

INCIDENT RESPONSE TO 2013 HARRIETVILLE BUSHFIRES



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ABSTRACT

For many Victorian water corporations Incident and Emergency response is now becoming a regular occurrence as we all endure and adapt to extreme climatic events, during the summer of 2013 North East Water (NEW) was challenged and tested yet again with a large bushfire in the upper reaches of the Ovens River Catchment. This particular fire was well publicised within the media as The Harrietville Fire. This paper outlines the importance of water corporations having strong emergency response plans and connections with emergency response agencies and other utility service providers.

In this paper we would like to highlight and share our experiences and lessons from an Operations Management and Operators perspective.

KEY WORDS

ICC (Incident Control Centre), IMT (Incident Management Team), NEW (North East Water), Bushfire, Incident and Emergency Response, Turbidity

1.0 INTRODUCTION

North East Water provides water and sewerage services to 39 towns, villages and cities in North East Victoria, including the small town of Harrietville which is approximately 100 km south of Wodonga in the upper reaches of the Ovens valley. Harrietville has approximately 220 water connections and is an unfiltered supply treated with chlorination only. Typical consumption ranges from 30kl to 100kl per day.

On the 21st Jan 2013 a lightning strike sparked a fire which started on the north eastern side of Harrietville, this fire quickly heading in the direction of the Ovens Catchment, also posing a direct ember threat to Harrietville, It was apparent from the beginning that North East Water was going to play an important role during and post “The Harrietville fire”.

North East Water has experienced bushfires impacting our water catchments in 2003, 2006 and 2009. In 2013 we are very aware of the potential impacts of losing a catchment to fire. From our previous experiences, we have learnt that the Australian Interagency Incident Management Systems (AIIMS) and emergency response plans have a place within our corporation.

North East Water was able to quickly form an Incident Management Teams (IMT) in the early stages of the Harrietville fire and implement communication strategies with other agencies and the local community.

Key lessons and challenges for North East Water still arose from this fire and these lessons are what prompted us to tell our story.



Figure 1: *Catchment burning, early stages of Harrietville fire, January 2013*

2.0 DISCUSSION

2.1 Initial Response

The sequence of events that followed the notification of the Harrietville Fire initiated our automatic operational instincts to protect our assets; maintain supply and triggering an ‘all hands on deck’ response. Considerations such as ‘how long will we have power?’, ‘can we still get access to Harrietville?’, ‘how much water have we got in storage?’, ‘where is the back up generator?’, ‘what if it rains?’ These questions were also being raised from other parts of the business and the need for an informed IMT in consultation with the operational staff on the ground was clear and therefore activated.

With the fire out of control, North East Water was asked to play a role in the broader coordination at the Ovens Incident Control Center (ICC) as well as a higher level region focused Emergency Management Team (EMT) in Benalla. While this participation is critical for all parties, and an impost on North East Waters resources, the ‘foot in the door’ at these centers assisted with our decisions as well as highlighted other critical issues with the incident (such as a cyanide spill in the catchment as highlighted later).

Planning beyond the fire was also occurring in parallel with the immediate response, particularly as the fire spread and continued, to burn the Ovens Water Catchment area. The impacts on our ability to rely on high quality water from this catchment were diminishing. Members within operations were busy compiling a comprehensive options analysis for the post fire events. Several alternative Water treatment options were considered and with the decision made to design and construct a temporary filtration plant. This was the best medium to long term option. The Corporations Treatment Technical, Operations and Electrical teams began designing the 100k project.

Our immediate challenge was to maintain sufficient quantity and quality of water to assist the community in protecting assets (homes). During this period North East Water recorded a doubling in water demand. At the time of the Harrietville fire, Ovens River flows were very low and in accordance with our drought response plans, we were preparing to trigger water restrictions. There was also a requirement for staff to balance priorities with other towns, dealing with routine tasks, despite the raging bushfire threatening one of our small towns. The situation certainly presented multiple challenges for all involved. Early cooperation with other agencies at the Ovens ICC certainly made this a little easier as we were able to work with the Planning and Operations teams to ensure consideration for our assets and activities.

With the Harrietville water supply unfiltered, impacts from firefighting activity within the catchment were significant due to 16 vehicle crossings per day above our raw water off-take. The typically clean (<1NTU) waters were being disturbed, disrupting our ability to provide safe drinking water. North East Water coordinated within the ICC that vehicles would avoid the section above our off-take from dusk to dawn, allowing us to maintain water quality. Despite this cooperation, the fire took another run at Harrietville triggering dual shifts and full fire response from ground crews and aerial attacks. It was at this point we realised that we could not guarantee safe drinking water. With the Harrietville still under threat, we opted to issue a precautionary Boil Water Notice (BWN) to allow unrestricted supply to the Harrietville consumers. A media release was distributed. This message was also conveyed to the ICC where it was disseminated into daily media releases. This approach proved to be very beneficial to NEW as the messaging remained consistent and the customers that remained in Harrietville were well informed of the precautionary BWN. Staff also undertook a walk through Harrietville informing larger customers such as the school, hotels and accommodation managers of the BWN.

We were also concerned about the use of fire retardants via aerial attack. Phosphate is a key ingredient within the retardant and our teams carried out regular phosphate monitoring. Interestingly, an elevated phosphate level was detected in the river, however this coincided with cartage. Operators continued testing the source for elevated levels of phosphate and this ensured that they were delivering the best quality of water at all times. However, despite the BWN, it was agreed that supplementary water carting should be an option once the turbidity began to exceed 1NTU or elevated levels of phosphate were detected.

There had been previous occasions where NEW had supplemented Harrietville's water supply with carting (e.g. flood events). Typically these occasions only required around 2 loads of 30 kL to be transferred into the high level tank – a straight forward process. That was not the case in the event, as we were not able to access our high level tank due to the fire activity at this area. Operations staff has to install modifications at the off take, including installation of connecting pipework via a balance tank into existing infrastructure, to enable transfer of water to the high level storage. This temporary installation remains in place and now forms part of the new WTP process.

Throughout initial response activities, frequent communication occurred in many forms including on-site meetings, regular media releases as well as daily IMT catch ups, including phone hook-ups.

2.2 Loss of entire catchment

The Harrietville Fire burnt out of control for 55 days eventually combining to form the Gippsland North fire. Eventually, rain enabled fire crews to contain and extinguish the fire, however 36,000 ha of mountain country including the Ovens Catchment had been burnt. North East Water was now faced with some additional challenges. There was no other option for Harrietville in the short term than managing source water and water carting (under BWN). We were also conscious that the community of Harrietville had suffered significantly and, in recovery mode, BWN was not ideal. A decision was made to lift the BWN by Easter which was six weeks away.

The Harrietville community was made aware of the Corporation's plans to lift the BWN, and we progressed with the construction of the new WTP.

At that stage North East Water wrapped up the IMT – but not for long.

2.3 Then the rain arrived – additional response

Around 4 weeks later, 100mm of rain fell in 24 hour throughout the catchment, this resulted in significant amounts of debris and ash washing downstream. At this point we reformed an IMT particularly due to the impacts extending to other North East Water towns of Bright and Wangaratta. Once again the Alpine Operations team was involved, with the Bright water supply, 30km downstream from Harrietville now under significant threat. Fortunately, a 'drought relief' bore was able to be commission and integrated into the Bright WTP requiring a temporary generator and 400m of lay-flat hose. There was an issue of ability to meet demand. The bore was approximately 0.5ML/d short of meeting town demand at the time, so water carting was also implemented for Bright. Carting around 0.5ML per day turned out to be an extremely challenging logistical exercise. It was achieved by two 42kl B-double trucks operating around the clock between Myrtleford and Bright.

With Bright and Harrietville requiring cartage, the Wangaratta Treatment Operators were facing raw water turbidities of approximately 2000 NTU. Reconfiguring the treatment process (as occurred post 2003 fires) with sedimentation train operating in series with the direct filtration plant, including slowing plant flow rates, ensured that safe drinking water was being delivered. Split shifts allowing 18 hr coverage ensured operator attendance during the period of highly variable water. An emergency discharge (Section 30A) was also approved by EPA to allow staff to discharge from the clarifiers to the river during the extreme dirty water period.

At that stage Easter was only 5 weeks away. Delays were experienced with the construction of the temporary WTP due to the staff constructing the plant being busy assisting with response activities. Knowing it was very unlikely that the river would clear to below 2NTU in the foreseeable future, the BWN was lifted and full time carting into Harrietville was initiated.

More rain followed, resulting in multiple landslides in the Harrietville Catchment area, including devastating a gold mining operation. The mine owner notified authorities of the potential that Cyanide containers may have ruptured. This suspected Cyanide spill triggered responses from multiple agencies resulting in the ICC to be reopened. North East Water promptly undertook a risk assessment based on the information available. With

cartage full time in Harrietville the desktop assessment determined that the worst case concentrations of cyanide would not be elevate to near the ADWG health based limit. Verification testing was also implemented upstream of the off takes. Within 24 hours of the initial notification, investigations and inspections were undertaken by EPA, CFA, DPI and DSE. Fortunately it was confirmed that all registered Cyanide was accounted for and had not been spilt off site. A sigh of relief for all involved particularly, the owner of the mine! Media releases from the ICC were issued ensuring communities that no waterways were affected.



Figure 2: *Harrietville Ovens River Off-take, February 2013*

2.4 Construction of Temporary WTP

The temporary WTP was delivered in approximately 10 weeks. The plant was commissioned and in full operation a week after Easter, and has proven critical for the bulk of the time. Despite significant recovery in source water quality, rarely the historic turbidities of less than 2 NTU have been observed since the fires. Fortunately, NEW staff are experienced with construction of small WTP's, and have a history of excellent support from *Amiad*. The design was a direct filtration unit, containerised, with full automation.

Full details of the construction of the WTP is detailed within the poster titled *Can you build a water treatment plant before Easter?.....*, which is also presented at the 2013 Victorian WIOA conference.

2.5 Debriefs and Lessons

Since the Harrietville fire, and subsequent events, North East water conducted a series of incident debriefs. These sessions have been critical in ensuring improvements within our incident and emergency management processes are scrutinized with improvement opportunities captured.

Most staff involved in the sessions provided feedback, despite being extremely busy

during the multiple events, indicating that the coordinated approach through our IMT worked well, included that it was ‘our best managed incident(s)’.

2.6 Harrierville Update

Winter rainfall continues to cause havoc and interestingly it is apparent that the initial black sediment has been replaced with a reddish/orange coloured stream. The catchment will slowly recover however in the mean time we know that variable turbidities will be an ongoing challenge. In July turbidities in excess of 10,000 NTU were observed, obviously beyond the capability of the temporary plant, however clear water storage capacity often allows such events to pass although occasional water cartage is required during these longer periods of high turbidities events.

3.0 CONCLUSION

NEW were able to manage an extremely difficult series of events as a result of the ‘Harrierville Fire’. Key to the management of the incident were the relationships developed within the external ICC and EMT, as well as implementation and review of our Emergency Response protocols. This approach to the various challenges was demonstrated with good communication and coordination.

From this event, a few key lessons from an Operations Managers point of view were that it was imperative to maintain a presence in the field and support the Operations staff in all aspects of the response activities. Involvement as a point of contact at the ICC to ensure consistent and clear direction and messages was something that worked well although you do need to remember to rest yourself.

From an Operators point of view the contribution and cooperation from all parts of the business was most important during the entire event as it made our job much easier.

Note:

Alpine Operations staff maintained compliant drinking water during the series of events, a significant achievement for all involved.

4.0 ACKNOWLEDGEMENTS

Due to extent of incidents, it is difficult to name all individuals (both external and internal to North East Water), however special mention to the ‘Alpine’ Operations Team, members of the various IMT’s, water carting contractors, and the community of Harrierville.

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