1.0 Introduction

1.1 Project Overview

Gladstone Pacific Nickel Ltd (ACN 104 261 887) (GPNL) is proposing to build and operate the Gladstone Nickel Project (GNP). The GNP consists of a fourth-generation high pressure acid leach (HPAL) nickel/cobalt refinery and supporting facilities to be located at Gladstone, Queensland (refer Figure 1.1.1).

The refinery will be approximately 8 km west of the Gladstone central business district and will be located at the intersection of Hanson and Reid Roads, in the Yarwun Precinct of the Queensland Government's Gladstone State Development Area (GSDA),

The refinery will process ores from a nickel laterite mine near Marlborough, approximately 180 km north-west of Gladstone, together with nickel laterite ores imported from the south-west Pacific region. The ores from Marlborough will be beneficiated at a plant adjacent to the mine site at Coorumburra and then pumped as a slurry through a pipeline to the refinery (refer Figure 1.1.2). Residue from the refinery will be pumped to a residue storage facility (RSF) at Aldoga, approximately 15 km south-west of the refinery site (refer Figure 1.1.3).

The HPAL process selected for the refinery generates about 50% less greenhouse gas emissions per unit of product compared to other process alternatives. The lower emissions are achieved because the bulk of the power and steam requirements for the refinery's operation is raised from the exothermic reaction of burning sulphur to manufacture sulphuric acid (the leaching reagent).The use of seawater as process water in the HPAL plant reduces the project's fresh water requirements and simultaneously increases the productivity of the project.

The refinery will add value to Australian and imported ores by producing nickel and cobalt metal, which will be exported to the growing world market, primarily to meet the increasing demand for stainless steel.

1.2 EIS Objective

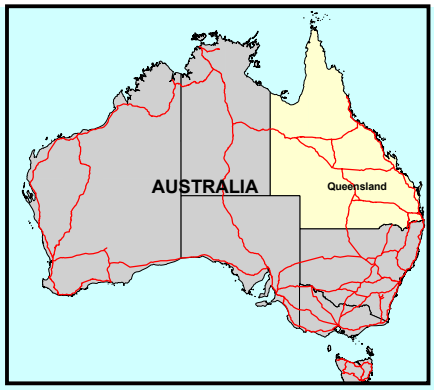
This Environmental Impact Statement (EIS) has been prepared to identify the environmental effects of the GNP and to meet the requirements of the following groups:

- *Regulatory Agencies and Referral Bodies*, as a statement for considering the impacts and the proposed management and mitigation strategies.
- *General Public and Interest Groups*, as a basis for understanding the proposal, the alternatives, the existing environment, and the potential changes to the environment which may occur.
- *Proponent*, as a statement of the actions to be taken to manage the potential impacts.

This EIS has also been prepared to fulfill the requirements of an EIS in accordance with the provisions of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).The principal objective of the EIS is to identify and assess the environmental and related impacts that could occur as a result of the construction and operation of the GNP. Impacts are considered for all relevant aspects of the natural, social and economic environments, and where appropriate, controls and safeguards to render potential impacts acceptable, are proposed.

1.3 Project Proponent

GPNL was formed in 2003 as Pearce Matheson Group Pty Ltd (PMG), an Australian private limited company, to pursue the development of the GNP. PMG acquired Marlborough Nickel Pty Ltd (MNPL) from Preston Resources Limited. MNPL owns 12 mining leases with associated environmental approvals (MIM 800078102). GPNL was listed on the London Stock Exchange's Alternative Investment Market (AIM) in March 2005. MNPL is a wholly owned subsidiary of GPNL.



Gulf of Carpentaria

Pacific Ocean

Weipa

Cairns

Karumba

Townsville

Mt Isa

Mackay

Queensland

Marlborough

Rockhampton

Emerald

Longreach

Gladstone

RSF Site

Refinery Site

Bundaberg

Charleville

Roma

Dalby

BRISBANE

Gold Coast

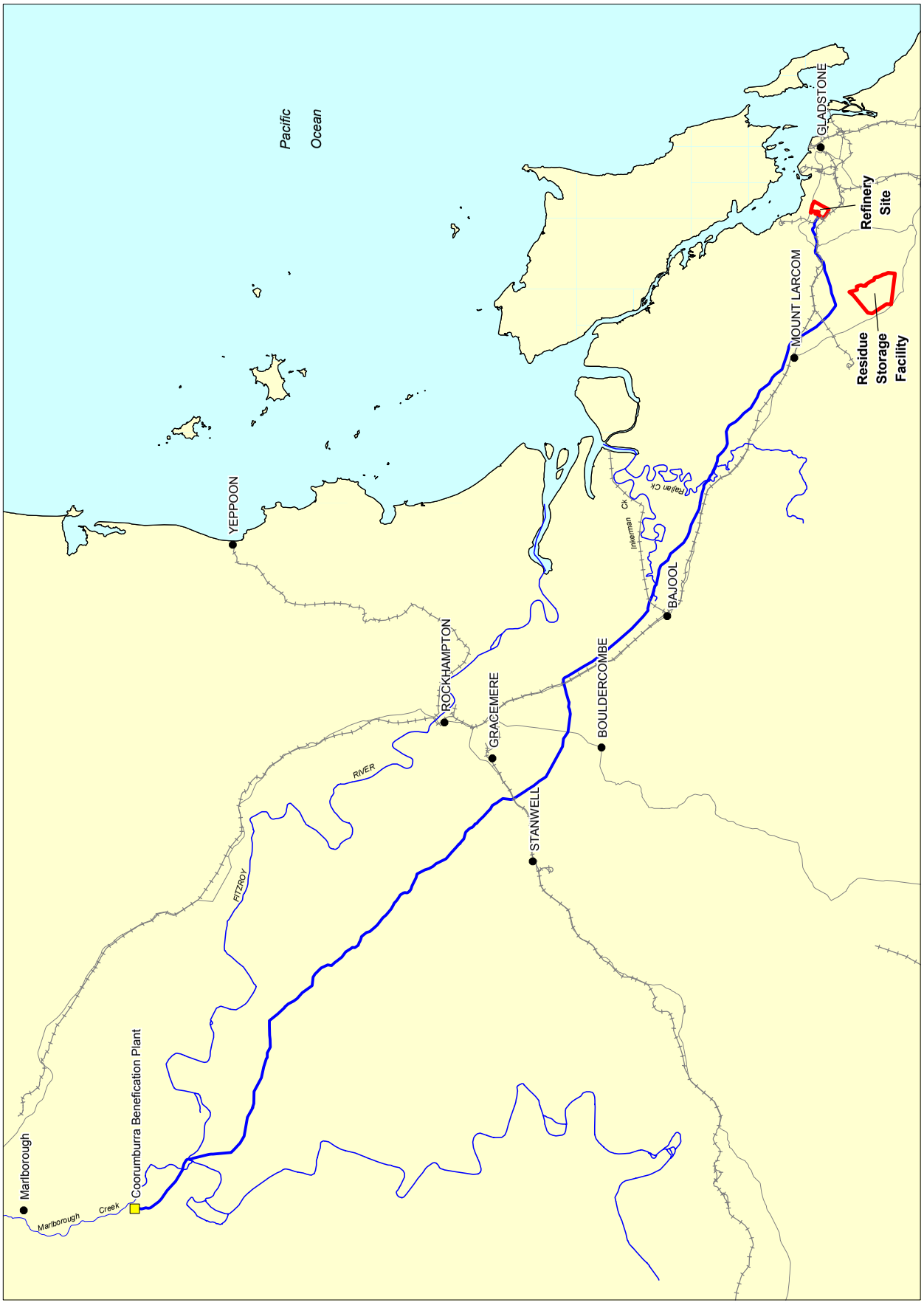
N

0 125 250km

Scale 1:10 000 000 (A4)

Source: This product incorporates data which is: ©Commonwealth of Australia (Geoscience Australia) 2004.

Client: Gladstone Pacific Nickel Ltd	Project: GLADSTONE NICKEL PROJECT ENVIRONMENTAL IMPACT STATEMENT	Title: **REGIONAL LOCALITY**	
URS	Drawn: TN / Approved: CMP / Date: 08-01-07	Figure: **1.1.1**	Rev: B
	Job No: **4262 5791** / File No: 42625791-g-011b.wor		**A4**



Client: Gladstone Pacific Nickel Ltd	Project: GLADSTONE NICKEL PROJECT ENVIRONMENTAL IMPACT STATEMENT	Title: **SLURRY PIPELINE ROUTE**	
URS	Drawn: VH	Approved: CMP	Date: 08-01-07
	Job No: **4262 5791**	File No: 42625791-g-092.wor	Figure: **1.1.2**
			Rev: B
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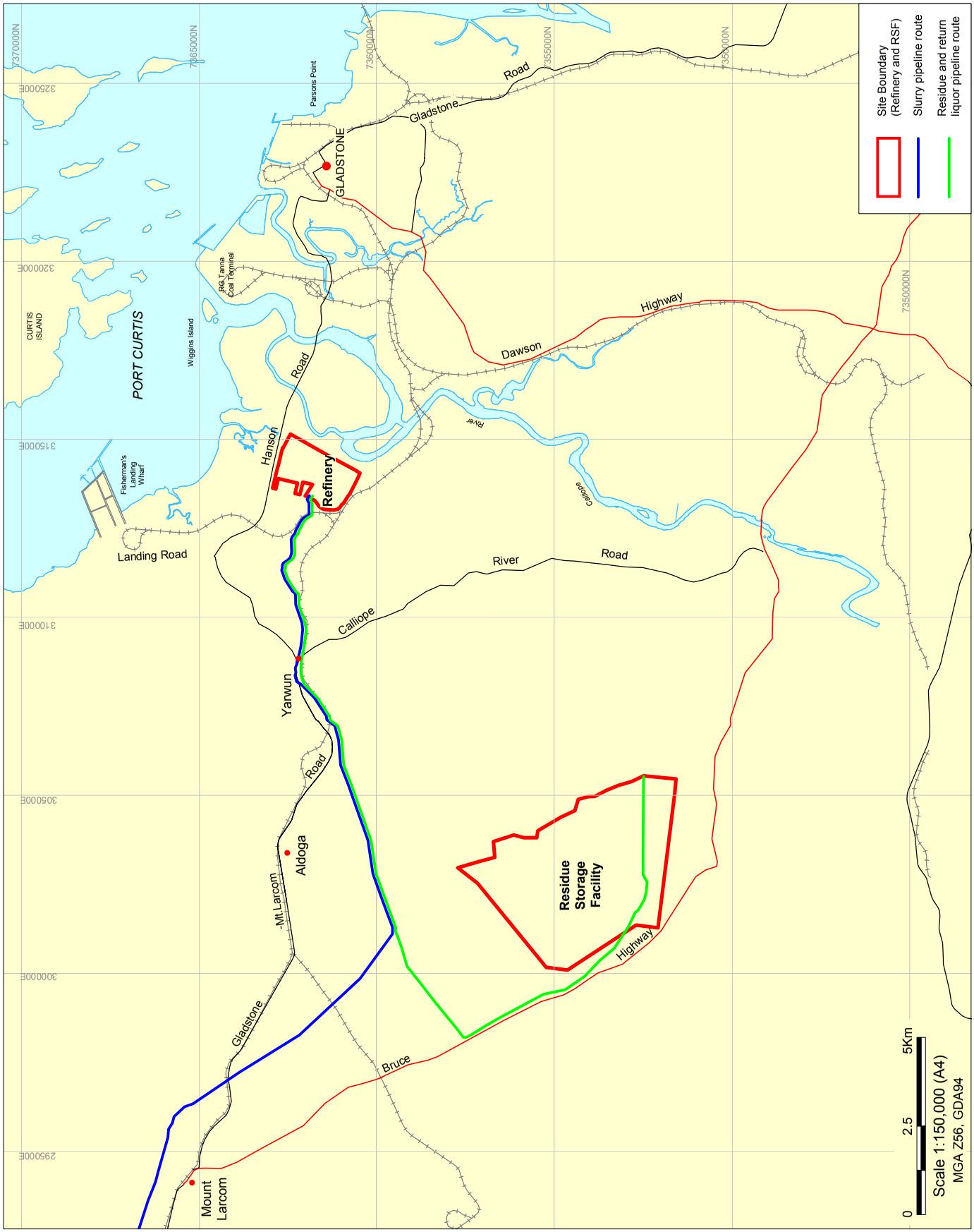

Client: Gladstone Pacific Nickel Ltd

URS

Project: GLADSTONE NICKEL PROJECT
ENVIRONMENTAL IMPACT STATEMENT

Title: **LOCATION OF REFINERY AND RESIDUE STORAGE FACILITY**

Drawn: TN	Approved: CMP	Date: 08-01-07
Job No: **4262 5791**	File No: 42625791-g-012b.wor	

Figure: **1.1.3**

Rev: B

A4

The contact details for the proponent are:

Gladstone Pacific Nickel Ltd
GPO BOX 111
Brisbane QLD 4001
Phone: (07) 3211 8899
Fax: (07) 3211 8688
Web: www.gladstonepacific.com.au
Email: info@gladstonepaciific.com.au

The proponent has commissioned URS Australia Pty Ltd and RLMS Pty Ltd to prepare this EIS. Contact details for URS, which is the project manager for the EIS, are:

URS Australia Pty Ltd
Level 14, 240 Queen Street
Brisbane QLD 4000
Phone: (07) 3243 2111
Fax: (07) 3243 2199

1.4 Proposed Project

GPNL's vision is to build a major long-life nickel cobalt/refinery at Gladstone, within the GSDA. The refinery will produce metal products for export to the global nickel market, which is expanding primarily due to growth in demand for stainlesss steel. Stainless steel has a number of properties, including corrosion resistance, high-temperature stability, strength, ductility and recyclability that support its sustainable use and generally result in high service life and reduced life cycle impacts compared to other alternative materials. The GNP is aimed at assisting in filling the widening gap between existing global nickel metal production and worldwide demand.

The refinery will treat high grade nickel laterite ores from around the south-west Pacific, underpinned by beneficiated ores from its own Marlborough deposits and will produce valuable nickel and cobalt metal products, resulting in a positive effect on Australia's balance of trade. At the completion of Stage 2, the refinery will have the capacity to ultimately produce some 8-10% of global nickel demand. Refer to Table 1.4.1 for details of the Stage 2 operating parameters.

The project will comprise a modern nickel/cobalt laterite mine at Marlborough, with beneficiated slurried ore being pumped as a slurry through a 180 km long pipeline to a fourth generation HPAL refinery sited in the Yarwun Precinct of the GSDA. The refinery incorporates a leach plant to produce an intermediate product, a metals plant for the production of pure nickel and cobalt metal products, and associated infrastructure and services. In addition to slurried ore from Marlborough, nickel ore (and sulphur) will be imported through the Wiggins Island Wharfs (WIW) to be developed at Wiggins Island, Gladstone by the Central Queensland Ports Authority (CQPA) as part of its proposed Wiggins Island Coal Terminal (WICT) project. The WIW will be a common-user facility, which will allow for nickel ore and sulphur to be imported via Capesize vessels. If construction of WIW does not proceed or is delayed, nickel ore and sulphur can be imported through the existing port facilities at Fisherman's Landing.

The refinery's products, refined nickel and cobalt metal, will be containerised and transported by rail to a container shipping terminal in Brisbane and then exported.

Ammonium sulphate produced as a by-product of nickel and cobalt refining will be exported through the port facilities at Fisherman's Landing.

Residue from the refinery will be piped to a RSF to be constructed in the Aldoga Precinct of the GSDA, approximately 15 km south-west of the refinery site.

Seawater extracted from Port Curtis will be used as cooling water in the process instead of fresh water. It will be returned to Port Curtis via diffusers near the Clinton Wharf at the RG Tanna Coal Terminal. Barren liquor from the process will be mixed with the return seawater and also discharged via the diffusers.

Table 1.4.1 Stage 2 Operating Parameters

Process Input/Output	Stage 2
Products	
Nickel product (t/y)	126,000
Cobalt product (t/y)	10,400
Ammonium sulphate by-product (t/y)	343,000
Process Inputs	
Imported Ore (Mdt/y)	8 -10
Marlborough Ore (Mdt/y)	1 - 4
Sulphur (Mt/y)	1.1
Limestone (Mt/y)	1.43
Raw water (GL/y)	10.5
Seawater (GL/y)	240
Natural gas (PJ/y)	4
Wastes	
Residue (Mdt/y)	10.8
Waste process water (GL/y)	27

The total capital cost of the project will be assessed in the next phase of the feasibility study and is expected to exceed US$3 billion.

The project has been granted Major Project Facilitation (MPF) status by the Commonwealth Government in recognition of its national significance and potential long-term benefits to Australia. In his announcement dated 12 July 2006, Minister Macfarlane said: “The Gladstone Nickel Project will make a significant contribution to economic growth, employment, infrastructure and development in regional Queensland.”

This EIS has been prepared for two project stages:

- Stage 1 in this document is the same as Stage 1a in the Initial Advice Statement (IAS) and Terms of Reference (TOR).
- Stage 2 in this document is the same as Stage 1b in the IAS/TOR.

Note that the Stage 2 referred to in the IAS/TOR is now called Stage 3.

Stage 1 will have a production capacity of 60,000 t/y of nickel metal and 4,800 t/y of cobalt metal. Stage 2 will have a production capacity of 126,000 t/y of nickel and 10,400 t/y of cobalt.

1.5 Project Schedule

It is proposed to start construction of Stage 1 in early 2008. Construction is expected to take approximately 2.5 years with commissioning for Stage 1 operations beginning in mid 2010. Depending on market demand, Stage 2 construction could begin by 2013 with Stage 2 operations starting in mid 2016. For both stages, full production is expected approximately 12 months after start of commissioning. The proposed project schedule is given in Figure 1.5.1.

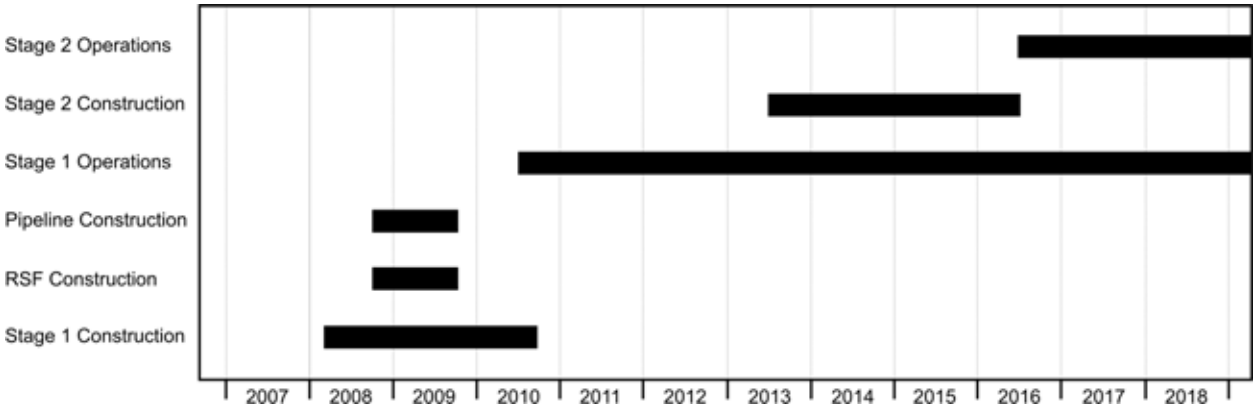

Figure 1.5.1 Project Schedule

It should be noted that a more aggressive project schedule (construction beginning by the end of 2007) has been assumed for the detailed environmental assessments (e.g. traffic, economics, housing etc.) undertaken for the EIS. This is discussed further in the relevant EIS sections.

This EIS is based on the first 25 years of operations of the project. It is likely that the refinery will remain in operation well beyond this period.

1.6 Scope of EIS

1.6.1 Project Components

The project will initially be developed in two stages – Stage 1 and Stage 2. This EIS addresses both stages. The Stage 2 refinery will essentially have a modular duplication of Stage 1. The production schedule and the major differences between Stage 1 and Stage 2 are outlined in Section 2.4.

The project components covered in the EIS comprise:

- The refinery in the Yarwun Precinct of the GSDA.
- The RSF located in the Aldoga Precinct of the GSDA.
- Slurry and seawater pipelines between the Marlborough mine and the refinery.
- Residue and return liquor pipelines between the refinery and the RSF.
- Material handling facilities at the WIW.
- Associated infrastructure in Gladstone.

The Marlborough mine project area has already received separate environmental approvals (MIM 800078102) and does not form part of the scope of this EIS.

Activities associated with the construction and operation of the WIW are covered in the WICT EIS (Connell Hatch, 2006). However, the environmental implications of the importing of ore and sulphur as part of the GNP have been assessed in this EIS.

1.6.2 EIS Studies

Numerous studies and surveys have been undertaken in developing the project and preparing this EIS, including:

- Previous feasibility studies from Preston Resources.
- Preliminary Scoping Studies – Aker Kvaerner Australia (AKAU) carried out scoping studies for the GNP in 2003/2004 to evaluate the feasibility of various plant configurations and outputs prior to GPNL listing on the AIM of the Stock Exchange in London. A further scoping study by AKAU, completed at the end of 2005, updated the earlier studies, and investigated the initial development for Stage 1 of the project producing approximately 64,400 tonnes of nickel metal and 5,300 tonnes of cobalt metal per year.
- Definitive Feasibility Study – in 2006, GPNL commissioned AKAU to conduct a Definitive Feasibility Study (DFS) for Stage 1 of the project, based on specific design conditions, resulting from, among others, extensive ore testing, in order to develop more accurate costing for the project. As part of this study, other specialist consultants provided inputs into this study. This study was completed in September 2006.
- Feasibility study (ongoing) – continues the work of the DFS to define the project in greater detail.
- Further investigations on numerous issues including:
  - Marlborough exploration reports
  - Site location studies
  - Metallurgical test work
  - RSF siting study
  - RSF design study
  - Rail versus slurry pipeline study
  - Slurry rheology and pipeline design study

Specialist studies undertaken in the preparation of this EIS included: air quality; cultural heritage; ecology (flora, fauna and aquatic biology); greenhouse gases; noise; health and safety; socio-economic; soils, geology and topography; surface water and groundwater; traffic; and visual impacts.

The study/survey methodology and results for each of these studies are described in more detail and referenced in the relevant sections of this EIS (including the appendices).

1.7 Project Objectives and Rationale

1.7.1 Project Need

The world has a growing need for more nickel, primarily due to the increasing demand for stainless steel. Stainless steel has a number of properties that support its sustainable use, including corrosion resistance, high-temperature stability, strength, ductility and recyclability. Most applications of nickel are based on the nickel-containing product having high-corrosion resistance. Coupled with recyclability, this generally results in high service life and reduced life cycle impacts compared to other alternatives.

The majority of nickel metal is currently derived from sulphide ore deposits and very few new major deposits have been discovered in recent years. Therefore, the increase in global nickel supplies required to meet expected future world demand will have to come primarily from the development of new nickel laterite projects. The GNP is aimed at assisting in filling the widening gap between existing global nickel metal production and worldwide demand.

There are a number of HPAL nickel projects that have been developed throughout the world in recent times, including three in Western Australia and one in the Philippines. Another HPAL refinery in Cuba has been operational since 1959, though it employs more basic process and engineering technology than the recently commissioned plants.

Currently, there are only three new nickel laterite HPAL projects in the world that have been publicly announced as having commenced construction. These are:

- The Goro Project in New Caledonia.

- The Ravensthorpe Project in Western Australia and the QNI Yabulu Expansion Project in Queensland.
- The Vermelho Nickel Project in Brazil.

Given the projected growth in primary metal demand, even after accounting for these projects, there is a significant opportunity for the development of a greenfield nickel refinery in Gladstone.

In summary, GPNL aims to become an active participant in the nickel industry and capture an opportunity in the market by operating a highly competitive nickel refinery in Gladstone.

1.7.2 Market Conditions

1.7.2.1 Nickel Market

Nickel is the fifth most common naturally occurring element and has been commercially mined and refined since the late 19th century. It is currently mined in over 20 countries. By the mid 1990s nickel was sourced predominantly from sulphide ores. Laterite ores are increasingly becoming the source of nickel, to the point where, in the next few years, these ores will be the major source of new nickel production. The majority of the reserves for these laterite ores are reported to be located in the south-west Pacific region, the main feed location for laterite ores for the GNP.

Nickel readily combines with a number of metals to form alloys, especially iron, cobalt and copper. The most important are the alloys of iron and chromium to form stainless steels, with approximately two thirds of all new nickel used in the production of austenitic stainless steel. While chromium makes steel “stainless”, nickel improves its ductibility, weldability and corrosion resistance and allows it to be used in both high and low temperature applications. Stainless steel is a “quality of life” material, which has had a strong consistent demand growth over the last 50 years. This demand growth is projected to increase into the future as standards of living rise around the world, especially in China and India. In the 10-year period to 2003, global consumption of primary nickel grew by 4.75% year on year, mainly from the demand for stainless steel products. Total demand for nickel from the BRIC countries (Brazil, Russia, India and China) is expected to grow by as much as 20 times from 2002 to 2050.

Current projections of demand for 2006 from Macquarie Research in the UK, indicate a year-on-year increase over 2005 demand of 14%, far in excess of the long term growth rate of about 5%.

In addition to its major use as an alloy in stainless steels, nickel has many other uses. These include:

- As a catalyst in chemical processes - finely divided nickel-based catalysts are the key to several important reactions, including the hydrogenation of vegetable oils, the reforming of hydrocarbons, and the production of fertilisers, pesticides and fungicides.
- Plating on plastics for items such as automobile trim, bathroom fittings and electronic connectors.
- Nickel “foam” for hybrid car batteries – most of the production from Inco’s Goro plant in New Caledonia is reportedly destined for this market in China, i.e. not to fill the growing stainless steel demand/supply gap.
- Heat-resistant alloys and cast high-nickel alloys for use in the blades and vanes of gas turbines and aero engines.
- Copper-nickel alloys used for combating corrosion in marine environments or in large desalinisation plants.
- Hard-wearing decorative and engineering coatings as "nickel-plating" or "electroless nickel coating" or "electroforming". When used together with chromium, it is popularly known as "chrome-plating". When carried out in combination with silicon carbide it is known as composite plating.
- Provision of portable power - nickel-cadmium rechargeable batteries containing nickel plates and nickel hydroxide have been in use for several years. More recently, nickel metal-hydride batteries which employ nickel rare-earth alloys to absorb large amounts of hydrogen have been introduced. These higher-performance rechargeable batteries have, in turn, led to improved performance from cordless power tools, portable computers, and other mobile electronic equipment such as mobile phones and digital cameras.
- Hydrogen storage - alloys may find wider application if greater use is made of hydrogen as a fuel.

1.7.2.2 Cobalt Market

Production of cobalt has changed from being mainly a by-product of copper production to a being a by-product of nickel production and as a primary product. It was estimated in 2005, that only about 7% of world-wide cobalt was produced from copper ores, and 41.5% was produced from nickel ores, with predictions that ultimately the majority of new cobalt will be produced from nickel operations.

Initially, cobalt consumption was largely driven by its ability to impart strength, hardness and magnetic properties when alloyed with steel. Its biggest single use has been in the extremely hard-wearing and temperature/creep resistant ''super alloys'' of iron, nickel and cobalt mainly used in gas turbine engines for aircraft and electricity generation. However, in recent years a number of new uses have contributed to its increasing demand. The major uses for cobalt are:

- Superalloys for use in gas turbine engines.
- Catalysts for use in the manufacture of polyester fibres and synthetic textiles for packaging, PET bottles and recording tape.
- Cobalt in the form of lithium cobalt oxide for use in lithium-ion batteries for hybrid electric vehicles.
- Rechargeable batteries for use in electronic devices (e.g. mobile phones, digital cameras).
- Organic chemicals such as cobalt carboxylates for use as paint and ink driers and to promote the adhesion between the rubber and steel in steel-belt radial tyres.

1.7.3 Project Benefits

The GNP will bring to Gladstone a large, capital intensive and long-term processing facility which uses a process that is greenhouse gas friendly compared to other process alternatives. It will produce significant direct and indirect benefits for the Gladstone region, Queensland and Australia. The refinery will produce nickel and cobalt metal which will be exported to the growing world market, primarily due to the increasing demand for stainless steel, which has a number of properties that supports its sustainable use. The project will have a positive effect on Australia's balance of trade.

1.7.3.1 Economic Benefits

The project's economic impacts are detailed in Section 10.9. Key economic benefits include:

- Annual increase in economic output in the Australian economy of $1.1 billion for Stage 1 and $2.6 billion for Stage 2.
- Annual contribution to the Australian gross domestic product of $760 million for Stage 1 and $1.6 billion for Stage 2.
- During construction, the annual increase in Queensland's gross state product and household income will be $513 million and $183 million respectively for Stage 1, and $270 million and $155 million for Stage 2.
- During Stage 2 operations, the annual increase in Queensland's gross state product and household income will be $1.4 billion and $78 million respectively.

1.7.3.2 Social Benefits

The social impact of the project is detailed in Section 10. A summary of the key employment benefits is detailed below:

- The project will employ an average of 1,300 people during the Stage 1 construction stage (maximum 2,600).
- During Stage 1 construction, the project will create an additional 750 full time flow-on jobs per year.
- During operations, the project will employ 385 people for Stage 1, with an additional 40 - 50 people for Stage 2.

- During operations, the project will create an additional 235 full time flow-on jobs during Stage 1, which will ultimately grow to 295 following the completion of Stage 2.

1.8 Environmental Impact Assessment Process

This section describes both the Queensland and Commonwealth legislative processes that apply to this EIS.

1.8.1 EIS Preparation Process

The objective of the EIS process under State and Commonwealth legislation is to integrate environmental management with planning for proposals and establish a process for:

- Ensuring that proponents assume primary responsibility for protection of any environmental values that may be affected by their proposals.
- Addressing environmental management through the life of proposals.
- Forming a basis for statutory decisions on whether a proposal meets ecologically sustainable development principles, and if so, relevant environmental management and monitoring conditions.
- Incorporating community and stakeholder views in assessment and decision-making processes.

1.8.2 Queensland Government Process

A flowchart showing the Queensland Government's EIS process under the SDPWO Act is shown in Figure 1.8.1.

An IAS for the project was lodged with the Coordinator General (CG) on 21 October 2005. On 10 November 2005, the CG determined that the GNP is a "Significant Project" in accordance with the requirements of Section 26 of the SDPWO Act.

A draft TOR for the EIS was prepared and advertised for public comment on 14 January 2006 for a period of four weeks. All relevant commonwealth, state and local government agencies and authorities were also invited to participate in the process as Advisory Agencies. In finalising the TOR, the CG gave regard to all submissions on the draft TOR. The final TOR was released by the CG in March 2006.

The statutory impact assessment process under the SDPWO Act is also the subject of a bilateral agreement between the Queensland and Commonwealth governments in relation to environmental assessment under the EPBC Act. The proponents referred the proposal to the Commonwealth Minister for the Environment and Heritage (Department of the Environment and Heritage – DEH) in accordance with the provisions of the EPBC Act. A referral for the GNP was submitted to the DEH on 26 October 2005. The DEH declared that the project was a "controlled action" pursuant to Section 75 of the EPBC Act on 18 November 2005. Section 1.8.5 provides further details on the EPBC Act.

This EIS has been prepared under the provisions of the SDPWO Act and in accordance with the final TOR for the project. A copy of the final TOR is provided in Appendix A together with a cross-reference to where each aspect is discussed in the EIS.

A public notice has been placed in relevant local and state newspapers advising where copies of this EIS are available for inspection or purchase; that submissions may be made to the CG about the EIS; and the timeframe for the submission period. During this advertising period, members of the public have the opportunity to make submissions about the EIS. Following the submission period, the proponents may be required to prepare a supplementary report/addendum to the EIS to address specific matters raised in submissions on the EIS.

At the completion of the assessment phase, the CG will prepare a report evaluating the EIS and other related material, pursuant to Section 35 of SDPWO Act. The CG's report will include an evaluation of the environmental effects of the project and any related matters, and will reach a conclusion about the environmental effects and any

Client: Gladstone Pacific Nickel Ltd

Project: GLADSTONE NICKEL PROJECT ENVIRONMENTAL IMPACT STATEMENT

Title: ENVIRONMENT IMPACT ASSESSMENT PROCESS

Figure: 1.8.1

Rev. A

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Drawn: VH

Approved: CMP

Date: 07/08/2006

Job No.: 4262 5791

File No. 42625791-g-116.cdr

URS

Initial Advice Statement & Request for Declaration *(GPNL)*

Declaration of Significant Project *(CG)*

Invitation to Advisory Agencies *(CG)*

Draft Terms of Reference Public Review *(CG)*

Finalise Terms of Reference *(CG)*

EIS Prepared & Submitted to CG *(GPNL)*

Referral to Commonwealth under EPBC Act *(GPNL)*

Assessment & Decision on Controlled Action *(DEH)*

If Controlled Action Accredited Assessment under Bilateral Agreement *(DEH)*

Public & Advisory Agency Review of EIS *(CG)*

Preparation of Supplementary EIS (if required) *(GPNL)*

Evaluation of EIS in Consultation with Advisory Agencies *(CG)*

CG Report Decision on Subsequent Approvals *(CG)*

1. Proponent
2. IPA Assessment Manager(s)
3. Other Approval Agencies

Decision on Approval & Conditions EPBC Act *(DEH)*

Tasks already completed

GPNL	Gladstone Pacific Nickel Ltd
CG	Coordinator-General
DEH	Department of the Environment & Heritage (Cth)
EIS	Environmental Impact Statement
EPBC	Environment Protection & Biodiversity Conservation Act (Cth)
IPA	Integrated Planning Act (Qld)

associated mitigation measures. The evaluation will take into account all relevant material including: the EIS; all properly made submissions and other submissions accepted by the CG; any other material the CG considers is relevant to the project such as a supplementary report/addendum to the EIS; comments and advice from Advisory Agencies; technical reports on specific components of the project; and legal advice.

In addition to the requirements under the SDPWO Act and EPBC Act, the project will require a range of development approvals under the *Environmental Protection Act 1994* (EP Act) and the *Integrated Planning Act 1997* (IP Act). Under Section 39 of the SDPWO Act, the CG report may state to the IP Act assessment manager one or more of the following:

- The conditions that must attach to the development approval;
- That the development approval must be for part only of the development; and/or
- That the approval must be preliminary approval only.

Alternatively, the CG report may state to the assessment manager that there are no conditions or requirements for the project, or that the application for development approval be refused.

Similarly, under Section 45 of the SDPWO Act, the CG report may state conditions for a proposed mining lease granted under the *Mineral Resources Act 1989*.

1.8.3 EIS Submissions

The EIS has been released for public review to enable the public and the Advisory Agencies to comment on the project. Notification of the display centres, submission centres, submission procedures, lodgement address, deadlines and purchasing details have been advertised in the following newspapers;

- Gladstone Observer.
- Brisbane's The Courier Mail.
- The Weekend Australian.

The public has been invited to make submissions on this EIS. Submission can be made to provide additional data, to correct inaccuracies, to raise issues of concern, to seek additional information, or for any other relevant reason.

Written submissions will be received by the CG until 28 May 2007 All submissions should be typed on A4 paper and not require colour for interpretation. Submissions should be sent to:

The Coordinator-General
Attention: EIS Project Manager
Gladstone Nickel Project
Major Projects
Department of Infrastructure
PO Box 15009
CITY EAST Qld 4002
Tel: (07) 3405 6205 Fax: (07) 3225 8282

1.8.4 Public Consultation Process

Consultation with advisory agencies, members of the public and other stakeholders has formed an integral part of the EIS process and will continue to be an integral part of project development. The community consultation process aims to ensure clear, transparent, two-way communication between GPNL and the interested and affected stakeholders through listening, recording and responding to issues relating to the project as these arise. The process provides an opportunity for GPNL to impart information to the stakeholders regarding the project, to obtain valuable local knowledge from these groups and to respond to concerns through appropriate action. It provides stakeholders with an opportunity to express their views and concerns, provide feedback, and be involved in the EIS process.

A comprehensive consultation program was successfully conducted throughout the EIS process and will continue during project implementation. A variety of communication tools and activities were used to inform and receive feedback including meetings, newsletters, presentations, a freecall number and website. These consultation tools and activities and the timings of these are described in Section 12. The issues identified in, and outcomes of, the consultation program have been recorded and fed back into the EIS process.

The key objectives of the consultation program were to:

- Initiate and maintain open communication between stakeholders and the proponent on all aspects of the project and the environmental impact assessment work.
- Inform the different interest groups about the proposal and encourage their involvement in the process.
- Seek an understanding of interest group concerns about the proposal.
- Explain the impact assessment research methodology and how public input might influence the final recommendations for the project.
- Provide an understanding of the regulatory approval process.
- Seek local information and input in the project by providing a range of opportunities for stakeholders to identify key issues for consideration.
- Proactively work with the community to propose recommended strategies to minimise negative impacts.

1.8.5 Commonwealth Government Process

Under the EPBC Act, a project will require approval by the Minister for the Environment if the project has been declared a controlled activity which will have, or be likely to have, significant impact on a matter of national environmental significance. Matters of national environmental significance include:

- World Heritage properties.
- Ramsar wetlands of international importance.
- Listed threatened species or communities.
- Migratory species protected under international agreements.
- Nuclear actions.
- The Commonwealth marine environment.

In accordance with the requirements of the EPBC Act, a referral for the GNP was submitted to the DEH on 26 October 2005. The DEH declared on 18 November 2005 that the project was a "controlled action" pursuant to Section 75 of the EPBC Act. The Part 3, Division 1 controlling actions of relevance to the GNP are:

- Sections 12, 15A (World Heritage).
- Sections 18 and 18A (Listed threatened species and communities).
- Sections 20 and 20A (Listed migratory species).

Subsequently, an approval is required under Part 9 of the EPBC Act.

The bilateral agreement between the Commonwealth and Queensland governments recognises the Queensland EIS process under the SDPWO Act as an appropriate process pursuant to Section 87 of the EPBC Act.

The DEH is an advisory agency to the Queensland Government for the project's EIS process. As part of the EIS process, the Commonwealth Minister for the Environment and Heritage will review the EIS to ensure that it adequately addresses the requirements of the EPBC Act. The Minister's assessment will follow preparation of the CG's assessment report. The DEH will ensure that input from other Commonwealth agencies is provided.

At the conclusion of the Queensland Government process, the DEH will receive a copy of the CG's report and will prepare its own assessment report for the Commonwealth Minister for the Environment and Heritage. The Minister will take this information into account when making his decision on the project.

1.8.6 EIS Schedule

The EIS schedule summarising the main study milestones discussed above is given in Figure 1.8.2. The EIS was prepared throughout 2006 during which there was ongoing community consultation with relevant stakeholders. This consultation will continue during the public advertising period in early 2007. It is expected that this would be followed by the preparation of the EIS Supplement with the CG's assessment report expected in mid 2007.

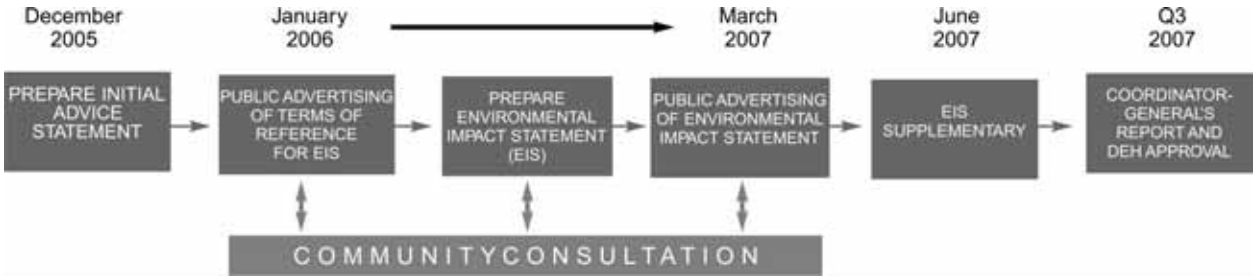

Figure 1.8.2 EIS Schedule

1.9 Project Approvals and Legislative Framework

In addition to the EIS approval process, the project will need to obtain other approvals before construction can begin and operations can commence. These relate particularly to planning approval and environmental authority approval. A description of these and other necessary approvals is given below. Land use and planning approvals and other relevant legislation are discussed in Section 10.

1.9.1 Native Title Act

The Commonwealth *Native Title Act 1993* (NT Act) and the Queensland *Aboriginal Cultural Heritage Act 2004* (ACHA) formalise the common law recognition of native title (i.e. rights and interests over land and water possessed by indigenous people in Australia under their traditional laws and customs). The NT Act provides for the existence of native title rights and interests over land which is or has been subject to a pastoral lease, and possibly some other forms of leasehold tenure.

1.9.2 Environmental Protection Act

The GNP will include a number of activities which, under Queensland's EP Act, have the potential to cause environmental harm. These environmentally relevant activities (ERAs) require a development approval or code of environmental compliance. Proponents intending to operate ERAs for which a development approval is sought under the IP Act, are also required to obtain a registration certificate under the EP Act. An application for registration is made to the same government agency that is responsible for assessing and setting conditions for the ERA under the Integrated Development Assessment System (IDAS) i.e. the administering authority.

GPNL will lodge an "Application for an Integrated Authority" as there will be multiple ERAs on the site. The integrated authority application will be accompanied by an "Application for a Licence (with Development Approval)" for each ERA to be combined into an Integrated Environmental Authority.

Project activities classified as ERAs under Schedule 1 in the *Environmental Protection Regulation 1998* potentially include but are not limited to; chemical manufacturing, processing or mixing (ERA 6), chemical storage (ERA 7), gas producing (ERA 9), crude oil or petroleum product storing (ERA 11), fuel burning (ERA 17), power station (ERA 18), screening etc material (ERA 22), motor vehicle workshop (ERA 28), mineral processing (ERA 42),

concrete batching (ERA 62), and stockpiling, loading and unloading goods in bulk in association with operating a port (ERAs 74 and 71).

Under Schedule 2 of the EP Act, it is likely that the project will involve several notifiable activities, which are activities likely to cause contamination. The relevant activities include; Item 29 - petroleum product or oil storage; and Item 37 - waste storage, treatment or disposal. It is also possible that registration on the Environmental Management Register (EMR) or the Contaminated Land Register (CLR) will be required. Current notifiable activities and listings on the EMR or CLR are triggers under IDAS for referral of an application to the Environmental Protection Agency (EPA) in respect of contaminated land matters.

1.9.3 Integrated Planning Act

Almost all development approvals are integrated into IDAS and applications are made using the common Form 1 Development Application. The IP Act Schedule 8 and the *Standard Building Regulation 1993* detail what development is self-assessable development, assessable development or exempt development. The project involves several types of assessable development that would be combined into one application under IDAS.

Under the IDAS process, the project is likely to trigger applications for the following:

- A material change of use as per the local planning scheme (GSDA Development Scheme).
- ERAs and material change of use for an ERA under the EP Act.
- Permit to clear vegetation on freehold land under the *Vegetation Management Act 1999* (VM Act).
- Permit to remove marine plants under the *Fisheries Act 1994*.
- Approval for ancillary works and encroachments under the *Transport Infrastructure Act 1994*.
- Approval for interfering with water under the *Water Act 2000.*
- Approval for operational works in a tidal area under the *Coastal Protection and Management Act 1995.*
- Approval to undertake operational work within electricity easements in favour of a transmission entity under the *Electricity Act 1994*.
- Permit for the alteration or improvement of a road, under local law 21 *Local Government Act 1993*.

The IDAS process normally requires referrals to be made to individual referral agencies. However, since the EIS process is under the SDPWO Act, this referral process has been undertaken as part of the SDPWO Act assessment process. After the CG's assessment report has been received by the proponent, the required development applications will be lodged for development approval. An application for a registration certificate will also be made to the EPA.

As the refinery and RSF are located within the GSDA, an application for development approval in respect of a material change of use is assessed under the provision of the GSDA Development Scheme. The GSDA Development Scheme has been prepared in accordance with the provisions of the SDPWO Act. The CG is the assessment manager for development applications under the GSDA Development Scheme. The GSDA Development Scheme applies for development applications that would otherwise require a material change of use application under the IP Act. The approvals process under the GSDA Development Scheme is similar to all approvals under IDAS. Refer to Section 1.9.2.12 for further details.

It should be noted that the CG has the power to exclude the referral, public notification and review stages of the development application in circumstances detailed in Section 9.1(10) of the GSDA Development Scheme, such as if an EIS is accompanying the development application. This clause is intended to streamline the development application process and avoid duplication with the EIS approval process under the SDPWO Act.

1.9.4 Aboriginal Cultural Heritage Act

The main purpose of the ACHA, which is administered by the Department of Natural Resources and Water (DNRW), is to provide effective recognition, protection and conservation of Aboriginal cultural heritage. In accordance with the ACHA, the project's effects on Aboriginal cultural heritage are being managed through the development of Cultural Heritage Management Plans (CHMPs) in conjunction with identified Aboriginal parties. The CHMPs will provide the basis for the management of Aboriginal cultural heritage issues in the project's zone of influence as discussed in Section 11.

1.9.5 Minerals Resources Act

For the pipeline corridors located outside of the GSDA, a mining lease under the *Mineral Resources Act 1989* will be obtained. Further information regarding the process for acquiring access to land for the construction and operation of the pipelines is provided in Section 10.10.3.

1.9.6 Vegetation Management Act

The VM Act aims to regulate the clearing of vegetation. Clearing vegetation to which the VM Act applies is operational work within the definition of development in the IP Act. Clearing of vegetation is assessable under Schedule 8 of the IP Act to which the VM Act applies.

1.9.7 Fisheries Act

The *Fisheries Act 1994* is administered by the Queensland Department of Primary Industries and Fisheries (DPIF).

The main purpose of this Act is to provide for the use, conservation and enhancement of the community's fisheries resources and fish habitats. This includes both terrestrial and marine environments, fresh and salt water. The Act covers fish, fisheries and marine plants. The Act includes provisions for taking, causing damage or interfering with marine plants, works in declared fish habitat areas, and waterway barrier works. Such activities are considered assessable development under Schedule 8, Part 1-Table 1 of the IP Act. If any such activities may occur in relation to the project, the appropriate development applications will be made.

1.9.8 Nature Conservation Act

The objective of the *Nature Conservation Act 1992* is the conservation of nature, which is achieved through integrated and comprehensive conservation strategies. The *Nature Conservation Regulation 1994* provides the main legislative tool for managing, including licensing and compliance, provision of protected areas such as national parks, and protection of wildlife outside of protected areas. It also includes provisions relating to non-native wildlife to manage threats to native wildlife. This Act is administered by the EPA.

A number of flora and fauna species protected by the Act and its regulations have already been identified over the GNP area. Detailed ecological surveys have been conducted to confirm the presence of protected flora and fauna.

1.9.9 Coastal Protection and Management Act

The objective of the *Coastal Protection and Management Act 1995* includes providing for the protection, conservation, rehabilitation and management of the coastal areas including resources and biological diversity. The Act also seeks to provide, with other legislation, a co-coordinated and integrated management and administrative framework for the ecologically sustainable development of the coastal zone.

Approval will be sought if any aspects of the project trigger approval under the Act such as:

- Reclaiming land under tidal water.
- Draining or allowing drainage or flow of water or other matter across State coastal land above high-water mark.
- Tidal works in, on or above land under tidal waters.

Regional coastal management plans have been developed under the Act to identify principles and policies for coastal management, identify key coastal sites and coastal resources in the coastal zone, and to plan for the long-term protection and management. The GNP area lies within the Curtis Coast Regional Coastal Management Plan 2003 and is subject to this management plan.

1.9.10 Other Approvals

A number of approvals may also be required under the *Water Act 2000*, *Transport Infrastructure Act 1994*, *Transport Planning and Coordination Act 1994* and *Transport Operations (Road Use Management) Act 1995*. Subsequent to receipt of development approvals and relevant environmental authorities, there may be a need for several additional approvals pertaining to watercourse crossings, temporary road closures for the transportation of oversized loads of plant equipment and materials etc. These approvals will be made on an as-needs basis during the course of the project's design and construction phases when more specific design and construction management information required for the permit applications is available.

1.9.11 Policies

There are number of State Planning Policies (SPP) and Environmental Protection Policies applicable to the project.

SPP 1/92 "Development and the Conservation of Agricultural Land" (Department of Primary Industries (DPI, 1992), requires that an assessment of the agricultural land capability of the area be conducted to provide a benchmark of existing/potential agricultural land use. Sections 7, 8 and 9 provide detail on the assessment of agricultural land capability for the project.

The "State Coastal Management Plan – Queensland's Coastal Policy" (EPA 2001) indicates that water quality must be maintained at a standard that supports and maintains coastal ecosystems. Furthermore, release of contaminants must be eliminated wherever possible. In line with the *Environmental Protection (Water) Policy 1997*, environmental values for all Queensland waters must be identified in order that these be protected and/or enhanced. These include the biological integrity of the aquatic ecosystem and recreational, drinking water supply, agricultural and/or industrial uses. The implications of this policy on the project are discussed in Sections 7, 8 and 9.

SPP 2/02 "Planning and Managing Development Involving Acid Sulphate Soils" applies to the project. The SPP applies to developments involving any of the following activities:

- Excavating or removing 100 m^3 of soil or sediment; or
- Filling of land involving 500 m^3 or more of material with an average depth of 0.5 m or greater.

Potential and actual acid sulphate soils are discussed further in Sections 7, 8 and 9.

SPP 1/03 "Mitigating the Adverse Impacts of Flood, Bushfire and Landslide is applicable to the project.

SPP 1/02 "Development in the Vicinity of Certain Airports and Aviation Facilities" is applicable to the project. GPNL is in discussions with the Gladstone and Calliope Aerodrome Board and the Civil Aviation Safety Authority (CASA) regarding the application of this policy.

The *Environmental Protection Policy (Air) 1997* and its amendment contain three lists of air quality indicators and goals relevant to the aesthetic enjoyment of places and visual and local amenity, biological integrity and other (unspecified) atmospheric qualities. The National Environmental Protection Council (NEPC) produced national standards in 1998 for regional air quality to be achieved within 10 years of commencement. The standards and associated monitoring and reporting requirements are published in the National Environmental Protection Measure (NEPM) for Ambient Air Quality (NEPC, 2003). These policies are addressed in Sections 8 and 9.

The *Environmental Protection Policy (Noise) 1997* aims to identify acoustic environmental values to be enhanced or protected, specifies acoustic quality objectives and provides a framework for decision making, program development and noise assessments. The application of this policy is discussed further in Sections 7, 8 and 9.

1.9.12 GSDA Development Scheme

The GSDA Development Scheme has been prepared in accordance with the provisions of the SDPWO Act. The CG is the assessment manager for development applications under the Development Scheme. The Development Scheme applies for development applications that would otherwise require a material change of use application under the IP Act.

The Development Scheme outlines the land use planning approval process for all projects located within the GSDA. It sets out the objectives and guidelines for future land use in the area as well as establishing procedures for assessment of applications within acceptable timeframes and referrals to relevant agencies, including Calliope Shire Council and Gladstone City Council. The Development Scheme applies to development applications that would otherwise require a material change of use application under the IP Act.

Further details on the GSDA Development Scheme are given in Section 10.12.1.

1.9.13 Local Government

While the GSDA Development Scheme establishes land use planning requirements in relation to the GSDA, other approvals relating to construction and operational aspects of the project may require approval by relevant shire councils, for any aspects of the project which occur outside the GSDA. Applications for approval will be made under the IDAS provisions of IPA and may include:

- Operational works.
- Building works.
- Plumbing and drainage works.

Calliope Shire has prepared an IPA-compliant planning scheme. The Calliope Shire Draft Planning Scheme has been developed as a framework for managing development that advances the purposes of the IP Act. The following Calliope Shire local laws are likely to be applicable to the project:

- Local Law No.21 (Roads) 2003 and Subordinate Local Law.
- Local Law No.37 (Control of Nuisances) 2001 and Subordinate Local Law.

Parts of the slurry and seawater pipelines also pass through the Fitzroy Shire. Fitzroy Shire's planning scheme indicates that the majority of the pipelines within the shire are in the rural zone. Other zones include the Alton Downs Zone Precinct 2 and the Stanwell-Gracemere Zone It is considered that the pipelines are consistent with the aims of the planning schemes within these areas.

1.9.14 Marlborough Approvals Process

All activities that are planned on the Marlborough mining leases will be conducted under the Environmental Authority (MIM 800078102) granted in August 2003, and are not the subject of this EIS.

1.10 Report Structure

This EIS has the following structure:

Volume 1

Executive Summary	A brief overview of the project, its potential environmental and social impacts, and the proposed impact mitigation strategies.
Section 1	Introduction to the report outlining its objective, the project and proponent, and the EIS process.
Section 2	Provides details of the proposed project.
Section 3	Provides details of the supporting infrastructure that the project will require.
Section 4	Characterises the plant's waste streams and identifies treatment and disposal proposals.
Section 5	Discusses alternatives considered for the site, the process, and transport.
Section 6	Discusses the refinery's transportation requirements and likely impacts.
Sections 7-9	Discuss the project's environmental impacts and proposed management strategies.
Section 10	Discusses the project's social and economic impacts.
Section 11	Outlines the cultural heritage issues associated with the project.
Section 12	Details the community consultation activities undertaken and summarises the results.
Section 13	Provides the results of the project's risk assessment and outlines the proposed risk management strategies.
Section 14	Outlines the project's draft environmental management plans.

Volume 2

Appendices	Provides additional technical details which support the assessment outlined in the report. The appendices are provided in a separate volume (Volume 2).