TWEED SHIRE COUNCIL

Environmental Emergency Management Plan
Uki Wastewater Treatment Plant and Sewerage Network

Approved by: Manager Water

Version 1.0

Division: Community and Natural Resources
Section: Water
File Reference:
Historical Reference:

Version History		
Version #	**Summary of changes made**	**Date changes made**
1.0	Created by Water Unit	11/10/2013
	EEMP tested on 03/01/2019	
	EEMP tested on 01/12/2021	

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TWEED SHIRE COUNCIL

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1 Introduction

This Environmental Emergency Management Plan (EEMP) for Uki Wastewater Treatment Plant (WWTP) applies to the Uki 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. 12392 (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.

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 (See Note)	Emergency Management Plan Checklist (WorkCover NSW) Guidelines for Emergency Plans at Sites having Dangerous Goods, Explosives and Major Hazard Facilities (NSW Fire Brigades, 2010)

Note: The facilities referred to in this EEMP do not store or handle quantities of dangerous goods in exceedance of the threshold or 'placard' quantities.

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 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 Uki 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
- Uki WWTP

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

2.1 Location

The Uki WWTP is located at 165 Smiths Creek Rd, Smiths Creek, 2484 (Figure 2 & 3). This is approximately 2.7km from the village of Uki. It is situated on a 52 hectare property (Lot 2 DP 550508) owned by Council.

Sewerage network services the village of Uki. The village is mainly residential and rural residential with a small commercial component.

2.2 Environs

The site is on a Council owned property that is bordered by Smiths Creek. The entry into the property is across Smiths Creek and access would be cut off during a flood, however the treatment plant is at 30M AHD.

The surrounding areas which may potentially be impacted by a pollution incident occurring at Uki WWTP or the sewerage network include the following (Figure 2 & 3).

- **Rural Landholders adjacent to the treatment plant**

  Twelve houses on rural properties are located within 600m of the treatment plant.

- **Smiths Creek and downstream water users:**

  Uki WWTP is located approximately 500 m from the bank of Smiths Creek. The site comprises alluvial creek bank flats to undulating land towards the treatment plant. Downstream from the site is the confluence of the Smiths Creek with the Tweed River. Domestic and rural land users currently draw from Smiths Creek and the Tweed River primarily for irrigation. The Water Supply for the Bray Park Water Treatment Plan is also drawn from the Tweed River downstream from the Uki WWTP.

Under the Tweed Local Environmental Plan 2000, the Uki WWTP is zoned Special Purposes 5(a). The surrounding land is mostly zoned Rural 1(a). To the south of the plant are a number of lots zoned Rural Living 1(c).

Figure 1: Uki WWTP Sewerage Network

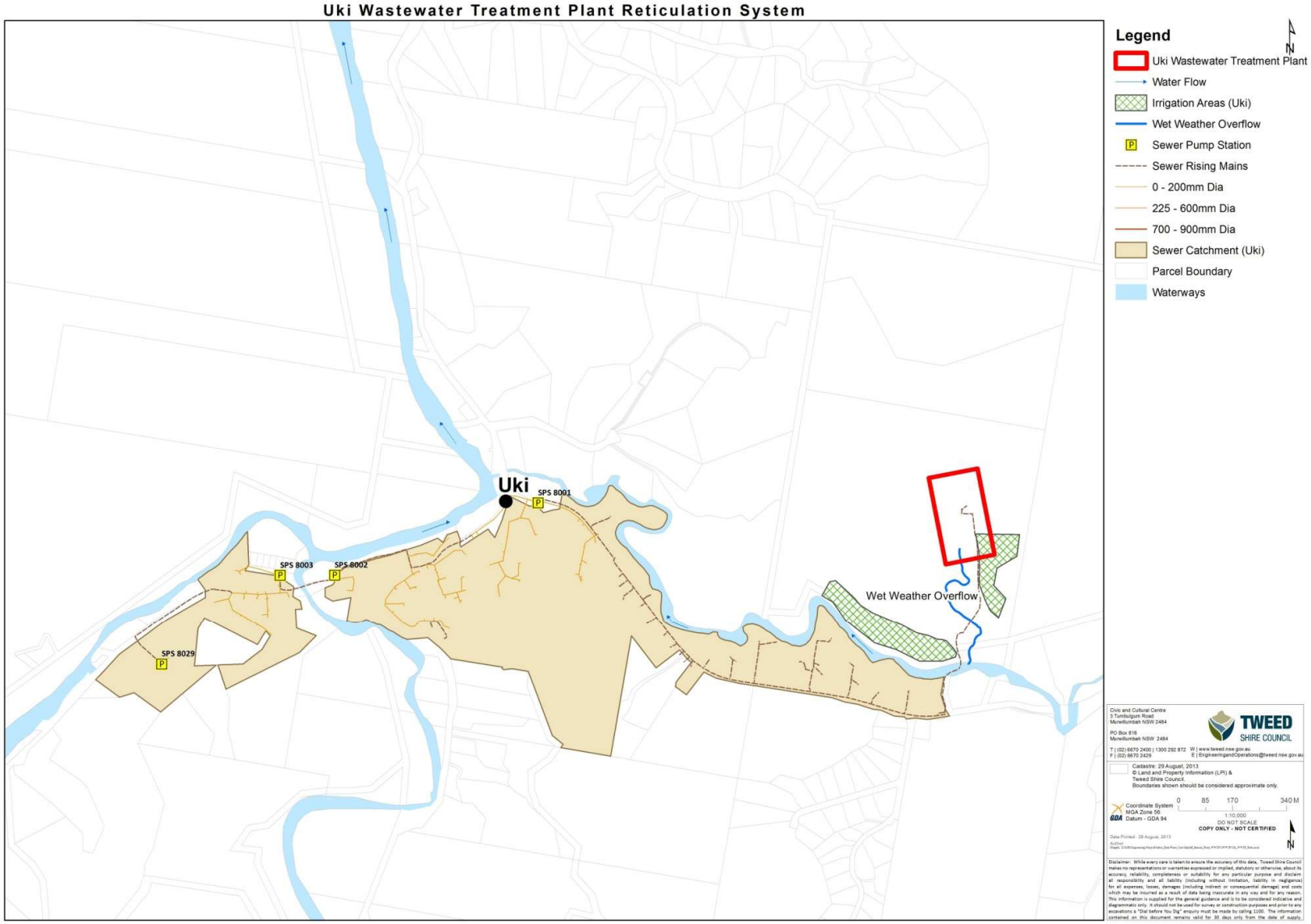


Figure 2: Uki WWTP Locality Map – Wetland Surrounds

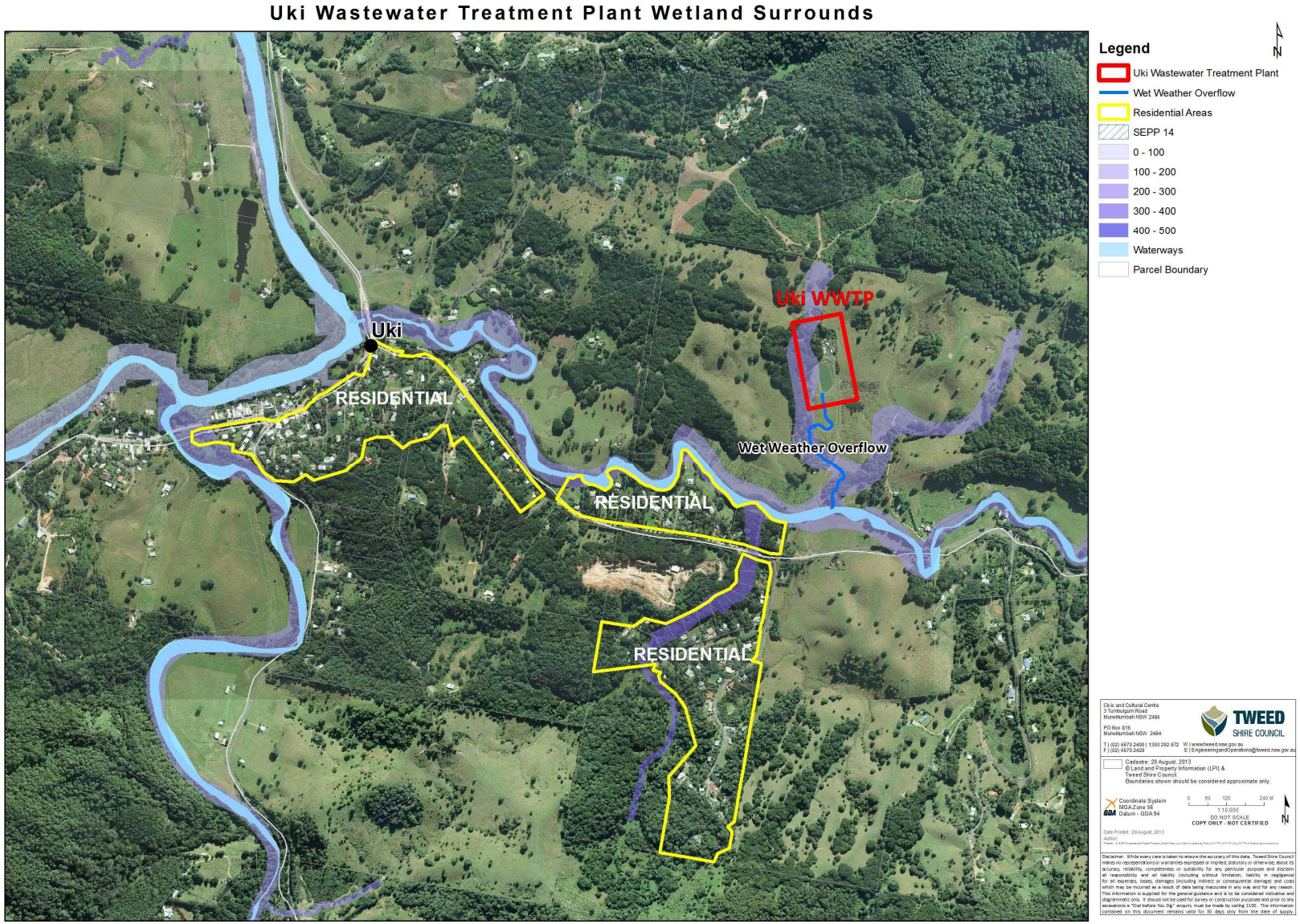
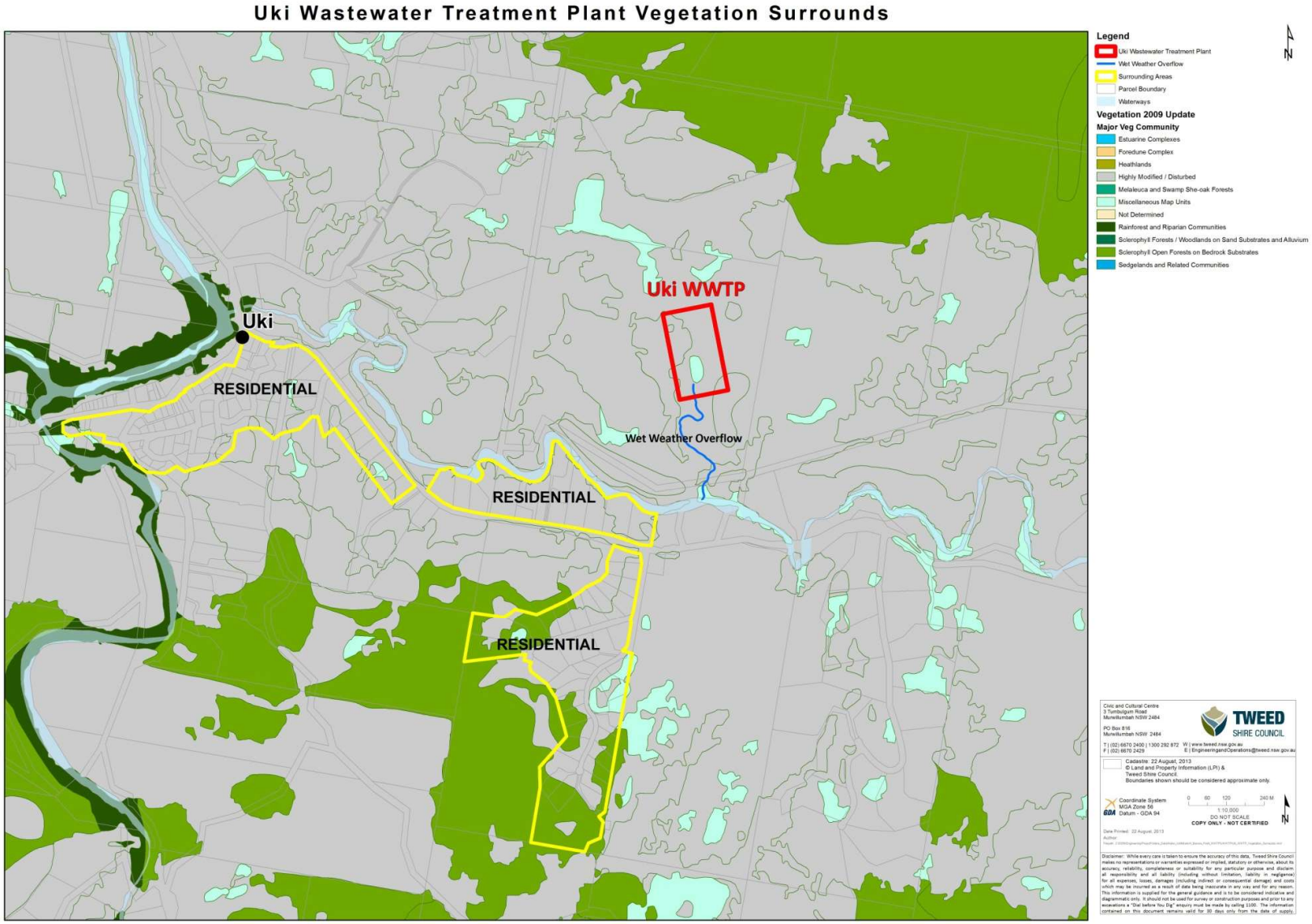


Figure 3: Uki WWTP Locality Map – Vegetation Surrounds



2.3 Processes

The Uki WWTP is a 600 EP treatment plant using a Modified Ludzack-Ettinger (MLE) activated sludge process.

All flows up to 5xADWF are fully treated without discharge to the environment. Flows >5xADWF are screened and then bypassed to the effluent lagoon. All effluent in the lagoon is irrigated to an adjacent Koala Feed Eucalyptus plantation. Only in extreme and extended wet weather events may the effluent lagoon overflow to Smiths Creek.

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

Uki WWTP Process Unit	Description
Inlet Works	The inlet works contains an electromagnetic flow meter on the 150mm incoming rising main and a manual screen contained in an enclosed cover
Flow Balance Chamber	From the Inlet works flow gravitates into the flow balance chamber. The flow balance tank is a 28.8KL single outer portion of the first tank. The compartment contains a sump, 2 transfer pumps, an overflow weir (bypass) for wet weather flows to the final irrigation chamber and separate 50mm PVC transfer pipe work from the pumps to the first Anoxic Zone.
Biological Treatment	Overview The plant design is based on a Modified Ludzack Ettinger (MLE) Process. The process has 2 anoxic zones, 4 aeration zones, clarification, storage, tertiary ponds, chorine disinfection and a reuse scheme. The process contains return flows from the clarifier and recycling of wastewater from the final aeration zone. Both of these return flows are discharged into the first anoxic zone. Anoxic Zones (1 and 2) Flow from the balance tank enters into Anoxic 1 through a stilling tube to prevent turbulence. The Anoxix Zones are 2 outer compartments of the first tank with an overall volume of 57.6KL. Two submersible mixers operate continuously to prevent settlement of solids and promote mixing of the recycled and fresh wastewater. Aeration Zones (1 to 4) There are 4 outer compartments of a second tank that make up the aeration zones with a total volume of 115kL. Two blowers are used to introduce air into all four aeration zones. A single blower is sufficient to supply air to all zones. The plant has one automatic dissolved oxygen meter installed within aeration tank 4. Aeration zone 4 also contains a submersible pump for recycling MLSS back to the anoxic zone. (‘A’ Recycle) An automatically operated valve is used to waste a portion of the ‘A’ Recycle flow to the waste sludge tank which is a 28.8KL single outer portion of the first tank.

Uki WWTP Process Unit	Description
Clarifier	The clarifier is the inner compartment of the second tank and has a volume of 25kL and provides a 7 hour detention time at peak flow. A suction manifold antenna extracts settled solids from the flat floor via a RAS pump, and returns these solids to anoxic tank 1.
Chemical Dosing System	Alum is introduced into the aeration tank at zone 1 at a typical rate of 150 mg/L with the primary objective of reduction of phosphorus to less than 2 mg/L.
Treated Effluent Storage Lagoon	Flow from the irrigation chamber in the first tank discharges to an open concrete channel that gravitates to the storage lagoon. The lagoon is an earth dam with the primary objective of providing storage of effluent so it is available for reuse. It has a typical storage quantity of 8,000 kL but available storage double this amount. There is a spillway overflow at the far end of the lagoon if storage does fill. This overflow would run overland downhill for 600m before entering Smiths Creek.
Effluent disinfection and irrigation	A variable speed centrifugal pump delivers 5.3L/s at it's design head to an in-line Filtomat strainer with automatic cleaning. A chlorination unit is used downstream of the filter to ensure a residual across the irrigation pipe work The pump run times are set by the operator and altered based on daily weather conditions and condition of trees.

2.4 History

The Uki WWTP and sewerage network was commissioned in 2003. Prior to this there was no sewerage network and the village of Uki was serviced by onsite wastewater systems.

2.5 Chemical Storage

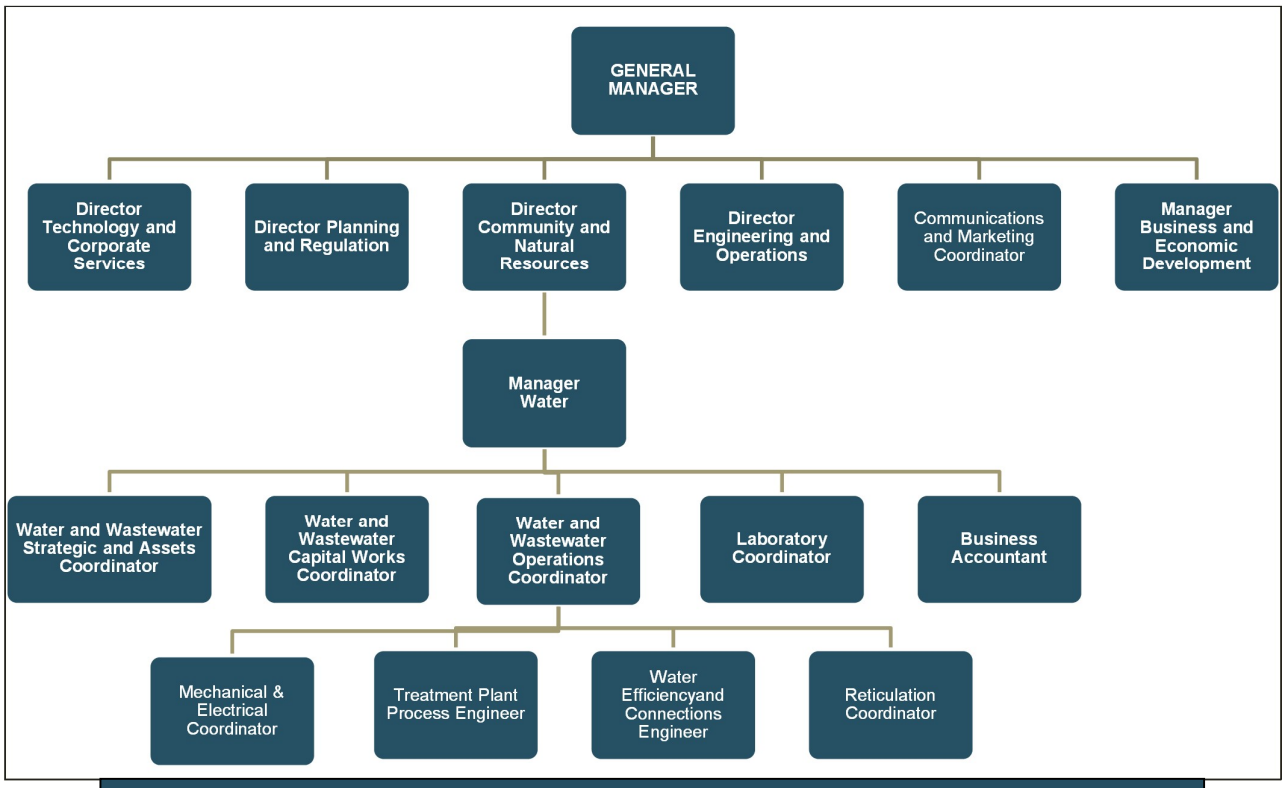
A detailed listing of chemicals is contained in the Chemalert database.

There are no bulk chemicals stored at Uki WWTP.

3 Operation Structure and Responsibilities

The Council organisational structure is provided in Figure 4.

Figure 4: Council Organisational Structure – Community and Natural Resource



Staff: Water Supply Services; Wastewater Services (Operations Staff); Laboratory Services; Mechanical and Electrical Services

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 and visit Uki WWTP each day. 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 Uki WWTP:

- Environment Protection Licence under Section 55 of the *Protection of the Environment Operations Act 1997* (Licence No. – 12392

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: Uki WWTP Effluent Concentration Limits

Parameter	90 Percentile	100 Percentile
Biochemical Oxygen Demand	15 mg/L	30 mg/L
Total Suspended Solids (TSS)	25 mg/L	50 mg/L
Total Nitrogen	30 mg/L	60 mg/L
Ammonia Nitrogen	5 mg/L	10 mg/L
Total Phosphorus	6 mg/L	12 mg/L
pH	n/a	6.5 – 8.5
Oil & Grease	10 mg/L	20 mg/L

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 TSC 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 and smoke alarm system connected to 24 hour call service, 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	149 377
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, WorkCover NSW, NSW Fire and Rescue etc.)

Appendix A: Uki WWTP Emergency Plan

A1 Introduction

This document forms part of the Uki 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. While the facilities referred to in this EEMP do not store or handle quantities of dangerous goods in exceedance of the threshold or 'placard' quantities, the requirements of the Emergency Management Plan have been incorporated in accordance with the NSW Fire and Rescue guidelines.

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

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 or Luke Collier

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 Early Warning Alarms and Systems

Security

The entire treatment facility perimeter is chainmesh fenced. There is a padlocked gate which is locked out of normal working hours or when there is no operator in attendance. The outer property boundary is barbwire fenced and the entrance gate is padlocked. In an emergency locks will have to be cut.

There is no Security system.

Fire

There are no fire alarm systems at this facility.

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 – Uki Wastewater Treatment Plant

165 Smiths Creek Rd, Smiths Creek 2484

Contact name: Caller

Directions: from Murwillumbah

- Head west on Kyogle Road
- Turn left into Smiths Creek Rd (just before Uki)
- Turn left into Smiths Creek Rd at Uki
- Turn left into the treatment plant approximately 1.6km

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

A7 Emergency Contact Details

INITIAL ALERT - Council EMERGENCY COORDINATOR	
Senior Wastewater Treatment Plant Operator – Anthony Trindall Acting Senior Wastewater Treatment Plant Operator – Danny Vickery or Luke Collier	(02) 6670 2740 Mobile – 0407 953129 (02) 6670 2740 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	149 377
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

A8 Safety and Containment

Power Isolation

Building/Functional Group	Power Isolation Location
Individual Drives/Processes	Local Emergency Stops and Isolation Switches
Amenities building	Switchboard Inside Amenities Building
Irrigation Building	Main Control Switchboard
Treatment Processes	Main Control Switchboard

Equipment

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 extinguishers
- Chemical spill kit
- Chemical bunding
- First aid kits
- First aid officers
- Trained plant operators
- Mobile backup generator

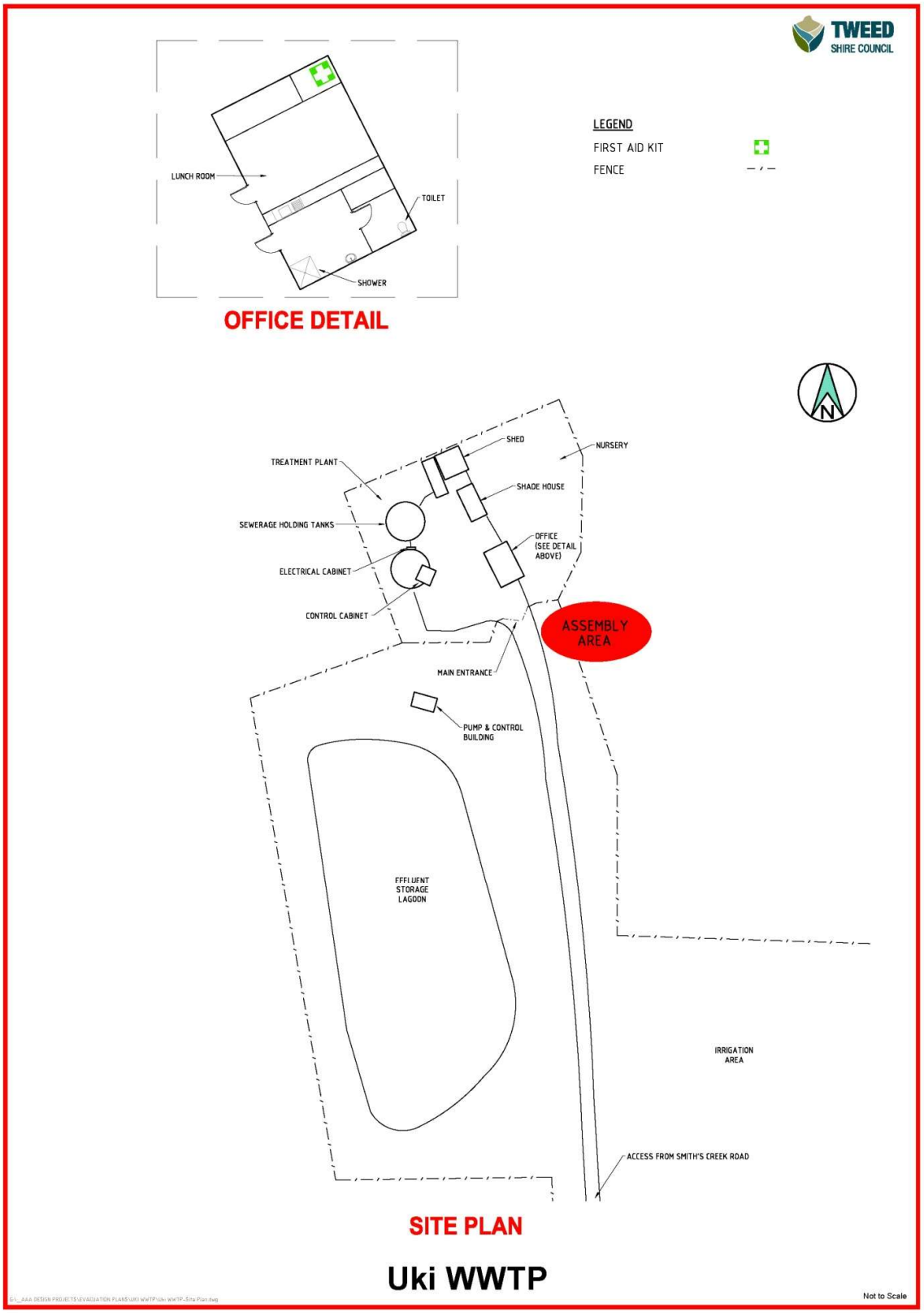
A9 Terminating an Emergency

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.

A10 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



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 and pump station operation / maintenance	**FIRE** Caused by: ▪ Accidental (e.g. discarded cigarette, welding sparks) ▪ Electrical fire ▪ Bushfire / sugar cane burn offs ▪ Lightning strikes ▪ Arson	▪ WWTP - Damage to machinery and equipment causing overflow through lowest point or discharge to Creek ▪ SPS - Damage to machinery and equipment causing overflow through lowest point in to dry gully to creek ▪ Escape to surrounding agricultural and recreational areas ▪ Injury to workers	▪ Buffer zones ▪ Pump stations & WWTP SCADA telemetry & alarms ▪ Fire safety equipment – extinguishers ▪ Arson - security fencing ▪ Daily site inspections ▪ Ensure work areas are clear of fire hazards ▪ No smoking near/in buildings ▪ Sewerage Environmental Incident SOP ▪ Environmental Emergency Management Plan ▪ Communication – public notification regarding incident ▪ Business Continuity Plan ▪ Tanker raw sewage to alternative WWTP if plant/equipment sufficiently damaged to make it inoperable ▪ Training in use of fire fighting equipment	UN/Mod = 4
WWTP operation / maintenance	**FLOOD** Damage caused by: ▪ Inundation of WWTP control room and/or tanks	▪ Flooding of critical infrastructure and sensitive equipment (electrical, pumps etc) resulting in o/f of raw or partly treated sewage to Creek	▪ Top level of tanks and control room floor built above 1:100 flood ▪ Communication – public notification regarding o/f incident ▪ SCADA telemetry ▪ Sewerage Environmental Incident SOP ▪ Business Continuity Plan ▪ 24 hr call centre ▪ On call response staff ▪ Tanker raw sewage to alternative WWTP	VU/Maj = 5
Pump station operation / maintenance	**FLOOD** Damage caused by: ▪ Inundation of pump station	▪ Flooding of critical infrastructure and sensitive equipment (electrical, pumps etc) resulting in overflow of raw sewage to environment	▪ SCADA telemetry ▪ Communication – public notification regarding o/f incident ▪ Sewerage Environmental Incident SOP ▪ SPSs include submersible pumps with electrical control equipment located above Q20 flood level. ▪ Business Continuity Plan ▪ 24 hr call centre ▪ On call response staff ▪ Tanker raw sewage to alternative WWTP	VU/Maj = 5

Activity	Hazard	Consequence	Existing Measures to Control Risks	Risk Rating
Individual site SPS	**FLOOD** Damage caused by: ▪ Inundation of individual site pump station	▪ Flooding of critical infrastructure and sensitive equipment (electrical, pumps etc) resulting in overflow of raw sewage to environment	▪ Pump Local Control Panel located above height of property switchboard. ▪ Routine maintenance of pumps ▪ Information sheet to landholder on operations ▪ Sewerage Environmental Incident SOP ▪ Business Continuity Plan	VU/Min = 5
WWTP operation / maintenance	**STORMWATER CONTAMINATION** ▪ Contaminated stormwater runoff during rain events (i.e. from messy site)	▪ Pollution to Brays Creek ▪ Adverse impacts on water quality	▪ No contaminated materials stockpiled on site unless bunded ▪ Site maintained by trained operators and kept neat and tidy	U/Mod = 4
	▪ Stormwater contamination from onsite activities (e.g. sludge spill, chemical spill, paint thinner down drain)	▪ Compliance issues (water quality objectives not met) ▪ Impacts on aquatic ecosystems and sensitive species (loss of significant flora and fauna) ▪ Cost of stream rehabilitation ▪ Negative public perception	▪ Operators monitor all contractors i.e. tanker transfers ▪ Site Induction for all contractors and service providers ▪ Trained operators	Poss/Mod = 4

Activity	Hazard	Consequence	Existing Measures to Control Risks	Risk Rating

Rising main operation	**RAW/PARTIALLY TREATED SEWAGE RELEASE**
	
	Caused by:
	▪ Failure of pipeline structures due to:
	  ▪ human/accident
	  ▪ environmental factors
	  ▪ deliberate vandalism
		▪ Pollution to land/waterways
		▪ Adverse impacts on water quality
		▪ Impacts on aquatic ecosystems and sensitive species (loss of significant flora and fauna)
		▪ Cost of stream rehabilitation/clean up
		▪ Negative public perception
			▪ Marker tape above pipeline security
			▪ Register with DBYD
			▪ Sewerage Environmental Incident SOP
			▪ Sewer condition maintenance program
			▪ 24 hr call centre
			▪ On call response staff
				Pos/mod = 3

Pump station operation	**RAW/PARTIALLY TREATED SEWAGE SPILL**
	
	Caused by:
	
	▪ Failure of SPS structures due to:
	  ▪ human/accident
	  ▪ mech/elec failure
	  ▪ environmental factors
	  ▪ deliberate vandalism
	  ▪ Power failure
		▪ Pollution to land/waterways
		▪ Adverse impacts on water quality e.g. reduced oxygen, increased Nitrogen and Phosphorus
		▪ Impacts on aquatic ecosystems and sensitive species (loss of significant flora and fauna)
		▪ Cost of stream rehabilitation/clean up
		▪ Negative public perception
			▪ Duty/Standby pumps
			▪ SCADA telemetry
			▪ Battery power backup on instruments and telemetry
			▪ Backup/Standby High level switch and PLC controller
			▪ External warning light for high level and 24 hour response telephone number located on control cabinet
			▪ 24 hr call centre
			▪ On call response staff
			▪ Sewerage Environmental Incident SOP
			▪ Proactive SPS maintenance program
			▪ Standardised SPS equipment of similar size
			▪ Business Continuity Plan
			▪ Routine maintenance of pumps
			▪ Automatic daily alarm report on exceptional pump starts or pump run times
			▪ Critical electrical and control equipment spares parts are maintained
			▪ Tanker raw sewage to alternative WWTP if extended failure
				Pos/mod = 3

Activity	Hazard	Consequence	Existing Measures to Control Risks	Risk Rating

WWTP operation	**RAW/PARTIALLY TREATED SEWAGE RELEASE**
	
	Caused by:
	
	▪ Accidental spillage of raw sewage at the treatment plant due to:
	  ▪ operation error
	  ▪ pump / equipment failure
	  ▪ blocked or leaking sewer
	  ▪ Insufficient isolation, alarm systems, and auto shut off safety measures
	  ▪ Vandalism of /unauthorised access to treatment plant,
	  ▪ Power failure
		▪ Pollution to Brays Creek
		▪ Adverse impacts on water quality e.g. reduced oxygen, increased Nitrogen and Phosphorus
		▪ Compliance issues (water quality objectives not met)
		▪ Impacts on aquatic ecosystems and sensitive species (loss of significant flora and fauna)
		▪ Cost of stream rehabilitation
		▪ Damage to surrounding infrastructure (roads)
		▪ Negative public perception
			▪ O&M manual details operational requirements
			▪ alarms and telemetry
			▪ 24 hr call centre
			▪ On call response staff
			▪ Spill kits / containment procedures and training
			▪ Review of SCADA alarms and emergency shutdown procedures
			▪ Site security measures e.g. fencing, padlocks, signage
			▪ Duty/standby for critical assets
			▪ Routine maintenance of pumps
			▪ Business Continuity Plan
			▪ Critical spares inventory
			▪ Tanker raw sewage to alternative WWTP if extended failure
				VU/Min= 5

	RAW/PARTIALLY TREATED SEWAGE RELEASE Caused by: ▪ Tank failure e.g. balancing tank, overflow storage tank, reactors, dosing facilities, sludge storage tanks, treated effluent storage tank		▪ Concrete structures unlikely to completely fail ▪ Regular inspections ▪ Business Continuity Plan ▪ Tanker raw sewage to alternative WWTP if extended failure	VU/Min= 5
	RAW/PARTIALLY TREATED SEWAGE RELEASE Caused by: ▪ poor influent quality e.g. due to illegal trade waste or domestic discharges ▪ poor operational management of WWTP	▪ Not meeting discharge licence conditions resulting in environmental harm to Brays Creek	▪ O&M manuals and SOP/work instructions to mitigate process upsets ▪ In-house Process specialists and trained operators ▪ Process Monitoring plan - compliance with effluent standard ▪ Licence compliance monitoring ▪ Catchment monitoring program ▪ SCADA telemetry ▪ Enforcement of Council trade waste policy and on-going community education ▪ Tanker to alternative WWTP if required.	P/Mod=3

WWTP and pump station operation	**Odour generated through general sewage treatment and collection** ▪ Failure of wastewater treatment processes causing odour	▪ Odour nuisance for local community, public perception issues ▪ Compliance issues (odour impact guidelines not met) ▪ High retrofit costs	▪ Nearest sensitive receptor > 200m ▪ O&M manuals and SOP/work instructions to mitigate process upsets ▪ In-house Process specialists and trained operators ▪ Daily inspections ▪ Process monitoring ▪ SCADA telemetry	P/Min = 4
	▪ Accidental spillage of raw sewage		▪ O&M procedures to avoid accidental spillage ▪ Clean up procedures as per SOP ▪ Nearest sensitive receptor > 200m	P/Min = 4
WWTP operation	**NOISE:** ▪ Operational noise at treatment plant	▪ Disturbance to residents ▪ Noise complaints	▪ Nearest sensitive receptor > 200m ▪ Routine maintenance of equipment ▪ Daily inspections ▪ Major pumps submersible ▪ Deliveries and truck movements during normal working hours.	VU/I=5
Pump station operation	▪ Operational noise at pump stations	▪ Disturbance to residents ▪ Noise complaints	▪ Submersible pumps on all pump stations (low noise)	VU/I=5

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