CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Santos Multi Discipline Services Agreement

Narrabri Development

Contract No. [redacted]

Document Preparation & Control	Document Review
[redacted] – Project Engineer	[redacted] – Construction Superintendent
Document Approval	**Signature**
[redacted] – Contract Manager	[redacted]

Project Document Version	Date
Rev 1	01/11/2019

Document Version History

Version No.	Date	Document Status	Brief Description of Change(s) from Previous Version
1	01/11/2019	Issued for use	[redacted]

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

TABLE OF CONTENTS

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

1 PURPOSE

This plan defines the environmental management principles, processes, procedures, systems, tools, and templates implemented for use throughout the duration of the project.

This plan is subordinate to the Project Execution Management Plan (PEP) which has been developed to:

- satisfy the requirements of the contract; and
- support the Project Team in completing the requirements of the project.

2 DOCUMENT SCOPE

The scope of this management plan applies to Infrastructure Services and Engineering, Construction and Maintenance; and New Zealand, hereafter referred to as Downer.

This plan applies to all aspects of environmental management for the project.

The target audiences for this plan are the Project Manager, Project Team, Project Sponsor, and any other relevant stakeholders.

This CEMP addresses the requirements of condition 6.2 of the Project Approval MP07_0023, as amended, for the Narrabri Coal Seam Gas Utilisation Project. Table 1 identifies where each of the requirements of condition 6.2 are addressed.

Condition Requirement	Section Addressed
The Proponent shall prepare and implement a Construction Environmental Management Plan to outline environmental management practices and procedures to be followed during construction of the project and shall include, but not necessarily be limited to:	Refer to this CEMP
a) a description of all activities to be undertaken on the site during construction including an indication of stages of construction, where relevant	Section 7
b) statutory and other obligations that the Proponent is required to fulfil during construction including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies	Section 6
c) details of how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:	Section 11
i. measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities, particularly during any construction works at or near drainage lines;	Section 14.7
ii. measures to minimise and manage impacts on native ecology, including minimisation of vegetation clearing; methods to minimise unintended impacts on vegetation to be retained and fauna; topsoil, seed and vegetative material re-use initiatives to be employed; and measures to be undertaken to control weed spread;	Section 14.4
iii. measures to be undertaken to control weed spread	Section 14.4
iv. measures to monitor and manage indigenous heritage values on site	Section 14.9

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Condition Requirement		Section Addressed
	including involvement of Narrabri Local Aboriginal Land Council, Pilliga Forest Aboriginal Committee and Gomeroi Traditional Owner Group;	
v.	measures to monitor and measure dust emissions;	Section 14.6
vi.	measures to monitor and control noise and vibration emissions during construction works; and	Section 14.5
vii.	measures to monitor and manage traffic impacts in consultation with relevant road authorities including details of traffic routes for heavy vehicles and any necessary route or timing restriction for oversized loads; detailed consideration of measures to be employed to ensure traffic volume, acoustic and amenity impacts along the heavy vehicle routes are minimised; and detailed consideration of alternative routes (where necessary);	Section 14.1
d) a description of roles and responsibilities for all relevant employees involved in the construction of the project; and		Annex A
e) complaints handling procedures during construction.		Section 10 & 11

3 PROJECT MANAGEMENT FRAMEWORK

The Downer project management framework aligns and integrates the project functions which define the project's delivery methodologies and processes. The Project Execution Plan (PEP), as a key element of the project management framework, is the integration document which identifies and details both the standard Downer project management practices, structure, and execution methods and any project specific requirements for the project.

The PEP incorporates a number of subordinate management plans which provide the specific functional detail required to successfully deliver the project, as illustrated in the following figure.

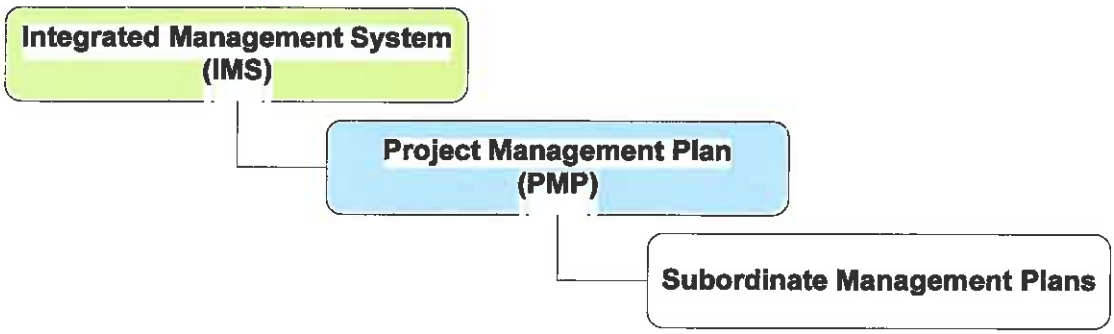


Figure 1: Project Management Plan Structure

The plans reference any IMS documents (including but not limited to, procedures, work instructions, and forms), client specific requirements, and project specific documents required to execute the project.

The PEP provides project specific details including, but not limited to, the following:

- Project information, i.e. background, project location, and project description
- Scope of work, i.e. scope of work narrative, basis of design, battery limits, and scope of services; and
- Project objectives and values, i.e. objectives, overarching principles, values, and key performance indicators (KPIs) for the project.

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

All positions in the Project Team have a clearly defined role and set of responsibilities that are included in the PEP. All members of the Project Team are made aware of and understand their responsibilities prior to commencing work on the project. Refer to *Annex A – Project Roles & Responsibilities* for the roles and responsibilities for environmental management.

The PEP and subordinate management plans are audited throughout the duration of the project to maintain compliance and updated as required. Updates to the PEP and subordinate management plans are subject to the document review and approval process detailed in the PEP.

4 REFERENCED DOCUMENTS

CONTRACT AND MANAGEMENT PLANS

16055-PLA-0200	Project Execution Plan
16055-PLA-0201	Zero Harm Management Plan

POLICIES

DG-ZH-PO001	Environmental Sustainability Policy

PROCEDURES

DA-QA-PR007	Internal Audits
DA-ZH-PR003	Training and Competency Management
DA-ZH-PR006	Incident Reporting and Investigation
DA-ZH-PR007	ZH Project Planning and Performance Reporting
DA-ZH-PR013	Communication and Consultation
DA-ZH-PR015	Emergency Preparedness and Response
DA-ZH-PR022	Visitor and Contractor Management
DA-ZH-PR028	Zero Harm Risk Management
DA-ZH-PR031	Zero Harm Change Management
DA-ZH-PR077	Greenhouse Gas & Energy Reporting
DA-ZH-PR116	Zero Harm Inspections and Observations
DI-RM-PR003	Project Risk and Opportunity Management

STANDARDS

DA-ZH-ST024	Hazardous Chemicals and Dangerous Goods
DA-ZH-ST041	Hot Work
DA-ZH-ST043	Excavation Trenching and Services
DA-ZH-ST054	Hazardous Chemicals and Dangerous Goods Storage Principles and Transportation
DA-ZH-ST063	Waste Management
DA-ZH-ST064	Soil and Water Management
DA-ZH-ST067	Biosecurity Management
DA-ZH-ST068	Fill Material Management
DA-ZH-ST069	Environmental Noise and Vibration
DA-ZH-ST070	Air Quality Management
DA-ZH-ST071	Flora and Fauna Management

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

DA-ZH-ST076	Heritage Management
DA-ZH-ST086	Asbestos Management
DA-ZH-ST135	Traffic Management
DA-ZH-ST149	Vegetation Disturbance
FORMS	
DA-ZH-FM063.1	Waste Estimation Record
DA-ZH-FM063.2	Waste Disposal Register
DA-ZH-FM067.1	Hygiene Inspection Form
DA-ZH-FM015.2	Spill Response Equipment Needs Assessment Form
DA-ZH-FM116.9	Environmental Inspection Checklist
DA-ZH-FM149.1	Vegetation Disturbance Permit
REGISTERS	
DA-QA-RG001	Definitions Register
OTHER	
10 Environmental Principles	

5 DEFINITIONS

The following terms are used in this document and are included in *DA-QA-RG001 Definitions Register*.

CEMP	Construction Environmental Management Plan
Client	The Client is Santos NSW (Eastern) Pty Limited and has the same meaning as Proponent under Project Approval MP 07_0023 for the Narrabri Coal Seam Gas Utilisation Project
Downer Worker	All individuals working for Downer as: employees, contingent labour hire, contractors, subcontractors, apprentices, trainees, and work experience students.
EMS	Environmental Management System
Integrated Management System (IMS)	The documented management system for agreed operational arrangements for all support functions including Finance, Zero Harm, Quality, HR, Project Management. The IMS is designed to provide consistent process controls, meet the requirements of external standards, linking and integrate relevant core business processes.
INX InControl	The Zero Harm database used to record, investigate and follow-up events, including audits, hazards, incidents, inspections, meetings, observations, risk assessments, reviews, and suggestions.
PEP	Project Execution Plan
Safe Work Method Statement (SWMS)	A document that identifies hazards associated with each step of a work process and the controls that are required to minimise risk to people, environment, and property.

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Subcontractor	An individual or organisation that signs a contract with Downer to perform part or all of the obligations of a Downer contract, including the performance of work, i.e. provision of labour and/ or labour services. Examples of subcontractors include contingent labour hire, independent contractors, consultants and cartage contractors.
Zero Harm (ZH)	Health, safety, environment and community.

6 STANDARDS & LEGISLATION

6.1 Legislation & Regulatory Requirements

Downer is aware of the importance of complying with all applicable environmental measures, and where practicable, exceeds the minimum legislative and regulatory requirements. Downer's obligations include conditions of regulatory approvals as well as the generally applicable Environmental Acts and their subsidiary legislation. Downer and the Project Team monitor changes to environmental legislation through monthly updates on environmental law changes provided by EnviroLaw, and ensure compliance is maintained throughout the project's lifecycle.

Project Specific Requirements

No additional approvals are required for the construction works. The specific environmental legislation and standards applicable to this project are listed in the following table.

Environmental Legislation
Project Specific Obligations
Conditions of Project Approval MP07_0023, as amended, for the Narrabri Coal Seam Gas Utilisation Project
Commonwealth Legislation
Environment Protection and Biodiversity Conservation Act 1999
Environment Protection and Biodiversity Conservation Regulations 2000
National Greenhouse and Energy Reporting Act 2007
National Greenhouse and Energy Reporting Regulations 2008
Ozone Protection and Synthetic Greenhouse Gas Management Act 1989
Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995
State-based Legislation
Environmental Planning and Assessment Act 1979
Environmental Planning and Assessment Regulation 2000
Protection of the Environment Operations Act 1997

© Downer 2018. All Rights Reserved

Project Specific Requirements
Australian Standards and Guidance Material
ANZECC 1992 Australian Water Quality Guidelines for Fresh and Marine Waters
AS 1940 The Storage and Handling of Flammable & Combustible Liquids
AS 2436 Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites
AS 3780 The Storage and Handling of Corrosive Substances (similar standards exist for other classes of dangerous goods)
AS 4326-2008 The Storage and Handling of Oxidising Agents
AS/NZS 3833 The Storage and Handling of Mixed Classes of Dangerous Goods, in Packages and Intermediate Bulk Containers
IECA 2008 – Best Practice Erosion and Sediment Control
ISO 14001 Environmental Management Systems – Requirements with Guidance for Use

7 PROJECT DESCRIPTION

7.1 Project Scope

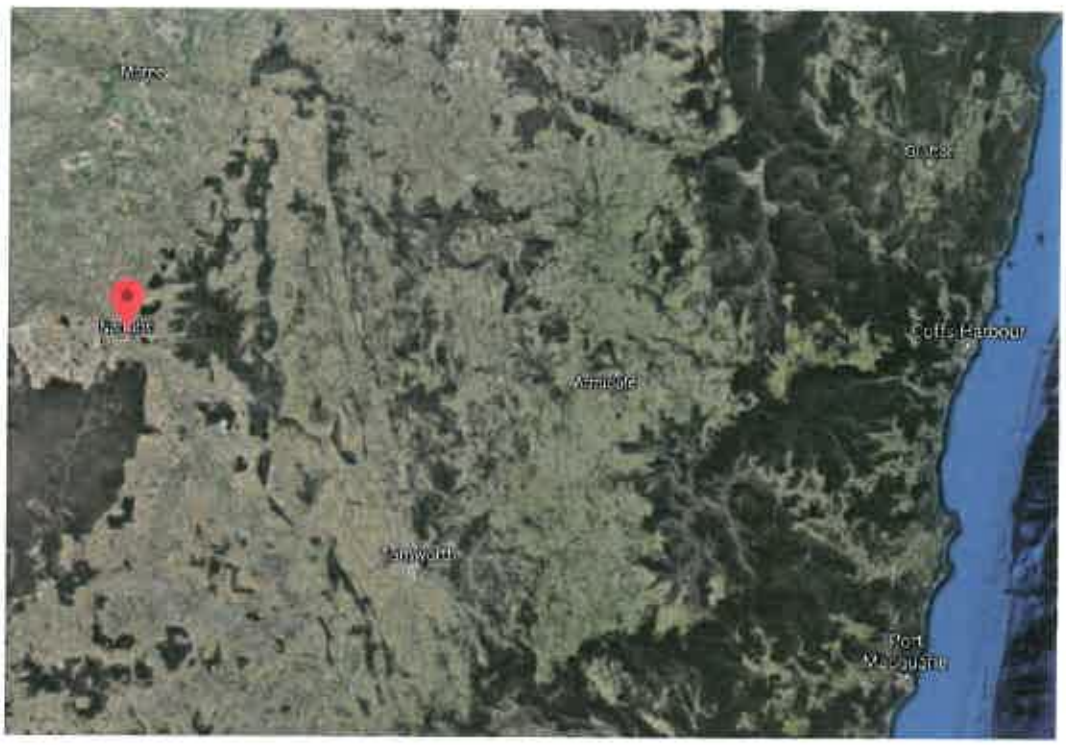
The scope of works for this project will include, but not limited to, the provision of all labour, materials (except Client Free Issued Materials), plant, equipment and supervision to perform the works. Typical activities to be undertaken within the scope of work include:

- Procurement and transportation of materials
- Transportation of Santos supplied free issued material from the Narrabri Operational Centre to site
- Site mobilisation and demobilisation
- Site installation and management of civil, structural, mechanical, piping, electrical and instrumentation works
- Testing, inspection and pre-commissioning of all works that are pertained in Downers scope; and
- Supply of completion documentation.

7.2 Project Location

The scope of work will be executed at Wilga Park Power Station and Bibblewindi Compressor Station which are situated near Narrabri, NSW.

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence



7.3 Construction Methodology

The scope of work will be undertaken in a staged approached including project mobilisation, pre-shutdown works, shutdown works and project demobilisation. The following sections provide a high-level overview of the works to be undertaken.

7.3.1 Wilga Park Slug Catcher & Tintsfield Tie-In

7.3.1.1 Pre-Shutdown Works

Pre-shutdown works at Wilga Park Power Station will include:

- Installation of pipe supports
- Installation of concrete sleepers for control panels
- Installation of Wilga Park Slug Catcher Skid
- Installation of HDPE Tank and associated instrumentation
- Installation of associated piping between the Wilga Park Slug Catcher and HDPE Tank
- Installation of XV and Flowboss at Tintsfield Tie-In
- Installation of Slug Catcher and Tie-In Control Panel
- Installation of Antennas
- Installation of cables and associated cable ladder, conduit and Unistrut
- Installation of instruments and associated instrument tubing.

7.3.1.2 Shutdown Works

Shutdown works at Wilga Park Power Station will include:

- Installation and tie-in of pipe spooling between Slug Catcher and Pipeline Risers
- Service test all modified pipework

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

- Glanding and termination of electrical cables
- Hazardous area inspections
- Pre-commissioning and perform loop check of installed instruments.

7.3.2 Bibblewindi Compressor Station Type B Compliance & Piping Modifications

7.3.2.1 Workshop Fabrication Works

Fabrication works will be completed offsite and prior to mobilisation to site.

- Fabrication and hydrotesting of pipe spools.

7.3.2.2 Pre-Shutdown Works

Pre-shutdown works at Bibblewindi Compressor Station will include:

- Installation of pipe supports
- Installation of Type B shut off valves
- Installation of compressor blowdown line to flare
- Installation of compressor discharge separator PSV and associated piping
- Installation of Flame Arrestor
- Installation manual valves
- Installation and tie-in of compressor fuel gas train spool
- Installation of cables and associated cable ladder, conduit and Unistrut
- Installation of instruments and associated instrument tubing
- Wiring modifications in the compressor PLC cabinet
- Installation of earth stake

7.3.2.3 Shutdown Works

- Installation of check valves on the compressor bypass line
- Installation and tie-in of compressor blowdown line to flare and associated valves
- Installation and tie-in of flowmeter on flare piping and bypass line
- Installation and tie-in of replacement PSV spool on inlet separator
- Leak testing of all installed pipework
- Glanding and termination of electrical cables
- Hazardous area inspections
- Pre-commissioning and perform loop check of installed instruments.

7.4 Environmental Sensitivities Control Map

All works are contained to existing hardstand area's associated with Wilga Park Power Station and Bibblewindi Compressor Station.

Project Specific Requirements

© Downer 2018. All Rights Reserved

Project Specific Requirements
▪ Only formed and approved access tracks will be used. ▪ All construction works will only be undertaken on previously cleared land. ▪ No disturbance activity will be undertaken.

8 ENVIRONMENTAL MANAGEMENT OVERVIEW

8.1 Objectives & Targets

In consideration of *DG-ZH-PO001 Environmental Sustainability Policy*, the Client's contractual requirements, and any identified hazards and/ or risks for the project, Downer has developed a standard set of objectives and targets that are applicable to all projects, as per the following table. These objectives and targets are managed to ensure that all identified, as well as potential environmental impacts that could reasonably be expected to occur during the construction works, fall within acceptable and agreed limits. This is achieved through pro-active environmental management planning prior to carrying out particular elements of work.

Focus Area	Objective	Target
Legal Compliance	▪ Compliance with all legal requirements. ▪ Undertake the project in accordance with environmental approvals.	▪ No regulatory infringements, including PINS and prosecutions. ▪ 100% compliance with statutory approvals.
Monitoring	Complete internal environmental audits in accordance with the pre-planned audit schedule.	Complete 100% of scheduled environmental audits.
Reporting	Promote a positive reporting culture. Ensure all environmental observations, hazards and near misses and incidents are entered into **INX InControl**. Ensure actions are closed out by the nominated due dates.	0 actions arising from incident overdue >30 days.
Planning	Ensure that Downer workers are provided with regular and up-to-date information on environmental aspects for the duration of the project.	Review the content of the CEMP prior to 25% of the scheduled project duration to maintain the currency of information provided to Downer workers and others.
Risk Management	Ensure that Downer workers are familiar with hazards and risks associated with the execution of the scope of work (work under contract).	The Project Risk Register, controls, and treatment plans are regularly reviewed and communicated to the Project Team in accordance with *DI-RM-PR003 Project Risk and Opportunity Management*.
Consultation	Ensure that Downer workers are regularly consulted on matters that affect the environment.	Conduct pre-start meetings (daily), and toolbox meetings (monthly).

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Focus Area	Objective	Target
Training	Ensure Downer workers are provided with training to enable work practices to be undertaken that are safe and minimise risk to the environment.	All Downer workers undertake, as a minimum, the two levels of induction training, i.e. project specific induction and Downer site specific induction.

Project Specific Requirements

- All workers, subcontractors and visitors will be made aware of legal, environmental and site-specific requirements and obligations before mobilising to site through Downer, Santos and Site Inductions.

8.2 Risk Management

Throughout the duration of the project, risks are identified, assessed, and controlled using of a number of different tools.

The identification of environmental activities and the respective potential impact to the environment is determined following a review of the:

- contract and its associated environmental conditions
- consent conditions as applied by the State and Federal governments and detailed in the associated Environmental Impact Assessment (EIA) document; and
- actual scope of work and consideration of all applicable legislation, standards, and other conditions.

Risk is managed during the project's phases (i.e. Handover & Initiation, Planning, Start-Up, Execution, and Close-Out) in accordance with the project's PEP.

The Project Risk Register details the relevant environmental aspects, their associated impacts, the mitigation control, and a rating of their significance. Refer to *Annex B – Project Risk Register Excerpt* for an excerpt of the Project Risk Register detailing the environmental risks for the project.

The significant environmental risks for the project, by risk ranking A and B inherent risks, are detailed in the table below. The procedures and control measures for the identified significant project aspects have been developed and are defined in section 14 Managing High Risk Activities

While on site, the processes, tools, and control hierarchy used to manage risk are defined in ***DA-ZH-PR028 Zero Harm Risk Management***. Risk assessments are completed as follows:

- A Project Risk Register is developed by relevant members of the Project Team, in consultation with the Client. Unless specified otherwise by the Client, the Project Team is responsible for maintaining the Project Risk Register.
- All high risk tasks are assessed by having a SWMS developed for them using the SWMS Form, as per ***DA-ZH-PR028 Zero Harm Risk Management***.
- A SWMS Register is developed for the project as per ***DA-ZH-PR028 Zero Harm Risk Management***.
- Zero Harm start-up (i.e. pre-commencement) toolbox talks are conducted to communicate key hazards, risks, and the SWMS, and are documented accordingly.
- Zero Harm pre-start and risk control assessments are conducted prior to commencing work each day.

Project Specific Requirements

- The significant environmental risks for the project are listed in Annex C - Risk Register.

© Downer 2018. All Rights Reserved

8.3 Change Management

Zero Harm related changes in the workplace are managed using ***DA-ZH-PR031 Zero Harm Change Management***, which describes the change management process of:

- initiate and plan the change
- consult on the change
- approve the change
- implement the change; and
- review the change.

Project Specific Requirements
▪ Nil

8.4 Subcontractor Management

Subcontractors comply with the requirements of the subcontract agreement, which includes the details of all environmental requirements while performing works under the control and direction of Downer.

Subcontractor personnel adopt the same responsibilities as outlined for Downer personnel, inclusive of reporting all matters relating to health, safety, and the environment.

Pre-qualification evaluation and assessment, engagement, review and on-site management and monitoring of subcontractors is undertaken as per the project's PEP and ***DA-ZH-PR022 Visitor and Contractor Management***.

Project Specific Requirements
▪ Nil

9 TRAINING & AWARENESS

Downer recognises the importance of employee training and induction, and the critical role it plays in supporting the safe and environmentally responsible conduct of project operations.

Downer promotes the following:

- A person must not undertake an activity that pollutes, or might pollute, the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm.
- In determining what activities are required to be taken, the following are considered (amongst other things):
  - The nature of the pollution or potential pollution and the sensitivity of the receiving environment.
  - The current state of technical knowledge and likelihood of successful application of the activities that might be taken.
  - The financial implications of the activities that might be taken, as those implications relate to the class of person undertaking activities of the same or a similar kind.

Downer manages project activities in such a manner as to:

- minimise impact to the environmental; and
- educate personnel on their responsibilities relating to protecting the environment.

© Downer 2018. All Rights Reserved

All personnel have environmental management responsibilities, and Downer ensures that these responsibilities are communicated to all personnel via appropriate environmental management training, including the initial environment induction.

9.1 Environmental Principles

Downer has established ***10 Environmental Principles*** that is a set of fundamental principles that all projects adhere to at all times. The Environmental Principles are prominently displayed on-site in communal areas and/ or on notice boards.

Project Specific Requirements
▪ Nil

9.2 Inductions

Environmental awareness training is provided to all personnel involved with the project, including all subcontractors and visitors, via inductions, as per ***DA-ZH-PR003 Training and Competency Management***.

A project specific induction is delivered to all personnel and subcontractors highlighting the hazards specific to the site, and the controls necessary to manage them appropriately. Induction handbooks and associated training presentations may be used for the induction. Personnel are re-inducted annually. The environmental component of the induction is tailored for each group of inductees (as applicable) to ensure that specific components of work are adequately addressed. This method of environmental awareness training ensures that all personnel are aware of:

- the importance of conformance with environmental policy and procedures and the requirements of the CEMP and associated sub-plans (if applicable)
- ***10 Environmental Principles***
- the significant environmental aspects of the project work's and the environmental benefits of improved work performance
- their roles and environmental responsibilities for achieving conformance with environmental policy and procedures and with the CEMP, including site emergency preparedness and response requirements; and
- the potential consequences of departure from specified operating procedures.

The project's environmental induction is valid for a period of 12 months, after such time the person undertakes refresher training.

All personnel, including subcontractors, attend inductions prior to commencing work on the project. Records of inductions are recorded in the project's training matrix.

Project Specific Requirements
▪ Refer to Zero Harm Management Plan – 16055-PLA-0201

9.2.1 Visitor Inductions

Subcontractors that attend site on an intermittent basis, e.g. a delivery driver, are typically inducted on a visitor basis. Subcontractors are assessed by the relevant member of the Project Team on a case-by-case situation to determine if a subcontractor is required to undertake a visitor induction or full site induction.

A visitor induction is valid for a period of 2 weeks.

Project Specific Requirements

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Project Specific Requirements
▪ Refer to Zero Harm Management Plan – 16055-PLA-0201

9.3 Training

Employee training and competency requirements are reviewed annually, or as an employee's role changes.

Downer maintains a database of training records and employee competencies that provides capabilities such as tracking expiry of time limited competencies and programming of training requirements.

Personnel who undertake activities with significant environmental risk complete specialist environmental training, which is conducted by Downer (with support of the Client), in addition to the environmental induction.

Specialist training includes, but is not limited to:

- erosion and sediment control principles and practise
- dust control procedures
- response in heavy rain events
- vehicle wash down procedures
- emergency response procedures; and
- hazardous materials spill response.

Selected personnel, including all plant service personnel, undertake awareness training in the correct use of spill response kits.

The Zero Harm Lead / Advisor undertakes relevant Zero Harm supervisor training as required by the Client.

Project Specific Requirements
▪ Refer to Zero Harm Management Plan – 16055-PLA-0201

10 COMMUNICATIONS

10.1 General Communication

Achieving effective communication between all parties is critical to ensure that the requirements of this CEMP are met.

Downer uses a number of methods to communicate with employees, subcontractors, and visitors. The requirements, frequency, information, and methods of recording communication are outlined in the project's PEP, ***DA-ZH-PR013 Communication and Consultation***, and ***DA-ZH-PR028 Zero Harm Risk Management***.

Typical methods of communication on site:

- pre-start meetings
- Zero Harm start-up (i.e. pre-commencement) toolbox talks
- Zero Harm inductions
- noticeboards
- toolbox talks; and
- environment alerts.

Pre-start and toolbox meetings include delivering key environmental messages and audit and inspection results and communicating environmental risks for the scheduled activities.

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Pre-start meeting minutes are taken, reviewed and signed by the meeting chairperson, and made available to all Downer workers and visitors (if applicable) on site.

The Zero Harm Manager ensures that relevant documentation is filed electronically, and hard copies made available to personnel. Hard copy documentation made available to personnel typically includes:

- the project's Emergency Preparedness Management Plan
- standard operating procedures
- work instructions
- client procedures/ policies
- fatal risk control standards
- risk assessments
- minutes of meetings; and
- copies of pertinent legislation and codes of practice.

Project Specific Requirements
▪ Refer to Narrabri Gas Project Community and Stakeholder Engagement Plan

10.2 Dispute Resolution

Downer's dispute resolution process meets the requirements of the Work Health and Safety Regulation 2011 and is included in ***DA-ZH-PR013 Communication and Consultation***.

Other disputes raised that are not applicable to Zero Harm are managed in accordance with the PEP.

Project Specific Requirements
▪ Nil

10.3 External Communication

Direct communication with the media and general public is not permitted. Any requests from the media or general public are referred to the Project Manager who takes action in accordance with the PEP.

All direct communication with statutory authorities is approved by the Project Manager.

The Client typically also has specific requirements relating to external communications.

Project Specific Requirements
▪ Refer to Narrabri Gas Project Community and Stakeholder Engagement Plan

11 MONITORING & CORRECTIVE ACTION

11.1 Audit & Inspection

Downer conducts internal environmental audits in accordance with ***DA-QA-PR007 Internal Audits*** to ensure the ongoing adequacy and effectiveness of the CEMP and **EMS**, and to facilitate continuous improvement.

Environmental audits are planned and scheduled with all other project audits, and detail the type of audit, duration, auditors (including the Lead Auditor), and dates.

The findings from internal audits on the implementation of the CEMP and **EMS** for the project are provided to the Project Manager.

© Downer 2018. All Rights Reserved

Audits are conducted by the Zero Harm Manager or nominated qualified delegate.

In addition to planned internal audits, the Project Team verifies environmental conformance to the CEMP as per the reviews in the following table and ***DA-ZH-PR116 Zero Harm Inspections and Observations.***

Type of Review	Goal	Frequency
Solid Wastes	▪ Recycling where practical and economically feasible. ▪ Appropriate use of landfill site for disposal. ▪ Appropriate placement and use of site amenities.	▪ Spot checks of recycling facilities. ▪ Informal daily, formal weekly inspections
Flora and Fauna	Compliance with section *14.3 Flora and Fauna Management* of this plan.	Informal daily, formal weekly inspections
Erosion and Sediment Control Measures	Implementation, monitoring, and maintenance of all soil erosion and sediment control measures defined in section *14.6 Erosion and Sediment Control* of this plan.	Informal daily, formal weekly inspections.
Work Site Storage and Handling of Fuels, Oils, Chemicals, and Paints	Compliance with dangerous substances regulations and hydrocarbons and chemicals procedures defined in section *14.2 Hydrocarbon and Chemical Management* of this plan.	Informal daily, formal weekly inspections.
Hydrocarbon and Oil Spills	Compliance with section *14.2 Hydrocarbon and Chemical Management* of this plan.	Continuous monitoring by Environmental Advisor and/ or Site Supervisor. Spot checks of sites and formal weekly inspections
Air Quality and Dust Management	Compliance with section *14.5 Air Quality Management* of this plan.	Continuous monitoring by Environmental Advisor and/ or Site Supervisor. Spot checks of sites and formal weekly inspections
Applicable Impact Mitigation Strategies	Compliance to SWMS requirements and the CEMP.	Informal daily, formal weekly inspections
Housekeeping	▪ Tidy work site with no litter and all waste contained in appropriate containers. ▪ Containers to be emptied and disposed of at appropriate intervals.	Informal daily, formal weekly inspections

Whenever practicable, personnel conducting an audit address identified deficiencies during the course of the inspection. In all other cases the Supervisor is responsible for ensuring action and a date for completion is assigned to each outstanding action. The Environmental Advisor monitors the progress of rectification of any outstanding corrective actions.

Results of all audits are made available to personnel via pre-start, and/ or toolbox meetings.

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Project Specific Requirements
▪ Nil

11.2 Client Audits

Any client or third-party audit requirements to verify the effectiveness of the CEMP are captured in the following table.

Project Specific Requirements
▪ Condition 4.1 of the project approval places an obligation on Santos for compliance monitoring and tracking. Any non-compliances identified by Downer will be communicated to the Santos Construction Supervisor. ▪ Santos will carry out independent audits of the works being undertaken under this plan.

11.3 Subcontractor Audits

Subcontractors are required to undertake audits of their work space, as communicated to the Subcontractor through the tender and contract. Compliance with this requirement is a contract deliverable and is defined in the Supplier Data Requirements. Refer to the Project Management Plan for further information on project procurement management. The environmental audit requirements are communicated to the procurement personnel for inclusion in the tender documents.

The reviews listed in the table in section *11.1 Audit & Inspection* also apply to subcontractor activities and workspaces.

Project Specific Requirements
▪ Nil

11.4 Compliance Tracking

Compliance tracking is undertaken on a continuous nature during construction using Downer's compliance management system **INX InControl**, which allows authorised users to:

- access the Compliance Tracking Database, Incident Reporting Database, and Complaints Register; and
- sort and evaluate the compliance status of all conditions at any time.

The Compliance Tracking Database includes a protocol to address:

- auditing requirements
- reporting requirements; and
- incident response mechanisms.

Project Specific Requirements
▪ Condition 4.1 of the project approval places an obligation on Santos for compliance monitoring and tracking. Any non-compliances identified by Downer will be communicated to the Santos Construction Supervisor. ▪ Santos will carry out independent audits of the works being undertaken under this plan.

11.5 Environmental Non-Compliance

© Downer 2018. All Rights Reserved

Non-compliances raised by the Client and via internal project audits are registered and controlled in accordance with *DA-ZH-PR006 Incident Reporting and Investigation* and using **INX InControl.**

Possible non-compliances include non-compliance with the management measures outlined in this CEMP. All non-compliances are registered and controlled using **INX InControl.**

Where detected, any non-compliance or environmental impact exceeding specified limits are investigated by the Environmental Advisor to determine the extent of possible non-conformance. The non-compliance is corrected as soon as possible with necessary action taken to prevent recurrence.

All non-compliances are reported to the Client and clearly identify the corrective/ preventative actions to be taken and the close-out date.

Project Specific Requirements
▪ Nil

11.6 Environmental Complaints

Third party environmental complaints are managed in accordance with Santos Policy, Procedures and NSW Government – Department of Planning and Environmental. Specifically, the Environmental Advisor:

- records complaints as an incident in **INX InControl**
- investigates and verifies complaints, and assesses if excessive off-site impacts have occurred
- implements corrective measures including modification of construction methods and operational techniques to avoid recurrence or minimise ongoing adverse impacts
- completes monitoring/ additional investigations to verify the adequacy of the recommendations, as required
- notifies the complainant of actions taken; and
- continues to monitor activity, if required.

Project Specific Requirements
▪ Refer to Narrabri Gas Project Community and Stakeholder Engagement Plan

11.7 Environmental Breach

Subcontractors found to be in breach of this CEMP are managed in accordance with the subcontract under which they have been engaged.

Employees who breach the requirements of this CEMP are managed in accordance with the Workplace Relations Management processes defined in the PEP. Personnel found to be grossly negligent or commit an intentional environmental breach are removed from site and managed in accordance with the project's Workplace Relations Management processes.

Project Specific Requirements
▪ Nil

11.8 Reporting

Environmental performance is reported for the project in accordance with *DA-ZH-PR007 ZH Project Planning and Performance Reporting.*

Environmental performance is reviewed and documented via minutes of scheduled project meetings utilising inputs from the Environmental Advisor, Construction Superintendent, and Zero Harm Manager.

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

As per *DA-ZH-PR077 Greenhouse Gas & Energy Reporting*, monthly reporting for Downer includes:

- greenhouse gas and energy data; and
- waste generation and water consumption data, gathered using the Environmental Data Collection Record described in *DA-ZH-PR077 Greenhouse Gas & Energy Reporting*.

Project Specific Requirements
▪ Nil

12 INCIDENT MANAGEMENT

In accordance with *DA-ZH-PR015 Emergency Preparedness and Response*, the Project Team establishes an Emergency Preparedness Management Plan (EPMP) for the project which addresses all emergency response scenarios. Common types of environmental emergencies include:

- sewage spills (to land or to water)
- emulsion spills (to land or to water)
- hydrocarbon spills (to land or to water)
- sediment discharge (to land or to water)
- unexpected finds (cultural heritage); and
- damage to heritage items or protected flora and fauna.

In the event of an incident that may have resulted in a near miss or an impact to the environment or community, Downer employees are expected to respond appropriately in accordance with *DA-ZH-PR006 Incident Reporting and Investigation*.

The Construction Superintendent (or Site Manager), Supervisor(s), Zero Harm Manager and environmental personnel workshop and identify the potential for and responses to environmental incidents and emergency situations for the project. The workshop includes:

- a review of all audit findings, including external audits
- a review of the operation of environmental procedures, processes, forms, checklists, and any other documents referenced in the CEMP and sub-plans
- a review of any design or activity modifications
- a review of environmental incidents and community complaints; and
- modifications to the CEMP and/ or sub-plans, as required.

The outcomes of the workshop are registered in **INX InControl**, and any actions assigned are followed-up through to completion.

Project Specific Requirements
Condition 7.1 of MP 07_0023 requires the Secretary to be notified of any incident with actual or potential significant off-site impacts on people or the biophysical environment within **12 hours** of becoming aware of the incident. Written details of the incident are to be provided to the Secretary within seven days of the date on which the incident occurred. For incidents causing or threatening to cause material harm, Santos is required by its EPL, PEL and the POEO Act to immediately notify the respective agencies EPA, DRE as well as NSW Health, WorkCover NSW, Local Council and Fire and Rescue NSW). EPL Condition R2.1 requires that the notification must be made by the telephoning the Environment Line service on 131 555.

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

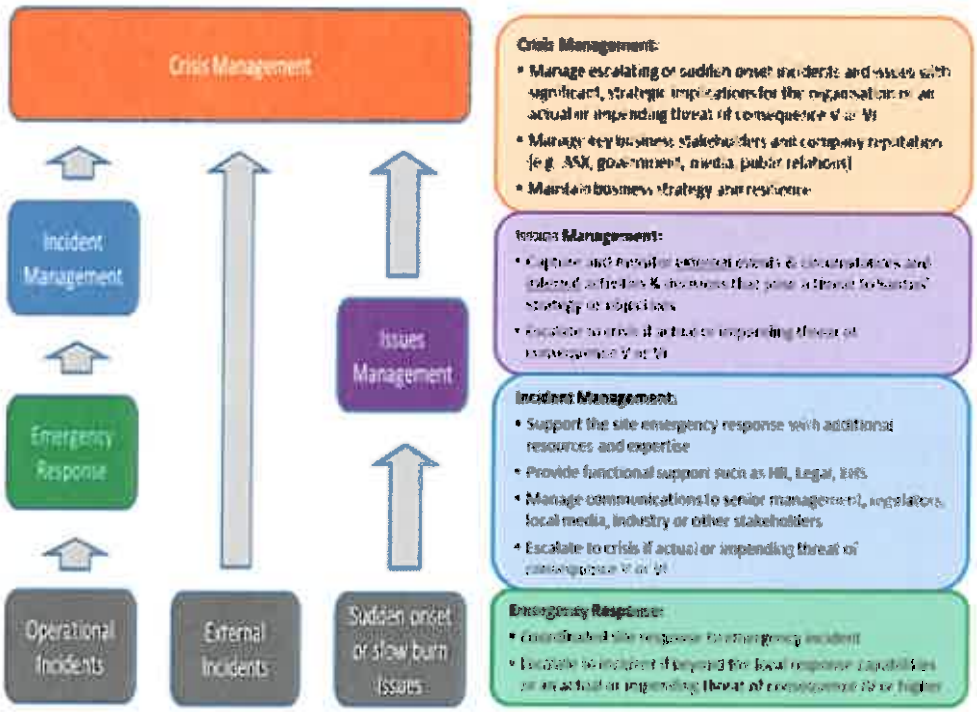
Project Specific Requirements

In accordance with Section 147 of the POEO Act, harm to the environment is material harm if:

- it involves actual or potential harm to the health or safety of human beings or to ecosystems, that is not trivial, or
- it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (including the reasonable costs and expenses that would be incurred to prevent, mitigate or make good harm to the environment).

As with the MP07-0023, PEL and EPL all require that a written report on the incident is provided to the relevant agencies within 7 days of the date of the incident.

The Santos SMS provides the mechanism for managing incidents. All incidents, hazards / near misses are categorized according to SMS requirements, with immediate internal notification to respective management levels commensurate with severity. This process is illustrated in the figure below.



Should an incident occur, Downer will immediately notify the Santos Construction Supervisor and Santos would make the appropriate notification to the Secretary and other appropriate agencies.

13 DOCUMENT CONTROL & MANAGEMENT REVIEW

All project documents are generated, numbered, approved, revised, transmitted, and stored in accordance with the Document Management and Control processes defined in the Project Management Plan.

The CEMP review ensures the suitability, effectiveness, and adequacy of the CEMP. The CEMP is formally reviewed annually (as a minimum) and whenever the CEMP, risk, and/ or activities change from the scope/ content.

The review is conducted by a team comprising the Project Manager (or delegate) and the Zero Harm Manager and considers performance against the CEMP with respect to incident trends and findings from internal and external audits.

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

The Project Manager (or delegate) ensures any changes to the CEMP, as a result of review / change is communicated to personnel.

Project Specific Requirements
▪ Nil

14 MANAGING ENVIRONMENTAL ASPECTS

The following sub-sections detail the controls and supporting information for the environmental risk aspects for the project.

14.1 Traffic Management

The following table outlines the management measures and mitigation strategies that are undertaken as far as practicable during the pre-construction, construction, and post-construction phases of the project to mitigate the potential impacts associated with traffic management.

Management Measures & Mitigation Strategies	Responsibility
Pre-construction Phase	
DA-ZH-ST135 Traffic Management must be completed to determine appropriate Traffic Management requirements.	Site Manager
There is no requirement for any oversized loads	Site Manager
There is no requirement for any approvals from Narrabri Shire Council or NSW Roads and Maritime Services under the *Roads Act 1993*.	Site Manager
Construction Phase	
All vehicles and mobile plant will utilise designated and approved access tracks, roads and existing hardstands.	Site Manager
The coordination of project traffic shall be carried out in conjunction with Santos project personnel.	Site Manager

© Downer 2018. All Rights Reserved

Management Measures & Mitigation Strategies	Responsibility
General principles in planning of safe traffic routes include but are not limited to the following: ▪ No foreseen oversized loads will be required. ▪ The number of project vehicles will be minimised to limit traffic volume. ▪ Travel movements will be minimised to limit the impact on the local communities. ▪ The majority of heavy vehicle movements will be between the Narrabri Operational Centre and site to perform deliveries. Deliveries will be performed during approved working hours. ▪ Routes shall be wide enough for the safe and timely movement of the largest vehicle permitted to use them. ▪ Routes should have firm and even surfaces and be properly drained. The surface should be capable of taking the load of the vehicle. ▪ Routes should be maintained to provide an effective surface for both vehicles and personnel. Any unsuitable conditions such as overly slick or rough shall be reported. ▪ Site layouts need to be effectively planned to eliminate or reduce the need for vehicles to back up. Drive-through operations can increase efficiency and improve visibility. ▪ When personnel are working alongside trucks and heavy equipment and are at foreseeable risk, designated work areas shall be setup, separated by barriers and warning signs.	Site Manager
General site requirements include but not limited to: ▪ All personnel must wear mandatory PPE in operational areas. Maximum 10 KPH speed limit. ▪ Pedestrians must walk with care and always comply with signage and barricading. ▪ Vehicles must be reversed parked in designated areas. ▪ Seatbelts must be worn at all times. ▪ Vehicle movement without load restraint is forbidden. ▪ The operator of vehicles and/or mobile plant must hold the relevant licence/ticket. ▪ Pedestrians must be acknowledged by the mobile operator with positive communication. For example, eye contact, wave (mobile equipment stationery) before proceeding. ▪ Mobile plant must remain stationery until the pedestrian is at least 3 meters away. ▪ All mobile equipment must be fitted with a UHF Radio, this includes forklifts and loaders. ▪ All Light Vehicle drivers to have completed a certified 4WD Course. ▪ Each driver will be individually issued IVMS operators electronic Driver Identification Tag daily by task or permanently with a register maintained at issue.	Site Manager

© Downer 2018. All Rights Reserved

Management Measures & Mitigation Strategies	Responsibility
Adverse weather conditions can affect the operating condition of unsealed roads. All frequently used unsealed roads shall be inspected for deterioration and damage following: ▪ Storms / Cyclones ▪ Prolonged rainy conditions ▪ Prolonged dry conditions All roads shall be checked for the condition of the road surface and signage, as well as for visibility. If the condition of a road has deteriorated significantly, the section of road should be reported to the Downer Site Supervisor for official notification to Santos.	Site Manager
During the life of the project Downer will have offsite traffic movements. These include Camp to site, RnR, travel to local businesses etc. Only designated Santos travel routes shall be adopted for such travel.	Site Manager
A one-page wall displayed Vehicle Management Plan will be implemented on the project site, taking into account: ▪ all mobile plant ▪ delivery vehicles ▪ other site traffic; and ▪ site workers on foot and other pedestrians.	Site Manager
In line with ***DA-ZH-ST057 Vehicle and Mobile Plant***, Downer has developed a Regional Driver Program to communicate the 'Safer Together' guidelines and the Santos requirement regarding safe driving. Driving exceptions, breach demerit points, IVMS key performance, recognition, callup zones, crossings, approved travel routes and driver restrictions are all outlined in the program.	Site Manager
No vehicles or mobile plant will be permitted to enter site without a valid Santos Specific Vehicle and Mobile Plant Hygiene Inspection Report (Weed and Seed).	Site Manager
All operators shall satisfy the following training and competency requirements prior to <u>independent</u> operation of vehicles and mobile plant: ▪ Where required by law, all vehicle and mobile plant operators possess the necessary licence, certificate or permit specific to the vehicle or item of mobile plant they operate (incl. Dangerous Goods transport). ▪ operators have been formally trained in the SWMS, Work Instruction (or equivalent) specific to the vehicle/plant as well as conducting prestart checks ▪ operators have successfully completed a competency assessment specific to the vehicle/ plant ▪ operator competencies have been verified prior to working onsite	Site Manager
Post-construction Phase	
All vehicles and mobile plant will be removed from site at the completion of the project	Site Manager

© Downer 2018. All Rights Reserved

14.2 Waste Management

The following table outlines the management measures and mitigation strategies that are undertaken as far as practicable during the pre-construction, construction, and post-construction phases of the project to mitigate the potential impacts associated with waste management.

Management Measures & Mitigation Strategies	Responsibility
Pre-construction Phase	
DA-ZH-FM063.1 Waste Estimation Record must be completed to determine appropriate waste storage and disposal requirements.	Site Manager/ Environmental Advisor
Construction Phase	
Segregated bins will be provided for construction waste, general waste and recycling. These bins provide adequate containment considering predicted amount of waste to be generated, fire safety, pest, odour and dust control and the protection of soil and water.	Site Manager
Liquid waste, including waste items with a potential to leak, will be stored in a suitably covered, ventilated and bunded area.	Site Manager

▪ All on-site toilet systems (excluding potable portaloo type systems that are stand alone or trailer mounted and sewage/ wastewater treatment plants) must be supplied and fitted with:
  ▪ Alarms on the waste storage tanks to indicate when storage tanks are at 90% full of volume capacity
  ▪ Automatic cut off valves on the potable water supply when the waste storage tanks are at 90% full of volume capacity; and
  ▪ Push taps (time flow taps).
▪ Ensure the volume of the potable water tank does not exceed 90% of the volume of the wastewater storage tank.
▪ Carry out daily inspections of on-site septic systems.
▪ Maintain inspection and maintenance records.
▪ Immediately report any waste water leaks, spills, or overflows regardless of volumes.
▪ Repair faulty or leaking equipment.
▪ Monitor the waste water storage tank and organise removal of liquid waste as required.
▪ Monitor the water supply tank and organise filling as required.
▪ Ensure that taps and toilets are not left running.
	Site Manager

Regulated waste will be stored in appropriately sealed, marked containers and in a bunded area.	Site Manager
A Safety Data Sheet for each waste that has the potential to pose a risk to health or the environment will be available to personnel exposed to the waste.	Site Manager
Waste will be removed as it accumulates and regularly from site.	Site Manager

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Management Measures & Mitigation Strategies	Responsibility
The final destination of waste of any kind will be determined after careful consideration has been given to all available reuse and recycling options. Any waste material that is unable to be recycled will be disposed of using an authorised waste facility.	Site Manager
A waste tracking system will be implemented tracking waste to the receiving facility. ***DA-ZH-FM063.1 Waste Estimation Record*** or ***DA-ZH-FM063.2 Waste Disposal Register*** may be used for this purpose.	Site Manager
All waste will be contained or covered during transportation to prevent spillage or loss.	Site Manager
Regulated wastes will be disposed of by a waste contractor licenced to remove such waste and include the generation and recording of appropriate transport and disposal dockets.	Site Manager
All sewerage waste will be regularly collected and transported by a transport company licenced to transport liquid waste.	Site Manager
Post-construction Phase	
All wastes will be removed from site at the completion of the project	Site Manager

Project Specific Requirements
▪ Nil

14.3 Hydrocarbon and Chemical Management

The following table outlines the management measures and mitigation strategies that are undertaken as far as practicable during the pre-construction, construction, and post-construction phases of the project to mitigate the potential impacts associated with hydrocarbon and chemical management.

Management Measures & Mitigation Strategies	Responsibility
Pre-construction Phase	
DA-ZH-FM015.2 Spill Response Equipment Needs Assessment Form will be completed to determine appropriate spill response equipment needs.	Environmental Advisor/ Zero Harm Advisor
Construction Phase	
Hazardous chemicals will be stored in a bunded area ensuring the following requirements: ▪ Bund constructed of impervious materials. ▪ Located at least 50m from waterways or drainage channels. ▪ Contains at least 25% of the total volume stored or at least 110% of the largest container, whichever is larger. ▪ The storage vessel(s) are back from the bund wall (or shielded) to prevent jetting of the liquid outside of the bund.	Site Manager

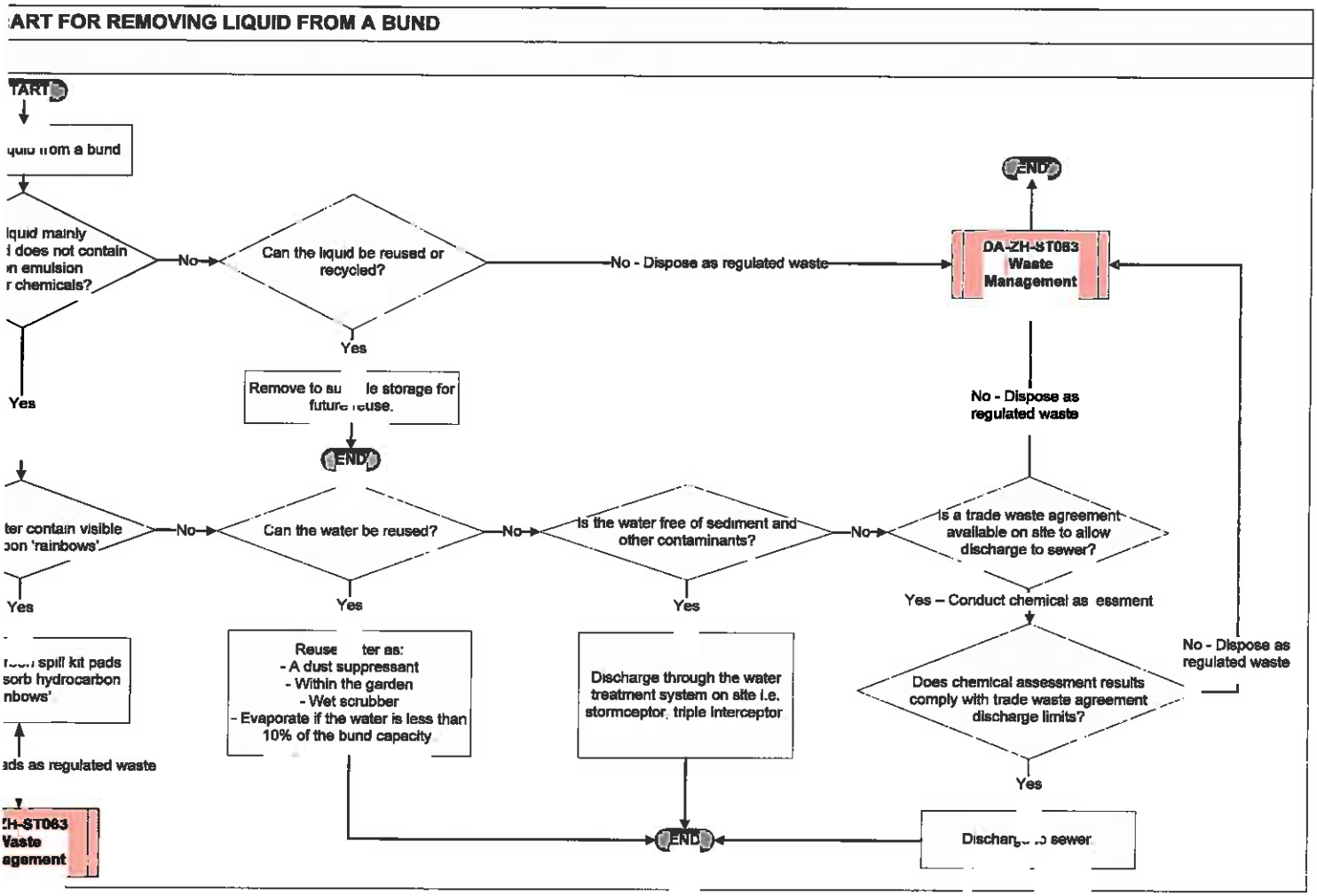
© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Management Measures & Mitigation Strategies	Responsibility
A register and copy of SDSs of all hazardous substances and fuel and oil storages will be maintained in accordance with ***DA-ZH-ST024 Hazardous Chemicals and Dangerous Goods***.	Site Manager
Hazardous chemicals will be segregated in accordance with ***DA-ZH-ST024 Hazardous Chemicals and Dangerous Goods***.	Site Manager
For oxygen, acetylene and other compressed gases: ▪ cylinders in use will be adequately restrained (i.e. chained to a trolley or other appropriate device) ▪ full and empty cylinders in storage will remain upright and restrained to a wall (or similar) in an area away from sources of heat ▪ empty cylinders will be stored separately to those that are full ▪ cylinders of like gases will be stored together, except in the case of oxy/ acetylene secured to a trolley for use; and ▪ oxygen and fuel gasses will be stored separately from corrosive and flammable gases.	Site Manager
The disposal of hazardous chemicals and dangerous goods will be undertaken in a safe manner that complies with ***DA-ZH-ST063 Waste Management***.	Site Manager
Removal of liquid from a bund will be completed in accordance with *section 14.2.1 Decision Flowchart for Removing Liquid from a Bund* of this plan.	Site Manager
Hazardous chemicals management will be formally inspected weekly using ***DA-ZH-FM116.9 Environmental Inspection Checklist***.	Environmental/ Zero Harm Advisor
Inspection of open storage facilities will be undertaken before and after significant (>10 mm) rainfall events to ensure adequate capacity remains.	Site Manager/ Environmental Advisor/ Zero Harm Advisor

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

ision Flowchart for Removing Liquid from a Bund

chart has been extracted from standard *DA-ZH-ST054 Hazardous Chemicals and Dangerous Goods Storage Principles and*



nly
ghts Reserved
Warning: Printed documents are UNCONTROLLED
Cc

14.4 Flora and Fauna Management

The following table outlines the management measures and mitigation strategies that are undertaken as far as practicable during the pre-construction, construction, and post-construction phases of the project to mitigate the potential impacts associated with flora and fauna management.

Management Measures & Mitigation Strategies	Responsibility
Pre-construction Phase	
No land disturbance or associated activities (such as construction laydown or stockpiling) is to occur outside of the existing hardstand boundary of Wilga Park Power Station as shown in Annex B.	Site Manager
Construction Phase	
No land disturbance or associated activities (such as construction laydown or stockpiling) is to occur outside of the existing hardstand boundary of Wilga Park Power Station as shown in Figure 1 of the modification report.	Site Manager
No vegetation disturbance is permitted to occur.	Site Manager
Personnel will not be permitted to intentionally feed, harass, harm, injure or kill fauna.	Site Manager
In the event that fauna enters the construction footprint and needs to be removed, it will only be handled by approved and appropriately trained fauna handlers.	Site Manager
Any on the job fauna incidents and/ or mortalities will be reported and entered into **INX InControl**.	Site Manager
Access points, machinery and truck turning areas, parking areas and temporary stack sites will be located within the existing hardstand boundary of Wilga Park Power Station as shown on Figure 1 of the modification report.	Site Manager
Materials will be placed on established lay down areas.	Site Manager
End caps will be fitted to all open pipework to prevent fauna access.	Site Manager

Project Specific Requirements
▪ Refer to Santos Plant Hygiene Procedure for plant and equipment weed / seed inspections and washdown requirements.

14.5 Environmental Noise and Vibration

The following table outlines the management measures and mitigation strategies that are undertaken as far as practicable during the pre-construction, construction, and post-construction phases of the project to mitigate the potential impacts associated with environmental noise and vibration.

Management Measures & Mitigation Strategies	Responsibility
Pre-construction Phase	

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Management Measures & Mitigation Strategies	Responsibility
The location of nearby sensitive receivers for the Wilga Park Power Station are identified in Annex B. There are no sensitive receivers within 10km of the Bibblewindi Compressor Station.	Site Manager
Construction Phase	
Work that is audible at any residence will be carried out during the following standard construction hours: • 7:00am to 6:00pm Mondays to Friday • 8:00am to 1:00pm Saturday; and • at no time on Sunday or during Public Holidays.	Site Manager
All plant and equipment will be adequately maintained, kept in good operating order and operated in an appropriate and efficient manner. Any unusual noisy equipment will be investigated and rectified.	Site Manager
The hierarchy of controls will be followed to avoid/ reduce noise and vibration, where possible.	Site Manager
Vehicle reversing will be limited, where possible.	Downer workers
Environmental noise and vibration management will be formally inspected weekly using *DA-ZH-FM116.9 Environmental Inspection Checklist*.	Environmental Advisor/ Zero Harm Advisor

Project Specific Requirements
• Nil

14.6 Air Quality Management

The following table outlines the management measures and mitigation strategies that are undertaken as far as practicable during the pre-construction, construction, and post-construction phases of the project to mitigate the potential impacts associated with air quality management. Given the scope of works, and the location of works, the potential for dust generation is considered low.

Management Measures & Mitigation Strategies	Responsibility
Pre-construction Phase	
Areas or plant that can impact on air quality will be identified.	Site Manager
The site induction will include dust and air quality management.	Site Manager
Construction Phase	
Consideration will be given to purchase the newest available technology for any new plant and equipment procured to minimise energy use and avoid air emissions.	Site Manager

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Management Measures & Mitigation Strategies	Responsibility
Unnecessary vehicle movements will be eliminated by carpooling where practicable and ensuring vehicles remain on designated tracks.	Site Manager
Dust mitigation strategies will be implemented, e.g. water carts and sprinklers.	Site Manager
Visual dust monitoring will be undertaken continuously, and additional controls implemented as required.	Site Manager

Project Specific Requirements
▪ Nil

14.7 Erosion and Sediment Control

The following table outlines the management measures and mitigation strategies that are undertaken as far as practicable during the pre-construction, construction, and post-construction phases of the project to mitigate the potential impacts associated with erosion and sediment control.

Management Measures & Mitigation Strategies	Responsibility
Pre-construction Phase	
No land disturbance or associated activities (such as construction laydown or stockpiling) is to occur outside of the existing hardstand boundary of Wilga Park Power Station as shown in Figure 1 of the modification report.	Site Manager
A site map will be completed that highlights: ▪ north point and plan scale ▪ site boundaries, adjoining roads and sensitive surroundings ▪ construction access points ▪ site office, car park and location of stockpiles ▪ proposed construction activities and limits of disturbance ▪ existing and proposed drainage patterns and discharge points ▪ clean water diversion of upslope runoff around the disturbed areas ▪ location and details of proposed erosion and sediment control measures ▪ location of stockpile areas.	Site Manager
Construction Phase	
Construction activities will be carried out in a manner which complies with section 120 of the *Protection of the Environment Operations Act 1997.*	Site Manager
Soil and water management controls will be implemented to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters in accordance with *Managing Urban Stormwater: Soils and Construction, Volume 1 (Landcom 2004)* (the 'Blue Book').	Site Manager

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Management Measures & Mitigation Strategies	Responsibility
Exposed areas of the site will be limited in extent and duration as far as practicable by: ▪ stabilising disturbed areas quickly ▪ limiting vehicle movement to existing tracks and hardstand areas ▪ maintaining access tracks in sound condition ▪ diverting clean water around disturbed areas and chemical/fuel storages. ▪ covering stockpiles.	Site Manager
Drip trays and spill kits are essential and will be in place when using mobile refuelling locations.	Site Manager
A drain warden, mesh and gravel inlet filter, geotextile inlet filter, sandbags or other locally approved method to cover drains/ water inlets will be used to reduce the sediment load.	Site Manager
Erosion and sediment controls will be formally inspected weekly using ***DA-ZH-FM116.9 Environmental Inspection Checklist.***	Zero Harm Advisor

Project Specific Requirements
▪ Nil

14.8 Greenhouse Gas Management

The following table outlines the management measures and mitigation strategies that are undertaken as far as practicable during the pre-construction, construction, and post-construction phases of the project to mitigate the potential impacts associated with greenhouse gas management.

Management Measures & Mitigation Strategies	Responsibility
Construction Phase	
Opportunities to reduce energy usage and associated greenhouse emissions will be identified.	Site Manager
All plant and equipment will be maintained to ensure that maximum operating efficiency can be attained.	Site Manager
Energy usage will be reviewed in accordance with procedure ***DA-ZH-PR077 Greenhouse Gas and Energy Reporting***.	Site Manager
Site energy usage will be monitored, and monthly reports provided to the Client in accordance with NGER requirements.	Zero Harm Advisor

Project Specific Requirements
▪ Nil

14.9 Cultural Heritage

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

The following table outlines the management measures and mitigation strategies that are undertaken as far as practicable during the pre-construction, construction, and post-construction phases of the project to mitigate the potential impacts associated with cultural heritage.

Management Measures & Mitigation Strategies	Responsibility
Pre-construction Phase	
▪ No land disturbance or associated activities (such as construction laydown or stockpiling) is to occur outside of the existing hardstand boundary of Wilga Park Power Station as shown in Figure 1 of the modification report.	Site Manager
Construction Phase	
No land disturbance or associated activities (such as construction laydown or stockpiling) is to occur outside of the existing hardstand boundary of Wilga Park Power Station as shown in Figure 1 of the modification report.	Site Manager
▪ If previously unidentified aboriginal objects are found during construction, all work likely to affect the object(s) must cease immediately and the Client informed. The Client must then notify OEH of the object(s) in accordance with the *National Parks and Wildlife Act 1974*. Work must not recommence until written authorisation from OEH advising otherwise is received by the Client. ▪ If previously unexpected historical relic(s) are found during construction, all work likely to affect the relic(s) must cease immediately and the Client informed. The Client must then notify the Heritage Division of the relic(s) in accordance with the *Heritage Act 1977*. Work must not recommence until written authorisation from the Heritage Division advising otherwise is received by the Client.	Project Manager, Downer workers

Project Specific Requirements
▪ Nil

14.10 Biosecurity

The following table outlines the management measures and mitigation strategies that are undertaken as far as practicable during the pre-construction, construction, and post-construction phases of the project to mitigate the potential impacts associated with biosecurity.

Management Measures & Mitigation Strategies	Responsibility
Pre-construction Phase	
Where a biosecurity risk is present on or adjacent to the site, a suitably qualified person(s) will complete a survey and assessment. A 'suitably qualified person is a person with the relevant tertiary qualification, e.g. environmental science or ecology, and the minimum amount of experience.	Site Manager
Construction Phase	
The location of biosecurity risks and control requirements will be communicated to all personnel in the site induction.	Site Manager

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

Management Measures & Mitigation Strategies	Responsibility
Where necessary, biosecurity management signs will be erected at strategic locations prior to any construction or clearing to restrict access to infested areas and ensure personnel use designated access tracks.	Site Manager
Where a biosecurity threat is detected or suspected, it will be demarcated, avoided and/ or treated as per the most recent information available from the relevant state biosecurity or agriculture department.	Site Manager
Where applicable, all vehicles and machinery will be thoroughly washed to remove all soil/ mud and plant material prior to entering site. It is recommended that this requirement is included under special conditions of the contract (where not already included) and provide ***DA-ZH-FM067.1 Hygiene Inspection Form***.	Site Manager
Biosecurity management will be formally inspected weekly using ***DA-ZH-FM116.9 Environmental Inspection Checklist***.	Site Manager

Project Specific Requirements
▪ Nil

© Downer 2018. All Rights Reserved

ANNEX A – PROJECT ROLES & RESPONSIBILITIES

The Project Manager works with the relevant functional managers and human resources personnel to ensure adequate resources are in place for the project, as per the PEP.

The Project Manager ensures that the specific roles, inter-relationships, and lines of reporting for the project are defined in the project's organisational structure, and may assign:

- an individual to a specific role
- the responsibilities for the specific role to themselves; or
- the responsibilities for the specific role to other project team members.

Refer to the PEP for further information.

Project Manager

Typical Responsibilities

- Visibly committing to and implementing environmental practices as defined in the CEMP.
- Overseeing site occupation and project delivery compliance to the CEMP, and ensuring environmental records are maintained and made available upon request to government agencies.
- Reporting project environmental status and environmental incident to the Client.
- Reviewing and participating in environmental incident investigations and nominated corrective measures.
- Attending project and environmental meetings.
- Participating in environmental audits.
- Initiating environmental reviews with the Environmental Advisor to facilitate continual improvement.

Project Specific Responsibilities

- Nil

Construction Superintendent

Typical Responsibilities

- Ensuring environmental works are carried out in accordance with the CEMP and applicable sub-plans, and Downer procedures.
- Co-ordinating and facilitating SWMS activities for their area of responsibility.
- Ensuring all personnel, including subcontractors and visitors, undertake project defined induction and training, and are aware of any evacuation and emergency procedures.
- Reporting environmental incidents to the Project Manager and the Environmental Advisor as they are identified.
- Consulting and liaising with the Client on environmental matters and informing the Environmental Advisor of any issues.
- Ensuring daily and weekly environmental inspections are carried out and actions identified are implemented immediately.
- Participating with the Environmental Advisor in the investigation of incidents in their area of responsibility.
- Ensuring environmental issues are raised at site toolbox meetings.
- Participating in emergency response as part of the Emergency Response Team.

Project Specific Responsibilities

- Nil

© Downer 2018. All Rights Reserved

Construction Supervisor

Typical Responsibilities

- Ensuring environmental works are carried out in accordance with the CEMP and applicable sub-plans, and Downer procedures.
- Reporting environmental incidents to the Project Manager and the Environmental Advisor as they are identified.
- Participating with the Environmental Advisor in the investigation of incidents in their area of responsibility.
- Ensuring environmental issues are raised at site toolbox meetings.

Project Specific Responsibilities

- Nil

Environmental Sustainability Manager (Governance Role)

Typical Responsibilities

- Providing senior support to the Project Manager and Environmental Advisor/ Zero Harm Advisor to ensure environmental works are carried out in accordance with the CEMP and the respective sub-plans, and Downer procedures.
- Conducting periodic reviews and audits to verify compliance with this plan.
- Providing technical support to site staff.
- Assisting in the investigation of any incidents.
- Consulting, as necessary, with the Client on environmental matters.

Project Environmental Manager or Zero Harm Manager

The project team organisational structure will include a Project Environmental Manager or Zero Harm Manager as defined in the PEP.

Typical Responsibilities

- Providing senior support to the Project Manager and Environmental Advisor to ensure environmental works are carried out in accordance with the CEMP and applicable sub-plans, and Downer procedures.
- Providing technical support to site staff.
- Assisting in the investigation of any incidents.
- Consulting with the Client on environmental matters, as required.
- Maintaining effective Zero Harm systems in the field by developing maximum employee and subcontractor participation.
- Participating actively in project team Zero Harm meetings.
- Assisting in achieving zero environmental incidents for the project.
- Maintaining a useable library of environmental documentation.
- Undertaking weekly and monthly environmental inspections across all areas of the site and presenting alerts or findings at toolbox meetings.
- Undertaking regular system/ project environmental audits and producing high quality environment audit reports.
- Provide environmental guidance in resolving issues with a view to continuous improvement and elimination of any environmental incidents.

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

- Co-ordinating and delivering environmental training, including for environmental management, spill response, and spill prevention.
- Assisting field personnel in the development of project specific documentation, e.g. SWMS.
- Assisting in the preparation of the Project Risk Register and the environmental induction of project personnel.
- Monitoring and reporting on energy, greenhouse gas and waste management, including sewage disposal.
- Being familiar with and implementing the requirements of the Client's CEMP, as required.
- Being familiar with and implementing the requirements of this CEMP, as required.
- Complying with any regulations or statutory obligations for environmental management.

Project Specific Responsibilities

- Nil

Environmental Advisor / Zero Harm Lead

Typical Responsibilities

- Visibly committing to environmental procedures and instruction, and maintaining environmental records defined within this CEMP.
- Reporting to the Environmental Manager, Zero Harm Manager, Project Manager, and Construction Superintendent on environmental issues, as required.
- Providing environment planning (inclusive of impact mitigation measures) and discipline technical support to the Project Manager and project team.
- Assisting the Construction Super/ Environmental Manager in providing environmental training and inducting all site personnel, including subcontractors and visitors.
- Providing environmental input to the formulation of SWMS, as required.
- Consulting and liaising with the Client on environmental matters, including compliance with all regulatory requirements.
- Resolving and/ or facilitating solutions to site environmental issues and problems.
- Liaising with relevant regulatory authorities and stakeholders, as required.
- Reviewing and participating in environmental incident investigation and nominating corrective measures.
- Carrying out environmental inspections.
- Initiating environmental reviews with the Project Manager and facilitating continual improvement.
- Directing the workforce (in consultation with the Project Manager) to stop work in order to achieve compliance with the environmental requirements of the head contract, as covered in the CEMP and applicable sub-plans, or to prevent environmental damage.

Project Specific Responsibilities

- Nil

Downer Worker

Typical Responsibilities

- Visibly committing to environmental procedures and instruction.
- Completing required inductions as specified in this CEMP.
- Participating in the formulation of SWMS.

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

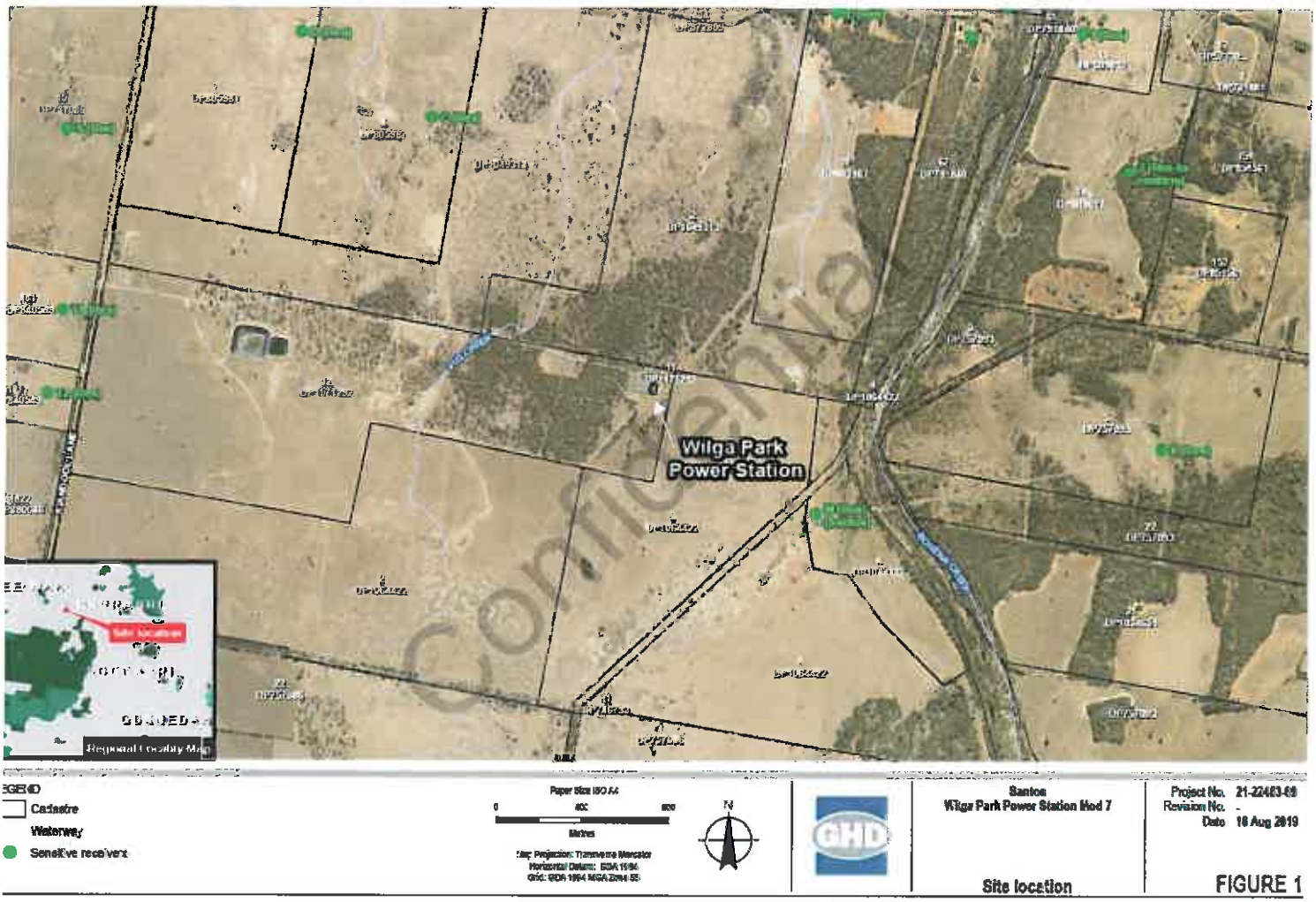
- Implementing environmental controls as detailed in inductions, SWMS, all aspects of this CEMP and applicable sub-plans, compliance documents, procedures, and standards.
- Reporting environmental incidents and issues to the relevant Supervisor or to the Environmental Advisor.
- Using equipment provided to reduce environmental hazards or emissions.
- Participating in daily and weekly environmental inspections.
- Contributing to the overall project goal for zero environmental impacts and incidents by making suggestions for improvement where identified.
- Complying with all aspects of this CEMP and all associated compliance documents, permits, procedures, and standards.
- Conducting risk assessments and providing SWMS to Downer prior to construction.
- Undertaking induction(s) as defined by this CEMP and complying with project environmental instructions.
- Providing to Downer details of all hazardous substances, contained within Safety Data Sheets (SDS), proposed for use in subcontractor scope.
- Providing other environmental related data to Downer as defined by this CEMP, including data for NGER, waste generation, and water consumption.
- Attending site meetings when requested.
- Reporting, investigating, and implementing corrective measures arising from associated environmental incidents.
- Attending environmental training and awareness sessions.

Project Specific Responsibilities

- Nil

© Downer 2018. All Rights Reserved
Warning: Printed documents are UNCONTROLLED
Commercial in Confidence

– SITE LOCATION



Confidential

– RISK REGISTER

st

nts Reserved