

EnergyAustralia Tallawarra

Pollution Incident Response Management Plan

VERSION HISTORY

| Version | Date | Author | Reason |
|---------|------------|-------------|--|
| 1.0 | 09.01.2014 | Ivan Currie | Creation for Tallawarra |
| 2.0 | 22/06/2015 | Ivan Currie | Amended to reflect relationship with ERP |
| 3.0 | 21/6/2016 | Ivan Currie | Amended to simplify flow chart, and rearrange document to improve ease of use in emergency. Extra hazard and controls added to Table 1. |
| 4.0 | 29/03/2017 | Kristen Lee | References links to old figures in previous version removed from page 4. Reference in the contact list TQMS12-HSE-L001-A01 updated and addition of Table 1: Regulatory Authorities Contact Details – page 9. Addition of Table 7: PIRMP Test Date – page 19. Addition of statement included on page 19 added to how the plan will be updated and maintained “Due to a high risk ranking the PIRMP will be reviewed and updated yearly by following Energy Australia Tallawarra standard operation procedure for Document creation, modification and approval TQMS09-IDR-P001.” |

MINOR AMENDMENTS SUMMARY

| No. | Amendment Summary | Amended By |
|-----|--|---------------------------------|
| 1.1 | Contact list replaced with link to existing ‘Emergency Contact List’ TQMS12-HSE-L001-A01 | Tracy Vasconcelos |
| 3.1 | New Light the Way Logo added | Business Administration Manager |

FULL VERSION

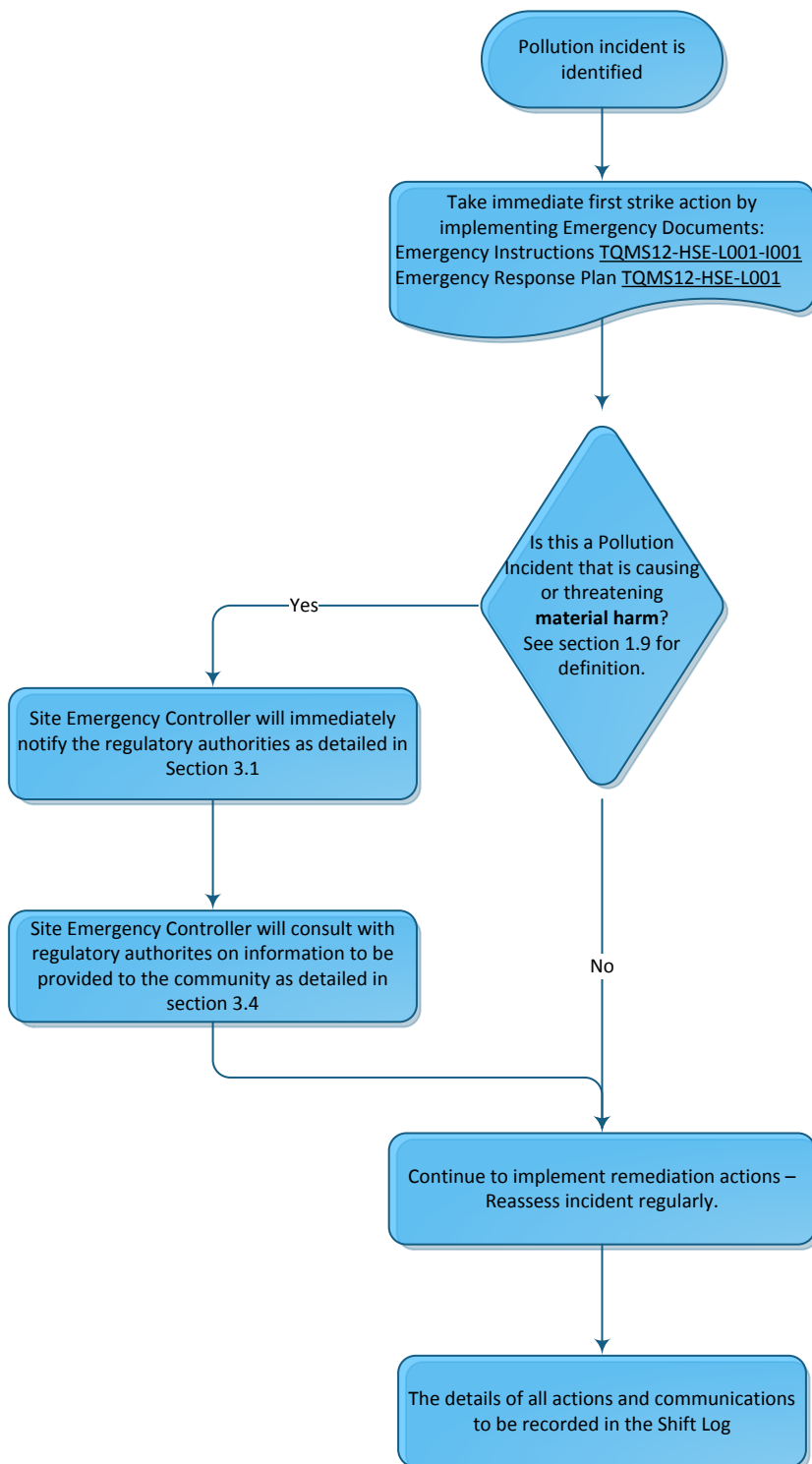
ATTENTION!

In an Emergency situation, the Emergency Instructions [TQMS12-HSE-L001-I001](#) and overarching Emergency Response Plan [TQMS12-HSE-L001](#) shall be implemented as a first priority.

This plan shall be followed at the earliest opportunity after the Emergency Response Plan has been initiated.

The actions outlined in this plan mirror those in the Emergency documents referenced above, and have only been included in this document to satisfy regulatory requirements.

Figure 1 - PIRMP Implementation chart



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1. Introduction

1.1 Title

This document is titled Pollution Incident Response Management Plan (PIRMP) for Tallawarra Power Station.

1.2 Full Version

This is the full version of the PIRMP and is maintained at the premises to which the relevant licence relates and is readily available to the persons responsible for implementing the plan and to an authorised officer of the EPA on request.

This version was originally developed in December 2013. Refer to the version control for the latest version. Previous to this the Emergency Response Plan was used as a PIRMP.

The PIRMP must be tested annually. Tests are documented and recorded in the EnergyAustralia Tallawarra event management system – Scenario.

1.3 Tallawarra Operations

EnergyAustralia Tallawarra is located on the western shore of Lake Illawarra and is primarily used to support power generation activities, providing the location for a combined cycle gas fired power plant as well as lands surrounding this facility.

The EnergyAustralia Tallawarra lands are maintained as remnant vegetation, or alternatively used for grazing where local landowners agist their animals.

1.4 Objectives

This PIRMP sets out the requirements for the notification, response and management of pollution incidents as defined in the Protection of the Environment Operations Act 1997 (POEO Act) and the Protection of the Environment Operations (General) Regulation (2009) at Tallawarra Power Station including Tallawarra lands – EnergyAustralia staff and/or contractors to Tallawarra.

The PIRMP has been developed to meet the requirements of EnergyAustralia Tallawarra and POEO legislation and nominates the appropriate responsibilities and actions assigned to Operations staff to ensure the requirements of this procedure are strictly adhered to.

This PIRMP is a component of the broader Emergency Response Plan.

1.5 Scope

This PIRMP shall be applicable to ALL EnergyAustralia Tallawarra staff, visitors and contractors to EnergyAustralia Tallawarra Power Station and Tallawarra Lands.

The PIRMP sets out the responsibilities and specific requirements in relation to notifying, responding to and managing pollution incidents as defined in the POEO Act.

A pollution incident is required to be notified to the Environmental Protection Authority (EPA) and other regulatory agencies as detailed in the Act where there is a risk of actual or potential 'material harm' to the environment. Material harm is defined in Section 1.9 of this PIRMP.

This PIRMP shall specifically list the Operations staff designated as responsible by the Asset Leader, for ensuring that actions and requirements nominated in this PIRMP are carried out as specified.

1.6 Document structure

This PIRMP has been prepared to address the specific requirements of the Protection of the Environment Operations (G) Regulation (clause 98B).

- ▶ Chapter 2 outlines the specific pollution incident response requirements and procedures;
- ▶ Chapter 3 outlines pollution incident response communications;
- ▶ Chapter 4 outlines pollution incident response planning undertaken to minimise the risk of potential incidents;
- ▶ Chapter 5 outlines the requirements for testing the PIRMP.

1.7 Reference documents

The following reference documents are also available for additional information or detail:

- ▶ Emergency Response Plan [TQMS12-HSE-L001](#);
- ▶ Emergency Instructions [TQMS12-HSE-L001-I001](#)
- ▶ Environmental Management Plan [TQMS04-HSE-L003](#);
- ▶ Management of Contractors Health, Safety and Environment [TQMS11-HSE-P006](#);
- ▶ Technical publications (e.g. MSDS's & ChemAlert, HAZCHEM codes);
- ▶ Protection of the Environment Operations Act 1997;
- ▶ Protection of the Environment Operations (General) Regulation 2009;
- ▶ NSW Office of Heritage (EPA) Environmental Guidelines: Preparation of pollution incident response management plans.

1.8 Pollution incident definition

A Pollution Incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur.

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

A pollution incident is required to be notified if '**material harm to the environment is caused or threatened**', which is defined in Section 147 of the POEO Act as:

(a) harm to the environment is material if:

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

2. Pollution incident response

The following section details responsibilities of designated EnergyAustralia Tallawarra staff during a pollution incident. It also details management measures for minimising the risk of harm to site personnel during a pollution incident and the actions to be taken during and immediately after a pollution incident.

2.1 Responsibilities during a pollution incident

The Asset Leader is the nominated Site Emergency Controller, or his delegate who can be the Operations Leader or Power Plant Technician, and is required to assess and initiate the notification process in accordance with the requirements of the POEO Act.

Refer to Section 3.1 of this PIRMP for the notification process

EnergyAustralia Tallawarra staff that discover an actual or potential pollution incident are responsible for immediately notifying the Control Room of the incident and providing the following information:

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

EnergyAustralia Tallawarra's emergency response protocols nominate the Asset Leader as the Site Emergency Controller (SEC), who may appoint a Communications Coordinator. Further details on the responsibilities of the Site Emergency Controller and Communications Coordinator are available in The Emergency Response Plan.

The will Asset Leader will assume the Site Emergency Controller role until other arrangements are in place. The Site Emergency Controller is to;

1. Assess the Situation
2. Activate the Response
3. Direct the Response

2.2 Management measures to minimised harm to site personnel

The safety of personnel involved in pollution incident response must be given the highest priority. Only properly trained personnel equipped with appropriate safety gear and protective clothing may be permitted to take part in operations where the risk of injury is evident. Any response action is to consider the requirements for support systems such as back-up personnel and equipment, first aid, showers, hoses etc.

EnergyAustralia Tallawarra also has safety mechanisms in place as part of EnergyAustralia Tallawarra Safety Management System. All site personnel and contractors are inducted when first attending the site and advised of the evacuation procedures, audible warning alarms and muster locations.

In the event of a pollution incident that has the potential to impact all site staff, an Audible 'beep' and amber flashing light is used to alert site personnel to an impending message. The Power Plant Technician will then make an announcement on what action is required. In the situation where site evacuation is required, an audible 'beep' and red flashing light with a male voice over directing people to evacuate the site will sound. In this circumstance, personnel are directed to the appropriate muster point.

2.3 Actions to be taken during and immediately after a pollution incident

2.3.1 First strike action

It is imperative that first-strike action be taken quickly to contain any spill. This first strike action, determined by the Power Plant Technician and implemented by the available staff, is to be aimed at achieving isolation and containment of the spill to prevent any further leakage or spread to the surrounding environment. If the spill is minor, clean-up procedures will be implemented as required.

If the spill occurs in a day shift period the personnel and resources of all employees' will also be available to the Power Plant Technician.

2.3.2 Incident response procedures

EnergyAustralia Tallawarra has a number of Emergency Instructions which detail the actions to be taken by staff after a pollution incident to reduce or control any pollution. The next two pages are excerpts from the Emergency Instructions related to spills, which is to be used in conjunction with the Emergency Response Plan.

CHEMICAL SPILL / HAZARDOUS MATERIAL SPILL

FIRST PERSON ON SCENE

- NOTIFY the Control Room – provide clear description of chemical and size of spill
- OBTAIN MSDS information for the relevant product by contacting Control Room
- WEAR correct PPE
- ISOLATE equipment to control spill if safe to do so
- BARRICADE the area if possible, ensure no persons are exposed to the hazard
- REMOVE yourself (and other personnel if possible) from the area, upwind / uphill of the spill
- REMAIN upwind / uphill of the spill and await instructions from the Site Emergency Controller

SITE EMERGENCY CONTROLLER

- ACCOUNT for all personnel
- OBTAIN and review MSDS
- ASSESS source, condition and quantity of chemical spill:
 - 1st priority: prevent further spillage;
 - 2nd priority: prevent fire, explosion and fumes;
 - 3rd priority: bund to prevent spreading; and
 - 4th priority: clean up affected area.
- BRIEF ERT on immediate actions required
- DEPLOY chemical spillage equipment from Tallawarra Workshop. Contact Emergency Services if required
- FOR **STATUS 2** incidents, call EMT contact numbers NOTIFY local Fire Brigade or Police for dangerous goods incident
- **STATUS 2** Emergencies – Record events
- MONITOR spillage, (for dispersion and direction) and BUND if possible
- ENSURE gas testing of an incident area is undertaken to detect toxic gases or low oxygen levels
- RECORD in TES

GAS LEAK OR EXPLOSION

FIRST PERSON ON SCENE

- DO NOT use mobile phone in the event of a gas leak
- NOTIFY Control Room of the location and incident details
- CLEAR affected site of personnel
- RAISE Fire Alarm using the Red Manual Call Point 'Break Glass' units
- REMOVE any possible ignition source (i.e. operating equipment)
- ISOLATE or bypass the gas leak if safe to do so (remotely if possible)
- REPORT status of incident to control room (details such as wind direction etc.)
- WITHDRAW to a safe location and await instructions from Site Emergency Controller
- REPORT status of personnel in the area to Site Emergency Controller

SITE EMERGENCY CONTROLLER

- TREAT ANY UNCONTROLLED GAS LEAK OR EXPLOSION AS A STATUS 2 EMERGENCY
- ISOLATE FUEL GAS
- EVALUATE need for Facility evacuation and execute if necessary
- ENSURE emergency Fire Alarm is activated which sends automatic signal to Fire Brigade
- REQUEST Emergency Services to attend the Tallawarra site. Give address as:

EnergyAustralia Tallawarra Power Station

Yallah Bay Road,

Yallah New South Wales

2530 (entry via Old Princes Highway)

- ACCOUNT for all personnel
- BRIEF Emergency Response Team and delegate tasks
- DISPATCH an ERT member with radio to meet and direct Emergency Services
- ENSURE gas testing of an incident area is undertaken after a fire to detect toxic gases or low oxygen
- CALL Emergency Management Team contact numbers
- **STATUS 2** Emergencies – Record events
- SECURE the scene of the accident for investigation team

2.3.3 Pollution incident clean-up

Procedures for the clean-up of pollution incidents will largely depend on the type and extent of the pollution incident.

Clean-up procedures will take into account the following:

- ▶ Type of pollutant;
- ▶ Extent/Area of pollution;
- ▶ Medium in which pollution has occurred (land, air, water);
- ▶ Requirements for specialist advice in relation to the removal and remediation of the pollution;
- ▶ Potential additional environmental impacts by the proposed clean-up processes; and
- ▶ Costs to remove the polluted material to a waste facility licensed to accept the waste.

The Power Plant Technician is responsible for determining the method of clean-up, in consultation with the Environmental Coordinator, Asset Leader and consultants (where required). Funding of clean-up procedures will be determined by the Asset Leader.

3. Pollution Incident Communications and Training

The following section provides the contact details and requirements for EnergyAustralia Tallawarra staff, Regulators and other stakeholders during a pollution incident. The section also details how neighbours and in what circumstances neighbours will be advised of an incident.

For additional detail on emergency communications and procedures, refer to the EnergyAustralia Tallawarra Business Continuity Plan [TQMS12-BMG-L001](#).

3.1 Immediate Notifications of Incident to Relevant Authorities

EnergyAustralia Tallawarra is required to immediately notify the following regulatory authorities in accordance with the POEO Act s148 where a pollution incident has occurred **that is causing or threatening material harm to the environment**:

Table 1: Regulatory Authorities Contact Details

| Contact Authority | Contact Person | Contact Details |
|---|-----------------------------------|---------------------------------------|
| Environmental Protection Authority | Environmental Line Greg Newman | 131 555 0408 206 035 |
| NSW Health (local Public Health Unit) | Public Health Officer on call | 02 4222 5000 |
| WorkCover NSW | | 13 10 50 |
| Local Council – Wollongong City Council | | 02 4227 7111 |
| Fire and Rescue NSW | | 000 |

‘Immediately’ has its ordinary dictionary meaning of promptly and without delay.

The Power Plant Technician is required to report all pollution incidents and all relevant information about it to the Asset Leader, Operations Leader or Environmental Coordinator immediately after becoming aware of the incident.

Using the relevant information of the incident and/or EnergyAustralia Tallawarra’s environmental aspects register and/or internal Emergency Response procedures, the Asset Leader, Operations Leader or Environmental Coordinator will promptly and without delay assess if the incident is causing or threatening material harm to the environment. If it is deemed so, or it is uncertain, then he/she will immediately notify the relevant authorities.

If the Asset Leader, Operations Leader or Environmental Coordinator cannot be contacted within 30 minutes, the Power Plant Technician is required to notify each relevant authority.

The Shift Log should be used to document the agency notification.

The information required to be provided as part of the notification process includes:

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

Lack of any of the above information should not prevent the responsible person from making an immediate notification in the case where the incident has been deemed to be causing or threatening material harm to the environment. As additional information becomes available, it should be communicated with all the relevant agencies immediately.

The Shift Log should be updated as required and used to document any information updates made to the relevant agencies.

3.2 Contact details

Details of the key personnel within EnergyAustralia Tallawarra and details of regulatory agencies and other stakeholders that require notification in the event of a pollution incident are listed in Emergency Contact List – [TQMS12-HSE-L001-A01](#) available on EnergyAustralia Tallawarra Intranet TQMS Library.

3.3 Communicating with neighbours and the local community

In the event of an incident, subject to advice from the regulatory authorities, the following methods of communication are able to be used to communicate with the local community.

3.3.1 Communication modes

The following communication modes may be implemented:

- ▶ Updating web page;
- ▶ Newsletter drop;
- ▶ Doorknocking; and
- ▶ Advertisements.
- ▶ Signage.

3.4 Information to be provided to the Community

Decisions to notify neighbours and the local community will be made in consultation with regulatory authorities based on an initial risk assessment (for example, considering the type of pollutant, concentration of emission, prevailing wind and height of the emission).

Advice provided to the community will depend on the type and extent of the pollution incident and guidance from the regulatory authorities. The following examples are provided as a guide:

- ▶ Uncontrolled emission of air pollutant – Community advised through applicable media outlets to close windows and doors, turn off air conditioning equipment and stay indoors.
- ▶ Uncontrolled release of contaminated water into a waterway – Advise local community to avoid fishing in affected waterways, to restrain pets from entering affected waterways or utilising the waterway for recreation (e.g. swimming, skiing) until the waterway is deemed safe to use following sampling and monitoring.

The EnergyAustralia Tallawarra Communications Coordinator will be responsible for co-ordinating the notification and update of information to neighbours, the local community and regulatory authorities.

Notification of the Community and Media is to be undertaken in accordance with the EnergyAustralia Tallawarra Emergency Response Plan.

3.5 Staff training

Environmental awareness training is delivered to all staff regularly during HSE discussions, and within three months of employment at operational sites. Training records are maintained by the TQMS Coordinator.

The Environmental Awareness Training Package is designed to provide our employees with an awareness of the importance of:

- ▶ their roles and responsibilities in achieving conformance with our Environment Policy and procedures;
- ▶ the requirements of our EMS;
- ▶ our significant environmental aspects and impacts (actual or potential) of their work activities;
- ▶ the environmental benefits of improved personal performance;
- ▶ the potential consequences of departure from specified operating procedures;
- ▶ performing duties in an efficient and competent fashion;
- ▶ reporting environmental incidents and “near-miss” events;
- ▶ active participation in EnergyAustralia Tallawarra’s environmental management process; and
- ▶ knowledge of regulatory requirements.

The Environmental Coordinator is responsible for ensuring that PIRMP environmental emergency response exercises are conducted at least yearly at each power station site as required by clause 98E in the POEO Regulation. Where possible these are incorporated into site general emergency response exercises.

Full documentation is to be maintained of the exercise, with lessons learnt and steps taken to improve future response.

4. Pollution incident response planning

The following section details the main hazards at Tallawarra, including an inventory of pollutants and associated safety equipment. Pre-emptive measures for minimising risks associated with hazards and pollutants are also detailed below.

4.1 Pollution incident response maps

Pollution incident response maps have been prepared to facilitate planning for incident response and provide readily accessible and accurate information to support the assessment of an incident and assist in the implementation of incident response procedures and clean-up.

The maps will be reviewed on an ongoing basis in order to present accurate information.

The following maps are provided in **Appendix A**:

- ▶ Locality map - showing the location of the premises, the surrounding area including sensitive receivers;
- ▶ Main hazard map – showing main potential pollutants on the site;
- ▶ Safety equipment maps – showing the location of safety equipment; and
- ▶ Drainage maps – showing the main drainage lines and direction of drainage within the site.

4.2 Main hazards at Tallawarra

A site-wide hazard risk assessment was undertaken at Tallawarra to identify the main hazards on each site that pose a risk of causing actual or potential material harm to the environment (human beings and ecosystems). The main hazards identified in this risk assessment are detailed in Table 2 and Table 3.

The degree to which an incident has the potential to threaten or cause material harm will depend on the extent and nature of the incident. **In most cases, the threat of environmental harm should be low (trivial) if the incidents are quickly identified and effectively managed in accordance with the management measures identified in Table 2.**

Table 2 Tallawarra Main Hazards & Environmental Risk

| Item | Hazard | Description | Likelihood of causing or threatening material environmental harm | Consequence | Management Measure | Circumstances that may increase likelihood of causing or threatening material environmental harm |
|---|--|--|--|--|---|--|
| Gas Turbine Operation | | | | | | |
| 1 | Uncontrolled emission from stacks | Discharge of NOx above the EPL permitted limit | Low | Localised & regional air pollution Non-compliance with EPL. | Air emissions are constantly monitored and alarmed to notify operators of emissions outside of EPL limits. Alarms are set at a lower limit to the EPL limit to allow for rectification of the emissions. | Prolonged Continuous Emissions Monitoring failure with unit still in service and corrective action not taken |
| Natural Gas Transport and Handling | | | | | | |
| 2 | Discharge of Natural Gas to atmosphere due to leak in pipeline | The Natural Gas pipeline supplying fuel to site may rupture or leak at a flange, causing uncontrolled release of Natural Gas. | Low | Localised & regional air pollution Potential for ignition of gas causing fire in vicinity | Camera's and instruments positioned along pipeline to identify rupture or leak. Weekly pipeline inspection performed to identify defects. Jemena control room can remotely shutoff gas supply. | Digging or excavation works occurring on or near pipeline. Cathodic protection of pipeline ineffective, or incorrectly applied. |
| Tallawarra Land Management | | | | | | |
| 6 | Bushfire within Tallawarra Lands boundary | Bushfire within Tallawarra Lands boundary. | Low | Localised air pollution | Bushfire Management Plan developed for Tallawarra. Firefighting equipment kept on-site. Fire training conducted for first response | Adverse weather conditions. Lack of routine maintenance in clearing access roads. |
| 7 | Erosion from site entering waterways | Erosion of soils within the site leading to discharge of sediment-laden water into settling ponds and/or Final Holding Pond | Low | Discharge of sediment-laden water. Non-compliance with EPL | Tallawarra Lands Inspections. Maintenance of fire trails, roads, access tracks and boundaries Sediment control ponds and traps | Major storms during earthwork projects with poor sediment control systems in place |
| Emergency Diesel Generator Operations | | | | | | |
| 8 | Diesel generator and/or storage tank failure/spill onto soil and/or into stormwater drains | Diesel tank and/or pipe failure/overflow leading to spill outside of bund walls and/or contaminated water drains. Spill during refuelling of diesel tank. | Low | Contamination of Stormwater Holding Pond with hydrocarbons. | Stormwater retention pond pumped to oily drains pit. Emergency spill equipment kept on-site. Stormwater pump isolated. | Alarm failure leading to uncontrolled spill to the environment (waterways or land) |
| 9 | Emergency Diesel generator fire | Diesel generator fire | Low | Localised air pollution | Firefighting equipment kept on-site. | Plant failure leading to uncontrolled spill to the environment (waterways or land) |
| Turbine Systems Operations/ Transformer Operations | | | | | | |
| 10 | Oil spills from storage tanks into stormwater drains | Turbine/ Transformer/ Lubricant/ Waste oil tank/drum and/or pipe | Low | Contamination of Stormwater Retention Pond with | Stormwater retention pond pumped to oily drains pit. | Plant and/or alarm failure leading to uncontrolled discharge to the |

| Item | Hazard | Description | Likelihood of causing or threatening material environmental harm | Consequence | Management Measure | Circumstances that may increase likelihood of causing or threatening material environmental harm |
|------|---|---|--|--|---|--|
| | | failure leading to spill outside of bund walls and beyond contaminated water drains. Spill during refuelling of storage tanks. | | hydrocarbons. | Emergency spill equipment kept on-site. Stormwater pump isolated. | environment (waterways or land) |
| | Chemical Plant Operations | | | | | |
| 11 | Chemical storage tank failure/spills | Storage tank/pipe failure leading to spill outside of bund walls and contaminated clean water drains. Overflow from storage tank bund into stormwater. Spill during refuelling of storage tanks. | Low | Contamination of Stormwater Retention Pond with Ammonia Non-compliance with EPL. | Stormwater retention pond pumped to Clean drains pit. Clean drains pit isolated for Neutralisation/treatment. Emergency spill equipment kept on-site. Stormwater pump isolated. | Plant and/or alarm failure leading to uncontrolled discharge to the environment (waterways or land) |
| | Water Recovery | | | | | |
| 12 | Wastewater Pipeline failure | Failure of wastewater effluent pipes between the Clean Drains Pit and Wetlands. | Low | Tallawarra Lands with low concentrations of Phosphate and Ammonia. Non-compliance with EPL. | Weekly Tallawarra Lands inspections. | Plant and/or alarm failure leading to prolonged uncontrolled discharge to the environment (waterways or land) |
| | Water Utilisation and Management | | | | | |
| 17 | Contaminated discharge from Wetlands | The Wetlands collects water from the stormwater retention pond and the Clean Drains Pit. If either of these are contaminated, this would affect the water quality in the Wetlands. The Wetlands discharge to Lake Illawarra | Low | Contamination of Lake Illawarra Non-compliance with EPL. | The Wetlands contains reeds and natural grasses as a tertiary treatment. | Storm events leading to prolonged contaminated discharge to the environment (waterways). |
| 18 | Stagnant Water in Cooling Water Canals | The cooling water canals are enclosed waterways that contain flowing water during normal operations. During abnormal operations the flow can stop, resulting in changes to water quality e.g. reduced dissolved oxygen | Medium | Fish mortality event and subsequent pollution of lake with dead fish. | The instruction "TCD10-OPS-M003-I011 - Operation of Main Cooling Water System when CCGT is shutdown" details a measurement driven instruction for maintaining water quality during abnormal operations. | Maintenance on the Attenuation system would remove the main system for pumping water during abnormal operations, limiting the ability flow sufficient water to maintain water quality. |

4.3 Inventory of pollutants

A number of potential pollutants are stored, used and disposed of at Tallawarra. These include fuels, chemicals, oils, lubricants, waste water, sewerage water and waste materials. A list of potential pollutants is detailed in Table below.

Table 3 Tallawarra potential pollutants

| MAP LOCATION | AREA | POLLUTANT | QUANTITY | UNIT |
|--------------|--------------------------------|----------------------------------|----------|----------|
| 1 | Stormwater Pond | Sediment Contaminated Stormwater | 2460,000 | Litres |
| 2 | Waste Water Pit | Waste Water | 216,000 | Litres |
| 3 | Lube Oil Tank | Lube oil - Turbotect 2020 | 20,000 | Litres |
| 4 | Co2 Bullet | Carbon Dioxide Bulk | 4,000 | Kilogram |
| 5 | E Modules | Argon, Compressed | 505 | Kilogram |
| 6 | Fuel Gas Yard | C9+ Calibration Gas | 108 | Kilogram |
| | Fuel Gas Yard | Helium Compressed | 100 | Litres |
| 7 | Carbon Dioxide Storage | Carbon Dioxide Compressed | 2,100 | Litres |
| 8 | Control Room Argon Fire System | Argon, Compressed | 1,040 | Litres |
| 9 | Gas Cylinder Storage Area | LPG | 252 | Litres |
| | Gas Cylinder Storage Area | Helium, Compressed | 250 | Litres |
| | Gas Cylinder Storage Area | LPG | 150 | Litres |
| | Gas Cylinder Storage Area | Oxygen, Compressed | 150 | Litres |
| | Gas Cylinder Storage Area | C9+ Calibration Gas | 105 | Litres |
| 10 | Hydrogen Storage | Hydrogen | 5,000 | Litres |
| 11 | Nitrogen Capping | Nitrogen, Compressed | 600 | Litres |
| 12 | Maintenance Building | Multipurpose Degreaser | 200 | Litres |
| 13 | Oil Storage Shed | Waste Oil | 1,000 | Litres |
| | Oil Storage Shed | Perfecto T 46 | 4,715 | Litres |
| | Oil Storage Shed | Spheerol Epl 00 | 920 | Kilogram |
| | Oil Storage Shed | Nytro 10gbx | 820 | Litres |
| | Oil Storage Shed | Turbotect 2020 | 624 | Litres |
| | Oil Storage Shed | Hyspin Awh-M 46 (Uk) | 615 | Litres |
| | Oil Storage Shed | Turbotect 2020 | 615 | Litres |
| | Oil Storage Shed | Multipurpose Degreaser | 205 | Litres |
| | Oil Storage Shed | Perfecto T 46 | 140 | Litres |
| | Oil Storage Shed | Atlas Copco Roto Inject Fluid | 120 | Litres |
| | Oil Storage Shed | Alpha Sp 220 | 100 | Litres |
| 14 | Turbine Hall | Turbotect 2020 | 1,000 | Litres |
| 15 | Ammonia Dosing Skid | Ammonia 25% Solution | 210 | Kilogram |
| 16 | Warehouse | Turbotect 2020 | 200 | Litres |
| | Warehouse | Amerlock 400 Mio Nsg Part A | 100 | Litres |
| 17 | Water Treatment Building | Ammonia 25% Solution | 800 | Litres |
| | Water Treatment Building | Osmoflo Osmo-Dechlor | 200 | Litres |
| | Water Treatment Building | Osmotreat | 200 | Litres |

4.4 Pre-emptive actions to minimise risks

The following general pre-emptive actions are undertaken by EnergyAustralia Tallawarra in order to minimise risks to human health and/or the environment arising from the activities undertaken at the power station.

- ▶ Provision, training and use of spill containment kits;
- ▶ Installation of monitoring equipment on discharge points (air and water);
- ▶ Installation of alarms on key infrastructure;
- ▶ Bunding of bulk chemical, fuel, oil and lubricant storage containers;
- ▶ Isolation valves on bunded storage areas;
- ▶ Installation and use of fire-containment infrastructure and water tanks;
- ▶ Labelling of drains according to their discharge point (stormwater, oily water separator etc);
- ▶ Maximisation of the capacity of storage ponds;
- ▶ Regular and routine condition assessments of key infrastructure;
- ▶ Regular and routine environmental inspections across the sites;
- ▶ External audits assessing environmental compliance of the sites with Conditions of Approvals, Environmental Management Plans and general environmental performance;
- ▶ Training of staff in the safe handling and use of chemicals, fuels, oils and lubricants.

4.5 Emergency equipment at Tallawarra

A wide variety of safety and emergency equipment is stored at Tallawarra for use during emergencies and Section 4.5.1 detail this equipment.

4.5.1 Equipment at Tallawarra

Table 4 Pollution Control Equipment Locations

| Locations | |
|--|----------------------|
| Area | Equipment |
| Workshop near Electrical Store entrance door | Oil Spill Kit 1 |
| Oil Store | Oil Spill Kit 2 |
| Turbine Hall South/West side Ground Floor | Oil Spill Kit 3 |
| Turbine Hall South side base of generator ground floor | Oil Spill Kit 4 |
| Turbine Hall South/East side Ground Floor | Oil Spill Kit 5 |
| Turbine Hall North Side near Ammonia Skid ground floor | Oil Spill Kit 6 |
| Turbine Hall North side near Seal Oil Unit Ground Floor | Oil Spill Kit 7 |
| Turbine Hall North Side near Auxiliary Oil Unit ground floor | Oil Spill Kit 8 |
| Water Treatment Plant back of Electrical Room | Oil Spill Kit 9 |
| Spare located in Workshop | Oil Spill Kit 10 |
| Turbine Hall North Side near Ammonia skid ground floor | Chemical Spill Kit 1 |
| Water Treatment Plant outside Laboratory | Chemical Spill Kit 2 |

Table 5 Chemical Spill Kits

| Chemical Spill Kits | |
|--------------------------------|--------------------|
| Contents | Estimated Quantity |
| Absorbent Mini Booms 2.4mx75mm | 10 |
| Absorbent Pillows 38x23cm | 16 |
| Absorbent Pads 400x500mm | 100 |
| Floorsorb 2.5kg bag | 2 |

| Chemical Spill Kits | |
|---------------------------------------|--------------------|
| Contents | Estimated Quantity |
| Pair of Gloves 45cm | 2 |
| Hazardous Waste/Salvage Bags 1.4X0.5m | 8 |

Table 6 Oil Spill Kits

| Oil Spill Kits | |
|---------------------------------------|--------------------|
| Contents | Estimated Quantity |
| Absorbent Mini Booms 2.4mx75mm | 7 |
| Absorbent Pillows 50x40cm | 5 |
| Absorbent Pads 400x500mm | 100 |
| Floorsorb 7kg bag | 1 |
| Pair of Gloves 45cm | 2 |
| Hazardous Waste/Salvage Bags 1.4X0.5m | 8 |

5. Testing of the PIRMP

EnergyAustralia Tallawarra will test the PIRMP on a routine basis at least once every 12 months and within one month of a notifiable incident.

Testing of the PIRMP will generally be run in conjunction with testing of the overall Emergency Response Plan. The program for testing is provided below:

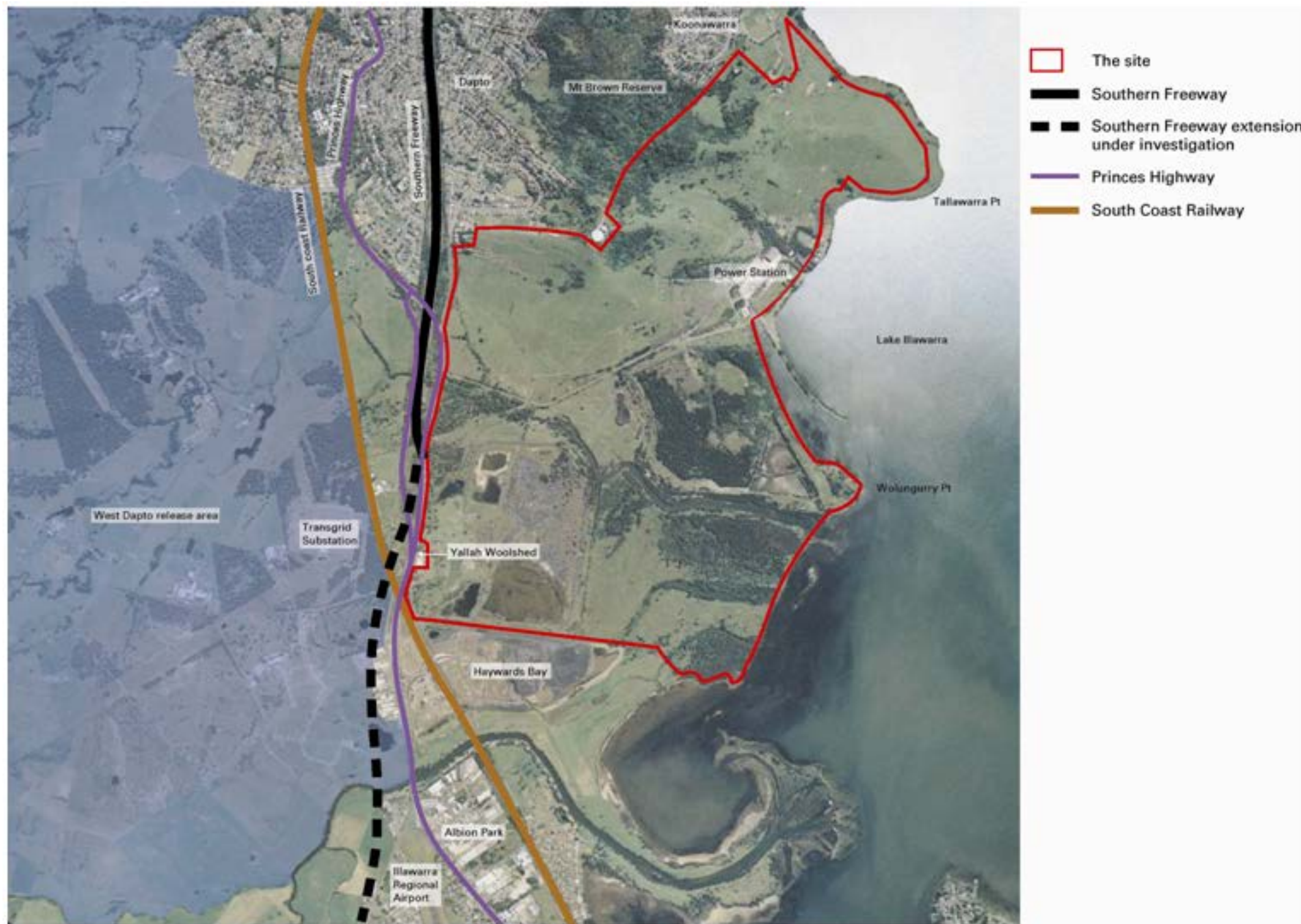
- Testing of the PIRMP will either be in the form of a simulation or a practical exercise organised in conjunction with the environmental emergency response exercises.
- PIRMP test exercises will be scheduled and recorded in the Maximo.
- EnergyAustralia Tallawarra will maintain records in TES pertaining to the exercise, lessons learnt, steps taken to improve responses.
- Documented records of the PIRMP tests will be kept on the EnergyAustralia Tallawarra Intranet and reported at the Management Review.
- Due to a high risk ranking the PIRMP will be reviewed and updated yearly by following Energy Australia Tallawarra standard operation procedure for Document creation, modification and approval [TQMS09-IDR-POO1](#).

Table 7 PIRMP Test Date

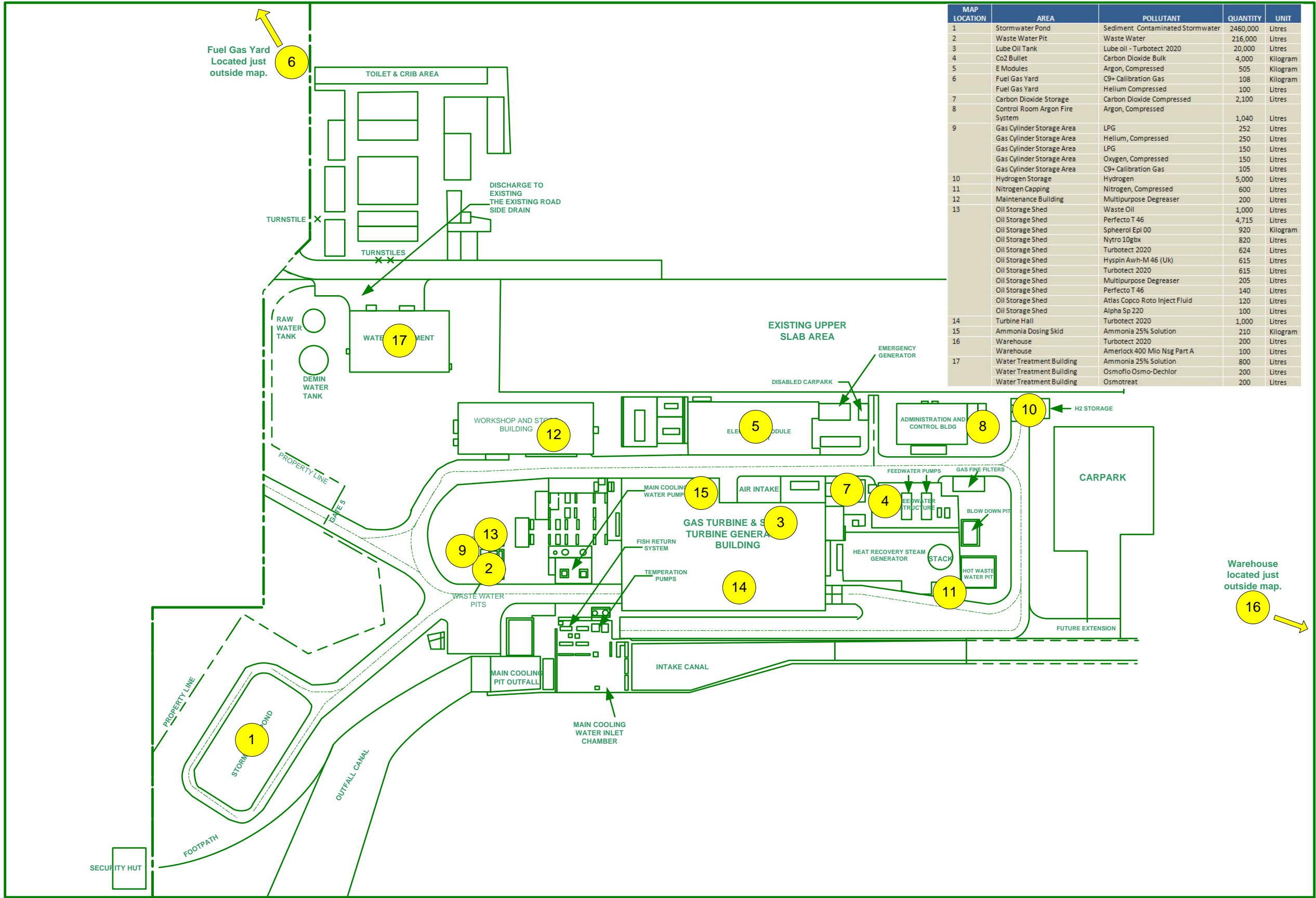
| Reason for Testing | Type of Test | Date of Test | Person Present |
|--------------------|--------------|--------------|--|
| Annual Test | Desktop | 25/02/2015 | Robin Barclay Steve Boscoscuro Ivan Currie |
| Annual Test | Desktop | 23/06/2016 | Steve Boscoscuro Ivan Currie |

Appendix A

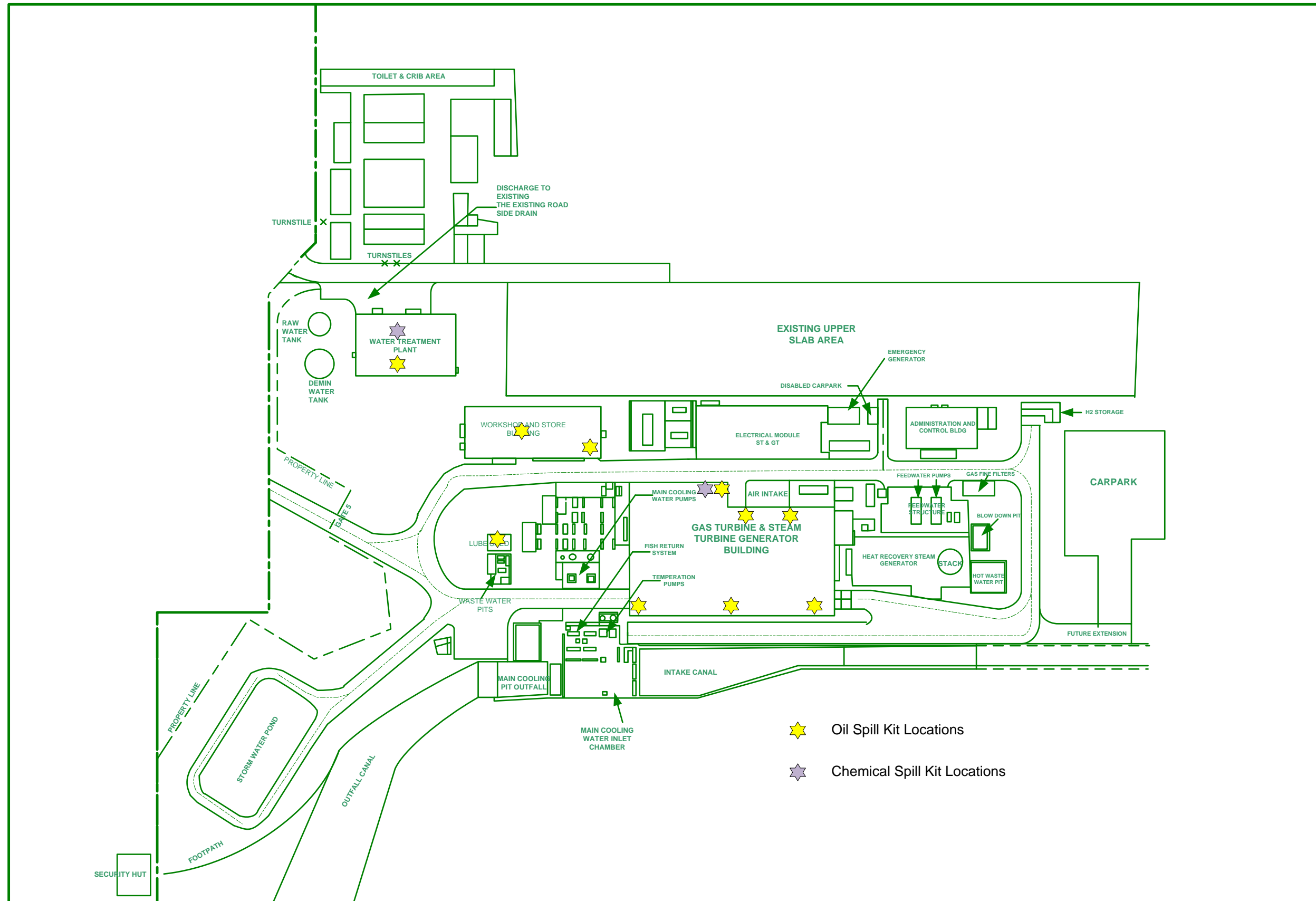
Locality Map



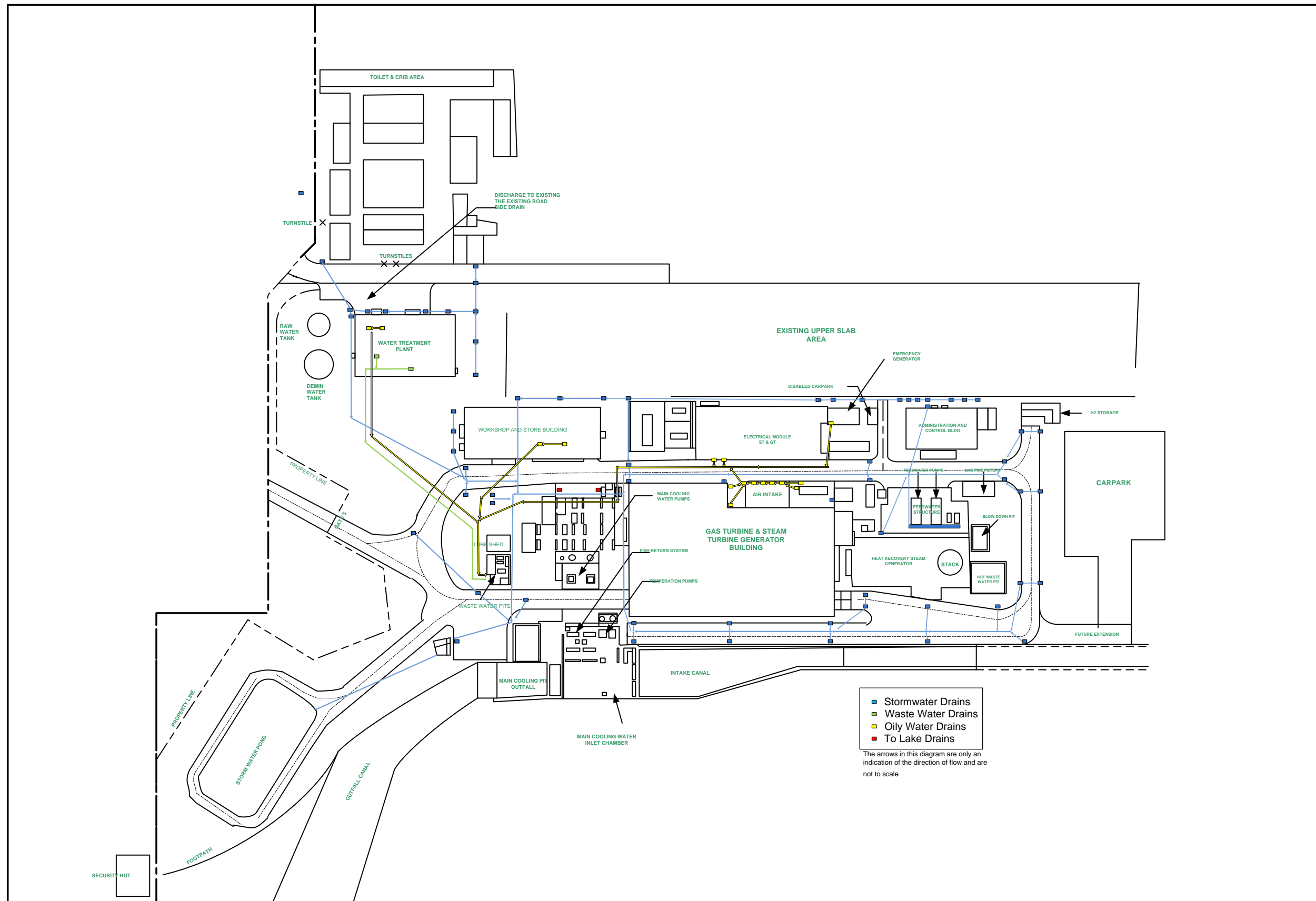
Main Hazard Map



Safety Equipment Map



Drains Map



Drains Map

