



POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

NYNGAN SEWAGE TREATMENT SYSTEM



APRIL 2018



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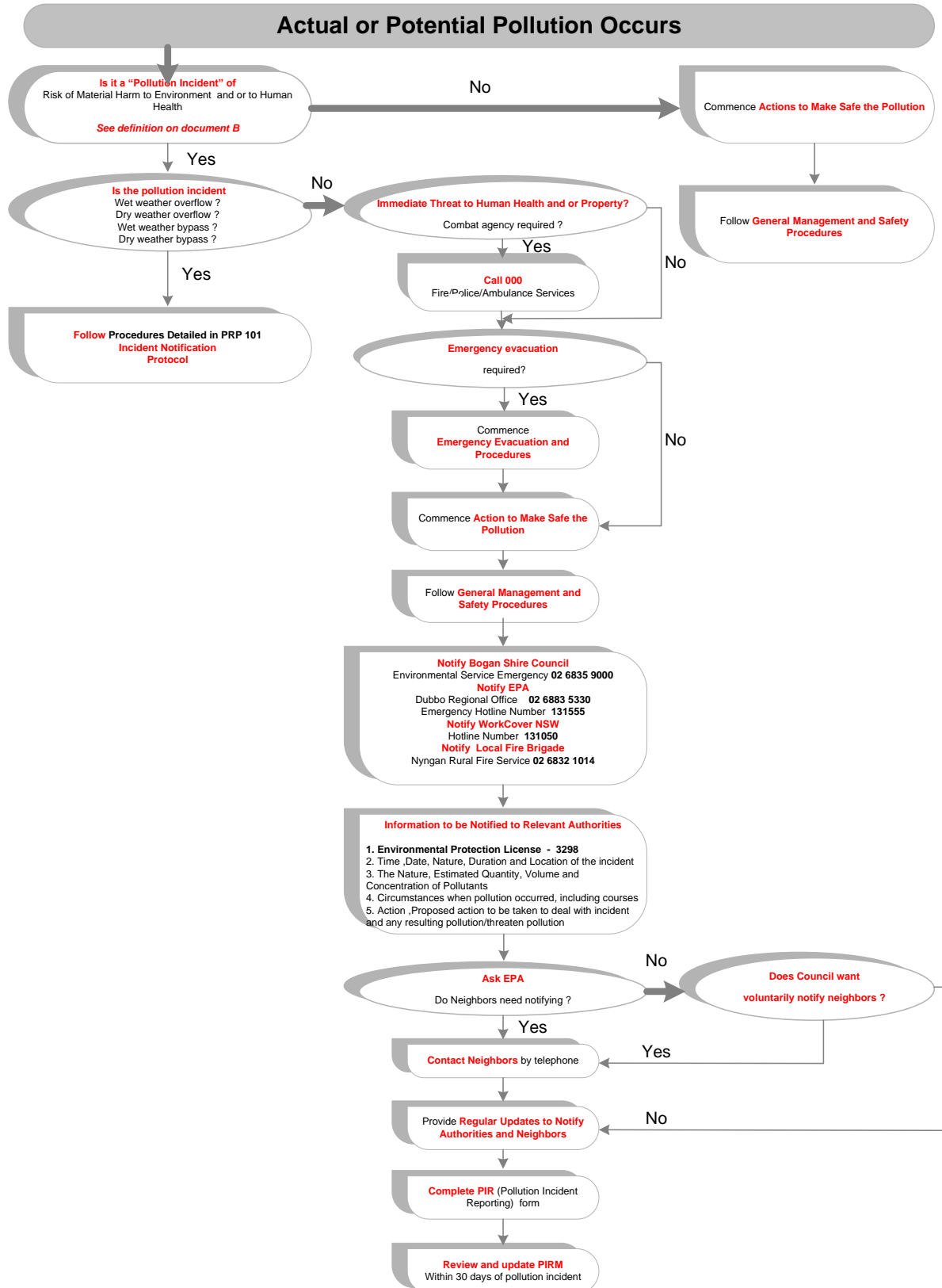
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1.0 POLLUTION INCIDENT CLASSIFICATION, RISK ASSESSMENT AND CONTRIBUTING FACTORS

Table 1.1 – Pollution Incident Classification, Risk Assessment and Contributing Factors

Description of Pollution Incident	Likelihood	Impact	Contributing Factors
Wet Weather Overflow from the reticulation system during wet weather.	refer to PRP 100 Sewer Overflow Investigations Report (Sections 5 & 7)	refer to PRP 100 Sewer Overflow Investigations Report (Section 6)	refer to PRP 100 Sewer Overflow Investigations Report (Section 5.1)
Dry Weather Overflow from the reticulation system during dry weather.	refer to PRP 100 Sewer Overflow Investigations Report (Sections 5 & 7)	refer to PRP 100 Sewer Overflow Investigations Report (Section 6)	refer to PRP 100 Sewer Overflow Investigations Report (Section 5.1)
Wet Weather Bypass at the sewage treatment plant (STP) and is when untreated sewage bypasses the sewage treatment process and discharges to the Box Cowl dry creek during wet weather.	Low	High	Prolonged periods of heavy rain, lack of pond and site maintenance and/or a mechanical failure of plant and equipment.
Dry Weather Bypass at the STP and is when untreated sewage bypasses the sewage treatment process and discharges to the Box Cowl dry creek during dry weather.	Low	High	Lack of pond and site maintenance and/or a mechanical failure of plant and equipment.
Pond failure at the STP;	Low	Low	Prolonged periods of heavy rain, lack of pond and site maintenance and/or a mechanical failure of plant and equipment.
Mechanical failure at the STP results in discharge of untreated sewage.	Low	High	Fire damage or poor maintenance of plant and equipment. Prolonged periods of heavy rain.
Mechanical failure at the STP results in offensive odour from the premises.	Low	Low	Fire damage or poor maintenance of plant and equipment.
Inadequate chemical storage.	Low	Medium	Human error. Chemical fire accelerated by high winds, dry weather, prolonged periods of high temperatures and low humidity.
Acts of vandalism or target of terrorist activity at the STP.	Low	Medium	Increased risk during hours of closure
Reticulation and Rising Main pipeline breakage.	Low	Low	Poor maintenance of plant and equipment. Flows exceeding pipe and pump capacity
Exceed Environment Protection Licence (EPL) discharge limits to the re use pond.	Low	Low	Prolonged periods of heavy rain and mechanical failure of plant and equipment
Significant adverse environmental impact from irrigation in utilisation areas.	Low	Low	Human error. Lack of control and/or monitoring. Prolonged periods of heavy rain.

2.0 DOCUMENT A - POLLUTION INCIDENT DECISION FLOW CHART



3.0 DOCUMENT B – POLLUTION INCIDENT EMERGENCY CONTACT DETAILS

3.1 DEFINITION OF POLLUTION INCIDENT

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 1997*:

- “(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, and*
- (b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.”*

3.2 NOTIFICATION OF POLLUTION INCIDENT

3.2.1 Notification Speed of Response

The requirement for notification of a pollution incident has changed from 'as soon as practicable' to 'immediately'. In short, 'immediately' means 'promptly without delay', but it does not mean undertaking notification ahead of doing what is necessary to make safe.

3.2.2 Notification of Relevant Authorities

If the pollution incident is a wet weather overflow, dry weather overflow, wet weather bypass or dry weather bypass procedures need to be followed in Council's *PRP 101 Incident Notification Protocol, October 2012*.

In all other pollution incident cases and where the pollution incident causes or threatens material harm to the environment or human health, the Site Supervisor must notify all the following authorities:

Notification of Relevant Authorities

1. Emergency Call Services

Emergency Hotline Number (24 hours)

000*

*The Site Supervisor should call 000 if the incident presents an immediate threat to human health and/or property and a combat agency is required (i.e. NSW Fire and Rescue, NSW Ambulance Service, NSW Police Force) and then notify all other parties below including NSW Fire and Rescue via a local telephone number.

2. Bogan Shire Council

Bogan Shire Council Environmental Services
(24-hour Emergency Hotline Number)

02 6835 9000

3. The Environment Protection Authority (EPA)

Dubbo Regional Office
Emergency Hotline Number (24 hours)

02 6883 5330
131 555

NSW Ministry of Health (via Public Health Units)

Nyngan Health Service
Environment and Health Officer on Call (24 hours)

02 6832 1707
0428239490

4. WorkCover NSW

Hotline Number

13 10 50

5. Fire and Rescue NSW

Nyngan Rural Fire Service

02 6832 1014

If there is no immediate threat to human health and/or property i.e. a combat agency is not required, then the Site Supervisor is still required to follow that outlined above except for dialling 000.

3.2.3 Information to be Notified

Under section 150 of the *POEO Act 1997*, the information about a pollution incident that must be notified to relevant authorities is:

- The time, date, nature, duration, and location of the incident;
- The location of the place where pollution is occurring or is likely to occur;
- The nature, the estimated quantity or volume and the concentration of any pollutants involved, if known;
- The circumstances in which the incident occurred, including the cause of the incident, if known;
- The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known; and
- Other information prescribed by the regulations.

The Site Supervisor is required to notify immediately after a pollution incident becomes known. Any information required that is not known at the time the incident is notified must be provided when it becomes known.

3.2.4 EPA Powers of Direction & Notification of Neighbours

Where the pollution incident causes or threatens material harm to the environment or human health, the EPA is notified in accordance with **Section 3.2.2**.

Once the EPA is notified, it is then for the EPA to determine whether commercial, industrial and residential neighbours of the site need to be contacted by Council and informed of the circumstances of the incident and what action is being taken in response to it. If deemed necessary, the EPA then has powers to formally direct Council to notify the neighbours of the site.

Irrespective of whether the EPA directs Council to notify neighbours and depending on the circumstances of the pollution incident, Council may at their own discretion voluntarily choose to notify neighbours.

Council would notify neighbours by making a telephone call to every neighbouring property of the STP as detailed in **Table 2.1** below and as identified on enclosed Site Plan. A summary of the neighbour notification procedure is provided in **Document A** – Pollution Incident Decision Flow Chart.

Table 2.1 – List of Neighbours to be Notified

Location	Contact Name	Property Address	Contact	Comments
Sewage Reuse Plant	Mrs MF Smith	Laravoulta, Nyngan NSW 2825		LOT 38 DP 753420
	Mr TT& Mrs SA Waterhouse	PO Box 223, Nyngan NSW 2825	68321458	LOT 39 DP 753420
	Mr Tod Rope	Yelate, Nyngan 2825	68321214	LOT 41 DP 848853
Chemical Storage (Water Treatment Plant)	Property Administration Dept, Telstra	C/- United Group, Services, GPO Box 2698		LOT 12 DP 773711
	The Manager, Justice Department	NSW Attorney General Dept Attn: Julie O'Connor		LOT 2 DP 758802 Section 31
	The Trustees Of, Anglican Property Trust	PO Box 2, Nyngan NSW 2825		LOT 6 Section 31 DP 758802
	Ms HS Galvin	64 Bogan Street, Nyngan NSW 2825	68322151	LOT 81 DP 1010259
Sewer Pump Station-01	Mr RE &Mrs SM Black	PO Box 189, Nyngan NSW 2825	68321773	LOT 1 DP 965760
	Mr RE Whiteford	25 Wambiana St, Nyngan 2825	68321595	LOT 12 Section 20 DP 758802
	Mr B Murden	33 Wambiana St, Nyngan NSW 2825	68322496	LOT 13 DP 758802 Section 20
	Aboriginal Housing Office	223 - 239 Liverpool Road, Ashfield NSW 2131		LOT 8 DP 758802 Section 20
	Mr DJ Skews	21 Argus Avenue, Gumly NSW 2652		LOT 102854
	GBS Falkiner Pty Ltd	C/- Falkiner Family Super Fund, Haddon Rig		LOT
	Mr JB Neyland	24 Nymagee Street, Nyngan NSW 2825		LOT
	Department of Housing	PO Box 466, Liverpool NSW 2170		Part LOT 3 DP 758802 Section 20
Sewer Pump Station-03	Mrs LE Skewpeck	GPO Box 260, Nyngan NSW 2825	68321562	LOT 10 DP 42135
	Mrs DF Smith	71 Cathundril Street, Nyngan NSW 2825		LOT 6 DP 42135
	Mrs GJ Johnson	73 Cathundril Street, Nyngan, NSW 2825		LOT 7 DP 42135
	Mr KL & Mrs JP Jackson	75 Cathundril Street, Nyngan NSW 2825		LOT 8 DP 42135
	Mrs BM Clarke	77 Cathundril St, Nyngan 2825		LOT 9 DP 42135
Sewer Pump Station-02	Mrs GD Eldridge	97 Cobar St, Nyngan 2825		LOT 1 DP 327199
	Mr GV & Mrs Be Parsons	PO Box 262, Nyngan NSW 2825		LOT 1 DP 925785
	Mrs NB Dutton	PO Box 195, Nyngan NSW 2825		LOT 1 DP 965760
	Mr GV Parsons	PO Box 262, Nyngan NSW 2825		LOT 10 DP 1111471
Sewer Pump Station-04	Mr GR& Mrs AE Webster	Lot 1, Hoskins Street, Nyngan NSW 2825		LOT 1 DP 758803 Section 4
	Rob Shine	35 Ellen Street, Nyngan NSW 2825		LOT 3 DP 261826
	Tritton Resources Ltd	PO Box 386, Nyngan NSW 2825		LOT 4 DP 261826
	Mrs PM Carter	31 Ellen Street, Nyngan NSW 2825		LOT 5 DP 261826
	Mr WW & Mrs DT Powell	PO Box 88, Nyngan NSW 2825		LOT 56 DP 613677
	Brendon Johnson	27 Ellen Street, Nyngan NSW 2825		LOT 7 DP 261826

3.2.5 Sewage Treatment System Council Contact Details

The following Council officers are directly responsible for the overall management of the NSTS and, if considered necessary, can be contacted by relevant authorities in the event of a pollution incident:

Trevor Waterhouse Water and Sewerage Supervisor Bogan Shire Council	0409 078 762
Graeme Bourke Manager Engineering Service Bogan Shire Council	0427 264 262
Jayantha C. W. Ediriweera Water and Asset Manager Bogan Shire Council	0428 264 262

4.0 POLLUTION INCIDENT REPORTING FORM

INCIDENT No:

TIME:

DATE:

DURATION OF INCIDENT:

NATURE OF INCIDENT:

.....

.....

.....

WEATHER CONDITIONS:

.....

.....

THE LOCATION OF THE PLACE WHERE POLLUTION IS OCCURRING OR IS LIKELY TO OCCUR:

.....

.....

THE NATURE, THE ESTIMATED QUANTITY OR VOLUME AND THE CONCENTRATION OF ANY POLLUTANTS INVOLVED (IF KNOWN):

.....

.....

.....

THE CIRCUMSTANCES IN WHICH THE INCIDENT OCCURRED, INCLUDING THE CAUSE OF THE INCIDENT (IF KNOWN):

.....

.....

.....

THE CORRECTIVE ACTION TAKEN OR PROPOSED TO BE TAKEN TO DEAL WITH THE INCIDENT AND ANY RESULTING POLLUTION OR THREATENED POLLUTION (IF KNOWN):

.....

.....

.....

HAS COUNCIL BEEN NOTIFIED?

YES

NO

HAS ENVIRONMENT PROTECTION AUTHORITY (EPA) BEEN NOTIFIED?

YES

NO

HAS NSW MINISTRY OF HEALTH (VIA PUBLIC HEALTH UNITS) BEEN NOTIFIED?

YES

NO

HAS WORKCOVER NSW BEEN NOTIFIED?

YES

NO

HAS LOCAL FIRE AND RESCUE NSW BEEN NOTIFIED?

YES

NO

HAS EPA DIRECTED COUNCIL TO NOTIFY NEIGHBOURS?	YES	NO
IF NOT, HAS COUNCIL VOLUNTARILY NOTIFIED NEIGHBOURS?	YES	NO

Signature:	Date:
Water and Sewerage Supervisor, Bogan Shire Council	
Signature:	Date:
Manager Engineering Services, Bogan Shire Council	

5.0 PIRMP TESTING & UPDATE REGISTER

Date	Routine Testing	Routine Update	Post Incident Updates	7 New Copies Distributed?

6.0 STAFF TRAINING REGISTER

Date	Staff Member	Brief Description of Training Task

7.0 PUMPING STATION 3 - SPARE PUMP TESTING REGISTER

The details of the period testing undertaken on the spare pump for PS3 is to be provided in the following table. The testing is to be undertaken to ensure that this pump is in working condition if/when it is required. Testing should be undertaken at least annually.

The location of where the pump is stored following the testing is to be stated in the Work's Description column below.

Date	Staff Member	Work's Description

APPENDIX 1 - SEWAGE OVERFLOWS REPORT FINAL JAN 2008



The reticulation system has no recorded overflows and they are **unlikely to occur**. The system is in good condition for its age, indicated by camera inspections, lack of chokes and breaks in mains, and low flow increases in all but severe wet weather. Sub-system ages vary from 16 to 52 years. The system has ample storage capacity in deep sewers, access chambers and pumping stations. Low pump run times indicate spare pumping capacity. Pumping stations have 2 pumps alternating duty and backup roles, except that Pumping Station 3 (PS3) has one pump, with a spare ready for immediate changeover

An overflow requires extended system failure and inaction, with abnormal heavy and/or sustained rain, to fill the pumping stations, access chambers and pipes – a situation also providing high dilution in the sewers and on the ground. If it occurs, several access chambers would overflow before pumping stations, and:

- PS1 area overflows would head to the lower weir pool if flood gates are left open;
- PS2 area overflows would head east away from the river;
- PS3 area overflows would head for modified bushland and the lagoon adjacent to ovals off Terrangion Street;
- PS4 area overflows from the area east of Hoskins Street (north) would head for:
 - A shallow underground prior stream bed via a stormwater soakage pit,
 - Modified bushland off Jubilee St if the drainage channel and soakage pit near PS4 backs up into the overflow channel in Derrybong St;

Analysing 4 years' data indicated that Peak Wet Weather Flow and infiltration are within accepted norms and within system capacity.

However, an unusually severe storm on 21st December 2007 showed higher PWWF and infiltration effects. The storm was intense from 9:50pm for 20 minutes and then eased off. Pump hour meter readings next morning were at different times. Estimated flows for the first 24 hours show higher peak flows than indicated by the raw data, but still within system capacity. PS1 ran for 7 of the first 8 hours.

There is a low risk of overflows generally, with no history and low likelihood given the spare system capacity. The 21st December 2007 storm confirmed this assessment.

Therefore there are no new priority actions or new major capital investment required to deal with potential sewer overflows in the short to medium term.

This desk top assessment using existing data is appropriate to a small system with low overflow risk. Extensive modelling or water quality monitoring is unnecessary.

4. Reticulation system data

The reticulation system has four catchments defined by the downstream pumping station. Three small pumping stations are "piggy backed" onto PS1 which pumps all to the STW.

Sewage is mainly domestic in nature. There are no heavy industry or large trade waste dischargers – the RSL club is probably the largest.

Table 1 - Sewerage catchments data:

Catchment:	PS1	PS2	PS3	PS4
Pumping Station Location	Nymagee Lane between Mudal and Terangion Streets	Corner of Dandaloo St & Cobar Lane	Nyngan Public School, corner of Derrybong & Cathundril Streets	Hoskins St at rear of Powells' residence
Catchment boundaries, approx	Whole town, including discharges from PS2, PS3, PS4	Terrangion St, railway, Cemetery Rd, Warren St	Hoskins, Oxley, Dandaloo & Cannonbar Sts	Hoskins St, Jubilee St, Hospital Rd, Mitchell Hwy
No. of connections, approx	900	270 dwellings & commercial, plus RSL club & 1 motel	52 dwellings plus primary school	65 dwellings, commerc/indust. Hospital to 03/08. Caravan park
Est. population	2200	650	130	170
Equivalent Tenements	Not calculated	Not calculated	Not calculated	Not calculated
Reticulation	1	2	3	4
Construction	1955, 1960	1955, 1960	1986, or older	1991
Length, m			859m approx	956.3
Ave depth, m	1.4 – 7.0	1.4 – 7.0	1.5 – 3.5	1.03 – 7.52
Pipe sizes, mm	210m x 225mm Rest 150mm	477m x 225mm Rest 150mm	150	433.7m x 225mm Rest 150mm
Pipe material	Vitrified Clay	VC, 267m conc	VC 176m uPVC	Concrete TBC
Average condition	Fair/good. Part insp. straight pipes & joints, minimal tree roots, no acid, fat deposits.	Fair/good – no service issues	Good	Good
Overflow or flow relief structures in reticulation system	No structures. No overflows. Fill whole system before overflow at access chambers.	No structures. No overflows. Fill whole system before overflow at access chambers.	No structures. No overflows. Fill system, overflow access chambers. Raised tops b/n Hoskins, Oxley Derrybong & Cathundril Sts	No structures. No overflows. Fill whole system before overflow at access chambers.
Potential Overflow Destination (if it occurs)	High dilution & spread on flat terrain. Surface drains to levee gates, weir pool.	High dilution & spread on flat terrain. Local surface drainage – lane, kerb & gutter.	High dilution & spread on flat terrain. Local surface drainage – kerb & gutter.	High dilution. Adjacent soakage basin & storm water overflow channel north to Jubilee St. bush

Pump Station:	1	2	3	4
Type	Wet well	Dry/wet well	Wet well	Wet well
No. of pumps	2	2	1 + spare	2
Pump capacity	Design 104 l/s. 96.85 l/s in test 5/6/97. Calc's use 94.1 l/s. 2006 test - flow rate varies	26.6 l/s Test 5/6/97	8.1 l/s Test 5/6/97	14.8 l/s Test 5/6/97
Constructed:	1960?	1960?	1986	1991
Refurbished:	1991	1991		
Wet well depth				
Wet well vol				
Measurement equipment	Start counter & hour meter	Start counter & hour meter	Start counter & hour meter	Start counter & hour meter
Analysis of 4 years records:				
Pump records	13/2/04-7/12/07	13/2/04-7/12/07	13/2/04-7/12/07	5/11/04-7/12/07
Ave no. of starts	15 starts/day	12	40	9
Ave pump run	2.13 hr/day	1.69 hr/d	1.96 hr/d	0.80 hr/d
ADWF run time	2.1 hr/day	1.5 hr/day	1.7 hr/day	0.6 hr/day
Ave storage	1.4 hr	1.9 hr	0.6 hr	2.6 hr
Ave. discharge	0.722 ML/day *	0.161 ML/d *	0.057 ML/d *	0.042 ML/d *
Ave yearly	264 ML/yr *	59 ML/yr *	21 ML/yr *	15 ML/yr *
Est ADWF	0.700 ML/d *	0.143 ML/d *	0.050 ML/d *	0.033 ML/d *
Long term PWWF	2.788 ML, 8.2 hr on 9/11/05 - rain 27.6mm over 6 days. (2.30 ML - 54mm rain on 21/10/05) *	0.490 ML/d on 21/10/05 *	0.117 ML/d *	0.082 ML/d *
PWWF multiple (peak/ADWF)	4.0	3.4	2.3	2.2
Analysis of 21/12/07 severe storm pump run times: (readings in mornings - various times)				
Pump run 20/12	1.99 hr	1.73 hr	1.40 hr	0.69 hr
Pump run 21/12	8.99 hr	6.9 hr	5.7 hr	4.14 hr
Pump run 22/12	7.81 hr	4.6 hr	2.6 hr	1.42 hr
Pump run 23/12	4.45 hr	1.80 hr	1.2 hr	0.67 hr
Pump run 23-28	Ave 5.05 hr	Ave 1.47 hr	Ave 1.1 hr	Ave 0.60 hr
Pump 29/12-4/1	Ave 4.17 hr	Ave 1.36 hr	Ave 1.6 hr	Ave 0.72 hr
PWWF multiple (peak/ADWF)	4.3	4.6	3.4	6.9
Estim pump run time next 24 hrs	11.6 hr	8.3	6.1	4.4
Adjust PWWF	5.5	5.5	3.6	7.3

multiplier				
Operator observation	Max ½ full in wet weather		Max ½ full in wet weather	
Is there a peak flow issue?	Yes – not severe from storm, possible infiltration from river, new estate	Yes – not severe	No	Yes – check new estate access chambers & level of top of PS4
Alarm/telemetry	Alarm	Alarm	Alarm	Alarm
Overflow or flow relief facility at pump station	Not required. Overflow from access chambers.	Not required. Overflow from access chambers.	Not required. Overflow from access chambers.	Not required. Overflow from access chambers.
Condition	Good. Refurbished. Pumps serviced regularly.	Fair, functional. Pumps serviced regularly.	Good. Pump regularly serviced, becomes standby spare.	Good, some corrosion. Pumps serviced regularly

Rising Main:	1	2	3	4
Destination	STW	A/31 to PS1	A/31 to PS1	AJ/1 to PS1
Length, m	1274	439	330	
Diameter, mm	200	150	100	150
Year constructed	1960	1960	1986 Replaced 1997	1991
Pipe material	Cast iron	Cast iron	uPVC	upVC
Condition	Not known	Poor – replace	Good	Good
System or catchment modelling	N/A	N/A	N/A	N/A
STW:				
Total yearly inflow 2005/6	278 ML *			
Total yearly inflow 2006/7	185 ML *			
Treated effluent outflow, ML/yr	86 – 176 ML/yr (8 yrs average is 129 ML/yr)			
Daily effluent 2005/6, ML/d	0 – 0.825 ML (average 0.258 ML)			
Licence effluent flow, ML/d	0.750 ML			
No. of times exceed licence	1 in July 2006 (# see later)			
21/12/07 storm	7.584 ML for week & 0.012ML next week			

* Flows are overstated - calculations from pump run time don't allow for fall in efficiency. Higher peaks that had transcription or calculation errors or did not match up with rain are excluded. Some dry weather peaks apparently similar magnitude to wet weather peaks. Also, pump meters are read at different times in the mornings, causing daily fluctuations.

Soils vary and include loams, clays and sandy prior stream beds, with little or no ground movement affecting sewers. Grass growth is limited to short seasons. Trees are deep rooted and occasionally choke a shallow property service but not the deeper sewers.

5. Identifying the likelihood of overflows

The discharge licence requires recording of each observed or reported overflow from particular parts of the STW and the reticulation system. DECC expects analysis of at least two years of monitoring data. Four years are analysed. There is no system modelling.

There have been occasional high flows of treated effluent through the STW outlet.

There is no history of overflows in the reticulation system. It is unlikely as it needs several days of system failure (eg. failure of duty and standby pumps or switchboards), inaction and enough rain to fill the reticulation system to overflow from access chambers. The 21st December 2007 storm produced heavy runoff, building damage and long pump run times, but no reticulation overflows.

Property services:

- Some chokes from tree roots, easily repaired, responsibility of residents.

Council's reticulation gravity sewers:

- Overflow is more likely from access chambers than a pumping station if the reticulation fills up - no recorded overflows from access chambers;
- Operator cannot recall digging up deep sewers for chokes, roots or repairs;
- Low infiltration - wet weather flows are not high, thunderstorms barely register;
- The reticulation system is in good condition for its age, mostly around 50 years old and 20 years old. Partial camera inspections show intact pipes and joints;
- Some sewers in the small PS4 catchment may intersect a shallow underground stream, but flows are not high in proportion to population.
- An overflow requires long term failure of both pumps downstream.

Pumping stations:

- Flow volumes are calculated from pump run times without accounting for changes in flow rates due to gradual loss of efficiency, periodic overhauls and blockages. Recorded flow volumes therefore overstate the actual volumes pumped:
 - Increasing run times without rain indicate slowly declining pump efficiency and eventually triggers a service;
 - Temporary high run times indicate a rag jamming a non-return valve open with sewage draining back and re-pumped (recycling, no extra sewage);
 - Spikes in pump start frequency and normal run times can indicate a rag over the probe causing frequent starts and stops (eg. PS4 early Nov 2007);
 - Small pump stations show relatively bigger data spike anomalies.
- Low overflow risk - wet well tops are above access chambers, esp. PS1, PS2, PS3.

Infiltration does not appear to be a significant issue based on analysis of the four years of data available from a period of drought with occasional storms to increase flows:

- Increases of Peak Wet Weather Flow (PWWF), over Average Dry Weather Flow (ADWF) are within reasonable tolerances in that period;
- Thunderstorms rarely produce significant spikes in pumping times;
- There is generally low sensitivity to small or isolated storms;
- A wet week with falls up to 25mm increased PS1 run time from 2.1 to 3.61 hours on 30 June 2005, 1.7 times ADWF of 0.7 ML/d (or increase to 15% of capacity);
- PWWF multipliers for the older PS1 and PS2 systems were reasonable at 3.4 to 4.0. PWWF multipliers for newer PS3 and PS4 systems were low at 2.2 to 2.3

PS1 readings up to 2.517 ML/day in October 2005 and 2.788 in November 2005 coincided with rain and a run in the Bogan River. PS2, PS3 and PS4 are further from the river and had smaller rises. A high river possibly influences the PS1 catchment.

However, a few hours after forwarding a draft of the report on 21st December 2007 with the above analysis, the most severe storm in memory became the likely worst case for PWWF. Unusually intense rain for 20 minutes was followed by showers for the next day.

PS1 pump run in the following 24 hours is estimated as 11.6 hours, including 7.2 of the first 8 hours and 4.4 of the next 16 hours. A new access chamber at the new hospital site was submerged, contributing extra flow, and should be raised.

PS1 run times were high for the next 2 weeks (average 5.05 hours for rest of the first week and 4.17 hours for second week). This period saw little rain but a high river. The other pumping stations quickly dropped back to normal flows, supporting the thought that a high river influences the PS1 catchment.

- PS2 ran for 6.9 hours – new PWWF multiplier is 4.1;
- PS2 dropped to 4.6 hours a day later and then back to normal – quick recovery, no delayed ground inflow;
- PS3 ran for 5.7 hours. Previous week average with drought and water restrictions was 1.3 hours, but 4 years average is 1.96 hours. New PWWF multiplier is 2.9;
- PS4 ran for 4.14 hours, then 1.42 next day and then slightly below average for the holiday period. Local sheet flooding may have overtopped the wet well for a few minutes. new PWWF multiplier is 5.2;
- PS4 – new access chambers in subdivision – check if submerged.

Sewage Treatment Works:

- Occasional high wet weather flow increases the discharge of treated effluent briefly to Box Cowal and reduces detention time, but there is spare capacity. Eg. in the week 11 - 17 June 2005 (same as PS1 eg. above) inflow increased 0.6ML, 0.7ML rain fell onto lagoons, less evaporation, and outflow increased 1.7ML;
- Low wet weather multiplier. Over 2003 - 2007, rain falls did not significantly increase sewage inflows - typically less than 1.5 times normal. The highest increase was 2.4 times. The data can be improved when a wetter season occurs;

- No bypass around the STW, therefore no overflow of untreated sewage;
- Discharge of partially treated effluent is limited to rare extreme rain events.

Overflow monitoring data is summarised in the following table.

Table 2 – Overflow occurrences 2006/7:

Component	Dry weather overflows	Wet weather overflows
Reticulation PS1 per 100km	0	0
Reticulation PS2 per 100km	0	0
Reticulation PS3 per 100km	0	0
Reticulation PS4 per 100km	0	0
PS1	0	0
PS2	0	0
PS3	0	0
PS4	0	0
Designed overflow retic	Not applic, not designed	Not applic, not designed
Sewage treatment works	N/A	1 high treated effluent discharge reported #

Further investigation reveals that the high discharge reported in the July 2006 annual return is not consistent with other data – the 20mm of rain did not cause a spike in flows at any pumping stations. Strong winds some times push more treated effluent out.

A qualitative assessment of the likelihood of overflows uses the following table. Further assessment is only necessary if circumstances change. Eg. if any overflows are recorded.

Table 3 – Classification of likelihood of overflow occurrence:

Level	Classification	Description
A	Almost certain	The event is expected to occur in most circumstances. Eg: – overflows have occurred numerous times a year, and/or – overflow rate is well above benchmark average
B	Likely	The event will probably occur in most circumstances. Eg: – overflows have occurred a few times a year, and/or – overflow rate is above benchmark average
C	Moderate	The event should occur at some time. Eg: – overflows have occurred at least once year, and/or – overflow rate is around the benchmark average
D	Unlikely	The event could occur at some time. Eg: – overflows have been recorded once, and/or – overflow rate is below the benchmark average
E	Rare	The event may occur only in exceptional circumstances. Eg: – overflows have not been recorded, and/or – overflow rate is well below benchmark average

Table 4 - Assessment of the likelihood of overflows:

Component	Likelihood of overflows in dry weather	Likelihood of overflows in wet weather
Catchment 1	E	E
Catchment 2	E	E
Catchment 3	E	E
Catchment 4	E	E
Sewage pumping station 1	E	E
Sewage pumping station 2	E	E
Sewage pumping station 3	E	E
Sewage pumping station 4	E	E
Sewage Treatment Works	n/a	C now, E from March 2008

6. Assessment of public health and environmental impacts

Public health and environmental impacts of sewage overflows are assessed:

- Reticulation system - split into catchments defined by pumping stations and age.
- For significant structural elements - assess impacts near overflow relief structures:
 - Designed overflow points – there are none;
 - Pump stations – there are none, access chambers overflow first;
 - STW – existing discharge to Box Cowal, but change to re-use from 2008.

An extreme rain event causing an overflow would greatly increase dilution.

Pumping Station 1

The available storage requires a storm to cause an overflow. An overflow in the PS1 catchment may potentially move toward the lower weir pool. An assessment would be required as to whether the diluted overflow is best kept inside the levee by closing flood gates if the river is below 3.30m or let run out to avoid backing up into the urban area.

The gates are closed for river heights above 3.30m. Stormwater is pumped over the levee. A sewage overflow would be highly diluted in the river - better than sitting in the drain.

Between 3.00 and 3.30m the gates are left open despite some flood flow inward up the channels, to allow local storm flows to escape as the pumps would be slower.

Pumping Station 2

A PS2 overflow would run east and north to Pangee and Hoskins Streets intersection and then easterly toward the GHA silos and levee culverts, away from the river.

Connection to the river would require a severe storm that had to be pumped over the levee, coinciding with something like a repeat of the 1990 flood. Dilution would be very high.

Pumping Station 3



A PS3 overflow has a long surface drainage path to fenced modified bushland within the flood levee. The 21st December 2007 storm raised the lagoon level and pooled runoff in undeveloped low areas upstream to within a town block of PS3. A severe storm shortens the flow path to that temporary standing water but increases dilution.

Pumping Station 4

A PS4 overflow has a long surface drainage path to bushland within the flood levee.

A drainage soakage pit adjacent to PS4 usually has some water in it. This is associated with a shallow sandy prior stream that crosses the north east corner of the town. Soakage is slow, taking several days after a storm to drop the water level.

In a rare severe storm event like 21st December 2007, the soakage pit and its inflow channel fill up and the storm water overflows into a slightly higher channel. It runs north along Derrybong and Hoskins Streets to Jubilee Street and a low lying area in grazed light bushland. This low area is undeveloped and might be a swamp if there was more rainfall.

A second drainage path runs north between houses across Merilba Street, sits in low areas near some houses between Merilba St, Jubilee St and Hospital Road and gradually drains away afterward. This area acts as a natural detention basin. Again, dilution would be high.

Table 5 below describes the potential impacts on the environment if an overflow occurs.

Table 5 - Information on the environment potentially affected by overflows:

Consideration	Information available
Peak flow rates, pipe size and response time which may assist in estimating sewer overflow volumes	Some data available.
Flow rates and water volumes of affected waterways to assist in determining the impact of overflows	Lower Weir pool – usually still water, approx 200 ML, long path to reach it, high dilution. Bogan River downstream - usually dry, floods pick up treated effluent in Box Cowal at 3.30m on gauge, but high dilution. Not applicable from 2008. Lagoon, Terrangion St – no data, 700m to PS3.
Water quality and aquatic ecosystems	Minimal data available – possible endangered river snail in weir pool. See 'Review of Aquatic Environmental Factors Bogan River weirpools at Nyngan' by EA Systems.
Ground water	No known effect. Possible ingress to (prior stream) shallow aquifer in PS4 area by sewers, or soak hole with high dilution & filter by sediments.
Shellfish-growing areas	Not applicable.
Flow characteristics of receiving water bodies, e.g. flow rates for watercourses, flooding data	Bogan River - normally dry, 15 flows from 1996 to 2007, 0–3 flows per year, 0 – 195 days, average one per year & approx 50 days. Occasional floods (SES flood plan), last significant flood in 1992.
Urban bushland areas potentially affected by sewer overflows, including any rare or endangered communities or species	PS3 - small catchment, flat terrain, 400m to urban bushland off Dandaloo St modified by grazing. PS4 - 1700m to modified bushland Jubilee St but drainage operates only in major storms.
Archaeology or heritage	No impact.
Aquatic recreational areas, e.g. popular bathing areas	Lower Weir Pool is used for bathing, fishing and skiing.
Land-based recreational areas likely to be affected by overflows, e.g. sporting fields	Frank Smith Oval (2 ovals), 500m via urban bushland from PS3. No impact. Rain stops sports. Lagoon flooded 21/12/07, ovals ok, high dilution.
Other potential high public health risk exposure areas, e.g. child care centres	PS2 - 50m across road to child care centre, 100m to doctor surgery. Access chambers would overflow before PS2, if 7m deep sewers fill to ground level.
Other sources of pollution, e.g. point sources, urban stormwater	Much urban stormwater lies on flat terrain to evaporate or soak away. No underground drainage to accelerate disposal. Light service industry only.
Climatic data, particularly rainfall patterns	Hot, dry & short localised thunderstorms. Drought reducing rain average from 441.7 mm/year. Climate change forecast is less rain, more severe events.

For this small system, the limited data available is supplemented by engineering judgement. This information is used in the qualitative assessment of the public health and environmental impacts of overflows, in accordance with the following table.

Table 6 - Assessment of public health and environmental impacts of overflows:

Level	Classification	Description
1	Insignificant	The overflow is extremely unlikely to drain to a local sensitive environment* and <ul style="list-style-type: none"> • where the overflow reaches waters, the volume of sewage likely to enter the waterway is insignificant with regard to the volume and flow of receiving waters, or • where the overflow reaches land, it is likely to be contained in an area with little chance of public exposure within the maximum response time**.
2	Minor	The overflow is extremely unlikely to drain to a local sensitive environment* and <ul style="list-style-type: none"> • where the overflow reaches waters, the volume of sewage likely to enter the waterway may be significant with regard to the volume and flow of receiving waters, or • where the overflow reaches land, it is likely to be contained in an area where public exposure is minimal given the maximum response time**.
3	Moderate	The overflow is unlikely to drain to a local sensitive environment* and <ul style="list-style-type: none"> • where the overflow reaches waters, the volume of sewage likely to enter the waterway is significant with regard to the volume and flow of receiving waters, or • where the overflow reaches land, it may travel to an area where public exposure is low within the maximum response time**.
4	Major	The overflow is likely to drain to a local sensitive environment* and <ul style="list-style-type: none"> • where the overflow reaches waters, the volume of sewage likely to enter the waterway is high with regard to the volume and flow of receiving waters, or • where the overflow reaches land, the public exposure risk is likely given the maximum response time**.
5	Catastrophic	The overflow is likely to drain to a local sensitive environment* and <ul style="list-style-type: none"> • where the overflow discharges to waters, the volume of sewage likely to enter the waterway is high with regard to the volume and flow of receiving waters, or • where the overflow discharges to land, the public exposure risk is high given the maximum response time**.

* Table 7 - A 'sensitive' environment includes:

Sensitive environment category	Is it applicable?
Drinking water catchment	No – water storage is upstream of town
Domestic groundwater source	No – some bores in shallow aquifer not suitable for potable supply due to potential for contamination from many urban sources.
Shellfish-growing area	No
Protected water bodies, ecological communities or conservation areas defined by legal and non-legal instruments, such as local environmental plans (LEPs), State environmental planning policies (SEPPs), national parks, world heritage parks, and Class P or Class S waters	No
Waterways used for primary contact recreation	Yes – (PS1) surface runoff from town to the Lower Weir Pool
A recreational area or other area with high public exposure or associated health risk	No

** Maximum response time is based on the length of time taken for detection of the overflow, or for the overflow to be reported, and the time taken for an operator to attend the site and secure against public contact. Operators are rostered for 24/7 availability.

Table 8 - Any other relevant information:

Information type or source	Is any information available?
Are there any water quality studies demonstrating environmental impacts from sewer overflows?	No – no reticulation overflows. Occasional high treated effluent flow to licensed discharge point.
Is there any other information identifying a link b/n sewage pollution and a public health or environmental impact?	No – nil occurrences

Table 9 - Assessment of the impacts of overflows:

Impact	Public health and/or environmental risk
Catchment 1	1
Catchment 2	1
Catchment 3	1
Catchment 4	1
Sewage pumping station 1	1
Sewage pumping station 2	1
Sewage pumping station 3	1
Sewage pumping station 4	2
Sewage Treatment Works	1

7. Risk Analysis

The following table is used to assess the level of risk, using a matrix of the assessment of the likelihood of overflows and their potential impacts.

Table 10 – Risk assessment matrix:

LIKELIHOOD	IMPACTS				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Almost certain (A)	Significant	Significant	High	High	High
Likely (B)	Moderate	Significant	Significant	High	High
Moderate (C)	Low	Moderate	Significant	High	High
Unlikely (D)	Low	Low	Moderate	Significant	High
Rare (E)	Low	Low	Moderate	Significant	Significant

Table 11 - Resulting levels of risk:

Component	Dry-weather risk	Wet-weather risk
Catchment 1	Low	Low
Catchment 2	Low	Low
Catchment 3	Low	Low
Catchment 4	Low	Low
Sewage pumping station 1	Low	Low
Sewage pumping station 2	Low	Low
Sewage pumping station 3	Low	Low
Sewage pumping station 4	Low	Low
Sewage Treatment Works	Low	Low

8. Management actions

There are no new priority actions required for the low level of risk of sewage overflows or need to gather more detailed data, although system management can be refined.

Structural actions - planned or underway:

- Relocate the treated sewage effluent discharge point in March 2008 from Box Cowal to storage inside the flood levee at the airport for irrigation re-use. Agreed in PRP 101 of the Environment Protection Licence. Discharge overflows to cease;
- Programmed renewal of assets as per Strategic Business Plan, establish reserve;

Structural actions – potential (subject to cost and feasibility for the low overflow risk):

- Install flow meters in rising mains to improve measurement and reporting;
- Consider installing telemetry to support the alarms.
- Investigate purchasing suitable bypass pump(s) if there are none readily available.

New development is unlikely to need downstream system augmentation, as the STW and pumping stations have spare capacity. Developers should pay for new add-on systems.

The low overflows risk potential can be managed by non-structural management practices, including routine procedures and work practices using existing resources such as:

- Daily checks of pumping stations - find a problem before it becomes an issue;
- Periodic servicing and refurbishment of pumps, triggered by increased run times;
- Immediate response to reports of alarms, sewer chokes and other failures.

There is spare system capacity to manage an emergency to avoid an overflow. In the flat terrain, the whole upstream catchment reticulation would fill over a few days before overflows occur from access chambers, even with rain. This provides time to fix the problem, but the sewage may need to be pumped out to avoid septicity and odour problems. Depending on the scope of the problem, options to consider include:

- Short term pumping into tankers for transport to the STW or PS1;
- Temporary bypass pump from pumping station or nearby access chamber, and cut a tee and valve into the rising main (if not pre-placed);
- Temporary bypass pump between access chambers either side a sewer blockage;
- Emergency water restrictions.

Although unlikely to occur, if it does, an overflow plume would spread in the vicinity, potentially impacting on nearby residents. The extreme rain needed in most scenarios to generate the overflow increases dilution and in those cases plume destinations are lightly populated on the fringes of the urban area, including at levee outlets where gates add control options.

If a sewer blockage occurs high in the catchment in dry weather, an overflow can be contained in a small area with earth banks for example.

Preventative works to reduce overflow impacts are unnecessary in consideration of the low risk, large system storage capacity relative to catchment populations, quick response to alarms or reports, and routine daily checks. It would be impractical with many potential overflow sites in the flat terrain.

Other management practices that can be maintained or improved include:

- Implement a more formal asset management program, including:
 - A program for more regular cleaning of sewers with the 'Watersnorter';
 - Periodic CCTV camera inspections;

- Repair faulty pipes when they start occurring as the system ages, unless depth makes it more feasible to save up a batch for trench less methods;
 - Repair or replace access chambers, as necessary to spread budget impact;
 - Improve record keeping and collation for reporting and trend analysis;
- Ongoing staff training and refresher training - operations and maintenance, system planning, new connection inspection procedures, and multi-skilling;
- Develop a trade waste management plan and agreements (if the cost is financially justified, or by government direction);
- Investigate if there is scope for reducing infiltration - test for stormwater cross connections and groundwater infiltration when there is heavy rain in a wet season;
- Continue control of new connections to the sewerage system:
 - Council supervision - do not accept substandard new connections;
 - Establish clear guidelines for design, construction, inspection and testing of new systems;
 - Prohibiting stormwater connections;
 - Inspect down pipes and exterior gully traps if suspect cross connections;
 - For significant development that will expand the system and /or intensify flows, consider the potential to create overflow problems;
 - New pumping stations must discharge into the PS1 catchment, not "piggy back" onto another pumping station, to minimise odours from ageing sewage and avoid overloading smaller systems.
- Educate the public about illegal connections and not dumping chemicals, oils, solid wastes like nappies, etc down the sewer, to reduce volumes, minimise chokes, avoid damage to pipes or pumps, and minimise hazardous content if an overflow occurs.

APPENDIX 2 - ENVIRONMENT PROTECTION LICENCE

Section 55 Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 3298



<u>Licence Details</u>	
Number:	3298
Anniversary Date:	09-June

<u>Licensee</u>
BOGAN SHIRE COUNCIL
PO BOX 221
NYNGAN NSW 2825

<u>Premises</u>
NYNGAN SEWAGE TREATMENT WORKS
CANONBAR ROAD
NYNGAN NSW 2825

<u>Scheduled Activity</u>
Sewage Treatment

<u>Fee Based Activity</u>	<u>Scale</u>
Sewage treatment processing by small plants	> 100-219 ML discharged

<u>Region</u>
North West - Dubbo
48-52 Wingewarra Street
DUBBO NSW 2830
Phone: (02) 6883 5330
Fax: (02) 6884 8675
PO Box 2111 DUBBO
NSW 2830

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

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The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

BOGAN SHIRE COUNCIL
PO BOX 221
NYNGAN NSW 2825

subject to the conditions which follow.

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1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Sewage Treatment	Sewage treatment processing by small plants	> 100 - 219 ML discharged

A1.2 The objectives of this licence are to:

- a) prevent as far as practicable sewage overflows and sewage treatment plant bypasses;
- b) require proper and efficient management of the system to minimise harm to the environment and public health; and
- c) require practical measures to be taken to protect the environment and public health from sewage overflows and sewage treatment plant effluent.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
NYNGAN SEWAGE TREATMENT WORKS
CANONBAR ROAD
NYNGAN
NSW 2825
LOT 41 DP 848853

A2.2 The premises also includes the reticulation system owned and operated by the licensee that is associated with the sewage treatment plant(s) identified in condition A2.1.

A2.3 The premises also includes the land on which the effluent storage pond is located at Lot 2 DP827132.

A2.4 The premises also includes the irrigation area located at the Airport identified as Lot 2, DP222408. This area is for use during an emergency or unforeseen circumstances resulting in the inability to utilise property Laravoulta.

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence

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application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

- P1.1 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.
- P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to waters	Discharge to waters	"Existing discharge point 1" as shown on map entitled "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11, DOC11/31622. Point identified as EDP1 on map reference grid. This is the discharge point to the 40 ML effluent storage dam near the airport.
2	Discharge to land	Discharge to land	Discharge point at centre of Pivot on property Laravoulta shown on map as "New discharge point 2" as shown on map entitled "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11. Point identified as NDP2 on map reference grid.
3	Monitoring Point		Groundwater monitoring bore adjacent to irrigation area labelled "Monitoring Point 3" as shown on map "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11. Point identified as MP3 on map reference grid.

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4	Groundwater Monitoring Point	Groundwater monitoring bore adjacent to irrigation area labelled 'Monitoring Point 4' on map "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11. Point identified as MP4 on map reference grid.
5	Groundwater Monitoring point	Groundwater monitoring bore adjacent to irrigation area labelled 'Monitoring Point 5' as shown on map titled "Bogan Shire Council, Nyngan Reuse Scheme" on 8/7/11. Point identified as MP5 on map reference grid.
6	Groundwater Monitoring point	Groundwater monitoring bore located within stage 2 irrigation area and effluent storage pond. Shown as 'Monitoring Point 6' on map "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11. Point identified as MP6 on map reference grid.
7	Groundwater Monitoring point	Groundwater monitoring bore (control) located away from irrigation and effluent storage areas to monitor background conditions. Identified on map "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11. Point identified as MP7 on map reference grid.
8	Soil monitoring point	Airport irrigation area. Shown as 'Monitoring Point 8' on map "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11. Point identified as MP8 on map reference grid.
9	Soil monitoring point	Airport irrigation area. West of discharge point 1. Shown as 'Monitoring Point 9' on map "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11. Point identified as MP9 on map reference grid.
10	Soil monitoring point	Control point located outside of Airport irrigation area to the NNE of discharge point 1. Shown as 'Monitoring Point 10' on map "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11. Point identified as MP10 on map reference grid.

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11	Soil monitoring point		Within irrigated area on property Laravoulta. SSE of discharge point 2. Shown as 'Monitoring Point 11' on map "Bogan Shire Council, Nyngan Reuse Scheme" on 16/06/11. Point identified as MP11 on map reference grid.
12	Soil monitoring point		Within irrigated area on property Laravoulta. North of discharge point 2. Shown as 'Monitoring Point 12' on map "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11. Point identified as MP12 on map reference grid.
13	Soil monitoring point		Soil control point located outside irrigation area on property Laravoulta. NE of discharge point 2. Shown as 'Monitoring Point 13' on map "Bogan Shire Council, Nyngan Reuse Scheme" on 8/07/11. Point identified as MP13 on map reference grid.
14	Surface Water Runoff		Monitoring Point located within 'Runoff control Basin' shown as 'Monitoring Point 14' on map 'Bogan Shire Council - Nyngan Reuse Scheme' dated 8/07/11. Point identified as MP14 on map reference grid.
15	Inflow Monitoring	Inflow Monitoring	Discharge point of effluent entering the Sewerage Treatment ponds.

3 Limit Conditions

L1 Pollution of waters

- L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.
- L1.2 The licensee may only discharge untreated or partially treated sewage from the sewage treatment plant and/or the reticulation system subject to the conditions of this licence, including O1 and O2.

L2 Concentration limits

- L2.1 For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.
- L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

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L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.

L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Biochemical oxygen demand	milligrams per litre				30
Faecal Coliforms	colony forming units per 100 millilitres				200
Nitrogen (ammonia)	milligrams per litre				5
Nitrogen (total)	milligrams per litre				15
Oil and Grease	milligrams per litre				10
pH	pH				6.5-8.5
Phosphorus (total)	milligrams per litre				10
Total suspended solids	milligrams per litre				30

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L3.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.

L3.3 The licensee may receive and/or transfer sewage and Group C waste generated outside the premises for treatment, processing or reprocessing at the premises. The licensee must take reasonable steps to ensure that sewage received at the premises has been lawfully discharged in accordance with a trade waste agreement or customer contract (as applicable) in force between the licensee and the generator of

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the waste. The licensee must treat, process or reprocess the sewage and Group C waste in accordance with this licence prior to discharge from the premises.

- L3.4 The licensee may receive, store, treat, process or reprocess and/or transfer at the premises sewage products generated or stored outside the premises by the licensee's other sewage treatment systems. Sewage products must be received, treated, processed or reprocessed in accordance with this licence.

L4 Potentially offensive odour

- L4.1 No condition in this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997 provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

- O1.1 Licensed activities must be carried out in a competent manner.
This includes:
- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
 - b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

Note: The requirements of O1.1 apply to the whole of the premises, including the reticulation system.

- O1.2 Biosolids at the premises must be stored, treated, processed, classified, transported and disposed in accordance with the Biosolids Guidelines, or as otherwise approved in writing by the EPA.

- O1.3 This condition applies to the reuse or disposal of biosolids by the licensee at locations other than the premises.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- a) must be maintained in a proper and efficient condition; and
 - b) must be operated in a proper and efficient manner.

Note: The requirements of O2.1 apply to the whole of the premises, including the reticulation system.

- O2.2 For the purposes of this condition, "plant and equipment" includes drainage systems, infrastructure,

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pollution control equipment and fuel burning equipment, but does not refer to equipment which has been decommissioned but is still on site.

O3 Effluent application to land

- O3.1 The quantity of effluent applied to the utilisation area(s) must not exceed the capacity of the utilisation area(s) to effectively utilise the effluent. For the purpose of this condition, "effectively utilise" includes the ability of the soil to absorb the nutrient, salt and hydraulic loads and the applied organic material without causing harm to the environment.
- O3.2 Effluent application to the utilisation area(s) must not occur in a manner that causes surface run-off from the utilisation area(s).
- O3.3 Spray from the effluent application to the utilisation area(s) must not drift beyond the boundary of the utilisation area(s) to which it has been applied.
- O3.4 Livestock access to any effluent application area must be denied during effluent application and until the applied effluent area had dried.
- O3.5 Adequate notices, warning the public not to drink or otherwise use the treated effluent, must be erected on the site. These notices must be legible English and in any other languages as may be necessary, and must indicate at least that the water in use is "Reclaim Water - Unfit for Drinking".
- O3.6 Effluent liquid waste pipelines and fittings must be clearly identified. Standard watertaps, hoses and valves must not be fitted to the pipelines of the effluent system. The effluent system must not be connected to other pipelines. Lockable valves or removable handles must be used where there is public access to the effluent.

O4 Emergency response

- O4.1 In the event of an overflow or bypass that harms or is likely to harm the environment, the licensee must use all practicable measures to minimise the impact of the overflow or bypass on the environment and public health. These measures are to be implemented as soon as practical after the licensee or one of the licensee's employees or agents becomes aware of the overflow or bypass.

O5 Processes and management

- O5.1 The licensee must ensure that any extensions to the reticulation system after 1 January 2004 are planned, designed, constructed and installed to prevent as far as practicable overflows from the premises.

Note: "The premises" includes both the new and the previously existing parts of the sewage treatment system.

O6 Other operating conditions

- O6.1 The licensee must not enter into any trade waste agreement to discharge organophosphate pesticides

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(including chlorpyrifos, diazinon, malathion) into the sewerage system.

O6.2 Prohibition on acceptance of pesticides

The licensee must not consent to any discharge of organochlorine pesticides (such as dieldrin, heptachlor and chlordane) into the sewerage system.

O6.3 Dry weather overflows resulting in pollution of waters from any sewage pumping station(s) installed within the sewage treatment system are not permitted.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

- a) in a legible form, or in a form that can readily be reduced to a legible form;
- b) kept for at least 4 years after the monitoring or event to which they relate took place; and
- c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- a) the date(s) on which the sample was taken;
- b) the time(s) at which the sample was collected;
- c) the point at which the sample was taken; and
- d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Biochemical oxygen demand	milligrams per litre	Quarterly	Grab sample
Nitrogen (total)	milligrams per litre	Quarterly	Grab sample
Oil and Grease	milligrams per litre	Quarterly	Grab sample
Phosphorus (total)	milligrams per litre	Quarterly	Grab sample

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Total suspended solids	milligrams per litre	Quarterly	Grab sample
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POINT 3,4,5,6,7

Pollutant	Units of measure	Frequency	Sampling Method
Calcium	milligrams per litre	Quarterly	Representative sample
Conductivity	millisiemens per centimetre	Quarterly	In situ
Magnesium	milligrams per litre	Quarterly	Representative sample
Nitrate	milligrams per litre	Quarterly	Representative sample
pH	pH	Quarterly	Representative sample
Potassium	milligrams per litre	Quarterly	Representative sample
Sodium	milligrams per litre	Quarterly	Representative sample
Sodium Adsorption Ratio	milligrams per litre	Quarterly	Representative sample
Standing Water Level	metres	Monthly	In situ
Thermotolerant Coliforms	colony forming units per 100 millilitres	Quarterly	Representative sample
Total Phosphorus - filtered sample	milligrams per litre	Quarterly	Representative sample

POINT 8,9,10

Pollutant	Units of measure	Frequency	Sampling Method
Available phosphorus	milligrams per kilogram	Special Frequency 2	Special Method 1
Cation Exchange Capacity	centimoles of positive charge per kilogram of soil	Special Frequency 2	Special Method 1
Conductivity	millisiemens per centimetre	Special Frequency 2	Special Method 1
Exchangeable aluminium	centimoles of positive charge per kilogram of soil	Special Frequency 2	Special Method 1
Exchangeable calcium	centimoles of positive charge per kilogram of soil	Special Frequency 2	Special Method 1
Exchangeable magnesium	centimoles of positive charge per kilogram of soil	Special Frequency 2	Special Method 1
Exchangeable potassium	centimoles of positive charge per kilogram of soil	Special Frequency 2	Special Method 1
Exchangeable sodium	centimoles of positive charge per kilogram of soil	Special Frequency 2	Special Method 1
Exchangeable sodium percentage	percent	Special Frequency 2	Special Method 1
Nitrogen (total)	milligrams per kilogram	Special Frequency 2	Special Method 1
Organic carbon	percent	Special Frequency 2	Special Method 1
pH	pH	Special Frequency 2	Special Method 1
Phosphorus (total)	milligrams per kilogram	Special Frequency 2	Special Method 1
Phosphorus Sorption Capacity	milligrams per kilogram	Special Frequency 2	Special Method 1

POINT 11,12,13

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Pollutant	Units of measure	Frequency	Sampling Method
Available phosphorus	milligrams per kilogram	Special Frequency 1	Special Method 1
Cation Exchange Capacity	centimoles of positive charge per kilogram of soil	Special Frequency 1	Special Method 1
Conductivity	millisiemens per centimetre	Special Frequency 1	Special Method 1
Exchangeable aluminium	centimoles of positive charge per kilogram of soil	Special Frequency 1	Special Method 1
Exchangeable calcium	centimoles of positive charge per kilogram of soil	Special Frequency 1	Special Method 1
Exchangeable magnesium	centimoles of positive charge per kilogram of soil	Special Frequency 1	Special Method 1
Exchangeable potassium	centimoles of positive charge per kilogram of soil	Special Frequency 1	Special Method 1
Exchangeable sodium	centimoles of positive charge per kilogram of soil	Special Frequency 1	Special Method 1
Exchangeable sodium percentage	centimoles of positive charge per kilogram of soil	Special Frequency 1	Special Method 1
Nitrogen (total)	milligrams per kilogram	Special Frequency 1	Special Method 1
Organic carbon	percent	Special Frequency 1	Special Method 1
pH	pH	Special Frequency 1	Special Method 1
Phosphorus (total)	milligrams per kilogram	Special Frequency 1	Special Method 1
Phosphorus Sorption Capacity	milligrams per kilogram	Special Frequency 1	Special Method 1

POINT 14

Pollutant	Units of measure	Frequency	Sampling Method
BOD	milligrams per litre	Special Frequency 3	Grab sample
Conductivity	millisiemens per centimetre	Special Frequency 3	Grab sample
Nitrogen (total)	milligrams per litre	Special Frequency 3	Grab sample
pH	pH	Special Frequency 3	Grab sample
Phosphorus (total)	milligrams per litre	Special Frequency 3	Grab sample
Thermotolerant Coliforms	colony forming units per 100 millilitres	Special Frequency 3	Grab sample

POINT 15

Pollutant	Units of measure	Frequency	Sampling Method
Volume	kilolitres	Continuous	In line instrumentation

M2.3 For the purposes of the table(s) above:

M2.4 Special Frequency 1 means annual surface samples; and at each tri-annual anniversary samples should also include sub-soil sampling using Special Method 1.

M2.5 Special Frequency 2 means the application of Special Frequency 1 when the airport site is utilised for

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irrigation.

M2.6 Special Frequency 3 means following a rainfall event with the trigger point being when any of the Runoff Collection Basins overflow.

M2.7 Special Method 1 means:

- Annual surface sampling obtaining a minimum of 25 sub samples to form a composite across an area 50 meters in radius from each of the soil reference points. Sample depth will be 0mm - 150mm.
- Tri-annual sampling obtaining a minimum of 25 sub samples to form a composite across an area 50 meters in radius from each of the soil reference points. Sample depth will be 150mm, plus sub-soil sampling at each reference point to a depth of 1.5 metres. Samples are to be collected from each key soil horizon or nominally at 1 to 150 mm (surface composite), 150 to 600 mm and 600 to 1200 mm.

M3 Testing methods - concentration limits

M3.1 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:

- a) the date and time of the complaint;
- b) the method by which the complaint was made;
- c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- d) the nature of the complaint;
- e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a

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complaints line so that the impacted community knows how to make a complaint.

- M5.3 The preceding two conditions do not apply until 3 months after:
- a) the date of the issue of this licence or
 - b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.
- M5.4 For the purpose of condition M5.1, operating hours are defined as twenty-four hours a day, seven days a week.
- M5.5 The public notification referred to in condition M5.2 must include specific reference to the fact that the complaints line may be used by the community for the reporting of overflows.

M6 Requirement to monitor volume or mass

- M6.1 In the event that the licensee cannot comply with a volume monitoring method as required by this licence solely due to the failure or malfunction of essential monitoring equipment, volume may be estimated using another agreed method approved in writing by the EPA. This provision only applies for the duration of the failure or malfunction. The licensee is to rectify the failure or malfunction as soon as practicable.
- M6.2 The licensee must:
- a) submit in writing to the EPA a proposal for a method of volume estimation; or
 - b) use a method of volume estimation already approved in writing by the EPA,
- to be used in the event that essential monitoring equipment referred to in the previous condition has failed or malfunctioned.

M7 Requirement to record overflow or bypass incidents

- M7.1 The licensee must record the following details in respect of each bypass of any of the appropriate treatment processes required by condition O3 which may be reasonably expected to adversely affect the quality of the final discharge:
- a) the EPA point identification number through which the bypass discharged;
 - b) the date, estimated start time and estimated duration of the bypass;
 - c) the estimated volume of the bypass;
 - d) the level of treatment of the sewage at the STP prior to discharge;
 - e) the probable cause of the bypass;
 - f) any actions taken to stop the bypass happening; and
 - g) any actions taken to prevent the bypass happening again.
- M7.2 From 31 October 2003 the licensee must record the following details in relation to each observed or reported overflow from the reticulation system and from the sewage treatment plant:
- a) the location of the overflow;

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- b) the date, estimated start time and estimated duration of the overflow;
- c) the estimated volume of the overflow;
- d) a description of the receiving environment of the overflow;
- e) classification as a dry or wet weather overflow;
- f) the probable cause of the overflow;
- g) any actions taken to stop the overflow happening;
- h) any actions taken to clean up the overflow; and
- i) any actions taken to prevent the overflow happening again.

M8 Other monitoring and recording conditions

M8.1 Biosolids at the premises must be recorded, monitored and classified in accordance with the Biosolids Guidelines, to the extent that those Guidelines are applicable, or as otherwise approved in writing by the EPA.

Note: This condition does not apply to the reuse or disposal of biosolids by the licensee at locations other than the premises.

M8.2 If biosolids are removed from the premises, the licensee must record the:

- a) date;
- b) estimated weight of biosolids;
- c) identity of the person removing biosolids.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

R1.3 Where this licence is transferred from the licensee to a new licensee:

- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or

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b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

- a) the licence holder; or
- b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.8 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

- a) where this licence applies to premises, an event has occurred at the premises; or
- b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

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- a) the cause, time and duration of the event;
- b) the type, volume and concentration of every pollutant discharged as a result of the event;
- c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
- d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Notification of bypass or overflow incidents

R4.1 Where either:

- a) sewage or partially treated sewage is discharged from the premises as a result of a bypass of the sewage treatment plant, or
- b) an observed or reported overflow has occurred from the reticulation system, and overflow or bypass may pose a risk to public health, the licensee is to promptly give appropriate notification to any parties that are likely to be affected, including:
 - i) the potentially affected community;
 - ii) the Department of Health;
 - (iii) Other parties as identified in, and in accordance with, the incident Notification Protocol prepared by Bogan Shire Council dated 28 July 2004.

R5 Annual system performance report

R5.1 The licensee must supply to the EPA an Annual System Performance Report not later than 60 days after the end of each reporting period.

R5.2 The report is to supplement the Annual Return and must include but need not be limited to:

- a) the 50 percentile, 90 percentile, 100 percentile and 3DGM values calculated from the monitoring data required by this licence for the reporting period for each pollutant which has corresponding concentration limits specified in this licence;
- b) the total amounts of biosolids, as classified in the Biosolids Guideline, disposed of on-site, off-site and to landfill during the reporting period;
- c) a diagram showing the major process elements, discharge points and monitoring points at the premises' sewage treatment plant(s), where there has been any significant change since the previous reporting period or this information has not been provided previously to the EPA;
- d) the number of dry and wet weather bypasses recorded over the reporting period (recorded in accordance with condition M7);

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- e) a breakdown of the total number of complaints received by the licensee during the reporting period in relation to the premises into categories of "odours – sewage treatment plant", "odours – reticulation system", "water pollution – sewage treatment plant", "water pollution – reticulation system" and any other category indicated by the complaints;
- f) a summary of observed, reported or recorded wet weather overflows and observed, reported or recorded dry weather overflows and sewage treatment plant bypasses. These data are to be for the current reporting period and for the four previous twelve-month periods, for which data has been collected. Any significant actions taken to address bypasses or overflows are to be noted;
- g) the amount of rainfall measured at a rain gauge at the STP, or at the rain gauge closest to the centre of the catchment of the sewage treatment system, for each month of the reporting period; and
- h) a brief progress report on the implementation over the reporting period of actions specified in PRP100.

R5.3 The licensee must supply with the Annual System Performance Report a report, which provides:

- a) an analysis and interpretation of monitoring results and
- b) actions to correct identified adverse trends.

R5.4 The Annual System Performance Report must be presented in a format approved in writing by the EPA.

R5.5 The requirements of R5.2 (d), (e), (f) and (g) apply to the part of the reporting period beginning three months after the date the licence is varied to include this condition.

R6 Other reporting conditions

R6.1 When the licensee notifies the Department of Health or Safe Food NSW Shellfish Quality Assurance Program of a bypass or overflow incident, the licensee must also notify the EPA by telephoning its Pollution Line service on 131 555. Notifications are to be given as soon as practicable after the licensee or one of the licensee's employees or agents becomes aware of the incident, and must include all relevant information including the information required under condition M9.1 or M7.1.

7 General Conditions

G1 Copy of licence kept at the premises or plant

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Note: For the purposes of this condition, "the premises" refers to each Sewage Treatment Plant(s) described in condition A2.1.

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G2 Contact number for incidents and responsible employees

- G2.1 The licensee must operate 24-hour telephone contact lines for the purpose of enabling the EPA to directly contact one or more representatives of the licensee who can:
- a) respond at all times to incidents relating to the premises; and
 - b) contact the licensee's senior employees or agents authorised at all times to:
 - i) speak on behalf of the licensee; and
 - ii) provide any information or document required under this licence.
- G2.2 The licensee is to inform the EPA in writing of the appointment of any subsequent contact persons, or changes to the person's contact details as soon as practicable and in any event within fourteen days of the appointment or change.

G3 Signage

- G3.1 The location of EPA point number(s) 1 must be clearly marked by signs that indicate the point identification number used in this licence and be located as close as practical to the point.

8 Pollution Studies and Reduction Programs

U1 PRP 104 - Preparation Groundwater flow study

- U1.1 Conduct groundwater flow study around irrigation area on property Laravolta to justify groundwater monitoring points.
- U1.2 With reference to PRP outlined above, the licensee must provide the groundwater flow report to the Dubbo Office of the EPA in writing by 31 December 2012.

9 Special Conditions

E1 Special Dictionary

E1.1

Term	Definition
ug/L	Means micrograms per litre.
access chamber	a structure constructed to provide physical access to sewer pipes. Also known as a manhole.
approved	Means approved in writing by the EPA. The EPA's approval may be given unconditionally, or subject to conditions.
Biosolids	Has the same meaning as in Schedule 1, Part 3 of the Protection of the Environment Operations Act 1997.

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Biosolids Guidelines	Means the "Environmental Guidelines: Use and disposal of biosolids products" published by the EPA in October 1997, or any subsequently updated guidelines which replace this publication.
bypass	Means circumstances where sewage has been received at the sewage treatment plant but is discharged from the plant without it being treated, processed or reprocessed by means of any or all of the designed treatment processes of the plant. A new bypass event is defined as a bypass that commences at least 24 hours after the end of the previous bypass.
cfu	Means colony forming units
condition	Means a condition of this licence.
designed overflow structure	Means a designed structure (excluding access chambers) in the reticulation system which operates as a relief to allow sewage to discharge at a planned location or a sewage pumping station, but does not include a bypass from a sewage treatment plant.
designed overflow	Means an overflow from a designed overflow structure.
dry weather bypass	Means a bypass that occurs when the flow rate of sewage at the inflow point of the STP does not exceed the flow rate specified in the conditions of this licence.
dry weather overflow	Means an overflow that is not a wet weather overflow.
dry weather sewage treatment plant discharge	Means a discharge of sewage or effluent from the STP that occurs when the flow rate of sewage at the inflow point of the STP does not exceed the flow rate specified in the conditions of this licence.
effluent	Means sewage that has received all of the designed treatment processes at the sewage treatment plant.
fc	Means faecal coliforms expressed in colony forming units per 100mL.
Group C waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997.
ISO	Means International Standards Organisation.
kL	Means kilolitre.
L/s	Means litres per second.
metal-A	Means the following metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver and zinc.
mL	Means millilitres.
ML	Means megalitres.
offensive odour	Has the same meaning as in the Protection of the Environment Operations Act 1997.
overflow	Is a discharge of untreated or partially treated sewage from the sewage treatment system.
reticulation system	Means that part of the sewage treatment system owned and operated by the licensee which collects and transports sewage to the sewage treatment plant and includes all sewer pipes (whether greater or less than 300mm diameter), sewer rising mains, access chambers, vent shafts, designed overflow structures, sewage ejection units and sewage pumping stations, but does not include the sewage treatment plant.
sewage	Means untreated liquid waste received in the reticulation system.
sewage ejection unit	Is a pump intended to control the transport of sewage from premises normally occupied by no more than 10 persons, or of an average daily flow of sewage not exceeding 2,000 litres through the sewer pipes, where steep hills and other variations in the land topography can prevent or limit the gravity flow of sewage to the sewage treatment plant.

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sewage products	Means any by-product of the treatment processes and includes biosolids, raw sludge, liquid sludge, thickened sludge, digested sludge, screenings and grit.
sewage pumping station (SPS)	Is a structure which controls the transport of sewage through the sewer pipes, where steep hills and other variations in the land topography can prevent or limit the gravity flow of sewage to the sewage treatment plant, but does not include a sewage ejection unit.
sewage treatment plant (STP)	Is a facility at which sewage is stored and treated following delivery from the reticulation system prior to discharge, and includes discharge structures and STP bypass points.
sewage treatment system	Means the reticulation system and the sewage treatment plant used for the transport, treatment and discharge of effluent and sewage.
Trade waste agreements	Means agreements reached between the licensee and industrial and commercial customers to restrict the amount of toxic and other potentially harmful substances discharged to the reticulation system.
TRC	Means total residual chlorine.
waters	Has the same meaning as in the Protection of the Environment Operations Act 1997.
wet weather bypass	Means a bypass that occurs when the flow rate of sewage at the inflow point of the STP equals or exceeds the rate specified in the conditions of this licence.
wet weather overflow	A wet weather overflow is an overflow where the probable cause is rainfall.

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Dictionary

General Dictionary

3DGM (in relation to a concentration limit)	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Terry Knowles

Environment Protection Authority

(By Delegation)

Date of this edition: 19-October-2000

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End Notes

- 1 Licence varied by notice 1012794, issued on 11-Oct-2002, which came into effect on 05-Nov-2002.
- 2 Licence varied by notice 1029502, issued on 02-Oct-2003, which came into effect on 27-Oct-2003.
- 3 EPA Condition ID S40934 amended 13-08-04
- 4 Licence varied by notice 1060383, issued on 24-May-2006, which came into effect on 24-May-2006.
- 5 Licence varied by notice 1065866, issued on 03-Nov-2006, which came into effect on 03-Nov-2006.
- 6 Licence varied by notice 1072745, issued on 23-Oct-2007, which came into effect on 23-Oct-2007.
- 7 Licence varied by notice 1081922, issued on 28-Mar-2008, which came into effect on 28-Mar-2008.
- 8 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 9 Licence varied by notice 1097459, issued on 16-Aug-2010, which came into effect on 16-Aug-2010.
- 10 Licence varied by correction to DECCW Region data record, issued on 28-Jan-2011, which came into effect on 28-Jan-2011.
- 11 Licence varied by notice 1500385 issued on 12-Sep-2012