

# Victorian Desalination Project



D&C Marine Area Environmental Management Plan  
Attachment K - Environmental Incident Response Plan

DOCUMENT NUMBER						
TDV	0	EV	PL	0013	K	03



## Table of Contents

<b>1</b>	<b>Purpose</b> .....	<b>7</b>
<b>2</b>	<b>Scope</b> .....	<b>8</b>
<b>3</b>	<b>Identification of types of potential incidents and emergencies that could impact on the environment</b> .....	<b>8</b>
<b>4</b>	<b>Regulatory, contractual and other requirements</b> .....	<b>9</b>
<b>5</b>	<b>Preventative measures to minimise the risk of environmental incidents</b> .....	<b>9</b>
<b>6</b>	<b>Location of On-site information on hazardous substances and spill containment equipment</b> .....	<b>10</b>
<b>7</b>	<b>Classification of Environmental Incidents</b> .....	<b>13</b>
<b>8</b>	<b>Environmental incident response</b> .....	<b>13</b>
<b>9</b>	<b>Environmental incident notification</b> .....	<b>15</b>
	9.1 Environmental Incident notification requirements.....	15
	9.2 Emergency Services.....	15
<b>10</b>	<b>Environmental Incident investigation</b> .....	<b>15</b>
	<b>ATTACHMENT K-1: Environmental Incident Classification Matrix</b> .....	<b>17</b>
	<b>ATTACHMENT K-2: Environmental Incident Procedure</b> .....	<b>27</b>

## Definitions and Acronyms

The following Definitions and Acronyms are used in this document:

Class One Environmental Incident	Class One Environmental Incidents create permanent or long term damage to the environment. This damage will result in the environment taking 12 months or more to return to pre-existing conditions or costs in excess of \$50,000 to remediate. (See Attachment K-1).
Class Two Environmental Incident	Class Two Environmental Incidents create short to medium term damage to the environment. This damage will result in the environment taking up to 12 months to return to pre-existing conditions or costs in excess of \$10 000 but not exceeding \$50,000 to remediate. (See Attachment K-1).
Class Three Environmental Incident	Class Three Environmental Incidents typically cause short term or nuisance damage. The damage is easily rectified usually within one day. Class 3 incidents do not cause medium or long term damage or costs less than \$10 000 to remediate. (See Attachment K-1).
D&C	Design and Construct Phase of the VDP
DSE	Department of Sustainability and Environment
DPI	Department of Primary Industries
EIRP	Environmental Incident Response Plan
Emergency Response Services	May, as appropriate, mean police, ambulance, fire brigades, state emergency services, hospitals or other specialist groups
EMP	Environmental Management Plan
EMR	Environmental Management Representative
EMS	Environmental Management System
Environmental Hazard	Means a state of danger to human beings or the environment whether imminent or otherwise resulting from the location, storage or handling of any substance having toxic, corrosive, flammable, explosive, infectious or otherwise dangerous characteristics (s.4, Environment Protection Act 1970)
Environmental Incident	Any event that causes, has caused or has the potential to cause an Environmental Hazard or Pollution (from section 4, Appendix S3, PS&PR). [Please see the definition of <i>Environmental Hazard</i> . Please see the definitions of <i>Pollution of Atmosphere</i> , <i>Pollution of Land</i> and <i>Pollution of Waters</i> for the legislative definitions of 'Pollution' in Victoria.]
EO	Environmental Officer
EPA	Victorian Environment Protection Authority
EP Act	Environment Protection Act 1970
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
JSEA	Job Safety and Environmental Analysis
Marine Area	The marine component of the VDP. Includes the drilling of vertical holes in the seabed, installation of risers and marine structures, mobilisation and use of vessels for marine monitoring activities and construction.

D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

Marine Works Area (onsite)	Refers to a locality where marine area activities take place. This includes all vessels when in use by TDJV, the area bounded by the temporary marine exclusion zone, the seabed where the marine structures are installed and monitoring locations where monitoring or devices are placed.
MSV	Marine Safety Victoria
Near Hit	Any unplanned event in the workplace that, although not resulting in environmental damage, had the potential to do so
O&M	Operation and Maintenance Phase of the VDP
OHS	Occupational Health and Safety
Performance Criteria	The Performance Criteria outline the overarching requirements based on the environmental objective for each Subject Area of Schedule A of Appendix S3 of the Project Scope and Project Requirements
Plant Site	Victorian Desalination Project Wonthaggi Plant site
Pollution of Atmosphere (s.41, <i>Environment Protection Act 1970</i> )	<p>A person shall not pollute the atmosphere so that the condition of the atmosphere is so changed as to make or be reasonably expected to make the atmosphere—</p> <ul style="list-style-type: none"> <li>(a) noxious or poisonous or offensive to the senses of human beings;</li> <li>(b) harmful or potentially harmful to the health, welfare, safety or property of human beings;</li> <li>(c) poisonous, harmful or potentially harmful to animals, birds or wildlife;</li> <li>(d) poisonous, harmful or potentially harmful to plants or other vegetation; or</li> <li>(e) detrimental to any beneficial use made of the atmosphere.</li> </ul>
Pollution of Land (s.45, <i>Environment Protection Act 1970</i> )	<p>A person shall not pollute land so that the condition of the land is so changed as to make or be reasonably expected to make the land or the produce of the land—</p> <ul style="list-style-type: none"> <li>(a) noxious or poisonous;</li> <li>(b) harmful or potentially harmful to the health or welfare of human beings;</li> <li>(c) poisonous, harmful or potentially harmful to animals, birds or wildlife;</li> <li>(d) poisonous, harmful or potentially harmful to plants or vegetation;</li> <li>(e) obnoxious or unduly offensive to the senses of human beings; or</li> <li>(f) detrimental to any beneficial use made of the land.</li> </ul>
Pollution of Waters (s.39, <i>Environment Protection Act 1970</i> )	<p>A person shall not pollute any waters so that the condition of the waters is so changed as to make or be reasonably expected to make those waters—</p> <ul style="list-style-type: none"> <li>(a) noxious or poisonous;</li> <li>(b) harmful or potentially harmful to the health, welfare, safety or property of human beings;</li> <li>(c) poisonous, harmful or potentially harmful to animals, birds, wildlife, fish or other</li> </ul>



D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

	<p>aquatic life;</p> <p>(d) poisonous, harmful or potentially harmful to plants or other vegetation; or</p> <p>(e) detrimental to any beneficial use made of those waters.</p>
PS&PR	Project Scope and Project Requirements
VDP	Victorian Desalination Project
WAP	Work Area Packages
WP	Work Pack

## 1 Purpose

The purpose of this Environmental Incident Response Plan (EIRP) (Document No. TDV-0-EV-PL-0013-K), is to provide project specific details for the identification of and response to potential environmental related incidents during the Design and Construction (D&C) phase of the Victorian Desalination Project (VDP), specifically addressing potential incidents during marine area activities.

The EIRP is a document for specific use by the TDJV Environmental Team, to respond to and manage potential and actual environmental incidents. It provides guidance on potential environmental incidents, and the mitigation strategies to manage these potential incidents, as well as response to actual incidents, and follow-up and reporting requirements.

The EIRP is a key attachment (Attachment K) to the D&C Marine Area Environment Management Plan (D&C Marine Area EMP) (TDV-0-EV-PL-0013), and is relevant, but not limited, to the following attachments and sub plans:

- Attachment C – Environmental Risk Register
- Attachment E – Environmental Legislation Register
- Attachment F – Environmental Licence, Permit, and Approvals Register
- Attachment G – Environmental Compliance Register
- Coastal Processes and Activities Sub Plan (TDV-0-EV-SB-0013.I1)
- Hazardous Materials Sub Plan (TDV-0-EV-SB-0013.I2)
- Resource Efficiency and Waste Management Sub Plan (TDV-0-EV-SB-0013.I3)
- Marine Flora and Fauna Sub Plan (TDV-0-EV-SB-0013.I4)
- Helicopter Management Sub Plan (TDV-0-EV-SB-0013.I5)
- Marine Pest and Pathogen Sub Plan (TDV-0-EV-SB-0013.I6)
- Underwater Noise Sub Plan (TDV-0-EV-SB-0013.I7)

The EIRP should be read in conjunction with the following documents:

- D&C OHS Procedure: Incident Notification, Record and Investigation (PR-TDV-SA-0-OHS-13001-01).
- EPBC Act Emergency Incident Environmental Management Strategy (TDV-0-EV-PL-0014-00);
- Emergency Management Plan (PR-TDV-SA-0-OHS-12-0001-01);
- Health & Safety Management Plan (PL-PLV-PM-3-X-000-0001-00-00).

## D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

Note: For environmental incident response requirements for the Plant and Utilities work areas, please refer to documents D&C Plant and General Area Environmental Incident Response Plan (TDV-0-EV-PL-0011-K) and D&C Utilities Environmental Incident Response Plan (TDV-0-EV-PL-0012-K).

## 2 Scope

The EIRP has been developed to comply with relevant regulatory requirements for identified environmental risks, and the environmental incident response requirements of the Project Deed, specifically Appendix S3 cl 4, provided below. For ease of reference, sections where these specific Project Deed requirements are addressed in this document are identified. Emergency/environmental incident procedures must detail the actions to be followed in the event of an incident. An environmental incident is defined as any event that causes, has caused or has the potential to cause an Environmental Hazard or Pollution. Appendix S3(4) of the Project Deed states that the emergency/environmental incident procedures must provide the following:

- (a) an assessment of the types of Incidents and emergencies that might impact on the environment and their potential causes and consequences (refer to section 3);
- (b) preventative measures required to minimise the risk of Incidents and emergencies which may be incorporated into the Environmental Management Plan (refer to section 5);
- (c) names and contact details of key response authorities including Emergency Services (refer to Attachment K-2);
- (d) names of key project response personnel and contact details (including after hours telephone numbers) (refer to Attachment K-2);
- (e) project personnel responsibilities (refer to section 7);
- (f) location of on-site information on hazardous materials and dangerous substances, and spill containment equipment or structures (refer to section 6);
- (g) a procedure for site personnel to follow to minimise/control the emergency/incident e.g. spill management (refer to section 9d); and
- (h) procedures for notifying the on-site staff, contractors, regulatory agencies and public if required (refer to section 10).

## 3 Identification of types of potential incidents and emergencies that could impact on the environment

All activities to be undertaken during the D&C Phase are assessed as part of the risk assessment process undertaken as a requirement of the D&C Marine Area EMP (TDV-0-EV-PL-0013). The Environmental Risk Register is a “live” document.

Types of potential incidents associated with these activities that could impact on the environment, and their consequences, are identified in the Environmental Risk Register (Attachment C) of the EMP. An assessment of the potential significance of the risks of these incidents is included in the Register, based on the AS/NZS ISO 31000 Risk Assessment process.

The Register should be referred to for identification and determining significance of potential environmental impacts associated with activities undertaken at the plant site. Potentially significant environmental impacts that may occur due to marine area activities identified through the risk assessment process include, but are not limited to the following:

## D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

- Interference of marine vessels and works with local recreational and commercial users
- Interference of marine vessels with marine fauna
- Hazardous material spills
- Uncontrolled release of grout into the marine environment
- Production of a turbid plume from riser drilling spoil disposal
- Seabed clearance and disturbance
- Damage to high biodiversity (key value) areas
- Impacts to sensitive fauna resulting from helicopter movements
- Introduction of marine pests and/or pathogens
- Construction noise (underwater) impacts on whales and marine recreational users

The Register is to be reviewed on at least a three-monthly basis or more often where new on site activities are initiated during the D&C Phase, to ensure that all activities and credible potential incident scenarios are identified.

## **4 Regulatory, contractual and other requirements**

Regulatory, contractual and other requirements for direction in assigning significance of potential environmental impacts are provided in the following documents:

- D&C Marine Area EMP – Attachment E – Environmental Legislation Register
- D&C Marine Area EMP – Attachment F – Environmental Licence, Permit and Approval Register
- D&C Marine Area EMP – Attachment G – Environmental Obligations Register.

## **5 Preventative measures to minimise the risk of environmental incidents**

The likelihood of the possible occurrence of potentially significant environmental impacts can be reduced and/or the potential impacts mitigated by implementation of appropriate preventative measures. These preventative measures for identified potentially significant environmental issues are documented in the relevant sub plans attached the D&C Marine Area EMP. Refer to the Environmental Risk Register for references to relevant sub plans.

The Environmental Team will be responsible for providing construction staff with guidance on the implementation of effective measures to appropriately manage the possible occurrence of these potentially significant environmental impacts identified through the risk assessment process. Responsibilities for implementing these measures are identified in the relevant sub plans.

## **6 Location of On-site information on hazardous substances and spill containment equipment**

An inventory of hazardous materials (including hazardous substances) is provided and maintained on the project and will be available in the event of an emergency. The Vessel Master will compile a Hazardous Substance Risk Assessment (HSRA) for all hazardous materials and substances within the scope of D&C activities relating to Marine Area Works. The Marine OHS Representative is responsible for approving the HSRA and ensuring it is kept current. The D&C marine area environmental team will assist the Marine OHS Representative and Vessel Master where applicable during this process.

In the event of an emergency situation involving hazardous substances, the database of all chemicals contained on site will be consulted. Relevant MSDS data sheets are located in the MSDS Register and will be contained, along with the HSRA, onboard both the JUB and OSV and be readily accessible to all employees as well as emergency services and relevant public authorities at all times on request. Paper copies of the EIRP will also be available onboard all major vessels. Additionally notification requirements, as per Attachment K-2, will be maintained at conspicuous locations onboard major vessels (e.g. at hazardous material storage areas). Smaller vessels will be required to carry MSDSs relevant to all hazardous substances, contained and used onboard the vessel, at all times.

Various members of the TDJV D&C team have responsibilities in minimising the potential for and responding to environmental incidents at the site. Table 7-1 outlines the key team members and levels of authority. Broader environmental management roles and responsibilities associated with the wider project are described in the D&C EMP.

The location of spill response equipment changes, depending on the work area currently active. All vessels will be required to carry hydrocarbon spill response materials onboard at all times. Further details on the location of spill kits on the major vessels (JUB and OSV) will be updated upon mobilisation and contained in the relevant SEPs (see below). Spill kits will be checked as part of the weekly environmental site inspection and additional spill kits and replacement materials kept onsite in the stores areas

### **JUB**

The MSDS Register will be available at the Project/JUB Office (located on the JUB) or at the Camp Boss Office (catering). This system provides Material Safety Data Sheets (MSDS) on hazardous substances or materials held in the marine works area (on site) and provides users with vital information on providing first aid, combating fires and managing spills.

A detailed map of the JUB deck - showing the location of the MSDS Register, first aid facilities, spill response measures and fire extinguishers is provided in SEP02: JUB. Further information on spill response materials will be provided upon JUB mobilisation.

### **OSV**

The location of the MSDS Register, first aid facilities, spill response measures and fire extinguishers is provided in SEP03: OSV. Further information will be completed upon OSV mobilisation.



D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

**Table 7-1 Project team structure and levels of authority**

Position	Authority
TDJV Project Director	<p>Implements and ensures compliance with the requirements of the Environmental Incident Response Plan. Ensures adequate funds, resources and allocates responsibilities to effectively develop, implement and maintain the Plan.</p> <p>Manages all formal communication with external authorities and media as per the TDJV Construction Communication Plan</p> <p>Ensures that appropriate reporting to DSE, EPA and other regulatory agencies is actioned as appropriate, in accordance with the severity and status of the incident (as defined in attachment K-2).</p>
A1MT Offshore Construction Manager	<p>Ensures management plans, work pack method statements, JSEA and related construction management tools are implemented to ensure environmental risks are correctly managed in accordance with best practices. Reviews the outcome and close out of all major incidents with the Project Director, Safety Manager and Marine Area Environment Manager.</p>
A1MT Vessel Master	<p>Responsible for management of the vessel under their charge. Ensures all risks related to hazardous materials are assessed and are incorporated into a Hazardous Substance Risk Assessment (HSRA).</p>
A1MT Marine OHS Representative	<p>Approval of the HSRA and ensuring it is maintained and up to date.</p>
Environment Management Representative (AquaSure)	<p>Conduct audits and reviews of the EMS, D&amp;C EMP and Marine Area D&amp;C EMP (including implementation).</p> <p>Ensuring that DSE, EPA and other appropriate regulatory authorities have been notified (as nominated in Attachment K-2).</p>
Stakeholder Director	<p>Responsible for ensuring that all Class 1, 2 and 3 environmental incidents have been appropriately responded to, and that corrective actions have been effectively implemented.</p> <p>Responsible for ensuring that all measures to contain, clean up and rectify the event have been completed.</p> <p>Ensure that all incidents including Class 3 environmental incidents are reported (as a minimum) on a monthly basis in the Project Monthly Report to AquaSure and DSE.</p>
TDJV Area Environment Managers	<p>Ensure environmental systems are functioning correctly at the work-front through training, awareness, audits and reviews. Training includes Environmental Incident classification (Attachment K-1) and notification requirements (Attachment K-2).</p> <p>Advises Construction Manager to cease site-stop work immediately if observed likely damage to environment.</p> <p>Conduct reviews of the Risk Assessment at least every three months.</p> <p>Inform Construction Manager/ Site-Superintendent and Environmental Coordinator of corrective actions.</p> <p>The Area Environment Manager will be informed in the event of a Class 1 or 2 events immediately or a Class 3 during the current shift.</p> <p>The Area Environment Manager is responsible for notifying the Environment Management Representative (AquaSure), Project Director, Construction or Operation Manager, DSE, EPA and other appropriate regulatory authorities within the specified time frames (as nominated in Attachment K-2). Provide support/ assist, where required in the containment, clean up and rectification of Class 1 and 2 environmental incidents.</p> <p>Responsible for ensuring that all measures to contain, clean up and rectify the</p>



D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

Position	Authority
	event have been completed and where necessary informing the Construction or Operation Manager, DSE, EPA and other appropriate regulatory authorities (as nominated in Attachment K-2).
TDJV Environmental Coordinator	Assist the Area Environment Managers in the review of the risk assessment and to ensure that corrective actions are completed as required by the Project Scope and Project Requirements and are updated in the Compliance Tracker.
TDJV Environmental Officer	<p>Conduct surveillance of construction work, confirming systems are being implemented, and stop work immediately if observed likely damage to environment</p> <p>Inform offshore construction manager or superintendent and environment and Environmental Coordinator</p> <p>The Environmental Officers should be informed in the event of a Class 1 or 2 event immediately or Class 3 during the current shift. The EOs are then responsible for notifying the Area Environment Manager and for ensuring that all measures to contain, clean up and rectify the event have been completed.</p>
TDJV Project Engineer/Site Supervisors	<p>Participate and lead work method statements, JSEA and related construction management tools to ensure environmental risks are correctly managed in accordance with best practices.</p> <p>Inform construction manager and environment and approvals manager of any departures from procedure</p>
All TDJV Staff, employees and contractors	<p>Comply with environmental procedures and risk mitigation measures. Conduct regular environmental inspections in accordance with job responsibilities. If a likelihood of damage occurring to the environment as a result of project activities, notify their supervisor, and take appropriate corrective action including ceasing work activities, “stop / start card” procedures or similar corrective actions. Ensure communication external to the project regarding incidents occurs through the designated channels. Share learnings and contribute to project’s knowledge.</p> <p>All Staff, employees and contractors should inform the Environmental Officer/ Area Environment Manager in the event of a Class 1 or 2 event immediately or Class 3 during the current shift.</p>

All staff are to be made aware of the requirement to notify relevant supervisory and Environmental Team staff of potential and actual incidents. All personnel working on the site will be made aware of the internal incident notification requirements through inductions and toolbox talks. When on site, all visitors will be under the direction of a fully inducted escort, who will be responsible for that visitor/s at all times including during an emergency event. Any personnel with incident/complaint response or incident investigation responsibilities shall be appropriately trained.

The EIRP is principally a document for the Environmental Team to use when responding to potential or actual incidents with environmental issues involved. However all D&C personnel affected by the EIRP will have access to a copy of the EIRP via the project document control system.

## 7 Classification of Environmental Incidents

For the purposes of response and reporting arrangements, environmental Incidents are classified into three classes, as summarised in Table 8-1.

**Table 8-1. Classes of Environmental Incidents**

Class One	Class Two	Class Three
<p>Class One Environmental Incidents create permanent or long term damage to the environment. This damage will result in the environment taking 12 months or more to return to pre-existing conditions.</p> <p>Cost: &gt; \$50,000 to clean up.</p>	<p>Class Two Environmental Incidents create short to medium term damage to the environment.</p> <p>This damage will result in the environment taking up to 12 months to return to pre-existing conditions.</p> <p>Cost: \$10,000 to \$50,000 to clean up.</p>	<p>Class Three Environmental Incidents typically cause short term or nuisance damage. The damage is easily rectified usually within one day. Class 3 incidents do not cause medium or long term damage.</p> <p>Cost: &lt; \$10,000 to clean up.</p>

The classifications, including sub-categories are explained in further detail in Attachment K1 - Environmental Incident Classification Matrix.

## 8 Environmental incident response

All environmental incidents will be responded to in accordance with the following documents:

- D&C OHS Procedure: Incident Notification, Record and Investigation (PR-TDV-SA-0-OHS-13001-01).
- EPBC Act Emergency Incident Environmental Management Strategy (TDV-0-EV-PL-0014-00).
- Emergency Management Plan (PR-TDV-SA-0-OHS-12-0001-01).

Incidents will be responded to as outlined in the environmental incident response flow chart (Figure 3). In summary:

1. STOP WORK and NOTIFY INTERNAL Site Supervisor and Environmental Team
2. PREVENT further environmental contamination/ spillage/ pollution etc. (if safe to do so)
3. CONTAIN environmental contamination/ spill/ pollution.
4. CLEAN UP environmental contamination/ spill/ pollution.
5. TDJV Area Environment Manager to NOTIFY EXTERNAL contacts (Attachment K-2: Environmental Incident Procedure )

D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

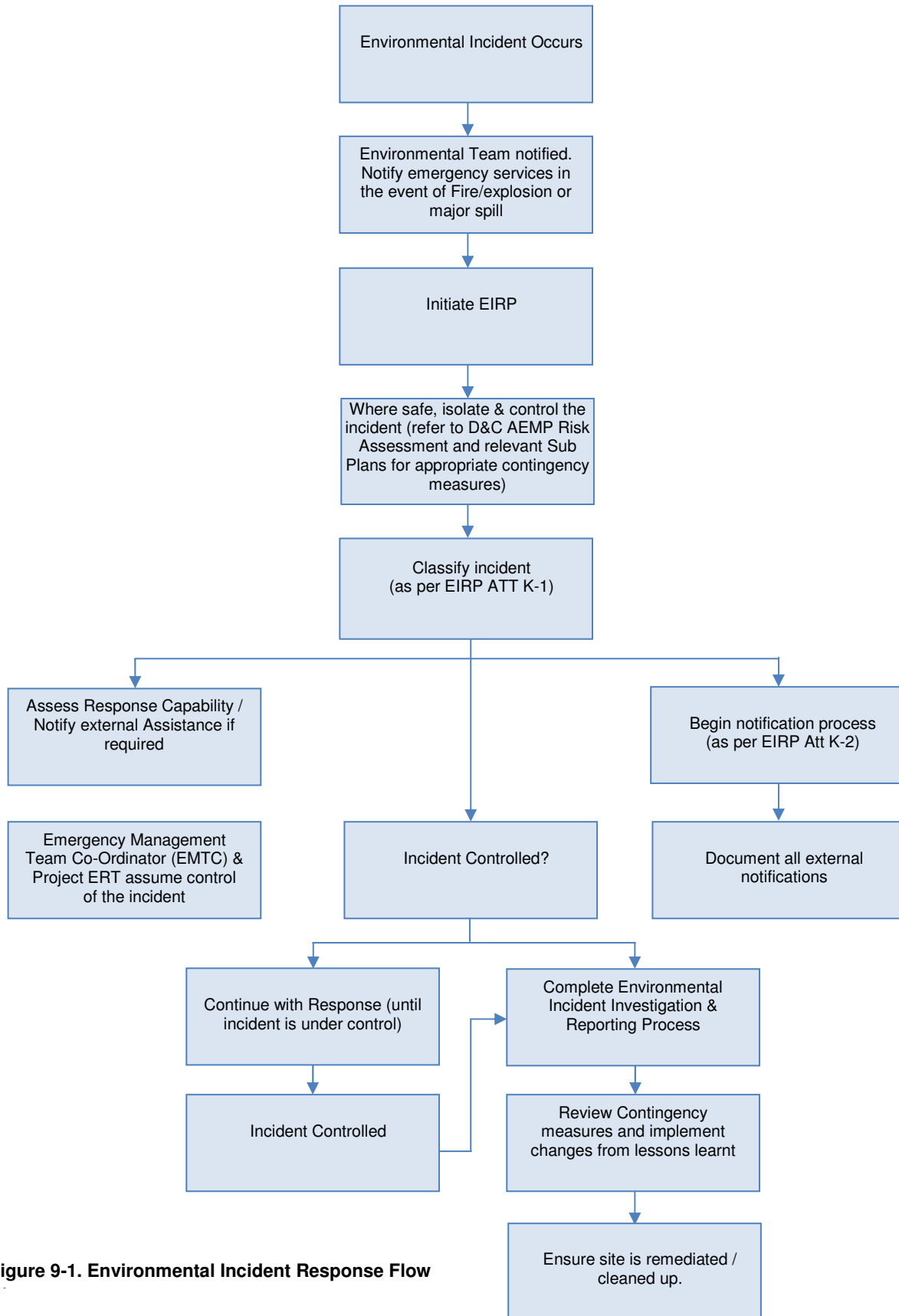


Figure 9-1. Environmental Incident Response Flow

## 9 Environmental incident notification

### 9.1 Environmental Incident notification requirements

A master contacts list of incident / emergency response personnel will be kept in the EIRP (not distributed widely) and updated as regularly as required (Attachment K-2). This notification protocol must be strictly complied with for all Classes of Environmental Incidents.

Notification and escalation to AquaSure and other stakeholders will follow the Incident Reporting and Review Protocol (Attachment K-2). The Area Environment Managers will report Class 1 and 2 environmental incidents to DSE, MSV and EPA as soon as practicable within 30 minutes of the incident occurring.

### 9.2 Emergency Services

Refer to the D&C OHS Procedure – Incident Notification, Record and Investigations (PR-TDV-SA-0-OHS-13001-01) for notification requirements for all types of incidents. The Emergency Services contact details will be displayed throughout the site offices and construction site and updated as regularly as required (Attachment K2).

Additionally, site posters will be produced to inform D&C personnel of which personnel are primary responders' e.g. first aiders, wardens, site safety representatives. The posters will contain all details listed above with the addition of the response personnel's photograph.

The OH&S Manager and Area Environment Manager will coordinate the quarterly review and updating of the contact listing details and ensure the current qualifications of the listed persons. Pocket copies will be developed for superintendents and site supervision to carry with them. All personnel issued a company mobile phone shall be encouraged to keep emergency numbers in their mobile phone directories.

## 10 Environmental Incident Investigation

In the event of an environmental incident, and regardless of severity, the Project Director and Area Environment Manager will ensure that all incidents are thoroughly investigated within the specified timeframes, with the findings and outcomes recorded and identifying corrective action implemented. All incident investigations will be undertaken in accordance with D&C OHS Procedure: Incident Notification, Record and Investigation (PR-TDV-SA-0-OHS-13001-01).

A properly planned, executed and followed up incident investigation will have some or all of the following benefits:

- Reducing the probability of a repeat of the specific incident
- Reducing the probability of related incidents
- Reducing the probability of incidents that share some contributing factors with the specific incident
- Identifying and initiating action on unrelated problems found as a by-product of the investigation
- Provide the data required to detect developing trends that can be analysed to identify specific or recurring problems.



D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

This page has been left intentionally blank.

## ATTACHMENT K-1: Environmental Incident Classification Matrix

### CLASSIFICATION MATRIX

#### ENVIRONMENTAL

Damage Incurred	Incident Type	Environmental Incident Type	Classification		
			Class 1	Class 2	Class 3
Yes	Environmental Harm	B - Controlled & uncontrolled discharges to water	Major and persistent discharge of pollutant to water outside site or workplace. Major long-term impact on water resources e.g. <ul style="list-style-type: none"> <li>acid drainage run-off from mining operations;</li> <li>tailings dam failure;</li> <li>extensive contamination / pollution of groundwater or water catchment areas.</li> </ul>	Major or persistent discharge to water. Short-term impact on water resources e.g. <ul style="list-style-type: none"> <li>oil spill escapes into stormwater or watercourse;</li> <li>operations cause minor pollution of groundwater in localised area(s);</li> <li>uncontrolled discharge from sedimentation basin via emergency spillway above allowable limits.</li> </ul>	Minor pollutant discharge to water. No impact on water resources e.g. <ul style="list-style-type: none"> <li>discharge from sedimentation basin above allowable limits;</li> <li>uncontrolled discharge of site drainage run-off water.</li> <li>placement of material in a location where it could potentially result in pollution.</li> <li>Spill less than 1 litre of oil</li> </ul>
		C - Contamination of land	Major spill or escape of hydrocarbons or chemicals. <ul style="list-style-type: none"> <li>persistent contamination of land.</li> <li>spill may or may not be contained to defined area(s) within site or workplace.</li> <li>extensive cleanup required.</li> <li>spill greater than 5000 litres from operations or storage into ground.</li> </ul>	Significant spill of hydrocarbons or chemicals. <ul style="list-style-type: none"> <li>some residual contamination of land.</li> <li>spill contained to defined area(s) within site or workplace.</li> <li>significant cleanup required over and above removal of contaminated material to land farm or nominated / approved waste area.</li> <li>spill greater than 1000 litres.</li> </ul>	Minor spill of hydrocarbons or chemicals. <ul style="list-style-type: none"> <li>no residual contamination of land.</li> <li>spill contained to defined area(s) within site or workplace.</li> <li>no significant cleanup required other than removal of contaminated material to land farm or nominated / approved waste area.</li> <li>spill less than 1000 litres.</li> </ul>
		D - Controlled & uncontrolled emissions to atmosphere	Major or persistent discharge of hazardous pollutant to atmosphere outside site or workplace e.g. <ul style="list-style-type: none"> <li>explosion or leak of hazardous gas;</li> <li>possible or actual evacuation of local vicinity;</li> <li>risk to human health or the environment.</li> </ul>	Major or persistent release of pollutant to atmosphere outside site or workplace: <ul style="list-style-type: none"> <li>some contained risk to human health.</li> </ul>	Minor discharge of pollutant to atmosphere outside site or workplace e.g. <ul style="list-style-type: none"> <li>overflow of cement silo, cement dust release;</li> <li>no risk to human health.</li> </ul>

D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

	E - Noise, dust, vibration & odour	<p>Generation of dust, noise, vibration or odour causing damage to property outside site or workplace, the environment or human health e.g.</p> <ul style="list-style-type: none"> <li>• noise generated causes damage to hearing and human health;</li> <li>• non-contained hazardous dust generation i.e. asbestos dust with potential long term damage to human health;</li> <li>• vibration causes damage to property.</li> </ul>	<p>Generation of dust, noise, vibration or odour causing sustained periods of inconvenience or disruption to community and the environment e.g.</p> <ul style="list-style-type: none"> <li>• sustained generation of dust with inadequate dust suppression, causing nuisance or local hazard.</li> </ul>	<p>Generation of dust, noise, vibration or odour causing periodic inconvenience or disruption to community and the environment e.g.</p> <ul style="list-style-type: none"> <li>• occasional breach of noise restrictions outside approved hours i.e. concrete pour takes longer than planned.</li> </ul>
	F - Solid and other wastes	<p>Unapproved storage, transport, treatment or disposal of a significant quantity (10,000 lt, 10 tonnes or 10.0 M<sup>3</sup>) of hazardous waste (solid or other) not easily removed to an appropriate location.</p>	<p>Unapproved storage, transport, treatment or disposal of a significant quantity (10,000 lt, 10 tonnes or 10.0 M<sup>3</sup>) of non-hazardous waste or minor quantity (205 lt, 200 Kg or 0.2 M<sup>3</sup>) of hazardous waste (solid or other), easily removed to an appropriate location.</p>	<p>Unapproved storage, transport, treatment or disposal of a minor quantity (205 lt, 200 Kg or 0.2 M<sup>3</sup>) of non-hazardous waste (solid or other), easily removed to an appropriate location.</p>
	G - Effects on the natural environment	<p>Major loss or impact on land or water based flora or fauna. Destruction of ecologically significant habitat. Endangering viability of species, habitat or eco-system. Damage that cannot be remediated without risk of long-term loss e.g.</p> <ul style="list-style-type: none"> <li>• destruction of habitat in a national park;</li> <li>• death of an animal or species that is in danger of extinction.</li> <li>• disruption of protected fauna-breeding cycle for an entire season.</li> </ul>	<p>Medium impact on land or water based flora, fauna and habitat. Short-term impact on eco-system. Damage that can be remediated e.g.</p> <ul style="list-style-type: none"> <li>• partial destruction of native habitat leading to impact on local species numbers or disruption to breeding cycles.</li> <li>• short-term disruption of protected fauna breeding cycle.</li> </ul>	<p>Minor loss or impact on land or water based flora, fauna &amp; habitat, but no negative effect on the eco-system. Limited damage to an area of land of no ecological significance e.g.</p> <ul style="list-style-type: none"> <li>• death of a native animal or species, that is not identified as abundant or a pest;</li> <li>• accidental felling of a tree;</li> <li>• over clearing of an area that is not native bush.</li> </ul>
	H - Archaeological, heritage or cultural issues	<p>Destruction or irreparable damage to highly valued structures / items / locations of cultural or heritage significance or value.</p>	<p>Damage to structures / items of cultural / heritage significance, or significant infringement of cultural values / sacred locations.</p>	<p>Minor repairable damage to commonplace structures, or minor infringement of cultural values.</p>

D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

	<p>I - Use of land, water, fuels &amp; energy, and other natural resources</p>	<p>Operations cause persistent unplanned disruption to the availability of resources to the community or the environment. Exhaustion or serious degradation of natural resources for future use e.g.</p> <ul style="list-style-type: none"> <li>• mining activities cause acid drainage run-off &amp; subsequent deforestation of surrounding land;</li> <li>• operations cause loss of flow in natural watercourses;</li> <li>• operations cause water table to rise increasing salinity problem i.e. unusable grazing pasture.</li> </ul>	<p>Operations cause substantial unplanned disruption to the availability of resources to the community or the environment. Significant impact on other energy / natural resource users outside site or workplace e.g.</p> <ul style="list-style-type: none"> <li>• water usage / de-watering by operations causes loss of pressure or flow to local / adjacent water bores.</li> </ul>	<p>Operations cause temporary unplanned disruption to the availability of resources to the community or the environment. Minor impact on other energy / natural resource users outside site or workplace e.g.</p> <ul style="list-style-type: none"> <li>• short-term loss of water or power supply.</li> </ul>
	<p>K - Public / media</p>	<ul style="list-style-type: none"> <li>• probable public or media attention with national or international coverage;</li> <li>• significant actual or potential damage to reputation;</li> <li>• lobbying of State and/or Federal Governments for action against company.</li> </ul>	<ul style="list-style-type: none"> <li>• may attract attention from local media and/or heightened concern by local community;</li> <li>• negative attitudes towards company – calls for action by Regulatory Authorities.</li> </ul>	<ul style="list-style-type: none"> <li>• public concern restricted to repeated local complaints.</li> </ul>
	<p>L - Total Cost (\$) – fines, remedial, lost time, legal cost</p>	<p>&gt; \$50,000</p>	<p>&gt; \$10,000 - &lt; \$50,000</p>	<p>&lt; \$10,000</p>

**ENVIRONMENTAL CONTINUED**

Damage Incurred	Incident Type	Environmental Incident Type	Classification		
			Class 1	Class 2	Class 3
		Z - General environmental and social effects	Pollution or degradation, which has or may have irreversible detrimental effects on the environment and/or community.	Pollution or degradation, which has persistent (greater than three months) but reversible detrimental effects on the environment and/or community.	Pollution or degradation, which has short-term (less than one month) and reversible detrimental effects on the environment and/or community.
No	Statutory Environmental Breach	J – Legal	<ul style="list-style-type: none"> <li>major breach of regulation identified and/or serious incident notification;</li> <li>investigation by Regulatory Authority with actual or potential prosecution and/or significant financial penalties against company and/or individuals.</li> </ul>	<ul style="list-style-type: none"> <li>possible or potential serious breach of regulation or licence conditions with on-the-spot fine and/or Regulatory Authority notification with possible prosecution.</li> </ul>	<ul style="list-style-type: none"> <li>minor licence non-compliance or non-conformance.</li> </ul>
	Procedural Breach	See categories above for Environmental Harm.	<ul style="list-style-type: none"> <li>Procedural breach where Class 1 environmental harm (as defined above for the respective environmental incident type) could realistically occur.</li> <li>Did not involve a statutory breach.</li> </ul>	<ul style="list-style-type: none"> <li>Procedural breach where Class 1 environmental harm (as defined above for the respective environmental incident type) has some chance of occurring.</li> <li>Did not involve a statutory breach.</li> </ul>	<ul style="list-style-type: none"> <li>Procedural breach where Class 1 environmental harm (as defined above for the respective environmental incident type) has almost no chance of occurring.</li> <li>Did not involve a statutory breach.</li> </ul>
	Near Hit - Environmental	See categories above for Environmental Harm.	Potential to result in class 1 environmental harm as defined above for the respective environmental incident type, but did not involve a statutory or procedural breach.	Potential to result in class 2 environmental harm as defined above for the respective environmental incident type, but did not involve a statutory or procedural breach.	Potential to result in class 3 environmental harm as defined above for the respective environmental incident type, but did not involve a statutory or procedural breach.

## SAFETY

Damage Incurred	Incident Type	Classification				
		Fatality / Perm. Disablement	LTI	RWI	MTI	FAI
Yes	Injury / Illness	Death or injury that permanently affects the future of an individual such as paraplegia, amputation, loss of an eye, etc.	An injury or illness that results in a fatality or days/shifts away from work, after the day of the injury.	A medical treatment injury or illness whereby a person is not capable of performing his or her expected duties at full capacity for a full shift.	Any injury or illness requiring medical treatment other than First Aid. Note: First Aid and observations by a medical practitioner are NOT MTIs. See <b>Note 1</b> below.	Treatment normally performed by a First Aider and not resulting in a LTI, RWI or MTI. See <b>Note 2</b> below.
No	Near Hit – Injury / Illness	Potential to result in Death/Disablement, but did not involve a statutory or procedural breach	Potential to result in LTI/RWI/MTI, but did not involve a statutory or procedural breach.			

### Note 1 - Medical Treatment Injury (MTI) include:

- Application of antiseptics during second or subsequent visits to medical personnel.
  - Treatment of partial or full thickness burns.
  - Insertion of sutures.
  - Removal of foreign bodies embedded in eye.
  - Removal of foreign bodies from a wound if the depth of embedment, size or location complicates the procedure.
  - Use of prescription medications (except a single dose administered on the first visit for minor injury or discomfort).
  - Surgical debridement. (Surgical removal of foreign object or suspect tissue from a wound).
  - Positive x-ray diagnosis for fractures.
  - Admission to a hospital or equivalent for treatment or observation for more than 12 hours.
  - Any work injury that results in a loss of consciousness.
- 
- Doctor prescribed visits to an associated health professional (eg. Physiotherapist) of more than 2 visits.
  - Any injury requiring two visits to a Doctor.

### Note 2 - First Aid Injury (FAI) include:

- Application of antiseptics during the first visit to medical personnel.
  - Treatment of superficial burns.
  - Application of bandages during any visit to medical personnel.
  - Removal of foreign bodies not embedded in the eye.
  - Removal of foreign bodies from a wound if the procedure is uncomplicated and is effected by the use of some simple technique.
  - Use of non-prescription medications and administration of a single dose of prescription medication on the first visit for a minor injury or discomfort. Tetanus injection.
  - Drilling of a finger or toe nail to relieve pressure, or draining fluid from a blister.
- 
- Negative x-ray diagnosis.
  - Observation of injury during a visit to medical personnel (less than 12 hours duration).
  - Doctor treatment first aid category is a single visit for injury or condition where the Doctor performs first aid, confirms that first aid treatment is adequate and/or provides advice on recovery.



D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

Damage Incurred	Incident Type	Classification		
		Class 1	Class 2	Class 3
No	Statutory Health / Safety Breach	<ul style="list-style-type: none"> <li>major breach of regulation identified and/or serious incident notification;</li> <li>investigation by Regulatory Authority with actual or potential prosecution and/or significant financial penalties against company and/or individuals.</li> </ul>	<ul style="list-style-type: none"> <li>breach of regulation or licence conditions with on-the-spot fine and/or Regulatory Authority notification with possible prosecution.</li> </ul>	<ul style="list-style-type: none"> <li>minor licence non-compliance or non-conformance.</li> </ul>
	Procedural Breach	Procedural breach where death or permanent disablement or Class 1 damage could realistically occur.	Procedural breach where death or permanent disablement or Class 1 damage has some chance of occurring.	Procedural breach where death or permanent disablement or Class 1 damage has almost no chance of occurring.  Important to record as potentially indicative of wider cultural, behavioural and supervisory issues.

D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

#	Mechanism
1	Falls from a Height
2	Falls on the Same Level (trips & slips)
3	Bodily Contact with Object
4	Exposure to Vibration
5	Hit by Moving Objects
6	Muscular Stress/Strain
7	Contact with Electricity
8	Exposure to Heat and Cold
9	Single contact with Chemical (excl. insect bites and stings).
10	Exposure to Water Contaminant
11	Exposure to Air Contaminant
12	Slide or Cave In
13	Vehicle Accident
14	Inappropriate Placement of Material
15	Damaged by Human Activity
16	Exposure to Sharp Sudden Sounds
17	Long term Exposure to Sounds
18	Exposure to variation in pressure (not sound)
19	Repetitive movement (low muscle loading)
20	Long term Contact with Chemical
21	Other contact with Chemical (incl. insect bites and stings)
22	Biological Factors
23	Mental Stress
98	Other and multiple mechanisms
99	Unspecified

#	Injury Type
1	Fractures
2	Sprains & Strains
3	Amputation incl. loss of eye
4	Open Wound
5	Superficial Injury
6	Contusion & Crushing
7	Foreign Body
8	Internal injury of chest,
9	Burns
10	Concussion
11	Shock (Electrical and other)
12	Poisoning
13	Multiple Injuries
14	Abrasion
15	Laceration
16	Dislocation
17	Effects of weather
99	Other and unspecified injuries

#	Body Location
1	Eye
2	Ear
3	Face
4	Head (not eye, ear and
5	Neck
6	Back
7	Trunk (excl. internal Organs)
8	Shoulders & Arms
9	Hands & Fingers
10	Hips & Legs
11	Feet & Toes
12	Internal Organs
13	Multiple Injuries
14	General and unspecified locations



D&C Marine Area EMP Attachment K – Environmental Incident Response Plan

**PLANT**

Damage Incurred	Incident Type	Classification		
		Class 1	Class 2	Class 3
Yes	Plant / Property / Equipment Damage	Damage or potential damage to plant or property in excess of \$50,000.	Damage to plant or property in excess of \$10,000 but less than \$50,000.	Damage to plant and property less than \$10,000.
No	Procedural Breach	Procedural breach where Class 1 damage could realistically occur.	Procedural breach where Class 1 damage has some chance of occurring.	Procedural breach where Class 1 damage has almost no chance of occurring. Important to record as potentially indicative of wider cultural, behavioural and supervisory issues.
	Near Hit – Plant / Property / Equipment Damage	Potential damage to plant or property in excess of \$50,000 that did not involve a procedural breach.	Potential damage to plant or property in excess of \$10,000 but less than \$50,000 that did not involve a procedural breach.	Potential damage to plant and property less than \$10,000 that did not involve a procedural breach



## REPORT ONLY AND COMPLAINT

Damage Incurred	Incident Type	Classification
Yes/No	Report Only	<p>Incidents that require recording for future reference but are non-work related and are not included in statistical reporting.</p> <p>The classifications for report only incidents are:</p> <ul style="list-style-type: none"> <li>- theft or damage associated with members of the public</li> <li>- non work related vehicle use resulting in damage</li> <li>- medical incident at work but not caused by work activity</li> <li>- injury participating in voluntary social activity organised by the company</li> </ul>
Yes/No	Complaint	<p>Raising an expression of dissatisfaction with the owner or agent about the standard of activities, services or goods provided.</p> <p>A complaint can be one of the following:</p> <ul style="list-style-type: none"> <li>- an expression of dissatisfaction about the standard of service</li> <li>- alleged nuisance, damage or inconvenience experienced (eg. dust, vibration)</li> <li>- action or lack of action by the owner or agent affecting an individual or group</li> <li>- an allegation that the owner or agent has failed to observe proper procedures</li> <li>- an allegation that there has been an unacceptable delay in dealing with a matter or about how an individual has been treated by a member of staff</li> </ul> <p>If an investigation of a complaint confirms its legitimacy, a separate incident record will be required to be entered into the HSE Reporting System.</p>



## HIGH POTENTIAL INCIDENT

### Thiess General

A “**high potential incident**” is an event, or a series of events, that causes or has the potential to cause a significant adverse effect on the safety or health of a person or the environment.

- A fatality associated with Thiess activities
- Multiple serious injuries,
- Permanent disabling injury
- Significant adverse reaction from authorities, media or the general public
- CSW Incidents resulting in:
  - Loss of load
  - Fall from >2m height
  - Electrical shock
- Potential class one plant/property damage.
- Potential permanent disability/fatality.
- Reasonable probability that incident could have been a Class 1 environmental incident