Shell ENERGY

PL75 - Neerabup Gas Pipeline System

NPS-PL-COR-0001 OPERATION ENVIRONMENTAL PLAN SUMMARY

Rev 5

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Contents

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Rev	Description	Revision Date	Next Revision Date	Reviewed	Approved
1	Issued for Use	19 Jun-09	19-Jun-14	J Gratton	P MacMahon
2	Revised due re-issue of NPS-PL-OPS-EMP-01 Operations Environmental Management Plan	08 Jul-09	08-Jul-14	B Lanciano	P MacMahon
3	Revised due re-issue of NPS-PL-OPS-EMP-01 Operations Environmental Management Plan	24 Oct-18	24 Oct-23	S Springer	D McKay
4	Shell Rebrand	23 Jun-21	23-Jun-26	A Weatherill	B Lanciano
5	Revised due to five-year Revision of NPS-PL-OPS-EMP-01 Operations Environmental Management Plan	12-Aug-25	12-Aug-30	J. Earnshaw	B Lanciano

1. Overview

This Operation Environmental Plan Summary **(EP Summary)** has been prepared for the operations and maintenance of the Neerabup Gas Pipeline System **(NGPS)** as per the requirements of Regulation 11(7) of the Petroleum (Environment) Regulations 2012. This EP Summary has been developed to support the Operational Environmental Management Plan (NPS-PL-OPS-EMP-01) submitted to the Department of Mines, Petroleum and Exploration (DMPE) on 14 August 2025.

NewGen Neerabup Partnership **(NNP)** is the Licensee, and Shell Energy Generation Pty Ltd **(Shell Energy)**, are the Operator of the NGPS.

The NNP 330MW Gas-Fired Power Station at Neerabup provides some of the generating capacity needed for the South-West Interconnected System **(SWIS)** during periods of high demand. It also reinforces the electricity transmission and distribution network in the rapidly growing northern metropolitan region.

Natural gas is used as the source of fuel for the gas turbines at the power station. The source of the gas supply is the Dampier Bunbury Natural Gas Pipeline **(DBNGP)** that runs from the north-west shelf gas production facilities through the metropolitan area to the south-west of WA.

2. Contact Details

The contact details for the proponent, Shell Energy Generation are as follows.

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Further information on the company can be obtained from their website, **http://www.shellenergy.com.au**.

3. Location

The NGPS is located 40 km north of Perth, Western Australia, within the City of Wanneroo and Shire of Chittering. The pipeline extends for approximately 30km from the Neerabup Compressor Facility (NCF) to the Neerabup Power Station (NPS). See Figure 1.

The NGPS connects to the DBNGP at a gas metering skid approximately 1.25 km upstream of Mainline Valve 116 (MLV116). The connection to the DBNGP and the gas metering skid associated with the tie-in are owned and operated by Dampier Bunbury Pipeline (DBP). The NGPS commences at the edge of the DBNGP corridor on the upstream side and ends immediately after the pig receiver kicker line isolation valve at the NPS, on the downstream side.

An overview of the pipeline route of the NGPS from the DBNGP to the NPS is provided in Figure 1.

The NGPS pipeline route was selected based on numerous constraints including:

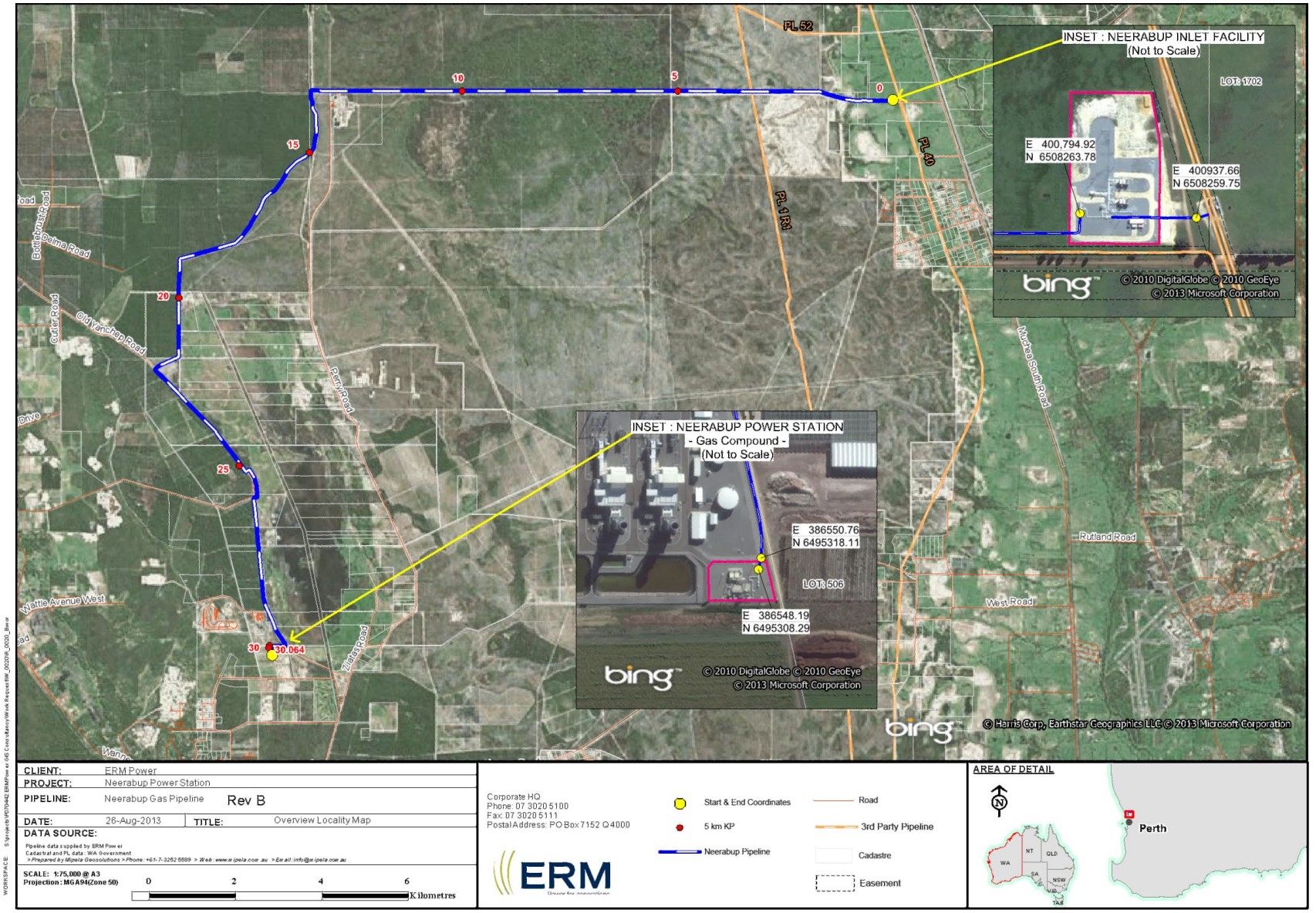
- Environmental impacts such as clearing of native vegetation, impact on wetlands and impact on fauna.
- Land tenure and use.
- Alignment of infrastructure to minimise overall impacts.

The coordinates of PL75 are listed in Table 1.

Table 1: Coordinates of PL75

DBP Tie in Point	Neerabup Inlet Facility	Neerabup Power Station
N 6 508 259.885	N 6,508,259.75	N 6,495,318.11
E 400 937.815	E 400,937.66	E 386,550.76

Figure 1: Coordinates Map, NGPS Overview & Location Plan of the Neerabup Gas Pipeline System



4. Description of the Environment

Prior to the construction of the NGPS, numerous environmental studies were undertaken; these are detailed in the Construction Environmental Management Plan (CEMP, NPP-35-0501-01) and supporting documentation to the environmental approval contained in Ministerial Statement 759.

4.1 Vegetation and Flora

The NGPS passes through a range of vegetation complexes. The vegetation complexes on the dune systems within the alignment are well represented in the State Forest and conservation reserve system on the northern Swan Coastal Plain. However, much of the pipeline alignment is located along already disturbed tracks, service corridors and in areas adjacent to tracks and pine plantations, which results in the majority of vegetation along the alignment being of low conservation value/significance.

The pipeline right-of-way (ROW) occurs on mostly pre-disturbed areas and tracks, and in proximity to established tracks near Muchea and the southern end of Lake Pinjar.

Areas where previous infrastructure was installed have partially recovered from disturbance. The remainder of the pipeline ROW occurs on agricultural lands, pine plantations and areas adjacent to established roads. On the border of the pine plantations and road reserves, rehabilitation is important in managing and improving their current condition. The agricultural land impacted by the ROW has been restored to their previous condition.

Flora surveys in the area did not identified Rare, Priority or Threatened flora near the ROW. This includes DRF species pursuant to subsection (2) of Section 23F of the *Biodiversity and Conservation Act 2016* (BC Act) and Priority flora.

Two TEC have been identified as likely to occur within the area:

- the Banksia Woodlands of the Swan Coastal Plain and
- Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain

It is unlikely that the ongoing operations will have a significant impact on vegetation. However, should the pipeline require vegetation clearing, flora and vegetation surveys would be required to confirm the status of vegetation, identify vegetation communities and confirm the presence or absence of any conservation significant flora. These surveys would inform the need for a Native Vegetation Clearing Permit and/or Referral under the *Environmental Protection and Biodiversity Conservation Act 1999* if the operations cannot be situated in an area that avoids clearing.

Introduced flora species are already present along the ROW, although none are declared plants. These species include *E. longiflora* (Veldt Grass) and are controlled as per the weed management procedure.

4.2 Fauna

The conservation significant Carnaby's Cockatoo is likely to be present in the larger NPP project area, generally feeding on *proteaceous* plants including Banksias. The *Banksia* woodland and *Marri* woodland areas within the pipeline ROW are degraded and are adjacent to the Gnangara Pine Plantation (20,000 ha) and Bush Forever site 380 (8,000 ha) and therefore do not represent a significant loss of food source for these birds.

It is considered unlikely that species will be affected by the ongoing operations and maintenance.

4.3 Areas of Conservation Value

The pipeline ROW traverses or is adjacent to areas deemed to be of conservation significance, being:

- Environmentally Sensitive Areas (ESA's)
- Bush Forever sites

- Conservation Category Wetlands, Resource Enhancement Wetlands and wetlands gazetted under the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 (EPP Lakes).*

ESA's are defined in Regulation 6(1) of the EP Act and include World Heritage Property, areas on the Register of the National Estate, defined wetlands, rare flora, TECs and Bush Forever Sites. There are no registered World Heritage Property Areas or Rare Flora within or adjacent to the NGPS.

The NGPS extends through a large ESA which encompasses the Gnangara-Moore River State Forest managed by DBCA.

Desktop mapping did not identify any regional parks or registered contaminated sites within the NGPS.

The NGPS extends through a number of Bush Forever sites; ID:380, 451 and 382. The pipeline alignment in Bush Forever site ID 380 occurs mostly in pre-disturbed areas. Management measures have been implemented to retain the integrity of this area during ongoing operations. The total area of disturbance in Bush Forever sites during construction was approximately 8ha of mainly regrowth vegetation within the existing Pinjar Lateral Gas Pipeline Corridor.

The pipeline ROW traverses several Priority wetlands, of which two are Conservation Category Wetlands (CCW). The pipeline also traverses through a Resource Enhancement Dampland for approximately 600 m in the existing Pinjar Power Station Pipeline Corridor. The pipeline ROW adjacent to Lake Pinjar (CCW) is within the recommended 50 m buffer for the wetland and is separated by a road.

4.4 Groundwater

The majority of the NGPS ROW is within the Gnangara Underground Water Pollution Control Area (Gnangara UWPCA) which has a Priority 1 source protection classification. The Gnangara UWPCA covers much of the Gnangara Mound which provides about 60% of Perth's drinking water. Priority 1 classification is for those areas where the provision of the highest quality public drinking water is the prime beneficial land use and would typically include land under Crown ownership.

4.5 Heritage

A desktop review of the Department of Planning, Lands and Heritage (DPLH) Aboriginal Heritage Inquiry System did not identify any registered Aboriginal Heritage Sites within the Pipeline ROW. There are two Lodged sites (ID 3693 and ID 19182) and two Registered sites (ID 4404 and ID 20008) close to the pipeline ROW, however operational activities do not interfere with these sites. Consultation will continue with DPLH should any new sites be identified.

An Archaeological Work Program Clearance Survey of the pipeline ROW was undertaken by third parties. No archaeological sites or isolated artefact materials were identified during the survey. In addition, all ground disturbing activities associated with the construction of the NGPS were completed with Aboriginal Heritage monitors present.

There are no registered European Heritage sites mapped as occurring within the pipeline corridor. However, the pipeline runs parallel to Lake Pinjar which is listed as an "Indicative Place" on the DOEE's Australian Heritage Database as part of the Wanneroo Wetlands Eastern Chain. An "Indicative Place" is one where data on the site has been entered by the Heritage Division, however a formal nomination of the site has not been made.

4.6 Rehabilitation

A flora and vegetation rehabilitation program and assessment reviews occurred following the construction of the NGPS to assess the progress of the rehabilitation along the ROW against the completion criteria. In 2015, a letter from the OEPA advised that the completion criteria required by condition 7.1 of Ministerial Statement 759 had been met and as such the management actions required by condition 7.2 of Ministerial Statement 759 were no longer required.

At the time of completing this EP there are no outstanding rehabilitation requirements. However if rehabilitation is required for future ground disturbance, an appropriate management plan will be developed.

5. Description of the Activity

5.1 Layout

The NGPS is comprised of the following:

- Neerabup Compression Facility (NCF) - located adjacent to the DBNGP near Muchea.
- Neerabup Pipeline – approximately 30 km in length and runs between the NCF and the Neerabup Power Station (NPS).

The NCF is designed on a fit-for-purpose basis and consists of the following:

- A gas flow control package.
- Two Gas Compressor packages that each include an Ariel JGK/2 Compressor coupled to a Waukesha L5774LT Engine, suction scrubber and discharge cooler. Gas compression will be provided by one or both compressors.
- Open waste oil drainage system that includes a waste oil tank that captures and stores waste oil from the compressor packages and air compressor bunds for maintenance activities and general waste oil catchments.
- Closed waste oil drainage system that collects via gas pressure waste oil from gas coalescer and gas compressor drainage pots to the closed drainage tank for disposal offsite. This closed drainage tank is vented to the atmosphere via the site's vent stack.
- A compressor discharge coalescer unit attached to common discharge piping.
- A fuel gas conditioning/metering skid including filtration and heating.
- A compressed air package for plant instrument air and compressor start air.
- A switchgear/control room.
- A parts store and chemical storage for the compressors.
- Provision for a third gas compressor package (suction, discharge and service piping tie ins).
- Provision for pig launching and receiving facilities.

Appendix A shows a site plan of the NCF. The initial operating parameters for the NCF and the pipeline limits the NCF discharge pressure to 10.2 MPa, which is equivalent to the nominal discharge design pressure of the Gas Compressor package(s). Gas is delivered at the NPS Receiver Station at a minimum pressure of 2.7 MPa.

The NCF and pipeline is accessible for operational intervention 24 hours a day, primarily from the NPS control room. Remote computer access is also possible by the on-call Pipeline /Power Station Operator. The systems are designed and sufficiently automated for safe remote operations and local maintenance of the Inlet Facility.

5.2 Operational Activities

The NGPS has been designed for a service life of at least 30 years and a pipeline life of 42 years.

The operation of the NGPS involves a range of activities generally undertaken by operations staff and specialist service companies including:

- Monthly surveillance of the pipeline easement.
- Maintenance of the pipeline, pipeline easement, and pipeline cathodic protection equipment.
- Periodic pigging of the pipeline for cleaning or inspection.
- Scheduled inspection and maintenance of associated compressor station equipment such as gas reciprocating engines and gas compressors, air compressors, gas filter and coalescers, flow control skid, fire

protection equipment, uninterruptable power supply, and hazardous area inspections, and any other scheduled maintenance as depicted by the maintenance management system.

- The use and handling of chemicals and hazardous materials.

Pipelines are widely accepted as a safe and environmentally responsible means for transporting gas and liquids. If pipeline operations are appropriately managed, few environmental issues are likely and those that do eventuate are typically localised and small-scale.

Within the NCF, hazardous materials and chemicals include oils and coolant for the compressors, and general substances within the chemical storage container. Each compressor package in the NCF has two self-bunded 1,000 L bulk container pallets containing compressor oil and engine coolant. The pallets are protected by a rain cover, as shown in Figure 2 and are stored on blue metal with a layer of limestone underneath within the NCF.

The NCF chemical storage area is in a self-bunded sea container with minimal amounts of chemicals such as cleaning agents, degreaser, valve sealant and paint on a self-bunded pallet.

All bunded areas are designed for 110% containment of any spills and to prevent the contamination of soil or water. All chemicals and hazardous substances will be stored and labelled as per legislative requirements.

MSDS are provided for each chemical used and stored on site. A register of all chemicals and hazardous materials and associated MSDS's will be maintained onsite in the site office and within the chemical storage areas.

Ground disturbance activities, including excavation and trenching are required from time to time for maintenance and repair activities. During such activities, surface vegetation and topsoil will be cleared and stockpiled for re-spreading over the site to assist in soil retention and provision of seed stock for revegetation.

6. Environmental Impacts and Risks

Potential environmental impacts and risks associated with operations and maintenance activities have been identified and assessed through various Hazard Identification (HAZID) Workshops in accordance with ISO31000:2018.

The objectives of the HAZID are to:

- Identify and systematically assess all major hazards and potential incident events associated with the operational activities, with a focus on environmental hazards.
- Evaluate and rank the identified impacts and risks.
- Identify control measures and strategies to manage and maintain all environmental hazards at an acceptable level.

Seventeen hazards have been identified, of which 4 hazards were identified to have an "Intermediate" residual risk ranking, being: spread of the European House Borer, spread of the Polyphagous Shot Hole Borer, damage to Aboriginal heritage sites, pipeline-related activities resulting in fire. With the implementation of identified mitigation measures it was considered that the risks were reduced as low as reasonably practicable (ALARP).

The potential environmental impacts and risks associated with the operation of the NGPS are presented in Table 2.

Table 2: Environmental Impacts

Activity / Risks	Potential Environmental Impact
General pipeline ROW and NCF access and operations	■ Death to fauna due to interaction with vehicles ■ General waste from personnel due to lack of housekeeping ■ Fire risk due to general waste and lack of housekeeping or vehicle incident ■ Spills due to lack of appropriate storage and handling of fuel and hazardous materials ■ Contribution to atmospheric greenhouse gases through use of vehicles and machinery
Weed Control	■ Death to fauna due to interaction with weeds or compromised vegetation ■ Impact on fauna habitat due to uncontrolled spraying ■ Impact to native vegetation due to uncontrolled spraying ■ Spread of weeds due to lack of control ■ Spills due to lack of appropriate storage and handling of chemicals ■ General waste from containers and equipment
Line of Sight Clearance	■ Death to fauna due to interaction (driving) ■ Impact on fauna habitat due to uncontrolled clearing ■ Impact to native vegetation due to uncontrolled clearing ■ Spread of weeds due to lack of control
Patrolling and inspections	■ Death to fauna due to interaction ■ Spread of weeds due to lack of control ■ Oil and diesel spills from vehicle ■ Unauthorised activity ■ Noise
Cathodic Protection Surveys	■ Death to fauna due to interaction ■ Spread of weeds due to lack of control
Testing and Inspection of Relief Valves	■ General waste from containers and equipment ■ Noise due to testing activities ■ Air emissions
Filter Inspection or Replacement	■ Noise due to venting / gas release /testing ■ Spills due to lack of appropriate storage and handling of chemicals ■ General waste from containers and equipment
Erosion Events	■ Loss of topsoil due to erosion ■ Contamination of water bodies due to sedimentation ■ Spread of weeds due to water flow
Emissions	■ Noise due to venting / gas release ■ Contamination of environment due to emissions
Pipeline Incident	■ Noise due to venting / gas release ■ Contamination of environment due to emissions ■ Fire due to ignition of flammable substances ■ Spills due to lack of appropriate storage
Pigging	■ Noise due to venting / gas release ■ Contamination of environment due to emissions ■ Spills due to lack of appropriate storage and handling of chemicals ■ General waste from containers and equipment and general consumables

Activity / Risks	Potential Environmental Impact
Pressure Testing	■ Erosion due to inappropriate water disposal ■ Noise due to venting / gas release ■ Contamination of environment due to emissions (water and air) ■ Spills due to lack of appropriate storage and handling of chemicals ■ General waste from containers and equipment
Ground disturbance	■ Death of fauna due to interaction and disturbance through vibration ■ Impact on fauna habitat due to unauthorised clearing ■ Damage to vegetation due to unauthorised clearing ■ Inability to reinstate due to lack of topsoil stripped and inappropriate storage ■ Soil over-compaction due to lack of appropriate reinstatement ■ Erosion due to inappropriate stockpile heights or incorrect implementation of design ■ Spread of weed / disease due to lack of adherence to vehicle / machinery hygiene requirements
Welding	■ General waste from personnel due to lack of housekeeping ■ Fire risk due to general waste and lack of housekeeping ■ Fire risk from sparks and lack of adherence to procedures.
Abrasive Blasting	■ Fire risk due to general waste and lack of housekeeping ■ Noise ■ Contamination of environment due to emissions (water and air)
Coating	■ Fire risk due to general waste and lack of housekeeping ■ Increased potential for rubbish generated due to general waste and lack of housekeeping
Compressors and associated equipment scheduled maintenance	■ Spills due to lack of appropriate storage and handling of chemicals ■ General waste from containers and equipment ■ Fire risk due to general waste and lack of housekeeping ■ Unauthorised activity

The following key environmental objectives for the NGPS are:

- To operate and maintain the pipeline in a safe manner.
- To operate and maintain the pipeline easement in a manner that minimises potential impacts on the environment, land use and third parties.
- To conduct maintenance and repair activities in a manner consistent with this EP and the APIA Code of Environmental Practice.

Management strategies for potential environmental impacts, as well as key environmental objectives, key mitigation measures and verification measures have been identified and implemented and include:

- Waste
- Weed, pest and disease
- Hazardous materials and chemicals (including oil spills)
- Fauna
- Heritage
- Air quality
- Bushfire prevention
- Stakeholder management
- Soil and vegetation

7. Management Approach

Environmental management is an integral part of NGPS operation to ensure that the environmental impacts and risks are reduced, and environmental management is undertaken.

The NNP Corporate Policy demonstrates the commitment to conduct activities in an environmentally responsible manner and guides the setting of environmental objectives and targets towards the monitoring and management of these objectives.

To support this commitment, the Environmental Management Systems (EMS) require a risk assessment to be conducted to identify any potential environmental hazards associated with the planned activity. The risk assessment outcomes assist with the development of clear environmental objectives. Procedures are then developed to ensure that activities are conducted in a manner which achieve the environmental objectives.

Environmental management will be undertaken by NNP, Shell Energy, its consultants, contractors and sub-contractors. The responsibilities for personnel indicate their obligations regarding environmental management, with support through inductions and training of personnel. A training program will be implemented for all NNP and Shell Energy personnel involved in the operations and maintenance of the NGPS to ensure awareness of environmental aspects, impacts and their control measures. The training program will include oil spill management, emergency response management, fire extinguisher training, weed identification training and first aid training.

Personnel will be informed of their obligations and the specific environmental aspects, impacts and their control measures through the site induction. All personnel and contractors involved with the NGPS will attend NPP Inductions.

Auditing ensures ongoing assessment of compliance with the EP and relevant procedures, and the achievement of objectives including a system of reporting, performance monitoring and notification to relevant personnel.

The environmental management systems are supported by ongoing consultation and communication to seek input from, and to inform, all parties of relevant issues.

Sound management of the NGPS will generally result in a low level of impact as protecting the asset protects the environment. In particular, operations aim to manage four key issues:

- The pipeline structure and integrity
- Pipeline operating conditions and practices
- The pipeline easement; and
- Activities that could affect the above elements.

Effective environmental management in these areas will help minimise potential environmental effects.

7.1 Oil Spill Contingency Plan

An Oil Spill Contingency Plan (OSCP) describes appropriate measures to be implemented in the case of an oil spill on the NGPS to ensure the impacts are minimised. Should a spill occur, Shell Energy will cover all costs for the required clean up. The plan is directed at guiding the actions of personnel in response to an oil spill from diesel, chemicals, or compressor and engine oils and defines the:

- Priority actions to be taken in the event of a spill.
- Equipment and facilities available for containment, recovery and disposal of spilled oil.
- The personnel responsible for responding to an oil spill and contact with the relevant authorities.
- Guidelines for monitoring the impacts of oil spills on the environment and for subsequent clean-up.

7.2 Decommissioning

A preliminary decommissioning plan (ID NPN 08142) has been developed as required by MS 759 and PL75. Detailed strategies for decommissioning will be progressively developed and outlined in the final decommissioning plan for the site. The decommissioning plan ensures the site will be left in a state that does not compromise safety or environment and considers proposed future land uses. The final decommissioning plan will be prepared progressively, but no later than 12 months prior to decommissioning of the power station.

The final land use, landform and closure criteria will incorporate closure objectives as determined by all the relevant stakeholders Decommissioning activities will be subject to a risk assessment. Rehabilitation of the pipeline easement will be back to a safe, stable and non-polluting form consistent with existing land use.

Upon cessation of operations, it is anticipated that surface plant will be decommissioned and removed, recycled where possible or disposed of accordingly. Subsurface infrastructure will be decommissioned and either removed/recycled or, plugged (cleaned and capped) and left in situ to prevent unnecessary disturbance to the rehabilitated corridor; the final decision will be based on risk assessments, legislation at the time, and stakeholder input.

8. Consultation

NNP is committed to respecting the rights and desires of all individuals who are directly affected by the NGPS and to abide by relevant legislation. Land access agreements and the relevant land tenure have been obtained for the site to ensure long term operational access to the pipeline and associated facilities.

Ongoing stakeholder consultation will continue to be implemented throughout the operation of the NGPS in accordance with the Shell Energy Stakeholder Management Guidelines. Consultation has been undertaken with the following parties:

- Department of Mines, Petroleum and Exploration
- Department of Water and Environmental Regulation
- Department of Biodiversity, Conservation and Attractions
- Department of Planning, Lands and Heritage
- Dampier Bunbury Group
- APA Group
- Shire of Chittering
- City of Wanneroo
- Forest Products Commissions
- Main Roads WA
- RAAF – Pearce
- Emergency Services
- Freehold landholders (directly impacted and adjacent)
- Australian Property Group
- Department of Administrative Services
- Department of Regional Development.

Shell Energy will undertake the following consultation:

- Contact all relevant stakeholders on an annual basis to:
  - provide any relevant updates

  - confirm contact details,
  - providing a platform for ongoing communication with Shell regarding concerns, feedback and queries,
  - identify any new stakeholders, and
- Provide updates to stakeholders where planned activities may differ from those outlined in this EP, and
- Contact relevant departments, agencies and emergency services (as appropriate) for emergency response exercises/ drill.

Means of communication may include phone calls, flyers, emails or face-to-face meetings. Shell Energy recognises the low impact level of the operations of NGPS operations and will continue to tailor the stakeholder engagement strategy to suit.