



FIRE INVESTIGATION REPORT

50 Rawhiti Road, Manly, Auckland



Incident Information:

F3756563

Suspicious Fire

2:38 p.m. 6 June 2023

Report completed by:

Michael Hoyne, Specialist Fire Investigator
Fire and Emergency New Zealand, Te Hiku

Table of contents

Table of contents	2
Author's brief	3
Executive summary	4
Terms of reference.....	5
Description and use of building	6
Pre-incident events.....	10
Discovery of fire.....	11
Fire and Emergency New Zealand response.....	12
Process of investigation.....	14
Interviews	14
Scene Examination	14
Area and point of origin.....	41
Area of Origin	41
Point of Origin	41
Conclusions	42
Supposed Cause	42
Elimination of Other Possible Causes	42
Report approvals.....	43
Appendix 1: Witness Details [SENSITIVE DO NOT DELETE].....	44

Released Under the Official Information Act

Author's brief

My full name is Micheal Lee Hoyne. I am a Specialist Fire Investigator for Fire and Emergency New Zealand (Fire and Emergency).

I have served with Fire and Emergency, since December 2020. I have been responsible for determining the origin and cause of fires since 2022.

I have completed the following training courses:

Fire Investigation 1 May 2022

Fire Investigation 2 November 2022

I have attained the following tertiary level qualification

Certificate IV in Electrical- Fire Protection Control Systems

I have attained the following qualifications by examination:

Fire Weather index-2022

Intermediate Fire Behaviour 2022

CIMS Incident Management Level 4 2022

I have the following memberships:

Membership of Fire Investigators Association of New Zealand

Membership of the Institution of Fire Engineers

Membership of the international Association of Arson Investigators

I have the following additional experience:

FENZ TAPS Trained Senior Firefighter

I have 22 years fire and emergency service experience.

I served as a firefighter in the Country Fire Authority in Melbourne, Australia for 20 years and investigated incidents during my 10 years as Lieutenant in charge of operations.

As a Specialist Fire Investigator for Fire and Emergency I am required to respond to significant fires in accordance with Operational Instructions with the principal objectives being to co-ordinate, supervise or undertake investigations into major and serious fires, including fatal fires, by determining the point of origin of a fire and from this establishing the cause of a fire.

I have read the Code of Conduct for Expert Witnesses, Schedule 4 of the High Court Rules 2016, and agree to abide with them.

Executive summary

On June 6, 2023, at 2:38 a.m. the Fire and Emergency New Zealand Communication Centre received a 111-call reporting a house fire at 50 Rawhiti Road, Manly. Three fire appliances, two from Silverdale and one from Manly, were dispatched. Upon arrival, the Manly 911 fire appliance transmitted a K99 (property fire well involved) radio message, and firefighters quickly worked to extinguish the fire using one high-pressure hose reel and one low pressure delivery hose. Police were also present at the scene.

A Specialist Fire Investigator (SFI) was requested and dispatched as per the National Commander's Operational Instructions P3, Fire Investigation and Reporting.

The affected dwelling was a five-bedroom vacant residential dwelling. After a thorough investigation, the area of origin was determined to be bedroom 2 on upper level of the dwelling. Specifically, the point of origin was identified as the corner of the bedroom located in bedroom 2.

Based on the evidence collected and analysed during the investigation, the classification of this incident has been recorded as Incendiary. The cause of the fire was determined to be the deliberate ignition of an ignitable liquid that had been poured around the corner of the room in bedroom 2 on the upper floor level.

Released Under the Official Information Act

Terms of reference

Sponsor

██████████ – District Manager.

Incident background

The Officer in Charge (OIC) of this incident considered the circumstances of the fire met the criteria requiring the attendance of a Specialist Fire Investigator (SFI) as per National Commander's Instruction P3. The OIC made this request through the Fire and Emergency Communications Centre who summoned the author of this report to attend the incident as an SFI.

The reason for the attendance of a SFI was: Suspicious Fire.

Objectives

Determine the origin and cause of the fire through best practice analysis and investigative processes.

Scope

- Focus on this incident specifically but consider historical data and information from this site and other similar incidents, and other incident information that may have a bearing or contributed to the outcome.
- Analysis of the circumstances and factors, including the occupant(s) actions, building fire loading and design, fire protection/suppression systems performance, circumstances of the fire, and result of the fire.
- Where evidence or suspicion of a deliberate fire start is discovered, the matter is to be referred to the Police who will then have the responsibility for further investigation. The Police may request that the Fire and Emergency SFI assist with the origin and cause determination.
- Produce a completed report for the report sponsor outlining all relevant findings.

Description and use of building

The dwelling involved in this fire was a residential two-level dwelling situated at 50 Rawhiti Road, Manly.

The dwelling consisted of five bedrooms with an open plan living, kitchen and dining area, with a total floor area of approximately 210m². It was constructed of a timber frame, clad in iron sheeting with aluminium joinery and a corrugated iron roof.

The interior of the property was timber framed and lined with plasterboard. The ceiling was metal framed, lined with plasterboard.

The dwelling had been unoccupied since 2019, and power was not connected at the time of the fire. Smoke detectors were not installed inside the dwelling.

The land around the dwelling was unmaintained and overgrown and the property was vandalised with graffiti visible on the interior and exterior walls.



Photograph 1: Entry to the dwelling. (Courtesy of Police)



Photograph 2: Manly village shops located directly adjacent to the address. Arrow indicating location of CCTV camera. (Courtesy of Police)

Released Under the Official Information Act



Image 1: Location of the dwelling on the section.

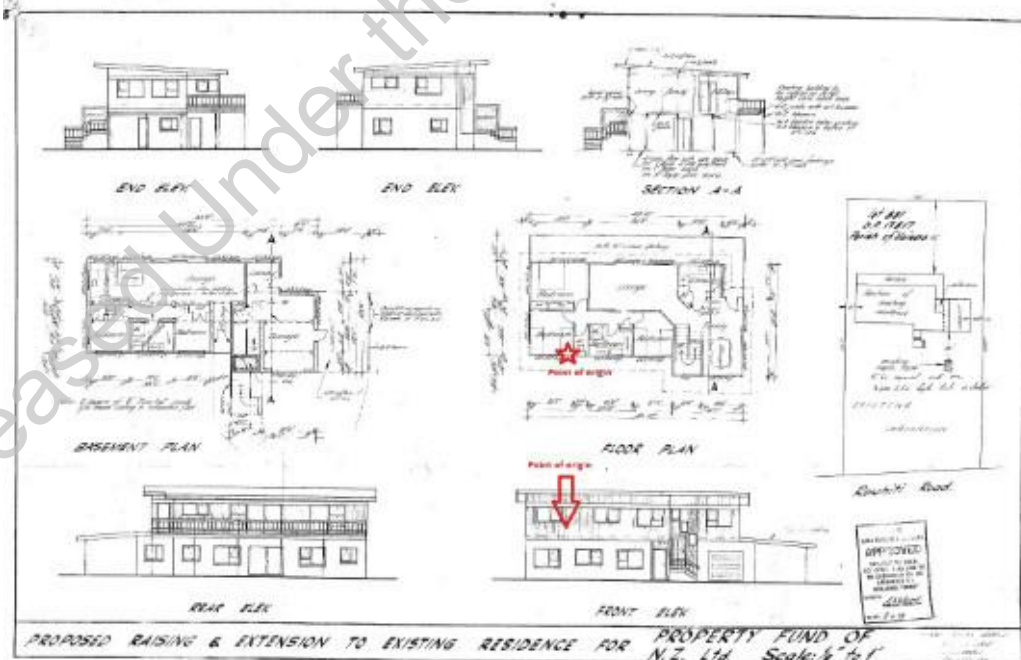


Image 2: Building Plans (Courtesy of Auckland Council)

Released Under the Official Information Act

Pre-incident events

The weather on the day of the fire was overcast with passing showers, and the temperature was 15 degrees with strong winds 50-70kms blowing from the southwest.

The property in question had been unoccupied since 2019 and had gained a reputation among the local police as a popular gathering spot for young individuals.

According to the police, CCTV footage captured the presence of two [REDACTED] who entered the dwelling and left approximately 5 minutes before the fire was reported to Fire and Emergency New Zealand.

Released Under the Official Information Act

Discovery of fire

On June 6, 2023, at 2:38 a.m. the Fire and Emergency New Zealand Communication Centre received a 111-call reporting a house fire at 50 Rawhiti Road, Manly.

According to Witness 2, the first caller, they were driving through the area and noticed large amounts of smoke coming from the property.

Released Under the Official Information Act

Fire and Emergency New Zealand response

Information sourced from Fire and Emergency Computer Aided Despatch Incident Report.

Incident Number	F3756563	
Call Type		
Method call received	111 Telephone	
Incident date	6 Jun 2023	
Incident time	2:38:40 p.m.	
1st Arrival	MANL911	2:51:46 p.m.
2nd Arrival	SILV907	2:53:27 p.m.

On June 6, 2023, at 2:38 a.m., the Fire and Emergency New Zealand Communication Centre received a 111-call reporting a house fire at 50 Rawhiti Road, Manly. Three fire appliances, two from Silverdale and one from Manly, were dispatched. Upon arrival, the Manly 911 appliance transmitted a K99 (property fire well involved) radio message, and firefighters quickly worked to extinguish the fire using one high-pressure hose reel and one low pressure delivery hose. Police were also present at the scene.

Manly [REDACTED] arrived at the scene approximately 4 minutes after the emergency call was received. [REDACTED] immediately contacted the fire communications centre to transmit a second alarm requesting additional firefighting resources, recognizing the severity of the situation.

According to [REDACTED] observation, the fire had already gained significant intensity in a front bedroom upper level, with flames visibly emanating from the front windows of the dwelling. The strong winds further accelerated the spread of the fire throughout the upper levels, causing it to engulf the entire upper level.

By the time the Manly 911 fire appliance arrived at the scene, the fire had already taken hold and spread through upper level of the building.

Released Under the Official Information Act



Image 2: Photo at the time of arrival of Manly DCFO. Arrow indicating area of origin.

Released Under the Official Information Act

Process of investigation

Interviews

During the investigation, the Officer in Charge of the first arriving fire appliance and DCFO [REDACTED] was interviewed to gather more information about the incident.

Witness 2 was also interviewed over the phone by me.

Scene Examination

Upon arriving at the scene, I liaised with the Officer in Charge and police officers who were already on-site. From the exterior of the building, I noted that the front bedroom had suffered the most fire damage.

In preparation for the investigation, a scene guard was arranged, and the investigation was scheduled to begin at 8:00 a.m. on June 7, 2023, once a police photographer had arrived.

At 9:00 a.m., I returned to the incident and began the investigation. Prior to entering the house, I obtained consent from the police to conduct a post-fire investigation and completed a risk assessment to identify any potential hazards.

The power authority had attended the incident before my arrival and had confirmed that the power supply to the dwelling was disconnected at the time of the fire.

Exterior Examination

West Profile

Lower level: No signs of fire damage were noted on the lower level of the dwelling. However, the presence of mechanically¹ broken windows suggests that these windows had been intentionally damaged, possibly as acts of vandalism.

Upper level: Fire damage was observed on all parts of the walls and windows of the upper level, indicating that the fire spread throughout this area of the dwelling. The aluminium window frames had melted approximately 3/4 of the way down suggesting that the fire reached high temperatures, estimated to be at least 660 degrees Celsius. The extent of the fire damage on the upper level highlighted the intensity and rapid spread of the fire.

¹ **Analysis of Glass.** Glass that has received an impact will exhibit a characteristic cobweb pattern. The cracks will be in straight lines and numerous. The glass may have been broken before, during, or after the fire. **NFPA921 2021 edition 6.3.17.4.1**



Photograph 3: Mechanical window break on lower level.



Photograph 4: Arrow A indicating aluminium window frame melted Arrow B indicating lower broken window from photograph 3.

South Profile

Lower Level: No signs of fire damage were noted on the lower level of the dwelling. The presence of mechanically broken windows suggested possible acts of vandalism. The mains power board located on the wall near the front door was examined and did not show any signs of damage related to the fire indicating that the fire did not originate or directly impact the power board.

Upper Level: Fire damage was observed on all parts of the walls and windows of the upper level, indicating that the fire spread throughout this area of the dwelling. The greater extent of fire damage on the west profile suggested that the fire was more intense in that area. Clean burning² observed on metal wall panels suggested higher temperatures in those areas. The roof supporting beams were burnt away and the roof was slumping in the area of origin indicating significant fire involvement in this area. The melted PVC storm water pipe attached to the front of the dwelling had slumped down to the lower level further indicating higher temperatures experienced on the upper level during the fire.



² **Clean Burn.** A distinct and visible fire effect generally apparent on non-combustible surfaces after combustible layer(s) (such as soot, paint, and paper) have been burned away **NFPA921 2021 3.3.31**

Photograph 5: Circle indicating area of origin in upper-level bedroom 2. Arrow D indicating location of the mains power meter. (Courtesy of Police)



Photograph 6: View from the south-eastern profile. (Courtesy of Police)

Released Under the Official Information Act



Photograph 7: Arrows indicating mechanically windows broken on the lower levels. (Courtesy of Police)



Photograph 7: Arrow E indicating soffit and timber support beams in the area of origin consumed by fire.



Photograph 8: Mains power meter undamaged.

East Profile:

Lower Level: No signs of fire damage were noted on the lower level of the dwelling. The presence of mechanically broken windows in the garage area and graffiti suggested possible acts of vandalism. The OIC stated that the doors on the east profile were all open at the time of arrival and fire crews did not force entry.

Upper Level: Fire damage was observed on all parts of the walls and windows on the upper level of the dwelling, indicating that the fire had spread throughout this area. The strong gusting winds likely contributed to the rapid spread of the fire.

On the east profile of the dwelling, the aluminium window frames remained intact at the top of the windows, which indicated that the heat and fire intensity were greater on the west profile. Photograph 4 of the window on the west profile clearly shows the window frame melted approximately three-quarters of the way down, indicating the intense heat experienced in that area.



Photograph 9: East profile of the dwelling. (Courtesy of Police)



Photograph 9: Mechanically windows broken on the lower levels. (Courtesy of Police)



Photograph 10: Arrows indicating aluminium window frames on east profile.

North Profile:

Lower Level: No signs of fire damage were noted on the lower level of the dwelling. The presence of mechanically broken windows in the garage area and graffiti suggested possible acts of vandalism.

The OIC stated that the doors on the north profile were all open at the time of arrival and fire crews did not force entry.

Upper Level: Fire damage was observed on all walls and windows on the upper level of the dwelling, indicating the widespread fire in this area. The presence of two large aluminium ranch sliding windows, once broken, would have provided a ventilation pathway for the fire, which would have contributed to the fire intensity.

Additionally, a large wooden deck covering the entire length of the dwelling was located on the upper level of the north profile. This deck exhibited greater amounts of charring towards the west profile of the dwelling, indicating the path of the fire. Other than the charring the deck was still mostly intact.

The fire intensity on the north profile of the dwelling was particularly severe due to the strong gusting winds at the time of the fire. These winds had forced the fire to spread from the south to the north, causing increased heat and flames on the north-facing side of the dwelling in turn creating the visible fire damage.



Photograph 11: North profile of the dwelling.



Photograph 12: Arrow F indicating mechanically windows broken on the lower levels. Arrow G open sliding door. (Courtesy of Police)



Photograph 13: Location on the two large sliding windows.



Photograph 14: Deck located on the upper-level north profile.

Released Under the Official Information Act



Photograph 15: Stairs leading to upper-level deck. (Courtesy of Police)

Interior examination:

An examination of the interior of the house was undertaken in order of least to most fire damaged areas.

Lower ground level:

Garage: The garage area of the dwelling, located on the east profile, did not show any signs of fire damage. It appeared that the garage door had been damaged prior to the fire incident.

There was some fire debris observed in the garage, which likely fell from the upper level of the dwelling. This was due to the flooring of the upper level collapsing in several spots. The fallen debris indicated the extent of the fire's impact on the upper level and its subsequent effects on the lower areas, including the garage.



Photograph 16: Garage area of the dwelling. (Courtesy of Police)



Photograph 17: Garage area of the dwelling. Circle indicating fire debris. Arrows indicating broken glass on doors. (Courtesy of Police)

Front door and entrance way lower ground: No signs of a smoke or fire damage were observed in this area.



Photograph 18: Front door and entry way into the dwelling. (Courtesy of Police)

Lower ground living area: No signs of a smoke or fire damage were observed in this area.

The main fuse board for the dwelling, located on the wall in the lower ground living area, was examined and showed no signs of fire damage.



Photograph 19: Living area on the lower ground floor. Arrow indicating located of the fuse board. (Courtesy of Police)



Photograph 20: Fuse board



Photograph 21: Cables at the rear of the fuse board.

Bedroom 1 lower ground: A small table was located in the room and the bedroom windows appeared to have been mechanically broken.

There was some fire debris observed on the floor, which likely fell from the upper level of the dwelling. This was due to the flooring of the upper-level collapsing in several spots.

Located directly above bedroom 1 was the upper-level bathroom. Witness 2 stated that the flooring around the bath area was rotting away. Upon inspection, it was evident that the flooring in this area had failed and given way, creating a hole in the floor. The exposed timber joists were significantly charred indicating a fire burning above them in this area.



Photograph 22: Bedroom 1 lower ground floor. (Courtesy of Police)



Photograph 23: Ceiling in bedroom 1 (Courtesy of Police)



Photograph 24: Bathtub from above room. (Courtesy of Police)

Bedroom 2 lower ground: The ceiling in bedroom 2 on the lower ground had been completely burnt away and burnt debris had collected on the floor below, but the rest of the room was undamaged by fire. During examination of the fire debris, the delayering process revealed the significant consumption of a large section of flooring from the above room.

A ppb RAE 3000 photoionisation detector (PID) was used to test for the presence of volatile organic compounds (VOCs). The presence of VOCs may suggest a flammable liquid has been present at the time of a fire. The PID indicated elevated levels of VOCs around the corner of the bedroom in contrast to the surrounding areas, I recommended to the police that they remove samples in this area for forensic testing

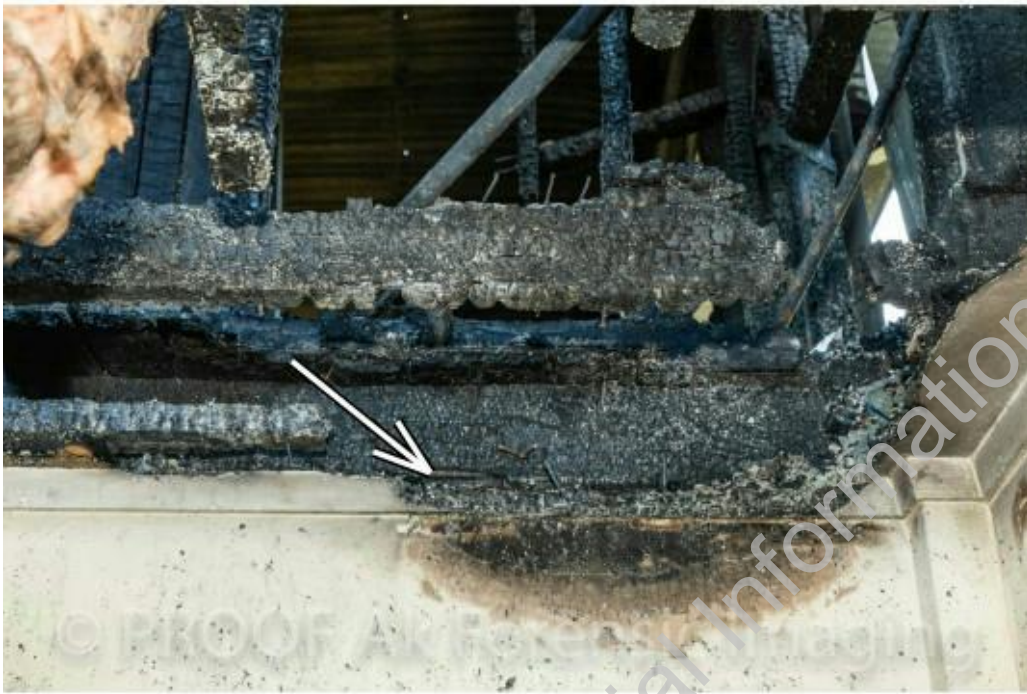
There was an irregular burn pattern³ on the upper section of the wall corresponding with the corner of the above room below the eternal window. The surround burning on the timber joists was also more significant

³ **Irregular Burn Patterns.** Irregular patterns are common in situations of post flashover conditions, long extinguishing times, or building collapse. These patterns may result from the effects of hot gases, flaming and smoldering debris, melted plastics, or ignitable liquids. **NFPA921 2021 edition 6.3.20.7** Where overall fire damage is limited and small or isolated irregular patterns are found, further examination should be conducted for supporting evidence of ignitable liquids. **6.3.20.7.3**

in his area. This pattern was consistent with a possible flammable liquid seeping into this area and being ignited causing localised burning.



Photograph 25: Arrow indicating irregular burn patterns in bedroom 2. (Courtesy of Police)



Photograph 26: Arrow indicating irregular burn patterns. (Courtesy of Police)



Photograph 27: Arrow indicating irregular burn patterns. (Courtesy of Police)

Upper Level of the dwelling:

The upper level of the dwelling consisted of three bedrooms, one bathroom, and one kitchen area. Due to the severe compromise of the flooring, a full examination of the upper level was unable to be completed.

In comparison to the bedrooms and hallway, the kitchen area located on the east profile of the dwelling exhibited the least amount of fire damage. The fire intensity in this area was likely mitigated by factors such as the layout and materials present.

In the kitchen area of the upper level, some sections of gypsum plasterboard remain intact, indicating a partial preservation of the wall surfaces. In contrast, in the bedroom and hallway areas, the gypsum plasterboard had been completely consumed by the fire, leaving only charred remnants. This difference suggested that the fire intensity and duration were higher in the bedroom and hallway areas.

The electrical wiring in the kitchen area still retained its insulation, indicating that the fire did not reach temperatures high enough to cause significant damage to the wiring. However, in the bedroom area, the insulation has been burned away, leaving only the bare copper wire. This suggested that the fire in the bedroom area reached higher temperatures, leading to the destruction of the insulation on the electrical wiring.

The lounge room area, on the other hand, showed significant fire damage. This can be attributed to the high winds and the ventilation pathway created by the two large ranch sliding windows. The fire dynamics in this area were influenced by the open windows, which allowed for increased air flow and the rapid spread of the fire.

The area encompassing bedroom 1 and bedroom 2 experienced the most intense burning where the roof support joists were burnt away by the fire and the tin roof started to bow. A large hole had formed in the floor in this area as well, indicating the extensive damage caused by the fire. This damage corresponded to the photo taken upon the arrival of the Manly DCFO.

Released under the Official Information Act



Photograph 28: Kitchen/Living area on upper level. Area of least damage.



Photograph 29: Kitchen appliances unused for some time.



Photograph 30: Unburnt timber wall framing in the kitchen and electrical cables that still have insulation present.



Photograph 31: Bedroom light switch in area of origin. Examined no signs of failure.



Photograph 32: Lounge room area looking towards front of the dwelling. (Courtesy of Police)



Photograph 33: Hallway area leading to bedrooms and area of origin. (Courtesy of Police)



Photograph 34: Roof in the area of origin (Bedroom 2). Arrow I timber roof purlins consumed by fire. Circle indicating Roofing iron starting to bow. Arrow H Wall plates consumed by fire. (Courtesy of Police)



Photograph 35: Consumption of a large section of flooring in the corner of the bedroom at the point origin.

Released Under the Official Information Act

Area and point of origin

Area of Origin

The area of origin of the fire was determined to be in bedroom 2 of the upper level of the dwelling. Upon investigation, it was found that the fire originated within this specific area and then spread to other parts of the room and beyond.

Point of Origin

The point of origin of the fire was determined to be the corner of the wall beneath the window located in bedroom 2 in the area of the irregular burn pattern was exhibited. Upon investigation, it was found that the fire originated from this area and then spread to other parts of the room.

Released Under the Official Information Act

Conclusions

Supposed Cause

Based on the evidence available at the time of this investigation, the classification of this incident has been recorded as Incendiary

During the investigation, several indicators of forced entry were discovered around the bedroom windows and doors, however, it is unknown when this damage had occurred. Traces of a volatile organic compound found at the scene may support the conclusion that this fire was intentionally set.

Based on the gathered evidence, it is believed that the cause of the fire was the deliberate ignition of an ignitable liquid. The liquid had been poured around the corner end of the bedroom and the surrounding floor area, leading to the rapid spread of the flames.

Elimination of Other Possible Causes

Upon further examination, it was determined that there was no damage to the wiring in the area of origin. As a result, an electrical cause was ruled out as the source of the fire. The fuse box and mains power meter were found to be undamaged, and Vector, the electricity provider, confirmed that the power had been disconnected for four years.

Weather events were also ruled out as a potential cause, as there were no recorded weather disturbances at the time of the incident.

Furthermore, upon thorough investigation, no other competent ignition sources were found in the point of origin area. This further supports the conclusion that the fire was deliberately set using an ignitable liquid.

Released Under the Official Information Act

Report approvals

Investigation and report completed by:

Investigator

Name: Michael Hoyne

Job Title: Specialist Fire Investigator

Date: 20 July 2023 02:01p.m.

I confirm the truth and accuracy of this statement. I make the statement with the knowledge that it is to be used in court proceedings. I am aware that it is an offence to make a statement that is known by me to be false or intended by me to mislead.

A technical review of this report has been completed by:

Name: [REDACTED]

Job Title: [REDACTED]

Date: [REDACTED]

This report has been approved by:

Name: [REDACTED]

Job Title: [REDACTED]

Date: [REDACTED]

Released Under the Official Information Act

Appendix 1: Witness Details

Removed in compliance with the Privacy Act 2020 and the Official Information Act 1982

Released Under the Official Information Act