

Case study – Kempsey Shire Council

Managing a contamination incident

Councils need to be vigilant to ensure that unintended or illegal discharges into town sewerage systems are detected and can be managed to protect their customers, services and the environment.

This case study describes how well-trained operators at a sewage treatment plant were able to quickly detect and respond to an illegal petrochemical spill into Kempsey Shire Council’s sewerage network to prevent what could have been a local environmental and public health disaster in their local area.

This case study is a resource for regional and county council decision-makers, including Councillors and operations staff of council-owned local water utilities.

About Kempsey Shire Council

- Kempsey Shire Council is responsible for the suburbs of Aldavilla, Burnt Bridge, Dondingalong, East Kempsey, Euroka, Greenhill, Kempsey, Sherwood, South Kempsey, West Kempsey, Yarravel in the Mid- North Coast of NSW.
- The local government area is home to around 29,000 residents across 3381 square kilometres.
- Council has an annual operating revenue of approximately \$90 Mil. Combined water and sewage assets have a net value of approximately \$300 Mil.



Figure 1. Map showing the location of Kempsey Shire Council e local government area in Mid- North Coast of NSW.

System context

South Kempsey has a large sewage catchment area comprising of 21 pumping stations, 17 of which are Council owned. The sewage network transportation network is divided into 3 separate systems which independently discharge to the sewerage treatment plant.

Built in the 1930s, the South Kempsey Treatment Plant was upgraded in 1989 to increase the pollution removal by the plant. The wastewater is further treated in a series of ponds before being safely discharged to the nearby Gills Creek.

The event

In December 2007, an estimated 1,000-2,000 litres of petrochemical found its way into the sewerage network, into the sewage treatment plant, and finally into the ponds. A well-coordinated response ensured the hazard was contained to the plant with minimal damage to the surrounding environment and local community.

- After noticing a petrochemical odour, the sewage treatment plant operator immediately notified the technical officer and commenced an investigation of three feeding pump stations to determine the area of possible contamination.
- The technical officer and coordinator advised the Manager of Macleay Water of the potential problem at the plant and an emergency action plan was enacted.
- Appropriate authorities were notified and up to date information was relayed. Authorities notified included:
 - NSW Fire Brigade who attended the plant quickly to take control of the potentially highly explosive area
 - Department of Environmental and Climate Change
 - Department of Water and Energy

Two teams were created to address the two main priorities for Council - identify the source of the petrochemical and to limit the exposure to the environment.

- Team 1: By undertaking a systematic search of the sewerage network, the environmental and technical officers discovered the source to be a broken petrol bowser line, leaking fuel into the sewer mains. Once discovered they stopped the flow of petrochemical into the network.
- Team 2: Treatment operators successfully isolated the contaminate spill at the sewage treatment plant which allowed the Hazmat team who had been called by NSW Fire brigade to safely transfer the petrochemical into a storage tank.

The community was faced with a potentially catastrophic event. Had the hazard not been contained in the plant and worked its way into Gills Creek, the environmental damage and consequent financial burden would be enormous. An event like this could expose workers to toxic fumes, increase the risk of fires and easily halt treatment processes for great lengths of time, further burdening the community.

Council governance

Kempsey Shire Council is a general purpose council under the *Local Government Act 1993* (NSW) and is subject to a range of obligations under that Act. As part of its functions, the Council has several water business obligations and is responsible for the sewerage transport network system and seven sewage treatment plants.

The Council are responsible for approving liquid trade waste discharges to their sewerage systems through s. 68 of the *Local Government Act 1993*. However, s. 90 (1) of the Act and cl. 28 of the Local Government (General) Regulation 2005 also require Council to obtain concurrence for the approval from the Secretary, Department of Planning, Industry and Environment. The department has issued the Liquid Trade Waste Management Guidelines – 2021 to assist Councils to issue approvals.

To successfully regulate its sewerage and liquid trade waste services in accordance with the NSW Guidelines, each council needs to ensure its employees maintain appropriate experience and qualifications. Council needs to provide appropriate training to ensure its employees have the necessary skills for managing both legal and illegal discharges to their sewerage systems.

Overview of risks

Kempsey Shire Council was exposed to several risks from the event, some of which are summarised in table 1.

Risk	Consequence to Council	Impacts
Failure of sewerage treatment plant	<ul style="list-style-type: none"> • Unanticipated repair costs • Increased operational resources during the failure • Potential non-conformance of levels of service 	<ul style="list-style-type: none"> • Environmental health • Financial • Compliance • Reputation
Exposure to hazardous chemicals for operators	<ul style="list-style-type: none"> • Ill health of operators • Resourcing constraints for staff/contractors • Fines for failure to maintain safe work conditions 	<ul style="list-style-type: none"> • Work health and safety • Compliance • Financial • Reputation
Contamination of the creek and surrounding area	<ul style="list-style-type: none"> • Fines for pollution of waterway • Unanticipated remediation cost • Reduced tourism 	<ul style="list-style-type: none"> • Environmental health • Financial • Compliance • Reputation

Risk	Consequence to Council	Impacts
Lack of preparation for a complex emergency incident	<ul style="list-style-type: none"> Reduced community and business trust in Council’s capacity to respond to emergencies. 	<ul style="list-style-type: none"> Reputation Political Work health and safety

Table 1. Overview of risks Council were exposed to from the illegal

Insights gained

Some of the key insights learned from this contamination event include:

Risk analysis and reporting

- The need to have systems, processes and resources in place to ensure appropriate responses to emergency events.

Incident management

- Early identification of incidents and notification with regulators assisted in the response.
- Importance of having and understanding your emergency action plan.

Staff capability

- The importance of appropriately qualified and/or trained staff.
- The need to report and act on potential incidents early and appropriately.

Considerations

- Do you know if Council has funds available for emergency situations?
- Do you understand Council’s responsibilities for Liquid Trade Waste?
- Do you know whether your emergency contact lists are up to date?
- Did you know what concurrence obligations your Council has with Department of Planning and Environment?
- Do you know what your responsibilities are in the event of an emergency?

References

http://www.wioa.org.au/conference_papers/08_nsw/documents/PeterAnderson.pdf

<https://www.kempsey.nsw.gov.au/Your-Council/Publications/Annual-reports-publications>