TWEED SHIRE COUNCIL

Environmental Emergency Management Plan Murwillumbah Wastewater Treatment Plant and Sewerage Network

Approved by: Manager Water

Version 1.1

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1.0	Created by MHancock	18/10/2013
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1 Introduction

This Environmental Emergency Management Plan (EEMP) for Murwillumbah Wastewater Treatment Plant (WWTP) applies to the Murwillumbah facility and the sewerage network. The entire scheme is operated by Tweed Shire Council under a NSW Environment Protection Authority (EPA) Environment Protection Licence No. 582 (downloadable from EPA website). As a licence holder, and in accordance with requirements set by NSW Government agencies, Council is required to prepare and implement a number of management plans to minimise the risk of harm to human health or the environment arising from the licensed activities. They are:

1. Operation Environmental Management Plan
2. Pollution Incident Response Management Plan
3. Emergency Management Plan

Council has produced a single consolidated document called an Environmental Emergency Management Plan (EEMP), which satisfies the requirements of each of the three required plans and assists with the operation of the Sewerage Network and Wastewater Treatment Plant.

1.1 EEMP Requirements

The relevant legislative requirements and guidelines administered by NSW authorities for the preparation of the EEMP are summarised in Table 1-1.

Table 1: Legislative Context for the Preparation of an EEMP

NSW Government Agency	Applicable Legislation	Management Plan Required	Guideline
NSW Department of Infrastructure, Planning and Natural Resources (DIPNR)	▪ *Environmental Planning and Assessment Act 1979* (EPAA Act) (Parts 4 and 5)	Operation Environmental Management Plan	Guideline for the Preparation of Environmental Management Plans (NSW DIPNR, 2004)
NSW Environment Protection Authority (EPA)	▪ *Protection of the Environment Legislation Amendment Act 2011* ▪ *Protection of the Environment Operations Act 1997* (POEO Act) (Part 5.7A) ▪ *Protection of the Environment Operations (General) Regulation 2009*	Pollution Incident Response Management Plan	Preparation of Pollution Incident Response Management Plans (NSW EPA, 2012)

NSW Government Agency	Applicable Legislation	Management Plan Required	Guideline
WorkCover NSW	▪ *Work Health and Safety (WHS) Act 2011* ▪ *Work Health and Safety Regulation 2011* ▪ *Explosives Regulation 2005*	Emergency Management Plan	Emergency Management Plan Checklist (WorkCover NSW) Guidelines for Emergency Plans at Sites having Dangerous Goods, Explosives and Major Hazard Facilities (NSW Fire Brigades, 2010)

1.2 Organisational Policy

Council has adopted the Health Safety Environment Management System (HSES) to establish an effective systematic process and framework for the overall management of Council's operational activities in relation to work health, safety and the environment.

The requirements of this system apply to all Council workers (fulltime, temporary, casual, contractors, volunteers and relevant stakeholders).

This management plan is a core element of the HSES, providing a site-specific framework for the management of health, safety and the environment at each of Council's Wastewater Treatment Plants.

Council also has a Workplace Environmental Management Policy and Chemical Management System called ChemAlert. ChemAlert is a proprietary web-based package that is used to manage chemicals on site. The system provides online access to safety data sheets, dangerous goods and hazardous substances registers, chemical storage volumes and product information.

Council's commitment to work health and safety is detailed further in the WHS Responsibility, Authority and Accountability Protocol.

1.3 EEMP Objectives

The objectives of the EEMP are to:

- Provide site specific information relating to environmental management and emergency / incident response, which satisfies requirements under the relevant legislation.
- Ensure integration with Council's existing policies and procedures.
- Promote best practice environmental management across site operations, and compliance with Environment Protection Licence conditions.
- Ensure comprehensive and timely communication about a pollution incident to employees, the EPA, other relevant authorities, and community members who may be affected by the impacts of the pollution incident.
- Minimise and control the risk of a pollution incident or emergency situation by requiring identification of risks and development of planned actions to minimise and manage those risks.
- Ensure the plan is properly implemented by trained staff, identifying persons responsible for implementing it, and is regularly tested and reviewed for accuracy, currency and suitability.

2 Site Description

The Murwillumbah Sewerage Scheme is a combined gravity sewage collection and transport system with a dedicated wastewater treatment plant (Figure 1). It consists of the following components:

- Reticulated Sewage Pumping Stations (SPS)
- Reticulated Sewage Gravity Mains (SGM)
- Reticulated Sewage Rising Mains (SRM)
- Transport SRM
- Household pressure pumping systems
- Murwillumbah WWTP

The sections below describe the site and its activities in more detail, with particular focus on operations at Murwillumbah WWTP.

2.1 Location

The Murwillumbah WWTP is located at Frances St, Murwillumbah 2484 (Figure 2). This is approximately 1.8 km from the Murwillumbah CBD. It is situated on a 19 hectare property (Lot 2 DP 5343521) owned by Council.

Sewerage network services the suburbs of Condong to the north, Bray Park to the south and east and Murwillumbah surrounding the treatment plant. The sewage sources are mainly residential and commercial.

2.2 Environs

The Murwillumbah WWTP is located within the floodplain of the Rous River a major tributary of the Tweed River. The Rous River runs approximately 60m from the western boundary of the plant. Surrounding the WWTP are low-lying agricultural lands that are predominantly farmed for sugar cane. The existing WWTP infrastructure is built up with a steep embankment down to the natural ground level. All structures except the Catch/Balance Ponds are constructed above 5.5 m Australian Height Data (AHD) which is the 1 in 100 flood level. The top of the Catch/Balance Ponds embankments are at 4.5 AHD which is the 1 in 5 year flood level. (Figure 2).

Council's acid sulfate soil (ASS) planning map indicates that the Murwillumbah WWTP is located on Class 3 lands. Under the Tweed Local Environmental Plan 2000, the Murwillumbah WWTP is zoned 5(a) –Sewage Treatment. Farming land to the north and west is zoned 1(b2) – Agricultural protection. Land adjacent to the southern and eastern boundaries are zoned 6(a) Open space, 6(b) Recreation or 2(a) Low Density Residential. There is no significant natural vegetation within close proximity to the plant (Figure 3).

Figure 1: Murwillumbah Point WWTP Sewerage Network

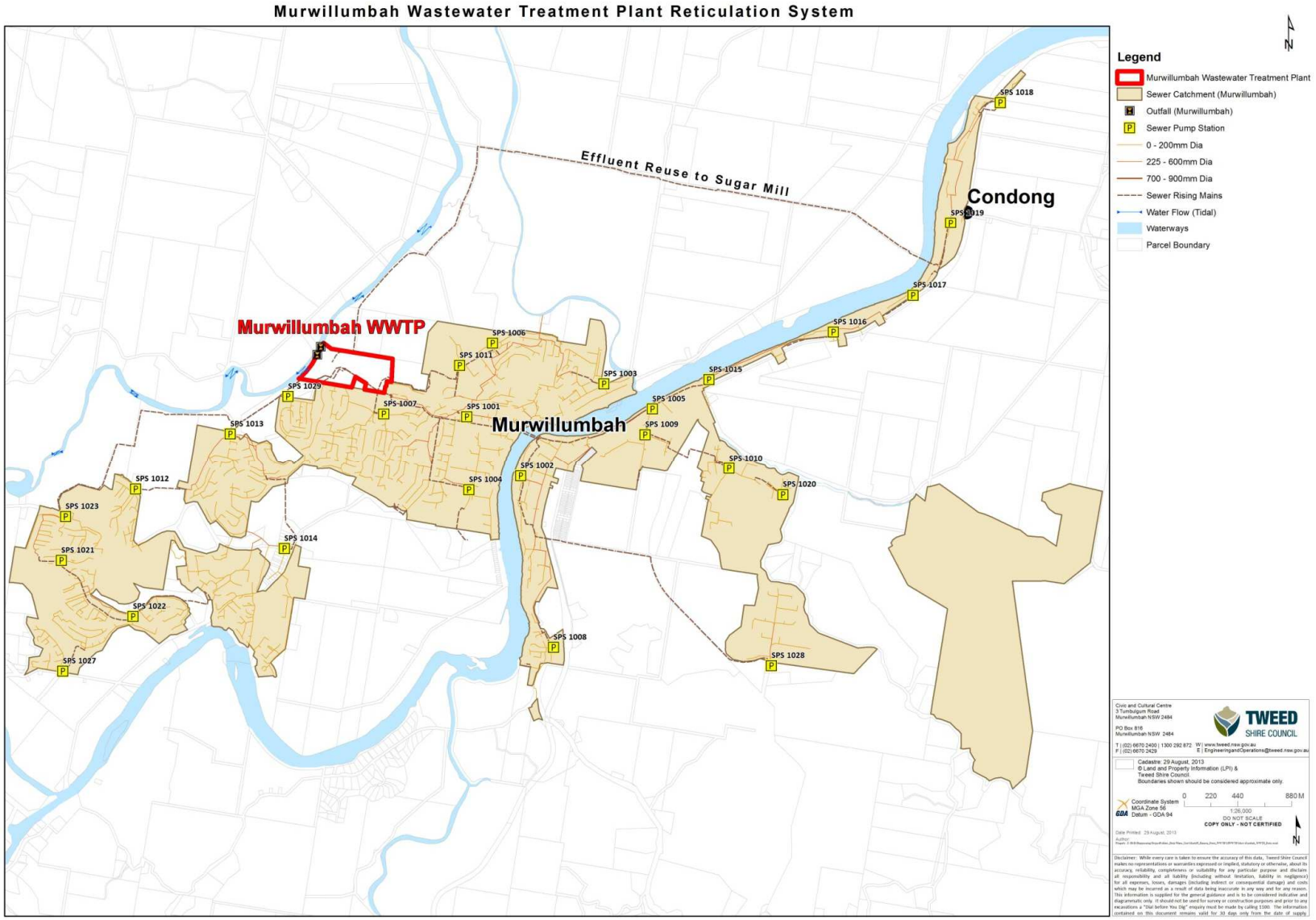


Figure 2: Murwillumbah WWTP Locality Map – Wetland Surrounds

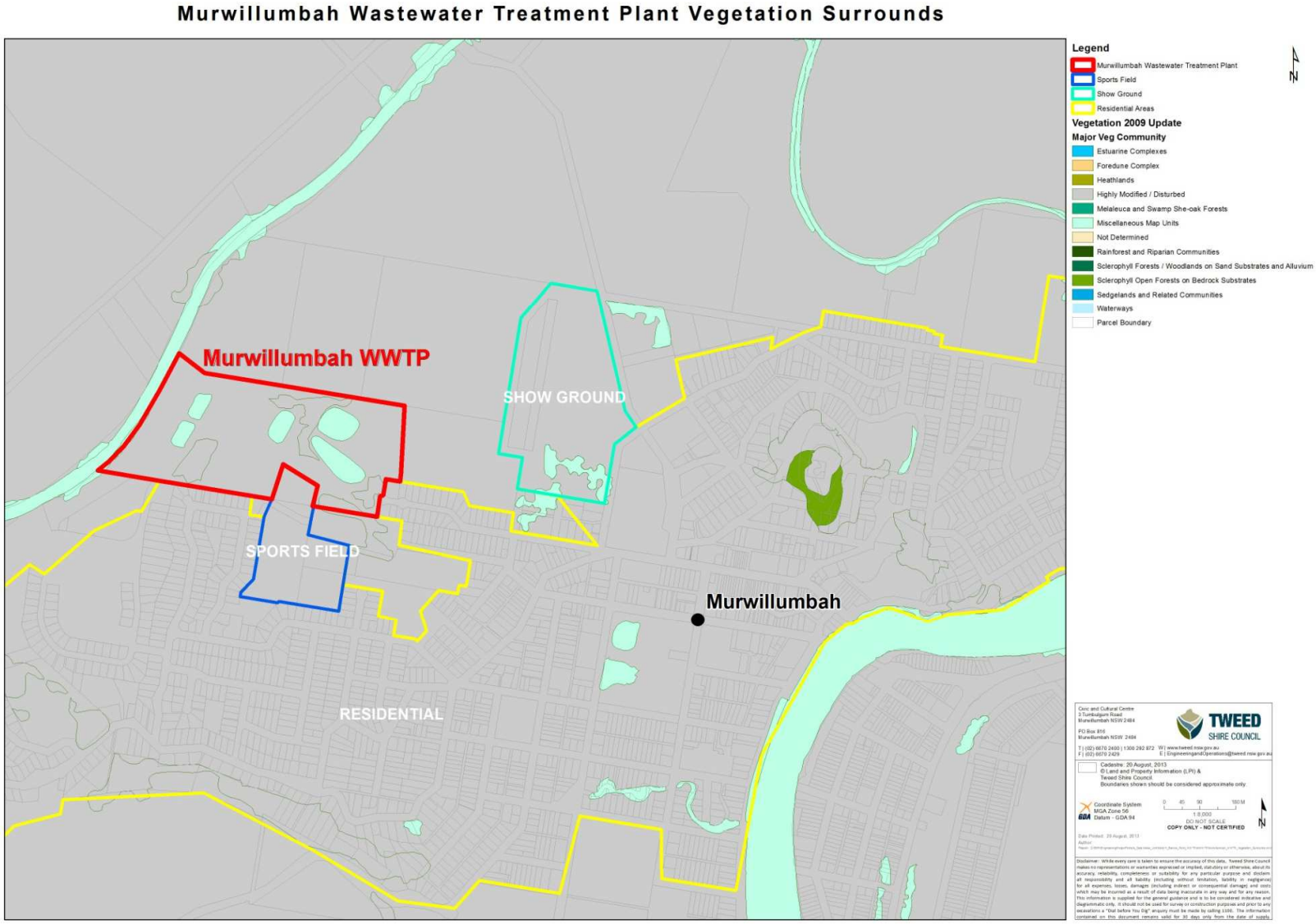
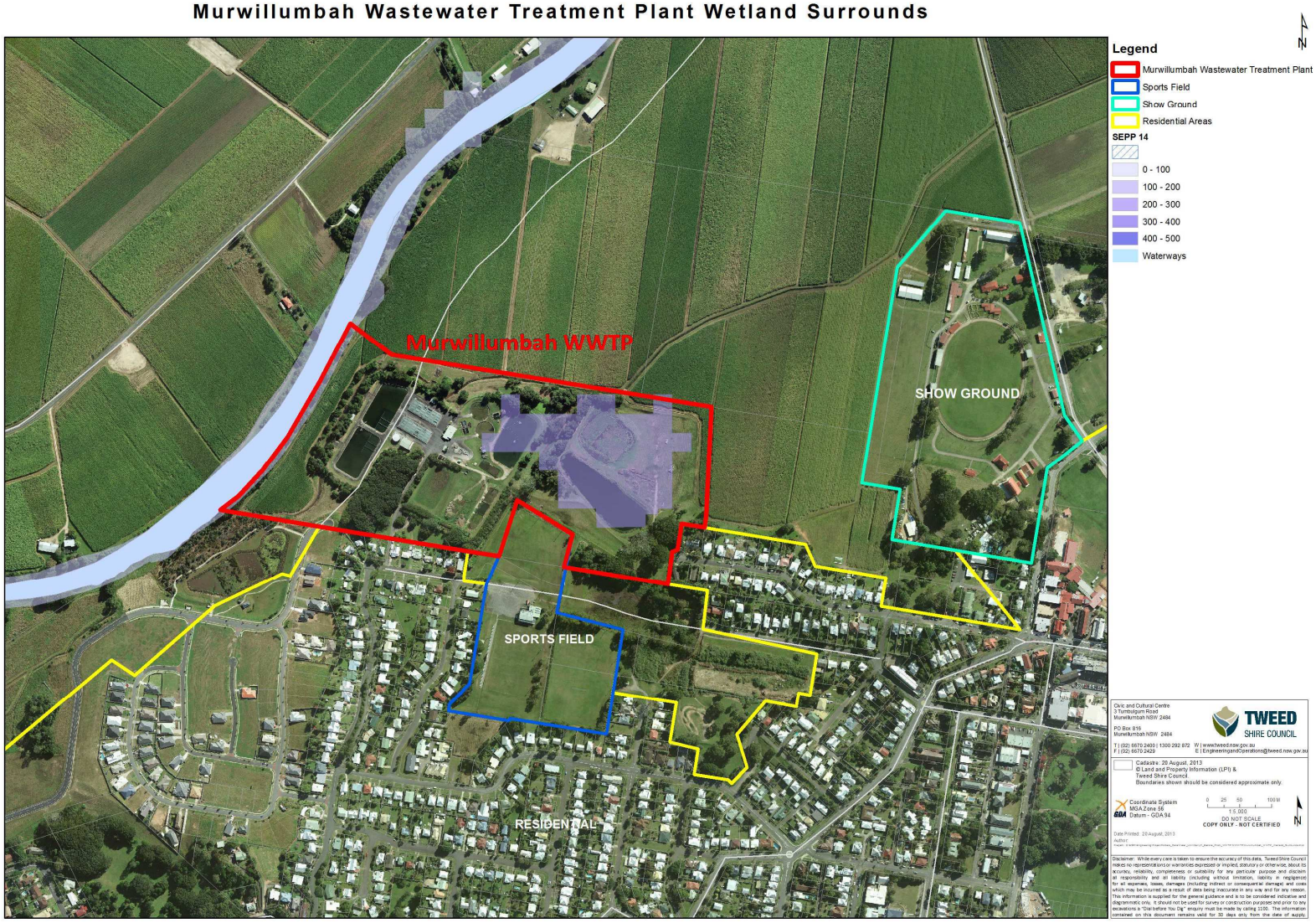


Figure 3: Murwillumbah WWTP Locality Map – Vegetation Surrounds



2.3 Processes

The Murwillumbah WWTP is a 16,000 EP treatment plant with two Intermittently Decanted Extended Aeration bioreactors.

Based on 240 L/EP/d, Average Dry Weather Flow (ADWF) is calculated to be 44L/s. 3xADWF is 133 L/s and 7xADWF is ~320L/s.

- Flows up to 3xADWF are fully treated before discharge to the environment.
- Flows >3xADWF to 7xADWF are bypassed to the storm lagoon and returned later for full treatment.
- Flows >7xADWF are diverted from the inlet works to the Rous River

- Following discussion with the EPA, the following operational parameters have been adopted:
- Full treatment and disinfection would be provided to all flows during dry weather i.e. for flows up to 3xAWDF
- Flows up to 7 x AWDF would receive biological treatment
- Flows above 7 x AWDF would receive screening and then be passed to the river.

A summary of the wastewater treatment process, plant and equipment is provided below. A complete description of equipment and operation and maintenance is provided in the Operation and Maintenance Manual:

Table 2: Wastewater Treatment Processes, plant and equipment

WWTP Process Unit	Description
Preliminary Treatment Screening and Grit Removal	A mechanical step screen located in the inlet channel achieves screening of the inflow. A screenings conveyor dewaters the screenings to approximately of 40 % dry solids. In case of mechanical screen malfunction the sewage level in the channel upstream of the screen will rise. Sewage will enter the screen by-pass channel where a manually raked barscreen is installed for removal of gross screenings. After passing through the Arkon flume, sewage flows into a vortex grit removal tank in which relatively heavy grit particles are settled and removed while lighter organic material is kept in suspension. Grit settled to the bottom of the tank is lifted by an air lift pump and discharged into the classifier for washing and dewatering. The de-watered grit is deposited in a bin located under the outlet of the classifier.
Flow by-pass and diversion	After the grit removal tank flow enters the flow division chamber where flow is divided evenly by two weirs and directed into the two IDEA tanks. The weir installed in the sidewall of the flow channel between the screen and flow measuring flume and third weir in the chamber are connected by common pipeline and they by-pass excess inflow greater than 7 x ADWF to the storm flow balance pond.
Deodorisation System	Foul air is drawn continuously from the inlet works and is blown by electric fan into the deodorisation soil bed. Foul air is distributed evenly throughout the base of the

WWTP Process Unit	Description
	deodorisation bed by a series of pipes in a gravel surround, which also act as underdrain. The bed drains to the lnlet Syphon Scour Pump Station. Micro-organisms in the soil and plants on top of the bed effect deodorisation.
Storm flow storage pond and pump station	The storm flow storage pond was built in the depression area of the old Pasvier channels. Approximate volume of the pond is 2.5 ML, which provides storage of 5.5 hours of maximum by-pass flow.
Secondary treatment	The secondary treatment is an activated sludge process for treatment of the sewage liquid and partial stabilisation (or digestion) of the sewage solids. Both are achieved in the presence of oxygen in two intermittently decanted extended aeration (IDEA) tanks.
Aeration System	The aeration system provides aeration and mixing in the IDEA tanks and consists of air blowers with associated equipment, air manifolds, valves, and membrane diffusers installed on submerged stainless steel grids. ln each tank there are six (6) submerged stainless steel grids fitted with a total of 1176 Flygt/Sanitaire fine bubble aeration diffusers. The aeration system delivers peak airflow of 3,680 m^3/h.
Chemical dosing for phosphorus removal	The function of the chemical dosing system is to store and dose alum. Phosphorus removal is achieved by means of chemical precipitation using liquid Alum. The liquid Alum is bulk delivered to the plant via a 'Kamlock' inlet (located at the Storage Tank) into 25 kL capacity Alum storage tank.
Effluent catch ponds	Effluent from the aeration tanks is discharged into the catch/balance ponds through the effluent transfer mains. Sliding gates that are provided to direct flows to either one of the ponds when the other is under maintenance or desludging. Ponds are concrete lined and have 2,860m3 storage volume.
Effluent disinfection	Prior to discharge to Rous River sewage effluent is disinfected in an artificial ultra-violet irradiation system. From the catch pond the Effluent Pump Station UV pumps delivers the effluent (at a rate of 180L/s) to the pressurised UV unit. From there effluent gravitates to the River discharge point. The river pumps of the Effluent Pump Station can discharge effluent at rate 400 L/s directly to Rous River without UV disinfection.
Sludge handling	Excess mixed liquor from the aeration tanks is pumped by submersible WAS pumps to the sludge lagoon. After six months in the sludge lagoon, the sludge is to be transferred to the Sludge Drying Beds. The supernatant is then pumped to the inlet Works. A floating pontoon incorporating a positive displacement pump, and flexible discharge pipe work undertakes de-sludging of the lagoon. The drained sludge is then dried under the sun in the Drying Beds before disposal off site.

WWTP Process Unit	Description
Tertiary Treatment	The Tertiary Treatment Facility has been designed to provide further treatment to the secondary effluent from the Murwillumbah Sewage Treatment Plant to provide a cooling water supply for the green waste cogeneration power station built adjacent to the Condong Sugar Mill. The effluent is drawn from the Catch / Balance Ponds and passed through a series of filters and ultrafiltration membrane filters with UV and Chlorine disinfection. The treated water is stored in a 550kL tank located locally at the STP. The Clearwater is then drawn from the storage tank and pumped to the sugar Mill for use at a rate of up to 3ML/day.

2.4 History

The Murwillumbah WWTP was originally commissioned in 1956 for a capacity of 6,000 EP. The treatment plant has been augmented twice since that time, with upgrades in 1977 to 10,000 EP and to current capacity of 16,000EP in 2000.

2.5 Chemical Storage

A detailed listing of chemicals is contained in the Chemalert database.

A summary of bulk chemicals stored at Murwillumbah WWTP is provided in Table 3. Their location is shown on the site plan (Appendix A)

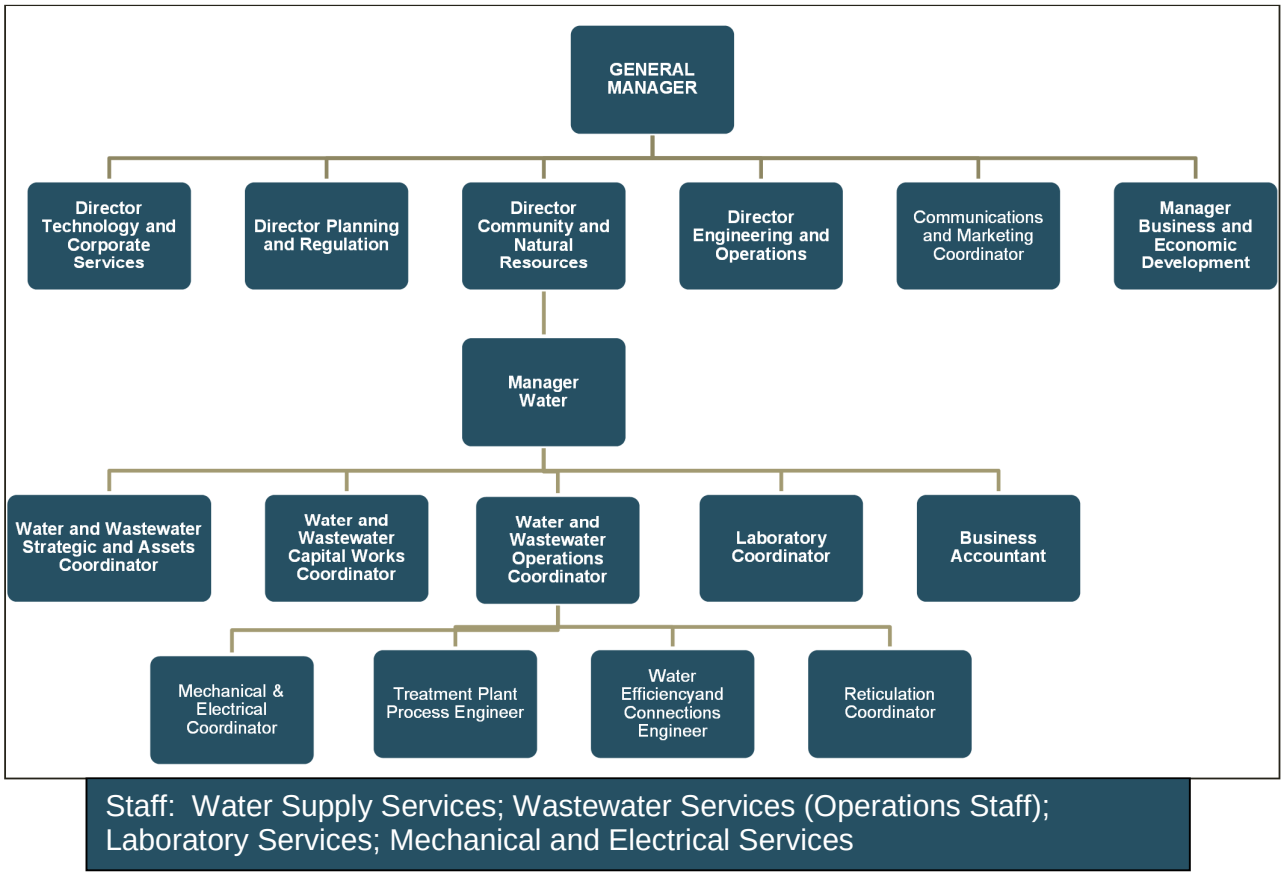
Table 3: Summary of bulk chemicals at Murwillumbah WWTP

Substance	Classification under the ADG Code	Quantity / Storage Details (Maximum Capacity)	WorkCover Requirement
Alum (Aluminium Sulphate)*	None allocated UN No: Nil	25,000 L capacity bulk tanks	Not listed in Schedule 11 of NSW *Work Health and Safety Regulation 2011*. No notification to NSW Work Cover required.
Caustic Soda (Sodium Hydroxide Solution)	8 Corrosive (Packing Group II) S6 Poison UN No: 1824	1 x 10,000 L 1 x 200L capacity bulk tanks	Above manifest quantity of 2,500 L (Skin Corrosive Category 1B) (Item 39) of Schedule 11 in NSW *Work Health and Safety Regulation 2011*. Requires notification to NSW Work Cover.
Sodium bisulphite	2693	200L	Notifiable quantity
Sodium hypochlorite	1791	1,100L capacity bulk tanks	Notifiable quantity
Citric Acid	None allocated UN No: Nil	200L	Below notifiable quantity

3 Operation Structure and Responsibilities

The Council organisational structure is provided in Figure 4.

Figure 4: Council Organisational Structure – Community and Natural Resource



Roles, responsibilities and communication pathways are illustrated in Figure 5.

Council defines, documents and communicates the areas of accountability and responsibility of all personnel involved in the implementation, maintenance and review of the HSES through the following:

- WHS Risk Management Protocol
- WHS Responsibility, Authority and Accountability Protocol
- Position descriptions
- Risk registers
- Safe Work Method Statements
- Standard Operating Procedures

Requirements for management of contractors are detailed in the Contractor and Services Health and Safety Management Protocol.

Figure 5: Roles, Responsibilities and Communication Pathway

3.1 Working Hours and Employment Structure

Council provides a 24 hour service for every scheme. Standard working hours for WWTP's operators are Monday - Friday, 7:00AM to 4:00PM. Routine inspections take place on weekends and public holidays between 6:00AM and 10:00AM.

Three full time operators are based at Murwillumbah WWTP. Mechanical and electrical services are provided by the Water Unit as required.

3.2 Maintenance

Routine maintenance is scheduled through Council's asset management system (MEX). All assets are recorded in this system and maintenance schedules are generated. Scheduled maintenance is then undertaken by the Water Unit, Mechanical & Electrical section. Critical assets are monitored remotely and staff are assigned to react to alarms.

4 Approvals, Licensing and Reporting

The following approvals and licences are in place for Murwillumbah WWTP:

- Environment Protection Licence under Section 55 of the *Protection of the Environment Operations Act 1997* (Licence No. – 582)
- Acknowledgement of Notification of Dangerous Goods on Premises

Licence conditions include requirement to monitor effluent quality and volume at the discharge point. Effluent quality concentration limits are provided in Table 4:

Table 4: M WWTP Effluent Concentration Limits

Parameter	90 Percentile	100 Percentile
Biochemical Oxygen Demand	10 mg/L	20 mg/L
Total Suspended Solids (TSS)	15 mg/L	30 mg/L
Total Nitrogen	10 mg/L	20 mg/L
Ammonia	2 mg/L	5 mg/L
Total Phosphorus	0.5 mg/L	1 mg/L
pH	n/a	6.5 – 8.5
Oil & Grease	5 mg/L	10 mg/L
Faecal Coliforms	200 cfu/100mL	600 cfu/100mL

Council reports to the NSW EPA. Reporting requirements include the following:

4.1 Annual Return

As an Environment Protection Licence holder, Council must complete and supply to the EPA an Annual Return comprising:

- statement of compliance with Licence
- monitoring and complaints summary
- details of any environmental incidents and the incident response implemented

- system performance report

An Annual Return must be prepared and submitted annually to the EPA within 60 days of the reporting period. The reporting period commences on the anniversary date of the licence.

4.2 Performance Monitoring Data

Council must within 14 days of obtaining monitoring data (for the last sample for that period), make any of the monitoring data that relates to pollution, and the licensee's name, publicly and prominently available on their website. This is to allow the public to access results of all pollution monitoring in a meaningful format.

Data required to be published includes:

- a summary of the monitoring data collected on at least a monthly basis.
- information regarding when and to what extent the pollutant discharge limits specified in the licence were not met and why.

The published monitoring data is available on Council's website.

4.3 Pollution Complaints

The EPA requires Council as an Environment Protection Licence holder to keep a record of all complaints made in relation to pollution arising from any activity to which the licence applies.

Council operates a 24-hour telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises e.g. odour, noise. The Council Complaints Line is (02) 6670 2400 or 1300 292872 and 1800 818 326 for after hours emergency calls.

All pollution complaints and resulting actions are registered in Council's document registration system and/or customer request system.

4.4 Notification of Environmental Harm

The POEO Act requires the occupier of premises, the employer or any person carrying on the activity which causes a pollution incident to immediately notify each relevant authority if there is a risk of '*material harm to the environment'*.

Council must notify the EPA of incidents causing or threatening material harm to the environment immediately after Council becomes aware of the incident to ensure that the appropriate agencies have the information they need to respond within an appropriate time.

Notifications must be made immediately by telephoning the NSW EPA service on 131 555. Council must subsequently provide written reports as directed by EPA.

5 Training and Induction

All plant operational staff are trained to a Certification Level III in Wastewater Industry Operations and have at least a competent understanding of the industry. General training requirements are managed through the Council's Human Resources Unit.

Training records and competencies are recorded and maintained utilising Council's corporate human resource system.

5.1 Staff Training

Training is provided to Council employees as part of site inductions, specialised skills and technology (e.g. ChemAlert, Aurion), and annual workplace health and safety and emergency response training. This includes a review of the responsibilities of staff and an update of procedural and legislative changes.

The site specific induction will include:

- Environmental Management e.g. environmental hazards of substances handled, pollution prevention (spill management and overflow management), odour control, waste and stormwater management.
- Health and Safety e.g. physical hazards of the workplace and activities, health and hygiene hazards, personal protective equipment, incident and near miss reporting.
- Emergency response (see below) and pollution incident response procedures.

Emergency response training is delivered annually and includes:

- Emergency Warden evacuation drills
- the communication procedure in the event of an emergency / incident;
- the location of emergency contact details;
- practicing a mock spill clean-up procedure including where to find emergency equipment and how to use it;
- ensuring staff are aware of their obligations in the event of an actual or potential emergency;
- ensuring staff are aware of the responsibilities and roles of other key staff members in the event of an emergency.

5.2 Inductions

The Council HSE Management System states that all employees are required to undertake the following inductions prior to commencing work:

- Corporate WHS Induction
- Workgroup Activity Induction
- Site Specific Inductions

6 Hazards and Risks

6.1 Risk Assessment

A risk assessment workshop was undertaken to identify operational risks to the environment and public health for the WWTP and sewerage system (Appendix B). This assessment included identifying and addressing measures to control risks.

This risk assessment is reviewed annually or if any major changes to network or WWTP are undertaken, or following a major incident.

6.2 Environmental Management Activities and Control

Management activities and operational controls are in place to manage the identified hazards and risks. They aim to provide clear instruction of activities undertaken so they

comply with HSES requirements and minimise hazards and potential environmental impacts.

Key management activities and operational controls include:

- Appropriate design of Infrastructure including fenced compound, Building code regulations, Control building BCA certified, SCADA telemetry and alarms and stormwater system including bunding and isolation valves
- Site security
- Maintenance of vegetation buffer zones
- Daily site inspections by site operators
- Trained operators
- Good Housekeeping
- Work instructions (eg. Chemical Handling)
- SOPs eg. Sewerage Environmental Incident
- Emergency Plan and Procedures including
  - Evacuation procedures
  - Hydrant location/s displayed
  - Training for fire/emergency wardens
  - Back-up generator
- Pollution Incident Response Procedures
- Liquid Trade Waste Policy and management.
- Biosolids management plan
- Dangerous Goods Register (SDSs): Flammable and combustible liquids are stored in accordance with AS1940-2004. All are registered in ChemAlert
- WHS audits
- Maintenance program and procedures
- Monitoring programs
- Complaint register
- Annual inspection of fire safety equipment
- Annual emergency evacuation drills
- Business continuity plan (BCP)

7 Emergency Management

Council's HSES requires potential emergency situations to be identified and procedures documented (Emergency Preparedness and Management Protocol).

The Protocol provides an effective systematic process for the management of emergency situations across all Council operations and response to protect life, property and the environment.

The HSES documents other processes and procedures to assist in the communication and implementation of emergency response procedures:

- Council has an established Emergency Planning Committee that meets twice yearly.
- Employees shall receive training in emergency response procedures appropriate to allocated emergency response responsibilities and degree of risk. In addition, emergency procedure drills shall be conducted annually.
- A central register detailing locations, wardens, training, drills, procedures, maps shall be maintained by the WHS Section.

The Emergency Plan is contained as Appendix A. It has been prepared to complement and interact with TSC HSES.

8 Pollution Incident Response Management

A pollution incident may include:

- plant malfunction
- sewer overflow
- mains break or blockage
- Illegal trade waste disposal
- other occurrence that has the potential to cause public health or environmental harm.

8.1 Pollutant Incident Notification Requirements

The POEO Act requires the occupier of premises, the employer or any person carrying on the activity which causes a pollution incident to immediately notify each relevant authority when material harm to the environment is caused or threatened.

The POEO Act **defines** '**material harm'** 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.*

8.2 Incident Response

Council's Sewerage Environmental Incident Standard Operating Procedure describes the procedures for the prevention and mitigation of environmental and public harm as a result of an incident in the sewerage scheme. As part of this procedure Council has an Environmental Incident Report which details the notification procedures and all actions taken.

8.3 Level of Response

The level of severity of the incident will dictate the appropriate response to the incident. It is essential that when the incident occurs, Council site personnel are able to categorise the relative severity of the incident so that the appropriate actions and plans can be adopted, including communication of the incident both internally and externally.

Incidents are categorised as follows:

Incident Category	Incident Description
Minor Incident (Category 1): *No notification required*	Incidents with no or little public health or environmental effects There is no risk of material harm to humans or the environment
Moderate Incident (Category 2): *Notify NSW EPA and Local Public Health Unit only*	Incidents with limited public health impact or limited and non-permanent impact on the environment There is a risk of pollution or material harm to the environment Clean-up can be completed without assistance
Major Incident (Category 3): *Notification required – Notify NSW EPA, Local Public Health Unit, WorkCover and Fire & Rescue*	Incidents with major impact on Public Health or major and irreversible impact on the environment Potential or actual harm to humans and the environment Assistance is required with clean-up from other agencies

8.4 Initial Response

Firstly, call 000 if the incident presents an immediate threat to human health or property. Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are the first responders, as they are responsible for controlling and containing incidents.

If the incident does not require an initial combat agency, or once the 000 call has been made, notify the relevant authorities in the following order. The following contacts are included in the Sewerage Environmental Incident Standard Operating Procedure:

EXTERNAL ALERT CONTACT NUMBERS	
Fire	**000**
Ambulance	**000**
Police	**000**
SES	**132 500**
NOTIFYING RELEVANT AUTHORITIES	
NSW EPA (Environment Line)	131 555
Local Public Health Unit	1300 066 055 0428 882 805 (ah)
WorkCover Authority	13 10 50

The Environmental Incident Report should be completed for all incidents above Category 1. The form should be forwarded to the relevant authorities for all Category 2 and 3 incidents.

8.5 Communication with Neighbours and the Local Community

Community notification shall be undertaken at the determination of the Scheme Manager. The main risk that could potentially impact neighbouring properties to the WWTP and in the sewerage network is a release of raw, partially treated sewage or significant odour.

Council's GIS system will be used to assist in identifying local groups to be notified in the event of a disaster or major incident. If required, impacted property owners will be notified by door knock, generally by the first response crew. If the incident is a waterway, signage will be placed in public areas that may be used for recreational activities until the waterways is deemed clear of contamination.

Council's Communications and Customer Service section will coordinate media releases, responses to journalists, and general media related inquiries.

9 Auditing, Improvement and Record Keeping

9.1 Auditing Requirements

Documented procedures detailing audit and inspection programs are detailed in the WHS Workplace Inspections and Audit Protocol.

The Sewerage Scheme will undergo an annual internal audit to ensure:

- Council is meeting their obligations as an EPA Environment Protection Licence holder, and under any other relevant legislation, policies, standards and guidelines; and
- this EEMP is being fully implemented and maintained; and any incident reported as per this EEMP.
- any potential risk exposures or incidents on site are being adequately investigated and management practices developed.

External audits will only be undertaken if directed by NSW EPA.

9.2 Corrective Action

Incident investigation, corrective actions and review are detailed in:

- Incident Injury Hazard Near Miss Reporting and Investigation Protocol
- WHS Risk Management Protocol

A central register detailing all incidents, investigations and corrective actions shall be maintained by the WHS Seciton.

Relevant personnel shall be trained in incident investigation.

All corrective actions shall be reviewed to ensure effectiveness and that controls have not introduced further hazards or risk.

9.3 Plan Review

This plan is to be reviewed annually to ensure it is up to date and allows for any major changes in the network, the treatment plant, to neighbouring or downstream land users, external legislative changes or corporate systems procedures.

There must also be a revision of Council personnel roles and responsibilities and initial/external emergency contact details. The review will correspond with the annual audit.

The plan review process may include the following actions:

- Review responsibilities and staff contacts are current.
- Check the targets identified in the plan and identify which have been achieved.
- Review any complaints or lack of compliance with monitoring targets.
- Identify any new risks to human health or environment and include in the updated Risk Assessment section.
- Determine new actions from the above and include in the updated Control Measures section.
- Determine any new monitoring requirements from the above process and include in the Monitoring section of the plan.
- Undertake either desktop simulation or practical exercise to test pollution incident management specific components of plan.
- Determine any new training requirements and include in the Training section of the plan.
- Assess any upgrades or major works planned at the site.
- Provide updated copies of this document to authorities (e.g. EPA, NSW Health (North Coast Public Health Unit, WorkCover NSW, NSW Fire and Rescue etc.)

Appendix A: Murwillumbah WWTP Emergency Plan

A1 Introduction

This document forms part of the Murwillumbah WWTP Environmental Emergency Management Plan and has been developed to meet the requirements for a WorkCover Emergency Management Plan for sites with notifiable quantities of Dangerous Goods.

A2 Aims

The purpose of this document is to provide site specific incident management information:

- to control and mitigate the effects of minor or major leaks / spills arising from an incident focusing on safe and environmentally aware outcomes
- to facilitate emergency response and provide assistance on site as is appropriate to the situation
- to ensure that vital information is communicated to relevant external agencies
- to facilitate the reorganisation and recovery operations
- to meet the requirements of applicable legislation
- to detail the emergency response incidents for bulk dangerous goods

A3 Attachments

1. Site Plan
2. Emergency Escape Plans
3. Emergency Services Information Package

A4 Initial Response

Treatment Plant Emergency Personnel

Emergency Coordinator

Senior Wastewater Treatment Plant Operator

Anthony Trindall

Secondary Emergency Coordinator

Acting Senior Wastewater Treatment Plant Operator

Danny Vickery and Mark McLean

When the Emergency Coordinator is on leave the Acting Senior Operator will also act as the Emergency Coordinator.

First Aid Officer

Danny Vickery

Emergency Coordinator Responsibilities

It is the responsibility of the Emergency Coordinator to determine the nature and extent of the incident and to implement relevant emergency procedures. The Emergency Coordinator shall assume the role of emergency services liaison officer should the incident require response from external emergency services.

After hour alarms shall be routed through to the relevant emergency coordinator's mobile for attendance on site, investigation and determined actions.

Emergency Instructions

Specific instructions applicable to various buildings and sections of buildings shall be available to both employees, visitors, contractors through the display of emergency evacuation maps and procedures in the form of emergency procedures flip charts.

All employees, visitors, contractors and other Council workgroups shall be inducted in relation to site emergency procedures.

Manufacturers SDS shall be displayed at the relevant storage and or handling location.

A5 Incident Response Principles

Key principles and duties of the Emergency Coordinator are:

1. Containment (if safe to do so)
2. Rescue (if safe to do so)
3. Raise the Alarm
4. Evacuation
5. First Aid

In many cases the above principles and duties will be conducted simultaneously and always at the direction of the Emergency Coordinator.

A6 External Emergency Response

The Emergency Services Information Package (ESIP) (attached) shall be located at the front gate in a prominently labelled weather proof container secured with a 003 lock and shall include:

- A Council letter head with full business contact details, two emergency contacts (names, position titles, business and after hours contact numbers), date prepared and the location of any manifests, emergency plans and SDSs held on site.
- Two copies of scaled Manifest Site Map (A3 minimum) showing assembly points, dangerous goods ventilation points and containment (e.g. bundings), drain isolation and discharge points.
- A copy of site hydrant system block plan (if applicable)
- A concise list detailing location, quantity, class and names of notifable quantities of dangerous goods

A7 Early Warning Alarms and Systems

Security

The entire treatment facility perimeter is chainmesh fenced. The main entrance is padlocked out of normal working hours. In an emergency the lock will have to be cut. The plant can also be entered by the locked side gate located to the east perimeter of the main entrance (off Murwillumbah Street).

The control building and UV building are connected to a security system which will call out to a 24 hour call centre. If an alarm is activated the call centre will contact the on-call operator with the details of the alarm. If the on-call operator can not be contacted there is an escalation hierarchy that the call centre will follow until a Council officer is contacted. It is Councils responsibility to call emergency services should they be required.

The Security Monitoring Centre contact is 07 55640088.

Fire

There is no fire panel in the control building

Raising the Alarm

On initial discovery of a perceived or actual emergency occurrence the 'on duty' plant attendant is to notify immediately by direct contact or telephone communication the Emergency Co-ordinator.

The 'on duty' plant attendant shall determine the nature and extent of the incident and implement relevant emergency procedures including raising the alarm and notifying emergency services, if required.

Minor or Moderate Incident - Site Alert

This shall be activated by verbal communication

Major Incident – Site Alert and External Alert

Ring 000 – Fire Ambulance Police

This shall be conducted by the Emergency Coordinator or their nominated representative.

The information to be supplied is as follows:

What assistance is required: Fire, Ambulance or Police

Name: Tweed Shire Council – Murwillumbah Wastewater Treatment Plant

Contact name: Caller

Directions:

- Murwillumbah WWTP – from Post Office
  - Head west on Murwillumbah Street
  - Via left into Byangum Road
  - Turn right into William Street
  - Turn right into Dorothy Street
  - Turn left into Frances Street
  - Turn right into WWTP Entrance between houses (100m)

Phone No: Your number, or as appropriate

Type of Emergency and Details: Fire, explosion, major leak and details of hazards/ risks present

Injury / Casualty Details: Types of injuries and number of casualties

Note: Ask the emergency service to repeat back the details before hanging up, particularly the directions

A8 Emergency Contact Details

INITIAL ALERT - COUNCIL EMERGENCY COORDINATOR	
Senior Wastewater Treatment Plant Operator – Anthony Trindall Acting Senior Wastewater Treatment Plant Operator – Danny Vickery or Mark McLean	(02) 66702740 Mobile – 0407 953129 (02) 66702740 Mobile – 0420 962407
EXTERNAL ALERT CONTACT NUMBERS	
Fire	**000**
Ambulance	**000**
Police	**000**
SES	**132 500**
NOTIFYING RELEVANT AUTHORITIES	
NSW EPA (Environment Line)	131 555
Local Public Health Unit	1300 066 055 0428 882 805 (ah)
WorkCover Authority	13 10 50

Type of Emergency	Emergency Service Agency Responsible
Fire, Explosion, Chemical Spills/ Leaks, rescue at heights/ confined spaces/ entrapment	NSWFB
Casualties, injuries	Ambulance
Civil disorder, bomb threat	Police
Evacuation of people outside site boundaries (neighbours)	Police

A9 Safety and Containment

Power Isolation

Building/Functional Group	Power Isolation Location
Individual Drives/Processes	Local Emergency Stops and Isolation Switches
Office/Blower Room/Main Switch Room	Main Switch Room
Tertiary Treatment Building	Main Switch Room
UV Building	Main Switch Room
SCA4 Building (Flood PS, Supernatant/Filtrate PS, Sludge Rat, Digester PS)	Main Switch Room
Chemical Dosing Building	Main Switch Room
Chemical Dosing Building	Main Switch Room

Equipment

Safety Data Sheets are located near the chemical dosing area. SDS's are also available through Council's chemical database, 'Chemalert', accessed from the Intranet.

PPE is kept onsite in the control building.

Personal gas monitors are only required for Confined Space Entry and are kept in Council's Confined Space Trailer which is brought to site when required. Only personnel who have been Confined Space Trained may undertake confined space work.

- Fire hydrant (off site)
- Fire extinguishers
- Chemical spill kit
- Chemical bunding
- First aid kits
- First aid officers
- Trained plant operators
- Backup generator

Spills and Leaks of Dangerous Goods

1. Notify the emergency co-ordinator of the incident
2. Arrange for two people with appropriate personal protective equipment (PPE) to attend the leak/spill
3. Isolate valves to stop the leak
4. Turn off pumps as appropriate
5. Consult SDS for clean up procedures
6. For major spills arrange for a waste cartage contractor to remove

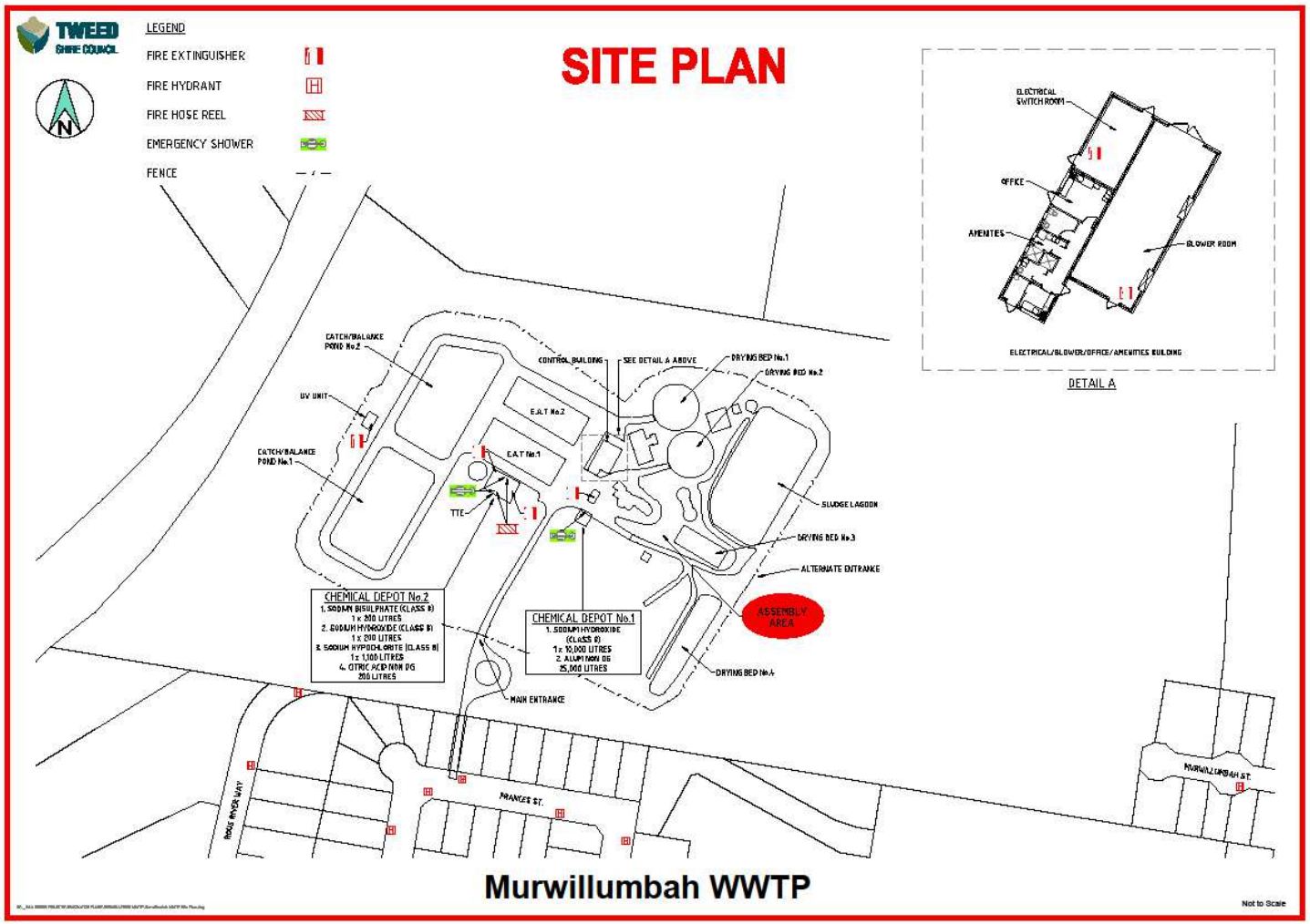
A10 Terminating an Emergency

Once the emergency services incident controller designates that their role is complete, control of the site will then be handed back to the Council emergency coordinator. The emergency controller will then need to facilitate reorganisation and reconstruction activities so that normal operation of the site can resume. This will be done with assistance from relevant Council Engineers and other parties as identified by Council.

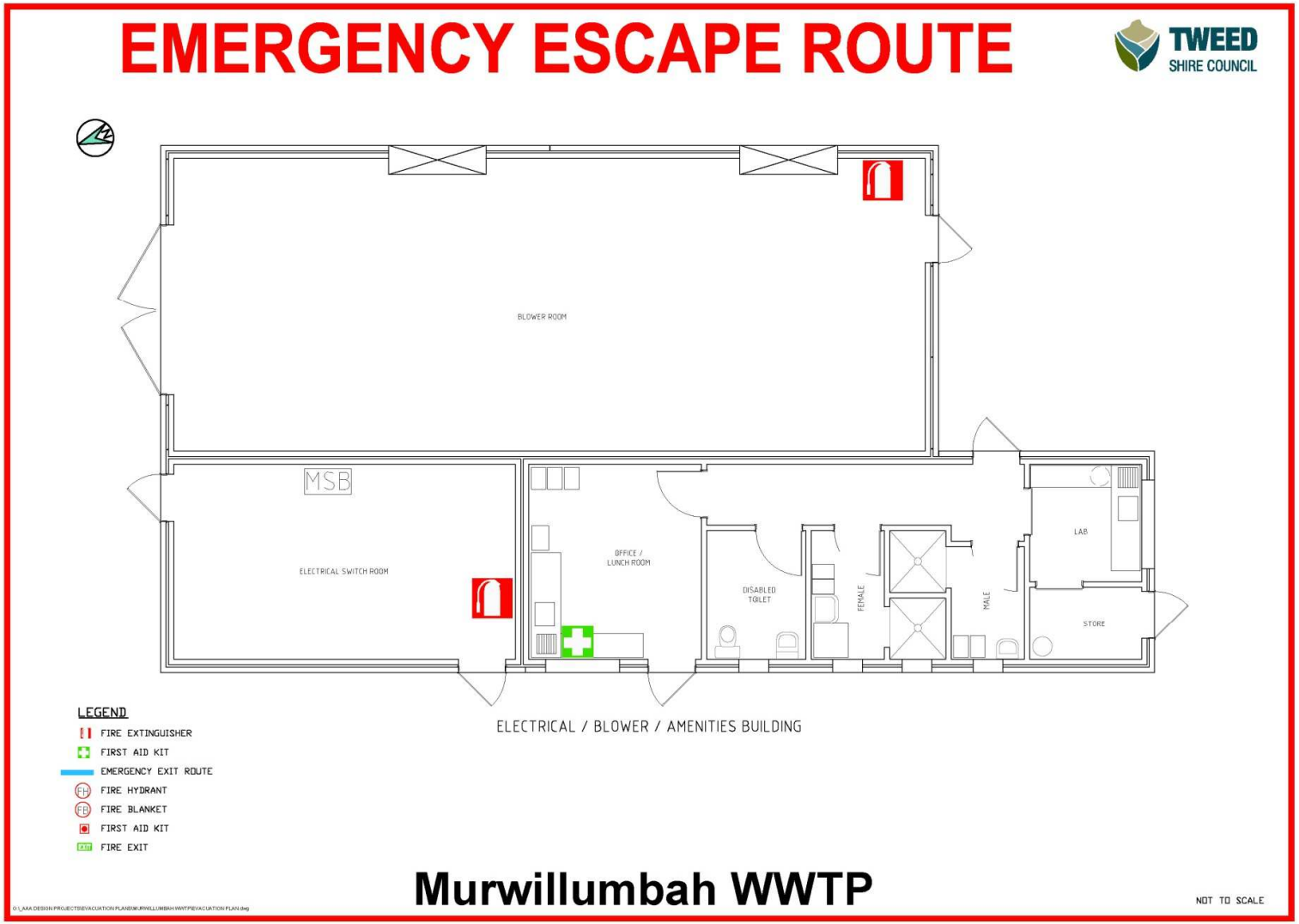
A11 Post Emergency

As part of Council's Emergency Preparedness and Management Protocol all emergencies are reviewed, investigated and the effectiveness of system assessed. Where appropriate the system is amended as part of the continuous improvement process.

Attachment 1 Site Plan



Attachment 2 Emergency Escape Plan



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TWEED
SHIRE COUNCIL

Customer Service | 1300 292 872 | (02) 6670 2400

tsc@tweed.nsw.gov.au
www.tweed.nsw.gov.au

Fax (02) 6670 2429
PO Box 816
Murwillumbah NSW 2484

Please address all communications to the General Manager

ABN: 90 178 732 496

Emergency Services Information Package

Murwillumbah Wastewater Treatment Plant
Frances St Murwillumbah NSW

Emergency Services Information Package

1 Murwillumbah Wastewater Treatment Plant Emergency Personnel

Emergency Coordinator

Senior Wastewater Treatment Plant Operator

Anthony Trindall 0407 953129; 02 66702740

Secondary Emergency Coordinator

Acting Senior Wastewater Treatment Plant Operator

Danny Vickery or Mark McLean 0420 962407; 02 66702740

Address of Site:

Frances Street Murwillumbah NSW

2 Dangerous Goods Manifest

PRODUCT	UN No	DG CLASS		PG	HAZCHEM	MAXIMUM QUANTITY
HYPO 12.5	1791	8		3	2R	1100L
Sodium hydroxide	1791	8		2	2R	10,000L
Sodium bisulphite	2693	8		3	2X	200L

3 SDS Location

All SDS located at chemical storage.

4 Site Plans (two A3 copies attached)

Appendix B: Risk Assessment

TWEED SHIRE COUNCIL WHS & ENVIRONMENTAL RISK MATRIX How dangerous is the hazard you found?						
PROBABILITY		**Very Likely**	**Likely**	**Possible**	**Unlikely**	**Very Unlikely**
WHS **Severity / Consequence**	Environmental Severity / Consequence					
Major injury / illness / death	Catastrophic environmental event.	**1**	**1**	**2**	**3**	**4**
Long term or serious injury / illness (greater than 5 days lost time)	Major environmental event.	**1**	**2**	**2**	**3**	**5**
Short term injury / illness (less than 5 days lost time)	Moderate environmental event.	**2**	**2**	**3**	**4**	**5**
Minor injury (first aid treatment required)	Minor environmental event.	**3**	**3**	**4**	**5**	**5**
Insignificant event	Insignificant environmental event	**4**	**5**	**5**	**5**	**5**

1	**Extreme Risk** – Do not commence work and contact WHS Section and Unit Manager. Secure site as required.
2	**High Risk** – Immediate action required to reduce risk.
3	**Medium Risk** – Urgent action required to reduce risk.
4	**Low Risk** – Ensure adequate control measures are implemented.
5	**Negligible Risk** - Manage appropriately.

If you feel a WHS / Environmental risk fits two or more categories, always treat the risk at the higher level as a precaution.

Activity	Hazard	Consequence	Existing Measures to Control Risks	Risk Rating
WWTP	**Fire damage On-Site / Off-Site** Caused by: • Accidental • Electrical Fire • Bushfire • Lightning strikes • Arson Potentially escalated by: • Inadequate isolation procedures • Fire alarm failure • In appropriate storage of flammables	• Damage to machinery and equipment causing overflow • Treatment process failure • Injury to workers • Smoke to neighbouring community	• Annual inspection of fire safety equipment • Annual fire drills • Maintenance of vegetation buffer zones • Fenced compound • Building code regulations • SCADA telemetry and alarms • Daily site inspections by site operators • Good Housekeeping • Sewerage Incident Response SOP • Environmental Emergency Management Plan • Evacuation procedures • BCP • Hydrant location/s displayed • Training for fire warden/s • Dangerous Goods Register: Flammable and combustible liquids are stored in accordance with AS1940-2004. • WHS audit • Bulk treatment chemicals are non flammable	Mod/U=4
WWTP	**Flood damage** Damage caused by: • Inundation of WWTP structures Potentially escalated by: • Failure of telemetry and operational access	• Release of partially treated effluent to the environment • Equipment damage • Odour	• Flood overlay map for site • Plant has been designed for flood scenario of Q100 • Remote SCADA operation • Telemetry connection with LAN microwave link with standby digital radio link.	Mod/U=4
WWTP	**Sewage spill** Failure of normal flows due to : • Operator error • Accident • Structural / pipe failure • Mech/elec failure • Environmental factors • Vandalism	• Release of sewage to the environment • Odour • Health risks to the workers	• Appropriate design • Trained Operators • Back-up power (Generator) • Sewerage Incident Response SOP • Site security • Daily site inspections • Telemetry and alarming	Mod/VU=5
WWTP	**Raw Sewage High Inflow** Caused by high rainfall and infiltration	• Release of partially treated effluent to the environment • Odour	• Plant designed to hydraulically handle peak pumping capacity from SPSs • Trained operators • Storm lagoon capacity returned to inlet works post event • SOAS • Sewerage Incident Response SOP	Min/P=4

Activity	Hazard	Consequence	Existing Measures to Control Risks	Risk Rating
WWTP	**Stormwater contamination from site runoff** Caused by: • Biosolids mishandling • Chemical leaks • Fuel leaks • Treatment process line leaks • Screenings and Grit	• Release of potential contaminants to the environment	• Site inspections • Trained operators • Biosolids stored on hardstand • Operators to clean up Biosolids and other spills • Spill kit	Min/VU=5
WWTP	**Odour nuisance** Caused by: • Septicity in the sewerage network • Failure of treatment processes • Failure of odour control facility • Overflows or lagoon storage • Trade waste/industry discharge to sewer • Dewatering plant Potentially escalated by: • Weather conditions • Maintenance work	• Complaints from the community	• Odour control unit on Inlet Works • Maintenance procedures • Trained Operators • Trade waste policy and management • Complaint register	Min/P=4
WWTP	**Noise nuisance** Caused by: • Operational noise • Maintenance works • Truck movements Potentially escalated by: • Emergency power (back-up generator) • Mechanical failure (pump bearings)	• Complaints from the community	• Restricted work hours • Maintenance program • Site inspections	I/VU=5

Activity	Hazard	Consequence	Existing Measures to Control Risks	Risk Rating
WWTP	**Pollution to the environment (effluent/biosolids/solid waste)** Failure to meet licence conditions due to: • Failure of treatment processes • Operator error • Accident • Mech/elec/civil failure • Weather • Vandalism • Trade waste/industry discharge to sewer • Incorrect disposal of Biosolids/solid waste	• Release of potential contaminants to the environment	• Appropriate design • Trained Operators • Back-up power (Generator) • Site security • Daily site inspections • Telemetry and alarming • Daily operator monitoring • Weekly compliance monitoring by NATA approved laboratory • Maintenance program • Trade waste policy and management • Contractor compliance with Biosolids Management Guidelines	Mod/U=4
WWTP	**Chemical spill** Caused by: • Rupture of tank/bund • Operator error • Handling error • Failure of lines • Vandalism Potentially escalated by: • Flood / mixing with water • Fire	• Release of potential contaminants to the environment • • Injury to workers (irritant, corrosive chemicals)	• Appropriate design including signage • Trained Operators • WI for chemical handling • Chemical register • MSDS on site (includes disposal and PPE) • Daily site inspections • Maintenance program • Environmental Emergency Management Plan	Mod/U=4
SPS	**Fire damage** Caused by: • Accidental • Electrical Fire • Bushfire • Lightning strikes • Arson Potentially escalated by: • Fire risk associated with standby generators (fuel) for some SPSs	• Damage to machinery and equipment causing overflow • Odour • Injury to workers • Smoke to neighbouring community • Fire spread	• Annual inspection of fire safety equipment • Maintenance of vegetation buffer zones • Building code regulations • Locked building/electrical panels • SCADA telemetry and alarms • Routine site inspections by operators • Sewerage Incident Response SOP • BCP • Dangerous Goods Register: Flammable and combustible liquids are stored in accordance with AS1940-2004. • Waste Transport company contract (emergency pump out truck)	Mod/VU=5

Activity	Hazard	Consequence	Existing Measures to Control Risks	Risk Rating
SPS	**Raw sewage spill** Damage caused by: • Flood inundation of SPS structures Potentially escalated by: • Failure of telemetry and operational access	• Release of raw sewage to the environment • Equipment damage • Odour	• Flood overlay map (Enlighten) • Switch boards located above Q100 • Remote SCADA operation • Telemetry • Submersible pumps • BCP • Notification procedures to EPA and community • Waste Transport company contract (emergency pump out truck)	Min/P=4
SPS	**Raw sewage spill** Failure of SPS due to : • Accident • Mech/elec failure • Environmental factors • Vandalism	• Release of raw sewage to the environment • Equipment damage • Odour	• Remote SCADA operation • Telemetry (Automatic daily alarm report on exceptional pump starts or pump run times) • Duty standby pumps • Notification procedures to EPA and community • Sewerage Incident Response SOP • Trained operators • Routine inspections • Maintenance procedures • Waste Transport company contract (emergency pump out truck) • Critical electrical and control equipment spares parts are maintained	Mod/U=4
SPS	**Odour nuisance** Caused by: • Septicity in the sewerage network • Trade waste/industry discharge to sewer Potentially escalated by: • Weather conditions • Maintenance work	• Complaints from the community	• Odour modelling of major SPS • Maintenance procedures • Trained Operators • Trade waste policy and management • Complaint register	Min/P=4
SPS	**Noise nuisance** Caused by: • Noise at SPS	• Complaints from the community	• Submersible pumps • Complaint register • Maintenance procedures	I/VU=5
Single Private Pump Station (SPPS)	**Raw sewage spill** Failure of SPS due to : • Accident • Mech/elec failure • Environmental factors	• Release of raw sewage to the environment • Equipment damage • Odour	• Local alarm • Sewerage Incident Response SOP • Trained operators • Routine inspections • Maintenance procedures • Waste Transport company contract (emergency pump out truck)	Min/U=5

Activity	Hazard	Consequence	Existing Measures to Control Risks	Risk Rating
Sewer	**Raw sewage spill** Failure of pipes due to : • Accidental breakage eg excavation • Blockage • Environmental factors eg ground conditions, tree roots • Vandalism • Pipe or manhole corrosion/failure Potentially escalated by: • Proximity to waterways	• Release of raw sewage to the environment • Equipment damage • Odour	• Monitoring of SPS Telemetry • Sewerage Incident Response SOP • Trained operators • Routine inspections • Maintenance procedures • Relining replacement program • Complaint register • Dial Before You Dig • Waste Transport company contract (emergency pump out truck)	Mod/P=3

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SHIRE COUNCIL

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tsc@tweed.nsw.gov.au
www.tweed.nsw.gov.au

Fax (02) 6670 2429
PO Box 816
Murwillumbah NSW 2484