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

Contact: Trystan Richards
Our Ref: P2108127JC45V01
Pages: 4 + Attachments
cc. Andrew Norris

02 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 – NOVEMBER 2024

Further to recommendations in Merry Beach Annual Monitoring Report find below the monthly review of monitoring data for October 28 to December 01, 2024.

1. Collection of water samples

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

- November 28 – Eff1, influent, SW2 and SW3.
- November 28 - Drinking water samples from Creek Tanks, Main Tank, Pool and Pretty Beach Tank were sampled.

Head Office
Suite 201, 20 George St
Hornsby NSW 2077, Australia
Ph 02 9476 9999 **Fax** 02 9476 8767

> mail@martens.com.au
www.martens.com.au
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 indicate license conditions were exceeded for nitrogen total during November.
- Laboratory results for Eff1 indicate Phosphorus (total) exceeded the 50 percentile concentration limit for November.
- 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	28 November Results	Complies?
BOD	mg/L		20	30	<2	✓
Faecal coliforms (FC)	CFU/100 mL	25		150	<1	✓
Nitrogen (total)	mg/L		10	15	21.9	✘
Oil and grease	mg/L	1.5		5	<1	✓
pH	pH units			6.5 – 8.5	7.7	✓
Phosphorous (total)	mg/L	5.5		10	7.87	✘
Total suspended solids (TSS)	mg/L		10	20	<5	✓

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 Eff1 and 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. Review of monitored parameters

During November sampling period surface water monitoring points SW2 – SW3 were sampled. SW1 was dry during November sampling event.

Surface water monitoring results were reviewed for November 2024.

All laboratory results for Surface water monitoring for November 2024 are generally consistent with previous reported periods and will continue to be monitored.

5. 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 November 2024.
- All sample locations were within the standards for *E. coli* with results (<1 CFU/100mL) for November 2024.
- Beach Front Tank and Top Toilet Tank were not sampled due to "Tank not in use".

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: 28-10-2024 **Finish Date:** 3-11-2024

Day of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time of Readings	7.25	8.00.	7.45	7.15	7.30	7.30	0730
Meter 1 Reading MAGFLOW (L)	13.55	13.56	13.59	13.60	13.62	13.66	13.71
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	2733	2774.	2774	2813	2813.	2851	2925
Meter 4 Reading (KL) – NPWS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meter 5 Reading (KL) - DLWC	0.00	0.00.	0.00	0.00	0.00	0.00	0.00
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)	1.70	4.99	3.73	2.13	1.96	1.20	2.91
pH in IDEA reactor / Effluent PW	7.57	7.72	7.65.	7.69	7.71	7.62/	7.70 /
Total Alkalinity in IDEA Reactor (mg/L)		483mg/L			441 mg/L		500mg/l
30 minute sludge volume (%)		45%.			35%.		47%
Chlorine (residual) onsite testing Eff2 (once per week)							
Initials	CRAIG.	CRAIG.	CRAIG	CRAIG.	CRAIG	LUKE	MAL

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

Start Date: 4-11-24. **Finish Date:** 10-11-24.

Day of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time of Readings	7.45.	0745	0800.	7.12	0755	8.35.	7.35
Meter 1 Reading MAGFLOW (L)	13.75	13.78	13.81	13.84	13.86	13.91	13.97
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	2961.	3002	3002	3041	3078	.3118.	111174 (OUTSIDE) 3192
Meter 4 Reading (KL) – NPWS	00.00	00.00	00.00	0.00	0.00	0.00	37954
Meter 5 Reading (KL) - DLWC	00.00	00.00	00.00	0.00	0.00	0.00	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)	3.15	2.92	1.32	3.26	0.00	2.14	1.16
pH in IDEA reactor / Effluent PW	7.65 /	7.66 /	7.59 /	7.60 /	7.59 /	7.55.	7.43
Total Alkalinity in IDEA Reactor (mg/L)			444				> 500 mg/l.
30 minute sludge volume (%)			60%				78% AFTER DECANT.
Chlorine (residual) onsite testing Eff2 (once per week)							
Initials	MAL.	MAL	MAL	LUKE	MAL	CRAIG.	LUKE

BAY FIELD. NEW FIELD PLAYGROUND

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

Start Date: 11-11-24 **Finish Date:** 17-11-24.

Day of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time of Readings	7.40.	0745	7.35	8.05.	0824	8.15	7.15
Meter 1 Reading MAGFLOW (L)	14.02	14.05	14.08	14.11	14.14	14.19	14.24
Meter 2 Reading (KL) – Non- Potable RU (TOTAL BACK)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meter 3 Reading (KL) – Irrigation	111222 3230	111270 3269	111313 3308	111313 3308	111313 3308	111314 3308	111314 3308
Meter 4 Reading (KL) – NPWS (NEW)	37954	TEST 37954 – 37957	37957	37957	37957	37957	37957
Meter 5 Reading (KL) - DLWC (PUMP)	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	3.55	0.00	0.00	0.00	0.00	0.00
pH in IDEA reactor / Effluent PW	7.54	7.62 /	7.60	7.58	7.54 /	7.60	7.72
Total Alkalinity in IDEA Reactor (mg/L)			STP OFFLINE			Running Small Pump to recirculate IDEA.	NEW ASPIRATOR
30 minute sludge volume (%)			DUE TO ASPIRATOR PUMP				PUMP INSTALLED –
Chlorine (residual) onsite testing Eff2 (once per week)			FAILURE – JOSH WATSON,				JOSH WATSON.
Initials	LUKE MAL CRAIG.	MAL		REPAIRING. LUKE & MM	MAL	CRAIG	LUKE.

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

Start Date: 18/11/24 **Finish Date:** 24-11-24

Day of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time of Readings	7.45	7-40	7.25.	07.35	0735	10:00AM	8.05am
Meter 1 Reading MAGFLOW (L)	14.28	14.31	14.34.	14.38	14.41	14.47	14.53
Meter 2 Reading (KL) – Non- Potable RU	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL BACK (INOX) Meter 3 Reading (KL) – Irrigation	111 314 3308	111 314 3345	INOXIC 3382 111 337	111 337 3419	111 337 3457	111 441 3495	111537 3571
NEW Meter 4 Reading (KL) – NPWS	37957 (ON)	37996	38016	38016	38021	38046	038046
PUMP 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)	3.91	3.66	6.22	4.40	1.37	0.00	6.07
pH in IDEA reactor / Effluent PW	7.82	7.76	7.68	7.61 /	7.53 /	7.28 /	7.38
Total Alkalinity in IDEA Reactor (mg/L)	> 500 mg/l		487 mg/l				
30 minute sludge volume (%)	50 %		70%	65%	63%		
Chlorine (residual) onsite testing Eff2 (once per week)	STP BACK ONLINE		LAST DECANT TO INOXIC TANK.				
Initials	LUKE	LUKE.	LUKE.	MAL	MAL	ABR	CRHG.

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

Start Date: 25/11/24 **Finish Date:** 01/12/2024

Day of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Time of Readings	0730	08.25	9:55 Am	0730	10:20 Am	9.32 Am.	9.05
Meter 1 Reading MAGFLOW (L)	14.56	14.60	14.64	14.66	14.70	14.75	14.80
Meter 2 Reading (KL) – Non- Potable RU	0 00	0.00.	0.00	0.00	0.00	0.00	0.00
BACK INOX Meter 3 Reading (KL) – Irrigation	111589	111633	111684 3689	111729 3725	111429	111729 3763	111824. 3840
NEW Meter 4 Reading (KL) – NPWS	038046	038046	038046	038046	038046	038086.	038086
PLAY Meter 5 Reading (KL) - DLWC	27398	27398.	27398	27398	027398	027398	027 398
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)	2-93	4.30	0.00	0.00	1.46	0.00	0.00
pH in IDEA reactor / Effluent PW	7.31 /	7.31	7.42/	7.31 /	7.49/	7.37.	7.27
Total Alkalinity in IDEA Reactor (mg/L)	342	2x transfer Sludge Pump (was)		359			216 mg/L
30 minute sludge volume (%)	65%			75%			52%
Chlorine (residual) onsite testing Eff2 (once per week)		Decant to Dune Fields.					
Initials	MAL	CRAIG.	Abe	MAL	Abe	CRAIG	CRAIG.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EW2405407**		
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 Fresh /Drinking Water Monthly	Page	: 1 of 4
Order number	: P0501061	Quote number	: EW2024INGMER0001 (EW24INGMER0001)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Tom Roose		

Dates

Date Samples Received	: 28-Nov-2024 17:30	Issue Date	: 28-Nov-2024
Client Requested Due Date	: 06-Dec-2024	Scheduled Reporting Date	: **06-Dec-2024**

Delivery Details

Mode of Delivery	: Sampled By ALS	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: 6.2, 5.3, 5.0 - Ice present
Receipt Detail	:	No. of samples received / analysed	: 4 / 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*	(On Hold) WATER No analysis requested	WATER - MW006 (Ec) E.coli by Membrane Filtration	WATER - MW007 Total Coliforms by Membrane Filtration
EW2405407-002	28-Nov-2024 11:10	Creek Tanks		✓	✓
EW2405407-003	28-Nov-2024 11:05	Main tank		✓	✓
EW2405407-005	28-Nov-2024 11:00	Pretty beach tank		✓	✓
EW2405407-006	28-Nov-2024 00:00	Pool	✓		

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
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Mail Martens

- *AU Certificate of Analysis - NATA (COA)	Email	mail@martens.com.au
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- 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
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- 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) MW007: Coliforms by MF

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

QUALITY CONTROL REPORT

Work Order	: **EW2405407**	Page	: 1 of 3
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 Fresh /Drinking Water Monthly	Date Samples Received	: 28-Nov-2024
Order number	: P0501061	Date Analysis Commenced	: 29-Nov-2024
C-O-C number	: ----	Issue Date	: 05-Dec-2024
Sampler	: Tom Roose		
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*
Sarah Griffiths	Microbiologist	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	: **EW2405407**	Page	: 1 of 4
Client	: **Ingenia Holidays Merry Beach**	Laboratory	: Environmental Division NSW South Coast
Contact	: Gray Taylor	Telephone	: 02 42253125
Project	: Merry Beach Fresh /Drinking Water Monthly	Date Samples Received	: 28-Nov-2024
Site	: ----	Issue Date	: 05-Dec-2024
Sampler	: Tom Roose	No. of samples received	: 4
Order number	: P0501061	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
MW002: Heterotrophic Plate Count							
Sterile Plastic Bottle - Sodium Thiosulfate (MW002)							
Pool	**28-Nov-2024**	**----**	----	----	**29-Nov-2024**	29-Nov-2024	✓
MW006: Faecal Coliforms & E.coli by MF							
Sterile Plastic Bottle - Sodium Thiosulfate (MW006)							
Creek Tanks, Main tank, Pretty beach tank	**28-Nov-2024**	**----**	----	----	**29-Nov-2024**	29-Nov-2024	✓
MW006: Thermotolerant Coliforms & E.coli by MF							
Sterile Plastic Bottle - Sodium Thiosulfate (MW006)							
Pool	**28-Nov-2024**	**----**	----	----	**29-Nov-2024**	29-Nov-2024	✓
MW007: Coliforms by MF							
Sterile Plastic Bottle - Sodium Thiosulfate (MW007)							
Creek Tanks, Main tank, Pretty beach tank	**28-Nov-2024**	**----**	----	----	**29-Nov-2024**	29-Nov-2024	✓
MW010: P.aeruginosa by MF							
Sterile Plastic Bottle - Sodium Thiosulfate (MW010)							
Pool	**28-Nov-2024**	**----**	----	----	**29-Nov-2024**	29-Nov-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
Heterotrophic (Total) Plate Count @ 22C and 36C	MW002	WATER	AS4276.3.1
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7
Coliforms by Membrane Filtration	MW007	WATER	AS 4276.5
Pseudomonas aeruginosa by Membrane Filtration	MW010	WATER	AS4276.13

CHAIN OF CUSTODY

Page 1 of 1

Mandatory Fields

CLIENT CODE:	IMGMER	*PROJECT MANAGER:	Gray Taylor	SAMPLER:	Peter Young
*CLIENT:	INGENIA HOLIDAYS MERRY BEACH	*PM MOBILE:	0422 685 594	SAMPLER MOBILE:	0404 455 064
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)	payables@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; mail@martens.com.au; young.pete7@gmail.com, Merrybeachmgr@ingeniaholidays.com.au, KBourke@ingeniacommunities.com.au, Bconnolly@ingeniaholidays.com.au, Trichards@martens.com.au, ejongsma@martens.com.au				

CoC #: (if applicable)

BIOSECURITY

Country of Origin: (if not Australia)

*** STORAGE REQUIREMENTS**
Please check box. →
Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

- [X] Standard Storage
- [ ] Extended Storage

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)

- [X] 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 sa

Environmental Division
Wollongong
Work Order Reference
EW2405407

Telephone : 02 42253125

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	Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
	~~Beach Front Tank~~ N/A			1	W	X	X	☐	☐	
	Creek Tanks		1110	1	W	X	X	☐	☐	
	Main Tank		1105	1	W	X	X	☐	☐	
	~~Top Toilets Tank~~ N/A			1	W	X	X	☐	☐	
	Pretty Beach Tank		1100	1	W	X	X	☐	☐	
	POOL			1	W			☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	
								☐	☐	

Analysis to be confirmed by Client MS. 28/11/24 @ 1750

Receipt Detail (Lab Use ONLY)

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

Sample Temp at Receipt: 6.2 °C 5.3 °C 5.0 °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 # 1 # #

Relinquished by:	Signature:	Date/Time: 28/11	Received by: Signature: MS
Relinquished by:	Signature:	Date/Time:	Received by: Signature: Date/Time: 28/11/2024 1750

Approved Date: 13/02/2024

CERTIFICATE OF ANALYSIS

Work Order	: **EW2405407**	Page	: 1 of 3
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 Fresh /Drinking Water Monthly	Date Samples Received	: 28-Nov-2024 17:30
Order number	: P0501061	Date Analysis Commenced	: 29-Nov-2024
C-O-C number	: ----	Issue Date	: 05-Dec-2024 15:44
Sampler	: Tom Roose		
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*
Sarah Griffiths	Microbiologist	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.

- CFU = colony forming unit
- MF = membrane filtration
- Microbiological Comment: HPC results are reported an approximate (~) when the count of colonies on the plate is outside the range of 10 - 300cfu, in accordance with ALS work instruction QWI-MIC/MW002.
- 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.
- MW002 is ALS's internal code and is equivalent to AS4276.3.
- MW007 is ALS's internal code and is equivalent to AS4276.5.
- MW010 is ALS's internal code and is equivalent to AS4276.13.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Creek Tanks	Main tank	Pretty beach tank	Pool	----
				Sampling date / time	28-Nov-2024 11:10	28-Nov-2024 11:05	28-Nov-2024 11:00	28-Nov-2024 00:00	----
Compound	CAS Number	LOR	Unit		EW2405407-002	EW2405407-003	EW2405407-005	EW2405407-006	--------
					Result	Result	Result	Result	----
MW002: Heterotrophic Plate Count									
Heterotrophic Plate Count (36°C)	----	1	CFU/mL		**----**	**----**	**----**	<1	**----**
MW006: Faecal Coliforms & E.coli by MF									
Escherichia coli	----	1	CFU/100mL		<1	<1	<1	**----**	**----**
MW006: Thermotolerant Coliforms & E.coli by MF									
Escherichia coli	----	1	CFU/100mL		**----**	**----**	**----**	<1	**----**
MW007: Coliforms by MF									
Coliforms	----	1	CFU/100mL		<1	<1	<1	**----**	**----**
MW010: P.aeruginosa by MF									
Pseudomonas aeruginosa	----	1	CFU/100mL		**----**	**----**	**----**	<1	**----**

Inter-Laboratory Testing

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

(WATER) MW007: Coliforms by MF

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

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

(WATER) MW010: P.aeruginosa by MF

(WATER) MW002: Heterotrophic Plate Count

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EW2405410**		
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 - November 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	: Tom Roose		

Dates

Date Samples Received	: 28-Nov-2024 17:30	Issue Date	: 28-Nov-2024
Client Requested Due Date	: 06-Dec-2024	Scheduled Reporting Date	: **06-Dec-2024**

Delivery Details

Mode of Delivery	: Sampled By ALS	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: 21.0, 22.4, 22.8
Receipt Detail	:	No. of samples received / analysed	: 6 / 6

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.

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Enumeration of Enterococci by Membrane Filtration : MW023		
884/SW2	- Clear Plastic Bottle - Natural	- Sterile Plastic Bottle - Sodium Thiosulfate
884/SW3	- Clear Plastic Bottle - Natural	- Sterile Plastic Bottle - Sodium Thiosulfate

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 - EN67 PK - pH Field Tests - pH - ALS Wollongong	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
EW2405410-001	28-Nov-2024 10:35	884/Eff1	✓	✓	✓	✓	✓	✓	✓
EW2405410-004	28-Nov-2024 11:20	884/SW2		✓	✓		✓	✓	
EW2405410-005	28-Nov-2024 11:07	884/SW3		✓	✓		✓	✓	
EW2405410-006	28-Nov-2024 10:40	Influent	✓	✓	✓	✓	✓		✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EK059G Nitrite plus Nitrate as N (NOx) by Discrete	WATER - EN67 PK - Conductivity Field Tests - Conductivity- ALS Wollongong	WATER - EN67 PK - Field Observations Field Tests - Field Observations - ALS	WATER - MW006 (FC & Ec) Thermotolerant Coliforms & E.coli by Membrane	WATER - MW023 Enterococci - Enumeration by Membrane	WATER - NT-09 TKN, Total Phosphorus
EW2405410-002	28-Nov-2024 00:00	884/Eff2			✓			
EW2405410-003	28-Nov-2024 00:00	884/SW1			✓			
EW2405410-004	28-Nov-2024 11:20	884/SW2	✓	✓			✓	✓
EW2405410-005	28-Nov-2024 11:07	884/SW3	✓	✓			✓	✓
EW2405410-006	28-Nov-2024 10:40	Influent				✓		

Proactive Holding Time Report

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

Requested Deliverables

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

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) EP030: Biochemical Oxygen Demand (BOD)
(WATER) MW006: Thermotolerant Coliforms & E.coli by MF
(WATER) MW023: Enterococci by Membrane Filtration

QUALITY CONTROL REPORT

Work Order	: **EW2405410**	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 - November 2024	Date Samples Received	: 28-Nov-2024
Order number	: P2108127	Date Analysis Commenced	: 28-Nov-2024
C-O-C number	: ----	Issue Date	: 05-Dec-2024
Sampler	: Tom Roose		
Site	: ----		
Quote number	: EW24INGMER0001		
No. of samples received	: 6		
No. of samples analysed	: 6		

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*
Aneta Prosaroski	Environmental Services Representative	Laboratory - Wollongong, NSW
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 (%)
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 6232083)									
ES2438881-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	330	332	0.6	0% - 20%
ES2439002-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	13	12	14.1	No Limit
ES2439079-005	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	151	149	1.2	0% - 20%
ES2439134-016	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 6230821)									
ES2439145-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.29	0.28	0.0	0% - 20%
EW2405410-006	Influent	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	96.4	98.3	2.0	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 6230822)									
ES2439145-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.12	2.14	0.9	0% - 20%
EW2405410-006	Influent	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.06	0.06	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 6230818)									
ES2439145-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1 (0.2)*	mg/L	12.3	11.7	5.7	0% - 20%
EW2405404-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1 (2.0)*	mg/L	2.8	4.0	33.3	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 6230817)									
ES2439145-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01 (0.02)*	mg/L	2.19	2.21	0.8	0% - 20%
EW2405404-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	1.04	1.10	5.4	0% - 20%
EP030: Biochemical Oxygen Demand (BOD) (QC Lot: 6224657)									
ES2438846-001	Anonymous	EP030: Biochemical Oxygen Demand	----	2	mg/L	13	16	16.9	No Limit
ES2438974-001	Anonymous	EP030: Biochemical Oxygen Demand	----	2	mg/L	<2	<2	0.0	No Limit
EP030: Biochemical Oxygen Demand (BOD) (QC Lot: 6224658)									

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: 6224658) - continued									
EW2405410-004	884/SW2	EP030: Biochemical Oxygen Demand	----	2	mg/L	5	6	18.2	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 Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 6232083)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	97.3	83.0	129
				<5	1000 mg/L	101	82.0	110
				<5	879 mg/L	98.4	83.0	118
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6230821)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	101	90.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6230822)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	99.6	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6230818)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	91.8	69.0	123
				<0.1	1 mg/L	93.3	70.0	123
				<0.1	5 mg/L	105	70.0	123
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6230817)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	102	71.3	126
				<0.01	0.442 mg/L	107	71.3	126
				<0.01	1 mg/L	126	70.0	130
EP020: Oil and Grease (O&G) (QCLot: 6227244)								
EP020: Oil & Grease	----	1	mg/L	<1.0	5000 mg/L	94.1	80.0	120
EP030: Biochemical Oxygen Demand (BOD) (QCLot: 6224657)								
EP030: Biochemical Oxygen Demand	----	2	mg/L	<2	200 mg/L	75.2	74.0	112
EP030: Biochemical Oxygen Demand (BOD) (QCLot: 6224658)								
EP030: Biochemical Oxygen Demand	----	2	mg/L	<2	200 mg/L	75.2	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**

				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: 6230821)							
ES2439145-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	97.0	70.0	130

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: 6230822)							
ES2439145-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6230818)							
ES2439145-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	25 mg/L	103	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6230817)							
ES2439145-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	122	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EW2405410**	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 - November 2024	Date Samples Received	: 28-Nov-2024
Site	: ----	Issue Date	: 05-Dec-2024
Sampler	: Tom Roose	No. of samples received	: 6
Order number	: P2108127	No. of samples analysed	: 6

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							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	ES2439145--001	Anonymous	**Nitrite + Nitrate 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
EA005FD: Field pH							
Field Test Dummy Bottle (EN67 PK) 884/Eff1, 884/SW2, 884/SW3, Influent	**28-Nov-2024**	**----**	----	----	**28-Nov-2024**	----	----
EA010FD: Field Conductivity							
Field Test Dummy Bottle (EN67 PK) 884/SW2, 884/SW3	**28-Nov-2024**	**----**	----	----	**28-Nov-2024**	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H) 884/Eff1, Influent	**28-Nov-2024**	**----**	----	----	**04-Dec-2024**	05-Dec-2024	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) 884/Eff1, 884/SW2, 884/SW3, Influent	**28-Nov-2024**	**----**	----	----	**03-Dec-2024**	26-Dec-2024	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) 884/Eff1, 884/SW2, 884/SW3, Influent	**28-Nov-2024**	**----**	----	----	**03-Dec-2024**	26-Dec-2024	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) 884/Eff1, 884/SW2, 884/SW3, Influent	**28-Nov-2024**	**03-Dec-2024**	26-Dec-2024	✓	**03-Dec-2024**	26-Dec-2024	✓

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
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
884/Eff1, 884/SW2, 884/SW3, Influent	**28-Nov-2024**	**03-Dec-2024**	26-Dec-2024	✓	**03-Dec-2024**	26-Dec-2024	✓
EN67 PK: Field Tests							
Field Test Dummy Bottle (EN67 PK)							
884/Eff2, 884/SW1	**28-Nov-2024**	**----**	----	----	**28-Nov-2024**	----	----
EP020: Oil and Grease (O&G)							
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020 LL)							
884/Eff1, Influent	**28-Nov-2024**	**----**	----	----	**02-Dec-2024**	26-Dec-2024	✓
EP030: Biochemical Oxygen Demand (BOD)							
Clear Plastic Bottle - Natural (EP030)							
884/Eff1, 884/SW2, 884/SW3, Influent	**28-Nov-2024**	**----**	----	----	**29-Nov-2024**	30-Nov-2024	✓
MW006: Thermotolerant Coliforms & E.coli by MF							
Sterile Plastic Bottle - Sodium Thiosulfate (MW006)							
884/Eff1, 884/SW2, 884/SW3, Influent	**28-Nov-2024**	**----**	----	----	**29-Nov-2024**	29-Nov-2024	✓
MW023: Enterococci by Membrane Filtration							
Sterile Plastic Bottle - Sodium Thiosulfate (MW023)							
884/SW2, 884/SW3	**28-Nov-2024**	**----**	----	----	**29-Nov-2024**	29-Nov-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	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	**10.00**	**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	2	20	**10.00**	**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	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease Low Level	EP020 LL	1	17	**5.88**	**5.00**	✓	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	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Biochemical Oxygen Demand (BOD)	EP030	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease Low Level	EP020 LL	1	17	**5.88**	**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	20	**5.00**	**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	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**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
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)
Field Tests - Port Kembla	EN67 PK	WATER	Field determinations as per methods described in APHA. The analysis is performed in the field by ALS samplers. ALS NATA accreditation apply for this service.
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
Enumeration of Enterococci by Membrane Filtration	MW023	WATER	AS4276.9

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)

WATER ANALYSIS CHAIN OF CUSTODY

Project:	Merry Beach Monitoring – November 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	Field pH	Field Conductivity	Suspended Solids	BOD_5	Phosphorous (total)	Nitrogen (total)	TKN	Ammonia	NOx	Faecal Col.	Enterococci	Oil and Grease	E. Coli	
		Analysis Required (X)													
884/Eff1	1035	X		X	X	X	X	X	X	X	X		X		
884/Eff2	–	X		X										X	
884/SW1	–	X	X		X	X		X	X	X	X	X			
884/SW2	1120	X	X		X	X		X	X	X	X	X			
884/SW3	1107	X	X		X	X		X	X	X	X	X			
	℞														
Influent	1040	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.

Rec: M.Sampson 28/11/24 @1730 Temp: 25.0, 22.4, 22.8

Environmental Division
Wollongong
Work Order Reference
EW2405410

Telephone : 02 42253125

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> mail@martens.com.au
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CERTIFICATE OF ANALYSIS

Work Order	: **EW2405410**	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 - November 2024	Date Samples Received	: 28-Nov-2024 17:30
Order number	: P2108127	Date Analysis Commenced	: 28-Nov-2024
C-O-C number	: ----	Issue Date	: 05-Dec-2024 10:22
Sampler	: Tom Roose		
Site	: ----		
Quote number	: EW24INGMER0001		
No. of samples received	: 6		
No. of samples analysed	: 6		

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*
Aneta Prosaroski	Environmental Services Representative	Laboratory - Wollongong, NSW
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
- 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.
- MW006 is ALS's internal code and is equivalent to AS4276.5.
- EP030: BOD LCS Low Recovery <170 mg/L: LCS recovery below recommended APHA limits of the certified +/-30.5 mg/L; BOD results may bias low.
- 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 completed by ALS Wollongong in accordance with in-house sampling method EN/67.6 Rivers and Streams.
- All field analysis performed by ALS Wollongong were completed at the time of sampling.
- Sampling completed by ALS Wollongong in accordance with in-house sampling method EN/67.4 Lakes and Reservoirs
- Sampling completed by ALS Wollongong in accordance with in-house sampling method EN/67.10 Wastewaters
- MW023 is ALS's internal code and is equivalent to AS4276.9.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	884/Eff1	884/Eff2	884/SW1	884/SW2	884/SW3
			Sampling date / time	28-Nov-2024 10:35	28-Nov-2024 00:00	28-Nov-2024 00:00	28-Nov-2024 11:20	28-Nov-2024 11:07
Compound	CAS Number	LOR	Unit	EW2405410-001	EW2405410-002	EW2405410-003	EW2405410-004	EW2405410-005
				Result	Result	Result	Result	Result
EA005FD: Field pH								
pH	----	0.1	pH Unit	**7.7**	**----**	**----**	**6.9**	**7.5**
EA010FD: Field Conductivity								
Conductivity @ 25oC	----	1	µS/cm	**----**	**----**	**----**	**2140**	**4690**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	**----**	**----**	**----**	**----**
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.04**	**----**	**----**	**0.18**	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**16.8**	**----**	**----**	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**5.1**	**----**	**----**	**0.8**	**1.8**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**21.9**	**----**	**----**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**7.87**	**----**	**----**	**0.11**	**0.94**
EN67 PK: Field Tests								
Field Observations	----	0.01	--	**----**	**Not In Use**	**Dry Site**	**----**	**----**
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	**----**	**----**	**5**	**5**
MW006: Thermotolerant Coliforms & E.coli by MF								
Thermotolerant Coliforms	----	1	CFU/100mL	<1	**----**	**----**	**3200**	**1400**
MW023: Enterococci by Membrane Filtration								
Enterococci	----	1	CFU/100mL	**----**	**----**	**----**	**910**	**580**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	Influent	----	----	----	----
			Sampling date / time	28-Nov-2024 10:40	----	----	----	----
Compound	CAS Number	LOR	Unit	EW2405410-006	--------	--------	--------	--------
				Result	----	----	----	----
EA005FD: Field pH								
pH	----	0.1	pH Unit	**9.1**	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**118**	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**96.4**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.06**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**108**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ **Total Nitrogen as N**	----	0.1	mg/L	**108**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**14.1**	----	----	----	----
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	**110**	----	----	----	----
MW006: Thermotolerant Coliforms & E.coli by MF								
Thermotolerant Coliforms	----	1	CFU/100mL	**32000000**	----	----	----	----
Escherichia coli	----	1	CFU/100mL	**27000000**	----	----	----	----

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) MW023: Enterococci by Membrane Filtration