



## **POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN**



## **NARRANDERA SEWER TREATMENT PLAN**

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## 1. Background

To improve the efficiency of pollution reporting, NSW Parliament amended the Protection of the Environment Operations (POEO) Act 1997 resulting in the Protection of the Environment Legislation Amendment (POELA) Act 2011.

The Narrandera STP Pollution Incident Response Plan (PIRMP) has been prepared in accordance with the POEO Act 1997, POEO (General) Regulation 2009 and Preparation of PIRMP's Environmental Guidelines.

## 2. Definition of Pollution Incident

A pollution incident is defined in section 147 of the POEO Act as:

- (a) harm to the environment is material if:
  - (i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
  - (ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and
- (b) Loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

## 3. Description and Likelihood of Hazards

Hazards which have been identified during the risk identification stage were analysed. This process takes into account the 'likelihood' and the 'consequences' of the event. The objective of the analysis is to separate the minor acceptable risks from the major risks and to provide data to assist in the assessment and management of risks.

The risk analysis process is applied to all credible risks to determine levels of risk. The process acts as a filter by applying a reasoned and consistent process. Minor risks can be eliminated from further consideration and dealt with within standard operating procedures.

The remaining risks will therefore be of such significance as to consider the development of risk treatment options and plans.

Likelihood is a qualitative description of probability of an event occurring. The process of determining likelihood involves combining information about estimated or calculated probability, history or experience. Where possible it is based on past records, relevant experience, industry practice and experience, published literature or expert judgement.

The qualitative descriptors for each assessment are shown below:

### 3.1 Likelihood

Likelihood	Descriptor	Probability of occurrence
Rare	May occur only in exceptional circumstances	More than 20 years
Unlikely	Could occur at some time	Within 10-20 years
Possible	Might occur at some time	Within 3-5 years
Likely	Will probably occur in most circumstances	Within 2 years
Almost certain	Expected to occur in most circumstances	Within 1 year

### 3.2 Risk Assessment

The risk assessment process compares the likelihood of a risk event occurring against the consequences of the event occurring. In the risk rating table below, a risk event with a likelihood of 'Possible' and a consequence of 'Major' has a risk rating of 'High'.

Risk Matrix					
Likelihood level	Consequences				
	Insignificant	Minor	Moderate	Major	Catastrophic
Rare	L	L	M	M	H
Unlikely	L	L	M	M	H
Possible	L	M	H	H	H
Likely	M	M	H	H	VH
Almost Certain	M	H	H	VH	VH

Ref: HB 436:2004, Risk Management Guidelines, Table. 6.6 p 55.

Potential/ Chemical Hazard	Risk Assessment	
	Likelihood	Risk Matrix
Sewage overflow (raw or partially treated)	Unlikely	M
Storm events (lightning/heavy rainfall/wind) causing power failure or infrastructure damage	Likely	M
Reticulation blockages	Almost Certain	M
Damage to reticulation (contractors or other damage during excavations, etc.)	Likely	L
Infrastructure failure due to age	Unlikely	M
SCADA/Communications failure	Almost Certain	M
Excessive inflows	Rare	M
Mechanical breakdown;	Likely	M
Power failure	Likely	L
Treatment Plant blockage	Likely	H
Tank/storage failure	Unlikely	M
Delivery incident	Possible	M
Damage to chemical reticulation	Possible	H
Vandalism	Unlikely	M
Inappropriate chemical use	Rare	L
Bund failure	Rare	L

#### 4. Pre-emptive actions to be taken

Risk/Hazard	Controls/Actions
<b>RETICULATION</b>	
Sewage overflow due to heavy rainfall	<ul style="list-style-type: none"> <li>▪ Reticulation maintenance and rehabilitation to reduce infiltration</li> <li>▪ Spare capacity in pump wells, reticulation and manholes</li> <li>▪ Monitoring and maintenance</li> </ul>
Sewage overflow due to power failure	<ul style="list-style-type: none"> <li>▪ Lightning protection</li> <li>▪ Surge protection</li> <li>▪ During emergency, backup generators are available from local suppliers</li> </ul>
Sewage overflow due to storm damaging infrastructure	<ul style="list-style-type: none"> <li>▪ Lightning protection</li> <li>▪ Surge protection</li> <li>▪ During emergency, back up portable pumps are readily available</li> </ul>
Sewage overflow due to reticulation blockages or damages	<ul style="list-style-type: none"> <li>▪ Spare capacity in pump wells, reticulation and manholes</li> <li>▪ Sewer Jetting machine is readily available (high pressure cleaning of mains for sewer chokes)</li> <li>▪ Monitoring and maintenance</li> </ul>
Sewage overflow due to a contractor's excavation hitting the sewers	<ul style="list-style-type: none"> <li>▪ Provide underground service locations to external persons</li> <li>▪ Telemetry designed to pick up a change in inflows</li> <li>▪ Portable pumps are readily available (for clean-up)</li> <li>▪ Vacuum truck is available to locate underground assets</li> </ul>
Sewage overflow due to SCADA/Communications failure	<ul style="list-style-type: none"> <li>▪ SCADA testing and alarming</li> <li>▪ Back-up batteries will be activated automatically</li> <li>▪ SCADA monitoring and maintenance</li> </ul>
Sewage overflow due to infrastructure failure (e.g. due to age)	<ul style="list-style-type: none"> <li>▪ Maintenance and renewal programs</li> <li>▪ During emergency, back up portable pumps are readily available</li> </ul>
Sewage overflow due to mechanical breakdown/pump failure	<ul style="list-style-type: none"> <li>▪ Telemetry monitoring</li> <li>▪ Maintenance program</li> <li>▪ Spare capacity in pump wells, reticulation and manholes</li> <li>▪ Activate the stand-by pump</li> <li>▪ Portable pumps are readily available to bypass site</li> <li>▪ Backflow prevention</li> <li>▪ Monitoring and maintenance</li> </ul>
Sewage overflow from manholes due to blockage/damage/rainfall	<ul style="list-style-type: none"> <li>▪ Reticulation maintenance and rehabilitation to reduce infiltration</li> <li>▪ Spare capacity in pump wells, reticulation and manholes</li> <li>▪ Portable pumps are readily available to bypass site</li> <li>▪ Monitoring and maintenance</li> </ul>
Sewage overflow from pump stations due to blockage/damage/rainfall	<ul style="list-style-type: none"> <li>▪ Reticulation maintenance and rehabilitation to reduce infiltration</li> <li>▪ Spare capacity in pump wells, reticulation and manholes</li> <li>▪ Activate the stand-by pump</li> <li>▪ Portable pumps are readily available to bypass site</li> <li>▪ Pump station monitoring and maintenance</li> <li>▪ Backflow prevention</li> </ul>
<b>SEWERAGE TREATMENT PLANT</b>	
Sewage overflow (raw) due to heavy rainfall	<ul style="list-style-type: none"> <li>▪ Reticulation maintenance and rehabilitation to reduce infiltration</li> <li>▪ Spare capacity in pump wells, reticulation and manholes</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Overflow storage at the STP (containment/evaporation ponds)</li> <li>▪ Stormwater bypass system which allows excess flow to be diverted into containment/evaporation ponds</li> <li>▪ Monitoring and maintenance</li> </ul>
Sewage overflow (raw) due to storm (lightning/wind) causing power failure	<ul style="list-style-type: none"> <li>▪ Lightning protection</li> <li>▪ Surge protection</li> <li>▪ Backup generators are available from local suppliers</li> </ul>
Sewage overflow (raw) due to storm (lightning/wind) causing infrastructure damage	<ul style="list-style-type: none"> <li>▪ Lightning protection</li> <li>▪ Surge protection</li> <li>▪ Overflow bypass at the STP</li> </ul>
Sewage overflow (raw) due to reticulation blockages	<ul style="list-style-type: none"> <li>▪ Reticulation maintenance</li> <li>▪ Spare capacity in pump wells, reticulation and manholes</li> <li>▪ Overflow storage at the STP (containment/evaporation ponds)</li> <li>▪ Bypass systems to overflow containment/evaporation ponds</li> <li>▪ Monitoring and maintenance</li> </ul>
Sewage overflow (raw) due to damage to onsite reticulation (e.g. during excavations, etc)	<ul style="list-style-type: none"> <li>▪ Locate services prior excavations</li> <li>▪ Appropriate supervision of contractors</li> <li>▪ Bypass systems to overflow containment/evaporation ponds</li> </ul>
Sewage overflow (raw) due to SCADA/Communications failure	<ul style="list-style-type: none"> <li>▪ SCADA testing and alarming</li> <li>▪ SCADA monitoring and maintenance</li> <li>▪ Manually operate the Sewerage Treatment Plant</li> </ul>
Sewage overflow (raw) due to infrastructure failure (e.g. due to age)	<ul style="list-style-type: none"> <li>▪ Maintenance and renewal programs</li> </ul>
Sewage overflow (raw) due to excessive flows	<ul style="list-style-type: none"> <li>▪ Reticulation maintenance to reduce infiltration</li> <li>▪ Spare capacity in pump wells, reticulation and manholes</li> <li>▪ Overflow storage at the STP (containment/evaporation ponds)</li> <li>▪ Stormwater bypass system which allows excess flow to be diverted into containment/evaporation ponds</li> <li>▪ Monitoring and maintenance</li> </ul>
Sewage overflow (raw) due to mechanical break down	<ul style="list-style-type: none"> <li>▪ Maintenance and inspection programs</li> <li>▪ Spare capacity in pump wells, reticulation and manholes</li> <li>▪ Overflow storage at the STP (containment/evaporation ponds)</li> <li>▪ Stormwater bypass system which allows excess flow to be diverted into containment/evaporation ponds</li> <li>▪ Monitoring and maintenance</li> </ul>
Sewage overflow (raw) due to Treatment Plant blockage	<ul style="list-style-type: none"> <li>▪ Bypass systems from the inlet works to containment/evaporation ponds</li> <li>▪ Spare capacity in pump wells, reticulation and manholes</li> <li>▪ Monitoring and maintenance</li> <li>▪ Manually operate the Sewerage Treatment Plant</li> </ul>
Chemical spill due to tank/storage failure	<ul style="list-style-type: none"> <li>▪ Bunding</li> <li>▪ Alarms</li> <li>▪ Inspection and maintenance of tanks</li> </ul>
Chemical spill during delivery	<ul style="list-style-type: none"> <li>▪ Appropriate Safe Work Method Statement (SWMS)</li> <li>▪ Appropriate PPE</li> </ul>

Chemical spill due to damage to chemical reticulation	<ul style="list-style-type: none"> <li>▪ Locate services prior to excavations</li> <li>▪ Appropriate supervision of contractors</li> <li>▪ Shut off valves for chemical dosing plant</li> </ul>
Chemical spill due to vandalism	<ul style="list-style-type: none"> <li>▪ Site security fences</li> </ul>
Chemical spill due to bund failure	<ul style="list-style-type: none"> <li>▪ Bund inspections</li> <li>▪ Maintenance and renewal</li> </ul>
Chemical truck incident outside of bunded area	<ul style="list-style-type: none"> <li>▪ Operator onsite during deliveries</li> </ul>

## 5. Inventory of Pollutants

Below are the identified pollutants located on site:

Liquid Aluminium Sulphate	25,000L
Petrol	Less than 20L
Chlorine gas	140 KG
Effluent	3 ML
Sludge	100 t

## 6. Safety Equipment

Narrandera Shire Council's Workplace Health and Safety Policies and Procedures apply to this site.

All equipment, controls, incident response plans and management plans will be maintained to prevent any possible harm to human health and the environment. Inspection, testing and review of equipment, controls, documents and systems currently in place on the site will depend on the issues raised for concern and results from previous checks.

Safety equipment located within the site is as follows:

- 1 x Fire Extinguishers in the main office, 1 x Fire Extinguisher in the electrical room and 1 x Fire Extinguisher in the lab.
- Signage on gates, chemical containers, moving plant and confined spaces
- MSDSs for Aluminium Sulphate, Petrol, Chlorine and chemicals for testing
- Hand rails on walkways on the treatment plants
- Site Office
- First Aid Kit
- Emergency phone numbers at the main office.
- Eye wash station at the alum bunding/chlorine storage area.
- Bunded area around Alum Dosing system.
- 1 x Chemical Spill Showers at the Alum dosing system
- Induction for every employee and contractor
- PPE

## 7. Duty to report Pollution Incident



Under the POEO Act a duty to immediately report an incident applies where a pollution incident occurs in the course of the project so that material harm to the environment is caused or threatened. It does not matter that harm to the environment is caused only in the premise where the pollution incident occurs.

Leaks, spills, water discharges and other pollution incidents can harm the environment. The relevant regulatory authorities need to be informed of pollution incidents immediately, so that action can be coordinated to prevent or limit harm to the environment. Regulatory authorities and notification responsibilities are given below.

### 8. Regulatory Authorities and Project Personnel to be notified

Below is a list of the relevant regulatory authorities and project personnel to be notified of any pollution incident for the Narrandera STP.

Name	Position	Contact Number
Shane Wilson	Deputy General Manager Infrastructure	02 6959 5503, 0428 696 117
Shane Squires	Water and Sewer Manager	02 6959 5567, 0427 886 453
John Vearing	Team Leader	0417023015, 02 6959 5510
Keith Kenna	Team Leader	0417023015, 02 6959 5510
Rodney Flack	Treatment Plant Operator	0437446458, 02 6959 5510
<del>Steve Gehringer</del>	<del>Treatment Plant Operator</del>	<del>0437446458, 02 6959 5510</del>
Peter Broadhead	Treatment Plant Operator	0437446458, 02 6959 5510
John Williams	Treatment Plant Operator	0437446458, 02 6959 5510
EPA Pollution Hotline		131 555
NSW Ministry of Health via Local Public Health Unit		02 4824 1837, AH 02 6080 8900
Emergency Services /Fire and Rescue/ NSW Police		000
SES		132 500
Narrandera Rescue Squad		1300 872 777

Pollution incidents posing material harm to the environment must be notified to the Environmental Protection Authority. The relevant information about a pollution incident required to be reported consists of the following:

- 1) The time, date, nature, duration and location of the incident
- 2) The location of the place where pollution is occurring or is likely to occur
- 3) The nature, the estimated quantity or volume and the concentration of any pollutants involved
- 4) The circumstances in which the incident occurred (including the cause of the incident, if known)
- 5) The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution

If the information required by items (3) to (5) becomes known after the initial notification is made, that information must be provided to the authorities immediately after it becomes known.

A person/project must notify even though the notification might incriminate the person/project. However the notification is not admissible in evidence against the person/project for an offence.

## **9. Communicating with Neighbours and the Local Community**

Impacts on the community due to sewage distribution and treatment incidents are variable and depend on location, volumes of spills or other factors. Communication methods will be used on a case by case basis and in all situations Narrandera Shire Council will attempt to provide early warning to directly affected premises (either upstream or downstream where relevant) by phone call or site visit. Early warning is to include details of what the imminent incident is, how those affected can prepare and respond, and provide important advice such as avoiding contact and use of affected waterways.

Where early warning is not possible, Narrandera Shire Council will provide notification and communication during and after an incident to advise those affected with information, advice and updates. Notification and communication methods will be determined on a case by case basis and the following methods may be used:

- Phone calls
- Media releases (radio/newspaper/internet/social media as required)
- Site visits/door knocking
- Letter drops
- Warning signs
- Other methods as the situation requires

## **10. Minimising Harm to Persons on the Premises**

One of the goals of the pollution incidents response management plan is to develop and implement an emergency response protocol.

Narrandera Shire Council receives, records and initiates response to customer inquiries/complaints through and get directed to the appropriate personnel.

Other pre-emptive actions taken to minimise the risk of harm to persons on the premises include:

- Pre-commencement health screening and assistance
- Site inductions
- Regular inspections and recording and close out of corrective actions
- Regular management meetings
- Hazard and near miss reporting
- Staff training
- Environmental and occupational monitoring

Narrandera Shire Council emergency response action includes but is not limited to the following:

- Adequate staff training
- Provision of appropriate equipment (pumps, hoses, generators and industry approved PPE)
- Back up/stand-by sewerage pumps
- Vacuum trucks to be sourced locally to remove sewage and sludge
- Public warning signs and emergency tapes to mark the affected area
- Sampling equipment
- Reporting and record keeping
- Formal procedures for maintenance activities
- Training of operations and maintenance staff

## **11. Actions to be taken during or immediately after a Pollution Incident**

Actions to be undertaken in the event of a pollution incident are as follows:

- If a pollution incident has occurred involving Narrandera Shire Council Water & Sewerage asset and / or activity and the situation is potentially life threatening, call 000 in the first instance
- Any persons wishing to report an incident involving Narrandera Shire Council Water & Sewerage asset and / or activity must call 02 6959 5510, to be directed to the Shane Squires, Water & Sewer Engineering Officer.
- The Water and Sewer Engineering Officer will:
  - a. Assess the situation and potential consequences
  - b. Prioritise the response based on intelligence gathered
  - c. Contact / dispatch designated operational staff to attend the incident or advise of a course of action based on the prioritisation assessment
  - d. Advise of any specific hazards which may be present at the location of the incident
- Narrandera Shire Council will escalate the incident accordingly and notify relevant authorities (detailed in Section 8) based on information received from its field resources
- Narrandera Shire Council follows the NSW State Emergency Management Arrangements meaning that key emergency service organisations such as NSW Police, Fire and Rescue NSW and the SES may be the controlling authority depending on the nature of the incident

## **12. Staff Training**

All staff must complete Council's General Induction and Site Specific Induction. All staff must maintain competency in relevant licences, policies and procedures. All operators must attain competency in sewage treatment plant operation. All staff training programs to be updated annually.

New members of staff at the facility should be inducted. This induction must cover the purpose, requirements and responsibilities detailed in this plan.

Staff competency will be monitored through audits, public complaints and pollution incident reports.

All staff required to implement this plan and associated documents must have training in its use and be inducted into it. This is to ensure they are aware of the content, processes and requirements of this plan and can competently implement it if necessary. Additionally, relevant staff will be involved in an annual exercise/drill to test the implementation of the plan. In the event of a significant incident, an investigation and debrief will be conducted, documentation updated (if required) and staff will be re-inducted.

Regular site briefings and toolbox meetings should be held when considered appropriate to draw attention to potential pollution incidents and identify improvements to on-site safety procedures.

All, desktop exercises, drills and incidents are to be registered into Council's TRIM, and training records will be sent to WH&S Officer and Human Resources for filing.

### **Follow Up Actions**

Actions to be taken after the incident are as follows:

- Submit the necessary reports to the relevant authorities (e.g. EPA, Ministry of Health, etc).

- Plan must be tested within one month of any pollution incident to assess whether the information included in the plan is accurate and up to date, and the plan is still capable of being implemented in a workable and effective manner.

### 13. Testing of this Plan

As a requirement of the Protection of the Environment Operations (General) Regulation 2009 (clause 98E) this Pollution Incident Response Management Plan must be tested:

- Routinely at least every 12 months, and
- Within one month of any pollution incident occurring to which the licence relates

The regular testing of the plan will identify any areas of the plan including equipment or training that requires updating. A desktop test and/or practical exercise will be carried out during each test period. Table below contains details of testing. This table will be updated following each test of the plan.

#### Record of Testing.

Date Completed	Desktop	Practical Exercise	Completed by
27/01/2023	Yes	No	Shane Squires
3/03/2021	Yes	No	Nivi Poudel
24/03/2020	yes	No	Shane Squires

14. Site Plans



**Narrandera Sewer Treatment Plant**