

Algal bloom wildlife post-mortem report



Government
of South Australia

Department for
Environment and Water

Species – Common dolphin

Date collected – 1 December 2025

Location – Moana Beach

History relating to the animal

A male common dolphin (*Delphinus delphis*) was found at Moana Beach on 1 December 2025.

Clinical examination

The animal was already dead and so could not be examined prior to death. The animal was found in laying on its right hand side.

Necropsy

The necropsy (looking at the whole body) revealed that the dolphin was in good body condition, weighing 100 kg and measuring 1.1 m in length. The ventral (underside) subcutaneous (under the skin) fat was 25 mm thick. Both eyes were sunken and the cornea (outer surface of the eyeball) was opaque (cloudy) and wrinkly. The skin was moderately autolysed (decomposed) and sloughed off (came away from underlying muscle), especially around the lower jaw region.

There was a 7 cm x 10 cm triangle-shaped wound in the skin caudal (toward the tail) to the dorsal fin (fin on the middle of the back), exposing the underlying muscle. There was minimal haemorrhage (bleeding) or inflammation associated with the wound (indicating the trauma may have happened after death).

The thoracic cavity (inside the chest) contained 200 mL of dark red, opaque fluid. The right lung was twice the size of the left – possibly due to gravity-dependent fluid pooling after death. When cut, both lungs oozed dark red, opaque fluid. Both lungs floated in formalin (tissue preserving liquid).

The abdominal cavity was moderately distended by gas, and contained 500 mL of dark-red, opaque fluid. The intestines were light pink to green in colour and moderately dilated with gas - consistent with autolysis (decomposition after death). The stomach contained a small volume of light pink opaque fluid and tiny fish bones. The colon contained small amounts of dark green pasty material, and the urinary bladder had a small volume of urine.

Tissues were collected to test for *Brucella* species bacteria and brevetoxins and other algal biotoxins (a possibility due to the algal bloom). Tissues were collected and stored for further histopathology assessment (looking at tissues under the microscope for more detailed information) if indicated.

Bacteriology

Polymerase chain reaction (PCR) testing for *Brucella* species bacteria was negative.

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Brevetoxins

No samples were above the limits of reporting.

Other algal biotoxins

No samples were above the limits of reporting.

Summary

A male common dolphin was found dead. Laboratory examination was unable to determine the cause of death due to the degree of decomposition of the body. One lung was enlarged and there was fluid in the chest, which could be due to post-mortem change. Testing for brucellosis (*Brucella* species bacteria) was negative. Brevetoxins and other algal biotoxins were also not detected.

PATH RESULTS: DOLPHIN, (Ma) [REDACTED]

From [REDACTED]

Date Thu 30/04/2026 12:30 PM

To [REDACTED]

[REDACTED]

Tested on 01/12/25
Reported on 30/04/26 13:00
Referred on 01/12/25 **by:** [REDACTED]

[REDACTED]

Owner:
DOLPHIN
MOANA BEACH

Animal/s:
Marine Mammal

DOB: N/A

Collected: 01/12/25 00:25

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

All Tests Complete

GROSS NECROPSY

REF: [REDACTED]

HISTORY

Refer to submission form for full history.

SUBMITTED SAMPLES

1x moderately autolysed, dolphin carcass

GROSS EXAMINATION

The dolphin is 110cm in length; male entire.

The ventral fat pad is 2.5cm.

The dolphin is in RIGHT recumbency.

There is a 7cm x 10cm wedge-shaped/triangle skin wound that exposes the underlying muscle, located just caudal to the dorsal fin. There is minimal haemorrhage or inflammation associated with the lesion. The lesion does not extend deeper beyond the muscular layer.

The eyes are sunken into the socket. The cornea is opaque and wrinkly. Skin is moderately autolysed. It easily sloughs off with gentle pressure, especially around the ventral jaw region.

The thoracic cavity contains ~200ml of dark-red opaque fluid. The RIGHT lung is approximately 2x size of the left lung. Both lungs ooze low amounts of dark-red opaque fluid on cut-section. Both lung lobes float in formalin. Note that the carcass is received in RIGHT recumbency.

The abdominal cavity is moderately distended by gas, and contains ~500ml of dark-red and opaque fluid. The intestines are light-pink to green coloured and moderately dilated with gas (consistent with autolysis). The stomach contains scant amounts of light-pink opaque fluid and tiny fish bones. The colon contains scant amounts of dark green pasty material. The bladder contains scant amounts of urine.

Organs not listed are otherwise grossly normal: Brain, trachea,



Tested on 01/12/25
Reported on 30/04/26 13:00
Referred on 01/12/25 by:



Owner:
DOLPHIN
MOANA BEACH

Animal/s:
Marine Mammal

DOB: N/A

Collected: 01/12/25 00:25

Subm.No:



Lab No.:



Samples tested as received

All Tests Complete

oesophagus, cranial aorta, heart, liver, spleen, gallbladder, pancreas,
testes, bladder, kidney

Interpretation

Moderately autolysed carcass

Lung: Suspect unilateral (right side) consolidation

SAMPLES COLLECTED

5ml tubes: liver, kidney, spleen, lung, heart, brain - Hold at -80
degrees Celsius

70ml tubes: liver, kidney, spleen, lung, heart, brain, intestinal
contents, stomach content, faeces, urine - Hold at -80 degrees Celsius

Oropharyngeal swab in VTM - hold at Molecular Lab

Fixed tissues: Hold at room temperature

COMMENTS

The dolphin is moderately autolysed, which makes accurate assessment difficult. The right lung is approximately 2x larger compared to the left side. This could be secondary to gravitational-associated artefact (note that the carcass is received in RIGHT recumbency). Note that both lungs float in formalin. The 500ml of red-opaque fluid could also be secondary to post-mortem artefact.

Note that samples have been sent for brevetoxin and biotoxin testing as per submission form.

[REDACTED]
Veterinary Anatomic Pathology Diagnostician

Validated by [REDACTED] Veterinary Anatomic
PathologyDiagnostician.

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PATH RESULTS: DOLPHIN BOTTLENOSE, (Ma) [REDACTED]

From [REDACTED]

Date Mon 22/12/2025 12:30 PM

To [REDACTED]

[REDACTED]

Tested on 22/12/25
Reported on 22/12/25 13:00
Referred on 01/12/25 **by:** [REDACTED]

[REDACTED]

Owner:

DOLPHIN [REDACTED]
MOANA BEACH

Animal/s:

Marine Mammal

DOB: N/A

Collected: 01/12/25 00:25

Subm.No: [REDACTED]

Lab No.: [REDACTED]

Samples tested as received

REFERRED TEST

Disease/Test : Brucella sp. PCR

Specimen Type: Brain Tissue

RESULT : Negative

Comment : NATA/RCPA accreditation does not cover the performance of this service

This test was performed by: Australian Centre for Disease Preparedness
(CSIRO)
NATA accreditation number: 13546

CERTIFICATE OF ANALYSIS

Customer:		Submission Description:	Dolphin
Address:		Sample Received Date:	11/03/2026
Contact:		Contract Number:	
		Client Order Number:	

Sample(s) analysed as received. Sampling date and time data supplied by the client. The document shall not be reproduced except in full.

Additional information relating to this submission can be found in the sample receipt notification.

This report supersedes any previous reports with this submission number.

Many tests specify a holding time which gives the recommended timeframe by which a sample should be preserved/extracted and/or analysed after the sample is taken.

Holding time information can be found on the AST website <https://analyticalservices.tas.gov.au/our-services/containers-samples-and-submissions>.

Whilst every effort is made to analyse samples within these timeframes, situations can occur where this is not possible.

Where a test has been conducted outside the recommended sample holding time this should be taken into account when interpreting results.

The results in this report were authorised by:

Name	Position
	Section Head - Organic Chemistry

Test Information:

Method ID	Test Description	Date Commenced:
3411	Lipophilic Toxins in Shellfish by LC-MS/MS	21-04-2026
3411A	Brevetoxins in Shellfish by LC-MS/MS	17-04-2026
3416	PST in Biota by LC-MS/MS (Boundy Method)	20-04-2026

Chemistry Test Results (Biota - Food)			BRAIN	LUNG	HEART	SPLEEN	KIDNEY	LIVER	FAECES	STOMACH CONTENT
Sample Description										
Sampled Date/ Time			01/12/25 0:00	01/12/25 0:00	01/12/25 0:00	01/12/25 0:00	01/12/25 0:00	01/12/25 0:00	01/12/25 0:00	01/12/25 0:00
Method ID	Analyte	Units	439747	439748	439749	439750	439751	439752	439753	439754
3411	AZA1	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	AZA2	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	AZA3	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	Domoic Acid	mg/kg WMB	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	*IS*	<0.05
	DTX1 Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	DTX1 Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	DTX2 Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	DTX2 Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	GYM	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	Homo-YTX	mg/kg WMB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02
	OA Free	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	OA Total	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	PnTx-G	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	PTX2	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	SPX1	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	Total DST	OA eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
3411A	YTX	mg/kg WMB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	Brevetoxin 1	mg/kg WMB	<0.10*	<0.10*	<0.10*	<0.10*	<0.10*	<0.10*	<0.10*	<0.10*
	Brevetoxin 2	mg/kg WMB	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*
	Brevetoxin 3	mg/kg WMB	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*
3416	C1	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	C2	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02
	C3	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02
	C4	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02
	dcGTX1	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	*IS*	<0.02*
	dcGTX2	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02
	dcGTX3	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02
	dcGTX4	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	<0.02*	*IS*	<0.02*

IS- Insufficient Sample

* NATA accreditation does not cover this result

Chemistry Test Results (Biota - Food)			BRAIN	LUNG	HEART	SPLEEN	KIDNEY	LIVER	FAECES	STOMACH CONTENT
Sample Description			01/12/25 0:00	01/12/25 0:00	01/12/25 0:00	01/12/25 0:00	01/12/25 0:00	01/12/25 0:00	01/12/25 0:00	01/12/25 0:00
Sampled Date/ Time										
Method ID	Analyte	Units	439747	439748	439749	439750	439751	439752	439753	439754
3416	dcNEO	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02
	dcSTX	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	doSTX	STX.2HCl eq. mg/kg	<0.01*	<0.01*	<0.01*	<0.01*	<0.01*	<0.01*	*IS*	<0.01*
	GTX1	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	GTX2	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	GTX3	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	GTX4	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
	GTX5	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02
	GTX6	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02
	NEO	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	*IS*	<0.02
	STX	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*IS*	<0.01
Total PST			<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	*IS*	<0.10

IS- Insufficient Sample

* NATA accreditation does not cover this result

Chemistry Test Results (Biota - Food)			ABDO FLUID	URINE	INTESTINAL CONTENT
Sample Description					
Sampled Date/ Time			01/12/25 0:00	01/12/25 0:00	01/12/25 0:00
Method ID	Analyte	Units	439755	439756	439757
3411	AZA1	mg/kg WMB	<0.01	*IS*	<0.01
	AZA2	mg/kg WMB	<0.01	*IS*	<0.01
	AZA3	mg/kg WMB	<0.01	*IS*	<0.01
	Domoic Acid	mg/kg WMB	<0.05	*IS*	<0.05
	DTX1 Free	mg/kg WMB	<0.01	*IS*	<0.01
	DTX1 Total	mg/kg WMB	<0.01	*IS*	<0.01
	DTX2 Free	mg/kg WMB	<0.01	*IS*	<0.01
	DTX2 Total	mg/kg WMB	<0.01	*IS*	<0.01
	GYM	mg/kg WMB	<0.01	*IS*	<0.01
	Homo-YTX	mg/kg WMB	<0.02	*IS*	<0.02
	OA Free	mg/kg WMB	<0.01	*IS*	<0.01
	OA Total	mg/kg WMB	<0.01	*IS*	<0.01
	PnTx-G	mg/kg WMB	<0.01	*IS*	<0.01
	PTX2	mg/kg WMB	<0.01	*IS*	<0.01
	SPX1	mg/kg WMB	<0.01	*IS*	<0.01
	Total DST	OA eq. mg/kg	<0.01	*IS*	<0.01
	YTX	mg/kg WMB	<0.01	*IS*	<0.01
3411A	Brevetoxin 1	mg/kg WMB	<0.10*	<0.10*	<0.10*
	Brevetoxin 2	mg/kg WMB	<0.02*	<0.02*	<0.02*
	Brevetoxin 3	mg/kg WMB	<0.02*	<0.02*	<0.02*
3416	C1	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01
	C2	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02
	C3	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02
	C4	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02
	dcGTX1	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*
	dcGTX2	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02
	dcGTX3	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02
	dcGTX4	STX.2HCl eq. mg/kg	<0.02*	<0.02*	<0.02*

IS- Insufficient Sample

* NATA accreditation does not cover this result



Chemistry Test Results (Biota - Food)			ABDO FLUID	URINE	INTESTINAL CONTENT
Sample Description					
Sampled Date/ Time			01/12/25 0:00	01/12/25 0:00	01/12/25 0:00
Method ID	Analyte	Units	439755	439756	439757
3416	dcNEO	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02
	dcSTX	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01
	doSTX	STX.2HCl eq. mg/kg	<0.01*	<0.01*	<0.01*
	GTX1	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01
	GTX2	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01
	GTX3	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01
	GTX4	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01
	GTX5	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02
	GTX6	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02
	NEO	STX.2HCl eq. mg/kg	<0.02	<0.02	<0.02
	STX	STX.2HCl eq. mg/kg	<0.01	<0.01	<0.01
	Total PST	STX.2HCl eq. mg/kg	<0.10	<0.10	<0.10

IS- Insufficient Sample
* NATA accreditation does not cover this result