ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1925871**	Page	: 1 of 3
Client	: **PF FORMATION**	Laboratory	: Environmental Division Sydney
Contact	: Josh	Contact	: Customer Services ES
Address	: 1 Patrica Fay Drive Maroota 2756	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: ----	Date Samples Received	: 14-Aug-2019 19:10
Order number	: ----	Date Analysis Commenced	: 15-Aug-2019
C-O-C number	: ----	Issue Date	: 19-Aug-2019 14:14
Sampler	: M. Mass - South East Environmental		
Site	: ----		
Quote number	: ----		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

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^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EN055: Ionic Balance out of acceptable limits due to analytes not quantified in this report.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Pit 5	Pit 4 - MW1	Pit 4 - MW2	Pit 4 - MW3	----
				Client sampling date / time	14-Aug-2019 00:00	14-Aug-2019 00:00	14-Aug-2019 00:00	14-Aug-2019 00:00	----
Compound	CAS Number	LOR	Unit		ES1925871-001	ES1925871-002	ES1925871-003	ES1925871-004	--------
					Result	Result	Result	Result	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		4.93	4.58	4.27	4.11	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		218	160	273	177	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		108	56	156	85	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		2	<1	<1	<1	----
Total Alkalinity as CaCO3	----	1	mg/L		2	<1	<1	<1	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		3	7	5	2	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		51	36	68	40	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		<1	<1	<1	<1	----
Magnesium	7439-95-4	1	mg/L		2	2	4	2	----
Sodium	7440-23-5	1	mg/L		23	18	33	17	----
Potassium	7440-09-7	1	mg/L		<1	1	<1	<1	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		1.54	1.16	2.02	1.17	----
ø Total Cations	----	0.01	meq/L		1.16	0.97	1.76	0.90	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1926040**	Page	: 1 of 4
Client	: **PF FORMATION**	Laboratory	: Environmental Division Sydney
Contact	: Josh	Contact	: Customer Services ES
Address	: 1 Patrica Fay Drive Maroota 2756	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: ----	Date Samples Received	: 15-Aug-2019 15:30
Order number	: ----	Date Analysis Commenced	: 15-Aug-2019
C-O-C number	: ----	Issue Date	: 21-Aug-2019 14:39
Sampler	: M.Mass / L. Steadson S.E. Enviro		
Site	: ----		
Quote number	: ----		
No. of samples received	: 10		
No. of samples analysed	: 10		

Accreditation No. 825
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Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	PFLHITCHMW1	PF214MW1	PF167MW4D	PF166MW2S	4378ONRPF1
				Client sampling date / time	15-Aug-2019 00:00	15-Aug-2019 00:00	15-Aug-2019 00:00	15-Aug-2019 00:00	15-Aug-2019 00:00
Compound	CAS Number	LOR	Unit		ES1926040-001	ES1926040-002	ES1926040-003	ES1926040-004	ES1926040-005
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.11	4.84	5.65	6.15	5.76
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		284	202	149	168	156
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		172	108	92	----	79
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		9	<1	7	4	12
Total Alkalinity as CaCO3	----	1	mg/L		9	<1	7	4	12
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		6	<1	3	3	2
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		67	37	9	36	32
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		<1	<1	2	3	<1
Magnesium	7439-95-4	1	mg/L		4	6	2	3	2
Sodium	7440-23-5	1	mg/L		38	17	21	18	16
Potassium	7440-09-7	1	mg/L		<1	<1	<1	2	2
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		2.19	1.04	0.46	1.16	1.18
ø Total Cations	----	0.01	meq/L		1.98	1.23	1.18	1.23	0.91
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	4378ONRPF2	LOT198BH01	PF156MW2D	LOT198BH02	PF166MW3D
			Client sampling date / time	15-Aug-2019 00:00	15-Aug-2019 00:00	15-Aug-2019 00:00	15-Aug-2019 00:00	15-Aug-2019 00:00
Compound	CAS Number	LOR	Unit	ES1926040-006	ES1926040-007	ES1926040-008	ES1926040-009	ES1926040-010
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	5.84	5.43	5.76	5.54	4.98
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	72	169	156	152	250
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	38	91	----	82	130
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	11	5	12	5	<1
Total Alkalinity as CaCO3	----	1	mg/L	11	5	12	5	<1
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	3	8	3	3	2
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	9	36	29	35	57
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	1	1	4	<1	1
Magnesium	7439-95-4	1	mg/L	<1	3	2	3	4
Sodium	7440-23-5	1	mg/L	8	20	18	19	31
Potassium	7440-09-7	1	mg/L	<1	1	2	<1	<1
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	0.54	1.28	1.12	1.15	1.65
ø Total Cations	----	0.01	meq/L	0.40	1.19	1.20	1.07	1.73
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	43	<5	<5

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1928006**	Page	: 1 of 5
Client	: **PF FORMATION**	Laboratory	: Environmental Division Sydney
Contact	: Josh	Contact	: Customer Services ES
Address	: 1 Patrica Fay Drive Maroota 2756	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: ----	Date Samples Received	: 02-Sep-2019 16:30
Order number	: ----	Date Analysis Commenced	: 02-Sep-2019
C-O-C number	: ----	Issue Date	: 06-Sep-2019 15:20
Sampler	: Melissa Mass		
Site	: ----		
Quote number	: ----		
No. of samples received	: 9		
No. of samples analysed	: 9		

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Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	PF 167 MW-1	PF 166 MW-20	Pit 4	Lot 198	Maroota Lodge Dam 1
			Client sampling date / time	02-Sep-2019 00:00	02-Sep-2019 00:00	02-Sep-2019 00:00	02-Sep-2019 00:00	02-Sep-2019 00:00
Compound	CAS Number	LOR	Unit	ES1928006-001	ES1928006-002	ES1928006-003	ES1928006-004	ES1928006-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	5.20	5.44	5.90	5.86	5.64
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	262	152	434	224	65
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	137	77	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	----	----	13	18	30
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	8	17	8	5
Total Alkalinity as CaCO3	----	1	mg/L	4	8	17	8	5
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	10	1	76	16	7
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	54	32	47	46	12
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	2	3	27	6	2
Magnesium	7439-95-4	1	mg/L	3	2	12	4	1
Sodium	7440-23-5	1	mg/L	16	18	26	25	7
Potassium	7440-09-7	1	mg/L	22	1	10	2	2
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	----	----	----	----	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	----	----	----	0.4
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	----	----	----	0.4
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	----	----	----	0.02
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	1.81	1.08	3.25	1.79	0.58
ø Total Cations	----	0.01	meq/L	1.60	1.12	3.72	1.77	0.54
ø Ionic Balance	----	0.01	%	----	----	6.80	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	PF 167 MW-1	PF 166 MW-20	Pit 4	Lot 198	Maroota Lodge Dam 1
				Client sampling date / time	02-Sep-2019 00:00	02-Sep-2019 00:00	02-Sep-2019 00:00	02-Sep-2019 00:00	02-Sep-2019 00:00
Compound	CAS Number	LOR	Unit		ES1928006-001	ES1928006-002	ES1928006-003	ES1928006-004	ES1928006-005
					Result	Result	Result	Result	Result
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Maroota Lodge Dam 2	Por 167 dam	CW dam	Hitchcock Rd	----
				Client sampling date / time	02-Sep-2019 00:00	02-Sep-2019 00:00	02-Sep-2019 00:00	02-Sep-2019 00:00	----
Compound	CAS Number	LOR	Unit		ES1928006-006	ES1928006-007	ES1928006-008	ES1928006-009	--------
					Result	Result	Result	Result	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		6.47	5.52	5.26	5.04	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		352	222	86	282	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		18	14	11	9	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		71	4	<1	<1	----
Total Alkalinity as CaCO3	----	1	mg/L		71	4	<1	<1	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		35	20	4	6	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		30	44	20	68	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		26	6	1	2	----
Magnesium	7439-95-4	1	mg/L		9	3	2	7	----
Sodium	7440-23-5	1	mg/L		18	24	9	33	----
Potassium	7440-09-7	1	mg/L		17	5	2	2	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		0.54	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		1.2	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		1.7	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.94	----	----	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		2.99	1.74	0.65	2.04	----
ø Total Cations	----	0.01	meq/L		3.26	1.72	0.66	2.16	----
ø Ionic Balance	----	0.01	%		4.20	----	----	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1931252**	Page	: 1 of 3
Client	: **PF FORMATION**	Laboratory	: Environmental Division Sydney
Contact	: Josh	Contact	: Customer Services ES
Address	: 1 Patrica Fay Drive Maroota 2756	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: ----	Date Samples Received	: 25-Sep-2019 16:30
Order number	: ----	Date Analysis Commenced	: 25-Sep-2019
C-O-C number	: ----	Issue Date	: 01-Oct-2019 11:31
Sampler	: Melissa Mass		
Site	: ----		
Quote number	: ----		
No. of samples received	: 2		
No. of samples analysed	: 2		

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~ = Indicates an estimated value.

- TDS by method EA-015 may bias high for sample 1 due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Maroota Lodge Dam 1	Maroota Lodge Dam 2	----	----	----
				Client sampling date / time	25-Sep-2019 00:00	25-Sep-2019 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1931252-001	ES1931252-002	--------	--------	--------
					Result	Result	----	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**6.04**	**6.54**	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**64**	**310**	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**84**	**190**	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**8**	**60**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**8**	**60**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**4**	**33**	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**9**	**25**	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**3**	**21**	----	----	----
Magnesium	7439-95-4	1	mg/L		**1**	**8**	----	----	----
Sodium	7440-23-5	1	mg/L		**6**	**15**	----	----	----
Potassium	7440-09-7	1	mg/L		**2**	**14**	----	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**0.50**	**2.59**	----	----	----
ø Total Cations	----	0.01	meq/L		**0.54**	**2.72**	----	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1934491**	Page	: 1 of 3
Client	: **PF FORMATION**	Laboratory	: Environmental Division Sydney
Contact	: Josh	Contact	: Customer Services ES
Address	: 1 Patrica Fay Drive Maroota 2756	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: Maroota Lodge	Date Samples Received	: 21-Oct-2019 14:15
Order number	: ----	Date Analysis Commenced	: 21-Oct-2019
C-O-C number	: ----	Issue Date	: 25-Oct-2019 14:17
Sampler	: Melissa Mass		
Site	: ----		
Quote number	: ----		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

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

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

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

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

- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Dam 1	Dam 2	----	----	----
			Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1934491-001	ES1934491-002	--------	--------	--------
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.08**	**7.21**	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**72**	**327**	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**15**	**14**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**8**	**67**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**8**	**67**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**3**	**32**	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**11**	**30**	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**2**	**19**	----	----	----
Magnesium	7439-95-4	1	mg/L	**1**	**8**	----	----	----
Sodium	7440-23-5	1	mg/L	**8**	**18**	----	----	----
Potassium	7440-09-7	1	mg/L	**2**	**19**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.4**	**2.0**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.4**	**2.0**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.03**	**0.86**	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**0.53**	**2.85**	----	----	----
ø Total Cations	----	0.01	meq/L	**0.58**	**2.88**	----	----	----
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	----	----	----