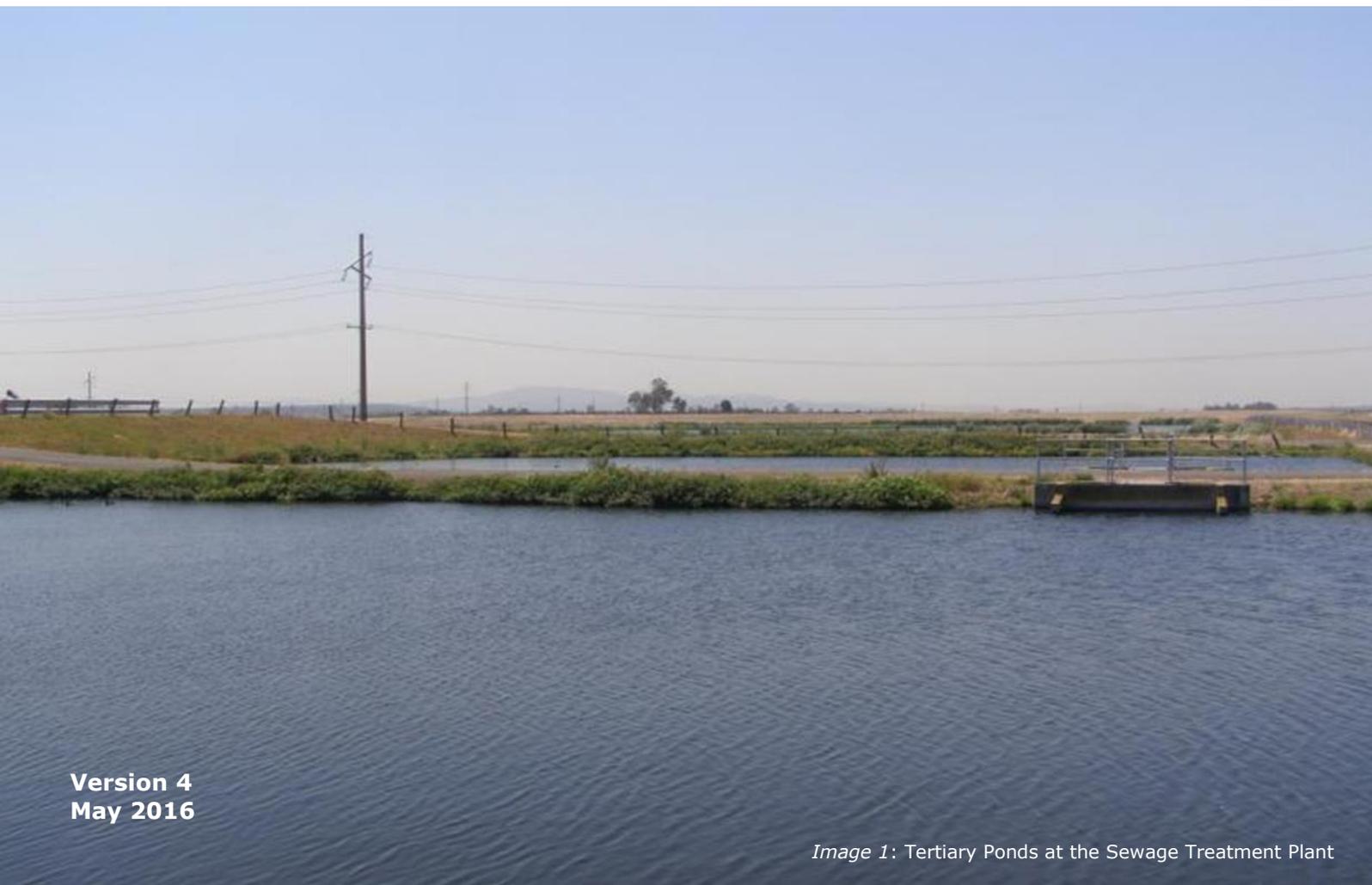


POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN (PIRMP)

**FOR
SINGLETON SEWAGE TREATMENT PLANT**



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1. INTRODUCTION

This document has been prepared in response to a direction received from the NSW Environmental Protection Authority (EPA). The Protection of the Environment Operations Act 1997 (POEO Act) requires holders of environmental protection licences to prepare and implement a Pollution Incident Response Management Plan (PIRMP).

This PIRMP applies to the Singleton Council Sewage Treatment Plant (SCSTP), situated on Army Camp Road, Singleton, and the Singleton Council Sewerage System as covered up EPA Licence No. 3088. In summary, the PIRMP is required to include the following:

- The procedures to be followed in regard to notification in the event of a pollution incident.
- A detailed description of the action that will be taken immediately after a pollution incident in order to minimise and control any pollution.
- The procedures that will be followed in regard to co-ordinating with any notified authorities or persons.
- Any other matter required by the regulations.

2. DEFINITION OF A POLLUTION INCIDENT

For the purpose of this Plan a “pollution incident” is defined as an incident where there is, or is likely to be, a spill of a pollution substance. This could be one of the following:

- Air pollution- escape of significant dust or smoke.
- Water pollution- escape of significant sediment, leachate or fuel off site to a watercourse.
- Noise pollution- excess noise.
- Land Pollution- escape of significant sediment, leachate or fuel of site to land.

Notification of a “pollution incident”, in section 141 of the POEO Act, is required if there is an incident where there is a risk of “material harm to the environment”. Material harm to the environment is defined as:

- a) Where there is actual or potential harm to the health or safety of human beings or to ecosystems that is significant or,
- b) Where there is actual or potential loss or property damage amounting to more than \$10,000.

3. POTENTIAL HAZARDS

- Raw effluent contamination due to pollution incident/discharge occurring in the gravity sewerage system upstream of the sewage treatment plant
- Leakage of the tertiary effluent pond
- Blockages resulting in backing up in the aeration tanks and treated effluent catch ponds
- Heavy rainfall conditions
- Excess flows to the aeration tanks
- Mechanical failure of the decants
- SCADA/Communication failures
- Power outages
- Infrastructure failures
- Hazardous liquid trade waste discharged to the sewerage system

4. POTENTIAL FOR A POLLUTION INCIDENT DUE TO HAZARDS AND LIKELIHOOD OF SUCH HAZARDS OCCURRING

The risk of a pollution incident occurring at (SCSTP) is viewed as very low. There are only very small quantities of hazardous chemicals (such as Round Up Herbicide) used on site and all procedures and safety protocols are designed to minimise the potential of a pollution incident occurring.

(1) Tertiary Ponds

As a condition of the plant licence, effluent produced is required to be of good quality. The EPA has set parameters for this that must be tested for and adhered to. The treatment process chemistry is checked daily and effluent released from the tertiary ponds is sampled and analysed monthly to ensure that quality is maintained. A leak from the tertiary pond area, therefore, has little potential to be a pollution incident. Effluent from the tertiary ponds is discharged to Doughboy Hollow and from there into the Hunter River.

(2) Aeration Tanks and Catch Ponds

Equipment operation is monitored constantly, via telemetry, and regular maintenance occurs in regard to features such as aerators, structural elements and pond embankments. A system of alarms alerts plant personnel of any malfunctions in the process. Any blockages resulting in backing up in the aeration tanks and catch ponds would be detected by Council's telemetry system and staff notified.

(3) Raw Effluent Contamination

In the event of a major pollution incident/discharge occurring in the gravity sewerage system, upstream of the Sewage Treatment Plant, the treatment process has the potential to be affected. In this case there is a very low chance of a pollution incident occurring.

(4) Heavy Rainfall condition

Heavy rainfall can cause excessive flow to the treatment process which can affect the effluent quality compliance with EPA licence, but because of dilution of raw sewage with rain water it has minimal likelihood to affect the effluent quality.

(5) Excess flow to the aeration tanks

This Sewage Treatment Plant has design capacity of 20,000 EP (ADWF 4.8 ML/d) and PWWF 33.6 ML/d) but the plant is running at 3-4 ML/d, so there is still room to accommodate more flow in the treatment process, so the chance of having pollution incident due to excessive inflow is very low.

(6) Mechanical failure of the Decants

Decant weirs are mechanically operated driven by a motor. If the decant system is failed then there is possibility of getting untreated sewage to the catch ponds. Likelihood of happening such incident is very low as the decant system is well maintained and regular preventive maintenance are done for decants.

(7) SCADA/Communication failure

SCADA/communication failure can interrupt the process operation which can affect the effluent quality. Chances of having communication failure and pollution incident due to off grade effluent quality are very low.

(8) Power outage

The sewage treatment process operation is powered by Ausgrid and there is automatic backup generator on site to control the process if there is power failure. If there is power failure due to failure of both Ausgrid and generator, then the process operation can be interrupted which eventually can cause pollution incident because of aeration tank overflow and untreated wastewater flowing to the catch pond, but the chances of having power failure from both the source together is very low.

(9) Infrastructure Failure

There could be infrastructure failure such as embankment failure of sludge ponds, catch ponds, aeration tanks and tertiary ponds and there could be potential environmental pollution due to spillage from infrastructure failure, however the chances of having infrastructure failure is very low.

(10) Hazardous liquid trade waste discharged to the sewerage system

There is potential for prohibited and restricted levels of liquid trade waste (LTW) to enter Singleton' sewerage system. Discharge of exceeding levels of this LTW may pose a threat to the aerobic and anaerobic bacteria at SCSTP. Implementation of LTW pre-treatment devices at all Categories A, B and C dischargers in addition to annual inspections from a Liquid Trade Waste Officer lowers the chance of LTW discharge causing negative outcomes at the SCSTP.

The risk of a pollution incident occurring in the Singleton Sewerage System is viewed as medium. Maintenance and inspection programs are targeted at ensuring proper operation that minimises risk of raw sewage exiting the sewer system.

(1) Sewer Mains

Sewer mains are typically blocked and fail due to root intrusion, fats and foreign matter. This can lead to raw sewage exiting the sewerage system through manholes or through failed pipes. The risk associated with sewer main failure stems from a failure to detect main failure or sewage seepage. This is minimised through responding to and investigating customer inquiries and complaints with the service level times outlined in the Strategic Business Plan and through regular infrastructure inspection and maintenance.

(2) Shafts

Shafts are typically blocked and collapse due to root intrusion, fats and foreign matter. This can lead to raw sewage exiting the sewerage system through collapsed shafts. The risk associated with shaft failure stems from a failure to detect main failure or sewage seepage. This is minimised through responding to and investigating customer inquiries and complaints with the service level times outlined in the Strategic Business Plan and through regular infrastructure inspection and maintenance.

(3) Sewage Pump Stations

Pump stations are monitored constantly via telemetry, regular maintenance and inspection occurring on a regular basis. A system of alarms alerts operation and on-call personnel of any malfunctions in the pump station or generator operation.

5. CONTROL, MINIMISE OR AVOID THE HAZARDS

(1) Instances of sewage exiting the sewerage system are minimised through the following controls:

- Regular program of CCTV inspection and reporting of sewer mains;
- Sewer relining program of mains following CCTV inspection and reporting;

-
- Customer Request Management system allowing for the receiving and recording of all customer inquiries and complaints relating to the sewerage system including blockages, seeping sewage and odours etc.
 - Regular inspection and maintenance of sewer mains including CCTV and water jetting to maintain sewage flow to the Sewage Treatment Plant.
 - On-call staff available 24/7 to respond to reports and incidents.
 - Telemetry system that is independent of mains power that monitors and alerts operational and on-call staff to issues.
- (2) Raw sewage can be contained at pump stations or within the gravity reticulation system as:
- Pump wells have sufficient capacity for several hours storage prior to overflow back to the gravity reticulation system.
 - Major pump stations have backup generators designed to maintain pump function during power failures.
 - All pump stations are connected to telemetry that can operate independently of mains power and send alarms to operation and on-call staff for attendance.
 - Regular inspection and maintenance of pumps, probes and associated equipment to ensure pumps are operating efficiently.
- (3) Any highly contaminated influent (raw sewage) and effluent (treated wastewater) would be able to be contained in the plant due to:
- Early detection, with daily sampling & testing of raw influent entering the plant and treated effluent leaving the aeration ponds.
 - Dilution of contaminate concentration during a 9 day detention time in tertiary ponds.
 - Council having the capability to pump effluent back from the tertiary ponds for re-treatment.
- (4) In order to minimise the possibility of contamination from commercial trade waste Council licences and monitors all known trade waste generators. This reduces the possibility of high levels of grease and potentially toxic chemicals entering the plant and poisoning the plant process. Thus, keeping effluent being of a treatable quality the possibility of incomplete treatment and hence any contamination "carry over" is minimised.
- (5) The treatment system is designed for significant pollutants to be withheld in aeration tank sludge. Council constantly monitors the condition and level of the sludge and under normal operating conditions transports an amount of

sludge to sludge lagoon daily. Any heavy metals and all suspended solids are removed in this process.

- (6) Under high rainfall conditions effluent is highly diluted and able to pass through the plant with minimal treatment. The treatment process has been designed that if there is excess flow due to heavy rainfall then the treatment cycle will be "storm cycle" which has comparatively lower cycle time than the normal cycle, and thus excess flow can be handled efficiently in the process without any overflow incident.
- (7) It is viewed that there is no perceptible pollution incident risk at the sludge lagoons. The ponds are smaller and the contained sludge is very thick. Desludging operations of the sludge lagoons are carried out periodically to make enough room for transporting sludge into these lagoons from aeration tanks.
- (8) Decant mechanism of the aeration / settling tank is regularly inspected and lots of periodic maintenance are carried out such as replacing the decant wires, maintenance of motor, gear box etc. Thus the decant system is ensured to run properly and is minimised the chances of mechanical failure.
- (9) Council always maintains spare parts of SCADA system including stand-by computer with complete set-up of telemetry system so that in the event of SCADA/communication failure telemetry and communication system can be very quickly resumed with standby computer.
- (10) The standby Generator is inspected and test run every week to ensure continued power supply for treatment operations in the event of and Ausgrid power failure. Power supply is monitored via telemetry which triggers alerts to on call staff in the event of a power failure.
- (11) Council operational staff continuously monitors the components of the facility like aeration tanks, catch ponds, tertiary ponds, sludge lagoons and drying beds, and carries out regular maintenance of the property, and thus minimises the chances of having infrastructure failure.

6. MAP AND SCHEMATIC PROCESS DIAGRAM OF SINGLETON SEWAGE TREATMENT PLANT

A layout of the plant is shown in Figure 1.

A schematic of the process is shown in Figure 2.

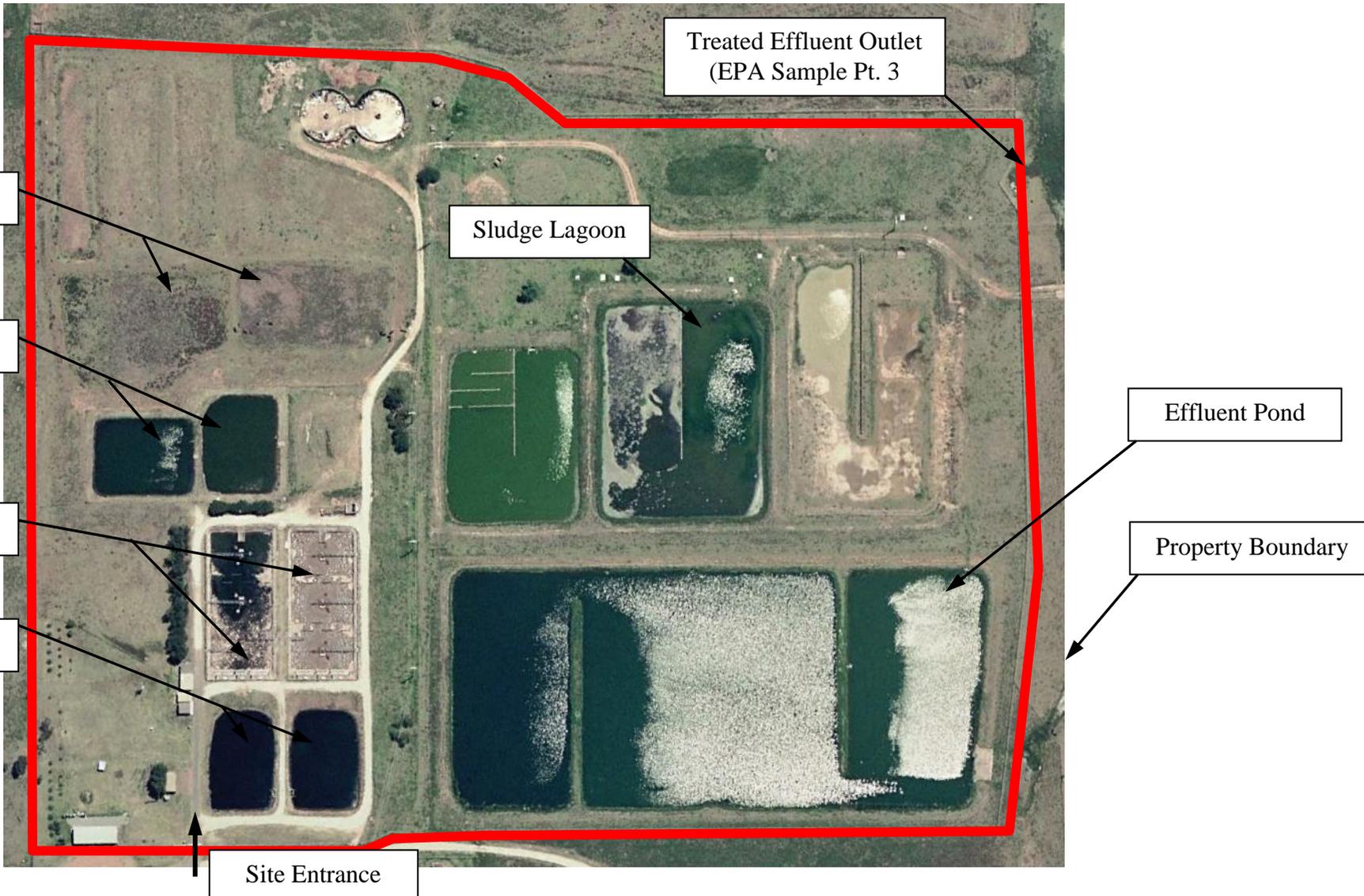
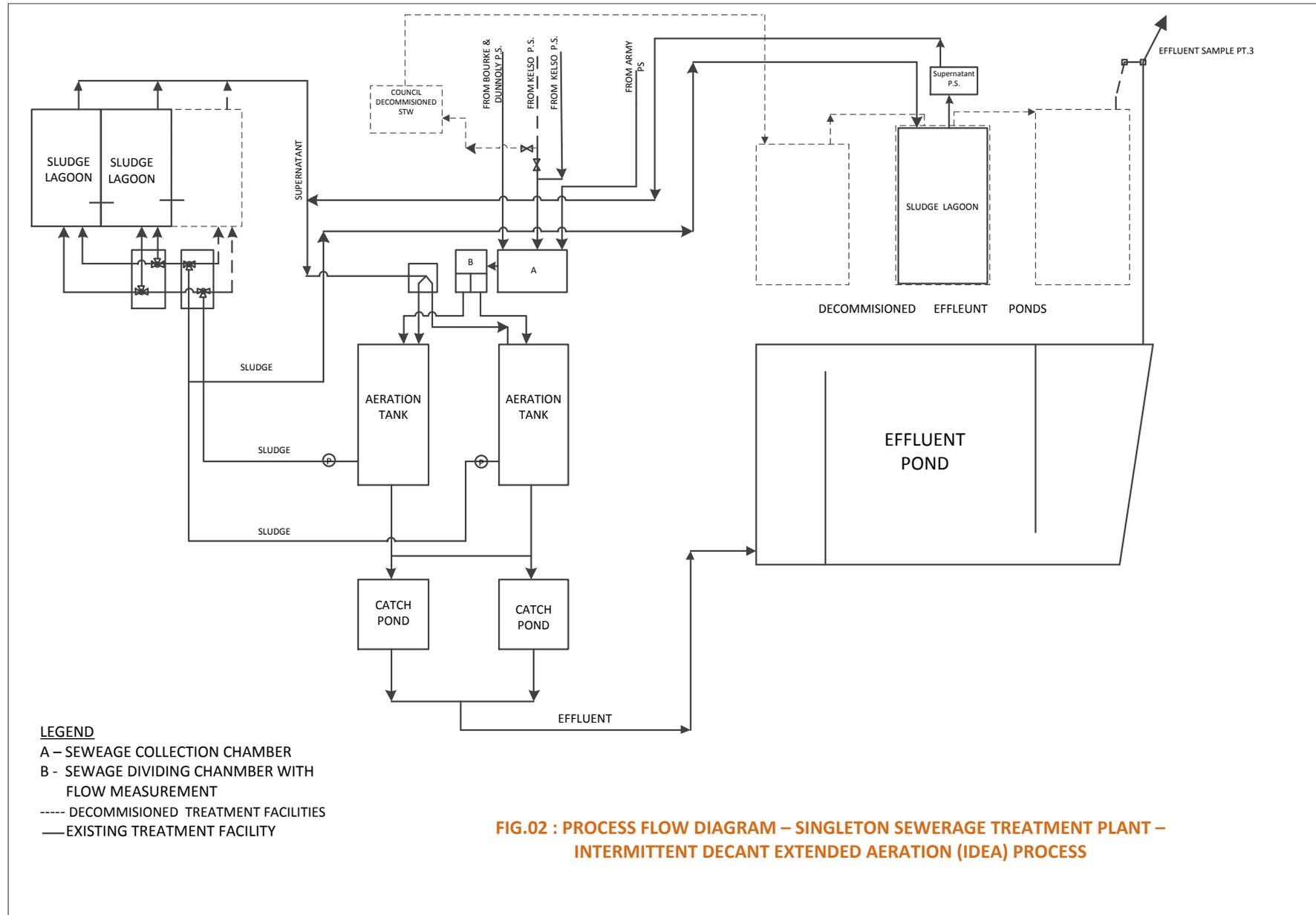


Figure 01 : Singleton Sewage Treatment Plant



7. Pollutant Identification

There is a small amount of fuel kept on site for use in mowers. This is not significant.

Raw sewage effluent is delivered to the aeration lagoons via an inlet channel. This effluent is considered to be a potential pollutant in the early stages of treatment (in two aeration tanks and two catch ponds). At the end of tertiary treatment it is not. The capacity of the aeration tanks is approx. 6,000 m³ per tank. The catch pond capacity is approx. 3,500 m³ per pond.

In the event of a major contamination of the treatment process (such as could be caused by an illegal discharge), and subsequent contamination of tertiary ponds, Council would be able to take measures such as:

- Temporarily blocking the outlet from the tertiary ponds.
- Installing a pump in the tertiary ponds to return effluent to the head of the plant for retreatment.
- Pumping effluent from either the catch ponds or the tertiary ponds to disused holding tanks for later retreatment.

8. Safety Equipment and Infrastructure

Infrastructure

In the event of a leak in the embankment of the aeration lagoons or catchment ponds Council would be able to promptly mobilise suitable earthmoving equipment for repairs. Dewatering pumps would be able to be brought in for any diversion works required.

Safety Equipment

Council personnel have safety equipment on site that would be used where works concerning untreated effluent are required. This includes protective overalls, gloves, masks and boots. Shovels and hand equipment are also available.

9. Contact Details

9.1 Singleton Council

The following table lists Council personnel responsible for the site.

Position	Name	Contact Number	Mobile
Manager – Water & Waste	Angelika Hesse	(02) 6578 7289	0407 914 393
Utilities Engineer – Planning & Process	Katie Hardy	(02) 6578 7281	0423 500 528
Utilities Engineer – Operations	Ian Vickers	(02) 6578 7283	0411 559 316
Senior Treatment Plant Operator	Gary Perrin	0428 606 325	0428 606 325
Council after hours contact	24/7	(02) 6578 7290	(02) 6572 1400
		office hours	after hours

8.2 External Parties

There are no private residences situated in the vicinity of the site. The area surrounding the plant is flat. Any embankment leaks would be slow and likely able to be contained within the site. In the event of an incident occurring that affects the surrounding properties owners would be notified. It is viewed that there is a very low possibility of this occurring.

Organisation	Contact	Contact Number
Emergency Services- Police, Ambulance	Emergency only 24/7	000
Fire and Rescue NSW		1300 729 579
Fire & Rescue NSW Zone Office Regional West 2 – Upper Hunter and Central West 2/114 Piper Street, Bathurst NSW 2795	Business hours 8:30am - 4:30pm	(02) 6331 6372
Singleton Fire Station 1A Pitt Street, Singleton NSW 2330		(02) 6572 1495
Environment Protection Authority (EPA)	Environment Line	131 555
Public Health Unit, Hunter New England Health, Newcastle Office	Public Health Officer 24/7 (diverts John Hunter Hospital)	(02) 4924 6477
Work Cover		13 10 50

10. Pollution Incident Reporting Process

In the event of a pollution incident the following actions would be taken:

1. Relevant Council staff would be notified.
2. The EPA Environment Line would be contacted at the first opportunity.
3. A rectification plan would be implemented and steps would be taken to minimise the extent and impact of the incident. This would include measures to minimise any risk to personnel.
4. External parties would be contacted.
5. Adjoining property owners would be contacted if the incident affects or has the potential to extend beyond the treatment plant boundary.

10.1 Early Notification and Communication

Notification and communication methods will be determined on a case by case basis and the following methods may be used:

- Phone calls
- Media releases (radio/television/newspaper/internet/social media as required)

- Site visits/door knocking
- Letter drops
- Warning signs
- Other methods as the situation requires

In the event of a sewage spill into tertiary pond, stormwater or waterway, councils staff are to go to prominent and/or high use areas of the affected waterway and erect signage.

Regular communication and notification is to be provided until the incident and clean-up of impacted site and affected areas has been completed. Singleton Council is to take signs down and advise the external parties and relevant authority that normal operation has been resumed. Following methods may be used to update the information:

- Phone calls
- Media releases (radio/television/newspaper/internet/social media as required)
- Letter drops
- Other methods as the situation requires

10.2 Incident Investigation

Emergencies and incidents are to be investigated by Singleton Council under the guidance of Manager – Water & Waste. Investigation will be carried out by forming an investigation team. Investigation team will co-ordinate the investigation and prepare the report.

10.3 Incident Reporting

For environmental pollution incident reporting purpose Singleton Council will use the template prepared by Water directorate as per Part 5.7 of the Protection of Environment Operations Act 1997 (POEO Act). The template has been attached herewith.

10.4 Staff Training

Council personnel will be provided with training in relation to the procedures to be followed if a pollution incident should occur. Training will be provided within 3 months of this plan being issued.

11. PUBLICATION OF THE PIRMP

The PIRMP is available on the Singleton Council website www.singleton.nsw.gov.au in the [environment](#) tab. A copy of this plan will be issued to relevant Council personnel. Copies of the PIRMP can be provided, without charge, to any person who makes a written request for a copy.

12. Review, Testing and Maintenance of PIRMP

A review of the plan (PIRMP) will be carried out 12 months after initial issuing and one month after any pollution incident. Next review will be carried out in September 2016.

Record of the dates of last review and test will be printed on the front page of PIRMP. Each reviewed copy will be recorded in the Council record keeping system (TRIM).

13.0 Incident Reporting Template

PART B

Report to Environmental Incident Hotline INVESTIGATION



The appropriate Section Supervisor/Manager is responsible for completion of Part B of the incident report.

IMMEDIATE ACTION BY SUPERVISOR/MANAGER

Will the incident:

- | | | | |
|---|------------------------------|-----------------------------|-----------------------------------|
| 1. Require assistance from other agencies to contain, isolate or cleanup?
If "Yes" call 000 immediately. | YES <input type="checkbox"/> | NO <input type="checkbox"/> | NOT SURE <input type="checkbox"/> |
| 2. Pose any actual or potential harm to human health that is not trivial?
• Is it located within 100m of a school, childcare centre, aged care home?
• Could it impact on users of public areas such as ovals, reserves, waterways?
• Could the impact spread and potentially harm occupants of nearby properties? | YES <input type="checkbox"/> | NO <input type="checkbox"/> | NOT SURE <input type="checkbox"/> |
| 3. Pose any actual or potential harm to ecosystems that is not trivial?
• Could the incident flow / impact on a water body or drainage system?
• Could the incident flow / impact on environmentally sensitive land? | YES <input type="checkbox"/> | NO <input type="checkbox"/> | NOT SURE <input type="checkbox"/> |
| 4. Result in actual or potential loss or property damage of an amount over \$10,000? | YES <input type="checkbox"/> | NO <input type="checkbox"/> | NOT SURE <input type="checkbox"/> |

If you answered 'YES' to any of the above then the incident should be considered as a notifiable "pollution event". There is a **duty to notify** the EPA, Ministry of Health, WorkCover and Fire and Rescue NSW immediately after becoming aware of a pollution incidents where material harm is caused or threatened. Failure to do so is an offence (*Protection of the Environment Operations Act 1997*)

AGENCY NOTIFICATIONS

If the incident does not require an initial combat agency, or once the 000 call has been made, notify the relevant authorities in the following order.

NSW EPA (EPA Environment Line: 131 555)

Contacted: YES NO Reason not contacted:

NAME OF EPA REPRESENTATIVE	TIME AND DATE	EPA REFERENCE NUMBER
<input type="text"/>	<input type="text"/>	<input type="text"/>

ACTIONS REQUIRED BY EPA

NSW Health – Local Public Health Unit (See www.health.nsw.gov.au/publichealth/infectious/phus.asp)

Contacted: YES NO Reason not contacted:

NAME OF PHU REPRESENTATIVE	TIME AND DATE	PHU REFERENCE NUMBER
<input type="text"/>	<input type="text"/>	<input type="text"/>

ACTIONS REQUIRED BY LOCAL PHU

WorkCover Authority (WorkCover: 13 10 50)

Contacted: YES NO Reason not contacted:

NAME OF WORKCOVER REPRESENTATIVE	TIME AND DATE	WORKCOVER REFERENCE NUMBER
<input type="text"/>	<input type="text"/>	<input type="text"/>

ACTIONS REQUIRED BY WORKCOVER

Fire & Rescue NSW (Emergency Hotline: 000)

Contacted: YES NO Reason not contacted:

NAME OF FIRE & RESCUE REPRESENTATIVE	TIME AND DATE	FIRE & RESCUE REFERENCE NUMBER
<input type="text"/>	<input type="text"/>	<input type="text"/>

ACTIONS REQUIRED BY FIRE & RESCUE

CONTINUES ON REVERSE 

OTHER NOTIFICATIONS TO CONSIDER INCLUDE:

- Internal contacts eg Environmental Health Officer
- Media
- NSW Food Authority
- Shellfish programs
- River users eg boat hiring companies
- Marine education centres
- Other



PRELIMINARY INVESTIGATION

Notes from discussions with relevant operational staff

Any further observations or comments by Supervisor / Manager

CATEGORISATION BY AUTHORISED OFFICER

- Minor**
No notification required
 - Incident affects small area only (eg single property) AND
 - Incident is easy to clean up without additional assistance, AND
 - There is no risk of material harm to humans or the environment.

- Moderate**
Notify EPA and Local PHU only
 - Incident affects more than one property OR
 - There is a risk of pollution or material harm to the environment BUT
 - Cleanup can be completed without assistance AND
 - There is no danger to humans.

- Major**
Notification required - Notify EPA, Local PHU, Workcover and Fire & Rescue
 - Potential or actual harm to humans and the environment AND/OR
 - Assistance is required with cleanup from other agencies.

- Council Responsible** Incident occurred as a direct result of Council activity or function.

- Response by Council** Incident occurred on Council land, or land under Council care and control BUT Council did not cause the incident.

- Technical Licence Breach** Relating to technical compliance such as exceedence of permissible discharge volume or environmental monitoring limits.

DETAILS OF APPROPRIATE SECTION SUPERVISOR/MANAGER REPORTING THE INCIDENT

NAME	DATE
<input style="width: 100%;" type="text"/>	<input style="width: 20px;" type="text"/>
PHONE	MOBILE
<input style="width: 20px;" type="text"/>	<input style="width: 20px;" type="text"/>
DEPARTMENT SECTION	
<input style="width: 100%;" type="text"/>	