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Posted		
Faxed		
Emailed	X	Hbrazil@ingeniaholidays.com.au
Courier		
By Hand		

Contact: Trystan Richards
Our Ref: P2108127JC46V01
Pages: 4 + Attachments
cc. Andrew Norris

08 January, 2025

Ingenia
Attention: Harry Brazil
Suite 1, 257 Gympie Road
Kedron, QLD - 4031.

Dear Harry,

RE: MERRY BEACH CARAVAN PARK, MONTHLY REVIEW OF LABORATORY RESULTS – SEWAGE TREATMENT AND REUSE SYSTEM – DECEMBER 2024

Further to recommendations in Merry Beach Annual Monitoring Report find below the monthly review of monitoring data for December 02 to December 30, 2024.

1. Collection of water samples

Water samples for selected monitoring points were collected on the following dates:

- December 06 – Eff1 and influent.
- December 18 – Eff1.
- December 30 – Eff1 and influent.
- December 30 - Drinking water samples from Beach Front Tank, Creek Tanks, Main Tank and Top Toilet Tanks were sampled.

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MARTENS & ASSOCIATES P/L
ABN 85 070 240 890 ACN 070 240 890

2. Review of monitoring results against POEO Act Environmental Protection License 5888 conditions

1. Effluent 1 (Eff1) (Monitoring Point 2)

Laboratory results were reviewed against License 5888 conditions for Eff1 (Monitoring Point 2), results are summarised in Table 1. Conclusions regarding Eff1 are:

- Laboratory results for Eff1 oil and grease (<2.0 mg/L) for 6 December 2024 exceeded 50 percentile concentration limit licence condition (1.5 mg/L). Laboratory comments indicate this was due to primary sample extract/digestate dilution and/or insufficient sample for analysis.
- Laboratory results for Eff1 oil and grease (<5.0 mg/L) for 30 December 2024 exceeded 100 percentile concentration limit (5.0 mg/L). Discussions with laboratory staff indicated incorrect testing was specified on COC. We recommend testing for low level oil and grease.
- Average laboratory results for Eff1 indicate licence conditions were not exceeded for December. However, license conditions (6.5-8.5) were exceeded for pH (5.90) during 18 December 2024 sampling event.
- Laboratory results for Eff1 indicate license conditions were exceeded for TSS during December.
- MA recommends contacting the service contractor for inspection of the system to determine observed exceedances in Table 1.
- All other laboratory results for Eff1 were within license conditions during November.

Table 1: Review of monitoring results for Eff1 against License 5888 conditions.

Chemical	Units	License 5888 Conditions – Eff1 (Point 2)			Sampling Date 2024	
		50 percentile concentration limit	90 percentile concentration limit	100 percentile concentration limit	Average December Results	Complies?
BOD	mg/L		20	30	6.7	✓
Faecal coliforms (FC)	CFU/100 mL	25		150	2.3	✓
Nitrogen (total)	mg/L		10	15	3.77	✓
Oil and grease	mg/L	1.5		5	<5	✘
pH	pH units			6.5 – 8.5	6.72	✓
Phosphorous (total)	mg/L	5.5		10	0.39	✓
Total suspended solids (TSS)	mg/L		10	20	30	✘

3. Reuse Effluent (Eff2) (Monitoring Point 6)

Laboratory results were reviewed against License 5888 conditions for Eff2 (Monitoring Point 6). Conclusions regarding Eff2 are:

- Laboratory results for Eff2 (Monitoring Point 6) indicate no sample was collected.

From discussion with site operators MA understands the following:

- Chlorine dosing has been automated.
- All effluent is being pumped into a sewage tanker and taken offsite by a licensed contractor.
- Anoxic tank taken offline and used for storage (200kL).
- No irrigation fields or reuse are currently in use. Irrigation fields will be used once consistent compliance results and approval are achieved from NSW EPA.
- Eff1 samples are taken from treated effluent line into anoxic tank.

If Eff2 are no longer being used and is instead taken offsite by a licensed contractor, any exceedances mentioned above are irrelevant to the conditions of licence 5888.

We recommend that prior to effluent disposal all wastewater treatment and storage tanks are serviced and verified as operating in accordance with License 5888 requirements.

4. Drinking water supply tank testing

Laboratory results were reviewed against National Drinking Water Quality Standards for drinking water at multiple tested tanks:

- All sample locations were within the standards for faecal coliforms with results (<1 CFU/100ml) for December 2024.
- All sample locations were within the standards for *E. coli* with results (<1 CFU/100mL) for December 2024.

Any questions or concerns please contact our office.

For and on behalf of
MARTENS & ASSOCIATES PTY LTD

TRYSTAN RICHARDS
Environmental Consultant

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DAILY MONITORING RECORD – MERRY BEACH CARAVAN PARK SEWAGE TREATMENT AND RE-USE SCHEME

Start Date: 2/12/24 **Finish Date:**

Day of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time of Readings	0745	9.30	0745	0740	0730	08.10	0850
Meter 1 Reading MAGFLOW (L)	14.83	14.86	14.88	14.91	14.93	14.98.	15.03
Meter 2 Reading (KL) – Non- Potable RU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meter 3 Reading (KL) – Irrigation	111872	111917	111918	111968 3957	112006 3986	112052 4024	112108
Meter 4 Reading (KL) – NPWS	03086	03086	03086	03086	03086	03086	03086
Meter 5 Reading (KL) - DLWC	027398	027398	027398	027398	027398	027398	027398
Pump Well Effluent Appearance	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY
STP Status	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED
UV Lamp Status	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED
Chlorination System Status	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY
Irrigation Field Status	OK / (WET) / PONDING	OK / (WET) / PONDING	OK / (WET) / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING	OK / (WET) / PONDING	OK / (WET) / PONDING
Weather Conditions	(SUNNY) / CLOUDY / RAIN	SUNNY / (CLOUDY) / RAIN	SUNNY / (CLOUDY) / RAIN	SUNNY / (CLOUDY) / RAIN	(SUNNY) / CLOUDY / RAIN	SUNNY / (CLOUDY) / RAIN	SUNNY / CLOUDY / (RAIN)
Dissolved Oxygen in IDEA reactor (mg/L)	4.05	4.14	0.00	0.00	0.00	0.90	0.39
pH in IDEA reactor / Effluent PW	7.42/	7.31	6.95/	7.25/	7.39 /	7.22	7.16 /
Total Alkalinity in IDEA Reactor (mg/L)			242		279 mg/l		
30 minute sludge volume (%)			50%		62%		
Chlorine (residual) onsite testing Eff2 (once per week)							
Initials	MAL	BRIAN	MAL	MAL	MAL	CRAIG.	MAL

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DAILY MONITORING RECORD – MERRY BEACH CARAVAN PARK SEWAGE TREATMENT AND RE-USE SCHEME

Start Date: 9/12/24 **Finish Date:**

Day of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time of Readings	0720	1:00pm	0730	0750	0745	0730	0730
Meter 1 Reading MAGFLOW (L)	15·07	15·11	15·12	15·16	15·19	15·23	15·31
Meter 2 Reading (KL) – Non- Potable RU	0·00	0·00	0·00	0·00	0·00	0·00	0·00
Meter 3 Reading (KL) – Irrigation	112155 +107	112203	112210	112261 +196	112310	112350	112401
Meter 4 Reading (KL) – NPWS	03086	038086	38086	38086	38086	38086	38086
Meter 5 Reading (KL) - DLWC	027398	027398	027398	027398	027398	027398	027398
Pump Well Effluent Appearance	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY
STP Status	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED
UV Lamp Status	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED
Chlorination System Status	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY
Irrigation Field Status	(OK) / WET / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING
Weather Conditions	SUNNY / (CLOUDY) / RAIN	(SUNNY) / CLOUDY / RAIN	SUNNY / (CLOUDY) / RAIN	(SUNNY) / CLOUDY / RAIN	(SUNNY) / CLOUDY / RAIN	SUNNY / (CLOUDY) / RAIN	SUNNY / (CLOUDY) / RAIN
Dissolved Oxygen in IDEA reactor (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pH in IDEA reactor / Effluent PW	7.11 /	6.99 /	7.09 /	6.02 /	5.46 /	5.83 /	5.31 /
Total Alkalinity in IDEA Reactor (mg/L)	157		189				
30 minute sludge volume (%)	85%		85%				
Chlorine (residual) onsite testing Eff2 (once per week)							
Initials	MAL		MAL	MAL	MAL	MAL	MAL

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DAILY MONITORING RECORD – MERRY BEACH CARAVAN PARK SEWAGE TREATMENT AND RE-USE SCHEME

Start Date: 16/12/24 **Finish Date:**

Day of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time of Readings	0730	9:30	0745	0900	0830	10:30	9:30
Meter 1 Reading MAGFLOW (L)	15·33	15·37	15·40	15·44	15·50	15·59	15·65
Meter 2 Reading (KL) – Non- Potable RU	0·00	0·00	0·00	0·00	21	56	83
Meter 3 Reading (KL) – Irrigation	112452	112497	112551	112658	112772	112886	112970
Meter 4 Reading (KL) – NPWS	38087	38087	38087	38087	38087	38087	38087
Meter 5 Reading (KL) - DLWC	27398	27398	27398	27398	27398	27398	27398
Pump Well Effluent Appearance	(CLEAR) / CLOUDY / GREY	CLEAR / CLOUDY (GREY)	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY	(CLEAR) / CLOUDY / GREY
STP Status	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED
UV Lamp Status	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED	(OK) / ALARMED
Chlorination System Status	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY	(OK) / FAULTY
Irrigation Field Status	(OK) / WET / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING	(OK) / WET / PONDING
Weather Conditions	(SUNNY) / CLOUDY / RAIN	(SUNNY) / CLOUDY / RAIN	SUNNY / (CLOUDY) / RAIN	(SUNNY) / CLOUDY / RAIN	(SUNNY) / CLOUDY / RAIN	SUNNY / (CLOUDY) / RAIN	(SUNNY) / CLOUDY / RAIN
Dissolved Oxygen in IDEA reactor (mg/L)	0·00	0·00	0·05	3·8	4·1	4·0	4·2
pH in IDEA reactor / Effluent PW	5·41 /	6·61 /	7·36	7·2 /	7·1 /	7·1 /	7·1 /
Total Alkalinity in IDEA Reactor (mg/L)							
30 minute sludge volume (%)	49%			85%	80%		
Chlorine (residual) onsite testing Eff2 (once per week)					0·57		
Initials	Mark	AbeCox	Mark	JW	JW	JW	JW

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DAILY MONITORING RECORD – MERRY BEACH CARAVAN PARK SEWAGE TREATMENT AND RE-USE SCHEME

Start Date: 23/12/2024 **Finish Date:**

Day of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time of Readings	8:30	9:00	12:15pm 25th	9:22 26th	8:30	8:00	9:30
Meter 1 Reading MAGFLOW (L)	15.72	15.80	15.89	15.96	16.05	16.14	16.24
Meter 2 Reading (KL) – Non- Potable RU	90	93	~~93~~ 2.00	~~95~~ 2.00	96	116	134
Meter 3 Reading (KL) – Irrigation	113043	113052	113061	113167	113259	113358	113430
Meter 4 Reading (KL) – NPWS	38086	38086	038087	038087	38087	38087	38087
Meter 5 Reading (KL) - DLWC	027398	027398	027398	027398	027398	27398	27398
Pump Well Effluent Appearance	CLEAR / CLOUDY / GREY	CLEAR / CLOUDY / GREY	~~CLEAR~~ / CLOUDY / GREY	CLEAR / CLOUDY / GREY	CLEAR / CLOUDY / GREY	CLEAR / CLOUDY / GREY	CLEAR / CLOUDY / GREY
STP Status	OK / ALARMED	OK / ALARMED	OK / ALARMED	OK / ALARMED	OK / ALARMED	OK / ALARMED	OK / ALARMED
UV Lamp Status	OK / ALARMED	OK / ALARMED	OK / ALARMED	OK / ALARMED	OK / ALARMED	OK / ALARMED	OK / ALARMED
Chlorination System Status	OK / FAULTY	OK / FAULTY	OK / FAULTY	OK / FAULTY	OK / FAULTY	OK / FAULTY	OK / FAULTY
Irrigation Field Status	OK / WET / PONDING	OK / WET / PONDING	OK / WET / PONDING	OK / WET / PONDING	OK / WET / PONDING	OK / WET / PONDING	OK / WET / PONDING
Weather Conditions	SUNNY / CLOUDY / RAIN	SUNNY / CLOUDY / RAIN	SUNNY / CLOUDY / RAIN	SUNNY / CLOUDY / RAIN	SUNNY / CLOUDY / RAIN	SUNNY / CLOUDY / RAIN	SUNNY / CLOUDY / RAIN
Dissolved Oxygen in IDEA reactor (mg/L)	4.2	3.7	6.7	6.0	5.2	4.1	5.7
pH in IDEA reactor / Effluent PW	6.9 /	7.1 /	7.1	7.2	7.1 /	7.1 /	7.1 /
Total Alkalinity in IDEA Reactor (mg/L)	125	94	85	67	147	258	265
30 minute sludge volume (%)	75	80					
Chlorine (residual) onsite testing Eff2 (once per week)							
Initials	JW	JW	Abe Cox	Abe Cox	JW	JW	JW

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2442139**

Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Contact	: Customer Services ES
Address	: Merry Beach Road, Kioloa 2539	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: gtaylor@martens.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: 02 9476 9999	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: Merry Beach Fresh /Drinking Water Monthly	Page	: 1 of 4
Order number	: PO501061	Quote number	: EW2024INGMER0001 (EW24INGMER0001)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: J Watson		

Dates

Date Samples Received	: 30-Dec-2024 15:30	Issue Date	: 30-Dec-2024
Client Requested Due Date	: 06-Jan-2025	Scheduled Reporting Date	: **06-Jan-2025**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 22.1°C, 23.4°C, 23.6°C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 4 / 4

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - MW006 (Ec) E.coli by Membrane Filtration	WATER - MW007 Total Coliforms by Membrane Filtration
ES2442139-001	30-Dec-2024 00:00	Beach Front Tank	✓	✓
ES2442139-002	30-Dec-2024 00:00	Creek Tanks	✓	✓
ES2442139-003	30-Dec-2024 00:00	Main Tank	✓	✓
ES2442139-004	30-Dec-2024 00:00	Top Toilets Tank	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ALL INVOICES FOR MERRY BEACH

- A4 - AU Tax Invoice (INV)	Email	KBourke@ingeniacommunities.com.au

Emily Jongsma

- *AU Certificate of Analysis - NATA (COA)	Email	ejongsma@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ejongsma@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ejongsma@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ejongsma@martens.com.au
- Chain of Custody (CoC) (COC)	Email	ejongsma@martens.com.au
- EDI Format - XTab (XTAB)	Email	ejongsma@martens.com.au

Gray Taylor

- *AU Certificate of Analysis - NATA (COA)	Email	gtaylor@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	gtaylor@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	gtaylor@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	gtaylor@martens.com.au
- Chain of Custody (CoC) (COC)	Email	gtaylor@martens.com.au
- EDI Format - XTab (XTAB)	Email	gtaylor@martens.com.au

Harry Brazil

- *AU Certificate of Analysis - NATA (COA)	Email	hbrazil@ingeniaholidays.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	hbrazil@ingeniaholidays.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	hbrazil@ingeniaholidays.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	hbrazil@ingeniaholidays.com.au
- Chain of Custody (CoC) (COC)	Email	hbrazil@ingeniaholidays.com.au
- EDI Format - XTab (XTAB)	Email	hbrazil@ingeniaholidays.com.au

JOSH

- *AU Certificate of Analysis - NATA (COA)	Email	josh@waterassetservices.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	josh@waterassetservices.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	josh@waterassetservices.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	josh@waterassetservices.com.au
- Chain of Custody (CoC) (COC)	Email	josh@waterassetservices.com.au
- EDI Format - XTab (XTAB)	Email	josh@waterassetservices.com.au

Mail Martens

- *AU Certificate of Analysis - NATA (COA)	Email	mail@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mail@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mail@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mail@martens.com.au
- Chain of Custody (CoC) (COC)	Email	mail@martens.com.au
- EDI Format - XTab (XTAB)	Email	mail@martens.com.au

Manager (Reports & Invoice)

- *AU Certificate of Analysis - NATA (COA)	Email	merrybeachmgr@ingeniaholidays.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	merrybeachmgr@ingeniaholidays.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	merrybeachmgr@ingeniaholidays.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	merrybeachmgr@ingeniaholidays.com.au
- A4 - AU Tax Invoice (INV)	Email	merrybeachmgr@ingeniaholidays.com.au
- Chain of Custody (CoC) (COC)	Email	merrybeachmgr@ingeniaholidays.com.au
- EDI Format - XTab (XTAB)	Email	merrybeachmgr@ingeniaholidays.com.au

Payables

- A4 - AU Tax Invoice (INV)	Email	payables@ingeniacommunities.com.au

Trystan Richards

- *AU Certificate of Analysis - NATA (COA)	Email	trichards@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	trichards@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	trichards@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	trichards@martens.com.au

Trystan Richards

- Chain of Custody (CoC) (COC)	Email	trichards@martens.com.au
- EDI Format - XTab (XTAB)	Email	trichards@martens.com.au

URGENT

CHAIN OF CUSTODY

Mandatory Fields

CLIENT CODE:	IMGMER	*PROJECT MANAGER:	Gray Taylor	SAMPLER:	J Watson
*CLIENT:	INGENIA HOLIDAYS MERRY BEACH	*PM MOBILE:	0422 685 594	SAMPLER MOBILE:	0438 025 678
OFFICE: (Invoiced Office)	Merry Beach Rd, Kioloa NSW 2539	ALS QUOTE # (Client PL if blank)	EW2023INGMER0002	PURCHASE ORDER NO.:	PO501061
PROJECT NO./PROJECT:	Merry Beach Fresh/ Drinking Water Monthly			SITE:	
*INVOICE TO: (client default if nil)	paysbles@ingeniacommunities.com.au , Merrybeachmgr@ingeniaholidays.com.au , KBourke@ingeniacommunities.com.au				☐ CC Invoice to PM
*EMAIL REPORTS TO: (default to PM if blank)	gtaylor@martens.com.au; ;hbrazil@ingeniaholidays.com.au ;josh@waterassetservices.com.au mail@martens.com.au;Merrybeachmgr@ingeniaholidays.com.au, Trichards@martens.com.au, ejongsma@martens.com.au				

Page 1 of 1

CoC #: (if applicable)

BIOSECURITY

Country of Origin: (if not Australia)

Environmental Division Sydney

Work Order Reference

ES2442139

Telephone : + 61-2-8784 8555

*** STORAGE REQUIREMENTS** (Please check box. →)
- ☒ Standard Storage
- ☐ Extended Storage

Standard Storage time from receipt of samples: Waters - 3 weeks; Soils - 2 months

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** (Please check box. → (Not all tests can be expedited, contact Client Services for more information))
- ☒ 5+ days (no surcharge)
- ☐ 3 day (+15%)
- ☐ 2 day (+30%)
- ☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (Field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments:

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	MW006 (Ec) - E.coli	MW007 - Total Coliforms	Dup (additional bottles req.)	MS (additional bottles req.)	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
1	Beach Front Tank		30/12/24	1	W	X	X	☐	☐	
2	Creek Tanks			1	W	X	X	☐	☐	
3	Main Tank			1	W	X	X	☐	☐	
4	Top Toilets Tank			2	W	X	X	☐	☐	
						X	X	☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	

Receipt Detail (Lab Use ONLY)

Chilling Method: Ice: Frozen / Melted; Ice Bricks: Frozen / Thawed; None

Sample Temp at Receipt: °C °C °C

Security Seal Intact (circle): Yes / No / NA(None)

Carrier Details: ☐ Courier/Post ☐ Client

Con Note #

Packaging: (Circle) Hard Esky; Foam Esky; Box/Bag/Other

Count # # #

Relinquished by:	Josh HARRY	Signature:		Date/Time:	30/12 10:30
Relinquished by:		Signature:		Date/Time:	30/12 1530
Received by:		Signature		Date/Time:	30/12/24 1530
Received by:		Signature		Date/Time:	

ENFM (304/17)

Form Page 1 of 1

Approved Date: 13/02/2024

CERTIFICATE OF ANALYSIS

Work Order	: **ES2442139**	Page	: 1 of 2
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Contact	: Customer Services ES
Address	: Merry Beach Road, Kioloa 2539	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 9476 9999	Telephone	: +61-2-8784 8555
Project	: Merry Beach Fresh /Drinking Water Monthly	Date Samples Received	: 30-Dec-2024 15:30
Order number	: PO501061	Date Analysis Commenced	: 30-Dec-2024
C-O-C number	: ----	Issue Date	: 03-Jan-2025 12:18
Sampler	: J Watson		
Site	: ----		
Quote number	: EW24INGMER0001		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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*
Lauren Waters	Microbiology Laboratory Technician	Sydney Microbiology, Smithfield, NSW

General Comments

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

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

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

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

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

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

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

- MF = membrane filtration
- CFU = colony forming unit
- MW006 is ALS's internal code and is equivalent to AS4276.5.
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range of 10 - 100cfu.
- MW007 is ALS's internal code and is equivalent to AS4276.5.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	Beach Front Tank	Creek Tanks	Main Tank	Top Toilets Tank	----
			Sampling date / time	30-Dec-2024 00:00	30-Dec-2024 00:00	30-Dec-2024 00:00	30-Dec-2024 00:00	----
Compound	CAS Number	LOR	Unit	ES2442139-001	ES2442139-002	ES2442139-003	ES2442139-004	--------
				Result	Result	Result	Result	----
MW006: Thermotolerant Coliforms & E.coli by MF								
Escherichia coli	----	1	CFU/100mL	<1	<1	<1	<1	----
MW007: Coliforms by MF								
Coliforms	----	1	CFU/100mL	<1	<1	<1	<1	----

QUALITY CONTROL REPORT

Work Order	: **ES2442139**	Page	: 1 of 3
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Contact	: Customer Services ES
Address	: Merry Beach Road, Kioloa 2539	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 9476 9999	Telephone	: +61-2-8784 8555
Project	: Merry Beach Fresh /Drinking Water Monthly	Date Samples Received	: 30-Dec-2024
Order number	: PO501061	Date Analysis Commenced	: 30-Dec-2024
C-O-C number	: ----	Issue Date	: 03-Jan-2025
Sampler	: J Watson		
Site	: ----		
Quote number	: EW24INGMER0001		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Lauren Waters	Microbiology Laboratory Technician	Sydney Microbiology, Smithfield, NSW

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

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

- **No Method Blank (MB) or Laboratory Control Spike (LCS) Results are required to be reported.**

Matrix Spike (MS) Report

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

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2442139**	Page	: 1 of 4
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Telephone	: +61-2-8784 8555
Project	: Merry Beach Fresh /Drinking Water Monthly	Date Samples Received	: 30-Dec-2024
Site	: ----	Issue Date	: 03-Jan-2025
Sampler	: J Watson	No. of samples received	: 4
Order number	: PO501061	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
MW006: Thermotolerant Coliforms & E.coli by MF							
Sterile Plastic Bottle - Sodium Thiosulfate (MW006)							
Beach Front Tank, Creek Tanks, Main Tank, Top Toilets Tank	**30-Dec-2024**	**----**	----	----	**30-Dec-2024**	31-Dec-2024	✓
MW007: Coliforms by MF							
Sterile Plastic Bottle - Sodium Thiosulfate (MW007)							
Beach Front Tank, Creek Tanks, Main Tank, Top Toilets Tank	**30-Dec-2024**	**----**	----	----	**30-Dec-2024**	31-Dec-2024	✓

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7
Coliforms by Membrane Filtration	MW007	WATER	AS 4276.5

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EW2405705**		
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division NSW South Coast
Contact	: Gray Taylor	Contact	: Aneta Prosaroski
Address	: Merry Beach Road, Kioloa 2539	Address	: 1/19 Ralph Black Dr, North Wollongong 2500 NSW Australia
E-mail	: gtaylor@martens.com.au	E-mail	: Aneta.Prosaroski@ALSGlobal.com
Telephone	: 02 9476 9999	Telephone	: 02 42253125
Facsimile	: ----	Facsimile	: W 02 42253128 N 02 44232083
Project	: Merry Beach Monitoring - December 2024	Page	: 1 of 4
Order number	: P2108127	Quote number	: EW2024INGMER0001 (EW24INGMER0001)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Client		

Dates

Date Samples Received	: 06-Dec-2024 15:47	Issue Date	: 06-Dec-2024
Client Requested Due Date	: 17-Dec-2024	Scheduled Reporting Date	: **17-Dec-2024**

Delivery Details

Mode of Delivery	: Sampled By ALS	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 3 / 3

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.**
- **Please direct any queries you have regarding this work order to the above ALS laboratory contact.**
- **Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA005P pH (Auto Titrator)	WATER - EA025H Suspended Solids - Standard Level	WATER - EK055G Ammonia as N By Discrete Analyser	WATER - EP020 LL Oil and Grease Low Level	WATER - EP030 BOD	WATER - MW006 (FC) Thermotolerant Coliforms by Membrane Filtration	WATER - NT-11 Total Nitrogen and Total Phosphorus
EW2405705-001	06-Dec-2024 00:00	884/Eff1	✓	✓	✓	✓	✓	✓	✓
EW2405705-003	06-Dec-2024 00:00	Influent	✓	✓	✓	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - MW006 (Ec) E.coli by Membrane Filtration
EW2405705-002	06-Dec-2024 00:00	RO Reject	✓
EW2405705-003	06-Dec-2024 00:00	Influent	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ALL INVOICES FOR MERRY BEACH

- *AU Certificate of Analysis - NATA (COA)	Email	KBourke@ingeniacommunities.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	KBourke@ingeniacommunities.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	KBourke@ingeniacommunities.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	KBourke@ingeniacommunities.com.au
- A4 - AU Tax Invoice (INV)	Email	KBourke@ingeniacommunities.com.au
- Chain of Custody (CoC) (COC)	Email	KBourke@ingeniacommunities.com.au
- EDI Format - XTab (XTAB)	Email	KBourke@ingeniacommunities.com.au

Emily Jongsma

- *AU Certificate of Analysis - NATA (COA)	Email	ejongsma@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ejongsma@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ejongsma@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ejongsma@martens.com.au
- Chain of Custody (CoC) (COC)	Email	ejongsma@martens.com.au
- EDI Format - XTab (XTAB)	Email	ejongsma@martens.com.au

Gray Taylor

- *AU Certificate of Analysis - NATA (COA)	Email	gtaylor@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	gtaylor@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	gtaylor@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	gtaylor@martens.com.au
- Chain of Custody (CoC) (COC)	Email	gtaylor@martens.com.au
- EDI Format - XTab (XTAB)	Email	gtaylor@martens.com.au

Mail Martens

- *AU Certificate of Analysis - NATA (COA)	Email	mail@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mail@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mail@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mail@martens.com.au
- Chain of Custody (CoC) (COC)	Email	mail@martens.com.au
- EDI Format - XTab (XTAB)	Email	mail@martens.com.au

Manager (Reports & Invoice)

- *AU Certificate of Analysis - NATA (COA)	Email	merrybeachmgr@ingeniaholidays.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	merrybeachmgr@ingeniaholidays.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	merrybeachmgr@ingeniaholidays.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	merrybeachmgr@ingeniaholidays.com.au
- A4 - AU Tax Invoice (INV)	Email	merrybeachmgr@ingeniaholidays.com.au
- Chain of Custody (CoC) (COC)	Email	merrybeachmgr@ingeniaholidays.com.au
- EDI Format - XTab (XTAB)	Email	merrybeachmgr@ingeniaholidays.com.au

Payables

- A4 - AU Tax Invoice (INV)	Email	payables@ingeniacommunities.com.au

Trystan Richards

- *AU Certificate of Analysis - NATA (COA)	Email	trichards@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	trichards@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	trichards@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	trichards@martens.com.au
- Chain of Custody (CoC) (COC)	Email	trichards@martens.com.au
- EDI Format - XTab (XTAB)	Email	trichards@martens.com.au

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry / Biology).

(WATER) EK055G: Ammonia as N by Discrete Analyser

(WATER) EK067G: Total Phosphorus as P by Discrete Analyser

(WATER) EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser

(WATER) EK061G: Total Kjeldahl Nitrogen By Discrete Analyser

(WATER) EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser

(WATER) EA025: Total Suspended Solids dried at 104 ± 2°C

(WATER) EP020: Oil and Grease (O&G)

(WATER) EA005P: pH by PC Titrator

(WATER) EP030: Biochemical Oxygen Demand (BOD)

(WATER) MW006: Thermotolerant Coliforms & E.coli by MF

WATER ANALYSIS CHAIN OF CUSTODY

Project:	Merry Beach Monitoring – December 2024			Laboratory:	ALS (Australian Laboratory Services)					Delivery Details	
Sampling Date:		Results Required by:		Address:	4/13 Geary Place, North Nowra, NSW 2541					Dispatch Date:	
Our reference:	P2108127	Our Contact:	Gray Taylor	Contact:		Phone:	(02) 4423 2063	Facsimile:	(02) 4423 2083	Shipment Method:	

	Sample ID	Number of Containers	Analysis Required (X)													
			pH	Conductivity	Suspended Solids	BOD_5	Phosphorous (total)	Nitrogen (total)	TKN	Ammonia	NOx	Faecal Col.	Enterococci	Oil and Grease	E. Coli	
1	884/Eff1		X		X	X	X	X	X	X	X	X		X		
	~~884/Eff2~~		~~X~~		~~X~~										~~X~~	
2	RO Reject														X	
3	Influent		X		X	X	X	X	X	X	X	X		X	X	

Notes: Fax (02 9476 8767) and email (gtaylor@martens.com.au; trichards@martens.com.au; mail@martens.com.au; young.pete7@gmail.com and merrybeachmgr@ingeniaholidays.com.au) results as soon as available, originals of laboratory reports to be posted to Merry Beach Caravan Park, KIOLOA, NSW, 2539.

Temp. Ice Bricks.
12.3, 14.0, 17.0

J. [signature]
6/12/24

Received
Anetta [signature]
6/12/24

Environmental Division
Wollongong
Work Order Reference
EW2405705

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Bushfire
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Excavations
Hydrogeology
Terrain analysis
Waste management

Water
Supply & storage
Flooding
Stormwater & drainage
Wetlands
Water quality
Irrigation
Water sensitive design

Wastewater
Treatment
Re-use
Biosolids
Design
Management
Monitoring
Construction

Head Offi
Suite 201,
Hornsby I
Ph 02 947
> mail@n
www.mc
Telephone : 02 42253125
MARTENS & ASSOCIATES PTY LTD
ABN 85 070 240 890 ACN 070 240 890

QUALITY CONTROL REPORT

Work Order	: **EW2405705**	Page	: 1 of 5
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division NSW South Coast
Contact	: Gray Taylor	Contact	: Aneta Prosaroski
Address	: Merry Beach Road, Kioloa 2539	Address	: 1/19 Ralph Black Dr, North Wollongong 2500 NSW Australia
Telephone	: 02 9476 9999	Telephone	: 02 42253125
Project	: Merry Beach Monitoring - December 2024	Date Samples Received	: 06-Dec-2024
Order number	: P2108127	Date Analysis Commenced	: 06-Dec-2024
C-O-C number	: ----	Issue Date	: 13-Dec-2024
Sampler	: Client		
Site	: ----		
Quote number	: EW24INGMER0001		
No. of samples received	: 3		
No. of samples analysed	: 3		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Prasanna Ganta	Team Leader - Microbiology/Phycology	Sydney Microbiology, Smithfield, NSW

General Comments

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

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA005P: pH by PC Titrator (QC Lot: 6241862)									
EW2405703-003	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.00	6.02	0.3	0% - 20%
EW2405700-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.78	6.81	0.4	0% - 20%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 6251335)									
ES2439883-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	394	406	2.9	0% - 20%
ES2439895-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	66	65	2.3	0% - 50%
ES2440049-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	314	291	7.6	0% - 20%
EW2405668-003	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	8	6	30.5	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 6250191)									
ES2439931-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.07	0.02	89.8	No Limit
EW2405705-003	Influent	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	64.7	64.6	0.2	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 6250192)									
ES2440188-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2439931-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.34	0.34	0.0	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 6250193)									
EW2405705-003	Influent	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 6250189)									
EW2405681-004	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1 (1.0)*	mg/L	31.7	32.3	1.9	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 6250190)									
EW2405681-004	Anonymous	EK067G: Total Phosphorus as P	----	0.01 (0.10)*	mg/L	1.58	1.60	0.8	0% - 50%
EP030: Biochemical Oxygen Demand (BOD) (QC Lot: 6242606)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP030: Biochemical Oxygen Demand (BOD) (QC Lot: 6242606) - continued									
ES2439937-001	Anonymous	EP030: Biochemical Oxygen Demand	----	2	mg/L	<2	<2	0.0	No Limit

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

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

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 6241862)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	99.8	98.8	101
				----	7 pH Unit	101	99.2	101
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 6251335)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	101	83.0	129
				<5	1000 mg/L	100	82.0	110
				<5	828 mg/L	108	83.0	118
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6250191)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	95.2	90.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6250192)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	102	91.0	113
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6250193)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	102	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6250189)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	94.1	69.0	123
				<0.1	1 mg/L	107	70.0	123
				<0.1	5 mg/L	107	70.0	123
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6250190)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	93.2	71.3	126
				<0.01	0.442 mg/L	93.0	71.3	126
				<0.01	1 mg/L	96.7	70.0	130
EP020: Oil and Grease (O&G) (QCLot: 6250509)								
EP020: Oil & Grease	----	1	mg/L	<1.0	5000 mg/L	98.1	80.0	120
EP030: Biochemical Oxygen Demand (BOD) (QCLot: 6242606)								
EP030: Biochemical Oxygen Demand	----	2	mg/L	<2	200 mg/L	95.8	74.0	112

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6250191)							
ES2439931-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	94.6	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6250192)							
ES2439931-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	109	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6250193)							
EW2405705-003	Influent	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	106	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6250189)							
EW2405681-004	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	# Not Determined	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6250190)							
EW2405681-004	Anonymous	EK067G: Total Phosphorus as P	----	10 mg/L	100	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EW2405705**	Page	: 1 of 5
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division NSW South Coast
Contact	: Gray Taylor	Telephone	: 02 42253125
Project	: Merry Beach Monitoring - December 2024	Date Samples Received	: 06-Dec-2024
Site	: ----	Issue Date	: 13-Dec-2024
Sampler	: Client	No. of samples received	: 3
Order number	: P2108127	No. of samples analysed	: 3

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	EW2405681--004	Anonymous	**Total Kjeldahl Nitrogen as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
884/Eff1,	Influent	**06-Dec-2024**	**----**	----	**----**	**06-Dec-2024**	06-Dec-2024	✓
EA025: Total Suspended Solids dried at 104 ± 2°C								
Clear Plastic Bottle - Natural (EA025H)								
884/Eff1,	Influent	**06-Dec-2024**	**----**	----	**----**	**11-Dec-2024**	13-Dec-2024	✓
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
884/Eff1,	Influent	**06-Dec-2024**	**----**	----	**----**	**11-Dec-2024**	03-Jan-2025	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
884/Eff1,	Influent	**06-Dec-2024**	**----**	----	**----**	**11-Dec-2024**	03-Jan-2025	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
884/Eff1,	Influent	**06-Dec-2024**	**11-Dec-2024**	03-Jan-2025	✓	**11-Dec-2024**	03-Jan-2025	✓
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
884/Eff1,	Influent	**06-Dec-2024**	**11-Dec-2024**	03-Jan-2025	✓	**11-Dec-2024**	03-Jan-2025	✓
EP020: Oil and Grease (O&G)								
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020 LL)								
884/Eff1,	Influent	**06-Dec-2024**	**----**	----	**----**	**11-Dec-2024**	03-Jan-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP030: Biochemical Oxygen Demand (BOD)								
Clear Plastic Bottle - Natural (EP030)								
884/Eff1,	Influent	**06-Dec-2024**	**----**	----	**----**	**07-Dec-2024**	08-Dec-2024	✓
MW006: Thermotolerant Coliforms & E.coli by MF								
Sterile Plastic Bottle - Sodium Thiosulfate (MW006)								
884/Eff1, Influent	RO Reject,	**06-Dec-2024**	**----**	----	**----**	**06-Dec-2024**	07-Dec-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	3	12	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	36	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	12	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease Low Level	EP020 LL	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	5	36	**13.89**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	5	**60.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	4	**75.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	12	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease Low Level	EP020 LL	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	12	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Oil and Grease Low Level	EP020 LL	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Biochemical Oxygen Demand (BOD)	EP030	WATER	In house: Referenced to APHA 5210 B. The 5-Day BOD test provides an empirical measure of the oxygen consumption capacity of a given water. A portion of the sample is diluted into oxygenated, nutrient rich water, and a seed added to begin biological decay. The initial dissolved oxygen content is measured, then the bottle is sealed and incubated for five days. The remaining dissolved oxygen is measured, and from the difference, the demand for oxygen, by biological decay, is determined. This method is compliant with NEPM Schedule B(3).
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)

CERTIFICATE OF ANALYSIS

Work Order	: **EW2405705**	Page	: 1 of 4
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division NSW South Coast
Contact	: Gray Taylor	Contact	: Aneta Prosaroski
Address	: Merry Beach Road, Kioloa 2539	Address	: 1/19 Ralph Black Dr, North Wollongong 2500 NSW Australia
Telephone	: 02 9476 9999	Telephone	: 02 42253125
Project	: Merry Beach Monitoring - December 2024	Date Samples Received	: 06-Dec-2024 15:47
Order number	: P2108127	Date Analysis Commenced	: 06-Dec-2024
C-O-C number	: ----	Issue Date	: 13-Dec-2024 16:42
Sampler	: Client		
Site	: ----		
Quote number	: EW24INGMER0001		
No. of samples received	: 3		
No. of samples analysed	: 3		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Prasanna Ganta	Team Leader - Microbiology/Phycology	Sydney Microbiology, Smithfield, NSW

General Comments

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

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

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

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

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

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

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

- MF = membrane filtration
- CFU = colony forming unit
- MW006 is ALS's internal code and is equivalent to AS4276.5.
- ep020 sample 1 LOR raised due to insuffiecent sample
- EP030: The residue DO for sample #3 is less than 1 mg/L. This indicates that the sample was not diluted enough and the BOD is greater than 175 mg/L. The result reported is estimated from the greatest dilution.
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range of 10 - 100cfu.
- pH performed by ALS Wollongong via in-house method EA005FD and EN67 PK.
- Electrical conductivity performed by ALS Wollongong via in-house method EA010FD and EN67 PK.
- Sampling and groundwater depth measurements completed by ALS Wollongong via inhouse sampling method EN/67.11 Groundwater Sampling. Via Bailer Method.
- Sampling completed by ALS Wollongong in accordance with in-house sampling method EN/67.10 Wastewaters
- Sample collection of Ground Waters by in-house EN67 where the “surface layer of the aquifer was sampled”.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	884/Eff1	RO Reject	Influent	----	----
			Sampling date / time	06-Dec-2024 00:00	06-Dec-2024 00:00	06-Dec-2024 00:00	----	----
Compound	CAS Number	LOR	Unit	EW2405705-001	EW2405705-002	EW2405705-003	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.37**	**----**	**8.05**	**----**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**20**	**----**	**198**	**----**	**----**
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.07**	**----**	**64.7**	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**2.16**	**----**	<0.01	**----**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.6**	**----**	**99.8**	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**3.8**	**----**	**99.8**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.99**	**----**	**10.4**	**----**	**----**
EP020: Oil and Grease (O&G)								
Oil & Grease	----	1.0	mg/L	<2.0	**----**	**36.4**	**----**	**----**
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	**16**	**----**	**175**	**----**	**----**
MW006: Thermotolerant Coliforms & E.coli by MF								
Thermotolerant Coliforms	----	1	CFU/100mL	**~2**	**----**	**57000000**	**----**	**----**
Escherichia coli	----	1	CFU/100mL	**----**	**~2**	**50000000**	**----**	**----**

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry / Biology).

(WATER) EP030: Biochemical Oxygen Demand (BOD)

(WATER) EK055G: Ammonia as N by Discrete Analyser

(WATER) MW006: Thermotolerant Coliforms & E.coli by MF

(WATER) EK067G: Total Phosphorus as P by Discrete Analyser

(WATER) EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser

(WATER) EK061G: Total Kjeldahl Nitrogen By Discrete Analyser

(WATER) EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser

(WATER) EA025: Total Suspended Solids dried at 104 ± 2°C

(WATER) EP020: Oil and Grease (O&G)

(WATER) EA005P: pH by PC Titrator

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2441546**

Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Contact	: Customer Services ES
Address	: Merry Beach Road, Kioloa 2539	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: gtaylor@martens.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: 02 9476 9999	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: Merry Beach Monitoring	Page	: 1 of 3
Order number	: ----	Quote number	: EW2024INGMER0001 (EW24INGMER0001)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 19-Dec-2024 08:00	Issue Date	: 19-Dec-2024
Client Requested Due Date	: 30-Dec-2024	Scheduled Reporting Date	: **30-Dec-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 5.1°C, 4.7°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **The final report will be completed by the scheduled reporting date listed in this SRN. A Preliminary report will be available on 23/12/24 with the exception of BOD analysis.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EA025H Suspended Solids - Standard Level	WATER - EK055G Ammonia as N By Discrete Analyser	WATER - EP020 LL Oil and Grease Low Level	WATER - EP030 BOD	WATER - MW006 (FC) Thermotolerant Coliforms by Membrane Filtration	WATER - NT-11 Total Nitrogen and Total Phosphorus
ES2441546-001	18-Dec-2024 00:00	884/Eff1	✓	✓	✓	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

Gray Taylor

- *AU Certificate of Analysis - NATA (COA)	Email	gtaylor@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	gtaylor@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	gtaylor@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	gtaylor@martens.com.au
- Chain of Custody (CoC) (COC)	Email	gtaylor@martens.com.au
- EDI Format - XTab (XTAB)	Email	gtaylor@martens.com.au

Harry Brazil

- *AU Certificate of Analysis - NATA (COA)	Email	hbrazil@ingeniaholidays.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	hbrazil@ingeniaholidays.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	hbrazil@ingeniaholidays.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	hbrazil@ingeniaholidays.com.au
- Chain of Custody (CoC) (COC)	Email	hbrazil@ingeniaholidays.com.au
- EDI Format - XTab (XTAB)	Email	hbrazil@ingeniaholidays.com.au

Mail Martens

- *AU Certificate of Analysis - NATA (COA)	Email	mail@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mail@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mail@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mail@martens.com.au
- Chain of Custody (CoC) (COC)	Email	mail@martens.com.au
- EDI Format - XTab (XTAB)	Email	mail@martens.com.au

Manager (Reports & Invoice)

- *AU Certificate of Analysis - NATA (COA)	Email	merrybeachmgr@ingeniaholidays.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	merrybeachmgr@ingeniaholidays.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	merrybeachmgr@ingeniaholidays.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	merrybeachmgr@ingeniaholidays.com.au
- A4 - AU Tax Invoice (INV)	Email	merrybeachmgr@ingeniaholidays.com.au
- Chain of Custody (CoC) (COC)	Email	merrybeachmgr@ingeniaholidays.com.au
- EDI Format - XTab (XTAB)	Email	merrybeachmgr@ingeniaholidays.com.au

Trystan Richards

- *AU Certificate of Analysis - NATA (COA)	Email	trichards@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	trichards@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	trichards@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	trichards@martens.com.au
- Chain of Custody (CoC) (COC)	Email	trichards@martens.com.au
- EDI Format - XTab (XTAB)	Email	trichards@martens.com.au

WATER ANALYSIS CHAIN OF CUSTODY

Project:	Merry Beach Monitoring – ~~December 2024~~			**Laboratory:**	ALS (Australian Laboratory Services)					**Delivery Details**	
Sampling Date:	18/12/24	**Results Required by:**		**Address:**	4/13 Geary Place, North Nowra, NSW 2541					**Dispatch Date:**	
Our reference:	P2108127	**Our Contact:**	Gray Taylor	**Contact:**		**Phone:**	(02) 4423 2063	**Facsimile:**	(02) 4423 2083	**Shipment Method:**	

Sample ID	Number of Containers	Analysis Required (X)													
		pH	Conductivity	Suspended Solids	BOD5	Phosphorous (total)	Nitrogen (total)	TKN	Ammonia	NOx	Faecal Col.	Enterococci	Oil and Grease	E. Coli	-
884/Eff1		X		X	X	X	X	X	X	X	X		X		
~~884/Eff2~~		~~X~~		~~X~~										X	
~~Influent~~		~~X~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		~~X~~	~~X~~	

Notes: Fax (02 9476 8767) and email (gtaylor@martens.com.au; trichards@martens.com.au; mail@martens.com.au; ~~young.pete7@gmail.com~~ and merrybeachmgr@ingeniaholidays.com.au) results as soon as available, originals of laboratory reports to be posted to Merry Beach Caravan Park, KIOLOA, NSW, 2539.

hbrazil@ingeniaholidays.com.au — 0477297020

Environmental Division
Sydney
Work Order Reference
ES2441546

TWO DAY FAST TAT please.

HT

URGENT

TAT

Telephone : +61-2-8784 8555

re: Franz 18/12/24

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MARTENS & ASSOCIATES P/L
ABN 85 070 240 890 ACN 070 240 890

ES2441546

CERTIFICATE OF ANALYSIS

Work Order	: **ES2441546**	Page	: 1 of 3
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Contact	: Customer Services ES
Address	: Merry Beach Road, Kioloa 2539	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 9476 9999	Telephone	: +61-2-8784 8555
Project	: Merry Beach Monitoring	Date Samples Received	: 19-Dec-2024 08:00
Order number	: ----	Date Analysis Commenced	: 19-Dec-2024
C-O-C number	: ----	Issue Date	: 27-Dec-2024 13:49
Sampler	: ----		
Site	: ----		
Quote number	: EW24INGMER0001		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Lauren Waters	Microbiology Laboratory Technician	Sydney Microbiology, Smithfield, NSW

General Comments

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

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

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

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

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

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

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

- MF = membrane filtration
- CFU = colony forming unit
- MW006 is ALS's internal code and is equivalent to AS4276.5.
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range of 10 - 100cfu.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	884/Eff1	----	----	----	----
				Sampling date / time	18-Dec-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2441546-001	--------	--------	--------	--------
					Result	----	----	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**5.90**	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**28**	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.09**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**2.29**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**2.0**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ **Total Nitrogen as N**	----	0.1	mg/L		**4.3**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.10**	----	----	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	1.0	mg/L		<1.0	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<2	----	----	----	----
MW006: Thermotolerant Coliforms & E.coli by MF									
Thermotolerant Coliforms	----	1	CFU/100mL		<1	----	----	----	----

QUALITY CONTROL REPORT

Work Order	: **ES2441546**	Page	: 1 of 4
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Contact	: Customer Services ES
Address	: Merry Beach Road, Kioloa 2539	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 9476 9999	Telephone	: +61-2-8784 8555
Project	: Merry Beach Monitoring	Date Samples Received	: 19-Dec-2024
Order number	: ----	Date Analysis Commenced	: 19-Dec-2024
C-O-C number	: ----	Issue Date	: 27-Dec-2024
Sampler	: ----		
Site	: ----		
Quote number	: EW24INGMER0001		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Lauren Waters	Microbiology Laboratory Technician	Sydney Microbiology, Smithfield, NSW

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 6276925)									
ES2441546-001	884/Eff1	EA005-P: pH Value	----	0.01	pH Unit	5.90	6.06	2.7	0% - 20%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 6274845)									
EN2416663-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EN2416663-011	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
ES2441386-005	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	115	118	2.6	0% - 20%
ES2441386-015	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	154	152	0.8	0% - 20%
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 6273528)									
ES2441226-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.12	0.12	0.0	0% - 50%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 6273527)									
EN2416684-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2441546-001	884/Eff1	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.29	2.29	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 6273526)									
EN2416684-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.2	0.1	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 6273525)									
EN2416684-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.10	0.12	17.0	0% - 50%
EP030: Biochemical Oxygen Demand (BOD) (QC Lot: 6276616)									
ES2441473-001	Anonymous	EP030: Biochemical Oxygen Demand	----	2	mg/L	20	21	4.9	0% - 50%
ES2441601-001	Anonymous	EP030: Biochemical Oxygen Demand	----	2	mg/L	826	767	7.4	0% - 20%

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 6276925)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	99.7	99.2	101
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 6274845)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	114	83.0	129
				<5	1000 mg/L	101	82.0	110
				<5	828 mg/L	100	83.0	118
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6273528)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	103	90.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6273527)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	101	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6273526)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	5 mg/L	99.8	69.0	123
				<0.1	2.5 mg/L	95.3	70.0	123
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6273525)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	2.21 mg/L	99.0	71.3	126
				<0.01	0.5 mg/L	111	71.3	126
EP020: Oil and Grease (O&G) (QCLot: 6273559)								
EP020: Oil & Grease	----	1	mg/L	<1.0	5000 mg/L	91.9	80.0	120
EP030: Biochemical Oxygen Demand (BOD) (QCLot: 6276616)								
EP030: Biochemical Oxygen Demand	----	2	mg/L	<2	200 mg/L	86.0	74.0	112

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6273528)							
ES2441226-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	78.4	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6273527)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6273527) - continued							
EN2416684-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	108	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6273526)							
EN2416684-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	102	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6273525)							
EN2416684-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	98.7	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2441546**	Page	: 1 of 5
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Telephone	: +61-2-8784 8555
Project	: Merry Beach Monitoring	Date Samples Received	: 19-Dec-2024
Site	: ----	Issue Date	: 27-Dec-2024
Sampler	: ----	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural						
884/Eff1	----	----	----	20-Dec-2024	18-Dec-2024	**2**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
884/Eff1	**18-Dec-2024**	**----**	----	----	**20-Dec-2024**	18-Dec-2024	×
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H)							
884/Eff1	**18-Dec-2024**	**----**	----	----	**20-Dec-2024**	25-Dec-2024	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
884/Eff1	**18-Dec-2024**	**----**	----	----	**19-Dec-2024**	15-Jan-2025	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
884/Eff1	**18-Dec-2024**	**----**	----	----	**19-Dec-2024**	15-Jan-2025	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
884/Eff1	**18-Dec-2024**	**19-Dec-2024**	15-Jan-2025	✓	**19-Dec-2024**	15-Jan-2025	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
884/Eff1	**18-Dec-2024**	**19-Dec-2024**	15-Jan-2025	✓	**19-Dec-2024**	15-Jan-2025	✓
EP020: Oil and Grease (O&G)							
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020 LL)							
884/Eff1	**18-Dec-2024**	**----**	----	----	**19-Dec-2024**	15-Jan-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP030: Biochemical Oxygen Demand (BOD)							
Clear Plastic Bottle - Natural (EP030)							
884/Eff1	**18-Dec-2024**	**----**	----	**----**	**20-Dec-2024**	20-Dec-2024	✓
MW006: Thermotolerant Coliforms & E.coli by MF							
Sterile Plastic Bottle - Sodium Thiosulfate (MW006)							
884/Eff1	**18-Dec-2024**	**----**	----	**----**	**19-Dec-2024**	19-Dec-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	10	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	1	1	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease Low Level	EP020 LL	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	1	**200.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	5	40	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	10	**30.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	10	**20.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease Low Level	EP020 LL	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Oil and Grease Low Level	EP020 LL	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Biochemical Oxygen Demand (BOD)	EP030	WATER	In house: Referenced to APHA 5210 B. The 5-Day BOD test provides an empirical measure of the oxygen consumption capacity of a given water. A portion of the sample is diluted into oxygenated, nutrient rich water, and a seed added to begin biological decay. The initial dissolved oxygen content is measured, then the bottle is sealed and incubated for five days. The remaining dissolved oxygen is measured, and from the difference, the demand for oxygen, by biological decay, is determined. This method is compliant with NEPM Schedule B(3).
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES2442140**		
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Contact	: Customer Services ES
Address	: Merry Beach Road, Kioloa 2539	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: gtaylor@martens.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: 02 9476 9999	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: Merry Beach Monitoring - December 2024	Page	: 1 of 3
Order number	: P2108127	Quote number	: EW2024INGMER0001 (EW24INGMER0001)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 30-Dec-2024 15:30	Issue Date	: 30-Dec-2024
Client Requested Due Date	: 06-Jan-2025	Scheduled Reporting Date	: **06-Jan-2025**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 22.2°C, 23.4°C, 23.6°C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA005P pH (Auto Titrator)	WATER - EA025H Suspended Solids - Standard Level	WATER - EK055G Ammonia as N By Discrete Analyser	WATER - EP020 Oil & Grease (O&G)	WATER - EP030 BOD	WATER - MW006 (FC & Ec) Thermotolerant Coliforms & E.coli by Membrane	WATER - NT-11 Total Nitrogen and Total Phosphorus
ES2442140-001	30-Dec-2024 00:00	884/Eff1	✓	✓	✓	✓	✓	✓	✓
ES2442140-002	30-Dec-2024 00:00	Inffluent	✓	✓	✓	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - MW006 (Ec) E.coli by Membrane Filtration	WATER - MW006 (FC) Thermotolerant Coliforms by Membrane Filtration
ES2442140-001	30-Dec-2024 00:00	884/Eff1		✓
ES2442140-002	30-Dec-2024 00:00	Inffluent	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

Gray Taylor

- *AU Certificate of Analysis - NATA (COA)	Email	gtaylor@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	gtaylor@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	gtaylor@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	gtaylor@martens.com.au
- Chain of Custody (CoC) (COC)	Email	gtaylor@martens.com.au
- EDI Format - XTab (XTAB)	Email	gtaylor@martens.com.au

Harry Brazil

- *AU Certificate of Analysis - NATA (COA)	Email	hbrazil@ingeniaholidays.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	hbrazil@ingeniaholidays.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	hbrazil@ingeniaholidays.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	hbrazil@ingeniaholidays.com.au
- Chain of Custody (CoC) (COC)	Email	hbrazil@ingeniaholidays.com.au
- EDI Format - XTab (XTAB)	Email	hbrazil@ingeniaholidays.com.au

JOSH

- *AU Certificate of Analysis - NATA (COA)	Email	josh@waterassetservices.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	josh@waterassetservices.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	josh@waterassetservices.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	josh@waterassetservices.com.au
- Chain of Custody (CoC) (COC)	Email	josh@waterassetservices.com.au
- EDI Format - XTab (XTAB)	Email	josh@waterassetservices.com.au

Mail Martens

- *AU Certificate of Analysis - NATA (COA)	Email	mail@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mail@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mail@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mail@martens.com.au
- Chain of Custody (CoC) (COC)	Email	mail@martens.com.au
- EDI Format - XTab (XTAB)	Email	mail@martens.com.au

Manager (Reports & Invoice)

- *AU Certificate of Analysis - NATA (COA)	Email	merrybeachmgr@ingeniaholidays.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	merrybeachmgr@ingeniaholidays.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	merrybeachmgr@ingeniaholidays.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	merrybeachmgr@ingeniaholidays.com.au
- A4 - AU Tax Invoice (INV)	Email	merrybeachmgr@ingeniaholidays.com.au
- Chain of Custody (CoC) (COC)	Email	merrybeachmgr@ingeniaholidays.com.au
- EDI Format - XTab (XTAB)	Email	merrybeachmgr@ingeniaholidays.com.au

Trystan Richards

- *AU Certificate of Analysis - NATA (COA)	Email	trichards@martens.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	trichards@martens.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	trichards@martens.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	trichards@martens.com.au
- Chain of Custody (CoC) (COC)	Email	trichards@martens.com.au
- EDI Format - XTab (XTAB)	Email	trichards@martens.com.au

Sydney

WATER ANALYSIS CHAIN OF CUSTODY

URGENT HT

Project:	Merry Beach Monitoring – December 2024			**Laboratory:**	ALS (Australian Laboratory Services)					**Delivery Details**	
Sampling Date:		**Results Required by:**		**Address:**	4/13 Geary Place, North Nowra, NSW 2541					**Dispatch Date:**	
Our reference:	P2108127	**Our Contact:**	Gray Taylor	**Contact:**		**Phone:**	(02) 4423 2063	**Facsimile:**	(02) 4423 2083	**Shipment Method:**	

Sample ID	Number of Containers	Analysis Required (X)													
		pH	Conductivity	Suspended Solids	BOD_5	Phosphorous (total)	Nitrogen (total)	TKN	Ammonia	NOx	Faecal Col.	Enterococci	Oil and Grease	E. Coli	
884/Eff1		X		X	X	X	X	X	X	X	X		X		
~~884/Eff2~~		~~X~~		~~X~~										~~X~~	
Influent		X		X	X	X	X	X	X	X	X		X	X	

Notes: Fax (02 9476 8767) and email (gtaylor@martens.com.au; trichards@martens.com.au; mail@martens.com.au; ~~young.pete7@gmail.com~~ and merrybeachmgr@ingeniaholidays.com.au) results as soon as available, originals of laboratory reports to be posted to Merry Beach Caravan Park, KIOLOA, NSW, 2539.

hbrazil@ingeniaholidays.com.au
JOSH@ waterassetservices.com.au

Environmental Division
Sydney
Work Order Reference
ES2442140

Telephone : +61-2-8784 8555

FAST TRACK

30/12

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30/12/24
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Hydrogeology
Terrain analysis
Waste management

Water
Supply & storage
Flooding
Stormwater & drainage
Wetlands
Water quality
Irrigation
Water sensitive design

Wastewater
Treatment
Re-use
Biosolids
Design
Management
Monitoring
Construction

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MARTENS & ASSOCIATES P/L
ABN 85 070 240 890 ACN 070 240 890

QUALITY CONTROL REPORT

Work Order	: **ES2442140**	Page	: 1 of 5
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Contact	: Customer Services ES
Address	: Merry Beach Road, Kioloa 2539	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 9476 9999	Telephone	: +61-2-8784 8555
Project	: Merry Beach Monitoring - December 2024	Date Samples Received	: 30-Dec-2024
Order number	: P2108127	Date Analysis Commenced	: 30-Dec-2024
C-O-C number	: ----	Issue Date	: 07-Jan-2025
Sampler	: ----		
Site	: ----		
Quote number	: EW24INGMER0001		
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, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Lauren Waters	Microbiology Laboratory Technician	Sydney Microbiology, Smithfield, NSW

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 6289166)									
ES2441703-007	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.08	8.13	0.6	0% - 20%
ES2441703-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	9.15	9.13	0.2	0% - 20%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 6292932)									
EN2417288-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	50	47	5.7	No Limit
ES2442182-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	115	119	3.2	0% - 20%
ES2442182-011	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	13	10	26.7	No Limit
ES2500021-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	14	12	17.5	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 6293421)									
EN2417288-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.04	0.0	No Limit
ES2442073-005	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	1.42	1.46	3.1	0% - 20%
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 6293423)									
ME2401994-009	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2442140-002	Inffluent	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	95.2	92.7	2.7	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 6293422)									
ME2401994-009	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2442140-002	Inffluent	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.11	0.08	30.7	0% - 50%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 6293430)									
ES2442126-006	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.2	0.2	0.0	No Limit
ME2401995-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	3.5	3.2	9.6	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 6293429)									
ES2442126-006	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ME2401995-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.12	0.12	0.0	0% - 50%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP030: Biochemical Oxygen Demand (BOD) (QC Lot: 6289765)									
EN2417284-001	Anonymous	EP030: Biochemical Oxygen Demand	----	2	mg/L	<2	2	0.0	No Limit
ES2442140-001	884/Eff1	EP030: Biochemical Oxygen Demand	----	2	mg/L	<2	<2	0.0	No Limit

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

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

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 6289166)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	99.8	99.2	101
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 6292932)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	95.7	83.0	129
				<5	1000 mg/L	98.4	82.0	110
				<5	828 mg/L	98.6	83.0	118
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6293421)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	94.3	90.0	114
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6293423)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	90.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6293422)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	110	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6293430)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	5 mg/L	108	69.0	123
				<0.1	2.5 mg/L	99.0	70.0	123
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6293429)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	2.21 mg/L	100	71.3	126
				<0.01	0.5 mg/L	91.1	71.3	126
EP020: Oil and Grease (O&G) (QCLot: 6290955)								
EP020: Oil & Grease	----	5	mg/L	<5	5000 mg/L	85.5	81.0	121
				<5	4000 mg/L	100	70.0	110
EP030: Biochemical Oxygen Demand (BOD) (QCLot: 6289765)								
EP030: Biochemical Oxygen Demand	----	2	mg/L	<2	200 mg/L	84.2	74.0	112

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6293421)							
EN2417288-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.5 mg/L	96.3	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6293423)							
ES2442140-002	Inffluent	EK055G: Ammonia as N	7664-41-7	0.5 mg/L	# Not Determined	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6293422)							
ES2442140-002	Inffluent	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	114	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6293430)							
ES2442140-001	884/Eff1	EK061G: Total Kjeldahl Nitrogen as N	----	10 mg/L	100	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6293429)							
ES2442140-001	884/Eff1	EK067G: Total Phosphorus as P	----	1 mg/L	99.6	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2442140**	Page	: 1 of 5
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Telephone	: +61-2-8784 8555
Project	: Merry Beach Monitoring - December 2024	Date Samples Received	: 30-Dec-2024
Site	: ----	Issue Date	: 07-Jan-2025
Sampler	: ----	No. of samples received	: 2
Order number	: P2108127	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EK055G: Ammonia as N by Discrete Analyser	ES2442140--002	Inffluent	**Ammonia as N**	7664-41-7	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
884/Eff1,	Inffluent	----	----	----	31-Dec-2024	30-Dec-2024	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Control Samples (LCS)						
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	15.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
884/Eff1,	Inffluent	**30-Dec-2024**	**----**	----	**----**	**31-Dec-2024**	30-Dec-2024	×
EA025: Total Suspended Solids dried at 104 ± 2°C								
Clear Plastic Bottle - Natural (EA025H)								
884/Eff1,	Inffluent	**30-Dec-2024**	**----**	----	**----**	**03-Jan-2025**	06-Jan-2025	✓
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
884/Eff1,	Inffluent	**30-Dec-2024**	**----**	----	**----**	**06-Jan-2025**	27-Jan-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
884/Eff1,	Inffluent	**30-Dec-2024**	**----**	----	**----**	**06-Jan-2025**	27-Jan-2025	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
884/Eff1,	Inffluent	**30-Dec-2024**	**03-Jan-2025**	27-Jan-2025	✓	**06-Jan-2025**	27-Jan-2025	✓
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
884/Eff1,	Inffluent	**30-Dec-2024**	**03-Jan-2025**	27-Jan-2025	✓	**06-Jan-2025**	27-Jan-2025	✓
EP020: Oil and Grease (O&G)								
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)								
884/Eff1,	Inffluent	**30-Dec-2024**	**----**	----	**----**	**02-Jan-2025**	27-Jan-2025	✓
EP030: Biochemical Oxygen Demand (BOD)								
Clear Plastic Bottle - Natural (EP030)								
884/Eff1,	Inffluent	**30-Dec-2024**	**----**	----	**----**	**31-Dec-2024**	01-Jan-2025	✓
MW006: Thermotolerant Coliforms & E.coli by MF								
Sterile Plastic Bottle - Sodium Thiosulfate (MW006)								
884/Eff1,	Inffluent	**30-Dec-2024**	**----**	----	**----**	**30-Dec-2024**	31-Dec-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	4	35	**11.43**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	32	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	4	50	**8.00**	**8.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	5	32	**15.63**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	17	**17.65**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**15.00**	×	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	50	**6.00**	**6.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	32	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Oil and Grease	EP020	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Biochemical Oxygen Demand (BOD)	EP030	WATER	In house: Referenced to APHA 5210 B. The 5-Day BOD test provides an empirical measure of the oxygen consumption capacity of a given water. A portion of the sample is diluted into oxygenated, nutrient rich water, and a seed added to begin biological decay. The initial dissolved oxygen content is measured, then the bottle is sealed and incubated for five days. The remaining dissolved oxygen is measured, and from the difference, the demand for oxygen, by biological decay, is determined. This method is compliant with NEPM Schedule B(3).
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)

CERTIFICATE OF ANALYSIS

Work Order	: **ES2442140**	Page	: 1 of 3
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division Sydney
Contact	: Gray Taylor	Contact	: Customer Services ES
Address	: Merry Beach Road, Kioloa 2539	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 9476 9999	Telephone	: +61-2-8784 8555
Project	: Merry Beach Monitoring - December 2024	Date Samples Received	: 30-Dec-2024 15:30
Order number	: P2108127	Date Analysis Commenced	: 30-Dec-2024
C-O-C number	: ----	Issue Date	: 07-Jan-2025 17:26
Sampler	: ----		
Site	: ----		
Quote number	: EW24INGMER0001		
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, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Lauren Waters	Microbiology Laboratory Technician	Sydney Microbiology, Smithfield, NSW

General Comments

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

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

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

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

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

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

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

- MF = membrane filtration
- CFU = colony forming unit
- MW006 is ALS's internal code and is equivalent to AS4276.5.
- EP030: The Residue DO for sample #2 is less than 1 mg/L. This indicates that the sample has not been diluted enough and the BOD is greater than 194 mg/L. The result reported is estimated from the greatest dilution.
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range of 10 - 100cfu.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	884/Eff1	Inffluent	----	----	----
			Sampling date / time	30-Dec-2024 00:00	30-Dec-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2442140-001	ES2442140-002	--------	--------	--------
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.89**	**8.48**	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**41**	**106**	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.91**	**95.2**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**2.03**	**0.11**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.2**	**147**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**3.2**	**147**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.07**	**14.3**	----	----	----
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	**15**	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	<2	**194**	----	----	----
MW006: Thermotolerant Coliforms & E.coli by MF								
Thermotolerant Coliforms	----	1	CFU/100mL	**~4**	**60000000**	----	----	----
Escherichia coli	----	1	CFU/100mL	**----**	**48000000**	----	----	----