

## CERTIFICATE OF FINDINGS

### Section 94, Coroners Act 2006

IN THE MATTER of **Paul William NORTHOVER**

I Sam Herdson, Coroner at Auckland HERBY CERTIFY pursuant to section 94 of the Coroners Act 2006 and having considered all the information presently available for the purpose of the Inquiry into the death of the deceased and for the purpose of Section 57 of the Coroners Act 2006 find :

WITHOUT HOLDING AN INQUEST, but having considered and satisfied the requirements of Section 77(2) of the Coroners Act 2006 (hearings on papers and chambers findings)

**Full Name of deceased:** Paul William NORTHOVER  
**Late of:** Am Nohl 32, Lonsee, Germany  
**Occupation:** Computer engineer  
**Sex:** Male  
**Date of Birth/Age:** 18 August 1956; 53 years  
**Place of Death:** Matauri Bay, Northland, New Zealand  
**Date of Death:** 24 January 2009

#### Cause(s) of Death:

1 (a) . Direct cause: **Drowning**  
(b) . Antecedent causes (if known) :  
**Cerebral air gas embolism**  
**Epilepsy**  
**Ischaemic heart disease**

#### Circumstances of death: As set out in the attached written findings Recommendations

There are no specified recommendations or comments made under section 57(3) of the Coroners Act 2006.

NOTIFICATION THAT INQUIRY WILL NOT BE OPENED/RESUMED

Sections 70(1 )(a) and 70(2), Coroners Act 2006

IN THE MATTER of **Paul William NORTHOVER**

#### Written findings as to circumstances of death

1 Paul William Northover was a 53 year old businessman who lived in Germany with his wife Linda Northover. They were visiting family in New Zealand during January 2009. Mr Northover worked as a self-employed computer engineer.

2 On 24 January 2009, Mr Northover died suddenly and unexpectedly, as a result of drowning while scuba diving at Matauri Bay, near Kaeo, Northland. The dive site was the site of the *Rainbow Warrior* vessel and involved recreational diving to depths of approximately 19-25 metres. Mr Northover's death was reported to the Coroner and inquiries were undertaken to establish the causes and circumstances of his death. A summary is set out below.

#### Summary of Circumstances

##### *Previous diving history*

1 A written report about the overall circumstances and the examination of the diving equipment used by Mr Northover, was provided by the Police National Dive Squad, through Bevan SheffieldCranstoun, Wellington (undated). At the start of the report it is noted that in September 2005, Mr Northover had completed a PADI Open Water Course in Florida, United States of America. He was known to have logged several dives subsequently and a table showing his history of 12 known dives from September 2005 to January 2008, undertaken in the United States of America and Australia, is included in the Police National Dive Squad report. The table also shows the four dives completed in New Zealand in January 2009, with the fifth dive being the fatal dive, all of which are summarised below.

2 At the time of his holiday in New Zealand in January 2009, he completed two dives in Milford Sound in the South Island. He undertook those dives with a dive charter group, Tawaki Adventures and was not required to sign a medical waiver as he produced a PADI Open Water dive card. It was also noted that one

of the dives at Milford Sound was to a depth of 22 metres and was in excess of his training as an Open Water Student which was a qualification to 18 metres.

3 On 23 January 2009, Mr Northover registered for a PADI Advanced Open Water Course through Paihia Dive HQ, Paihia, in Northland. (The full company name is Dive Bay of Islands Ltd trading as Paihia Dive HQ, however, it is commonly referred to as Paihia Dive HQ).

6. Mr Northover hired a full set of dive gear for the Advanced Open Water Course. He completed the requisite documentation that was needed for adventure diving. The documentation consisted of:

(1) an information sheet that was completed by the diving participant, but for the PADI Instructor's use; (2) a medical statement completed by the diving participant; and (3) a waiver of liability form. The full title of these documents is:

Adventures in Diving Documentation Worksheet (For PADI Instructor use only)

Medical Statement -Participant Record (Divers Medical Questionnaire)

Liability Release and Assumption of Risk Agreement

4 Later that day, on 23 January 2009, Mr Northover completed two training dives (boat dive, and also a deep dive) required for his PADI Advanced Open Water Diver certification. The dives took place at the wreck of the *HMNZ Canterbury* vessel in the Bay of Islands, Northland. Mr Northover was paired with a 'dive buddy', David Burkin, another participant on the course who was an Australian national on holiday in New Zealand.

8. Within the written report provided by the Police National Dive Squad it was noted (at para 3.15) that training records obtained from Paihia Dive HQ showed the detail of Mr Northover's two dives:

First dive: 26.9 metres for 24 minutes

Interval at surface: 2 hours 55 minutes

Second dive: 10.1 metres for 14 minutes

5 Mr Northover was noted to be out of breath after his first dive, and after the second dive, Mr Northover did not feel well enough to do a further dive. He stayed on the surface snorkelling while the remainder of the group completed a third dive. Further, Mr Northover was observed to be tired that evening and was seen drinking alcohol, although the amount of alcohol was unknown. The

#### *Previous day -completion of medical questionnaire and other documentation*

evidence shows that Mr Northover's widow advised that Mr Northover did drink alcohol regularly and was known to go to bed late but get up early (times not specified).

#### *Events on day of death*

1 On 24 January 2009, Mr Northover met the dive group at Paihia Dive HQ on Williams Road, Paihia. The group met at around Bam and were issued with equipment for the dive. Mr Northover was reported to be in good spirits and enthusiastic about the upcoming diving.

2 The dive was planned at the site of the sunken *Rainbow Warrior* vessel at Matauri Bay, which is near the Cavalli Islands, in Northland. The dive group comprised 10 dive participants, or customers, and they were given information about the history of the *Rainbow Warrior*, together with a dive plan.

3 The group arrived at Matauri Bay and set up their dive equipment, which was then put into the "RIB" (Rigid Inflatable Boat), a 7.3 metre dive boat named *Akamaru*, situated at Matauri Bay Holiday Park. The dive boat was launched and when it was clear of the beach, a safety briefing was given to all customers. There were 13 people on board, with the additional people being two staff acting as dive guides (Lewis Jones and David Wadsworth), and one staff member staying onboard as a boatman (Hayden McKay).

4 At the dive site all divers were given a full dive briefing on the dive at the *Rainbow Warrior*. Mr Northover was paired with the same dive buddy from the previous day, David Burkin. Their dive guide was David Wadsworth.

5 The *Rainbow Warrior* has a buoy attached to a mooring block near the stern which is used by divers to descent and ascend from the dive. The group descended and undertook the dive in accordance with the predetermined dive plan. The group left the sand at the bow of the *Rainbow Warrior*, which is at a depth of 25 metres, to ascend to the lower deck area which is at a depth of 19 metres. It was during this ascent that Mr Northover encountered difficulties.

6 During the ascent from the bow to the lower deck area, Mr Northover was observed to have his hand on the inflator hose to release air from his BCD (buoyancy control device), however, he failed to level out at the lower deck of the *Rainbow Warrior* and continued to ascend. The guide David Wadsworth noticed that Mr Northover was still ascending and took hold of the tip of Mr Northover's

fin and pulled him downwards towards the deck area. David Wadsworth then released his hand from Mr Northover's fin, however, Mr Northover continued descending and his dive buddy, David Burkin, noticed this and grabbed Mr Northover by the hand. Mr Northover was noted to be responsive and grabbed his dive buddy's arm, however, the guide David Wadsworth had become concerned and gained control of Mr Northover by grabbing the shoulder of Mr Northover's BCD. David Wadsworth noted that Mr Northover was breathing, but that his eyes had become wide and staring and that Mr Northover was in

a state of panic. David Wadsworth signalled to the other divers in the group that they should make their way back to the buoy line to ascend.

1 At this time, Mr Northover dropped the second stage of his dive regulator from his mouth and although David Wadsworth returned the regulator to Mr Northover's mouth and purged it, Mr Northover again dropped the regulator from his mouth. David Wadsworth again went through the procedure of returning the regulator to Mr Northover's mouth and purging it (pressing the front of the regulator using the air pressure to force the water from the regulator), but by this time Mr Northover appeared to have stopped breathing.

2 David Wadsworth did a controlled emergency ascent direct to the surface, still holding Mr Northover, and when they reached the surface, the weight belt was dropped, the RIB was called over and oxygen was set up for emergency assistance to be given to Mr Northover on board the RIB.

3 One of the other divers within the group who had returned to the RIB was a medical practitioner, and she attended Mr Northover. A call was made to Russell Radio to advise them of the emergency and arrange for an ambulance to be sent to Matauri Bay. The Northland Rescue Helicopter was also requested which was noted to be normal practice for diving emergencies.

4 When the remaining divers had returned to the RIB, the dive group returned to Matauri Bay where emergency assistance continued and Mr Northover was also attended by ambulance staff. However, despite emergency assistance, Mr Northover was pronounced dead by the attending doctor, just after the arrival of the helicopter.

### **Coronial and Police Inquiries: Forensic Pathology Report**

20. Mr Northover's death was reported to the Coroner and a post mortem examination was authorised. Dr Vuletic, Forensic Pathologist, provided a written report dated 10 September 2009 and concluded that death was due to: drowning. The antecedent causes were listed as cerebral air gas embolism, epilepsy, and ischaemic heart disease. Dr Vuletic also noted that Mr Northover's heart showed evidence of a previous heart attack (myocardial infarction) and although it was possible that he may have suffered a further heart attack during the dive, it was not possible to exclude or confirm this. Dr Vuletic also noted that there was evidence that Mr Northover had suffered a small stroke that was old and had occurred at some unknown prior date.

21. Dr Vuletic also noted that it was not possible to identify that an epileptic fit had caused Mr Northover's death as epilepsy leaves no overt findings. Dr Vuletic noted (at page 2):

In summary, the immediate cause of death is drowning however it is not possible to be certain whether this was secondary to cerebral air gas embolism, an epileptic fit or a cardiac rhythm disturbance secondary to myocardial ischaemia. Fatigue and lack of physical fitness may have been contributory factors.

#### *Forensic toxicology testing -alcohol and medication*

1 In addition, the results of forensic toxicology testing were noted by Dr Vuletic in her report. There was a trace of alcohol found (less than 5 milligrams per 100 millilitres) however, this was too low to be able to determine if this was naturally occurring or from ingestion of alcohol. In order to provide some context, by way of comparison, the "legal limit" for blood alcohol for an adult over 20 years is 80 milligrams of alcohol per 100 millilitres of blood. In summary, the alcohol level for Mr Northover was such that it could not be considered a contributory factor.

2 In terms of medication, it was found that Mr Northover was taking the prescription medication Topiramate, known as Topamax, which is used to treat epilepsy. The level detected was approximately 10 milligrams per litre (mg/L) which was found to be consistent with therapeutic use.

### **Medical History**

1 Further inquiries were made in relation to Mr Northover's medical history. The available evidence shows that Mr Northover was diagnosed with epilepsy during 2006 (date uncertain). The diagnosis followed a seizure in 2006 and was the second known seizure (the first seizure occurred in 2004, but was not diagnosed as epilepsy). Mr Northover was on Topamax medication for epilepsy, and was known to have received medical treatment (neurology) since 2006 in Germany.

2 The written report from the Police National Dive Squad noted (at page 41) that Mr Northover had been under neurological medical treatment from a Dr Rausch since 2006 and, further, that there was a vague suspicion that the seizures were due to alcohol intake (information source not cited). This information is noted, however, I make no finding beyond the established matters of fact,

namely, that Mr Northover had epilepsy and took prescription medication for that condition.

### *Medical Statement -Participant Record*

26. The documentation that Mr Northover was required to complete prior to commencing, including his declaration about medical matters, is available and forms part of the evidence. The "Medical Statement -Participant Record" (Medical Statement) is a key document in which Mr Northover was asked to complete answers to specific questions. Accordingly, it is important to set out the relevant sections of the Medical Statement:

#### DIVERS MEDICAL QUESTIONNAIRE

To the Participant:

The purpose of this Medical Questionnaire is to find out if you should be examined by your doctor before participating in recreational diver training. A positive response to a question does not necessarily disqualify you from diving. A positive response means that there is a pre-existing condition that may affect your safety while diving and you must seek the advice of your physician prior to engaging in dive activities.

["No"] Are you presently taking prescription medications? (with the exception of birth control or anti-malarial)

Are you over 45 years of age and can answer YES to one or more of the following?

Currently smoke a pipe, cigars or cigarettes  
Have a high cholesterol level

Have a family history of heart attack or stroke  
Are currently receiving medical care  
High blood pressure  
Diabetes mellitus, even if controlled by diet alone

Have you ever had or do you currently have... [bold emphasis in original form]

["No"] Epilepsy, seizures, convulsions or take medications to prevent them?

And, elsewhere in the document it states:

To scuba dive safely, you should not be extremely overweight or out of condition. Diving can be strenuous under certain conditions. Your respiratory and circulatory systems must be in good health. All body air spaces must be normal and healthy. A person with coronary disease, a current cold or congestion, epilepsy, a severe medical problem or who is under the influence of alcohol or drugs should not dive. [emphasis added]

27. The evidence shows that Mr Northover did answer the questions posed and his answers are indicated in square brackets above, but that he did so in a manner that did not convey full or accurate information about his medical history and existing condition. Mr Northover signed and dated the Medical Statement.

28. In addition, Mr Northover signed and dated the Liability Release and Assumption of Risk Agreement form which, in summary, affirmed that Mr Northover was aware that scuba diving has inherent risks which may result in serious injury or death. The liability release was applicable for one year from the date of signing.

### **Department of Labour Investigation**

1 Following Mr Northover's death, the Department of Labour conducted an inquiry into the work practices of Paihia Dive HQ and whether there had been breaches of the relevant legislation, the Health and Safety in Employment Act 1992 and the attendant regulations, Health and Safety in Employment Regulations 1995. This inquiry encompassed matters such as obligations and duties between employer and employee.

2 I note the comprehensive nature of the investigation undertaken by the Department of Labour. I do not propose to traverse the detail of the report which includes a variety of health and safety matters, including possible technical breaches relating to the need to update certification within the relevant workplace. However, it is important to record the conclusion reached by the Department of Labour that no further action would be taken in relation to Paihia Dive HQ or the relevant dive master, David Wadsworth, and that Mr Northover had failed to advise Paihia Dive HQ of his medically diagnosed condition of epilepsy.

31. In its recommendations the Department of Labour noted (at page 6) that its own National Dive Specialist would discuss within the industry, a possible review of current standards for best

practice for recreational diving "at a place of work". The recommendations then concluded:

It may be useful to re-evaluate the current system by which foreign and local participants are screened for health issues, to protect the employees and customers of New Zealand dive companies from the risk of a buddy or other party failing to declare a condition which may compromise the lives of other participants in the dive expedition

A health status questionnaire which asks an additional question requesting declaration of any known health *issues and highlighting the risk to other parties if the information is not provided* may assist in obtaining an accurate declaration and assist in determining whether a further medical review is advisable, for a qualified recreational diver A complete review of the current forms used by Tourism Dive operators may help to define a more effective methodology egothe intending dive participant handwriting the response rather than just marking boxes.

COR REF CSU-2009-WHG-000013

## **Police National Dive Squad Report**

- 32 The written report provided by the Police National Dive Squad covers the examination and testing of dive equipment used by Mr Northover, and also comments on aspects relating to the overall diving activities in the circumstances surrounding his death.
33. The report gives full consideration to the above matters and should be read in order to gain a complete understanding of the examination and testing undertaken. For example, there were some minor faults found with some of the equipment such as the fact that the air hoses were due for replacement and the dive computer was displaying a low battery symbol, however, these minor faults were not found to be contributory factors. In summary, the conclusion reached by the Police National Dive Squad was that the dive equipment used by Mr Northover, and provided by Paihia Dive HQ, did not contribute to Mr Northover's death.
34. The written report provided by the Police National Dive Squad concluded that the existence of Mr Northover's medical condition, epilepsy, and Mr Northover's failure to disclose this medical condition , were contradictions to safe diving practices. If Mr Northover had disclosed the existence of his epilepsy he would have been excluded from completing formal training. The written report concluded with the following recommendations (at page 49):

12.1 The following are recommendations for recreational divers:

- Ensure persons are medically fit to dive
- Always answer dive medical questionnaires honestly
- Never dive within 10 hours of consuming alcohol
- Seek medical advice if diving with prescription drugs
- Never dive with a dive computer displaying a low battery symbol

## **Identification of Contributing Factors**

35. The factors which have been identified as likely to have been the contributing causes to Mr Northover's death by drowning include cerebral air gas embolism and natural disease, which could include heart disease or an epileptic fit. It remains unknown whether Mr Northover's pre-existing medical condition of epilepsy and associated medication, or a cardiac rhythm disturbance secondary myocardial ischaemia, were present immediately prior to Mr Northover experiencing difficulties while underwater at the dive site of the Rainbow Warrior vessel.

Cor 7 COR REF-CSU-2009-WHG-000013

## **Conclusion**

On behalf of Coroner Shortland and the Coronial Services Unit at Whangarei, I extend my

condolences to Mr Northover's family and wider family, and friends\_

Signed at Auckland on this 8th day of April 2011

**Coroner S Herdson**