



1 Purpose

The purpose of Taronga's Pollution Incident Response Management Plan is to improve the way pollution incidents are reported, managed and communicated to the general community. The plan is designed to facilitate better coordination with the relevant response agencies.

This document also covers chemical spill management procedures.

2 Legislative Requirement

In accordance with Part 5.7A of the Protection of Environment Operation Act 1997 and the Protection of the Environment Operations (General) Regulation 2009 holders of an EPA Environment Protection Licence (EPL) are required to:

- prepare a Pollution Incident Response Management Plan (section 153A, POEO Act). This plan will form part of Taronga's Emergency Procedures Manual.
- Licensees must keep the PIRMP at the premises the environment protection licence relates to, or where the relevant activity takes place, and make certain parts of the PIRMP available on a publicly accessible website of the licensee, or alternatively provide a copy upon written request (clause 98D)
- test the plan in accordance with the POEO Regulation (clause 98E).
- implement their PIRMP immediately if a pollution incident occurs that causes or threatens material harm to the environment (section 153F).
- notify any 'material harm' pollution incidents, in accordance with the requirements set out in the POEO Act.

Penalties exist under the POEO Act for failing to comply with these requirements.

2.1 Licence Details

Taronga Zoo holds an Environment Protection Licence (Number: 1677). Details of the licence can be viewed at [Taronga Zoo EPL# 1677](#).

Water quality monitoring results can be viewed at [Taronga Zoo Water Quality Monitoring Results](#).

3 Definition

3.1 A pollution incident is:

An incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred or is likely to occur. It includes an incident or set of circumstances in which a



substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

Pollutants can include, but are not limited to:

- chemicals and/or hazardous substances used in cleaning processes
- fuels and lubricants used for equipment or machinery
- gas cylinders or major hazardous storage
- dust from stockpiles or fugitive emissions from chemical and/or hazardous substance use
- waste materials or wastewater, effluents and sediment laden stormwater.

Notification is required if a pollution incident causes or threatens to cause 'material harm' to the environment. 'Material harm' is defined in section 147 of the POEO Act as:

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

An incident includes an event which is a near miss (threatens material harm to the environment). An exceedance of an Environmental Protection Licence pollutant limit must also follow the PIRMP. The current Licence pollutant limit are as follows:



POINT 1,2

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
BOD	milligrams per litre	-	-	-	20
pH	pH				6.5-8.5
TSS	milligrams per litre				50

POINT 3,4

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
BOD	milligrams per litre				15
Enterococci	colony forming units per 100 millilitres				40
pH	pH				6.5-8.5
TSS	milligrams per litre				20

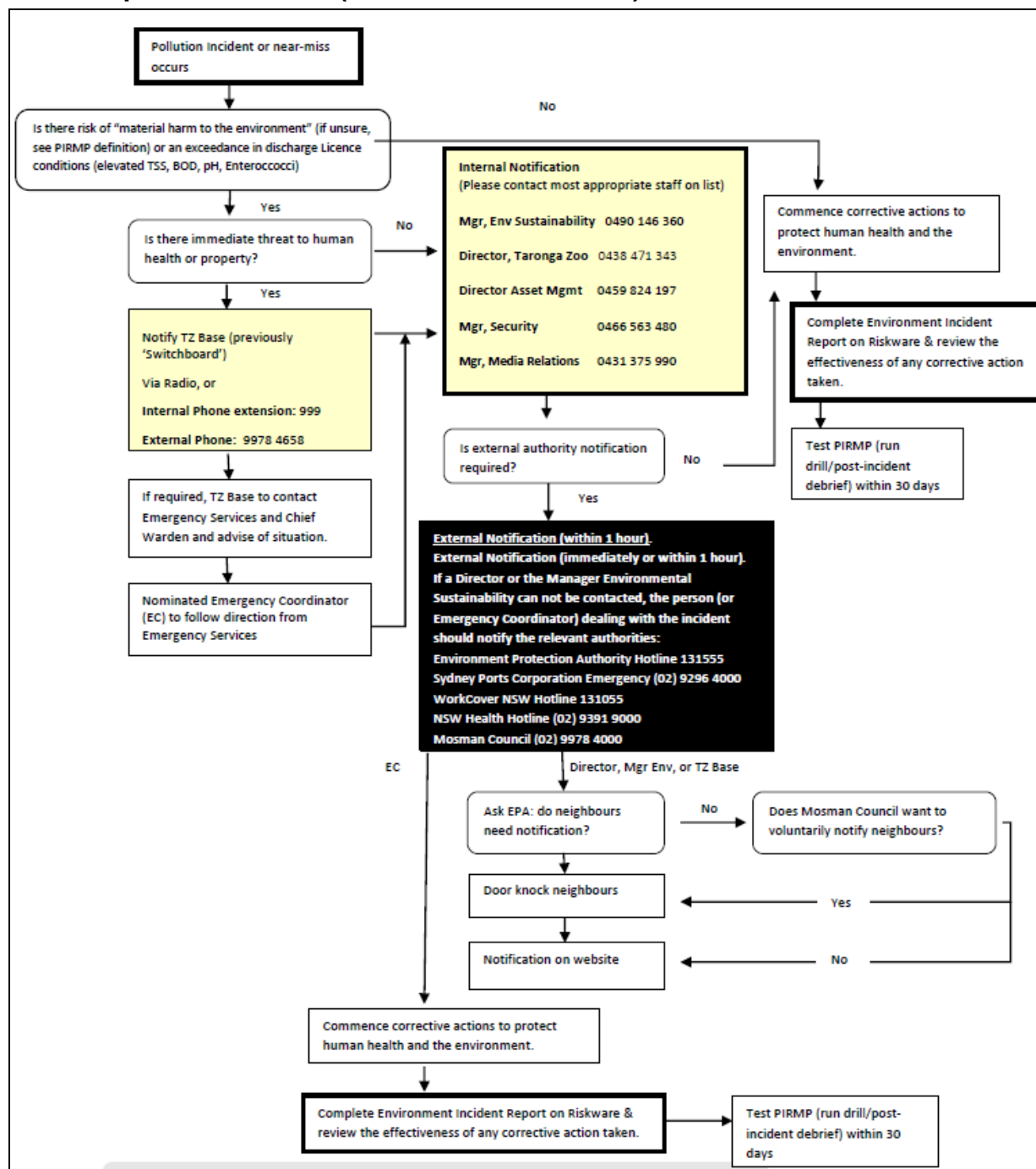
3.2 Notify immediately

Immediately is defined as promptly and without delay. For the purposes of external notification, Taronga is required to notify external authorities within 1 hour of learning that the incident has occurred. Part 5.7 of the POEO Act specifies when and how a person should notify each relevant authority about a pollution incident, and who is responsible for the notification. It also prescribes what relevant information must be given.

A person engaged as an employee in carrying on an activity must, immediately after the person becomes aware of the incident, notify the Director Asset Management or the Manager Environmental Sustainability of the incident and communicate all relevant information about it. If the Director Asset Management, Manager Environmental Sustainability, or TZ Base cannot be contacted, the person directly dealing with the incident is required to notify each relevant authority. **To further understand which stakeholders and authorities to notify, refer to the below Response flowcharts.**

4 Procedure - during business hours (8.30am- 5.00pm)

4.1 Response flowchart (within business hours)





4.2 Immediate Internal Notification

If there is risk of material harm to the environment or threat to human health or property, notify TZ Base (previously called 'Switchboard') call the **internal emergency phone extension 999 or 9978 4658 (or radio TZ Base). Declare 'Code yellow pollution incident'.**

State the following:

- exact location of the incident;
- the nature and extent of the incident; and
- whether First Aid or Emergency Services are required.
- TZ Base will identify an Emergency Coordinator to assist at the incident scene with the management of the incident.

Also notify relevant internal staff as per the PIRMP flowchart (or Section 9 below).

4.3 Immediate external notification

If external notification is required, the relevant internal staff (or TZ Base or Chief Warden) will determine which authorities to contact. If these internal staff cannot be contacted, the person directly dealing with the incident is required to notify each relevant authority.

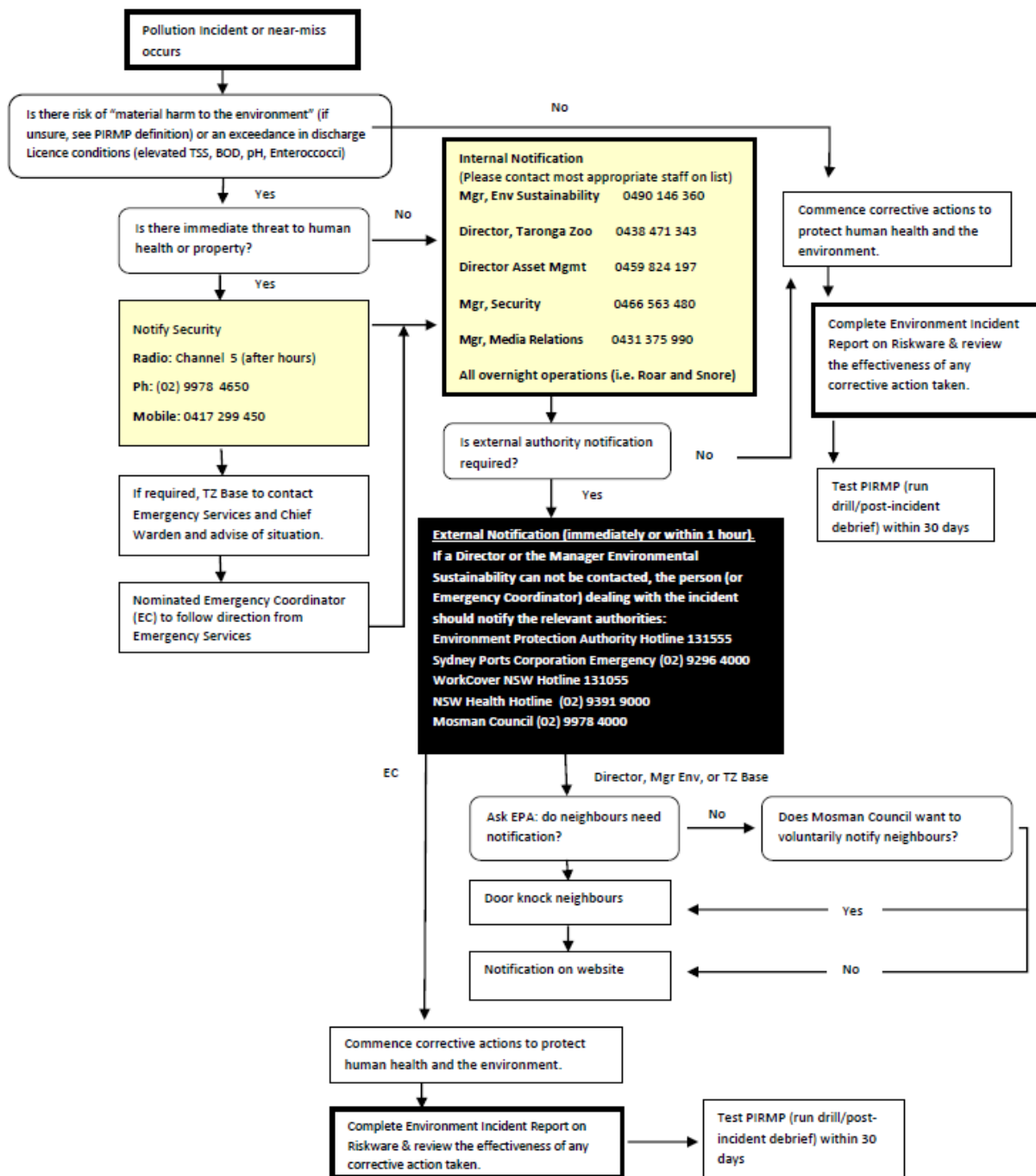
4.4 Management Action

- Ensure the area is safe and secure to approach.
- Locate the source of the spill and identify if any hazardous materials are involved.
- Locate Material Safety Data Sheet (MSDS) for the substance (if known) to obtain information about clean-up procedures and advice on appropriate Personal Protection Equipment that may be required.
- Take steps to prevent unauthorised staff or visitors' access.
- Assess potential harm and minimise environmental contamination. i.e. ensure substance is prevented from entering water body or soil using spill kit, hay bales or other suitable absorbent material. This may also include measures taken at the Wastewater Treatment Plant, if a substance has already entered drains.



5 Procedure - after business hours (5.00pm – 8.30am)

5.1 Response flowchart (after business hours)





5.2 Internal Notification procedure

If there is risk of material harm to the environment or threat to human health or property, notify Security. Declare 'Code yellow pollution incident'.

Notify Security via:

- **Radio:** Channel 5 (after hours radio channel)
- **Ph:** (02) 9978 4650
- **Mobile:** 0417 299 450 (security) or 0405 383 764 (Duty Manager)

State the following:

- exact location of the incident;
- the nature and extent of the incident; and
- whether First Aid or Emergency Services are required (Security to contact Emergency Services on 000)
- Also notify relevant internal staff as per the PIRMP flowchart (or Section 9 below).

5.3 Immediate external notification

If external notification is required, the relevant internal staff (or TZ Base or Chief Warden) will determine which authorities to contact. If these internal staff cannot be contacted, the person directly dealing with the incident is required to notify each relevant authority.

5.4 Management Action

- Ensure the area is safe and secure to approach.
- Locate the source of the spill and identify if any hazardous materials are involved.
- Locate Material Safety Data Sheet (MSDS) for the substance (if known) to obtain information about clean-up procedures and advice on appropriate Personal Protection Equipment that may be required.
- Take steps to prevent unauthorised staff or visitors' access.
- Assess potential harm and minimise environmental contamination. i.e. ensure substance is prevented from entering water body or soil using spill kit, hay bales or other suitable absorbent material. This may also include measures taken at the Wastewater Treatment Plant, if a substance has already entered drains.



6 Disposal & Reporting

Ensure environmentally responsible disposal of contaminated material as per the MSDS, HR Chemical Management Policy and relevant legislation.

Disposal must be arranged with an EPA licensed contractor.

An Environment Incident and/or WHS Incident Form (both located on Riskware) must be completed in accordance with Taronga's internal incident reporting procedures. If the Riskware form is not sufficient, locate the Environment Incident Form on ELO and submit completed form to relevant person.

7 Corrective action & evaluation

When a nonconformity occurs, the organisation must react to the nonconformity and take action to control and correct it. It must deal with the consequences, including mitigating adverse environmental impacts. It must evaluate the need for action to eliminate the causes of the nonconformity, in order that it does not recur or occur elsewhere, by reviewing the nonconformity, determining the causes of the nonconformity and determining if similar nonconformities exist, or could potentially occur. It must implement the action needed and review the effectiveness of any corrective action taken. Corrective actions shall be appropriate to the significance of the effects of the nonconformities encountered, including the environmental impact. The organisation must retain documented information for the evidence of the nature of the nonconformities, any actions taken and the results of any corrective action.

8 Site Maps

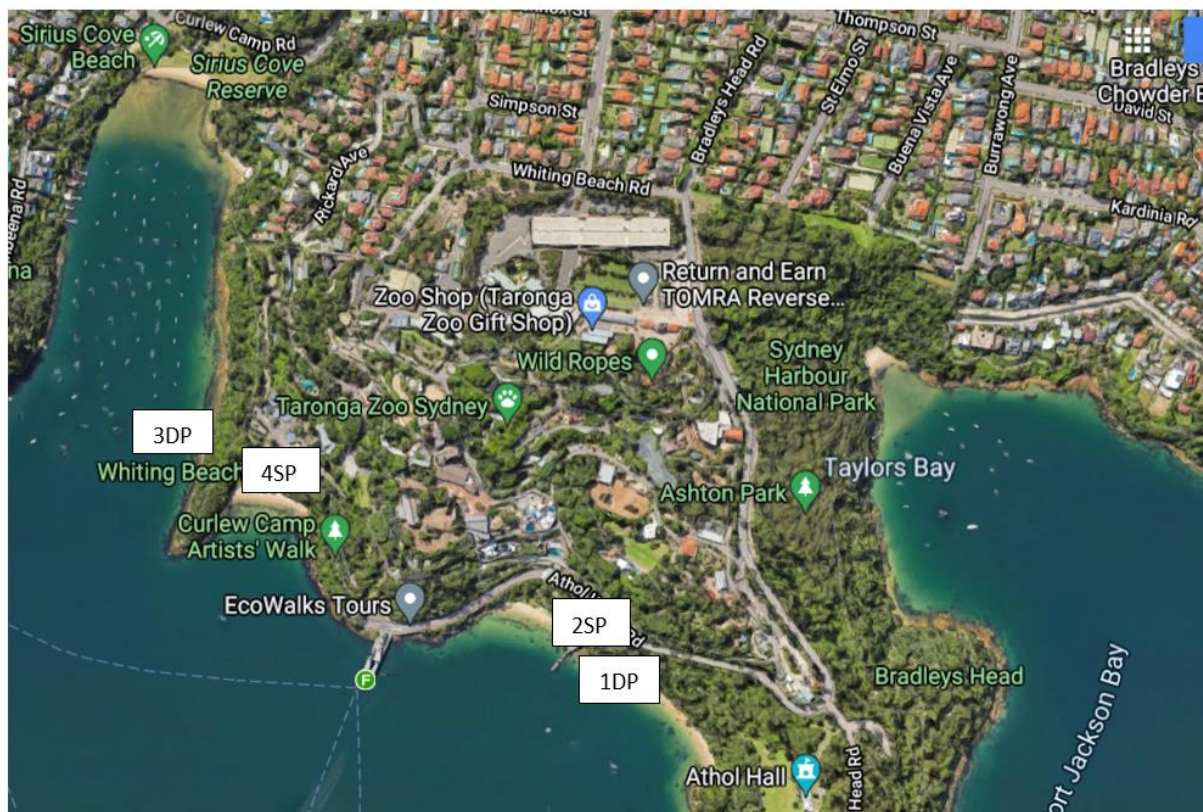
Refer to set of detailed site maps that indicate:

- location of the premises,
- the surrounding area that is likely to be affected by a pollution incident,
- the location of potential pollutants on the premises,
- the location of any stormwater drains on the premises, and
- the discharge locations of the stormwater drains to the nearest watercourse or water body.

Taronga Zoo

Emergency Response Plan

Pollution Incident Response Management Plan



Legend:

Number= EPL 'Point' number

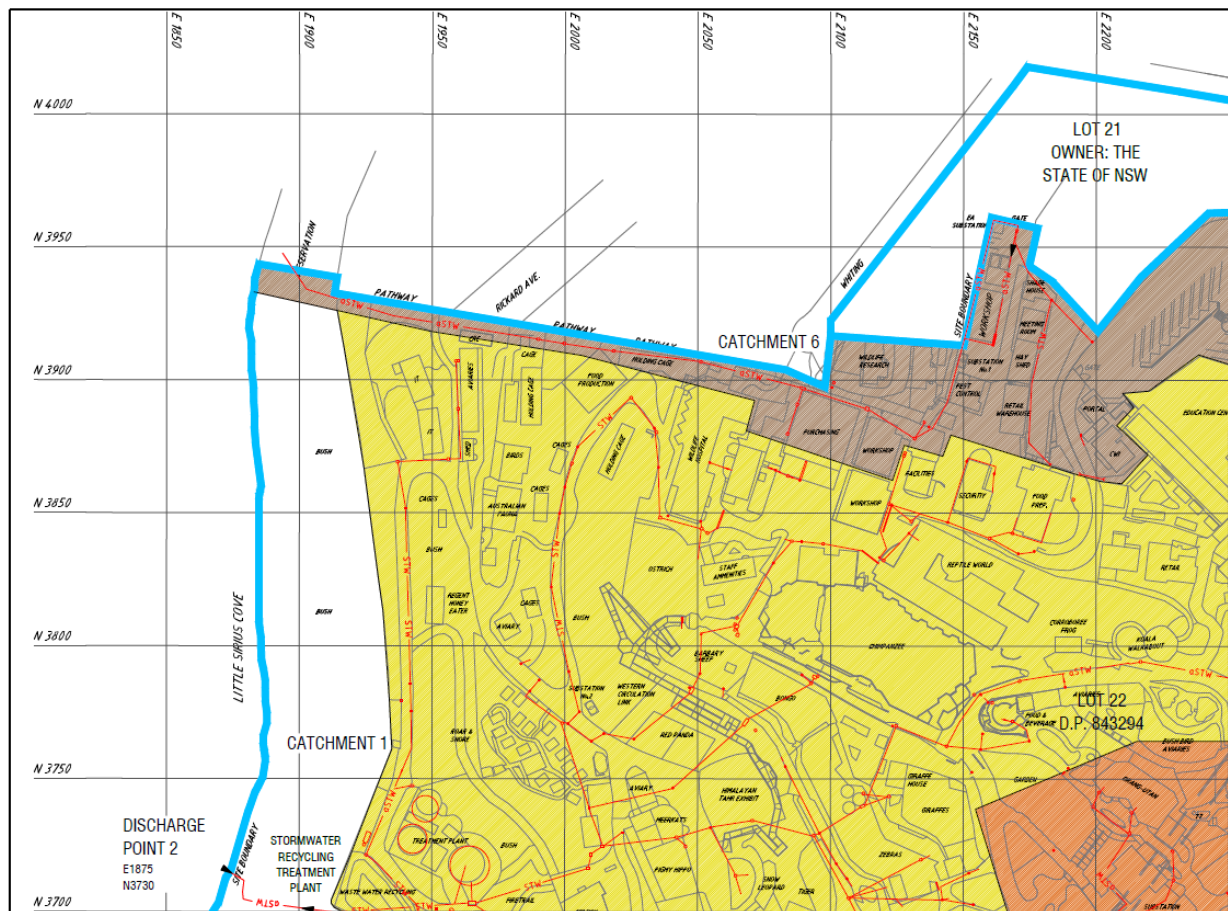
DP= Discharge point

SP= Sampling point

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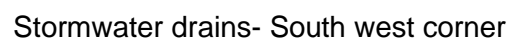
Emergency Response Plan

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Stormwater drains- North west corner

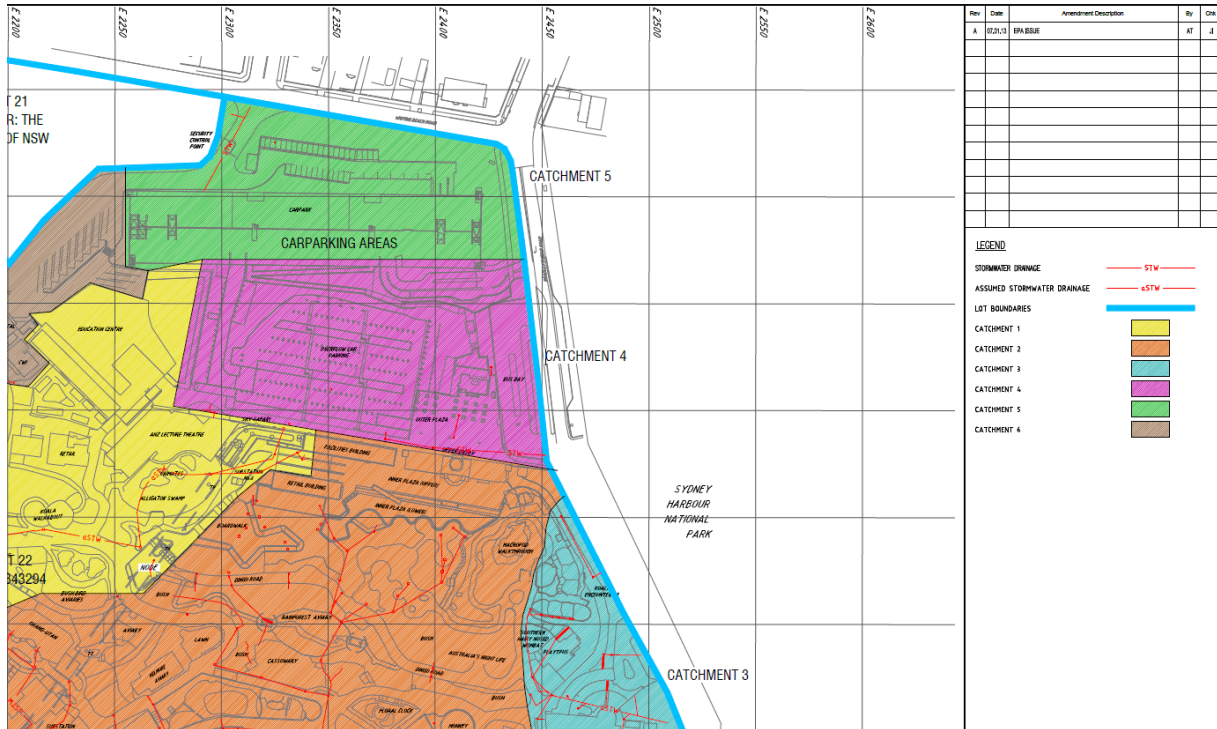
Pollution Incident Response Management Plan



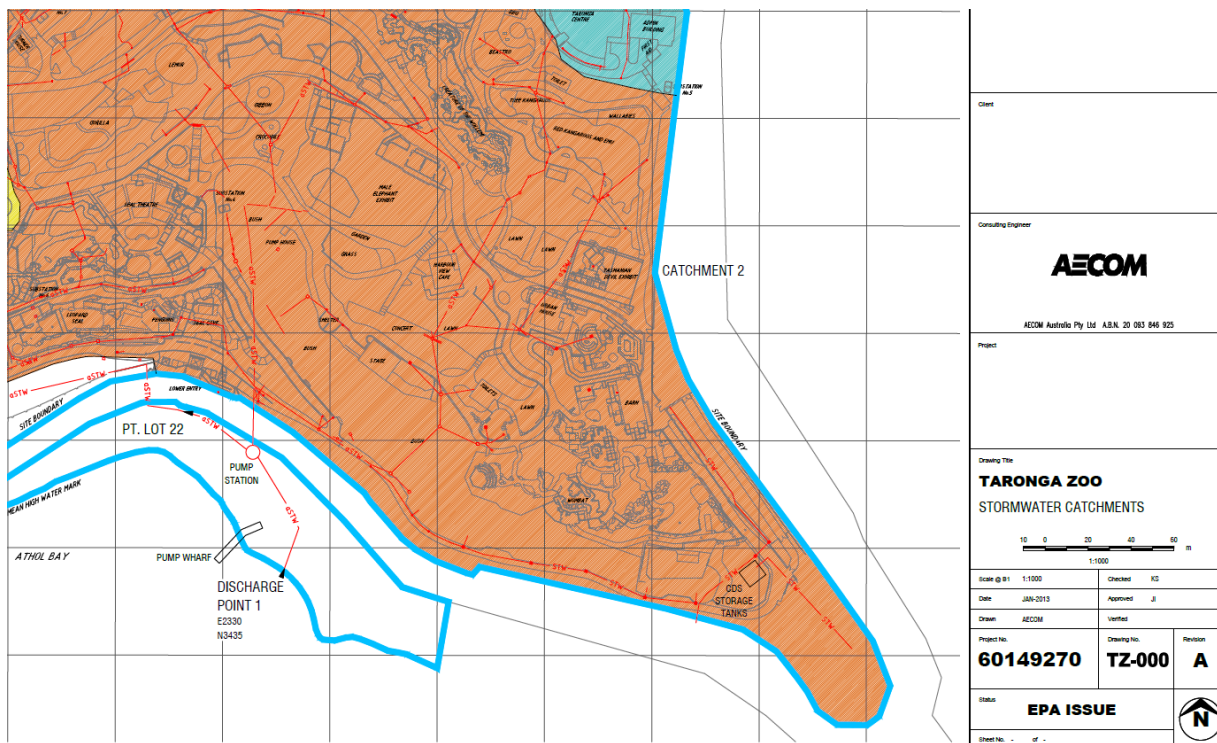
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Pollution Incident Response Management Plan



Stormwater drains- North east corner

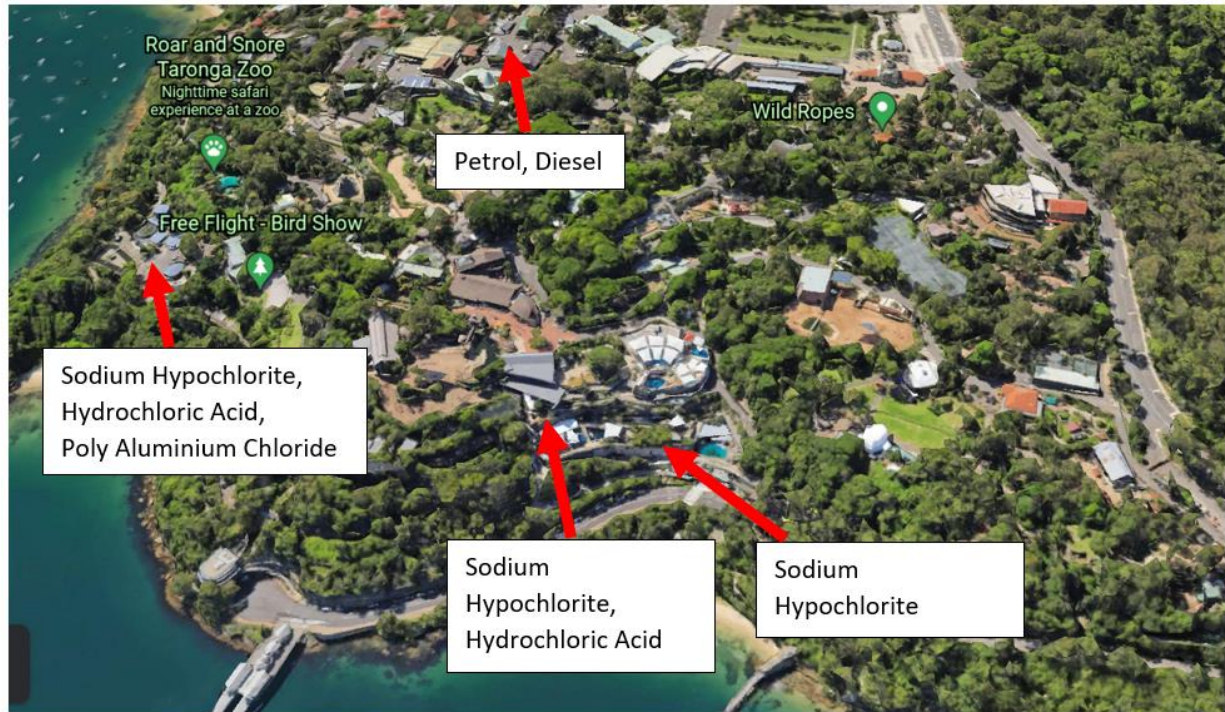


Stormwater drains- South east corner

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Emergency Response Plan

Pollution Incident Response Management Plan



Map of potential pollutants



9 Pollution Incident Contact Details

9.1 Primary Contacts

The following positions must be notified of an incident in order to ensure the relevant authorities are notified.

Name	Position	Contact Number
<i>Simon Duffy</i>	<i>Director, Taronga Zoo Operations</i>	<i>0438 471 343</i>
<i>Rodd Stapley</i>	<i>Director Asset Management</i>	<i>0459 824 197</i>
	<i>Manager, Environmental Sustainability</i>	<i>0435 243 776</i>
<i>Christopher Burns</i>	<i>Manager, Security</i>	<i>0466 563 480</i>
<i>24 hr Security</i>	<i>Security Officer</i>	<i>0417 299 450</i>

9.2 Secondary Contacts

Name	Position	Contact Number
<i>Valerie Moushigian</i>	<i>Manager, Work Health & Safety</i>	<i>0428 006 710</i>
<i>Emily Smith</i>	<i>Environmental Sustainability Officer</i>	<i>0449 614 300</i>
<i>Laura Minns</i>	<i>Manager, Communications</i>	<i>0431 375 990</i>
<i>Sergei Iagunkov</i>	<i>Supervisor, Water Systems</i>	<i>0418 698 970</i>



10 Notification

Under section 148 of the POEO Act Taronga is required to report risk of “material harm to the environment” (if unsure, see PIRMP definition) or an exceedance in discharge Licence conditions (elevated TSS, BOD, pH, Enterococci) to the NSW EPA. In special circumstances, you may also need to report incidents to other authorities. If external notification is required, the relevant internal staff (or TZ Base) will determine which authorities to contact. If these internal staff cannot be contacted, the person directly dealing with the incident is required to notify each relevant authority.

Authority	Contact Number
NSW EPA	131 555
NSW Health	9391 9000
Fire & Rescue, Police, Ambulance NSW	000
Safe Work NSW	13 10 50
Mosman Council	9978 4000

Depending on the scale of the incident Media Relations may also require that Taronga notifies the following government departments:

Authority
Ministers Office
Premiers Office



11 Risk Assessment & Management Plan

This section includes identification, description and likelihood of the primary hazards to human health or the environment associated with operation of the waste water treatment plant.

Taronga's Waste Water Treatment Plant is located adjacent the harbour foreshore, a sensitive marine environment and immediately adjacent to a residential area. All care must be taken to ensure both environmental and health risks are eliminated or mitigated in accordance with this plan of management.

Activity	Potential hazard	Risk score	Pre-emptive actions	Community Notification
Chemical storage	Chemical spill	Low risk	All chemicals stored in bunded area to contain any spills. Spill kits are available to absorb spill.	<i>Website notification.</i> <i>As per notification flowchart</i>
Chemical delivery – transport through zoo grounds	Chemical spill	Low risk	Delivery pre- authorised outside business areas. Delivery truck escorted through zoo via approved route. The Supervisor, Water Systems notifies the team that delivery is happening and authorises Operator(s) to meet truck on the day. <i>Ref: Chemical Delivery Work Procedure</i>	<i>Mosman council advised for major incidents. Residents notified if deemed necessary – follow notification flowchart</i>
Chemical use	Chemical spill	Low risk	Chemical handling is minimised by direct dosing into the system where possible.	<i>Website notification.</i> <i>As per notification flowchart</i>

Taronga Zoo

Emergency Response Plan

Pollution Incident Response Management Plan



Activity	Potential hazard	Risk score	Pre-emptive actions	Community Notification
Discharge	Contaminated discharge water	Medium	Water discharged is tested as per licence conditions to ensure quality falls within parameters for TSS, BOD, enterococci and pH.	<i>As per notification flowchart</i>
Fuel delivery	Fuel spill	Low	<p>Fuel tanker enters zoo on approved route and at pre-arranged time.</p> <p>Fuel bowzers are managed in accordance with Environmental Plan for UPSS.</p> <p>Fuel bowzers are filled inside bunded area.</p> <p>Valve to adjacent stormwater pit can be isolated in event of a spill.</p> <p>Pit is emptied as required by indicator on UPSS.</p> <p>Sensors indicate any problem with UPSS.</p> <p>Wastewater Treatment Plant can capture and isolate fuel in the event that spill that cannot be initially contained within the</p>	<p><i>Website notification (if required)</i></p> <p><i>Relevant regulatory authorities advised for major incidents.</i></p> <p><i>Residents notified if deemed necessary – follow notification flowchart</i></p> <p><i>As per notification flowchart</i></p>

Taronga Zoo

Emergency Response Plan

Pollution Incident Response Management Plan



			bunded area at fuel bowzers.	
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Taronga Zoo

Emergency Response Plan

Pollution Incident Response Management Plan



Activity	Potential hazard	Risk score	Pre-emptive actions	Community Notification
Overflow	Overflow contaminated with sediment	Medium	<p>Sediment control plans and filter socks around stormwater ingress points.</p> <p>Regular program of emptying on site Continuous Deflection Separation (CDS) units.</p> <p>Regular maintenance program of pumping out sediment in rising mains.</p> <p>Stockpiles must be covered by contractor as part of project's environmental management plans.</p> <p>Check compliance regularly by Project Manager and Manager, Environmental Sustainability via construction audits.</p>	<p><i>Website notification.</i></p> <p><i>As per notification flowchart</i></p>



11.1 Inventory of chemical pollutants

Pollutant	Source	Quantity
<i>Sodium Hypochlorite</i>	Liquid chemical	2000L (max)
<i>Hydrochloric acid</i>	Liquid chemical	200L (max)
<i>Poly aluminium chloride</i>	Liquid chemical	1000L (max)
<i>Unleaded Petrol bowser</i>	Liquid	8000L (max)
<i>Diesel bowser</i>	Liquid	8000L (max)
<i>Diesel and petrol drums</i>	Liquid	20L each

11.2 Safety equipment

Safety Equipment	Description	Location
Chemical MSDS	Information regarding chemical	Chemical storage areas
Leak detection for petrol tanks	Leak detection system for underground petrol storage system	Asset Management office, petrol bowzers.
Spill kits	Equipment to absorb spills at designated locations. Checked quarterly during WHS inspection.	Asset Management office, petrol bowzers, plantrooms
Spill pallets		Plantrooms
PPE	Personal protection equipment which is required in accordance with MSDS specifications	Chemical storage areas



12 Training & Awareness

12.1 Employees

Training and Awareness sessions will be held with key stakeholders upon implementation of the PIRMP. A structured information package will also be included into Taronga Zoo staff Induction program. All training records are held with People and Learning division.

12.2 Contractors

Contractors will be made aware of the PIRMP requirements via Conditions of Entry for Working on site at Taronga and Induction. Records are held with Capital Works, Infrastructure and Operations.

13 Complaints

Complaints can be made directly to Taronga Zoo in writing to tz@zoo.nsw.gov.au or webmaster@zoo.nsw.gov.au or by phone on (02) 9969 2777

14 Communicating with the Local Community

Taronga is committed to ensuring that those in our local community who may be potentially impacted by a pollution incident are adequately notified. Notifications to the community is the responsibility of Taronga Media Relations Department and would be undertaken via Taronga's website and Facebook and via Mosman Council, where considered appropriate.

15 Requirements of the Plan

This plan is effective from 1 September 2012. Document reviews are dated below.

A copy of this plan must be forwarded to the relevant response agencies in written form. The plan must also be available at Taronga (located at Asset Management Office) and be available to be provided to an authorised EPA officer on request.

A copy of the current license must be kept with this plan and be available to an authorised EPA officer on request.

15.1 Testing the Plan

This PIRMP is tested by way of an annual pollution drill scenario. Drill reports are saved to internal shared file network.

The PIRMP is also tested within one month of any pollution incident or near-miss occurring. This will occur via a drill scenario or a post-incident debrief.



Pollution drill date	Involved staff members
27/2/2020	Water Systems Supervisor - Sergei Iagunkov Water Systems Operator- Thomas Anderson Water Systems Operator- Troy Fullwood Water Systems Operator - Daryl Edwards
10 th June 2021	Water Systems Supervisor - Sergei Iagunkov Water Systems Operator - Troy Fullwood Works & Trades Supervisor, Plumber- Andrew Moar
17 th June 2021	Water Systems Operator - Thomas Anderson Water Systems Operator - Daryl Edwards
9 th June 2022	Water Systems Supervisor - Sergei Iagunkov Water Systems Operator- Sara Turrini Water Systems Operator- Troy Fullwood Asset Operations Manager- Ross Gage Supervisor, Plumbing and Electrical- Greg Berry Chris Burns- Manager, Security TZ Base- Hannah B
26 th May 2023	Facilities Supervisor – Gregory Berry Water Systems Operator – Troy Fullwood Water Systems Operator – Sara Turrini Facilities Manager – Andrea Crespo Arrisueno Manager Environmental Sustainability – Bridget Corcoran Environmental Sustainability Officer – Emily Smith Facilities Coordinator – Brian Hewetson Assets Operations Manager – Amadeo Apostle TZ Base – Georgia Smart

15.2 Document reviews

Version	Date of Review:	Reviewed by:	Reason for review:
3.3	09/07/19	Mgr. Environmental Sustainability	Stormwater sediment incident May 2019
3.4	30/08/19	Mgr. Environmental Sustainability	Update contact details of Manager Security & Manager, WHS
3.5	26/06/20	Mgr. Environmental Sustainability	Update contact details of Mgr. Sustainability Added Duty Manager contact Clarifications on acronyms



3.6	17/6/21	Mgr. Environmental Sustainability	Updated pollutants and maps, clarified contactable authorities, updated detail re Environment Incident Form, updated contact details, inserted Response flowcharts (instead of Appendices)
3.7	20/6/22	Mgr. Environmental Sustainability	Update Flowcharts based on learning from Pollution Drill, updated internal staff contact details
3.8	23/6/2022	Environmental Sustainability Officer	Updated internal staff contact details