Field Commets	A STATE OF
Field Filtered: Unfiltered:		x 40 mL Vial (HCI)	x 60 m	x 60 mL Ferrous	x 60 mL metals (HNO ₃)	NO ₃)		Bore volume calculation,	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	prection etc.
		x 40 mL Vial (H ₂ SO ₄)			x 250 mL Plastic			4x6636-21451~3	2 x (3 H 2	
The state of the second second	of the state of the	Api	Approval and Distribution	ution						
Fieldwork Staff Signature	ure	Date		Checker Nar	Checker Name and Signature	Ire	Date	1 50 50		
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	I SU BALI) Project No		640	たたしちかうの	PM Name	Tel Contraction of the		Sample Data: 7-	7-02-22
		Project Loci	Callon:	6	2	Fieldw	Fieldwork Staff:	-	Well Development or Well Sampling Event? (circle)	Tpling Event? (circle
Gene	Par Franklindel	ON REAL PROPERTY.		E1	neter Into.	Decc	Decontamination	Sampling Method	Hydrasieev	re info.
Date of Giv Level 17 -02-	22 Bore Radius (mm):	us (mm):	0	Chem Kil Serial No .: 55	1 552 : ON		Decontaminated FI	Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence
Depth to GW (m-pvc): 5.05	7551	terval (m):	0	Chem Kit Model:	255 24		Dedicated	Intake depth:	Hydrasleeve Type.	order):
Bone Depth (m-pvc): Q.12	Casing Radius	adius (mm):	0	Corrected Redox:	N I A 180	20	Disposable F1	Bailer	Sampling Depth (m-pvc):	Gauging
Depth to Product (m-pvc):	Cover Type (gat	e (gate/stick up):		The correction to	(The correction to apply is probe dependent	~	ΞŤΥ)		Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):	Bore Lock	92 L		Parameter method:	tod: F1 Downhole	-	CX.	Other (Sampling Start Time:	Hydrasbeve out
	Key Type	Key Type (if applicable):				eved		Shranke		Parameters
Calculated bore volume (L): UK XM Includes/ excludes bore annulus (circle)	1× × Includes	excludes bore	annulus (cin		# purge volumes removed	les removed:	1	Total purged volume (L):	CLASSING STATES	
「「「「「「」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」	and a supervision of the second	「日本のない」	Ander The Street	-	Water	Water Quality Parameters	N O Day of		A NEW AND A DESCRIPTION OF	and the set of the second
The Considers Vol	(in state	Pump Rate (pr	(ppm or mg/)		¥	Redox (mV)	J.dum		Odour, Colour, Turbidity	
10:20 La	5.05	2		42.9	302	22.2	17.7	Mercino adar, notubidity	tubaty	States and
	6.05	9		R.U1	6.89	5.52	173		and a state	
6:30	609	9		42.8	6.89	54.5	17.3	All the second se	te changer	Chever Distances
-	5.05	9		42.8	6.90	56.3	4. tl	Lawrence M.	A STATE OF STATE	
	505	6		42.8	6.89	8.45	h'£1		Contraction of the second second	
	505	6	6.47	42 8	6.96	2.82	トイ			
2	22	(allectus)	10. 50 0	3		1000				Contraction of the
and a second				1	And		100		A TANK IN TANK	State of the
1 States		A.C. M.		and the second	10.10	100				a species
			5			11.000		Allen al a la l	addam of Constraints and	
									A AND A DATE OF	A STATE OF A
Acc	Acceptable Parameter Range:	125	± 10%	± 3%	± 0.05	± 10 mV	±0.2 °C	± 10% lur	± 10% turbidity (if using a turbidity meter)	
Analytes sampled for:	Di la la		pomes conscien		A DESCRIPTION OF A DESC				a leia commens	
Field Filtered: Unfiltered:	x 40 m	x 40 mL Vial (HCI)	x 60 mL Ferrous		x 60 mL metals (HNO ₃)	(CON		Bore volume calculation, br	Bore volume calculation, bore condition, fare of tubing, redux correction etc.	omection etc.
4	×40 п	x 40 mL Viai (H ₂ SO4)	X TOUTHL ATTOR		A COLUMN THE PLAN			4x (9.12-5.05 X 3	505 X3	
IIIa	an information of the state of	Approv	Approval and Distribution	Bon	in particulario	a state in	「「「「「「」」」」」」」」」」」」」」」」」」」」」」」」」」」」」		5.	J
Fieldwork Staff Signature	ET	forter	1	Checker Na	Checker Name and Signature		Date	-	the	17.84 C
Project Manager Signature	1	Date	Distribu	Distribution: Project Central File	ıtral File					

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				ontral File	Distribution: Project Central File	Distrib	Date		Project Manager Signature	Proje
		Date	lure	Checker Name and Signature	Checker N	I	Date		Fieldwork Staff Signature	Fieldwo
			Constant of the	and all the	rtion	Approval and Distribution	App			MAN, IN ST.
4468.56-5.04) x3 = 42.74	4468.56-5 04									
Bore volume calculation, bore condition, fate of tubing, redox correction etc.	Bore volume calculation, bore co		HNO ₃)	x 60 mL metals (HNO ₃) x 250 mL Plastic	x 60 mL Ferrous x 100 mL Amber		x 40 mL Vial (HCI) x 40 mL Vial (H ₂ SO ₄)		Unfiltered:	Field Filtered:
Field Commets	N. S. S. S. S.	QA/QC Information	8	A Start	ected	Bottles Collected	and a second		Analytes Sampled for:	Analy
± 10% turbidity (if using a turbidity meter)		±0.2 °C	± 10 mV	± 0.05	± 3%	± 10%	Acceptable Parameter Range:	eptable Par	Acc	
		-								
				1:45)	Heix 1	E Colle	SAMPL			
The star star		14-51	31.2	6.90	77.7	オカン		5.04		11:45
		14.9	3.8	6.89	1777	447		5.04		1:40
		14.9	29.5	6-91	LT	4.97		204		1:35
		14.9	5.8	7.15	17:4	5.01		5.4		1:30
		14.5	1.05	6.74	9.44	5.04		5.64		1:25
6 marter		14.6	N 0	51.3	9.tL	5.04		5.04		1.10
Autadik.	(hiv, no ober, as trutadet	14.9	15.8	6.92	4.1L	5-68		5.04	84	11-15
Odour, Colour, Turbidity	Odour	Temp *C	Redox (mV)	뫄	E.C. (mS/cm or JuS/Cmj)	(ppm or may)	Pump Rate	(m-pvc)	Cumulative Vol. Removed (L)	ī
		ameters	Water Quality Parame	Mail Wal		Constant Store			and the second second	- A A A A A A A A A A A A A A A A A A A
Parameters	Lyng, y			the number of the test of	(interlation)	ore annulus (Includes/ excludes hore annulus (circle)		Calculated bore volume (L): 42.74	Calculated b
Sampling Start Time: Hydrasleeve out	C (Sacht)		wnhole		Parameter method:		Key Type (if annicable):	5	100	And the second second
Hydrasleeve Install time: Hydrasleeve in	Vaterra	Other (specify)	-		(The correction	k up):	Cover Type (gatic/stick up):	2 2	Dess (m)-	Product Thickness (m):
Sampling Depth (m-pvc): Gauging	eve	Disposable	Z	Y 1	Corrected Redox:		Casing Radius (mm):	200	10001 3.74	Sont Depair (III-pvc).
Hydrasleeve Type: tollowed (number in boder):	th:		11	101: DSS 92	Chem Kit Model: DSS		Screen Interval (m):	100	(m-pvc): 5.04A	Som Denth (m-pvc):
Hydrasleeve Size: Monitoring sequence	1		17	al No .: DSS 1	Chem Kit Serial No.:		Bore Radius (mm):			Date of GW Level
Hydrasleeve info.	Sampling Method	Decontamination	All allot a	E III E	5	State State State		General Bore Information	And and	
Well Development or Well Sampling Events (rincle)		Fieldwork Staff:		andrea Busan	100	Project Location:	Proje	r	1	Client
日: 12-52 0 3	1 < 1 4.	PM Name:	Md	thou h	1	Project Number:	alora	52	144	and the second sec

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Revision 2 July 12, 2016

$\frac{1-50 \text{ a. }}{\text{ stomv}} = 0.2^{\circ} \text{ c. }} = 10^{\circ} \text{ turbuly} (1 \text{ using a laterally mean})}$ $\frac{1-50 \text{ a. }}{\text{ stomv}} = 0.2^{\circ} \text{ c. }} = 10^{\circ} \text{ turbully} (1 \text{ using a laterally mean})}$ $\frac{1-50 \text{ a. }}{\text{ stomv}} = 0.4 \text{ comments} = 0.4 $	± 10% ± 3% ± 0.05 Brittles Collected Jack So mL Farrous x 60 mL melais (HMCs) x 100 mL Ambar x 250 mL Plaslic yral and Distribution X 250 mL Plaslic	2,) proval and	
a tomv = 102°C	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1),) proval and	Fieldwork Staff Signature
SDG.A +10mV = ±02°C OAVQC Information	ar s	20	
2 D G . 20 2 TOmV 202°C OAVQC Information	3%		
±02°C	3%	x 40 mL Vial (HCI)	Analytes Sampled for: Field Filtered: Unfiltered:
		Acceptable Parameter Range: ± 10%	Acceptable P
1.200.20			
	Conne	DAMARC	
110.1 13.7	252.2 622	L	11:12
6	6.29	7.84	
7 13.4	2630	98 L	
13.4 (4	1 6.30	702	
110.4 13.4 Churdy, mod hip, ding, no adar	5	CIK	- 44
Temp*C	E.C. (mS/cm or p	Pump Rate (ppm or mg))	Time Cumulative Vol. SWL Removed (L) (m-pvc)
y volumes removed: I total purged volumes removed:	# purge	Includes/ excludes bore annulus (circle)	Calculated bore volume (L): 45.46 In
SubMulsing (IV)	F1 Retrieved	Key Type (if applicable):	
(1 Other (specify)	Parameter method: F1 Downhole	Bore Locked (YES/NO):	ノ
VI Other (specify) VI Peristallic Pump Vaterra	(The correction to apply is probe dependent)	Cover Type (gatic/stick up):	pvc):
FI Bailer FI Hydrasleeve Sampling Depth (m-pvc)	4	Casing Radius (mm):	one Depth (m-pvc): 13.65 Ca
Intake depth: Hydrasleeve Typ	Chem Kit Model: 90 X	Bore Radius (mm): Screen Interval (m):	6-1-66
O constantiation Sampling measures Hydrasleeve Size:	Parameter Info.	Information	General Bore I
Fieldwork Staff: CY2	NGOMIN SY	Project Location:	111
PM Name: S. HTY Sample Date:	6064477	Project Number:	max RAVA
		w Barry	I'M SW

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FOM - Groundwater Sampling and Purging Revision 2 July 12, 2016

2		ntral File	Distribution: Project Central File	Date	Project Manager Signature	Project Ma
	Date	Checker Name and Signature	Checker N	6/2/72	Fieldwork Staff Signature	Lifeidwork S
1 - 0 - C	The second second second		Distribution	Approval and	ALCONTRACT OF A CONTRACT	20
4× (13.98-10.16) ×3= (45 54,)		x 250 mL Plastic	x 100 mL Amber	x 40 mL Vial (H ₂ SO ₄)	Î.	
Bore volume calculation, bore condition, fate of lubing, redge correction etc.		x 60 mL metals (HNO ₃)	x 60 mL Ferrous	x 40 mL Vial (HCI)	Analytes Sampled for: ared: Unfiltered:	Analytes S Field Filtered:
± 10% briddly (if using a furbidly meter) Field Commets	mV ±0.2 °C	± 0.05 ± 10 mV	6 ±3%	- 605	Acceptable Parameter Range:	
			151			
	and the second s					
				\parallel		
		10:30 AM	COLLECTO	SAMPLE CO		
	5 13.4	627 105.	11	7.44	10-16	10-25
	5 13.7		- Il	2.00	5 16	1-70
	13.4	-		7.95	5 10	21/2
	2 13.4	6-17 108.		5-1	10.16	6.11
1 1	13.	4	_	P.I.Y	-	-
body, SI-mod threadily,	6 13.3	9.21 46.9	- 1	R.43	Lei Mik	INA L
Odour, Colour, Turbidity	C Temp*C	pH Redox (mV)	(mSicm or (mSicm)	Pump Rate (ppm or man)	Cumulative Vol. SWL Removed (L) (m-pvc)	Time Cum
	ameters	Water Quality Parameters				
volume (L):	/ed: Total purged	# purge volumes removed	line (circle)	ney iype (i applicate);	Ime (L): UK VH Inclus	almilated hore vo
	A Cub		Parameter method:	BORE LOCKED (YES/NU):	-	Product Thickness (m):
Sampling Start Time:		is proce dependent)	(The correction to	Cover Type (gatic/stick up):	1	Depth to Product (m-pvc):
1		Y I N	Corrected Redox:	Casing Radius (mm):	1395 - 5/	Bore Depth (m-pvc):
Intake depth: "Juneswere Take. Orden:	1	De DSS	Chem Kit Model:	Screen Interval (m):	10.10 04	Depth to GW (m-pvc):
Hydrasleeve Size	Decontaminated F1	Ra 2552	Chem Kit Serial No .:	Bore Radius (mm):	6-2-22 Bore	Date of GW Level:
301.00	Decontamination	meter Info.	Statistics of the second		General Bore Information	And Barrist State
Ve.Sview Well Development	Fieldwork Staff:	Mai	No. Contraction	Project Location:	11000	
		しょうちょう	h hUndill	ICMC Project Number:		roject Name;

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مىي FQM - Groundwater Sampling and Purging Record

2		ntral File	Distribution: Project Central File	Date	Project Manager Signature	Project Ma
	Date	Checker Name and Signature	Checker N	6/2/72	Fieldwork Staff Signature	Lifeidwork S
1 - 0 - C	The second second second		Distribution	Approval and	ALCONTRACT OF A CONTRACT	20
4× (13.98-10.16) ×3= (45 54,)		x 250 mL Plastic	x 100 mL Amber	x 40 mL Vial (H ₂ SO ₄)	Î.	
Bore volume calculation, bore condition, fate of lubing, redge correction etc.		x 60 mL metals (HNO ₃)	x 60 mL Ferrous	x 40 mL Vial (HCI)	Analytes Sampled for: ared: Unfiltered:	Analytes S Field Filtered:
± 10% briddly (if using a furbidly meter) Field Commets	mV ±0.2 °C	± 0.05 ± 10 mV	6 ±3%	- 605	Acceptable Parameter Range:	
			151			
	and the second s					
				\parallel		
		10:30 AM	COLLECTO	SAMPLE CO		
	5 13.4	627 105.	11	7.44	10-16	10-25
	5 13.7		- Il	2.00	5 16	1-70
	13.4	-		7.95	5 10	5.12
	2 13.4	6-17 108.		5-1	10.16	6.11
1 1	13.	4	_	P.I.Y	-	-
body, SI-mod threadily,	6 13.3	9.21 46.9	- 1	R.43	Lei Mik	INA L
Odour, Colour, Turbidity	C Temp*C	pH Redox (mV)	(mSicm or (mSicm)	Pump Rate (ppm or man)	Cumulative Vol. SWL Removed (L) (m-pvc)	Time Cum
	ameters	Water Quality Parameters				
volume (L):	/ed: Total purged	# purge volumes removed	line (circle)	ney iype (i applicate);	Ime (L): UK VH Inclus	almilated hore vo
	A Cub		Parameter method:	BORE LOCKED (YES/NU):	-	Product Thickness (m):
Sampling Start Time:		is proce dependent)	(The correction to	Cover Type (gatic/stick up):	1	Depth to Product (m-pvc):
1		Y I N	Corrected Redox:	Casing Radius (mm):	1395 - 5/	Bore Depth (m-pvc):
Intake depth: "Juneawaye Take. Orden:	1	De DSS	Chem Kit Model:	Screen Interval (m):	10.10 04	Depth to GW (m-pvc):
Hydrasleeve Size	Decontaminated F1	Ra 2552	Chem Kit Serial No .:	Bore Radius (mm):	6-2-22 Bore	Date of GW Level:
301.00	Decontamination	meter Info.	Statistics of the second		General Bore Information	And Barrist State
Ve.Sview Well Development	Fieldwork Staff:	Mai	No. Contraction	Project Location:	11000	
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مىي FQM - Groundwater Sampling and Purging Record

Project Name: Client:	Cec s	SN Project Number: Project Location: Information:	boloyai z	۶ ۲	Statuto Method	Sample Date: 4.00 (c) Well Development or Well Sampling Eyent? (circle)
Date of GW Level:	_	Bore Radius (mm):	Chem Kit Serial No.:	(11	2	
172	194421	Screen Interval (n):	P.F	SS II Dedicated	_	
Depth to Product (m-pvc):	28	Casing Radius (mm):	Corrected Redox: Y	-	FI Bailer	FI Hydrasleeve
Product Thickness (m):		Bore Locked (YES/NO):	Parameter method: F1 Downhole	T Downhole	3	Naterra
	1	Key Type (if applicable):	2	Retrieved	Third (speciny)	
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		volumes removed:	Total purged volume (L):	-
A State of the sta	ALC: NO		la buide	w purge volumes removed: Water Quality Parameters	l lotal purged volume (I	-);
Time Cumulative Vol. Removed (L)	Removed (L) SWL (m-pvc)	Pump Rate (ppm or mg/L)	(mS/cm or pi	Redox (mV)	å	Odour, Colour, Turbidity
1:30 60	630	4.76	92.8 6.56	99.2 17.1	aller 1	no colour na adur
1:42	1.7.	211	17.5 6.4	6 102.7 12.0		
1:41	1.8	2.60	92.7 6.2			
1.50 1.50	1.6	251	2.7 6.20	7 16.		
1:00	1.0	5 4-1	92.8 6.54	1/12.6 17.0		the second second
2:05	K'1	1.92	12.8 6.3	9 11.0 17.0		
	Acceptable Pa	Acceptable Parameter Range: ±10%	±3% ±0.05	+ 10 mV		
Analytes Samp Field Filtered: Unfil	Unfiltered:	Bottles Collected x 40 mL Vial (HCi) x 60 mL Ferror x 40 mL Vial (H-SO ₄) x 100 mL Amb	er x 250	QA/QC Info		E 10% turbally (if using a turbady meter) Field Commets raiculation, bore condition, fate of tubing, red
<i>*</i> , <i>?</i>		Approval and Dist	Distribution) × h	48(4.58/22-22-2
Fieldwork Staff Signature	lignature	16-2-22	Checker Name and Signature	nature Date	-	
Project Manager Signature						

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Fibildwork Staff Signature	P			Field Filtered: Unfiltered	ytes Sampleo	A				12:20	12:45	07:70	12:24	12:20 (20	Time Cumulative Vol Removed (L)	Lat. The Manual a	Calculated bore volume (L): GY. 4(Includes/ excludes bore annulus (circle)		Product Thickness (m):	Depth to Product (m-pvc):	Bore Depth (m-pvc): 6.2	Depth to GW (m-pvc); [-3	Date of GW Level: 1621	8	Client	Project Name:
	ure	New York		-	Or:	cceptable P			Jame	03	1.40	1.80	1.80	1.80	d. SWL	Stat and the): 44.46				85	50			the second	111 -
	16/2/22 Date	Apps		x 40 mL Vial (HCI)	the set of the set of	Acceptable Parameter Range:			PLE CILL						Pump Rate	Car Charles	Includes/ excludes t	Key Type (if applicable):	Bore Locked (YES/NO):	Cover Type (gatic/stick up):	Casing Radius (mm):	Screen Interval (m):	Bore Radius (mm):	Information	Drug Project	
		pproval and Distribution			Bottles Collected	± 10%			red	1.23	1.24	133	2.41	3.82	(ppm or mgk)	CALCULATION OF THE OWNER	ore annulus ();	k up):				· · · · · · · · · · · · · · · · · · ·	t I constion-	Project Number
	Checker N	oution	x 100 mL Amber	x 60 mL Ferrous	lected	± 3%			12:500	126.7	176.7	126.6	126.5	126.6	E.C. (mS/cm or µS/cm)	and the second	circle)		Parameter method:	(The correction	Corrected Redox:	Chem Kit Model: Do	Chem Kit Serial No.:	142	R	
	Checker Name and Signature	のないのであるの	x 250 mL Plastic	x 60 mL metals (HNO3)	A STATE OF	± 0.05				7.22	7.22	ULT.	5.40	12.45	뫄	Wa	# purge vol	R	ethod: FI D	(The correction to apply is probe dependent)	×	del: Di	tal No: ブイク	threw ou	114 000	
	ture			HNO ₃)	6	± 10 mV				171.7	72.3	75.1	101.2	102-1	Redox (mV)	Water Quality Parameters	# purge volumes removed.	Retrieved	_	-	Z II		-		t	
	Date			Contraction of the local division of the loc	QA/QC Information	±0.2°C				20.3	90.5		20.7	2.20	Temp °C	ameters				I Other (specify)	Fy Disposable	Dedicated	C Decontaminated	Pieldwork statt:		
		- JYC 6.58-										6. 0000 / 11	1/2 m lo m lo	landy, Mad hirsdily	a distantion in		Total nurned volume (1): 60 V	Shurrible Pure	Otheris	Peristattic Pump	FI Bailer FI Hydrasleeve	Intake denth:		CC . Mathod	S TV	
		×6.58-1.+1+3 = 12:00		Bare volume calculation, bors condition, fate of lubing, redox correction etc.	± 10% lurbidity (if using a lurbidity meter)							1.0		na oder	Odour, Colour, Turbidity	AND			Sampling Start Time:		1	Hydrasleeve Vype:	Hydrasleeve Size: Monit	Well Development of Well Sampling Event? (circle	varipie vale.	7
r	J. 46			arrection etc.	and the second se				4				ber a state of the state of the			SUPPLY I BURGET WAR		Parametere	Hydrasleeve out	Hydrasleeve in	Gauging	followed (number in	Monitoring sequence	impling Event? (circle)	6-2-22	7

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ANZ FQM - Groundwater Sampling and Purging Record

Revision	
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Project Manager Signature	Fieldwork Staff Signature	and the second second second		Unitered.	Analytes Sampled for: Field Filtered:					51:0	200 18	Ta Cumulation	All in the second second	Calculated bore volume (L): 1.7.7.7. Includes/ excludes bore annulus (circla)	Product Thickness (m):	8	Bore Depth to GW (m-pvc):	Date of GW Level	the state of the second second	Clant
ture	a	1			9	cceptable Pa				634	657	ed (L) (m-pvc)		ルンフル			6.59	7.02	General Bore	-
Date	Date	Appro	x 40 mL Vial (H ₂ SO ₄)	x 40 mL Vial (HCI)	Notes and	Acceptable Parameter Range:) Pump Rate	Contraction of the local division	Key Type (if applicable): Includes/ excludes bo	Bore Locked (YES/NO):	Cover Type (gatic/stick up):	Casing Radius (mm):	Bore Radius (mm):	Information	-
Distribu	1	Approval and Distribution	x 100 m	x 60 m	Bottles Collected	± 10%				6.84	6.86	(ppm or mail)	Contraction of the	bore annulus	iQ;	lick up):	H	25	Suil of Contraction of Contraction	
Distribution: Project Central File	Checker Na	tion	x 100 mL Amber	x 60 mL Ferrous	ected	± 3%				111.8	165.1	E.C. (mS/cm or µS/cm)	(are re-	(circle)	Parameter r	(The correctio	Chem Kit Model: Corrected Redox:	Chem Kit Serial No.:		Contraction of the local division of the loc
tral File	Checker Name and Signature	and the second second	x 250 mL Plastic	x 60 mL metals (HNO ₃)	Nethingle Bar	± 0.05			1000	6.13	6.11	P	Wate	# nume volumes re	Parameter method: F1 Downhole	ly is probe	Nedor: Y / N	Io: YS	Parameter Info.	
đ		and a state of the second		CN I	QA/Q	± 10 mV	1.11.		100	74.4	L39	Redox (mV)	Water Quality Parameters	neved	-	_	2 2	2 1	Deci	
Date					QA/QC Information	±0.2.0				16.6	16.6	Temp *C	STREET, SOL			 Other (specify) 		Decontaminated	Decontamination	
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(=		4.40-6.39)x625 + 3 K . 60314-	(25°)	ore condition fate of tubion makers	± 10% turbidity (if using a turbidity meter)					317	neabur of 1.1 1.1	Odour, Colour, Turbidity	A REAL PROPERTY AND A REAL	1000	Sampling Start Time:	Hydrasheve Install time:	Hydrasleeve Type:	Hydrasleeve Size:	the second from the second from the second former of the second from the secon	all Development of wall semi
17.72 Like		<hi< td=""><td>maction etc.</td><td>N. IN SUCCESSION</td><td></td><td></td><td></td><td>di la</td><td>-</td><td>H JAL NEW</td><td>- 100</td><td></td><td></td><td>Parameters</td><td>Hydrasleeve in</td><td>Gauging</td><td>followed (number in order):</td><td>ze: Monitoring sequence</td><td>and Eventy (circ</td><td>AND DESCRIPTION OF THE PARTY OF</td></hi<>	maction etc.	N. IN SUCCESSION				di la	-	H JAL NEW	- 100			Parameters	Hydrasleeve in	Gauging	followed (number in order):	ze: Monitoring sequence	and Eventy (circ	AND DESCRIPTION OF THE PARTY OF

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2714	625 x > X.00	(q. 10-6.37 \x 625 x 3 x.00314			X 200 ML Masuc		X 100 mL Amber		X 40 m		
lox correction etc.	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	Bore volume calculation	No. 100 Aug	3)	x 60 mL metals (HNO ₃)	11-S	x 60 mL Ferrous	x 40 mL Vial (HCI)	x 40 n	Unfiltered:	Field Filtered:
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Gauging		FI Bailer FI Hydrasleeve	-	-	tedox: Y / N	Corrected Redox:	T	Casing Radius (mm):		Bore Depth (m-pvc): 9,10	Bore Dept
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Monitoring sequence	Hydrasleeve Size: Mon	Low Flow Pump rate:	ated		40.: YS.	Chem Kit Serial No .:		Bore Radius (mm):	24	Wiener 10-3-	Date of GW Lev
ampling Event? (circle	Well Development or Well Sampling Event? (circle	Sampling Method	Decontamination	100	arameter into.		The state of the s	nformation	Internal BOXED	8-	
10-2-22	Sample Date: / D	S ALCO	Fieldwork Staff:	Fieldwa	222 1111	31	nine Location:	200			
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x 60 mL Ferrous x 60 mL metals (HNO ₃) Field Commets x 100 mL Amber x 250 mL Plastic Bore volume calculation, bore condition, faile of lubing, redux correction etc. x 100 mL Amber x 250 mL Plastic (8:34-6.38) X625 x 34, 00714) istribution = 11.53 Checker Name and Signature Date
x 60 mL metals (HNO ₃) x 250 mL Plastic (8.3
x 60 mL metals (HNO ₃) x 250 mL Plastic
QA/QC Information
±3% ±0.05 ±10 mV ±0.2 °C
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vobe dependent)
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Date of GW Level 4-7-2	Bone Nacius (mil)	5	Chem Kit Model:	- 1	P Dedicated	Intak	Complian Depth (mana).	Gauging
Depth to GW (movel 17 4 4			Corrected Redox:	Y I N	X		Hydrasleeve Install time:	Hydrasleeve in
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Calculated bore volume (L).	II ACTION OF	C. State State of the		Water Qual	Water Quality Parameters		A PARTICIPAL PROPERTY OF A PARTICIPAL PROPERTY	Transferrance
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ytes Sampleo	Hard and marked	Bottles Collected	ALC THE DESCRIPTION	のないのないの	QA/QC Information	日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日	Field Commets	THE COLOR OF STREET
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	Appro	Approval and Distribution	aller build and a	All and a state of the state of	「「なる」のでのないです。		1000	-1.4
Feddwork Staff Signature	Date	Ch	Checker Name and Signature	l Signature	Date	1.125.02 cms	Zuns	
Project Manager Signature								

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Purging Reco	Purging Record (Q4AN(EV)	2016	Sampling and i
	rd (O4AN(EV)		Purging Reco

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6.06-1.94) x625x3 x (.00314)		(HNO ₃)	x 60 mL metals (HNV) x 250 mL Plastic	x 60 mL Ferrous x 100 mL Amber		x 40 mL Vial (HCl) x 40 mL Vial (H ₂ SO ₄)	××	Unfiltered:	Field Filtered:
± 10% turbidity (if using a turbidity meter) Field Commets Bore volume calculation, bore condition, fate of tubing, redox correction etc.	mv ±0.2°C QA/QC Information	± 101	± 0.05	± 3%	±10% ±	Acceptable Parameter Range:	ptable Parar	Analytes Sampled for:	Analytes
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11	10.0	124.3	7.04	119.8	4.11	1	1-46	0475	21:11
1111 R in Mad-back Tubbidity no odwor	Temp *C	Redox (mV)		(mS/cm or (IS/cm)	(ppm or mgh)	Pump Rate	(m-pvc)	Cumulative Vol. Removed (L)	Time
	ameters	# purge volumes removed. Water Quality Parameters	# purge	(circle)	bore annulus	Includes/ excludes bore annulus (circle)	146	Calculated bore volume (L):	Calculated b
ofal purged volume (L):	-	neved	The Retrieved	Sec. Mar	(e);	Key Type (if applicable):	Ke	(mess (m):	Product Thickness (m):
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Waterra Hydrasleeve Install time:	T Disposable		edox: Y / N	Corrected Redox:		Casing Radius (mm):	56		Depth to GW (m-pvc)
Intake depth: Hydraskeeve Type: Intake depth: Hydraskeeve Sampling Depth (m-pvc):	12	1	20x	Chem Kit Model:	61	Bore Radius (mm): Screen Interval (m):	22	R	Date of GW Level
Hydrasleeve Siz	FI Decontaminated		Parameter Into:	Paramete Chem Kit Serial No 4	2	ore information	eral Sore Info	Gen	Client
Samplino Method I Hydrasteeve Info.	Fieldwork Staff:	Fieldw	12543 2.2	-14	Project Location:	foud bud	CC SY	*	Project Nam
S-HHY Sample Date: 10-5-22	me:	PM Name:	シナーシャンシ	5	art Number:	R.			

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	Project Numb		PM Name:	-	Sample Date: 10-3-2-	27
Project Name:	Project Locat	lon:	Fieldwork Staff:	E. Comment	Well Development or Well Sampling Event? (circle)	ng Event? (circ
Date of GW Level 10-3	FCL Bore Radius (mm):	LXE	inated F1	Low Flow Pump rate:		Monitoring sequence followed (number in
Depth to GW (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	Thisposable II	FI Bailer FI Hydrasleeve	Sampling Depth (m-pvc)	Gauging
Bore Depth (m-svc)	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	nt) F Other (specify)	Peristattic Pump Waterra	Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: FI Downhole		er (spe	Sampling Start Time:	Hydrasleeve out
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Time Cumulative Vol. Removed (L)	(m-pvc) Pump Rate DO	fig(L) (mS/cm or pH	Redox Temp *C (mV)		Odour, Colour, Turbidity	
35	1.96 270		<u>138.4</u> 15.4	light brong	proparity, cloudy, dear	lesr h
		+ 302 + 0.05	-+ 10 mV			
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Fieldwork Staff Signature	Date	Checker Name and Signature	Date	25.	25.465 -	
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And Description And Hold Series	Project Name:	ruc sus	Troject Number:	ct Number:	6061	54417713.2	5 PM Name:		SHAY	Sample Date:	20-1-00
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H1 Stream Interval (m); Chem Ki Moolet: W4: PU/S Vacuation Interval Carenty Reducts: Carenty Reducts: The correction to spriv 1 prove demonstration Pu/S Pu/S Exercise Technologic Farmeter method: The correction to spriv 1 prove demonstration Pu/S Pu/S Kov Type (if applicable): Farmeter method: M Pu/S Pu/S Pu/S Kov Type (if applicable): M Pu/S Pu/S Pu/S Pu/S (L1): Includes / excludes hore annulus (circle) # pu/S Pu/S Pu/S Pu/S (L1): Includes / excludes hore annulus (circle) # pu/S Pu/S Pu/S Pu/S (L1): Includes / excludes hore annulus (circle) # pu/S Pu/S Pu/S Pu/S (L2): Includes / excludes hore annulus (circle) # pu/S Pu/S Pu/S Pu/S (L2): Includes / excludes hore annulus (circle) # pu/S Pu/S Pu/S Pu/S (L2): Includes / excludes hore annulus (circle) # pu/S Pu/S Pu/S Pu/S (L2): Includes / excludes hore annulus (circle) # pu/S Pu/S Pu/S Pu/S (L2): Includes / excludes hore annulus (circle) # pu/S Pu/S <td>0</td> <td>1</td> <td>vre Radius (mm):</td> <td></td> <td>Chem Kit Serial</td> <td>No.: YST J</td> <td>r1 Decc</td> <td>-</td> <td></td> <td>Hydrasleeve Size:</td> <td>Monitoring sequence</td>	0	1	vre Radius (mm):		Chem Kit Serial	No.: YST J	r1 Decc	-		Hydrasleeve Size:	Monitoring sequence
W Cararo Realist (un): Corrected Redot: Oner Type (gatchistic up): The gatchistic up: Perestation correction correction parmeter method: 1 Oner Type (gatchistic up): Terminic Perestation P			reen Interval (m):		Chem Kit Mode	• 1	1 CDedi	cated	Intake depth:	Hydrasleeve Type	order):
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Image: Second of CESNO1: Parameter method: T. Downhole N. Retrieved N. Grant of Control of CESNO1: metho: (vor, Yper (if appricable): N. Retrieved N. Retrindice N. Retrieved N. Retriev	Depth to Product (m-pvc):	S	over Type (gatic/stit	ck up):	(The correction to	apply is probe deper	-	ify)		Hydrasteeve Install time:	Hydrasleeve In
Key Type (if applicable): M. Retrieved S.G. M.C.S. Includes loce annulus (cicle) # purge volumes removed: Total purged volumes removed: Includes loce annulus (cicle) # purge volumes removed: Total purged volumes removed: SML Pump Rate (pm or regis) # purge volumes removed: Total purged volumes removed: SML Pump Rate (pm or regis) # purge volumes # outor RML Pump Rate (pm or regis) # purged volumes # outor RML Pump Rate (pm or regis) # purged volumes # outor RML Pump Rate (pm or regis) # purged volumes # outor RML Pump Rate (pm or regis) # purged volumes # outor RML Pump Rate (pm or regis) # pump # outor RML Pump Rate (pm or regis) # pump # outor RML Pump Rate # outor # outor # outor RML RML RML RML RML RML RML RML	Product Thickness (m):	Boi	Ire Locked (YES/N	0):	Parameter met	hod: FI Downt		-		Sampling Start Time:	Hydrasleeve out
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Mater Charlity Parameters Mater Charlity Parameters Removed tilty Pump Rame <	Calculated bore volume (cludes/ excludes	bore annulus (c	tircle)	# purge volume	s removed:	Tot	al purged volume (L):		
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x 40 mL Vial (H,SQ ₄) x 100 mL Amber x 250 mL Plastic Approval and Distribution Approval and Distribution		red:	x 40 mL Vial (HCI		mL Ferrous	x 60 mL metals (Hh	(O)		Bore, volume calculat	ion, bore condition, fate of tubing, red	ox correction etc.
Approval and Distribution Date Checker Name and Signature Date			x 40 mL Vial (H S) mL Amber	x 250 mL Plastic	Т		H~ 1 9.2X	5× (14.9-	
Approval and Distribution Date Checker Name and Signature Date							T)		
Date Checker Name and Signature Date	all of the seal		A	pproval and Distri	bution		10,556,11	and Hondows		5.22=	1.2.7
	Fieldwork Staff Sig	nature	Date	1	Checker N	ame and Signatu	le	Date)
Durited Manager Standius Data Data Control Elo	Decised Menacor	Circurature	Date	1	C toology	control Eilo					

Q4N(EV)-405-FM1 FQM - Groundwater Sempling and Purging Record (Q4AN(EV)-405-FM1) Reviews 2 July 12, 2016

Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

Project Name:	lic	SURGIN	Project Number:	6004	2A- ±1549	2. 5 PM Name:	ALL PLANE	くサイン	Sample Date:	L2-4-
Client:	いい		Project Location:	Avial	ce Bush	Fieldwork Staff:	Staff:	L'Osamer	Well Development or Well Sampling Event? (circle)	Sampling Event2 (ci
State and a state of the	General Bor	General Bore Information	ABARA ARCAR A	Para	meter Info.	Decont	DecontainInation	Sampling Method	Hydre	teeve info.
Date of GW Level: 6-1-12	77-7-	Bore Radius (mm):	m):	Chem Kit Serial No.:	No .: VSTY	In Dec	nated	FI Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence
Depth to GW (m-pvc): 6, 39	6 39	Screen Interval (m):	(m):	Chem Kit Model:	WIT PROF	Dedicated		Intake depth:	Hydrasleeve Type.	ronowed (number in
Bore Depth (m-pvc): 9.0	9.05	Casing Radius (mai):	(mag):	Corrected Redox:	ox: CO N	Disposable		ri Bailer ri Hydrasleeve	e Sampling Depth (m-pvc)	Gauging
Depth to Product (m-pvc):	IVC):	Cover Type (gatic/stick up):	(tic/stick up):	(The correction to	(The correction to apply is probe dependent)		I Other (specify)	1.000	Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):		Bore Locked (YES/NO):	'ES/NO):	Parameter met	method: FI Downhole	-	1	A Other (specify)	Sampling Start Time:	Hydrasleeve out
		Key Type (if applicable):	plicable):		Retrieved	P	M	DUBMERTRE		Parameters
Calculated bore volume (L):	ume (L):	Includes/ excl	Includes/ excludes bore annulus (circle)	(circle)	# purge volumes removed	removed:	1	Total purged volume (L):		
の一日のであって	Ward with high Statis	The shirt will be a set of	South and a state		Water Qi	Water Quality Parameter	yn		autom subscriptions	「日本日本日本社会会」
Time Cumu	Cumulative Vol: SWL Removed (L) (m-pvc)	/L Pump Rate	S.E.	E.C. (mS/cm or (uS/cm)	Hd	Redox (mV)	Temp °C		Odour, Colour, Turbidity	
1.82 4	5 6	10	266	10	572 1	40.7	15-8	Cloudy, SI. 6	an nume	" in Thanshall
502	6.1	40	2.09	92.4	154	116 8	ンと	- lloor st-	Dei 5 hilind	
2010	640	R	1-(01	93.5	5.56	197.5	15.8	and the barbar	the me	Trala N
5	6.411	11 - 17	50	825	556 1	157-6	58			
1.20	0.0	6	1.57	93.5	5.57	57.0	3%			
11:25	6.40	0	1-5-1	925	5.59 1	566	15,8			
								32		
								1		
The second se	Acceptab	Acceptable Parameter Range:	ange: ± 10%	a,a€∓	± 0.05	± 10 mV	± 0.2 °C	+ 10	± 10% turbidity (if using a turbidity meter)	(er)
Analytes Sampled for:	mpled for:		Bottles Collected	ollected		QA/Q	QA/QC Information		Field Commets	
Field Filtered: U	Unfiltered:	x 40 mL Vial (HCI)		x 60 mL Ferrous	x 60 mL metals (HNO ₃)	(1)		Bore volume cálculatio	Bore volume calculation, bore condition, fate of lubing, redox correction etc.	redox correction etc.
		x 40 mL Vial (H SO)	_	x 100 mL Amber	x 250 mL Plastic			4.05-	UN 9-05-6 21-2 - 71-0	7: 20
						T			- くい いい	>1-1-5
	A CONTRACTOR OF A CONTRACTOR A		Approval and Distribution	ribution	and the state	Selbor o	CONTRACTOR NO.			
Fieldwork Staff Signature	ff Signature	Date		Checker N	Checker Name and Signature		Date	-		
Besidef Man	Desing Manager Signafium		I		l					
Project Mail	almainia anna	IPA								

Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

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Client: CCCC Date of GW Level: CCC Bore Infor Depth to GW (m-pvc): C 3 F Scre Bore Depth (m-pvc): C 3 C C as Depth to Product (m-pvc): C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C				,	The second s	
1112	Costory Project Number:	60074177	PM Name:	シャイト 28	Sample Date: 6/	22/2
1717 132	Project Location:	Aunter Brs. h	Fieldwork Staff:	I Common W	Well Development or Well Sampling Event? (circle)	ampling Event? (circle)
13. 14 C	mormation	Parameter Info.	Decontamination	Method	Hydrastocve info	cve info.
8:3° ¥	Bore Radius (mm):	Chem Kit Serial No.: く く く	T Decontaminated	FI Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence
96.5	Screen Interval (m):	Chem Kit Model: 7 Co Rus	V Dedicated	Intake depth:	Hydrasleeve Type:	followed (number in
	Casing Radius (mm):	Corrected Redox: R 1 M		FI Bailer FI Hydrasleeve	Sampling Depth (m-pvc):	Ganging
/	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	Put Other (specify)	Peristattic Pump ** Waterra	Hydrasleeve Install time:	Hydrasleeve in
-	Bore Locked (YES/NO):	Parameter method: FI Downhole			Sampling Start Time:	Hydrasleeve out
	Key Type (if applicable):	F Retrieved		C-BARKAR I		Parametere
Calculated bore volume (L): Incl	Includes/ excludes bore annulus (circle)	sircle) # purge volumes removed:		Total purged volume (1.)		
		and the second second	ameters		CONTRACTOR OF A DAMAGE	Contract of the summary o
Time Cumulative Vol. SWL Removed (L) (m-pvc)	Pump Rate (ppm or mon	E.C. (mS/cm or pt- uS/cm)	Redox Temp °C (mV)		Odour, Colour, Turbidity	
30 36 638	18.2	7 5.91	202 3 14.6	Davis - L		
	1.50	0 XX 1 XC	AD 10 11/6	Prodorant , Mudarak	or A how	Thomas Sault
6.36	2.82	21 X 2 X 21	2	TO CLEUC, SI AVEN	1 art 10	الرياوريا
0.58	1.84	10x Xty X, 401	0	2.		
500 F. 3X	18.2	1645 5.74 15V	2			
59 6.38	2.58	PC-2 1	2 14			
	Sample Collected	10-00 am		~	2	
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Acceptable Parameter Range:	meter Range: ± 10%	± 3% ± 0.05 1	±10 mV ±0.2 °C	会 + 10%	🛧 + 10% trihiditu (frisina a trihiditu	
lytes Sampled for:	Bottles Collected	のないないというないである	VQC Infe		Field Commets	
Field Filtered: Unfiltered:	x 40 mL Vial (HCI) x 60 r	x 60 mL Ferrous x 60 mL metals (HNO ₄)			Bore volume calculation, bore condition, fate of tubing, redox correction and	ox correction atc
	x 40 mL Vial (H ₂ SO ₄) x 100	x 100 mL Amber x 250 mL Plastic				
				2~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	22/12 7	
	Approval and Distribution	Jution 👾 🔨 🔬 👘	A the second sec		へくてくの	
				1/12/1	[-	
Fieldwork Staff Signature	Date	Checker Name and Signature	Date		J	
Project Manager Signature	Date Distri	Distribution: Project Central File				

ANZ FQM - Groundwater Sampling and Purging Record

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Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

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ANZ FQM - Groundwater Sampling and Purging Record

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evel: Seneral Bore Level: Seneral Bore Level: (m-pvc): (m-pvc): T-pvc): m-pvc): (m-pvc): (m-pvc): (m-pvc): (m-pvc): (m-pvc) (m	Project Location:			Contraction of the local division of the loc			101
lepth to GW Level: 7, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,	and the second se	5/1/2 Sup	1 Skert	Fieldwork Staff:	the Sum	Well Development or Well Sa	Sampling Event? (circle)
35 mm-vice swit	Bore Radius (mm):	Chem Kit Serial No.:	h ISK :	PI Decontaminated	FI LOW Flow	Hydrasleeve Size:	Monitoring sequence
NMS	Screen Interval (m):	Chem Kit Model:	FRURUS	X Dedicated	-	Hydrasleeve Type:	followed (number in
overm) JWS	Casing Radius (mm):	Corrected Redox:	X I N	-	FT Bailer FT Hydrasleeve	ive Sampling Depth (m-pvc)	Gauging
avq-m) SWL	Cover Type (gatic/stick up):	(The correction to app	(The correction to apply is probe dependent)	• Other (specify)	Peristattic Pump	Hydrasleeve Install time:	Hudrasteeve in
JWS	bore Lockeu (TES/IVU); Kev Tvpe (if applicable):	Parameter method: FI Downhole	FI Downhole		V Other (specify)	Sampling Start Time	Hydrasleeve out
Cumulative Vol. SWL Removed (L) (m-pvc	Includes/ excludes bore annulus (circle)		# purge volumes removed:	toved:	Total numbed volume (1)		Parameters
Cumulative Vol. Removed (L)	The international states and the	A BOAL	Water Quali	Water Quality Parameters			
0.1	Pump Rate (ppm or min	E.C. (mS/cm or visiten)	Hd	Redox Temp °C (mV)	Q	Odour, Colour, Turbidity	
040400	24.6	26246	121 12-	10 120	Nor Not	ork holewhil	
10:45 0.45	9.26	262.26	Da Kar	1	Meet as here	10 4	NON
0:50 4.98	4.0	262-7	11 20	122	and when have	no out & int	
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11:00 9.95	0.05	2 2 2	5.75 17				
1:03 9:95	9.04	2.7	t1 X2.	2 2 2 2			
010 948	A REART	2671 6	11 12	6.2.2			
	70.07						
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Accentable Parameter Banae	efer Ranner ++1062	1700.7	4 0 0E				
Analytes Sampled for:		ecte		OV/OC Liferint/Io.	AND ADDRESS OF THE PARTY OF THE	🔹 🗠 ± 10% turbidity (if using a turbidity meter)	
Field Filtered: Unfiltered: × 40	x 40 mL Vial (HCI) x 6	IL Ferrous	x 60 mL metals (HNO.)	1		Frield Commets Bore volume calculation, bore condition, fate of tubing, codos conserios as	remedian ate
x 40	(⁴)		x 250 mL Plastic				conscion are:
					1×Calla	1×10-10 13-35- 9935/×3	~×/
	Approval and Distribution * *	ribution > >					
					~ ~ ~ ~ ~	1 1	
Fieldwork Staff Signature	Date	Checker Name and Signature	and Signature	Date	10.10	101	
Project Manager Structure						7	

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ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name:	200	25-	SASA Project	Project Number:	600	4917718	2.7 PM Name:	ne:	R.C.	S HQ	Sample Date:	3/4	(2)
Client:	100		Project	Project Location:	M	No Mile	Fieldwo	Fieldwork Staff:		T. 20 3man	2 (3000) Well Development or Well Sampling Event? (circle)	Well Samp	ling Event? (circ
	General E	ore inrorm	ation		Par	ameter Info.	Deco	Decontamination		Sampling Method	The second se		into.
Date of GW Level:	տ	Bore R	Bore Radius (mm):		Chem Kit Serial N	INO.: VSY	I I I I	TI Decontaminated	FI Low Flow Pump rate:	Pump rate:	Hydrasleeve Size:		Monitoring sequence
Depth to GW (m-pvc)	vc) 4-945	Screen	Screen Interval (m):		Chem Kit Model:	1: Ka Aus	2	Dedicated		Intake depth:	Hydrasleeve Type:		followed (number in
Bore Depth (m-pvc):	2 + 2 = 2	Casing	Casing Radius (mm):		Corrected Redox:	iox: Y / N	_	Disposable	FT Bailer	Irt Hydrasleeve	ve Sampling Depth (m-pvc):	pvc):	Gabeing
Depth to Product (m-pvc):	m-pvc):	Cover	Cover Type (gatic/stick up):	:(dn	(The correction to	(The correction to apply is probe dependent)	_	(Å)	Peristaltic	Peristaltic Pump * ⁸ Waterra	Hydrasleeve Install time:	ime:	Hydrasleeve in
Product Thickness (m):	(m):	Bore L	Bore Locked (YES/NO):		Parameter me	Parameter method: F' Downhole	-		Other (specify)	scify)	Sampling Start Time:		Hydrasleeve out
		Key Ty	Key Type (if applicable):			FI Retrieved	Į.			20			Parameters
Calculated bore volume (L):	volume (L):	Include	Includes/ excludes bore annutus (circle)	bre annulus (circle)	# purge volumes removed:	removed:		Total purged volume (L)	volume (L):			
	The Lot of	10 0 B	M	C Sole Martin	a formation of	Water Q	r Quality Para	meters				Contraction of the second	Contraction of the local division of the loc
Time Cu	Cumulative Vol. (m Removed (L)	SWL (m-pvc)	Pump Rate ((ppm or))	E.C. (mS/cm or	H	Redox (mV)	Temp °C			Odour, Colour, Turbidity		
930 6	45L 9.91	35		8.85	547	1 229	195.1	4:21	110	(1 clarde	No allow		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
9 35 1	481 9.9	5		512	2450	1	90.1	2	217	2	2		
9.40 6	10	25		1001 75	たちど	1	5.20						
2:45					121	1		N N					
-				X in t	254.7	0311	5.5	1 2					
2 % 0				8.65	256.0	6351	83.4	13.1					
0:55				8.66	255 1	2.35	8.28	13.7					
			SAUND	U (6	LUB 76	0 0 0	MAN 00						
									_				
	Accepta	ble Param	Acceptable Parameter Range:	± 10%	± 3%	# 0,05	± 10 mV	± 0.2 °C		+ 1(± 10% turbidity (if using a turbidity meter)	(meter)	
Analytes :	Sampled for:	S New of		Bottles Collected	llected	P. D. L. M.	OAN	QA/QC Information		WINN NUMPER	Field Commets	1	State of State of State
Field Filtered:	Unfiltered:	× 4	x 40 mL Vial (HCI)	× 60 r	x 60 mL Ferrous	× 60 mL metals (HNO ₃)				Bore volume calculati	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	ing, redox com	action etc.
		X 4	x 40 mL Vial (H ₂ SO ₄)		x 100 mL Amber	× 250 mL Plastic							
							Т		4	K (anda	an 13,73	-9.9.	51.3
Lot on A line			Appr	Approval and Distribution	bution		Concernance of the local data					•	< X / 1
Fieldwork S	Fieldwork Staff Signature	1	tet.							1	- 4-17-18-1×1 -	1	100 110
	and and and		Date		Checker N.	Checker Name and Signature		Date		-	((), ())		12.04
Project M	Project Manager Signature	1	Date	Dietri	Distribution: Designal Control File								

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ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

			-								Bore ID:	2	C 6	
roject Name.		11 2	~ NUMEN ~	Project Number:	000	44127 S	3.2.5 PM	PM Name:	No. 41-050	S-HAY	Sample Date:	5/3	122	
lient	おいていたい	200		Project Location:	53	my yan	Field	Fieldwork Staff:	- TRANS	F. Eismen	Well Develop	ment or Well San	Well Development or Well Sampling Event? (circle)	rcle)
No. 1 No. 1 No.	Gene	iral Bore In	formation	S THE SAU THE SAULT	Par	ameter Info.	De	Decontamination	A DATE	Sampling Method	MODUL THE MODUL	Hydrasieev	ve infor	AND DE COMPANY
late of GW Level:	JUL VIL	0	Bore Radius (mm):	x	Chem Kit Serial No.:	TSV :: ONI	IL A	FI Decontaminated	E	Low Flow Pump rate:	Hydrasleeve Size:	we Size:	Monitoring sequence	ence
hepth to GW (m-pvc);	(m-pvc): 1.96	v	Screen Interval (m):	n):	Chem Kit Model:	# PRON	US 42	Dedicated		Intake depth:	Hydrasleeve Type:	we Type	Tollowed (number in order):	L 18
ore Depth (m-pvc):	m-pvc): 6.05	9	Casing Radius (mm):	1(m):	Corrected Redox:	Iox: Y / N	Ŧ	Disposable	E B	Bailer FT Hydrasleeve		Sampling Depth (m-pvc).	Gauging	
epth to Prod	epth to Product (m-pvc):	5	Cover Type (gatic/stick up):	v/stick up):	(The correction to	(The correction to apply is probe dependent)	spendent) F	Other (specify)	. 11	Peristattic Pump	- (*) * 43	Hydrasleeve Install time:	Hydrasleeve in	. <u>e</u>
roduct Thickness (m):	(m): sean		Bore Locked (YES/NO):	S/NO):	Parameter me	Parameter method: F1 Downhole	vnhole		N/	Other (specify)	Sampling	Sampling Start Time:	Hydrasiceve out	out
		-	Key Type (if applicable):	cable):		FI Retrieved	rieved		2	131494-52812			Parameters	1
alculated b	alculated bore volume (L):	-	Includes/ exclud	Includes/ excludes bore annulus (circle)	(circle)	# purge volumes removed:	nes remove	ij	Total p	Total purged volume (L):				ŕ
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Time	Cumulative Vol. Removed (L)	(m-pvc)	Pump Rate	te (ppm or mBit.)	L) E.C. (mS/cm or (#S/cm)	Æ	Redox (mV)	Temp °C	D.		Odour, Colour, Turbidity	ır, Turbidity		
51.	60	1.97		3.03	120.4	6.34	177.8	81	2	Clear as odar as tubided	Ur. ant	verba de La		
\$20		10.1	1	1.55	120.2	6 8	tt'	1%.6	9			1		1
52:1		t 5 1		145	120.2	6.22	HE	2 18.6	5					Γ
30		401		1.38	20.3	122	169	2 18.0						Γ
35		1-0-1	1	130	120.0	6.29	165.0	2-21						
Cha = 1		1,97		トレン	120 1	6.28	166.7	L 1X.6						
15		42.	ĩ	1.2	120.1	6.31	1678	18.0						
					1			2						
			1 SAMO	40 E (0	Heysel	1:53								
]											
And South	Ac	ceptable F	Acceptable Parameter Range:	1ge: ± 10%	± 3%	± 0.05	± 10 mV	V ± 0.2 °C	D.	 A Contraction of the second sec	10% turbidity (If us	± 10% turbidity (If using a turbidity meter)		10
Analy	tes Sampled	or:		Bottles Collected	ollected			QA/QC Information	ttion		Field C	Field Commets		
ield Filtered:	Unfiltered:		x 40 mL Vial (HCI)		x 60 mL Ferrous	× 60 mL metals (HNO ₃)	(HNO ₃)			Bore volume calcu	lation, bore conditio	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	correction etc.	
			x 40 mL Vial (H _{SO4})		x 100 mL Amber	x 250 mL Plastic				111	10.	2 - IE.	1	
							Γ			2011 2 (X (Shi - (n'A n)	(< 9h-)		1.05	
			2°	Approval and Distribution *	stribution	Charles and	* *		Transferra			u.		
Field	Fieldwork Staff Signature	ILE	Date	I	Checker	Checker Name and Signature	ature	Date	e					
Pro	Project Manager Signature	nature	Date	ă	Distribution: Project Central File	central File	~							
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Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

General Bore Information CUL/TA Bore Radius (mm): Curr Type (gatic/stick Rev Type (gatic/stick Rev Type (if applicable (m-pvc) I. (1955 I. (m-pvc) I. (655 I. (m-pvc) I. (655 I. (m-pvc) I. (655 I. (m-pvc) I. (655 I. (m-pvc) I. (655 I. (1055 I. (10555 I. (10555 I. (10555 I. (10555 I. (105555 I. (1055555 I. (10555555 I. (10555555555555555555555555555555555555	Kit Model Kit Model Kit Model Cted Redc orrection to orrection to orre	100 CC C	Fieldwork Staff: Decontamination	Samoling Method		empling Event? (circle)
Ceneral Bore I Level: 5/4/71 (m-pvc): 6.4/71 mouct (m-pvc): kness (m): kness	Para I.Kit Serial Kit Model: orrection to orrection to orrection to stemo Signi	No: YY T Y Yes ALY we Y I N	Decontamination	Sampling Method	ACCRETISATION AND ACCRETISATIONA AND ACCRETISATION ACCRETISATION AND ACCRETISATION ACCRETISATICATION ACCRETISATICATION ACCRETISATICATION ACCRETISATICATION ACCRETISA	
14/27 1.46	Kit Serial Kit Model: Cited Redo orrection to orrection t	NO.: KTY The RUS		A DESCRIPTION OF THE PARTY OF T	uyurasieeve	le iuv.
6(L): (1): (mpre 1.96	Kit Model: cted Redc orrection to orrection to orrecti	XX / N	FI Decontaminated	d FI Low Flow Pump rate:	Hydrasteeve Size:	Monitoring sequence
a (L): a (L): a (L): (m-proc (m-proc (m-proc (m-proc	neter method	х: Y / N	Dedicated	Intake depth:	Hydrasteeve Type	order):
a (L): e voi: swr. 1.96	neter meth neter meth stem or Signi or		of Disposable	FI Baller FI Hydrasleeve	e Sampling Depth (m-pvc):	Gauging
me (L): wed (L) : Swit wed (L) (m-pvc 1.96	neter met	(The correction to apply is probe dependent)		F Peristaltic Pump F Vaterra	Hydrasleeve Install time:	Hydrasleeve in
95-1 95-1 1-66-1 1-76-1	E.C. Slem or Slem or	Parameter method: FT Downhole		Cother (specify)	Sampling Start Time:	Hydrasleeve out
swr. 1951	t.C.	FI Retrieved		1 SUCARE TSUG		Parameters
Cumulative Vol. SWL Removed (L) (m-pvc) Pump Rate 1.965	man market	# purge volumes removed:	oved:	Total purged volume (L):		
me cumulative Voi SWL Pump Rate Removed (L) (m-pvc) Pump Rate 70 1.955 1.955 1.955	The second	Water Quality Paramet	y Parameters		The second second second	A COLUMN AND A COLUMN
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695.1		6-40 188.1	ال ل ار.	L 1		
	9 155	P. 481 54.9	481 6			
0-1 645 65	5	650 183	3.2 18.4			
i de la	97 115.2	6.53 180	80.8 N. S	5		
11:45 1.985 8.0	96 115.2	8-22-9	SH X			
1.565 0.	95 115.2	Q 53 180	1.2 F.			
ptable Parameter Range:	±10% ±3%	± 0.05 ±	± 10 mV ± 0.2 °C	A DESCRIPTION OF THE PARTY OF T	± 10% turbidity (ir using a turbidity meter)	And appendict the state of the second
ytes sampred tor:	Domes conficted			AN THREE STREET		
Field Filtered: x 40 mL Vial (HCI) x 40 mL Vial (H _S O ₄)	x 60 mL Ferrous x 100 mL Amber	x 250 mL metals (HNO ₃) x 250 mL Plastic		Hore volume calculat	We volume calculation, bore condition, late of lubring, reported the lite.	
Approval	Approval and Distribution				Ĵ	1.00
Fieldwork Staff Signature Date	Checker N	Checker Name and Signature	Date	e		
Project Manager Sjonature Date	Distribution: Project Central File	entral File				

Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

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ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: CCC SW Basins	Isins Project Number:	60649177 / 3.2.3	PM Name:		Sample Date: 5570	22
client CCC	Project Location:	Baramatar Info	Discontant (ret(o))	Sampling Method	Hydrasleeve Info.	THUS LACING AND
ACCESSION OF	General Bore Information	Chem Kit Serial No.:	inated	FI Low Flow Pump rate:	Hydrasleeve Size:	ze: Monitoring sequence
5	Bore Radius (mm):	Chem Kit Model:		Intake depth:	Hydrasleeve Type:	order):
2	Casing Radius (mm):	Corrected Redox: Y / N	æ	FI Bailer FI Hydrasleeve	3 Sampling Depth (m-pvc):	Gauging
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	It) I Other (specify)	Peristattic Pump Waterra	Hydrasleeve Install time: Sampling Start Time:	Hydrasleeve in
Product Thickness (m):	Bore Locked (YES/NO):					Parameters
	Key Type (if applicable):	- Retrieved		Subilierside volume (1):		
alculated hore volume (1):	Includes/ excludes bore annulus (circle)	# purge	and and a second	I dai pulyeo voidille (r.).	and the second se	「「日本」「日本」「日本」
Calculated bole volutile (r.).		「日本」の「日本」	Water Quality Parameters			
Time Cumulative Vol. SI Removed (L) (m-	SWL Pump Rate DO (m-pvrc) Pump Rate (ppm or mg).	1	Redox Temp *C (mV)		Odour, Colour, Turbidity	
	n	KH.4 601	ILL ICX	Mer no od	no odus, no Arbad	4
1:20 00 0.	21	24	11.5 115.1			
11:52	12 204	1850 582	12.5 15.8			
> 0	202	184.9 5-83	112.8 15.4			
1	7	184.5 583	13.0 15.V			- States
2.2						
			0°00		± 10% turbidity (if using a turbidity meter)	
Accepta	Acceptable Parameter Range: E 10% Bottles	E 1078 Bottles Collected	QA/QC Information		Pore volume calculation, bore condition, faile of tubing, redox correction etc.	ox correction etc.
Autalytes setuptor		x 60 mL Ferrous x 60 mL metals (HNO ₃)	(60			
Field Filtered: Unnites ou.	x 40 mL Vial (H ₂ SO ₄)			4, 9.28	4/9.28 -6.52 43 -	`
	Approval and Distribution	Distribution	A STATE OF A			
Fieldwork Staff Signature	5/5//2 Date	Checker Name and Signature	re Date	10		
Project Manager Signature	re Date	Distribution: Project Central File				

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		Date	Signature	Checker Name and Signature	Checke		515122 Date	ď	Fieldwo lk S taff Signature	Fieldw
		and the particular second	and a state of the	and the second second	bution	Approval and Distribution	*		1	
4764.07-6.55) x3 = 30.27	40-6744		lastic	x 250 mL Plastic	x 100 mL Amber		x 40 mL Vial (H ₂ SO ₄)			
Bore volume calculation, bore condition, fale of tubing, redox correction etc.	Bore volume calculat		x 60 mL metals (HNO ₃)	x 60 mL m	x 60 mL Ferrous	× 60	x 40 mL Vial (HCI)		Unfiltered:	Field Filtered:
Fleid Commets	ALL SALES	QA/QC Information	No. of Contraction	States a	llected	Bottles Collected	AND A DAUG	66 N. 1	Analytes Sampled for:	Analy
± 10% turbidity (if using a turbidity meter)	z	±10 mV ±0.2 °C		± 0.05	± 3%	± 10%	Acceptable Parameter Range:	eptable Para	Acc	
						0 - 10		2.16		01.0
a war of a farmer		2 13.5	100	279	Arist Arist	18-0		90.00		10:15
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sc, as turb.and	allac, no paper		107-2	5.40	94.7	1.14	1	6.56	NXL	0.00
Odour, Colour, Turbidity	a dense se antes a	lox Temp °C V)	Redox (mV)	뿃	(mSicm or	(ppm or OD	Pump Rate	(m-pvc)	Cumulative Vol. Removed (L)	Time
A State of the second se		ameters	Water Quality Parameters		A SANN			1170		
1. 10 1.	Total purged volume (L):		# purge volumes removed:	# purge v	circle)	bore annulus (Includes/ excludes bore annulus (circle)	Inc	one volume (1):	Invitated b
Parameters	Submersible	S	FI Retrieved			9; ;	Key Type (if applicable):	Key	turb contr	- Indont I monitore ()-
	- 1	3	-	tethod: F1	Parameter method:	Ÿ	Bore Locked (YES/NO):	Bon	Deput to r toooct (timptu):	put to rive
Hydrasleeve Install time:	Peristattic Pump	Other (specify)	-	₹	(The correction to app	kup):	Cover Type (gatic/stick up):	Cas	n-pvcl: 4.0 t	Bore Depth (m-pvc):
			G		Chem Kit Model:	ł	Screen Interval (m):	2 Son		Depth to GW (m-pvc):
Hydrasleeve Size: <u>followed</u> (number in	Low Flow	The Decontaminated		fal No .: US	Chem Kit Serial No .:	1	Bore Radius (mm):	LL Bon	R	Date of GW Level:
Hydrasleeve into.	Sampling Method	ENOT:			1	- Infect moneurs	8	General Bore Information	Gener	Inter
Well Development or Well Sampling Event? (circle)	E. Reisman	Fieldwork Staff:	Zasin Fi		A	+ Location:	Pmia		3	
Sample Date: 5/5/6 4	UNT.C	T. Mar. 1 and 1 and 1		6064911113.2.3	606491	Project Number:	Proje	CCC SW Basins	0000	plect Name:

ANZ FQM - Groundwater Sampling and Purging Record

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Portart Name:	CCC SW Basins	10.5	Project Number:	60649177 / 3.2.3	13.2.3	PM Name:	Contraction of	S.HAY Sa	Sample Date:	2-22
Client:	CCC		Project Location:	Awika	the Brin	Fieldwork Staff:	HE SHI DING	E. Reisman	opmen	pling Event? (circle)
The of the Adda to the of the	Seneral Bore Information	nformation	Party of the state of the	Para	meter into.	Decontamination	1.00	Sampling Method	Hydrasieeve	Hydrasjeeve into. Monitoring sequence
Date of GW Level:	2112	Bore Radius (mm):		Chem Kit Model:	1 2 11 12 1	F-I Dedicated	-	Low Flow Pump rate:	Hydrasleeve Size: Hydrasleeve Type:	followed (number in
Born Denth (m-mur)-	140	Casino Radius (mm):		Corrected Redox:	ox: Y / N	FI Disposable		T Bailer TI Hydrasleeve		Gauging
Depth to Product (m-pvc):		Cover Type (gatic/stick up):	sk up):	(The correction to	(The correction to apply is probe dependent)	2		tic Pump		Hydrasleeve in
Product Thickness (m):		Bore Locked (YES/NO):	o;	Parameter method:	hod: FI Downhole		_	PI Other (specify)	Sampling Start Time:	Hydrasleeve out
		Key Type (if applicable):	le):		FI Retrieved	red	Sul	Submersible		Parameters
Calculated bore volume (L):	(L):	Includes/ excludes bore annulus (circle)	bore annulus (o	circle)	# purge volumes removed:	s removed:		Total purged volume (L):		
and the second second second	AND AND AND	としていいのの	「「「「「「「」」」」	and a set	Water C	Water Quality Parameters	8	A REAL PROPERTY AND A REAL	No of the State of State of State of State	NO SAUSANNA
Time Cumulative Vol. Removed (L)	e Vol. SWL (L) (m-pvc)	Pump Rate	(ppm or myll)	(mSicm or	P	Redox (mV)	Temp *C	のないのであるという	Odour, Colour, Turbidity	1000 BC/0
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~u~	6.54		7.02	icx. 4	5 465	1 5.28	14.7	A North Contraction		10
1.50	6.54	N	7.05	0.701	13	88.2 1	4.4		The second s	
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	0			1						
AND A CONTRACTOR	Acceptable	Acceptable Parameter Range:	30	± 3%	± 0.05	± 10 mV	mV ±0.2 °C	and the state of the	± 10% lurbidity (if using a turbidity meter) Field Commets	A STATE AND
Analytes Sampled for:	ed for:	No. 19 - 1 - Calo	Domes Concorco	inclusion.	No. A LONG DO LONG DO LONG			Who-the bear	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	x correction etc.
Field Filtered: Unfiltered:	h	x 40 mL Vial (HC) x 40 mL Vial (H ₂ SO ₄)		x 60 mL Ferrous x 100 mL Amber	x 60 mL metals (HNO ₃) x 250 mL Plastic			44683	446 830-6-56 >>3 =	()
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Project Manager Signature	r Signature	Date	Dist	Distribution: Project Central File	Central File					

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rk(12 10 10 AI	14/1						- And
2 9X-10,082 x3 2	11.1		Amber x 250 mL Plastic		x 40 mL Vial (H2SO4)		
		F		x 60 mL Ferrous	x 40 mL Vial (HCI)	red:	Field Filtered: Unfiltered:
Bore volume calculation, bore condition, fate of tubing, redox correction etc.	Section and	And the first of the second		Bottles Collected	Trees I severit a	d for:	Analytes Sampled for:
± 10% turbidity (if using a turbidity meter) Field Commets		± 10 mV ± 0.2 °C	±3% ±0.05	± 10%	ameter Range:	Acceptable Parameter Range:	100 100 100 100 100 100 100 100 100 100
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	1 - 1	1 1 12, 7	521 6.31 50	1.4.1	1	1401	Nn 101.1
high i on our i der	SI huhdi	451 24	1 1 6.37 50		and the second second	198	
Odour, Colour, Turbidity	and the second	Redox Temp *C (mV)	Instem or pH	(ppm or mg/L) (r	Pump Rate	Vol. SWL	Time Cumulative Vol.
a sold a second s		ameters	Pind #	ore annulus (circle	Includes/ excludes bore annulus (circle)		Calculated bore volume (L):
	Submersione Total purged volume (L):				Key Type (if applicable):		
Samping Start Time: Tryuessoro on Parameters	FI Other (specify)		Parameter method: T Downhole		Bore Locked (YES/NO):	Bor	Product Thickness (m):
Hydrasleeve Install time:	Peristaltic Pump Waterra	Other (specify)	(The correction to apply is probe dependent)		Cover Type (gatic/stick up):		Depth to Product (m-pvc):
eve Sampling Depth (m-pvc):	Bailer FI	PI Disposable	Corrected Redox: Y / N	Соп	Casing Radius (mm):	Ak	Bore Depth (m-pvc):
Hydrasleeve Type.	Intake depth:		Chem Kit Model: 7K2 555	Cher	Screen Interval (m):	Sci Sci	Depth to GW (m-ovc):
Hydrasleeve Size: Monitoring sequence	¹ Low Flow Pump rate:	FI Decontaminated FI	Chem Kit Serial No.: DS2	Cher	re information Doe Dedies (mm)-*		
Well Development or Well Sampling Event r (circle)	E. Reisman	Fieldwork Statt:	Khlapp Hugh	Project Location:		000	CHEW CAR
Sample Date: 4/5/22	S.HAY	PM Name:	60649177/3.2.3	Project Number:	Project	CCC SW Basins	Project Name:
Bore ID: LOC 9							

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Project Name:	CCC SW Basins		Project Number:	60649177 / 3.2.3	3.2.3	PM Name:	S.HAY		Sample Date: 4/
Cillent	ccc		Project Location:	Kaka	0	Fieldwork Staff:	No.		opment or W
Date of GW Level: 4		Rom Radius (mm	÷	Chem Kit Serial No.:	erial No.: JCC 7	FI Decontaminate	ž E	lod	Hyorsleeve L
Depth to GW (m-pvc):	10.0X	Screen Interval (m):	n) F	Chem Kit Model:	X S	P-1 Dedicated	lated Fo	Intake denth:	Hydrasleeve Size:
Bore Depth (m-pvc):	545	Casing Radius (mm):	ım):	Corrected Redox:	Y -	FI Disposable	FI Bailer	iler F1 Hydrasleeve	Sampling Depth (m-pvc):
Depth to Product (m-pvc):	Ÿ	Cover Type (gatic/stick up):	Jstick up):	(The correction to a	(The correction to apply is probe dependent)	=	_	altic Pump	Hydrasleeve Install time:
Product Thickness (m):		Bore Locked (YES/NO):	S/NO):	Parameter method:	od: FI Downhole	-		FI Other (specify)	Sampling Start Time:
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alculated hore volume	e(1):	Includes/ exclu	les hore annulus		t purge volumes i	emoved:	Total p	uraed volume (L):	
Calculated bore volume (L).	e (L).	Incidaes/ excin	Includes/ excludes bore annulus (circle)	(Instruction	# parge volumes removed. Water Quality Pare	Water Quality Parameters		rotal purged volume (r.).	A WARD A LAND
Cumulative Vol.	ve Vd. SWL	Duran Data	8	E.C.	2	Redox	Tamp oc	and the second second	Ddour Colour Turbidity
Removed (L)	ad (L) (m-pvc)		1.5	-	Con the second		N. 7. 610 10	A CONTRACTOR OF A CONTRACTOR OFTA CONTRACTOR O	and the set of the second
12:12 W	10-04	1 1	7.72	250.3	6.33	49. 13.	2	Clearino adas	edar, no wholly
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	- Alan		No. No.						
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	5						14 A		
	Accentable	Accentable Parameter Range:	10e: ± 10%	± 3%	± 0.05	± 10 mV	±0.2°C	15	± 10% turbidity (if using a turbidity meter)
Analytes Samp	Sampled for:	See the .	Bottles Collected	and a	Contraction of the second s	GAUCE INTOT	ormation	Bore volume calculat	Bore volume calculation, bore condition, faite of fubing, redox correction etc.
Field Filtered: Unfi	Unfiltered:	x 40 mL Vial (HCI)	NUM USE	x 60 mL Ferrous	x 60 mL metals (HNO ₃)) ₃)			/
		x 40 mL Vial (H ₂ SO ₄)	54)		x 250 mL Plastic			4×(13.7	4×(13.78-10.08 /13 = 44.4
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Fieldwork Staff Signature	Signature	Date		Checker Na	Checker Name and Signature		Date		

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ANZ FQM - Groundwater Sampling and Purging Record

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(Date	Checker Name and Signature	Checker		Date	8	- Chaff Clanatin	2
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4x (6,072 - 7,06) x25 418.0	4x (6,072		× 250 mL Plastic	x 100 mL Amber		x 40 mL Vial (H ₂ SO ₄)			
			x 60 mL metals (HNO ₃)	x 60 mL Ferrous	× 60	x 40 mL Vial (HCI)		Unfiltered:	Field Filtered:
Preto volume calculation, bore condition, fate of tubing, redox correction etc.	and the second	QA/QC Information	THE REAL OF	llected		Contraction of the second of the	Ceptable 1	Analytes Sampled for:	Analyt
± 10% turbidity (if using a turbidity meter)		± 10 mV ± 0.2 °C	± 0.05 ±	± 3%	± 10%	Accontable Parameter Range:	rentable Pa	A-1	
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			, YO	- 11 100	Gillede	TUNK			
		5 10.0.	63X 22	141.3	0.54		208		1:25
			6. 22 27	141.3	250		2.06	1	11:20
		F.a. 16.0	6-78 27	141.4	0.56		7.05		
		2 10-	8.28 JA	141.3	1.56		100	100	ister
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1000	Cher no hubdry		6.38 32	141.4	64.0	A	2.07	2	11:nn
Odour, Colour, Turbidity			P	(mSigm or	(ppm or many	Pump Rate	. SWL.	Cumulative Vol. Removed (L)	Time
and a local party of the second second	State of the state	ameters	Water Quali	(circie)	bore annuius	Includes/ excludes bore annulus (circle)	「「「「「」」	Calculated bore volume (L):	alculated b
	Total purged volume (L):	30	# nurne volumes removed:	(airola)	ie).	Key Type (if applicable).			
Parameters	Submersible		2		0.	BOLA FOCKED (1 COULD)	α	ness (m):	Product Thickness (m):
	Other (specify)	- Other (specify)	Parameter method: FI Downhole	(The correction to apply Parameter method:	ck up):	Cover Type (gatic/stick up):		uct (m-pvc):	Depth to Product (m-pvc):
A	Deristatio Dumo II Waterra	Disposable	uox. I / II	Corrected Neuox.		Casing Radius (mm):		1-PVC): 6.67	Bore Depth (m-pvc):
Sampling Depth (m_pyc): Gauging	ri Hydrasleeve	Dedicated	el: PKS VI	Chem Kit Model:		Screen Interval (m):		(m-pvc): 2-06	Depth to GW (m-pvc):
		Decontaminated	E	Chem Kit Serial No.:		Bore Radius (mm):	122 B	2	Date of GW Level:
Hydrasleeve IIUC	contamination Sampling Method	1		Par	and the second	1	canaral slore information	COL	Cilenc
5		Fieldwork Staff:	WHOOK BASIN	Out	Project Location:		CCC att Dasmis	200	Project Name:
1444		F M IVERING,	606491///3.2.3	0004917	Project Number:		n ow Basins	200	白 アイン あり からい あり

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Client	CCC		Project Location:	Outon	or Are	> Fieldwork Staff:	Staff:	E. Reisman Wel	Well Development or Well Sampling Events (circle)	Ing Events (circ
Sectored Should be	General Bore	General Bore Information	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Paran	8r (n		Decontamination	ling Method	Hydrasleeve it	nių.
Date of GW Level:	41	Bore Radius (mm):		Chem Kit Serial No .:	ło.:	FI Decc		FI Low Flow Pump rate:	Hydrasleeve Size:	e: Monitoring sequence
Depth to GW (m-pvc):	N G	Screen Interval (m):	÷	Chem Kit Model:		F-I Dedicated	_	Intake depth:		tollowed (number in
Bore Depth (m-pvc):	5	Casing Radius (mm):	m):	Corrected Redox:	N / X	FI Disp	Disposable FI	Bailer	Sampling Depth (m-pvc)	Gauging
Depth to Product (m-pvc):	t (m-pvc):	Cover Type (gatic/stick up):	stick up):	(The correction to apply is probe dependent)	pply is probe deper	Ξ		Peristattic Pump	Hydrasleeve Install time:	Hydrasleeve h
Product Thickness (m):	ss (m):	Bore Locked (YES/NO):	(NO):	Parameter method:	od: FI Downhole	_		PI Other (specify)	Sampling Start Time:	Hydrasleeve out
	,	Key Type (if applicable):	able):		FI Retrieved	þe	Sut	Submersible		Parameters
Calculated bore volume (L):	e volume (L):	Includes/ exclud	Includes/ excludes bore annulus (circle)		# purge volumes removed:	s removed:		Total purged volume (L):		
State of the state	NAN PARTY COLUMN	That the second second second	STATISTICS INCOME.	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Water C	Water Quality Parameters	Number of Street of St	which is only grant and	States rest and the	A DESTRUCTION
Time	Cumulative Vol. SWL Removed (L) (m-pvc)	NC) Pump Rate	(ppm or mg);	E.C. (mS/gm or (uS/cm)	PH	Redox (mV)	De duel.	8	Odour, Colour, Turbidity	のないの
9:30	80 2.06	6	OAT	1.0	6.36	8-21	15.9	(lear, no turbed he	h. no about	
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arre	- 7.00	•	15.0		24.9	イン	15.9		and the main of the second sec	
52.6	< 12.06	•	1.50	-	243	4.3	15.9		Construction Construction	Survey and
9:50	2.10		0.79	_	6.43	3.9	5-5	and the second	The set of the set of the	and the second
3		SAMPLE	E COLLETED	2 10	:00 Am	10.1	Section 1		an plant strange as a second	
							*			
Allow Provide	Acceptabl	ptable Parameter Range:	je: ± 10%	±3%	± 0.05	± 10 mV	±0.2 °C	± 10% tu	± 10% turbidity (if using a turbidity meter)	
Analytes	Sampled for:	APA TER T	8	lected		QA/QC	QA/QC Information	A THE R. LEWIS CO. LANSING MICH.	Field Commets	A Low State of State
Field Filtered:	Unfiltered:	x 40 mL Vial (HC)) x 40 mL Vial (H ₂ SO ₄)		x 60 mL Ferrous x x 100 mL Amber x	x 60 mL metals (HNO ₃) x 250 mL Plastic	(5)		Bore volume calculation, b 4x1 6.37-9	Hyl 6.37-2.05)x3 = 51.84	action etc.
698	k Staff Clonoshura	-15hz	Approval and Distribution	oution						
Fieldwork	ieldwork Staff Signature	Date		Checker Nar	Checker Name and Signature	9	Date			
Project	Project Manager Signature	Date	Distri	Distribution: Project Central File	tral File					

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Diniect Name	1.7 2	1110	CC Cial Barias Project Number	t Number:	6064	240177	PM Name:	Part of the	HS	Sample Date:	1-60	1-6-2021
		200	Print	Project I ocation:	Dislar L	The Datio	Fieldwork Staff:		MELER	Well Development or Well Sampling Event? (circle)	Vell Samp	ling Event? (circle)
Client	37/		afor a			I WOIL	T	distantion	Semelling Mathed	HVH	Irasleeve I	nto.
	General	Etore Inte	matton		Chom Kit Serial	No to the last	La La Dave	minotod F1	l our Eloui Duma rafe.	Hvdrasleeve Size:		Monitoring sequence
Date of GW Le	Date of GW Level: UNU V LOV N LOVE Bore Radius (mm):	Lo L Bor	Bore Radius (mm):	_	Chem Kit Model					Hydrasleeve Type:	/	tollowed (number in order):
Depth to GW (Depth to GW (m-pvc):		Cacino Padine (mm).		Corrected Redo	edox: X + N	_	ahla F1	Bailer	e Sampling Depth (m-p.e.)	ile.	Gauging
Bore Uepun (IT	Bore Ueptin (m-pvc):		Casing Ixauus (mini).		The correction to	(The correction to apply is probe dependent) F Other (snecity)	dent) F Other		Peristaltic Pump ^{F B} Waterra	Hydrasleeve Install time:	ne:	Hydrasleeve in
Dendinat Thickness (m).	uci (III-pvv).	Bor	Bore Locked (YES/NO):		Parameter meth	nethod: F1 Downhole	ole Tubira		M Other (specify)	Sampling Start Time:	~	Hydrasleeve out
	·/ ··· / ··· /	Key	Kev Tvne (if applicable): N	K		Retrieved	ed		Submers ble.	/		Parameters
Calculated h	Calculated hore volume (L):		Includes/ excludes bore annulus (circle)	pore annulus (ci		# purge volumes removed:	s removed:	Tota	Total purged volume (L):			
				State of the state	Charles 1 a Ger	Water G	luality Paramet	16	A WARDEN DOWNERS	A THE PARTY NEWS		and the second second
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	(ppm or mg/L)	E.C. (mS/cm or µS/cm)	Ŧ	Redox (mV)	Temp °C		Odour, Colour, Turbidity		
12 LT	01								Low tubidity	7. No odown	do ar	
1200	02 4		1				_					
12 63	00											

Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	(ppm or mg/L)	(m8/cm-or µS/cm)	Hq	(mV)	Temp °C	Odour, Colour, Turbidity
FUL	03								Low tubidity. No odown
200	20								
352	30								-
354	9 3								
255	20								Glordy
354	09			10.60	27.1	7-65	162.3	12.7	-
400				10.28	26.7	G . 78	232.6	12.7	
403		7.175		10.10	26.6	6.63	269.9	12.7	Low turb. "Milky"
400				10.12	26-6	6.64	261.1	12.7	
409				10.09	26.6	6-67	262.3	12.7	
							y		
								0000	+ 10% turbidity (ff. usino a turbidity metar)
	AC	ceptable Par	Acceptable Parameter Range:	± 10%	± 3%	± 0.05	± 10 mV	±0.2 U	I I I I I I I I I I I I I I I I I I I
Analyti	es Sampled for:	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Bottles Co	Collected	V the surger of	QAQC	C Information	Fleid Commets
Field Filtered:	Unfiltered:		x 40 mL Vial (HCI)		x 60 mL Ferrous	8.60 mL metals (HNO ₃)	HNO ₃)		Bore volume calculation, bore condition, fate of tubing, redox correction etc.
			OS H/ Iei/\ Im UF ~		v 100 ml. Amher	x 250 mL Plastic			11-1 (a AJC 513)
)	E C	2		-	Inorcon ic				CALL CALLYXXX
	~		Netern		2				= 4×4.255
The second second			A	Approval and Distribution	bution	1112 20 20 20	POLICE ANY NOT		
Fieldwo	Fieldwork Staff Signature	e	01-06-2021 Date	130	Checker N	Checker Name and Signature	ture	Date	C× 770.+1
				1		i			190-151
Projet	Project Manager Signature	ature	Date	Dist	In the Project (Control Ello			

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QM - Grou	ndwa	Samplinç	g and P	urging Re	cord	0.	0.1062				Q4AN(EV)-405-FM1	-FM1
Start ((a) 1132	A.								Bore ID:	achin 2	
roject Name:	CCC	SU BURN		Project Number:	6000	LAND	PM Name:	ä	HS	Sample Date:	6 262	
:lient:	General B	ore Informat	Proje	Project Location:	North 1	er Read	 Fieldwork Staff. Discontantis 	k Staff: Itamination	Set for wh	Well Development or Well Sampling Event? Circle) Hvoras leeve Info	ampling Event? (kircle)	
Date of GW Level:	1-6-21	Bore Rac	Bore Radius (mm):		Chem Kit Serial	Chem Kit Serial No.: 12F 006 52	2	Decontaminated	FI Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence	\
Depth to GW (m-pvc):			nterval (m): "	Screen Interval (m): 2.6 - 8.8	Chem Kit Model:	4St	Pro-lievies V De	Dedicated	Intake depth:	Hydrasleeve Type:	Tollowed (number in order):	
3ore Depth (m-pvc):	»: 9-125	Casing F	Casing Radius (mm):	6	Corrected Redox: X	-N-T-X- ixo	E	Disposable	FI Bailer FI Hydrasleeve	eve Sampling Depth (m-pvc)	Gauging	
Depth to Product (m-pvc):		Cover Ty	Cover Type (gatic/stick up):		(The correction to	(The correction to apply is probe dependent)	_	specify		Hydrasleeve Instalt time:	Hydrasleeve in	
roduct Thickness (m):	(E)	Bore Loc	Bore Locked (YESNO):		Parameter met	Parameter method: FI Downhole	Downhole Tubing	4	A Other (specify)	Sampling Start Time:	Hydrasleeve out	
Calculated hore volume (1.).	volume (1)	Includes	s/ avrinde h	holindes/ evoludes hare annihus (circle)		mau A Len		<u> </u>	Total nursed volume (1).		Parameters	
	./=/ 2				112	m purge volui	r Quality Paren	neters	otal purged volutile (L).	ALC: STATISTICS	A STATE OF A	
Time Cu R	Cumutative Vol. Removed (L) (n	SWL F (m-pvc)	Pump Rate	DO DO	E.C.	Æ	Redox (mV)	Temp °C	Nod -	Odour, Colour, Turbidity		
1124	10)				High hub.	N.U	0 dour	
134	10								11		1,	
1135	30 2,	84			(mand				Low turb.		1	
1136	40	11							11 11		11	
1138	50	11										
11 60	60											
11 71	ot		N N						- 1			
1142	8											
1143	ACO			90*01	24-4	90.9	154.9	12.5	Low turb			
1146 +	1 AL			9-84	29.3	6 - 02	196.1	12.5				
\$ 7	1		75	00.0	29.3	6.14	10.4.0	12.5				
11 50				9.94	29.3	6.08	202.2	12,5				
1152				-	29-3	6.15	208.8	12.5				
	Accept	Acceptable Parameter Range:	ter Range:		± 3%	± 0.05	± 10 mV	± 0.2 °C	+	± 10% turbidity (if using a turbidity meter)		
Analytes	Sampled for:		and the second	Bottles Collected	lected	NALE IN TH	QAQC	3C Information		Field Commets	Constraint of the second	
ield Filtered:	Unfiltered:	x 40	x 40 mL Vial (HCI)			x 60 mL metals (HNO ₃)	HNO ₃)		Bore volume calcula	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	x correction etc.	
	7 V	1 × 4	x 40 mL Vial (H _{SO4})	-	-	x 250 mL Plastic	T		V=4×101	7c - 7 4940		
		_	Metals	-	r Milesout		T			i	- - 	
			Ap	Approval and Distribution	oution	1000		II STREET	14×0.10		SUL=2.04 m.	
TAN	MP tetetra	- 	-6-21						= 25.4 ×			
Fieldwork	Staff Signature		Date		Checker Nam	ame and Signature	ture	Date		(
Project N	Project Manager Signature		Date	Distrit	Distribution: Project Central File	entral File			(1) + (1)	-		

ANZ FQM - Groundwater Sampling and Purging Record

Depth sumpling ~ 6.35m.

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FQM - Groundwater Sampling and Purging Record $P_2 \circ F < 2$

Q4AN(EV)-405-FM1

						-						ocation 2
Project Name:				Project Number:	ber:	*		PM Name	State and and	S	Sample Date:	
Client:				Project Location:	ttion:			Fieldwork Staff:	Staff:	A	Well Development or Well Sampling Event? (circle)	npling Event? (circle
Der Ven	Gener	General Bore I	Informátion	1000		Para	rameter Info.	Decon	contamination	Sampling Method	Hydrasleev	e info.
Date of GW Level:	vel:		Bore Radius (mm):	1m):	5	Chem Kit Serial No.:	No.:	FT Dec	Decontaminated F1	FI Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence
Depth to GW (m-pvc):	n-pvc):		Screen Interval (m):	l (m):	5	Chem Kit Model:		F Ded	Dedicated	Intake depth:	Hydrasleeve Type:	tottowed (number in order):
Bore Depth (m-pvc):	-pvc):		Casing Radius (mm):	(mm):		Corrected Redox:	ож: Y / N	FT Dist	Disposable 11	Bailer	Sampling Depth (m-pvc):	Gauging
Depth to Product (m-pvc):	ict (m-pvc):		Cover Type (gatic/stick up):	ttic/stick up):		The correction to	(The correction to apply is probe dependent)	-	Other (specify)	Peristaltic Pump 🔭 🚺 Waterra	Hydrasleeve Install time:	Hydrasleeve in
Product Thickness (m):	ess (m):		Bore Locked (YES/NO):	'ES/NO):		Parameter method:	hod: F1 Downhole		Ξ	Other (specify)	Sampling Start Time:	Hydrasleeve out
			Key Type (if applicable):	plicable):			FI Retrieved	eq				Parameters
Calculated bc	Calculated bore volume (L):		Includes/ excludes bore annulus (circle)	udes bore a	innulus (cir		# purge volumes removed	s removed:	To	Total purged volume (L):		
The State of the	and an all of the second	and the second	N ⁻¹ V V	Contraction of the local division of the loc		「「「「「「」」」	Water Q	Quality Param	eters	and on section which		int wellings
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)) Pump Rate	1999	DO (ppm or mg/L)	E.C. (mS/cm of µS/cm)	Hq	Redox (mV)	Temp °C		Odour, Colour, Turbidity	
1152				10	10.05	29.3	6.15	208.8	12.5	Iow tub.	No odour.	
1154			4	ee	5	29.3	6 10	209.2	12			
1156				0	9.95	29.3	6.14	204.0	12.5			
1158				б	0.95	29.4	6.12	202.2	12.5			
	Act	ceptable	Acceptable Parameter Range:		± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10%	± 10% turbidity (if using a turbidity meter)	A STRUCTURE STRUCTURE
Analy	tes Sampled fo	11	State of	Bo	ottles Colli	ected	A STATE OF A	QA/QC	C Information		Field Commets	201 2 3 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3
Field Filtered:	Unfiltered:		x 40 mL Vial (HCI)	ai (HCI)	x 60 ml	x 60 mL Ferrous	x 60 mL metals (HNO ₃)	03)		Bore volume calculation	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	correction etc.
			x 40 mL Vial (H ₂ SO ₄)	al (H ₂ SO ₄)	x 100 n	x 100 mL Amber	x 250 mL Plastic					
ALL ALL ALL ALL		0.0		Approval	Approval and Distribution	ution		and a submit				
Fieldw	Fieldwork Staff Signature	e	Date			Checker Na	Name and Signature		Date			
Proje	Project Manager Signature	ature	Date	6	Distrib	Distribution: Project Central File	entral File					

04AN[EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN[EV)-405-FM1) Revision 2 July 12, 2016

FQM - Groundwater Sampling and Purging Record

Start @ 093.

a the 2.595 m atter tubing toung initalled. V=MP × (depth well - depth wefer) = 4 × (8.882 - 2.585) Monitoring sequence followed (number in Hydrasleeve out Welt Development or Well Sampling Event? (bircle Hydrasleeve in Parameters order): Gauging -6-202 Location Bore volume calculation, bore condition, fate of tubing, redox correction etc. = 752 ± 10% turbidity (if using a turbidity meter) Hydrasleeve Install time: Sampling Depth (m-pye) Sampling start Time: Odour, Colour, Turbidity Hydrasleeve Type: Hydrasleeve Size: x M Sample Date: clear, no odour. Bore ID: X Other (specify) Submerrible \$ **ITI** Hydrasleeve ١ P Peristaltic Pump " Waterra -24.94 L Intake depth: = 4×6. MF.ER. St V Decontaminated F1 Low Flow Pump rate: Total purged volume (L): J 1 1 / 1 J Ì j **FI** Bailer Temp °C 14-9 ±0.2 °C 14-8 ju-4 14-9 14.2 149 Date (The correction to apply is probe dependent) FI Other (specify) FI Disposable Tubing < Chem Kit Model: VIT Pro Sara V Dedicated Fieldwork Staff: Distonia mi 139.0 142-0 PM Name: 151.0 143-0 138.3 # purge volumes removed: Redox (mV) 1-0/1 Chem Kit Serial No.: 2F10065 Parameter method: FI Downhole Retrieved stats (HNO₃) Checker Name and Signature Awatea Basin Corrected Redox: Y / N 6.25 6.04 6.26 6.0 K 60644177 2 6.01 ± 0.05 Hd Distribution: Project Central File 73.8 73.9 73.9 73.9 E.C. (mS/cm) 34.6 ± 3% Approval and Distribution COTTL Ferrous CTOUTINE Amber Includes/ excludes bore annulus (circle) (ppm or mg/L) 2.82 Screen Interval (m): 2.9-8.9 2-82 2.76 2.92 2.80 2-76 Casing Radius (mm): 🕵 . 25 CCC SW Basins, Project Number: CCC Project Location: 8 Key Type (if applicable): NA Cover Type (set stick up) 2 × backerial Bore Locked (YEGNO): 40-mt-Viar (H₂SO₄) X NCHU Acceptable Parameter Range: (HGI) Hell (HGI) Bore Radius (mm): Pump Rate Date Date 2.640 2.640 2.640 2.640 2.640 2-640 2.640 2.640 2 640 2 640 2.640 SWL (m-pvc) All. Project Manager Signature Fieldwork Staff Signature Depth to GW (m-pvc): 2.585 Bore Depth (m-pvc): 8.82 l \ Date of GW Level: 1-6-21 Cumulative Vol. Removed (L) Unfiltered: Calculated bore volume (L): metho 220 38 Depth to Product (m-pvc): SO 00 2 Product Thickness (m): Nove-1 セナンロ 9.49 0938 Field Filtered: Project Name 9.5 45:6 5.5% 9 S 3 Time Client:

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Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

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Q4AN(EV)-405-FM1

ANZ FQM - Groundwater Sampling and Purging Record

Start (0 9.14 am

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Project Name:	-un ame	X۷	Project Number:	0000	7,4	PM Name:		SH	Sample Date:	2-6-21	
Client:	y	Proje	Project Location:	Kata	apo Basins	Fieldwork Staff:	Staff:	MF+ER	Well Development of Well Sampling Event2 (circle)	all Sampling Eve	nt2 (circle)
	Ore	information	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Para	ameter Info.		amination	Sampling Method	Hydra	asleeve info.	and the second
Date of GW Level: 2 - 6	-21	Bore Radius (mm):	1	Chem Kit Serial	Chem Kit Serial No.: 1 25 10 86 52	8	Decontaminated F1	F & Low Flow Pump rate:	Hydrasleeve Size:	Monitorin	Monitoring sequence
Depth to GW (m-pvc): 11.		Screen Interval (m): 4-63-13-6 Shem Kit Model: 451	1-63-13-6	Chem Kit Mode	1: 451 Pro Soiles	X	Dedicated	Intake depth:	Hydrasleeve Type:		order):
Bore Depth (m-pvc): 14 . WW	1940 72 1	Casing Radius (mm):	25	Corrected Redox: 🖌	OX: X N	F1 Dispo	Disposable	Bailer FI Hydrasleeve	e Sampling Depth (mp/c):	Ö	Buid
Depth to Product (m-pvc):	ŧ	Cover Type (gatic/stick up):	:k up):	(The correction to	(The correction to apply is probe dependent)	8.4	r (specify/	Peristaltic Pump F Waterra	Hydrasleeve Install time:		Hydrasleeve in
Product Thickness (m):	(Bore Locked (TESNO)	1	Parameter met	Parameter method: FI Downhole		A K N		Sampling Start Time:		Hydrasleeve out
		Key Type (if applicable): NA	e): NA	/	Retrieved	A		Symmersible		Para	Parameters
Calculated bore volume (L):	:(Includes/ excludes bore annulus (circle)	bore annulus (o	circle)	# purge volumes removed:	s removed:	To	Total purged volume (L):			
	1. 1. 1.	I ON LOWER DAY		a liberation of the	Water Q	later Quality Parame	ters			1. 10. 20. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	100 C
Time Cumulative Vol. Removed (L)	ol. SWL) (m-pvc)	c) Pump Rate	(po (po po po po po po po po po po po po po p	E.C. (mS/em-er µS/cm)	Hd	Redox (mV)	Temp °C		Odour, Colour, Turbidity		1
03 9160	1.11							High turbid	t. NO	o dour.	
0918 20	N.							110			
0921 30	11		dar.					1.		}	
0924 40	ł							Med two.			
09.23 50	11										
0920 60			7.28	1681	6 75	135.1	13.4	than two			
09.32			7.23	168.0	6.65	120.3	1.3.1	2			
0935			7.51	16-1-8	6.54	131.1	13.2				
C937			7.17	168.0	6.54	133.1	13.2				
0439		-	7.12	168.3	6.54	134.6	13.2				
0941			P0. 1	160.0	6.53	135 .6	13.2	Mod. Turb 1	ow "Cloudy	hy a	
										2	
	Acceptable	Acceptable Parameter Range:	± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10	± 10% turbidity (if using a turbidity meter)	ster)	Control 1
Analytes Sampled	l for:		Bottles Col	Collected		QAUGO	C Information	ALCONTRACT AND A	Field Commets		
Field Filtered: Unfiltered:	:pe	x 40 mL Vial (HCI)		x 60 mL Ferrous	x 60 mL metals (HNO ₃)	(²)		Bore volume calculation	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	redox correction etc.	1
		x 40 mL Vial (H ₂ SO ₄)	_	x 100 mL Amber	× 250 mL Plastic			1/2 4 X (14	11 11 22. 11		
p4											
	101 102	Ap	Approval and Distribution	bution		1000	A PARAMETERS	1 4 X 1 2			
							1	2			
Fieldwork Staff Signature	ature	Date		Checker N	Checker Name and Signature		Date	- 12.56	M X		
Project Manager Signature	ignature	Date	Distri	Distribution: Project Central File	entral File			x	37.68 L		

04AN(EV)-405-FM1 FCM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

ANZ FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

	STON (01	030								10-0-02	010
Image: Contract	The second	V Basins.	Project Number:	6004		PM Name:		04.	Alotte Date:	all Samplin	d Events (circle
Model Control	a stanta -	J	Project Location:	Koko		Fieldwork Sta	ff: Instan I	+ C K		asleeve in	A FACING AND
(15,7] Second memoral (mm, $15, -35$) Council of the condition of the council	6	2	(mm)	Chem Kit Serial	No.:	P Decont	_	Low Flow Pump rate:	Hydrasleeve Size:	W V	Ilowed (number i
1. B(1): Constraint and market frages The angle fragments The angle fragments	1		6 35	Chem Kit Model:	451-Pro-Jeries.	🗶 Dedicat	7	Intak			order):
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	3	5		Corrected Redo	* * * *	FT Dispose		Bailer Int Hydrasleev		:0	Gauging
Bon Loudo Accelerolio Parameter method: T. Donnto T. Labria X. Other (griefle) Some S pri Trans. (1) Inclusion factorial Funge vorting removed: Expression prison Funge vorting removed: Expression prison Funge vorting removed: Expression prison Funge vorting removed: (1) Inclusion factorial Funge vorting removed: Funge vorting removed: Expression Funge vorting removed: Expression (1) Inclusion Funge vorting removed: Funge vorting removed: Funde vorting removed: Expression Funde vorting removed: (1) Inclusion Funde vorting removed: Funde vorting removed: Funde vorting removed: Funde vorting removed: (1) Inclusion Funde vorting removed: Funde vorting removed: Funde vorting removed: Funde vorting removed: (1) Internet Funde vorting removed: Funde vorting removed: Funde vorting removed: Funde vorting removed: (1) Internet Funde vorting removed: Funde vorting removed: Funde vorting removed: Funde vorting removed: (1) Internet Funde vorting removed: Funde vorting removed: Funde vorting removed: Funde vorting removed: (1) Internet Internet Funde vorting removed: Fund	pth to Product (m-pvc):	Cover Type	(gatiorstick up)	(The correction to	apply is probe dependen	t) F Other (Peristaltic Pump	Hydrasleeve Install time	e:	Hyarasleeve in
Image: Second contract in the second contract in t	duct Thickness (m):	Bore Locker	d (XES/NO):	Parameter meth	iod: FI Downhole	-		Other (specify)	Sampling Start Time:		Hydrasleeve out
Includes/ excludes bore amulus (circle) # purge volumes removed: Total purged volumes removed: SWL SWL SWL Total purged volumes removed: Total purged volumes removed: Increase Revor Revor Revor Revor Purpte Increase Purpte Revor Revor Total purged volumes removed: Dotal purged volumes removed: Increase Revor Total purged volumes Revor Revor Revor Purpte Intitional Total purged volumes Revor Revor Revor Purpte Intitional Total purged volumes Revor Total purged volumes Revor Purpte Intitional Total purged volumes Total purged volumes Revor Purpte Purpte Intitional Total purged volumes Total purged volumes Total purged volumes Revor Purpte Intitional Total purged volumes Total purged volumes Total purged volumes Revor Purpte Intitional Total purged volumes Total purged volumes Total purged volumes		Key Type (if	1 1		🕅 Retrieved	,		breverible.	/		Parameters
Struct Dot E.G. (respects) Matter outsity arranges Matter outsity arranges (respect) Pump fate (pawewing) (pawewing) <t< td=""><td>Iculated bore volume (L):</td><td>Includes/ e</td><td>xcludes bore annulus</td><td></td><td># purge volumes re</td><td>moved:</td><td>Tota</td><td>I purged volume (L):</td><td>The second second</td><td></td><td>A ST A ST A</td></t<>	Iculated bore volume (L):	Includes/ e	xcludes bore annulus		# purge volumes re	moved:	Tota	I purged volume (L):	The second second		A ST A ST A
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ANZ FQM - Groundwater Sampling and Purging Record

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ANZ FQM - Groundwater Sampling and Purging Record

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A DESCRIPTION OF THE PARTY OF T	General	Bore Inform	nation	And and a second second	Para	1400	Deconta	mination	Sampling A	Aethod	Hy Hy	/drasiceve ini	
Date of GW Level:	12-9-2:	Bore	Bore Radius (mm):)	Chem Kit Serial No.:	No.:	F1 Deco	Decontaminated	Low Flow Pump rate:	ate:	Hydrasleeve Size:	Mo	Monitoring sequence
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Bore Depth (m-pvc):	0) O	Casin	Casing Radius (mm):	25	Corrected Redox:	ож: Y / N	X Dispo	Disposable T	Bailer	FT Hydrasleeve	Sampling Depth (m-pvg)	-tovd-	Gauging
Depth to Product (m-pvc):	(m-pvc):	Covel	Cover Type (petic/stick up):)	(The correction to	(The correction to apply is probe dependent)		r (specify) 🖡 🛙	Peristaltic Pump F	Waterra	Hydrasleeve Instal time:	(ime:	Hydrasleeve in
Product Thickness (m):	s (m):	Bore	Bore Locked (MES/NO):		Parameter met	Parameter method: FI Downhole	-	1	X Other (specify)		Sampling Start Time:		Mydrasleeve out
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Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	(ppm-er-mg/L)	E.C. (mS/cmTor µS/cm)	Hd	Redox (mV)	Temp °C		0	Odour, Colour, Turbidity		
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1233	20		4										
1234	30												
1235.	40												
1236	ß												
F21	60												
04.01				1.38	64.0	6.99	0.511	12.9					
1243				1.21	84.6	16.9	177.5	12.9					
1245				1.12	84.7	6.90	1.9/1	12.9					
1248				1.09	64.7	06.9	1.941	12.9					
	Acce	ptable Para	Acceptable Parameter Range:	± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C		± 10% t	± 10% turbidity (if using a turbidity meter)	y meter)	
Analytes	Sampled		The allow	Bottles	Collected	New John Start	QAQC	QA/QC Information	Santan 115	124 - 13 B	Field Commets	States and	LTAF ROLL
Field Filtered:	Unfiltered:		x 40 mL Vial (HCI)		x 60 mL Ferrous	x 60 mL metals (HNO ₃)	(NO ₃)		Bore	volume calculation,	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	oing, redox correct	tion etc.
			x 40 mL Vial (H _s SO ₄)		x 100 mL Amber	x 250 mL Plastic			4 -1	- ~ (E 4	N- 4 - (6 41 - 1 8		
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OdANIEV/405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV),405-FM1) Revision 2 July 12, 2016

Page 1 of 1

Purged (23.0 m

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Date

Checker Name and Signature

Distribution: Project Central File

Date

Project Manager Signature

2-6-21 Date

M CHULW Fieldwork Staff Signature

	Purging Record
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Q4AN(EV)-405-FM1

AECOM

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Date of GW Level:	5-0	5			Chem Kit Serial No .:	No.:	**	Decontaminated	_	FI Low Flow Pump rate:		Hydrasleeve Size:		Monitoring sequence
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Product Thickness (m):	iss (m):	Bore Locke	Bore Locked (YES/NO):	ă	Parameter method: FI Downhole	Nod: FI Do	wnhole	Tubina		Other (snecify)		Sampling Start Time:		Hvdrasleeve out
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alculated bor	Calculated bore volume (L):	Includes/ e	Includes/ excludes bore annulus (circle)	nulus (cire			mes remov	ved:	To	Total purged volume (L):				
						Wate	er Quality	Water Quality Parameters						
Time	Cumulative Vol. Removed (L)	SWL Pun (m-pun	Pump Rate (ppm-or mg/L)	- mg/L)	E.C. (mS/cm.or- u.S/cm)	표	Redox (mV)	lox V)	Temp °C		PO	Odour, Colour, Turbidity		
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052	60 6	69.	1 1	H?	CF V	T IV	Ś							
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056			0	N	47.2	595	193	17	17. 2	bot				
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001			×.	66	46.9	C 16	179	N) (
102			à	-	46.7		ia	4						
											8			
	Accer	Accentable Parameter Ranner	Ranner + 10%	Jak	705.7	90 0 1	10	I	UO U U T		. 1000			
Analyte	Analytes Sampled for:			Bottles Collected	cted		4	QA/QC Information	ormation			E 10% turbioity (it using a turbioity meter) Field Commets	/ meter)	
Field Filtered:	Unfiltered:	x 40 mL	x 40 mL Vial (HCI)	× 60 mL Ferrous		x 60 mi metals (HNO-)	(UNH)			Bore volume	calculation. bor	Bore volume calculation. bore condition. Fate of tubing redox correction etc	ing redox corr	action atc
)	Ail ×4	2 Ba	x40 mL Vial (H,SO,) Bacterial 1 Metals	x 100 mL Amber T vorge	2ic	x 250 mL Plastic	0			V=4×(0°	(Depth -	sw) - 6.548	(8	
AAA	1	0	Approval and Distribution	od Distribu	tion						đ	×	N	
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Q4AN(EV)-405-FM1

AECOM

Project Name:	CCC Stormwater Basins		Project Number:	60649177 - 3.2.3	-3.2.3	PM Name:	ë	S Hay	Sample Date:	024100	
Client:	222	Pr	Project Location:	Awat	Bari	6	rk Staff:	M. Elotrion	N	Complex Frank	Color Color
	General Bore Information	1		Parame	ter Info		Decontamination	Sampling Method			r (circle
Date of GW Level: 🤰	3.6-24	Bore Radius (mm):		Chem Kit Serial No.:	No.:	Pe Pe	inated	F1 Low Flow Pump rate:	Hvdrasleeve Size:	Monitoring sequence	sedneuc
÷.	L.	Screen Interval (m): 2		Chem Kit Model: V	# VST 1		Dedicated	Intake depth:	Hydrasleeve Type:	followed (number in	in admin
Bore Depth (m-pvc):	4.132	Casing Radius (mm):	m): 25	Corrected Redox:	OX: Y / N	_	-	FI Bailer FI Hydrasleeve	beve Sampling Depth (m-pvo)	Ű	Ø
Depth to Product (m-pvc):	<u>۱</u>	Cover Type (gatic/stick up):	'stick up):	(The correction to	(The correction to apply is probe dependent)	_	P Other (specify)	Peristattic Pump F Vaterra	Hydrasleeve Install time:		Hydrasleeve in
Product Thickness (m):	١	Bore Locked (YES/NO):	(ON):	Parameter met	Parameter method: FrI Downhole		1	M Other (specify)	Sampling Start Time:	Hydras	Hydrasleeve out
		Key Type (if applicable):	able):		🛒 Retrieved	-	1	Submersible		Parameters	eters
Calculated bore volume (L):	ne (L):	Includes/ exclude	Includes/ excludes bore annulus (circle)		# purge volumes removed:	s removed:		Total purged volume (L):		,*	
-					Water G	Quality Paran					
Time Cumulai Remov	Cumulative Vol. SWL Removed (L) (m-pvc)	c) Pump Rate	e (ppm or mg/L)	E.C. -{mS/cm-or S/cm)	Hq	Redox (mV)	Temp °C		Odour, Colour, Turbidity		
080	Start	Puraina		fundad							
935 60	12:51	P61 0	1-1 d	50.9	6.64	137.4	2.11	CLEON. Mi	Minor truth.		
0 938			5.80	51.0	6.11	125.4	11.2				
040			6.62	5	6.10	132.4	11.2				
0942			5.55	51.1	6.01	129.5	0.11	ži			L
			2			-	J				ł
	Accord	Arrontehlo Darmotes Daves	1 1/0/		1						
Analytes Samulad for	noted for			0/C 1	CO.O H		J. 7.0 =		± 10% turbidity (if using a turbidity meter)	er)	
	- Dicd 101 -		Dollies collected	lected		GAN	UA/UC Information		Field Commets		
Field Filtered: Un	Unfiltered:	x 40 mL Vial (HCI)			x 60 mL metals (HNO ₃)	("0		Bore volume calcu	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	edox correction etc.	
-	4×	2 Bacterial 1 Metals	×	x 100 mL Amber Inorganic	x 250 mL Plastic			14× (Dep 14v (BM	(BUMBAR 9. 132-5.756	756)	
			Approval and Distribution	bution							
			1					15.504	1 × (1)		
	oignature	Date		Checker Në	Checker Name and Signature	ø	Date	2	r.		
Project Manager Signature	ger Signature	Date	Distri	Distribution: Project Central File	intral File			1=40.5			
eV)-405-FM1 Sroundwater Sampling at	Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1)	.N(EV)-405-FM1)	Sam	Sambes Cr	Collored Q	B	0944		*		
on 2 July 12, 2016	2	•				_	~				Page 1 o

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Q4AN(EV)-405-FM1

Well Development or Well Sampling Event? (circle)

201-

Sample Date: Bore ID:

Location

followed (number in

order):

Gauging

Sampling Depth (m-pvc). Hydrasleeve Install time: Sampling Start Time:

FI Hydrasleeve

FI Bailer

Intake depth:

F Peristattic Pump F Waterra

F Other (specify) a pridu

(The correction to apply is probe dependent) Parameter method: FI Downhole

Corrected Redox: Y / N

Chem Kit Model: V S

Screen Interval (m): 2.9 - 8

0 . 800

Depth to GW (m-pvc): Date of GW Level:

1

Product Thickness (m):

Depth to Product (m-pvc): 3ore Depth (m-pvc): 8

Bore Radius (mm):

23-6-21 5.67

General Bore Information

222

Casing Radius (mm): 25 Cover Type (gatic/Stick up): Bore Locked (YES/NO): Key Type (if applicable):

Chem Kit Serial No.:

Submersible

Define (specify)

Total purged volume (L):

purge volumes removed: Water Quality Para

Includes/ excludes bore annulus (circle)

Calculated bore volume (L):

X Retrieved

Hydrasleeve Type:

Hydrasleeve Size:

Sampling Method

Decontamina Fleidwork Staff:

Basin .

Awated B.

Project Location:

Project Number:

CCC Stormwater Basins

roject Name:

lient:

Decontaminated FI Low Flow Pump rate:

M Dedicated FI Disposable

M. Fletcher

Hydrasleeve Info. IMonitoring sequen

Hydrasleeve out

Parameters

rbidity

Hydrasleeve in

$\begin{array}{c} \pm 10\% \text{ turbidity (if using a turbidity} \\ \pm 10\% \text{ turbidity (if using a turbidity} \\ \text{Field Commets} \\ \text{Bore volume calculation, bore condition, fail of turbin} \\ V = 4 \times (0 = p + h - S - ordition, fail of turbin) \\ = 4 \times (0 = p + h - S - ordition, fail of usin) \\ = 12 \cdot 52 \times 3 \\ = 12 \cdot 56 L \end{array}$	→ 14.2 · 0 14.2 mv ±02°C advoc Information	88	16 5 87 6 116 6 5 87 8 116 6 5 87 8 116 6 5 87 8 116 1 1 1 1 116 1 1 1 1 116 1 1 1 1 116 1 1 1 1 116 1 1 1 1 116 1 1 1 1 116 1 1 1 1 116 1 1 1 1 116 1 1 1 1 116 1 1 1 1 116 1 1 1 1 116 1 1 1 1 116 1 1 1 117 1 1 1 1 118 1 1 1 1 118 1 1 1 1 117 1 1 1 1 118 1 1 1 1 118 1	6.5 43% d d d d d d d d d d d d d	± 10% ± 10%		S A Parte Part	Sampled Unfiltere A A Staff Sign	12.04 12.06 12.08 Analytes Field Filtered: Field Work
±10% turbidity (if using a tur Field Commet	±0.2 °C ≜ C Information	± 10 mV QA/Q(14-0.050	± 3% lected	± 10% Bottles Col	meter nange:	Ceptante Faio	s Sampled fo	al yte
in a tradition of the second se	340.0+	+ 10 mV	+0.05	± 3%	± 10%	meter Range:	ceptable Para	Ac	
7			-						
						•			
			4	ected	Coll	~			3
	14.2	84.0	-	116.6	1.73				9
		95.7		116.5	1.78				J
	14.2	86.2	5,00	116.3	1.85				202
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Clear. Low to m t	14.2	2.26	to: t	116.1	2.41				<u>=</u> 28
	(tau	v . lav	(mell	ouchet	10	ISh	5.736	8	7
				, 64	burg	Start	5.738		50
Odour, Colour, Turbidity	Temp °C	Redox (mV)	Hd	(mis/cm or µS/cm)	(DO DO	Pump Rate	SWL (m-pvc)	Cumulative Vol. Removed (L)	

ANZ FQM - Groundwater Sampling and Purging Record

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7.87m Purge (a

Dork Blue Kow S Hay PM Name: 60649177 - 3.2.3

Q4AN(EV)-405-FM1 FCM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

redox correction etc.

Q4AN(EV)-405-FM1

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Loore: 24-6-7 Bare Redultarim: (Promost) Chem Net Service: The Secretarian service services in the Secretarian service	etml Chem Ki Seial Nu: Procontaminatori Procontaminatori Pri Decontaminatori Priori Prior		ccc General Bore		roject Location:	Kaka	as Basin		Staff:	M.Fletcher	Well Development or	Well Sampling	Event? (circle)
Memory Line Description Line Construction Line Line <thline< th=""> Line <t< td=""><td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td><td>/ Level: 24</td><td>-6-21</td><td>Bore Radius (mm</td><td></td><td>Chem Kit Serial I</td><td>No.:</td><td></td><td></td><td></td><td>H</td><td>drasleeve info</td><td></td></t<></thline<>	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	/ Level: 24	-6-21	Bore Radius (mm		Chem Kit Serial I	No.:				H	drasleeve info	
Matrix Contracted Ratio Contracted Ratio Matrix Matrix <td>Market U.S. Concreted Refor. Market method: Market m</td> <td>ä</td> <td>0.188</td> <td>Screen Interval (r</td> <td>n): 4.63 - 13.0</td> <td>Chem Kit Model:</td> <td>5</td> <td>X Dedi</td> <td></td> <td>LOW LIOW</td> <td>Hydrasleeve Size: Hydrasleeve Type:</td> <td>folle</td> <td>wed (number in</td>	Market U.S. Concreted Refor. Market method: Market m	ä	0.188	Screen Interval (r	n): 4.63 - 13.0	Chem Kit Model:	5	X Dedi		LOW LIOW	Hydrasleeve Size: Hydrasleeve Type:	folle	wed (number in
Answer Answer<	Material Control Contro Control Control <t< td=""><td>oduct (m-ove</td><td></td><td>Casiriy Radius (n</td><td></td><td>Corrected Redo</td><td>X: Y / N</td><td>_</td><td>-</td><td></td><td></td><td></td><td>Gaucino</td></t<>	oduct (m-ove		Casiriy Radius (n		Corrected Redo	X: Y / N	_	-				Gaucino
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User vutranti, international and international internationalignet international international international international int	Retrieved Submercy: Distribution National Submercy: Distribution Total proportion annual (racial) Submercy: Distribution Total proportion (racial) Total proportion Total proportion Color Color, Color, Tradialy Put glugs Print (racial) Reference: Total proportion Ocorr. Color, Tradialy Put glugs Print (racial) Reference: Total proportion Ocorr. Color, Tradialy Put glugs Print (racial) Reference: Print (racial) Color, Color, Tradialy Put glugs Print (racial) Print (racial) Print (racial) Print (racial) Print (raci				SUNU):	Parameter meth	od: FI Downho		V	🛝 Other (specify)	Sampling Start Time:		Hvdrasleeve out
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451 $1A$ bL	but W_1 but W_1 1.11 1.12 1.12 $1.3.2$ $CLean$ 1.44 2.31 2.31 5.91 1.12 $1.3.2$ $1.3.2$ $CLean$ 1.44 $2.33.4$ 5.91 $1.02.6$ 13.2 N_0 6.63 $2.23.5$ 5.13 104.4 $1.3.2$ N_0 6.64 $2.23.5$ 5.12 102.8 13.2 N_0 6.64 $2.23.5$ 6.12 102.8 13.2 N_0 6.65 $2.23.5$ 6.12 102.8 13.2 N_0 6.65 $2.13.2$ 6.12 102.8 13.2 N_0 6.65 $2.13.2$ 6.12 102.6 13.2 10.7 13.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 13.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2 12.2	0	105										
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Image: Signature Control	\overline{C} . 69 2.23 . 3 \overline{C} . 13 104.9 13.2 \overline{C} . 66 2.23 . 2 \overline{C} . 12 102.6 13.2 \overline{C} . 61 2.23 . 2 \overline{C} . 12 102.6 13.2 \overline{C} . 61 2.23 . 2 \overline{C} . 10 102.6 13.2 \overline{C} . 61 $2.43.2$ \overline{C} . 10 102.6 13.2 \overline{C} . 61 $2.33.2$ \overline{C} . 10 \overline{C} . 10 \overline{C} . 10 \overline{C} . 10 \overline{C} . 10% $\pm 3\%$ ± 0.05 $\pm 10M$ $\pm 0.2°C$ \overline{C} . 11 \overline{C} . 10 \overline{C} . 1 \overline{C} . 10 \overline{C} . 10 \overline{C} . 10 Vial (HCi) $\times 60$ mL metals (HNO.) \overline{C} . 10 \overline{C} . 13 \overline{C} . 13 Vial (HSO.) $\times 100$ mL Amber $\times 250$ mL Plastic. \overline{C} . 14 \overline{C} . 15 Vial (HCi) $\times 100$ mL Amber $\times 250$ mL Plastic. \overline{C} . 14 \overline{C} . 15 \overline{C} . 14 Vial (HCi) $\times 100$ mL Amber $\times 250$ mL Plastic. \overline{C} . 14 \overline{C} . 14 \overline{C} . 15 \overline{C} . 15 Vial (HCi) $\times 100$ mL Amber $\times 250$ mL Plastic. <	2			6.95	1	6 80	A. B.					
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Image: Sampled for: Address Collected ± 10% ± 3% ± 0.05 ± 10m/ ± 0.2 °C Yes Sampled for: Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10m/ ± 0.2 °C Yes Sampled for: Admittendi: × 40 mL Vial (HC)) × 60 mL metals (HNO) ± 0.2 °C ± 0.2 °C Yes Sampled for: × 40 mL Vial (HC)) × 60 mL metals (HNO) ± 0.2 °C QA/QC Information Millered: × 40 mL Vial (HSO) × 100 mL Amber × 250 mL Plastic QA/QC Information Millered: × 40 mL Vial (HSO) × 100 mL Amber × 250 mL Plastic QA/QC Information Millered: Admit Vial (HSO) × 100 mL Amber × 250 mL Plastic QA/QC Information Millered: Admit Metals I Date Admit Metals Metals Millered: Date Date Date Date	Collected ± 10% ± 3% ± 0.05 ± 10mV ± 0.2 °C Range: ± 10% ± 3% ± 0.05 ± 10mV ± 0.2 °C Nall (HCi) x 60 mL Ferrous x 60 mL metals (HNO.) QA/QC Information Vial (HSO.) x 100 mL Amber x 250 mL Plastic Val (HSO.) x 100 mL Amber x 250 mL Plastic Approval and Distribution		1		6.65	53.	6.72 1	02.8	13.2				
Acceptable Parameter Range: ± 10% ± 3% ± 0.05 ± 10 mV ± 0.2 °C Vites Sampled for: Bottles Collected Bottles Collected QAVQC Information Vitilitered: x 40 mL Vial (Hc)) x 60 mL Ferrous x 60 mL metals (HNO ₃) M 2 8 cm L Vial (Hc) 1 Loon Amber x 250 mL plastic M 2 8 cm L Vial (Hc) 1 Loon Amber x 250 mL plastic M 2 8 cm to int 1 Loon Amber x 250 mL plastic M 2 8 cm to int 1 Loon Amber x 250 mL plastic M 2 8 cm to int 1 Loon Amber x 250 mL plastic M A 1 M et al.s 1 Loon Amber S metoric M A 1 M et al.s 1 Loon Amber M et al.s M A 1 M et al.s Checker Name and Signature Date Date Date Date Date Date	Range: ± 10% ± 33% ± 0.05 ± 10mV ± 0.2 °C Bottles Collected A/00 Information ± 0.05 ± 10mV ± 0.2 °C Vial (HCI) x 60 mL Ferrous x 60 mL metals (HNO ₃) QA/00 Information ± 0.2 °C Vial (HCI) x 60 mL Amber x 250 mL plastic QA/00 Information ± 0.2 °C Vial (H.SO ₁) x 100 mL Amber x 250 mL plastic QA/00 Information ± 0.2 °C Vial (H.SO ₁) x 100 mL Amber x 250 mL plastic QA/00 Information ± 0.2 °C Approval and Distribution Approval and Signature Date Date ± 4 After and Signature Date Date 2 4 ± 4	2	Sar		Collect								
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All x 40 mL Vial (HCl) x 60 mL Ferrous x 60 mL metals (HNO ₁) All x 40 mL Vial (H, SO ₁) x 100 mL Amber x 260 mL Plastic x 4 2 8 m for iarl 1 Th or option x 4 2 8 m for iarl 1 Th or option x 4 2 8 m for iarl 1 Th or option x 4 2 8 m for iarl 1 Th or option x 4 Approval and Distribution 2 6 m for iarl 1 M 2 1 M etals 1 1 M 2 1 Checker Name and Signature Date Date off Signature Date Distribution: Project Central File 1 4	Vial (HCl) x 60 mL Ferrous x 60 mL metals (HNO.) Vial (HSO.) x 100 mL Amber x 250 mL Plastic Vial (HSO.) x 100 mL Amber x 250 mL Plastic Approval and Distribution Approval and Distribution C 6-21 Checker Name and Signature Date ate Distribution: Project Central File C		Pomd.		Bottles	ected		QA/QC	Information		Field Commets		
X = 40 mL Vial (H,SOU) X = 100 mL Amber X = 250 mL Plastic 2 8 ar Tervisit 1 Long and Distribution 2 Approval and Distribution Checker Name and Signature Date 2 Date Distribution: Project Central File Checker Name and Signature	Vial (H-SO4) X 100 mL Amber X 250 mL Plastic evice 1 1 I I of the state of the sta			x 40 mL Vial (H	4		50 mL metals (HNO,	1		Bore volume calculat	on, bore condition, fate of tubing	g, redox correction	etc.
Approval and Distribution 24-6-24 Date Date Date Date Date Date Date	Approval and Distribution Approval and Distribution alte Checker Name and Signature Date ate Distribution: Project Central File		= 4			S	250 mL Plastic			V= 4× (De	oth-Sw)		
24-6-21 Checker Name and Signature Date Date Distribution: Project Central File	ate Checker Name and Signature Date Date Date Date Distribution: Project Central File			U	Approval and Distrib) Ition				= 4 × 619	17 - 10 - 7A	(J	
Date Checker Name and Signature Date Date Date Distribution: Project Central File	ate Checker Name and Signature Date Date ate Distribution: Project Central File	etalar		4-6-2						A CH TH AND		õ	
Date Distribution: Project Central File	ate Distribution: Project Central File	work Staff Si	gnature	Date		Checker Nam	e and Signature		Date	The Area I	5×240,0		
	N NOTICEODIN THOMAN 2.03. JE: 20 11	oject Manager	· Signature	Date	Distrib	ution: Project Centre	al File			- 40.584		1	
(EV)-405-FM1)													

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Q4AN(EV)-405-FM1

	2600-							7	Bore ID:	Location	5
name:	CCC Stormwater Basins		Project Number:	60649177	_			S Hay	Sample Date:	24-6-20	2
Client: CCC			Project Location:	Kakapo	apo Basin		Staff:	M.Flatcher	Well Development or Well Sampling Event? (circle)	Vell Sampling Event?	(circle)
K	al Bore	rmation		Para	ameter Info.	Decontamina	amination	Sampling Method	Hyd	Irasieeve info.	
110	17-	Bore Radius (mm):		Chem Kit Serial No .:	No.:	N Dec	Decontaminated F1	Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence	eduence
Depth to GW (m-pvc): 10 - 7	+ CO Scr	een Interval (m	Screen Interval (m): 4. 35 - 13 . 35 Chem Kit Model: V	S Chem Kit Mode	L TAY	Pedicated	icated	Intake depth:	Hydrasleeve Type:	followed (number in	imber in
Bore Depth (m-pvc):		Casing Radius (mm):	m): 25	Corrected Redox:	ох: Ү / N	FI Dis	Disposable	Bailer	seve Sampling Depth (m-pvc);	U	
Depth to Product (m-pvc):	Ŝ	Cover Type (gatie/stick up):	stick up):	(The correction to	(The correction to apply is probe dependent)		Other (specify)	Peristaltic Pump			eve in
Product Thickness (m):	Bor	Bore Locked (YES/NO):	:(NO):	Parameter met	Parameter method: FI Downhole	ŕ	D A LOU				Hvdrasleeve out
	Key	Key Type (if applicable):	able):		Retrieved			Id new provide	à	Parameters	ters
Calculated bore volume (L):	Inc	dudes/ exclud	Includes/ excludes bore annulus (circle)	(circle)	# purge volumes removed:	s removed:		Total purged volume (L):			
					Water	Water Quality Parameters					
Time Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	e (ppm or mg/L)	(mStem.or	Hq	Redox (mV)	Temp °C		Odour, Calour, Turbldity		
092 10.785	540	4	U Co MA	haicili				CIDNU NO	1.1.1	. 4	
032 10.762	U ST	4	2020	t.					INAIAINA	à	
1036			1.54	195.7	a l	0. 11	13.5				
038			52.t	194.2	6.82	112.2	13.5				
040			7.13	163.7	6.73	109.4	13.5				
1042			6.82	183.5	6.70	18.6	13.6				
1044			6.16	182.0	6.69	71.3	13.6				
1046			6.72	182.6	6.68	76.5	13.6				
Part -											
040	Sam	ole	collecter	R							
							•				
Acce	ontahla Da	Accentable Parameter Pancer	- 1007	705.1		1 40 mV	0000.				
Analytes Sampled for:			m	ollected	CU.U ±		OA/OC Information	+	± 10% turbidity (if using a turbidity meter) Field Commete	meter)	
Field Filtered: Unfiltered:		1 40 ml Verl HCI						Bore volume colori	ritan ham ann dition fata of tubio	a sedan source of a set	
	- -	x 40 mL Vial (H _S O ₄) X 40 mL Vial (H _S O ₄) B ol o i co l Molor S	3	x 100 mL renous x 100 mL Amber Trovragnic	x ou mL metals (HNU)) x 250 mL Plastic S.			V= 4 (de	4(depth - Sw)	g, redox correction etc.	
A I · VW			Approval and Distribution	ribution							
Fieldwork Staff Signature	p	<u>74-6-</u> Date	121	Checker N	Checker Name and Signafure	e	Date	21212	к С		
Project Manager Signature	ature	Date	Dist	Distribution: Project Central File	entral File			= 26.36	7		
Q4AN(EV)-405-FM1 Conv. Crounder Sampling and Purging Record (Q4AN(EV)-405-FM1)	Record (Q4AN(EV	/)-405-FM1)	Time to	19 19	_	126 bulled	11	~ 02:36:41	6:42		
alon 2 July 12, 2010								F L	-		Page 1 of 1

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ANZ FQM - Groundwater Sampling and Purging Record	ndwater Sa	mpling and	ł Purging Ro	ecord	6	aleen to	4	7			DAAN/FV)-405-1
	Purge	6	~ 4.35m.	3			22/1				
Project Name:	CCC Stormwater Basins		Project Number:	60649177 - 3.2.3	- 3.2.3	PM Name:		IS Hav	Bore IU: Samila Data:	Location	Tion o
Client:	ccc		Project Location:	Itro	V	Cosing Fleidwork Staff:	Staff:	M. Fletchar	Well Development of Well Samoling Event2 (Aircle)	Well Samuli	nn Event? (Aircle)
Date of GW Level.	0 2 6 - 21	a Information		Paramet	er Info	Decont	ation	San	Hyr	idrasleeve info	fo.
Depth to GW (m-pvc):	-	Screen Interval (m):	Screen Interval (m): 1.3-5.6	Chem Kit Model:		Deco	Decontaminated	Low Flow	Hydrasleeve Size:	2	followed (number in
Bore Depth (m-pvc):	6 , SAN	Casing Radius (mm): 25	mm): 25	Corrected Redox:	ox: Y / N	FI Disposable	Disnosable	Intake depth: Boilor Intake depth:	Hydrasleeve Lype: ave Sampling Denth (m. nord)	1	order):
Depth to Product (m-pvc):	ovc):	Cover Type (gatic/stick up):	ic/stick up):	(The correction to	y is probe	_	-	Darietaltia Duma		imo.	Valuging
Product Thickness (m):		Bore Locked (YES/NO):	S/NO):	Parameter meth	method: F1 Downhole	-	1		Samoline Start Time.		Undrasleeve III
	,	Key Type (if applicable):	licable):		🛒 Retrieved			S how a reity	NULL TIMO Reliduino		Dommotorn
Calculated bore volume (L):	ume (L):	Includes/ exclu	Includes/ excludes bore annulus (circle)		# purge volumes removed:	s removed:	1º	me			
					Water G	Water Quality Parameters					
Time Cumu Ren	Cumulative Vol. SWL Removed (L) (m-pvc)	L Pump Rate	ate DO (ppm or mg/L)	E.C. (mSlom or uSlom)	Hd	Redox (mV)	Temp °C		Odour, Colour, Turbidity		
1337		V	art Du	raina							
1340	.8	856 0	12 12 14	10	Ducket						
1343	2	7	Q.41	14	014	C Fal	ي ر	C boir Als	t in the	Ŧ	
1345			0	19.6	1ª	-	·17	01.00		5	
1347			5,73	79.4		134 4) 4				
1349			5.58	79.5	7.19	•	20.4				
1351			5.37	79.3	6.97	133.1	10.3				
1353			5,28	79.2	6.95	133.1	11				
1355			5.19	79,4	6.90	131.0					
	Acceptable	Acceptable Parameter Range:	nge: ± 10%	±3%	±0.05	+ 10 mV	-0.0°C		1 1 100 kookista (12 cookis 11 cookis 12 cooki		
Analytes Sampled for:	Impled for:		-	llected		QA/QC	QA/QC Information		Field Commets	(IBIAIII	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCI)		x 60 mL Ferrous	x 60 mL metals (HNO ₃)			Bore volume calcula	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	ng, redox correc	tion etc.
1	41 44 4	2 8 iol col ical	-	x 100 mL Amber x	x 250 mL Plastic			$V = 4 \times (D)$	Depth - SI	3	2
		1110	Approval and Distribution	button		_		1 4 × (6	15 - 1 - A 5		
metri	NON	23-6	1	lonar				1	, ``	~	
Fieldwork Staff Signature	off Signature	Date		Checker Na	Checker Name and Signature		Date) X		
Project Mar	Project Manager Signature	Date	1	Distribution: Project Central File	ntral File			11 2 - 21			

Sampled at 1355.

Q4AN(EV)-405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV)-405-FM1) Revision 2 July 12, 2016

AECOM	Q4AN(EV)-405-FM1	t option 7	-6-21	upling Event? (dircle)	e info.	Monitoring sequence	followed (number in	Gannino Cannino	ei enterjacitett		Hydrasleeve out	Parameters										1							orrection etc.			ε.					Bane 1 of 1
	no colour)	Bore ID:	Sample Date: 2.2	Weth Development or Well Sampling Event? (dircle)	Hydrasleev	Hydrasleeve Size:	Hydrasleeve Type:	Sampling Depth (m-pvc)	Hudraslaeve Install time		Sampling Start lime.			Odour Colour Turbidity			h. vhiditu.	the count							ينية. م		± 10% turbidity (if using a turbidity meter)	Field Commets	Bore volume calculation, bore condition, fate of tubing, redox correction etc.	TIS TH	Cephan US	(1) I I I I I I I I I I I I I I I I I I I		22		۲,	
	Blank key (no colour))	S Hay Sa	M. Fletcher, M	Sampling Method	FI Low Flow Pump rate:	Intake depth:	Bailer FI Hvdrasleeve	ltic Duma	rensenuc runup wateria	Omer (sp	8	rotat purged volutile (L).				CLOOK, NO										± 10%		Bore volume calculation,	1-1. 6	J X H I N	= 4. 162		- 10, 74	5,0	-54.72	
				aff:	nination	nated	(E	4 (Vigi		,	U tot	010	Temp °C				E. 3	N	1 1		200	2				±02°C	QA/QC Information					CINCLES V		Date		
	L	<i>w C w</i>	PM Name:	E.		The Decontaminated	M Dedicated	F Disposable	*	2+	_	-powere	lity Paramet	Redox	(mV)			140.1	24 9	27.0	4	204		28-91			±10 mV	QA/QC I		r—	r—		1000				1440
	7	m. 4.00m		dr Basin	leter In	:	T #Sh	X: Y / N	(The correction to apply is probe dependent)	Parameter method: FT Downhole	TA Retrieved	é nirra valimas r	Water Quality Para	H				A .68 12	-	-		4 8 4	6,951	6.94			±0.05		x 60 mL metals (HNO _s)	x 250 mL Plastic	In				Checker Name and Signature	tral File	d a
5	cord	A NOW	60649177 - 3.2.3	artio	Paran	Chem Kit Serial N	Chem Kit Model:	Corrected Redox:	(The correction to a	Parameter meth			1000	E.C. -(mSicm.or	µS/cm)		cleet.	90.B	GR. R	8	100	a a a b	4.96	98.7			± 3%	lected	x 60 mL Ferrous	x 100 mL Amber x	210	2	ution		Checker Nan	Distribution: Project Central File	Sampled B
	ırging Re	5	Project Number:	Project Location:			-5.96	25	:(dn			ore annulus /c		DO	(ppm or mg/L)	aurop	in Bu	120	10.0	0.55		3.51	055	0.53			± 10%	Bottles Collected	X 60 m		ーエー		Approval and Distribution			Distrit	
	pq	q			mation	Bore Radius (mm):	Screen Interval (m): 1.5-5	Casing Radius (mm): 25	Cover Type (getie/stick up):	Bore Locked (YES/NO):	Kev Type (if applicable):	Includes/ excludes hore annulus (circle)		Pump Rate		Start	TSK									· ·	Acceptable Parameter Range:		x 40 mL Vial (HCI)	x 40 mL Vial (H _{SO4})	Biological	Metals	App	13-6-21	Date	Date	-405-FM1)
7	r Sampl	M	CCC Stormwater Basins	10	Sore	Z Bore	Scre	Casi	Cove	Bore	Kev	Incl		SWL	(in-pvc)	- 86	1.008										eptable Para				3	-	1000		¢	ture	Record (Q4AN(EV)
	oundwate		CCC	CCC	5	0-0	-pvc): . 6	vc): 6 . 57	(m-pvc):	(m):		volume (L):		Cumulative Vol.	(-) navoinavi								-				Acc	Analytes Sampled for:	Unfiltered:	E¥.	47	<		Let the	Fieldwork Staff Signature	Project Manager Signature	mpling and Purging F
ANZ	FQM - Gro		Project Name:	Client:		Date of GW Level:	Depth to GW (m-pvc):	Bore Depth (m-pvc):	Depth to Product (m-pvc):	Product Thickness (m):		Calculated bore volume (L):		Time		974	1435	1430	1420	1441	1443	1445	14 44	1449				Analyte	Field Filtered:					W	Fieldwon	Project	Q4AN(EV).405-FM1 FQM - Groundwater Sampling and Purging Record (Q4AN(EV).405-FM1) Revision 2 July 12, 2016

Appendix E

Laboratory Report



Laboratory Report

Wastewater Treatment Plant Shuttle Dr (off Pages Rd) Bromley Christchurch 8062 PO Box 73041, Christchurch 8154 Phone: 64-3-941-5706 lab@ccc.govt.nz

9/06/2021

Quality and C P O Box 7304 Christchurch			Report Number: Client Order No:	210601023 60649177
		LABORATORY ANALYSIS REPORT		
ab. No: ample Name:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description: Parameter Name:	Result:	Units:
2110430	1/06/21 14.10 1/06/21 Eli Reisman	Stormwater Loc 1 - 210601		
		Conductivity	35.1	μS/cm
		Copper dissolved	0.00065	mg/L
		E. coli	<20	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	100	MPN/100 mL
		Zinc dissolved	<0.00010	mg/L
2110440	1/06/21 11.58 1/06/21 Eli Reisman	Stormwater LOC 2 - 210601		
		Conductivity	36.5	μS/cm
		Copper dissolved	0.00085	mg/L
		E. coli	20	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	350	MPN/100 mL
		Zinc dissolved	0.00032	mg/L
2110441	1/06/21 09.55 1/06/21 Eli Reisman	Stormwater LOC 3 - 210601		
		Conductivity	83.4	μS/cm
817 770	LABOR ATO	This Laboratory is accredited by International Accreditation New Zealand. The reported tests have been performed in accordance with its terms of accreditation, with the exception of tests marked *, which are not accredited.	Contact: Paul V DDI: 03 941 5702	
0601023		City Water and Waste Laboratory	Pa	ige 1 of 4

₋ab. No: Sample Name:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description: Parameter Name:	Result:	Units:
		Copper dissolved	0.00012	mg/L
		E. coli	<20	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	20	MPN/100 mL
		Zinc dissolved	0.0014	mg/L
2110442	1/06/21 10.14 1/06/21 Eli Reisman	Stormwater Awatea Basin 210601		
		Conductivity	17.2	μS/cm
		Copper dissolved	0.0013	mg/L
		E. coli	320	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	15000	MPN/100 mL
		Zinc dissolved	0.029	mg/L
2110530	2/06/21 09.43 2/06/21 Melissa Fletcher	Groundwater Loc 4 - 210602		
		Conductivity	200	μS/cm
		Copper dissolved	<0.00010	mg/L
		E. coli	<1	MPN/100 mL
		Lead dissolved	0.00063	mg/L
		Total Coliforms	460	MPN/100 mL
		Zinc dissolved	<0.00010	mg/L
2110531	2/06/21 11.00 2/06/21 Melissa Fletcher	Groundwater Loc 5 - 210602		
		Conductivity	162	μS/cm
		Copper dissolved	<0.00010	mg/L
		E. coli	2	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	1000	MPN/100 mL
		Zinc dissolved	<0.00010	mg/L
817 770	LABORATO	This Laboratory is accredited by International Accreditation New Zealand. The reported tests have been performed in accordance with its terms of accreditation, with the exception of tests marked *, which are not accredited.	Contact: Paul Wooc DDI: 03 941 5702	ls
ESTING	LABORAT	which die hot decredited.		

Lab. No: Sample Name:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description: Parameter Name:	Result:	Units:
2110532	2/06/21 12.08 2/06/21 Melissa Fletcher	Groundwater Loc 6 - 210602		
		Conductivity	53.3	μS/cm
		Copper dissolved	0.00070	mg/L
		E. coli	4	MPN/100 mL
		Lead dissolved	0.00015	mg/L
		Total Coliforms	260	MPN/100 mL
		Zinc dissolved	<0.00010	mg/L
2110533	2/06/21 12.45 2/06/21 Melissa Fletcher	Groundwater Loc 7 - 210602		
		Conductivity	102	μS/cm
		Copper dissolved	0.00019	mg/L
		E. coli	1	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	170	MPN/100 mL
		Zinc dissolved	<0.00010	mg/L
2110534	2/06/21 12.00 2/06/21 Melissa Fletcher	Stormwater, Outlook Basin - 210602		
		Conductivity	86.3	µS/cm
		Copper dissolved	0.00016	mg/L
		E. coli	10	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	250	MPN/100 mL
		Zinc dissolved	0.0023	mg/L

Methods:



This Laboratory is accredited by International Accreditation New Zealand. The reported tests have been performed in accordance with its terms of accreditation, with the exception of tests marked *, which are not accredited. Contact: Paul Woods DDI: 03 941 5702

210601023

City Water and Waste Laboratory

Report Modification Date:

Lab. No: Sample Name:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:	Parameter Name:	Result:	Units:
Parameter name		Method	Test Completed		
Total Coliforms		APHA 9223 B	03/06/21		
E. coli		APHA 9223 B	03/06/21		
Copper dissolved		APHA 3125B (mod)	09/06/21		
Lead dissolved		APHA 3125B (mod)	09/06/21		
Zinc dissolved		APHA 3125B (mod)	09/06/21		
Conductivity		APHA 2510 B	03/06/21		

Comments.

Symbols: < means less than, > means greater than Units of mg/L are equivalent to g/m3 and ppm APHA: American Public Health Association 23rd Edition (S) = Subcontracted analysis (*) = Not IANZ accredited for this method e = Estimated No. CFU/100ml Results reported are related only to the items analysed at the laboratory. Samples analysed as recieved at the laboratory.

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Samples collected by client

Nicholas Ohs <u>Team Leader Microbiology Laboratory</u>

Belinda Wilson <u>Laboratory Manager</u>

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This Laboratory is accredited by International Accreditation New Zealand. The reported tests have been performed in accordance with its terms of accreditation, with the exception of tests marked *, which are not accredited.

Contact: Paul Woods DDI: 03 941 5702

210601023

City Water and Waste Laboratory

Report Modification Date:



Laboratory Report

Wastewater Treatment Plant Shuttle Dr (off Pages Rd) Bromley Christchurch 8062 PO Box 73041, Christchurch 8154 Phone: 64-3-941-5706 lab@ccc.govt.nz

210623006

Report Number:

Client Order No:

30/06/2021

Quality and Compliance P O Box 73041 Christchurch

		LABORATORY	ANALYSIS REPORT		
Lab. No: Sample Name:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:	Parameter Name:	Result:	Units:
2112326	23/06/21 11.03 23/06/21 M.Fletcher	Loc1 - 21.06.23			
		Conductivity		44.8	µS/cm
		Copper acid e	xtractable	0.0016	mg/L
		Copper dissolv	ved	0.00062	mg/L
		E. coli		<1	MPN/100 mL
		Lead acid extr	actable	0.0016	mg/L
		Lead dissolved	t	<0.00010	mg/L
		рН		6.3	
		Total Coliforms	S	20	MPN/100 mL
		Zinc acid extra	ictable	0.0063	mg/L
		Zinc dissolved		<0.00010	mg/L
2112327	23/06/21 09.44 23/06/21 M.Fletcher	Loc2 - 21.06.23			
		Conductivity		49.5	μS/cm
		Copper acid e	xtractable	0.0015	mg/L
		Copper dissolv	ved	0.0010	mg/L
		E. coli		<1	MPN/100 mL
		Lead acid extr	actable	<0.0010	mg/L
		Lead dissolved	1	<0.00010	mg/L
817 770	LABORATO	This Laboratory is accredite Accreditation New Zealan been performed in accord accreditation, with the exc which are not accredited.	d. The reported tests have lance with its terms of	Contact: Belinda Wil DDI: 03 941 5706	son
210623006		City Water a	and Waste Laboratory	Page 1	of 5

Report Modification Date:

Lab. No: Sample Name:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description: Parameter Name:	Result:	Units:
		pH	6.1	
		Total Coliforms	10	MPN/100 mL
		Zinc acid extractable	0.0023	mg/L
		Zinc dissolved	0.00096	mg/L
2112328	23/06/21 12.08 23/06/21 M.Fletcher	Loc3 - 21.06.23		
		Conductivity	112	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00020	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		рН	5.9	
		Total Coliforms	27	MPN/100 mL
		Zinc acid extractable	0.0025	mg/L
		Zinc dissolved	0.0021	mg/L
2112329	23/06/21 10.00 23/06/21 M.Fletcher	Awatea Basin		
		Conductivity	24.5	μS/cm
		Copper acid extractable	0.0026	mg/L
		Copper dissolved	0.0015	mg/L
		E. coli	75	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		рН	6.5	
		Total Coliforms	>2400	MPN/100 mL
		Zinc acid extractable	0.029	mg/L
		Zinc dissolved	0.020	mg/L
2112330	23/06/21 14.10 23/06/21	Outlook Basin		
769 👡 🗲	M.Fletcher	This Laboratory is accredited by International Accreditation New Zealand. The reported tests have	Contact: Belinda V DDI: 03 941 5706	/ilson
817		been performed in accordance with its terms of		
817 770	LABORATO	accreditation, with the exception of tests marked *, which are not accredited.		

Sample Name:	Time Sampled: Date Received: Sampled By:			
		Conductivity	89.0	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00026	mg/L
		E. coli	3	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		pH	7.3	
		Total Coliforms	240	MPN/100 mL
		Zinc acid extractable	0.0032	mg/L
		Zinc dissolved	0.0013	mg/L
2112331	23/06/21 13.55			
	23/06/21 M.Fletcher	Loc6 - 21.06.23		
		Conductivity	96.0	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00057	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		pH	6.8	
		Total Coliforms	50	MPN/100 mL
		Zinc acid extractable	<0.0010	mg/L
		Zinc dissolved	<0.00010	mg/L
2112332	23/06/21 14.48 23/06/21	Loc7 - 21.06.23		
	M.Fletcher			
		Conductivity	96.2	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00021	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		pH	6.8	
817 770	CREDITEO	This Laboratory is accredited by International Accreditation New Zealand. The reported tests have been performed in accordance with its terms of accreditation, with the exception of tests marked *, which are not accredited.	Contact: Belinda W DDI: 03 941 5706	/ilson
10623006				

Lab. No: Sample Name:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:	Parameter Name:	Result:	Units:
		Total Coliform	5	27	MPN/100 mL
		Zinc acid extra	octable	<0.0010	mg/L
		Zinc dissolved		<0.00010	mg/L
2112379	24/06/21 09.32				
	24/06/21 M.Fletcher	Loc4 - 21.06.24			
		Conductivity		214	µS/cm
		Copper acid e	xtractable	<0.0010	mg/L
		Copper dissolv	ved	<0.00010	mg/L
		E. coli		<1	MPN/100 mL
		Lead acid extr	actable	<0.0010	mg/L
		Lead dissolved	t	<0.00010	mg/L
		pH		6.7	
		Total Coliform	S	24	MPN/100 mL
		Zinc acid extra	octable	0.0011	mg/L
		Zinc dissolved		0.00032	mg/L
2112380	24/06/21 10.48				
	24/06/21 M.Fletcher	Loc5 - 21.06.24			
		Conductivity		176	µS/cm
		Copper acid e	xtractable	<0.0010	mg/L
		Copper dissol	ved	<0.00010	mg/L
		E. coli		<1	MPN/100 mL
		Lead acid extr	actable	<0.0010	mg/L
		Lead dissolved	t	<0.00010	mg/L
		рН		6.7	
		Total Coliform	5	38	MPN/100 mL
		Zinc acid extra	ictable	0.0012	mg/L
		Zinc dissolved		0.00036	mg/L



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210623006

City Water and Waste Laboratory

30/06/2021

Lab. No: Sample Name: Date Sampled: Time Sampled: Date Received: Sampled By: Sample Description:

Parameter Name:

Result:

Units:

Methods:

Parameter name	<u>Method</u>	Test Completed
Total Coliforms	APHA 9223 B	25/06/21
E. coli	APHA 9223 B	25/06/21
Conductivity	APHA 2510 B	25/06/21
pH	APHA 4500H+ B	25/06/21
Copper acid extractable	APHA 3030E, 3125B (mod)	29/06/21
Copper dissolved	APHA 3125B (mod)	29/06/21
_ead acid extractable	APHA 3030E, 3125B (mod)	29/06/21
_ead dissolved	APHA 3125B (mod)	29/06/21
Zinc dissolved	APHA 3125B (mod)	29/06/21
Zinc acid extractable	APHA 3030E, 3125B (mod)	29/06/21

Comments.

Symbols: < means less than, > means greater than Units of mg/L are equivalent to g/m3 and ppm APHA: American Public Health Association 23rd Edition (S) = Subcontracted analysis (*) = Not IANZ accredited for this method e = Estimated No. CFU/100ml Results reported are related only to the items analysed at the laboratory. Samples analysed as recieved at the laboratory.

Samples collected by client

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Nicholas Ohs Team Leader Microbiology Laboratory

Belinda Wilson Laboratory Manager

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Contact: Belinda Wilson DDI: 03 941 5706

210623006

City Water and Waste Laboratory

Report Modification Date



Laboratory Report

Wastewater Treatment Plant Shuttle Dr (off Pages Rd) Bromley Christchurch 8062 PO Box 73041, Christchurch 8154 Phone: 64-3-941-5706 lab@ccc.govt.nz

12/08/20					
	a Zefferino urch City Council			Report Number:	210805001
PO Box	-			Client Order No:	60649177
Christch	urch 8154				
		LABORATO	RY ANALYSIS REPORT		
Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:	Parameter Name:	Result:	Units:
2115234	5/08/21 11:30 5/08/21 Eli Reisman	Stormwater, Loc 1 -			
			Conductivity	54.0	μS/cm
			Copper dissolved	0.00046	mg/L
			E. coli	<10	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	10	MPN/100 mL
			Zinc dissolved	0.00027	mg/L
2115235	5/08/21 13:30 5/08/21 Eli Reisman	Stormwater, LOC 2 -			
			Conductivity	61.0	μS/cm
			Copper dissolved	0.00065	mg/L
			E. coli	<10	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	<10	MPN/100 mL
			Zinc dissolved	0.0011	mg/L
2115236	5/08/21 14:30 5/08/21 Eli Reisman	Stormwater, LOC 3 -			
			Conductivity	113	μS/cm
			Copper dissolved	<0.00010	mg/L
			E. coli	10	MPN/100 mL
			Lead dissolved	<0.00010	mg/L

TESTING LABORATO

₋ab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:	Parameter Name:	Result:	Units:
			Total Coliforms	10	MPN/100 mL
			Zinc dissolved	0.0021	mg/L
2115237	5/08/21 14:30 5/08/21 Eli Reisman	Stormwater, Awatea Basin This sample was collected in a non-sterile container. Consequently, test results may not be reflec of bacterial concentrations present at the time of sampling.			y not be reflective
			Conductivity	35.0	μS/cm
			Copper dissolved	0.0013	mg/L
			E. coli	400	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	11000	MPN/100 mL
			Zinc dissolved	0.067	mg/L
2115238	6/08/21 14.07 6/08/21 Eli Reisman	Groundwater, Loc 4 -			
			Conductivity	207	μS/cm
			Copper dissolved	<0.00000	mg/L
			E. coli	<1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	6	MPN/100 mL
			Zinc dissolved	0.00050	mg/L
2115239	6/08/21 12.52 6/08/21 Eli Reisman	Groundwater, Loc 5 -			
			Conductivity	209	μS/cm
			Copper dissolved	<0.00000	mg/L
			E. coli	<1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	2	MPN/100 mL
			Zinc dissolved	0.00011	mg/L
2115240	6/08/21 09.46 6/08/21 Eli Reisman	Groundwater, Loc 6 -			
			Conductivity	79.0	μS/cm
			Copper dissolved	0.00077	mg/L
			E. coli	1	MPN/100 mL
			Lead dissolved	0.00018	mg/L
			Total Coliforms	170	MPN/100 mL

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:	Parameter Name:	Result:	Units:
			Zinc dissolved	0.00084	mg/L
2115241	6/08/21 10.55 6/08/21 Eli Reisman	Groundwater, Loc 7 -			
			Conductivity	92.3	μS/cm
			Copper dissolved	<0.00010	mg/L
			E. coli	1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	19	MPN/100 mL
			Zinc dissolved	<0.00010	mg/L
2115242	6/08/21 10.20 6/08/21 Eli Reisman	Stormwater, Outlook Basin -	210602		
			Conductivity	89.2	μS/cm
			Copper dissolved	0.00010	mg/L
			E. coli	<1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	210	MPN/100 mL
			Zinc dissolved	0.0026	mg/L

Methods:

	Method Reference
Conductivity	APHA 2510 B
Copper dissolved	APHA 3125B (mod)
E. coli	АРНА 9223 В
Lead dissolved	APHA 3125B (mod)
Total Coliforms	АРНА 9223 В
Zinc dissolved	APHA 3125B (mod)



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Lab. No:	Date Sampled:	Sample Description:	Parameter Name:	Result:	Units:	
	Time Sampled:					
	Date Received:					
	Sampled By:					
Comment	s.					
Symbols:	< means less than, >	means greater than.				
Units of m	g/L are equivalent to g	g/m3 and ppm.				
APHA: An	nerican Public Health	Association 23rd Edition.				

(S) = Subcontracted analysis.
(*) = Not IANZ accrediated for this method.
e = Estimated No. CFU/100ml.
Results reported are related only to the items analysed at the laboratory.
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Samples collected by client.

Testing was completed: 11/08/2021 11:59:44AM. For completion dates of individual analyses, please contact the laboratory.

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Nicholas Ohs Team Leader Microbiology Laboratory

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Belinda Wilson Laboratory Manager



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CHRISTCHURCH CITY COUNCIL LABORATORY THREE WATERS & WASTE UNIT

CHRISTCHURCH WASTEWATER TREATMENT PLANT • SHUTTLE DRIVE OFF PAGES ROAD PO BOX 73041 • CHRISTCHURCH • NEW ZEALAND • TEL 64-3-941-5706 • FAX 64-3-941-5709

Report Number: 211004002

Order No: 60649177

Quality and Compliance P O Box 73041 Christchurch

19/10/2021

LABORATORY ANALYSIS REPORT

Laboratory Number:	Date/Time Sampled :	Sample Description:	Parameter Name:	Result:	Units:
2119417	6/10/21 08.50	SW 061021 Awatea Basin	Due to a lab error, there ar	e no test results for	E. coli and total coliforms.
			Conductivity	28.8	µS/cm
			Copper dissolved	0.0028	mg/L
			E. coli	No result	MPN/100 mL
			Lead dissolved	0.00015	mg/L
			Total Coliforms	No result	MPN/100 mL
			Zinc dissolved	0.092	mg/L
2119418	6/10/21 01.21	LOC 5 - 061021			
			Conductivity	222	µS/cm
			Copper dissolved	0.00011	mg/L
			E. coli	<10	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	<10	MPN/100 mL
769 817 770	PCCRED		Test results indicated accredited are outs scope of the labora accreditation	ide the	Contact: Belinda Wilson DDI 03 941 5706

Laboratory Number:	Date/Time Sampled :	Sample Description:	Parameter Name:	Result:	Units:
			Zinc dissolved	0.00016	mg/L
2119419	6/10/21 02.21	LOC 4 - 061021			
			Conductivity	233	µS/cm
			Copper dissolved	0.00071	mg/L
			E. coli	<10	MPN/100 mL
			Lead dissolved	0.00012	mg/L
			Total Coliforms	<10	MPN/100 mL
			Zinc dissolved	0.00055	mg/L
2119420	6/10/21 09.30	LOC 3 - 061021			
			Conductivity	215	µS/cm
			Copper dissolved	0.00030	mg/L
			E. coli	<10	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	<10	MPN/100 mL
			Zinc dissolved	0.0037	mg/L
2119421	6/10/21 11.25	LOC 1 - 061021			
			Conductivity	54.3	µS/cm
			Copper dissolved	0.0011	mg/L
			E. coli	<10	MPN/100 mL
			Lead dissolved	0.00036	mg/L
769 817 770 TSANG LABORATOR			Test results indicated accredited are outsi scope of the laborat accreditation	de the	Contact: Belinda Wilson DDI 03 941 5706

Laboratory Number:	Date/Time Sampled :	Sample Description:	Parameter Name:	Result:	Units:
			Total Coliforms	31	MPN/100 mL
			Zinc dissolved	0.00091	mg/L
2119422	5/10/21 10.30	Loc 7 - 051021			
			Conductivity	100	µS/cm
			Copper dissolved	0.00029	mg/L
			E. coli	<10	MPN/100 mL
			Lead dissolved	0.00017	mg/L
			Total Coliforms	2	MPN/100 mL
			Zinc dissolved	0.0017	mg/L
2119423	5/10/21 11.55	Loc 6 - 051021			
			Conductivity	68.5	µS/cm
			Copper dissolved	0.0014	mg/L
			E. coli	<10	MPN/100 mL
			Lead dissolved	0.00060	mg/L
			Total Coliforms	31	MPN/100 mL
			Zinc dissolved	0.0023	mg/L
2119424	5/10/21 02.15	Loc 2 - 051021			
			Conductivity	80.7	µS/cm
			Copper dissolved	0.00091	mg/L
			E. coli	<10	MPN/100 mL
769 817 770 TSTING LABORATOR			Test results indicated accredited are outs scope of the laborat accreditation	ide the	Contact: Belinda Wilson DDI 03 941 5706

Laboratory Number:	Date/Time Sampled :	Sample Description:	Parameter Name:	Result:	Units:
			Lead dissolved	0.00013	mg/L
			Total Coliforms	5	MPN/100 mL
			Zinc dissolved	0.0030	mg/L

Methods:

	Method
Conductivity	APHA 2510 B
Copper dissolved	APHA 3125B (mod)
E. coli	APHA 9223 B
Lead dissolved	APHA 3125B (mod)
Total Coliforms	APHA 9223 B
Zinc dissolved	APHA 3125B (mod)

Comments.

Symbols: < means less than, > means greater than.

Units of mg/L are equivalent to g/m3 and ppm.

APHA: American Public Health Association 23rd Edition.

(S) = Subcontracted analysis.

(*) = Not IANZ accredited for this method.

e = Estimated No. CFU/100ml.

Results reported are related only to the items analysed at the laboratory.

Samples analysed as recieved at the laboratory.

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Testing was completed on 10/18/2021 For completion dates of individual analyses please contact the laboratory.

n Oh

Belinda Wilson Laboratory Manager

Nicholas Ohs Team Leader Microbiology Laboratory



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Contact: Belinda Wilson



Contact: Belinda Wilson



CHRISTCHURCH CITY COUNCIL LABORATORY THREE WATERS & WASTE UNIT

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Report Number: 211105003

Order No: 60649177

Quality and Compliance P O Box 73041 Christchurch

22/11/2021

LABORATORY ANALYSIS REPORT

Laboratory Number:	Date/Time Sampled :	Sample Description:	Parameter Name:	Result:	Units:
2121601	10/11/21	Groundwater			
	10.15	LOC7-101121			
			Conductivity	110	µS/cm
			Copper dissolved	0.00026	mg/L
			E. coli	<1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	12	MPN/100 mL
			Zinc dissolved	<0.00010	mg/L
2121604	10/11/21	Groundwater			
2121004	11.30	LOC6-101121			
				128	
			Conductivity		µS/cm
			Copper dissolved	0.00037	mg/L
			E. coli	<1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	2	MPN/100 mL
769 817 770	ACCRED	ITED	Test results indicate		
	TING LAB		accredited are outs scope of the laborc accreditation		Contact: Belinda Wilson DDI 03 941 5706
	NGLAB	ORA			ט יעט און אין אין אין אין אין אין אין אין אין אי

Laboratory Number:	Date/Time Sampled :	Sample Description:	Parameter Name:	Result:	Units:
			Zinc dissolved	0.00010	mg/L
2121605	10/11/21 13.40	Groundwater LOC1-101121			
			Conductivity	168	μS/cm
			Copper dissolved	0.0018	mg/L
			E. coli	<1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	2	MPN/100 mL
			Zinc dissolved	0.00087	mg/L
2121608	11/11/21 14.30	Groundwater LOC 2 11121			
			Conductivity	106	μS/cm
			Copper dissolved	0.00093	mg/L
			E. coli	<1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	1	MPN/100 mL
			Zinc dissolved	0.0024	mg/L
2121609	11/11/21 13.00	Groundwater LOC 3 11121			
			Conductivity	168	µS/cm
			Copper dissolved	0.00035	mg/L
			E. coli	<1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
769 817 770	ACCRED		Test results indicated accredited are outs scope of the labora accreditation	ide the	Contact: Belinda Wilson DDI 03 941 5706

Laboratory Number:	Date/Time Sampled :	Sample Description:	Parameter Name:	Result:	Units:
			Total Coliforms	>2400	MPN/100 mL
			Zinc dissolved	0.0041	mg/L
2122008	11/11/21 11.35	Groundwater LOC 4 11121			
			Conductivity	251	μS/cm
			Copper dissolved	0.00012	mg/L
			E. coli	<1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	<1	MPN/100 mL
			Zinc dissolved	0.00036	mg/L
2122009	11/11/21 09.50	Groundwater LOC 5 11121			
			Conductivity	242	µS/cm
			Copper dissolved	<0.00010	mg/L
			E. coli	<1	MPN/100 mL
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	2	MPN/100 mL
			Zinc dissolved	<0.00010	mg/L

Methods:

	Method
Conductivity	APHA 2510 B
Copper dissolved	APHA 3125B (mod)
E. coli	APHA 9223 B



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Contact: Belinda Wilson

	Method
Lead dissolved	APHA 3125B (mod)
Total Coliforms	APHA 9223 B
Zinc dissolved	APHA 3125B (mod)

Comments.

Symbols: < means less than, > means greater than. Units of mg/L are equivalent to g/m3 and ppm. APHA: American Public Health Association 23rd Edition. (S) = Subcontracted analysis. (*) = Not IANZ accredited for this method. e = Estimated No. CFU/100ml. Results reported are related only to the items analysed at the laboratory. Samples analysed as recieved at the laboratory. This report must not be reproduced, except in full, without written consent. Sampled collected by client.

Testing was completed on 11/22/2021 For completion dates of individual analyses please contact the laboratory.

Belinda Wilson Laboratory Manager

11 the

Nicholas Ohs Team Leader Microbiology Laboratory



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Contact: Belinda Wilson

Three Waters Laboratory

CHRISTCHURCH CITY COUNCIL

Three Waters Laboratory

CHRISTCHURCH WASTEWATER TREATMENT PLANT • SHUTTLE DRIVE OFF PAGES ROAD PO BOX 73041 • CHRISTCHURCH • NEW ZEALAND • TEL 64-3-941-5706

6/12/2021

Veronica Zefferino Christchurch City Council P O Box 73041 Christchurch 8154
 Report Number:
 211130003

 Client Order No:
 60649177/3.2.3

LABORATORY ANALYSIS REPORT

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
2123162	30/11/21 14.00 30/11/21 Eli Reisman	LOC 4 - 2021.11.30	Result:	Units:
Parameter Na	me:	Conductivity	258	µS/cm
		Copper dissolved	<0.00010	mg/L
		E. coli	<1	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	14	MPN/100 mL
		Zinc dissolved	0.0013	mg/L
2123163	30/11/21 14.00 30/11/21	LOC 5 - 2021.11.30		
	Eli Reisman		Result:	Units:
Parameter Na	me:	Conductivity	244	µS/cm
		Copper dissolved	<0.00010	mg/L
		E. coli	<1	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	5	MPN/100 mL
		Zinc dissolved	0.0029	mg/L

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Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
2123164	30/11/21 14.00	LOC 6 - 2021.11.30		
	30/11/21 Eli Reisman		Result:	Units:
Parameter Name	x:	Conductivity	124	µS/cm
		Copper dissolved	0.00057	mg/L
		E. coli	<1	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	110	MPN/100 mL
		Zinc dissolved	0.0012	mg/L
2123165	30/11/21 14.00	LOC 7 - 2021.11.30		
	30/11/21 Eli Reisman		Result:	Units:
Parameter Name	:	Conductivity	101	µS/cm
		Copper dissolved	0.00027	mg/L
		E. coli	<1	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	1	MPN/100 mL
		Total Coliforms Zinc dissolved	1 0.0019	MPN/100 mL mg/L
2123231	1/12/21 13.10			
2123231		Zinc dissolved		
2123231 Parameter Name	13.10 1/12/21 Eli Reisman	Zinc dissolved	0.0019	mg/L
	13.10 1/12/21 Eli Reisman	Zinc dissolved	0.0019 Result:	mg/L Units:
	13.10 1/12/21 Eli Reisman	Zinc dissolved LOC 1 - 21.12.1 Conductivity	0.0019 Result: 140	mg/L Units: μS/cm
	13.10 1/12/21 Eli Reisman	Zinc dissolved LOC 1 - 21.12.1 Conductivity Copper dissolved	0.0019 Result: 140 0.00075	mg/L Units: μS/cm mg/L
	13.10 1/12/21 Eli Reisman	Zinc dissolved LOC 1 - 21.12.1 Conductivity Copper dissolved E. coli	0.0019 Result: 140 0.00075 <1	mg/L Units: μS/cm mg/L MPN/100 mL

769 817 770

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
2123232	1/12/21 10.00 1/12/21 Eli Reisman	LOC 2 - 21.12.1	Result:	Units:
Parameter Nar	ne:	Conductivity	74.0	μS/cm
		Copper dissolved	0.0012	mg/L
		E. coli	2	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	270	MPN/100 mL
		Zinc dissolved	0.0028	mg/L
2123233	1/12/21 11.30 1/12/21	LOC 3 - 21.12.1		
	Eli Reisman		Result:	Units:
Parameter Nar	ne:	Conductivity	237	µS/cm
		Copper dissolved	0.00035	mg/L
		E. coli	<1	MPN/100 mL
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	160	MPN/100 mL
		Zinc dissolved	0.0052	mg/L



Date Sampled: Time Sampled: Date Received: Sampled By:

Methods:

	Method Reference
Conductivity	APHA 2510 B
Copper dissolved	APHA 3125B (mod)
E. coli	АРНА 9223 В
Lead dissolved	APHA 3125B (mod)
Total Coliforms	АРНА 9223 В
Zinc dissolved	APHA 3125B (mod)

Comments.

Symbols: < means less than, > means greater than.

Units of mg/L are equivalent to g/m3 and ppm.

APHA: American Public Health Association 23rd Edition.

(S) = Subcontracted analysis.

(*) = Not IANZ accrediated for this method.

e = Estimated No. CFU/100ml.

Results reported are related only to the items analysed at the laboratory.

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Testing was completed: 3/12/2021 3:25:34PM. For completion dates of individual analyses, please contact the laboratory.

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Nicholas Ohs Team Leader Microbiology Laboratory

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BUD

Belinda Wilson Laboratory Manager



Three Waters Laboratory

CHRISTCHURCH CITY COUNCIL

Three Waters Laboratory

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13/01/2022

Veronica Zefferino Christchurch City Council P O Box 73041 Christchurch 8154 Report Number: 211221005

Client Order No:

LABORATORY ANALYSIS REPORT

Lab. No:	Date Sampled Time Sampled Date Received Sampled By:	d: Sample Description:		
2124765	21/12/21 11.30 21/12/21	LOC 4-2021.12.21		
	Eli Reisman		Result:	Units:
Parameter Nar	me:	Conductivity	250	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	<0.00010	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	1	MPN/100 mL
		Zinc acid extractable	0.0014	mg/L
		Zinc dissolved	0.00035	mg/L
2124766	21/12/21 09.30	LOC 5-2021.12.21		
	21/12/21 Eli Reisman		Result:	Units:
Parameter Nar	me:	Conductivity	208	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	<0.00010	mg/L
817 770		est results indicated as not accredited are outside the cope of the laboratory's accreditation	Contact: Belinc DDI 03 941 5706	

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Name	e:	E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	62	MPN/100 mL
		Zinc acid extractable	0.011	mg/L
		Zinc dissolved	0.00032	mg/L
2124767	21/12/21 14.20	LOC 6-2021.12.21		
	21/12/21 Eli Reisman		Result:	Units:
Parameter Name	e:	Conductivity	106	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00078	mg/L
		E. coli	2	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	180	MPN/100 mL
		Zinc acid extractable	0.0023	mg/L
		Zinc dissolved	0.0014	mg/L
2124768	21/12/21 13.25	LOC 7-2021.12.21		
	21/12/21 Eli Reisman		Result:	Units:
Parameter Nam	e:	Conductivity	109	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.0031	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L



Contact: Belinda Wilson

Lab. No: Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Name:	Lead dissolved	<0.00010	mg/L
	Total Coliforms	250	MPN/100 mL
	Zinc acid extractable	0.0034	mg/L
	Zinc dissolved	0.0037	mg/L
2124888 22/12/21 13.15 22/12/21 Eli Reisman	LOC 1-2021.12.22	Result:	Units:
Parameter Name:	Conductivity	59.8	μS/cm
	Copper acid extractable	0.0014	mg/L
	Copper dissolved	0.00076	mg/L
	E. coli	<1	MPN/100 mL
	Lead acid extractable	<0.0010	mg/L
	Lead dissolved	<0.00010	mg/L
	Total Coliforms	38	MPN/100 mL
	Zinc acid extractable	0.0041	mg/L
	Zinc dissolved	0.00031	mg/L
2124889 22/12/21 10.00	LOC 2-2021.12.22		
22/12/21 Eli Reisman		Result:	Units:
Parameter Name:	Conductivity	60.5	μS/cm
	Copper acid extractable	0.0014	mg/L
	Copper dissolved	0.00093	mg/L
	E. coli	6	MPN/100 mL
	Lead acid extractable	<0.0010	mg/L
	Lead dissolved	<0.00010	mg/L



Contact: Belinda Wilson

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Nam	ne:	Zinc acid extractable	0.0059	mg/L
		Zinc dissolved	0.0026	mg/L
2124890	22/12/21 11.20 22/12/21	LOC 3-2021.12.22		
	Eli Reisman		Result:	Units:
Parameter Nam	ne:	Conductivity	130	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00041	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	110	MPN/100 mL
		Zinc acid extractable	0.0066	mg/L
		Zinc dissolved	0.0080	mg/L



Contact: Belinda Wilson

Date Sampled: Time Sampled: Date Received: Sampled By:

Methods:

	Method Reference
Conductivity	APHA 2510 B
Copper acid extractable	APHA 3030E, 3125B (mod)
Copper dissolved	APHA 3125B (mod)
E. coli	АРНА 9223 В
Lead acid extractable	APHA 3030E, 3125B (mod)
Lead dissolved	APHA 3125B (mod)
Total Coliforms	АРНА 9223 В
Zinc acid extractable	APHA 3030E, 3125B (mod)
Zinc dissolved	APHA 3125B (mod)

Comments.

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Testing was completed: 12/01/2022 12:20:29PM. For completion dates of individual analyses, please contact the laboratory.

Belinda Wilson Laboratory Manager

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Simon Armstrong Drinking Water Sampling Technician



Test results indicated as not accredited are outside the scope of the laboratory's accreditation Contact: Belinda Wilson

Three Waters Laboratory

CHRISTCHURCH CITY COUNCIL

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31/01/2022

Veronica Zefferino Christchurch City Council P O Box 73041 Christchurch 8154 Report Number: 220113003

Client Order No:

LABORATORY ANALYSIS REPORT

Lab. No:	Date Sampled: Time Sampled Date Received Sampled By:	l: S	Sample Description:		
2200696	13/01/22 14.33 13/01/22 Eli Reisman	LOC 3-	-2021-1-13	Result:	Units:
				Result:	Units:
Parameter Name	:	C	Conductivity	24.7	µS/cm
		C	Copper acid extractable	<0.0010	mg/L
		C	Copper dissolved	0.00029	mg/L
		E	E. coli	<1	MPN/100 mL
		L	ead acid extractable	<0.0010	mg/L
		L	ead dissolved	<0.00010	mg/L
		т	otal Coliforms	11	MPN/100 mL
		Z	Zinc acid extractable	0.0056	mg/L
		Z	Zinc dissolved	0.0039	mg/L
2200697	13/01/22 12.40	LOC 4-	-2021-1-13		
	13/01/22 Eli Reisman			Result:	Units:
Parameter Name	:	C	Conductivity	25.8	µS/cm
		С	Copper acid extractable	<0.0010	mg/L
769 817 770		est results indicated as coredited are outside	e the	Contact: Belinda V	/ilson
		cope of the laborator ccreditation	γs	DDI 03 941 5706	

Lab. No: Date Sampled: Sample D Time Sampled: Sample D Date Received: Sampled By:		Sample Description:		
Parameter Name	:	Copper dissolved	<0.00010	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	<1	MPN/100 mL
		Zinc acid extractable	0.0024	mg/L
		Zinc dissolved	0.00087	mg/L
2200698	13/01/22 10.30	LOC 5-2021-1-13		
	13/01/22 Eli Reisman		Result:	Units:
Parameter Name	:	Conductivity	25.2	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	<0.00010	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	1	MPN/100 mL
		Zinc acid extractable	0.0026	mg/L
		Zinc dissolved	0.00064	mg/L
2200734	14/01/22 12.20	LOC 1		
	14/01/22 Eli Reisman		Result:	Units:
Parameter Name	:	Conductivity	129	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00037	mg/L
		E. coli	1	MPN/100 mL
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769 817 770

Test results indicated as not accredited are outside the scope of the laboratory's accreditation Contact: Belinda Wilson

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:		Sample Description:		
Parameter Name	9:		Lead acid extractable	<0.0010	mg/L
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	41	MPN/100 mL
			Zinc acid extractable	0.0037	mg/L
			Zinc dissolved	0.0014	mg/L
2200735	14/01/22 13.30	LOC	2		
	14/01/22 Eli Reisman			Result:	Units:
Parameter Name	9:		Conductivity	87.2	µS/cm
			Copper acid extractable	0.0012	mg/L
			Copper dissolved	0.0010	mg/L
			E. coli	<1	MPN/100 mL
			Lead acid extractable	<0.0010	mg/L
			Lead dissolved	<0.00010	mg/L
			Total Coliforms	24	MPN/100 mL
			Zinc acid extractable	0.0081	mg/L
			Zinc dissolved	0.0034	mg/L
2200737	14/01/22 10.55 14/01/22	LOC	6		
	Eli Reisman			Result:	Units:
Parameter Name	9:		Conductivity	132	µS/cm
			Copper acid extractable	<0.0010	mg/L
			Copper dissolved	0.00052	mg/L
			E. coli	1	MPN/100 mL
			Lead acid extractable	<0.0010	mg/L
			Lead dissolved	<0.00010	mg/L

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Test results indicated as not accredited are outside the scope of the laboratory's accreditation Contact: Belinda Wilson

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:	Sample Description:	
Parameter Name	e:	Total Coliforms	36	MPN/100 mL
		Zinc acid extractable	0.0042	mg/L
		Zinc dissolved	0.0010	mg/L
2200738	14/01/22 09.25 14/01/22	LOC 7		
	Eli Reisman		Result:	Units:
Parameter Nam	e:	Conductivity	100	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00023	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	260	MPN/100 mL
		Zinc acid extractable	0.0024	mg/L
		Zinc dissolved	0.0010	mg/L



Contact: Belinda Wilson

Date Sampled: Time Sampled: Date Received: Sampled By:

Methods:

Method Reference
APHA 2510 B
APHA 3030E, 3125B (mod)
APHA 3125B (mod)
АРНА 9223 В
APHA 3030E, 3125B (mod)
APHA 3125B (mod)
АРНА 9223 В
APHA 3030E, 3125B (mod)
APHA 3125B (mod)

Comments.

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Testing was completed: 28/01/2022 3:29:13PM. For completion dates of individual analyses, please contact the laboratory.

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Nicholas Ohs Team Leader Microbiology Laboratory

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Belinda Wilson Laboratory Manager



Test results indicated as not accredited are outside the scope of the laboratory's accreditation Contact: Belinda Wilson

Three Waters Laboratory

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2/03/2022

Veronica Zefferino Christchurch City Council P O Box 73041 Christchurch 8154 Report Number: 220216003

Client Order No:

LABORATORY ANALYSIS REPORT

Lab. No:	Date Sampled Time Sampled Date Received Sampled By:	: Sample Description:		
2202836	16/02/22 11.30 16/02/22	LOC 4-2022-02-16		
	Eli Reisman		Result:	Units:
Parameter Nai	me:	Conductivity	240	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00019	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	<1	MPN/100 mL
		Zinc acid extractable	0.0027	mg/L
		Zinc dissolved	0.00079	mg/L
2202837	16/02/22 10.30	LOC 5-2022-02-16		
	16/02/22 Eli Reisman		Result:	Units:
Parameter Nai	me:	Conductivity	166	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00015	mg/L
817 770		est results indicated as not coredited are outside the cope of the laboratory's coreditation	Contact: Belinc DDI 03 941 5700	

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Name	:	E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	1600	MPN/100 mL
		Zinc acid extractable	0.0019	mg/L
		Zinc dissolved	0.0011	mg/L
2202838	16/02/22 14.00	LOC 6-2022-02-16		
	16/02/22 Eli Reisman		Result:	Units:
Parameter Name	:	Conductivity	81.0	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00090	mg/L
		E. coli	5	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	610	MPN/100 mL
		Zinc acid extractable	0.0068	mg/L
		Zinc dissolved	0.00099	mg/L
2202839	16/02/22 12.45	LOC 7-2022-02-16		
	16/02/22 Eli Reisman		Result:	Units:
Parameter Name	:	Conductivity	112	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00042	mg/L
		E. coli	5	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L



Contact: Belinda Wilson

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Name	:	Lead dissolved	<0.0001	0 mg/L
		Total Coliforms	83	MPN/100 mL
		Zinc acid extractable	0.0011	mg/L
		Zinc dissolved	0.00080	mg/L
2202840	16/02/22 12.50 16/02/22	Outlook basin Micro sample collected 17.02.22		
	Eli Reisman		Result:	Units:
Parameter Name	:	Conductivity	105	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00040	mg/L
		E. coli	390	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.0001	0 mg/L
		Total Coliforms	24000	MPN/100 mL
		Zinc acid extractable	0.0013	mg/L
		Zinc dissolved	0.00086	mg/L
2202885	17/02/22 13.00	LOC 1-2022-02-17		
_	17/02/22 Eli Reisman		Result:	Units:
Parameter Name	:	Conductivity	47.1	µS/cm
		Copper acid extractable	0.0015	mg/L
		Copper dissolved	0.00067	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	0.0011	mg/L
		Lead dissolved	<0.0001	0 mg/L
		Total Coliforms	23	MPN/100 mL



Contact: Belinda Wilson

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:	Sample Description:	
Parameter Nar	ne:	Zinc acid extractable	0.0048	mg/L
		Zinc dissolved	0.0015	mg/L
2202886 17/02/22 LOC 10.00 17/02/22 Eli Reisman		LOC 2-2022-02-17	Result:	Units:
Parameter Nar	ne:	Conductivity	38.2	μS/cm
		Copper acid extractable	0.0016	mg/L
		Copper dissolved	<0.00010	mg/L
		E. coli	1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	91	MPN/100 mL
		Zinc acid extractable	0.0036	mg/L
		Zinc dissolved	0.0011	mg/L
2202887	17/02/22 11.30	LOC 3-2022-02-17		
	17/02/22 Eli Reisman		Result:	Units:
Parameter Nar	ne:	Conductivity	69.0	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00018	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	17	MPN/100 mL
		Zinc acid extractable	0.0027	mg/L
		Zinc dissolved	0.0019	mg/L

769 817 770

Test results indicated as not accredited are outside the scope of the laboratory's accreditation Contact: Belinda Wilson

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
2202888	17/02/22 09.30 17/02/22 Eli Reisman	Awatea Basin	Result:	Units:
Parameter Na	me:	Conductivity	34.6	µS/cm
		Copper acid extractable	0.0019	mg/L
		Copper dissolved	0.0013	mg/L
		E. coli	320	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	>24000	MPN/100 mL
		Zinc acid extractable	0.040	mg/L
		Zinc dissolved	0.027	mg/L



Contact: Belinda Wilson

DDI 03 941 5706

Page 5 of 6

Date Sampled: Time Sampled: Date Received: Sampled By:

Methods:

	Method Reference
Conductivity	APHA 2510 B
Copper acid extractable	APHA 3030E, 3125B (mod)
Copper dissolved	APHA 3125B (mod)
E. coli	АРНА 9223 В
Lead acid extractable	APHA 3030E, 3125B (mod)
Lead dissolved	APHA 3125B (mod)
Total Coliforms	АРНА 9223 В
Zinc acid extractable	APHA 3030E, 3125B (mod)
Zinc dissolved	APHA 3125B (mod)

Comments.

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Results reported are related only to the items analysed at the laboratory.

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Testing was completed: 1/03/2022 12:43:54PM. For completion dates of individual analyses, please contact the laboratory.

11 the

Nicholas Ohs Team Leader Microbiology Laboratory

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Belinda Wilson Laboratory Manager



Test results indicated as not accredited are outside the scope of the laboratory's accreditation Contact: Belinda Wilson

Three Waters Laboratory

CHRISTCHURCH CITY COUNCIL

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28/03/2022

Veronica Zefferino Christchurch City Council P O Box 73041 Christchurch 8154 Report Number: 220309002

Client Order No:

LABORATORY ANALYSIS REPORT

Lab. No:	Date Sampled Time Sampled Date Receive Sampled By:	d: Sample Description: d:			
2204544	9/03/22 13.30 9/03/22	LOC4 - 2022-03-09			
	Eli Reisman		Result:	Units:	
Parameter Name:		Conductivity	263	µS/cm	
		Copper acid extractable	0.13	mg/L	
		Copper dissolved	0.00020	mg/L	
		E. coli	<10	MPN/100 mL	
		Lead acid extractable	0.17	mg/L	
		Lead dissolved	<0.00010	mg/L	
		Total Coliforms	41	MPN/100 mL	
		Zinc acid extractable	0.48	mg/L	
		Zinc dissolved	0.00072	mg/L	
2204545	9/03/22 12.30	LOC5 - 2022-03-09			
	9/03/22 Eli Reisman		Result:	Units:	
Parameter Name:		Conductivity	245	μS/cm	
		Copper acid extractable	0.089	mg/L	
		Copper dissolved	0.00018	mg/L	
817 770		Test results indicated as not accredited are outside the scope of the laboratory's accreditation		Contact: Belinda Wilson DDI 03 941 5706	

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Name	:	E. coli	<10	MPN/100 mL
		Lead acid extractable	0.085	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	10	MPN/100 mL
		Zinc acid extractable	0.31	mg/L
		Zinc dissolved	0.00034	mg/L
2204570	10/03/22 14:00	LOC1 - 2022-03-10		
	10/03/22 Eli Reisman		Result:	Units:
Parameter Name:		Conductivity	239	µS/cm
		Copper acid extractable	0.32	mg/L
		Copper dissolved	0.00043	mg/L
		E. coli	<10	MPN/100 mL
		Lead acid extractable	0.50	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	140	MPN/100 mL
		Zinc acid extractable	1.4	mg/L
		Zinc dissolved	0.00012	mg/L
2204571	10/03/22 12:15	LOC2 - 2022-03-10		
	10/03/22 Eli Reisman		Result:	Units:
Parameter Name	::	Conductivity	87.7	μS/cm
		Copper acid extractable	0.095	mg/L
		Copper dissolved	0.00077	mg/L
		E. coli	<10	MPN/100 mL
		Lead acid extractable	0.21	mg/L



Contact: Belinda Wilson

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Name	:	Lead dissolved	<0.00010	mg/L
		Total Coliforms	140	MPN/100 mL
		Zinc acid extractable	0.34	mg/L
		Zinc dissolved	0.00064	mg/L
2204572	10/03/22 13:30 10/03/22	LOC3 - 2022-03-10		
	Eli Reisman		Result:	Units:
Parameter Name	::	Conductivity	234	µS/cm
		Copper acid extractable	0.039	mg/L
		Copper dissolved	0.00058	mg/L
		E. coli	<10	MPN/100 mL
		Lead acid extractable	0.13	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	>24000	MPN/100 mL
		Zinc acid extractable	0.17	mg/L
		Zinc dissolved	0.010	mg/L
2204573	10/03/22 11:00	LOC6 - 2022-03-10		
	10/03/22 Eli Reisman		Result:	Units:
Parameter Name	:	Conductivity	113	µS/cm
		Copper acid extractable	0.020	mg/L
		Copper dissolved	0.00050	mg/L
		E. coli	20	MPN/100 mL
		Lead acid extractable	0.022	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	2600	MPN/100 mL

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Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Nar	ne:	Zinc acid extractable	0.063	mg/L
		Zinc dissolved	<0.00010	mg/L
2204574	10/03/22 10:00 10/03/22	LOC7 - 2022-03-10		
	Eli Reisman		Result:	Units:
Parameter Nar	ne:	Conductivity	104	µS/cm
		Copper acid extractable	0.0063	mg/L
		Copper dissolved	0.00040	mg/L
		E. coli	<10	MPN/100 mL
		Lead acid extractable	0.0061	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	190	MPN/100 mL
		Zinc acid extractable	0.018	mg/L
		Zinc dissolved	0.00034	mg/L



Test results indicated as not accredited are outside the scope of the laboratory's accreditation Contact: Belinda Wilson

DDI 03 941 5706

Page 4 of 5

Date Sampled: Time Sampled: Date Received: Sampled By:

Methods:

	Method Reference
Conductivity	APHA 2510 B
Copper acid extractable	APHA 3030E, 3125B (mod)
Copper dissolved	APHA 3125B (mod)
E. coli	АРНА 9223 В
Lead acid extractable	APHA 3030E, 3125B (mod)
Lead dissolved	APHA 3125B (mod)
Total Coliforms	АРНА 9223 В
Zinc acid extractable	APHA 3030E, 3125B (mod)
Zinc dissolved	APHA 3125B (mod)

Comments.

Symbols: < means less than, > means greater than.

Units of mg/L are equivalent to g/m3 and ppm.

APHA: American Public Health Association 23rd Edition.

(S) = Subcontracted analysis.

(*) = Not IANZ accrediated for this method.

e = Estimated No. CFU/100ml.

Results reported are related only to the items analysed at the laboratory.

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Testing was completed: 25/03/2022 2:59:24pm. For completion dates of individual analyses, please contact the laboratory.

Belinda Wilson Laboratory Manager

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Simon Armstrong Drinking Water Sampling Technician

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Test results indicated as not accredited are outside the scope of the laboratory's accreditation Contact: Belinda Wilson

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14/04/2022

Veronica Zefferino Christchurch City Council P O Box 73041 Christchurch 8154 Report Number: 220405003

Client Order No:

LABORATORY ANALYSIS REPORT

Lab. No:	Date Sampled: Time Sampled Date Received Sampled By:	: Sample Description:		
2205971	5/04/22 09.00 5/04/22	LOC 4 - 2022.4.5		
	Eli Reisman		Result:	Units:
Parameter Nar	ne:	Conductivity	257	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	<0.00010	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	24	MPN/100 mL
		Zinc acid extractable	0.0034	mg/L
		Zinc dissolved	0.00060	mg/L
2205972	5/04/22 10.00	LOC 5 - 2022.4.5		
	5/04/22 Eli Reisman		Result:	Units:
Parameter Nar	ne:	Conductivity	246	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	<0.00010	mg/L
817 770		est results indicated as not coredited are outside the sope of the laboratory's coreditation	Contact: Belind DDI 03 941 5706	

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Name	:	E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	11	MPN/100 mL
		Zinc acid extractable	0.0033	mg/L
		Zinc dissolved	0.0013	mg/L
2205973	5/04/22 13.30	LOC 6 - 2022.4.5		
	5/04/22 Eli Reisman		Result:	Units:
Parameter Name	:	Conductivity	111	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00041	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	32	MPN/100 mL
		Zinc acid extractable	0.0011	mg/L
		Zinc dissolved	0.00083	mg/L
2205974	5/04/22 12.45	LOC 7 - 2022.4.5		
	5/04/22 Eli Reisman		Result:	Units:
Parameter Name	:	Conductivity	106	μS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00025	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L



Test results indicated as not accredited are outside the scope of the laboratory's accreditation Contact: Belinda Wilson

Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Name	e:	Lead dissolved	<0.00010	mg/L
		Total Coliforms	13	MPN/100 mL
		Zinc acid extractable	0.0020	mg/L
		Zinc dissolved	0.00062	mg/L
2206032	6/04/22 13.00 6/04/22	LOC 1 - 2022.4.6		
	Eli Reisman		Result:	Units:
Parameter Name	e:	Conductivity	140	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00043	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	2	MPN/100 mL
		Zinc acid extractable	0.0067	mg/L
		Zinc dissolved	0.0013	mg/L
2206033	6/04/22 11.30	LOC 2 - 2022.4.6		
	6/04/22 Eli Reisman		Result:	Units:
Parameter Name	e:	Conductivity	87.7	μS/cm
		Copper acid extractable	0.0013	mg/L
		Copper dissolved	0.00099	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	19	MPN/100 mL

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Lab. No:	Date Sampled: Time Sampled: Date Received: Sampled By:	Sample Description:		
Parameter Nar	ne:	Zinc acid extractable	0.0085	mg/L
		Zinc dissolved	0.0028	mg/L
2206034	6/04/22 09.30 6/04/22	LOC 3 - 2022.4.6		
	Eli Reisman		Result:	Units:
Parameter Nar	ne:	Conductivity	148	µS/cm
		Copper acid extractable	<0.0010	mg/L
		Copper dissolved	0.00030	mg/L
		E. coli	<1	MPN/100 mL
		Lead acid extractable	<0.0010	mg/L
		Lead dissolved	<0.00010	mg/L
		Total Coliforms	9	MPN/100 mL
		Zinc acid extractable	0.0059	mg/L
		Zinc dissolved	0.0059	mg/L



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Date Sampled: Time Sampled: Date Received: Sampled By:

Methods:

	Method Reference
Conductivity	APHA 2510 B
Copper acid extractable	APHA 3030E, 3125B (mod)
Copper dissolved	APHA 3125B (mod)
E. coli	АРНА 9223 В
Lead acid extractable	APHA 3030E, 3125B (mod)
Lead dissolved	APHA 3125B (mod)
Total Coliforms	АРНА 9223 В
Zinc acid extractable	APHA 3030E, 3125B (mod)
Zinc dissolved	APHA 3125B (mod)

Comments.

Symbols: < means less than, > means greater than.

Units of mg/L are equivalent to g/m3 and ppm.

APHA: American Public Health Association 23rd Edition.

(S) = Subcontracted analysis.

(*) = Not IANZ accrediated for this method.

e = Estimated No. CFU/100ml.

Results reported are related only to the items analysed at the laboratory.

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Testing was completed: 13/04/2022 1:00:26pm. For completion dates of individual analyses, please contact the laboratory. The samples were analysed as received.

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Nicholas Ohs Team Leader Microbiology Laboratory

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Belinda Wilson Laboratory Manager



Test results indicated as not accredited are outside the scope of the laboratory's accreditation Contact: Belinda Wilson



Laboratory Analysis Report

Client Details:	Eli Reisman 2/2 Hazeldean Road Christchurch	Report Number: Report Date: Purchase Order:	220504007 24.05.2022 60649177/3.2.3
Sample Name: Lab ID: Sampled By:	LOC 4 - 22.5.4 2207366 Eli Reisman	Date/Time Sampled: Date Received:	04.05.2022 /10.00 04.05.2022
	Test	Result	Unit
	Conductivity	239	μS/cm
	Copper acid extractable	<0.0010	mg/L
	Copper dissolved	<0.00010	mg/L
	E. coli	<1	MPN/100 mL
	Lead acid extractable	<0.0010	mg/L
	Lead dissolved	<0.00010	mg/L
	Total Coliforms	730	MPN/100 mL
	Zinc acid extractable	0.030	mg/L
	Zinc dissolved	0.0012	mg/L
Sample Name: Lab ID: Sampled By:	LOC 5 - 22.5.4 2207367 Eli Reisman	Date/Time Sampled: Date Received:	04.05.2022 /11.30 04.05.2022
	Test	Result	Unit
	Test Conductivity	Result 239	<mark>Unit</mark> μS/cm
	Conductivity	239	µS/cm
	Conductivity Copper acid extractable	239 <0.0010	μS/cm mg/L
	Conductivity Copper acid extractable Copper dissolved	239 <0.0010 <0.00010	μS/cm mg/L mg/L
	Conductivity Copper acid extractable Copper dissolved E. coli	239 <0.0010 <0.00010 <1	μS/cm mg/L mg/L MPN/100 mL
	Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable	239 <0.0010 <0.00010 <1 <0.0010	μS/cm mg/L mg/L MPN/100 mL mg/L
	Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved	239 <0.0010 <0.00010 <1 <0.0010 <0.00010	μS/cm mg/L mg/L MPN/100 mL mg/L mg/L
	Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms	239 <0.0010 <0.00010 <1 <0.0010 <0.00010 160	μS/cm mg/L mg/L MPN/100 mL mg/L mg/L MPN/100 mL
	Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms Zinc acid extractable	239 <0.0010 <0.00010 <1 <0.0010 <0.00010 160 0.0020	μS/cm mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L
Sample Name: Lab ID: Sampled By:	Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms Zinc acid extractable	239 <0.0010 <0.00010 <1 <0.0010 <0.00010 160 0.0020	μS/cm mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L
Lab ID:	Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms Zinc acid extractable Zinc dissolved LOC 6 - 22.5.4 2207368	239 <0.0010 <0.00010 <1 <0.0010 <0.00010 160 0.0020 0.0010 Date/Time Sampled:	μS/cm mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L mg/L mg/L 04.05.2022 /12.30
Lab ID:	Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms Zinc acid extractable Zinc dissolved LOC 6 - 22.5.4 2207368 Eli Reisman Test	239 <0.0010 <0.00010 <1 <0.0010 <0.00010 160 0.0020 0.0010 Date/Time Sampled: Date Received:	μS/cm mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L mg/L mg/L 04.05.2022 /12.30 04.05.2022 Unit
Lab ID:	Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms Zinc acid extractable Zinc dissolved Zinc dissolved LOC 6 - 22.5.4 2207368 Eli Reisman Test Conductivity	239 <0.0010 <0.00010 <1 <0.0010 <0.00010 160 0.0020 0.0020 0.0010 Date/Time Sampled: Date Received: Result 134	μS/cm mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L mg/L 04.05.2022 /12.30 04.05.2022 Unit μS/cm
Lab ID:	Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms Zinc acid extractable Zinc acid extractable Zinc dissolved LOC 6 - 22.5.4 2207368 Eli Reisman Test Conductivity Copper acid extractable	239 <0.0010 <0.00010 <1 <0.0010 <0.00010 160 0.0020 0.0020 0.0010 Date/Time Sampled: Date Received: Result 134 <0.0010	μS/cm mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L MPN/100 mL mg/L 04.05.2022 /12.30 04.05.2022 Unit μS/cm mg/L
Lab ID:	Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms Zinc acid extractable Zinc dissolved Zinc dissolved LOC 6 - 22.5.4 2207368 Eli Reisman Test Conductivity	239 <0.0010 <0.00010 <1 <0.0010 <0.00010 160 0.0020 0.0020 0.0010 Date/Time Sampled: Date Received: Result 134	μS/cm mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L mg/L 04.05.2022 /12.30 04.05.2022 Unit μS/cm

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Sample Name: Lab ID: Sampled By:	LOC 6 - 22.5.4 2207368 Eli Reisman	Date/Time Sampled: Date Received:	04.05.2022 /12.30 04.05.2022
	Test	Result	Unit
	Lead acid extractable	<0.0010	mg/L
	Lead dissolved	<0.00010	mg/L
	Total Coliforms	16	MPN/100 mL
	Zinc acid extractable	0.0021	mg/L
	Zinc dissolved	0.00068	mg/L
Sample Name: Lab ID: Sampled By:	LOC 7 - 22.5.4 2207369 Eli Reisman	Date/Time Sampled: Date Received:	04.05.2022 /13.45 04.05.2022
	Test	Result	Unit
	Conductivity	127	µS/cm
	Copper acid extractable	<0.0010	mg/L
	Copper dissolved	0.00025	mg/L
	E. coli	<1	MPN/100 mL
	Lead acid extractable	<0.0010	mg/L
	Lead dissolved	<0.00010	mg/L
	Total Coliforms	5	MPN/100 mL
	Zinc acid extractable	0.0018	mg/L
	Zinc dissolved	0.0013	mg/L

Test Method References

APHA 2510 B
APHA 3030E, 3125B (mod)
APHA 3125B (mod)
APHA 9223 B
APHA 3030E, 3125B (mod)
APHA 3125B (mod)
APHA 9223 B
APHA 3030E, 3125B (mod)
APHA 3125B (mod)

Comments

- This Laboratory is accredited by International Accreditation New Zealand (IANZ). The reported tests have been
- performed in accordance with its terms of accreditation, with the exception of tests marked *, which are not accredited.
 Samples were collected by the client and tested by the laboratory, as received. Results reported relate only to the items analysed by the laboratory.
- This report must not be reproduced, except in full, without written consent.
- Symbols used: (S) = subcontracted analysis, (*) = not IANZ accredited for this method, e = estimated No. CFU/100 mL
- Testing was completed: 20/05/2022 12:59:33pm. For completion dates of individual analyses, please contact the lab.

Simon Armstrong Drinking Water Sampling Technician

C.J. Hearly



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Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Craig Henderson Team Leader Chemistry Laboratory Suzie Yates Laboratory Technician



Laboratory Analysis Report

Client Details:	Eli Reisman 2/2 Hazeldean Road Christchurch	Report Number: Report Date: Purchase Order:	220505004 24.05.2022 60649177/3.2.3
Sample Name: Lab ID: Sampled By:	LOC - 1 - 22.5.5 2207449 Eli Reisman	Date/Time Sampled: Date Received:	05.05.2022 /11.30 05.05.2022
	Test	Result	Unit
	Conductivity	237	μS/cm
	Copper acid extractable	<0.0010	mg/L
	Copper dissolved	0.00032	mg/L
	E. coli	<1	MPN/100 mL
	Lead acid extractable	<0.0010	mg/L
	Lead dissolved	<0.00010	mg/L
	Total Coliforms	23	MPN/100 mL
	Zinc acid extractable	0.0020	mg/L
	Zinc dissolved	0.0013	mg/L
Sample Name: Lab ID: Sampled By:	LOC - 2 - 22.5.5 2207450 Eli Reisman	Date/Time Sampled: Date Received:	05.05.2022 /10.00 05.05.2022
		Dato Noboli da.	
	Test	Result	Unit
	Test	Result	Unit
	Test Conductivity	Result 97.3	Unit μS/cm
	Test Conductivity Copper acid extractable	Result 97.3 <0.0010	<mark>Unit</mark> μS/cm mg/L
	Test Conductivity Copper acid extractable Copper dissolved	Result 97.3 <0.0010	Unit μS/cm mg/L mg/L
	Test Conductivity Copper acid extractable Copper dissolved E. coli	Result 97.3 <0.0010	Unit µS/cm mg/L mg/L MPN/100 mL
	Test Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable	Result 97.3 <0.0010	Unit µS/cm mg/L mg/L MPN/100 mL mg/L
	Test Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved	Result 97.3 <0.0010	Unit µS/cm mg/L mg/L MPN/100 mL mg/L mg/L
	TestConductivityCopper acid extractableCopper dissolvedE. coliLead acid extractableLead dissolvedTotal Coliforms	Result 97.3 <0.0010	Unit μS/cm mg/L mg/L MPN/100 mL mg/L Mpl Mpl
	TestConductivityCopper acid extractableCopper dissolvedE. coliLead acid extractableLead dissolvedTotal ColiformsZinc acid extractable	Result 97.3 <0.0010	Unit μS/cm mg/L mg/L MPN/100 mL mg/L MpN/100 mL mg/L mg/L mg/L mg/L mg/L mg/L MPN/100 mL mg/L
Sample Name:	Test Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms Zinc acid extractable Zinc dissolved Lead - 22.5.5	Result 97.3 <0.0010	Unit μS/cm mg/L mg/L MPN/100 mL mg/L
Sample Name: Lab ID:	Test Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms Zinc acid extractable Zinc dissolved LOC - 3 - 22.5.5 2207451	Result 97.3 <0.0010	Unit μS/cm mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L mg/L mg/L 05.05.2022 /13.30
Sample Name:	Test Conductivity Copper acid extractable Copper dissolved E. coli Lead acid extractable Lead dissolved Total Coliforms Zinc acid extractable Zinc dissolved Lead - 22.5.5	Result 97.3 <0.0010	Unit μS/cm mg/L mg/L MPN/100 mL mg/L
Sample Name: Lab ID:	TestConductivityCopper acid extractableCopper dissolvedE. coliLead acid extractableLead dissolvedTotal ColiformsZinc acid extractableZinc dissolvedZinc dissolvedLOC - 3 - 22.5.52207451Eli ReismanTest	Result 97.3 <0.0010	Unit μS/cm mg/L mg/L MPN/100 mL mg/L Mg/L Mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L 05.05.2022 /13.30 05.05.2022 Unit
Sample Name: Lab ID:	TestConductivityCopper acid extractableCopper dissolvedE. coliLead acid extractableLead dissolvedTotal ColiformsZinc acid extractableZinc dissolvedLOC - 3 - 22.5.52207451Eli ReismanTestConductivity	Result 97.3 <0.0010	Unit μS/cm mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L MPN/100 mL mg/L MPN/100 mL mg/L MPN/200 mL mg/L MPN/100 mL mg/L Unit μS/cm
Sample Name: Lab ID:	TestConductivityCopper acid extractableCopper dissolvedE. coliLead acid extractableLead dissolvedTotal ColiformsZinc acid extractableZinc dissolvedLOC - 3 - 22.5.52207451Eli ReismanTestConductivityCopper acid extractable	Result 97.3 <0.0010	Unit μS/cm mg/L mg/L MPN/100 mL mg/L Mg/L mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L MPN/200 mL mg/L MPN/100 mL mg/L Unit μS/cm mg/L
Sample Name: Lab ID:	TestConductivityCopper acid extractableCopper dissolvedE. coliLead acid extractableLead dissolvedTotal ColiformsZinc acid extractableZinc dissolvedLOC - 3 - 22.5.52207451Eli ReismanTestConductivity	Result 97.3 <0.0010	Unit μS/cm mg/L mg/L MPN/100 mL mg/L MPN/100 mL mg/L MPN/100 mL mg/L MPN/100 mL mg/L MPN/200 mL mg/L MPN/100 mL mg/L Unit μS/cm

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Report Number: 220505004

Sample Name: Lab ID: Sampled By:	LOC - 3 - 22.5.5 2207451 Eli Reisman	Date/Time Sampled: Date Received:	05.05.2022 /13.30 05.05.2022	
	Test	Result	Unit	
	Lead acid extractable	<0.0010	mg/L	
	Lead dissolved	<0.00010	mg/L	
	Total Coliforms	2	MPN/100 mL	
	Zinc acid extractable	0.0052	mg/L	
	Zinc dissolved	0.0034	mg/L	

Test Method References

Conductivity	APHA 2510 B	
Copper acid extractable	APHA 3030E, 3125B (mod)	
Copper dissolved	APHA 3125B (mod)	
E. coli	APHA 9223 B	
Lead acid extractable	APHA 3030E, 3125B (mod)	
Lead dissolved	APHA 3125B (mod)	
Total Coliforms	APHA 9223 B	
Zinc acid extractable	APHA 3030E, 3125B (mod)	
Zinc dissolved	APHA 3125B (mod)	

Comments

- This Laboratory is accredited by International Accreditation New Zealand (IANZ). The reported tests have been performed in accordance with its terms of accreditation, with the exception of tests marked *, which are not accredited.
- Samples were collected by the client and tested by the laboratory, as received. Results reported relate only to the items analysed by the laboratory.
- This report must not be reproduced, except in full, without written consent.
- Symbols used: (S) = subcontracted analysis, (*) = not IANZ accredited for this method, e = estimated No. CFU/100 mL
- Testing was completed: 20/05/2022 1:00:18pm. For completion dates of individual analyses, please contact the lab.

Simon Armstrong Drinking Water Sampling Technician

C.J. Hearbarn

Craig Henderson Team Leader Chemistry Laboratory

Suzie Yates Laboratory Technician

769 817 770



Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Appendix F

Survey Report

Coordinate System: NZGD2000 Circuit: Mount Pleasant 2000 Datum: CDD Origin of levels: EHCH (14 Jan 2018)

Location	Easting (m)	Northing (m)	Elevation (m)
AWATEA BASIN GROUND	385038.646	803928.278	27.929
AWATEA BASIN TOP OF CASING	385038.646	803928.278	27.975
AWATEA BASIN TELEMETRY	385025.636	803944.439	29.365
KAKAPO BASIN GROUND	384861.478	806601.497	33.108
KAKAPO BASIN TOP OF CASING	384861.478	806601.497	33.145
KAKAPO BASIN TELEMETRY	384861.061	806589.633	33.944
OUTLOOK BASIN GROUND	387922.261	814121.779	27.203
OUTLOOK BASIN TOP OF CASING	387922.261	814121.779	27.232
OUTLOOK BASIN TELEMETRY	387922.711	814130.141	28.178
WELL 1 GROUND	385097.307	803519.956	30.615
WELL 1 TOP OF CASING	385097.307	803519.956	31.096
WELL 2 GROUND	385158.736	803843.788	30.725
WELL 2 TOP OF CASING	385158.736	803843.788	31.213
WELL 3 GROUND	384931.61	803886.268	30.816
WELL 3 TOP OF CASING	384931.61	803886.268	31.282
WELL 4 GROUND	384786.008	806629.867	34.807
WELL 4 TOP OF CASING	384786.008	806629.867	35.162
WELL 5 GROUND	384900.015	806608.725	34.635
WELL 5 TOP OF CASING	384900.015	806608.725	35.106
WELL 6 GROUND	387938.06	814123.516	28.329
WELL 6 TOP OF CASING	387938.06	814123.516	28.765
WELL 7 GROUND	387878.516	814142.755	28.509
WELL 7 TOP OF CASING	387878.516	814142.755	28.989