Goldenfields Water

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Pollution Incident Response Management Plan Jugiong Water Treatment Plant
EPA Licence No. 1723

June 2023

Goldenfields Water

Contents

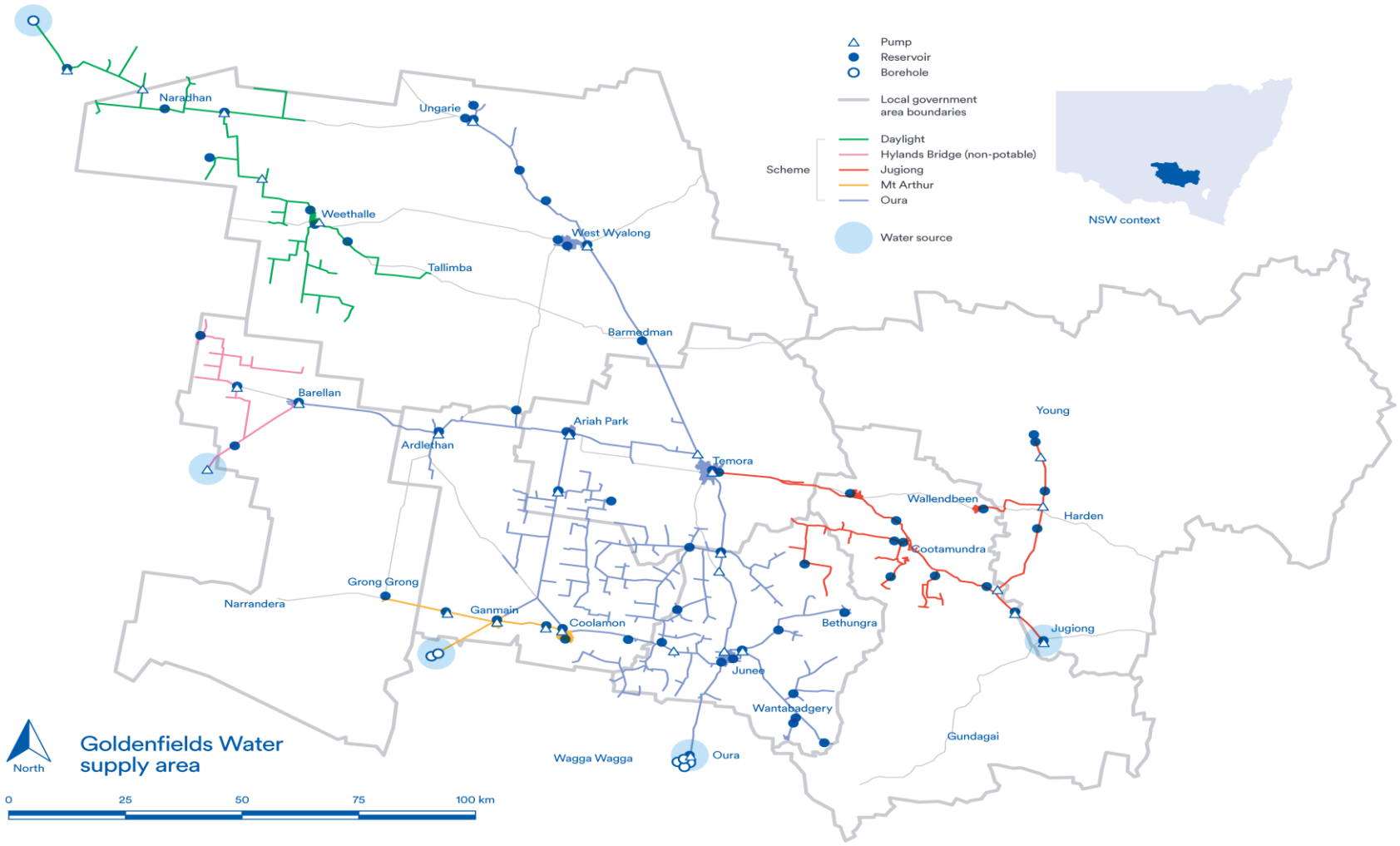
Goldenfields Water County Council

Goldenfields Water County Council (GWCC) provides the essential water requirements of about 40,000 people spread over an area in excess of 22,000 sq. km. between the Lachlan & Murrumbidgee Rivers in the South West of NSW.

GWCC's water supply system consists of five separate water schemes, Jugiong, Oura, Mt Arthur, Mt Daylight and Hylands Bridge (see figure 1). GWCC carries out water supply functions within the Local Government areas of Bland, Coolamon, Cootamundra-Gundagai, Hilltops, Junee, Temora and part of Narrandera.

Hilltops Council purchase bulk water from GWCC and supply the water to retail customers in their local government areas. Cootamundra-Gundagai, Cootamundra Township receives bulk supply from GWCC and retails water to customers in Cootamundra town, with GWCC supplying water to retail customers in Cootamundra Shire outside the town. The Gundagai part of the shire has their own water supply system and is not part of the GWCC water supply scheme, GWCC also supplies small quantities of bulk water to Riverina Water County Council.

Figure 1 - GWCC Water Source and Supply area



Jugiong Water Treatment Plant

The GWCC Jugiong Water Treatment Plant is located on Water Works Rd/Prudence St Jugiong (refer map **appendix 1**) and operates under Environment Protection License Number: 1723, allowing discharge to the Murrumbidgee River**.** The facility extracts water from the Murrumbidgee River and provides fit for consumption potable water to the towns of Cootamundra, Harden, Young, Stockinbingal, and Springdale. There is also an interconnection to the Oura supply system at Temora which has the ability to supply water on an emergency basis to Temora and towns to the north and west.

Legislative Requirements

This Pollution Incident Response Management Plan (PIRMP) has been prepared to comply with the new requirements introduced by the Protection of the Environment Legislation Amendment Act 2011.

It has been compiled in accordance with the specific requirements of Part 5.7A of the Protection of the Environment Operations Act 1997 and the Protection of the Environment Operations (General) Regulation 2009

In summary this provision requires the following:

- All holders of environment protection licences must prepare a pollution incident response management plan (section 153A, POEO ACT).
- The plan must include the information detailed in the POEO Act (section 153C) and be in the form required by the POEO(G) Regulation (clause 98B)
- Licensees must keep the plan at the premises to which the environment protection licence relates or, in the case of trackable waste transporters and mobile plant, where the relevant activity takes place (section 153D, POEO Act).
- Licensees must test the plan in accordance with the POEO(G) Regulation (clause 98E).
- If a pollution incident occurs in the course of an activity so that material harm to the environment is caused or threatened, licensees must immediately implement the plan (section 153F, POEO Act).

Pollution Incident

A pollution incident is defined for the purpose of this plan as:

An incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

Potential Hazards

The treatment plant at Jugiong is a facility that extracts water from the Murrumbidgee River and treats it for human consumption. The site contains all chemicals required for the treatment process. There are also small amounts of herbicide, fuels, and oils on site. Potential hazards include but are not limited to:

- Chemical spill
- Discharge of reduced quality effluent to the river
- Septic tank overflow
- Poor quality drinking water
- Chlorine gas leak
- Fuel spill
- Oil spill/leak from mechanical components
- Oil spill/leak from electrical transformers HV sub yard

Pre-emptive Measures

GWCC has a number of pre-emptive measures in place to reduce the likelihood of an environmental incident occurring. These measures include:

- Bunding around chemical storage areas
- Water quality monitoring systems i.e. chlorine and turbidity
- SCADA monitoring/control system
- Preventative maintenance program which reduces the likelihood of mechanical breakdown causing overflows etc
- High/low level alarms
- Daily Visual Checks
- Oil leakage containment at electrical sub yard

Safety Equipment

Site safety equipment includes:

- SDS for all chemicals
- Gas detector
- Fire extinguishers
- SWMS for routine jobs
- Warning alarms
- PPE
- Spill kits

- An inventory of site safety equipment is included in **Appendix 3**

Authority Notification

A pollution incident is required to be notified if there is a risk of 'material harm to the environment', which is defined in section 147 of the POEO Act as:

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

In the event of an extreme incident the onsite 'employee in charge' (usually the WTP Operator) is required to immediately implement the emergency evacuation plan, notify the Water Quality Coordinator, Production & Services Manager and contact the relevant emergency services if required.

The Production & Services Manager is required to notify the EPA Environmental hotline as soon as reasonably practicable, then contact the relevant Shire Council and downstream landholders. The Production & Services Manager will also contact WorkCover Authority if/when required, depending upon the nature of the incident.

Contact details:

Person/Authority	Position	Contact Number
Aaron Drenovski	General Manager	Office (02) 6977 3200
Geoff Veneris	Production & Services Manager	0437 974 730
Tony Corby	Water Quality Coordinator	0437 308 060
Brendan Ford	WTP Operator	0428 867 373
Rob Davis	WTP Operator	0418 747 255
Stephen Ledgard	WTP Operator	0427 266 546
Police/Fire/Ambulance		000
EPA Environmental hotline		131 555
WorkCover Authority		13 10 50
Public Health Unit Goulburn Office		02 4824 1840
Hilltops Shire Council		**Harden** – (02) 63860100

		Young – (02) 63801200 **Booroowa** – (02) 6302000 **A/H emergency number**: (02) 63860160
Cootamundra-Gundagai Regional Council		**Cootamundra**-(02)6940 2100 **Gundagai**- (02) 69440200

Community Notification

Pollution incidents deemed to require community notification will be in accordance with GWCC's Drinking Water Management System (DWMS) and may include but is not limited to:

- Chlorine gas leak
- E-coli/faecal coliform detection
- Water treatment chemical overdose
- Blue green algae alert
- Any other issue deemed by GWCC as threatening to the health and safety of the community

Community notification will be in accordance with the GWCC Emergency Response Management Plan

Minimising Harm to Persons on Premises

GWCC is committed to the safety and welfare of their employees, onsite contractors, and visitors during the normal course of their duties, and in the event of an emergency situation.

The onsite employee 'in charge' is to notify any contractors or visitors as soon as possible if there is a pollution incident unfolding and implement the GWCC 'Emergency Evacuation Procedures for the Jugiong Water Treatment Plant' as considered necessary. A map showing evacuation point is included in **Appendix 1**

Incident Management

In the event of a pollution incident the onsite employee in charge is to follow the following generic incident management procedures:

1. **Identify and assess incident severity**, implement mitigation or control measures and notify per the following:

Extreme Incident

Imminent/Serious danger to onsite personal and surrounding township.

Immediate action required

Implement emergency evacuation procedure and notification procedure

Medium Incident

Moderate danger. Action as soon as reasonably practicable. Implement controls i.e. spill containment procedure. Notify supervisor

Low Incident

Minor to negligible danger. Assess if further action is required. Monitor controls so the hazard is maintained as 'low'. Notify supervisor.

2. **Manage recovery** – take all necessary actions to resume normal operations for safe water supply and work with relevant authorities as required for any clean up and site rehabilitation.

3. **De-brief/lessons learnt** – investigate all critical control points, operational control points, failures and Implement controls to avoid any possible recurrence. Update the relevant emergency plans as required.

Staff Training and Testing

All staff required to implement this plan will be trained in its use. This is to ensure they are aware of the procedures in the event of a pollution incident. The plan will be tested annually, documented (as per appendix 5), and required changes made.

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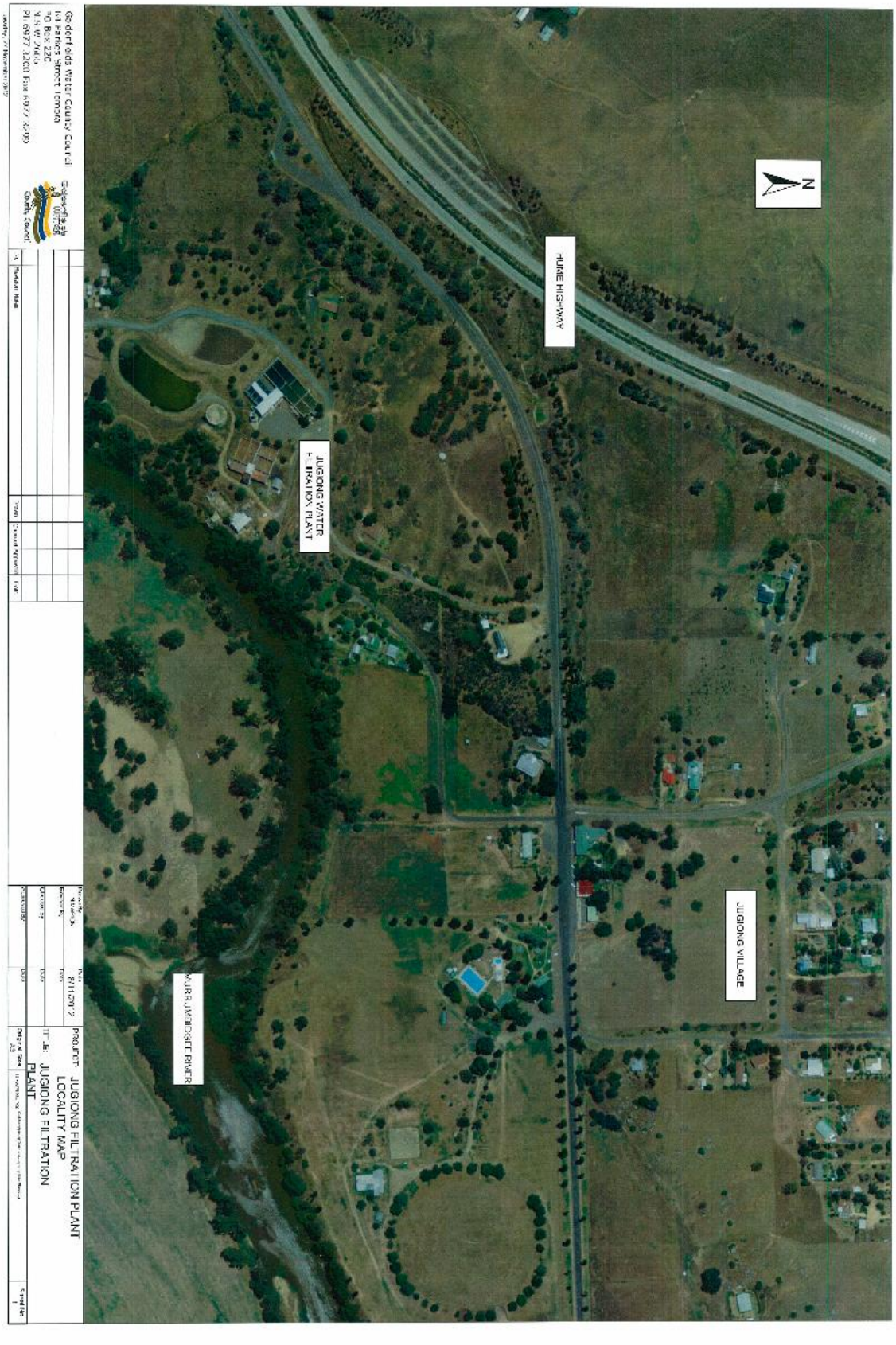
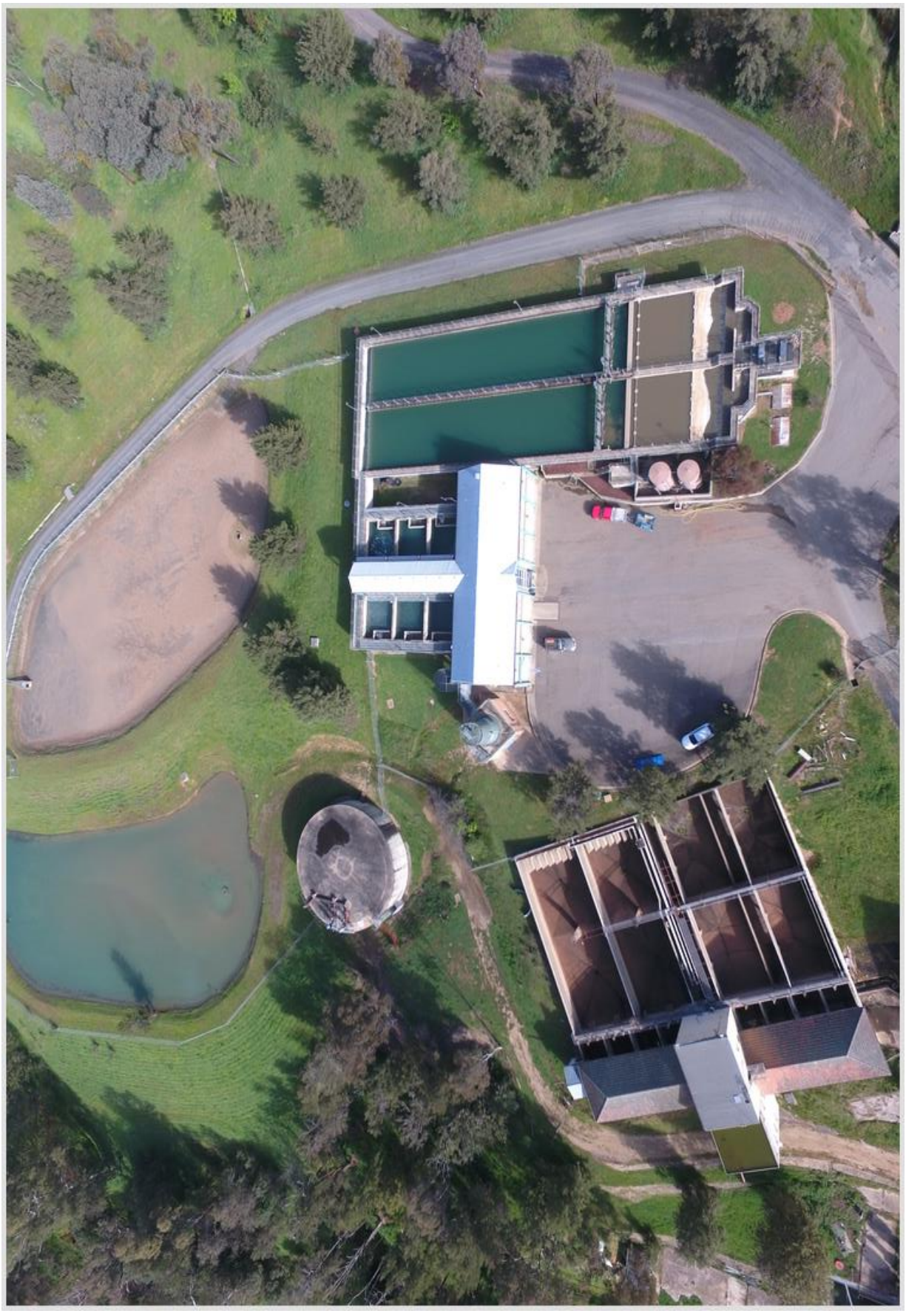
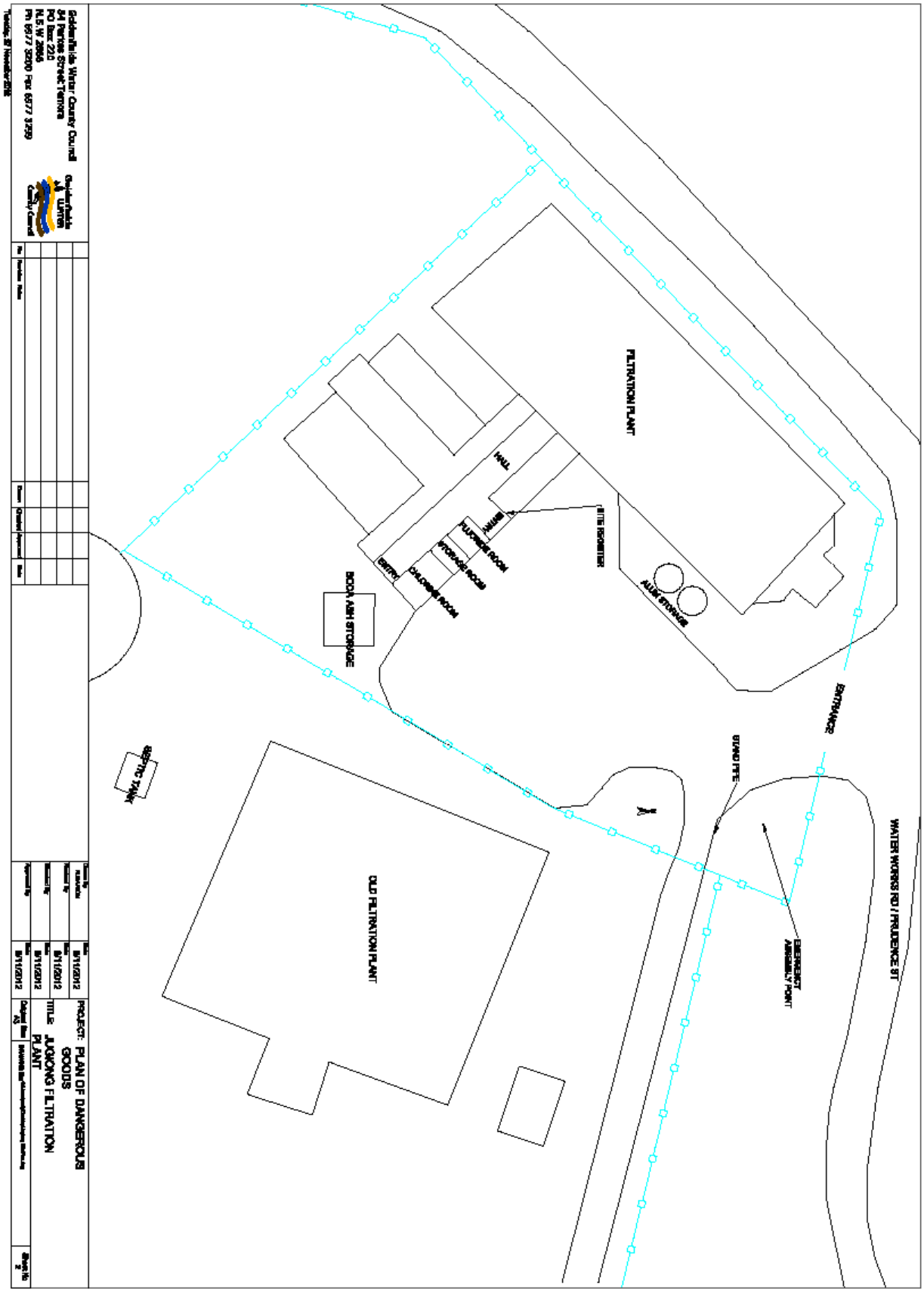
Appendix 1 – Site Plan






FILTRATION PLANT
TANK
BLOWER
FLUORIDE ROOM
STORAGE ROOM
CHLORINE ROOM
ENTRY
BOOM ARM STORAGE
ELITE ROSWATER
ALUM STORAGE
ENTRANCE
STAND PIPE
WATER WORKS RD / PRUDENCE ST
EMERGENCY ASSEMBLY POINT
SEPTIC TANK
OLD FILTRATION PLANT
Goldenfields Water County Council
84 Parkes Street Temora
PO Box 220
N.S.W 2666
Ph: 6977 3200 Fax: 6977 3299
PROJECT: PLAN OF DANGEROUS GOODS
TITLE: JUGIONG FILTRATION PLANT
Sheet No 2

Appendix 2 – Chemical Register

Chemical Name	Amount Stored	Location
Chlorine	4 X 920kg and 14 X 70kg Total 4660kg gas	Chlorine Room
'Hypo' (Sodium Hypochlorite)	2 X Pallets of 15kg Drums approx. 1440 Litres	Chlorine Storage Container
Sodium Silico Fluoride Powder	2000 kg	Fluoride Room
Liquid Aluminium Sulphate Solution	70,000 L	Storage Tanks
Polyelectrolyte	300kg	Store Room
Soda Ash	35,000 kg	Soda Ash Tank
Salt	1200kg	Soda Ash Room
Glyphosate Broadleaf Herbicide	25L	Garage
Fuel	20L	Garage

Appendix 3 – PPE Register

Qty	Equipment	Location
1	Drager Self Contained Breathing Apparatus	Hallway outside chlorine Room
2	Full Face Respirator	Hallway outside fluoride room
1	Half Face Respirator	Hallway outside fluoride room
2	Disposable Overalls	Hallway outside fluoride room
2	PVC Overalls	Hallway outside fluoride room
4	PVC Aprons	Hallway outside fluoride room
6	Heavy Duty Long Gloves	Hallway outside fluoride room
2	Emergency Eye Wash	Hallway outside fluoride room & alum dosing room
8	Fire Extinguishes	Throughout the WTP upstairs and downstairs
9	Spill Kits	Hallway outside fluoride room
10	First Aid Kits	Hallway outside fluoride room

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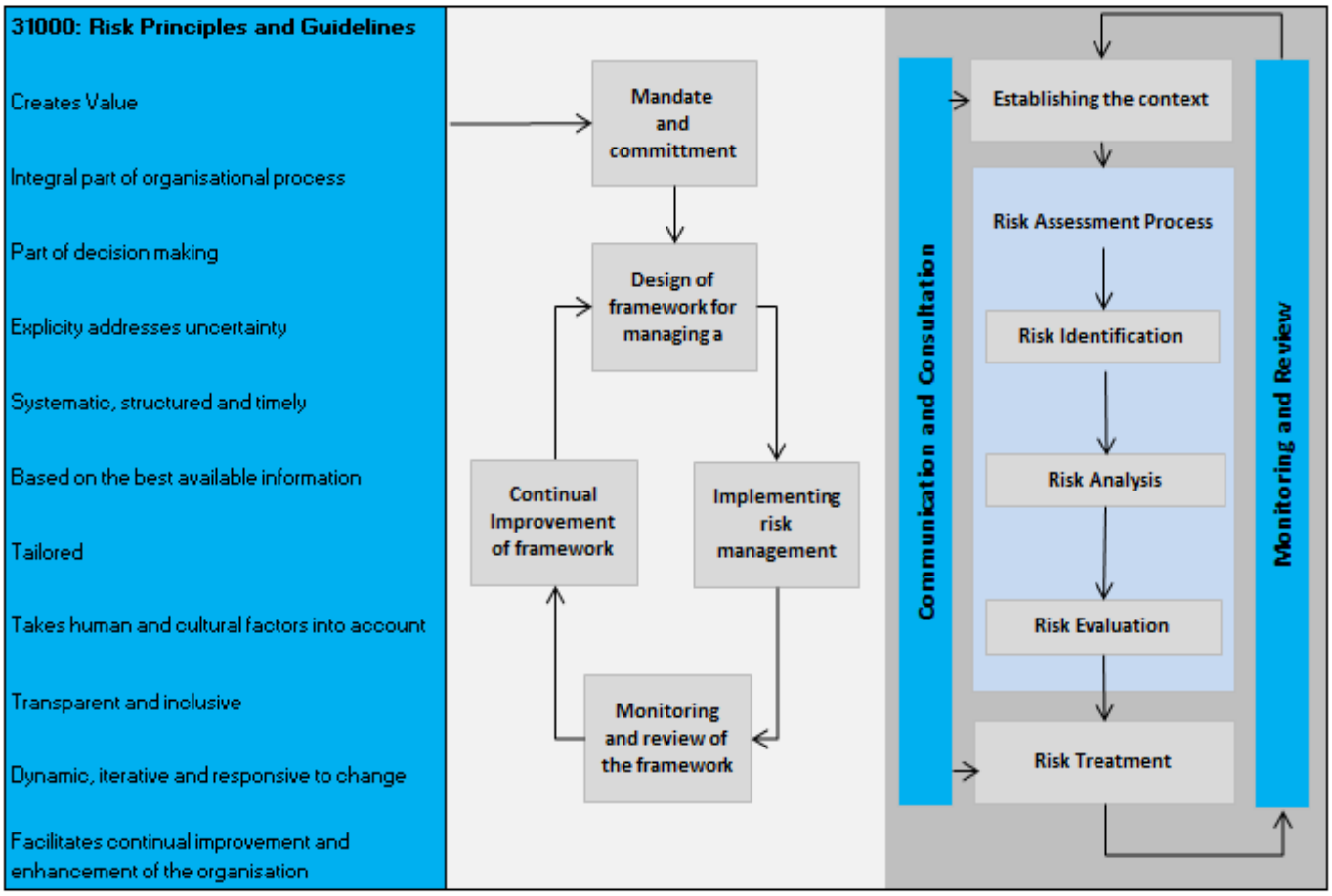
Appendix 4 – Risk Assessments



Risk Matrix

Likelihood	Consequence					
		Insignificant	Minor	Moderate	Major	Catastrophic
	Almost Certain	MEDIUM	HIGH	HIGH	EXTREME	EXTREME
	Likely	MEDIUM	MEDIUM	HIGH	HIGH	EXTREME
	Possible	LOW	MEDIUM	HIGH	HIGH	HIGH
	Unlikely	LOW	LOW	MEDIUM	MEDIUM	HIGH
	Rare	LOW	LOW	MEDIUM	MEDIUM	HIGH

Risk Response

Rating	Required Response
EXTREME	Do not proceed with any activities where the risk is in this category without specialist assistance to further treat/reduce risk including the development of contingency plans and / or transference strategies. This level of risk requires **immediate**, General Manager level attention. Solutions need to be developed and actioned immediately; action plans may require close attention by the General Manager until the risk is managed to the desired level. **Only the General Manager can authorise work to be undertaken at this level of risk.**
HIGH	Activities with the risk in this category require **immediate** attention of appropriate Manager. Do not proceed with any treatment option without clear and timely action plans identified to reduce the risk. Action plans must be approved by appropriate Manager. **Only the relevant Manager can authorise work to be undertaken at this level of risk.**
MEDIUM	Activities with the risk in this category require attention with a degree of priority. Remedial action should be identified and implementation commenced with appropriate priority. **Only the relevant Coordinator / Engineer can authorise work to be undertaken at this level of risk.**
LOW	While control issues may exist at this level, their impact is deemed low. All staff are expected to review the assessment and controls; and, where controls are not satisfactory remedial action should be identified and implemented where practical.

Likelihood Descriptors

Probability Factor	Descriptor	Probability of occurrence
Almost Certain	There is a >90% chance that the event will occur once in the next 12 months. Frequent past history.	Within 6 months
Likely	There is a 65% - 90% chance that the event will occur once in the next 12 months. Some past history.	Within 6 months to 2 years
Possible	There is a 35% - 65% change that the event will occur once in the next 12 months. Some past warning signs or previous event.	Within 3 - 5 years
Unlikely	There is a 10% - 35% chance that the event will occur in the next 12 months. No past history or event recorded.	Within 10 - 20 years
Rare	There is a <10% chance that the event will occur once in the next 12 months. No known past history or event.	More than 20 years

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Consequence Table

CONSEQUENCE					
Risk Category	**Insignificant**	**Minor**	**Moderate**	**Major**	**Catastrophic**
Environment	Environmental incident to localised area with recovery in days	Environmental incident to localised area with recovery in weeks	Serious environmental damage affecting numerous locations with recovery in months	Breach of environmental legislation resulting in legal proceedings or penalties imposed against Goldenfields Water, or Serious environmental damage of regional significance with recovery in years. EPA notifiable incident	Serious breach of environmental legislation resulting in protracted legal proceedings or significant findings / penalties against Goldenfields Water, or Long term environmental damage of regional significance with recovery in 25 years +
Health and Safety	A workplace incident resulting in injury (or potential injury), where the injured person is unable to perform normal duties for a period of less than 7 days,	A workplace incident resulting in injury (or potential injury), where the injured person is unable to perform normal duties for a period of greater than 7 days, but less than 90 days. or A lost time injury resulting in less than 5 days absence.	A workplace incident resulting in serious injury or illness, where the injured person is unable to perform normal duties for a period of greater than 90 days), or A workplace incident requiring SafeWork NSW notification.	A workplace incident resulting in a permanent injury causing significant incapacitation, or A workplace incident requiring SafeWork NSW notification of a "Non-Disturbance of the incident scene"	Serious breach of environmental legislation resulting in protracted legal proceedings or significant findings / penalties against Goldenfields Water, or Long term environmental damage of regional significance with recovery in 25 years +
Finance	Negligible financial loss; less than $10,000; up to10% of program/project value	Minor financial loss; $10,000 - $50,000; 10% - 15% of program/project value	Significant financial loss; $50,000 - $500,000; 15% - 25% of program/project value	Major financial loss; $500,000 - $1m; 25% - 50% of program/project value	Extensive financial loss; in excess of $1m; >50% of program/project value
Service Delivery (Service Interruption)	< 4 hrs	Up to 1 day	1 day to 1 week	1 week to1 month	More than 1 month
Reputation	Isolated, internal or minimal attention or complaint	Heightened local community concerns and criticism	Significant public criticism with our without media attention; short to mid term loss of support from community	Serious public outcry, state media attention and long term loss of support from community	Extensive public outcry; national media attention; loss of State government support with appointment of administrator

Risk Category	Insignificant	Minor	Moderate	Major	Catastrophic
Compliance and Legal	Isolated non compliance or breach; minimal failure of internal controls	Contained non compliance or action with short term significance; some impact on normal operations	Significant claim or breach involving statutory authority or investigation; prosecution possible	Major breach with litigation/fines and long term significance; critical failure of internal controls	Extensive litigation/fines with possible class action; indictable offences
Projects	No measurable operational impact	Minor delay	Moderate delay, impact on quality	Significant delay, project overbudget	Indefinite delay, project requirements not met, quality compromised
Fraud	Financial loss to company is less than $1,000, no media coverage, isolated employee dissatisfaction, event does not need to be reported to authorities	Financial loss to company is between $1,000 and $10,000, limited local media coverage, general employee morale problems, incident is reportable to authorities, but no follow-up	Financial loss to company is between $10,000 and $100,000, short-term regional or national media coverage, widespread employee morale problems, incident must be reported to authorities and immediate corrective action is necessary	Financial loss to company is between $100,000 and $10 million, national long-term media coverage, widespread employee morale problems and turnover, incident must be reported to authorities and sanctions against company result	Financial loss to company is in excess of $10 million, international long-term media coverage, widespread employee morale issues; multiple senior leaders leave, incident must be reported to authorities and significant sanctions and financial penalties result
Information Technology	No measurable operational impact	Minor downtime or outage in single area of the organisation; addressed with local management and resources	Significant downtime or outage in multiple areas of the organisation; substantial management required	Loss of critical functions across multiple areas of the organisation; long term outage; extensive management with external resources required	Extensive and total loss of critical and/or entire organisation; disaster management required

Risk Assessments

REF	HAZARD	Likelihood	Consequence	INITIAL RISK	Mitigation measures	Likelihood	Consequence	RESIDUAL RISK / Risk Tolerance
1	Transformer Oil Spill	Unlikely	Medium	Low	Regular maint. carried out to site equipment. Bunding and Oil traps / sumps under transformers.	Unlikely	Minor	Low
2	Transformer Oil Fire	Unlikely	Moderate	Moderate	Regular maint. and inspections carried out to site equipment. Fire extinguishers in area.	Unlikely	Minor	Low
3	Overflow Oil Sump compromised by rain water	Unlikely	Minor	Low	Regular maint. carried to site equipment. Area drainage improved. High Level Alarm installed on sump	Unlikely	Low	Low

REF	HAZARD	Likelihood	Consequence	INITIAL RISK	Mitigation measures	Likelihood	Consequence	RESIDUAL RISK / Risk Tolerance
4	Chemical Spill	Possible	Major	High	Bunding and trays installed. Daily visual checks. All chemical deliveries supervised	Unlikely	Major	Moderate
5	Discharge of reduced quality effluent to the river	Rare	Minor	Low	Daily monitoring. Ability to shut off one lagoon if necessary.	Rare	Minor	Low
6	Septic Tank Overflow	Unlikely	Minor	Low	Regular checks, maintenance and pump out	Rare	Major	Moderate
7	Poor quality drinking water	Possible	Catastrophic	High	Alarms – plant auto shut down. Daily quality testing	Rare	Catastrophic	High

REF	HAZARD	Likelihood	Consequence	INITIAL RISK	Mitigation measures	Likelihood	Consequence	RESIDUAL RISK / Risk Tolerance
8	Chlorine gas leak	Possible	catastrophic	High	Alarm in place. Safe Work Procedures for change over of chlorine gas bottles.	Unlikely	Major	Moderate
9	Fuel Spill	Rare	Minor	Low	Store in separate location. Onsite spill kits in place.	Rare	Minor	Low
10	Oil spill/leak from mechanical components	Unlikely	Moderate	Low	Maintenance schedule in place. Oil trays underneath components	Rare	Minor	Low

APPENDIX 5: Testing of the Plan

This plan must be tested once every 12 months. The information provided must be up to date and it must be demonstrated that it is capable of being implemented in a workable and effective manner if requested by the EPA. Testing of the plan is to include both desktop simulations and practical exercises and training drills. Testing must cover all components of the plan including the effectiveness of training. ***As per POEO Act 1997 – Section 153E – Testing of the Plan***

GWCC Staff: *The following staff have read this plan and agree to follow the procedures set out in this management plan in the event of a pollution incident.*

Dissemination and Acknowledgement by staff I have read and tested these procedures and understand the plans requirements.			
Team Members	***Position***	***Signature***	***Date***
Tony Corby	**Coordinator Water Quality**		**15/3/18**
Brendon Ford	**Plant Operator**		**15/3/18**
Steve Ledgard	**Plant Operator**		**15/3/18**
Tony Corby	**Coordinator Water Quality**		**27/3/19**
Brendon Ford	**Plant Operator**		**27/3/19**
Steve Ledgard	**Plant Operator**		**27/3/19**
Tony Corby	**Coordinator Water Quality**		**31/3/21**
Brendon Ford	**Plant Operator**		**31/3/21**
Steve Ledgard	**Plant Operator**		**31/3/21**
Tony Corby	**Coordinator Water Quality**		**25/3/2022**
Brendon Ford	**Plant Operator**		**25/3/2022**
Steve Ledgard	**Plant Operator**		**25/3/2022**

Tony Corby	**Coordinator Water Quality**		**25/3/2022**
Brendon Ford	**Plant Operator**		**25/3/2022**
Steve Ledgard	**Plant Operator**		**25/3/2022**

Testing of the Plan

The following is a summary of the simulations/tests periodically undertaken to test the PIRMP. Full documentation for these simulations/tests are saved in GWCC Data Management System Content Manger. See table below for document numbers.

Dissemination and Acknowledgement by staff I have read and tested these procedures and understand the plans requirements.				
Team Members	***Position***	***Tests Undertaken***	***CM9Document Number***	***Date***
Tony Corby	**Coordinator Water Quality**		**See Simulation Document this file**	**15/3/18**
Brendon Ford	**Plant Operator**			
Steve Ledgard	**Plant Operator**			
Tony Corby	**Coordinator Water Quality**	**Soda Ash Spill Simulation**	**Content manager Container 135, doc. 19/3879.**	**27/3/19**
Brendon Ford	**Plant Operator**			
Steve Ledgard	**Plant Operator**			
Tony Corby	**Coordinator Water Quality**	**Chlorine leak Simulation**	**21/8667**	**31/3/2021**
Brendon Ford	**Plant Operator**			
Steve Ledgard	**Plant Operator**			
Tony Corby	**Coordinator Water Quality**	**Broken Bag Spill of FLOPAM FA 920 PWG**	**Content Manager Container 142, doc number 22/7813**	**25/3/2022**
Brendon Ford	**Plant Operator**			
Steve Ledgard	**Plant Operator**			
Tony Corby	**Coordinator Water Quality**	**Liquid Aluminium Sulphate Leak**	**Content Manager Container 142, doc number 23/6169**	**23/3/2023**
Brendon Ford	**Plant Operator**			
Steve Ledgard	**Plant Operator**			