

Doc. Ref.: C1055-Jemena-ClydeSt

22 March 2018

Jemena  
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Via email: David.Virtue@jemena.com.au

Att.: David Virtue

**RE: Clyde Street, Hamilton North Gasworks Remediation Project –  
Capital Investment Value (CIV)**

**1. Introduction**

As requested, we provide below our certification on the preliminary estimated Capital Investment Value (CIV) for the Clyde Street, Hamilton North Gasworks Remediation Project (the Project). This advice satisfies the general requirements of the Secretary's Environmental Assessment Requirements for the preparation of an Environmental Impact Statement (EIS) for the Project.

**2. CIV**

The Capital Investment Value (as defined within the EP&A Regulation 2000) of a development or project includes all costs necessary to establish and operate the project, including the design and construction of buildings, structures, associated infrastructure and fixed or mobile plant and equipment other than the following costs:

- ▼ Amounts payable, or the cost of land dedicated, or any other benefit provided, under a condition imposed under Division 6 or 6A, of Part 4 of the Environmental Planning and Assessment Act or a planning agreement under that Division;
- ▼ Costs relating to any part of the development or project that is the subject of a separate development consent or project approval;
- ▼ Land costs (including any costs of marketing and selling land);
- ▼ GST (as defined by A New Tax System (Goods and Services Tax) Act 1999 of the Commonwealth).

The estimated Capital Investment Value for this Project amounts to \$11,470,081 excluding GST and contingency. A detailed breakdown of the estimate is found in the Capital Investment Value Report which accompanies this letter.

This estimate includes all costs necessary to deliver the Project, including the design and construction of buildings, structures, associated infrastructure and fixed or mobile plant and equipment.

### 3. Jobs created by the Project

CARAS estimated the number of jobs that would be created by the Project. The estimate of jobs covers personnel that work directly on the project such as project managers, environmental consultants, designers, engineers, technical experts and construction workers. The estimate includes jobs created during pre-construction, construction/remediation and post construction stages of the project. A detailed breakdown can be found in the Capital Investment Value Report which accompanies this letter. A summary of the estimate is listed below.

- ▼ Pre-construction – approximately 20 jobs.
- ▼ Construction/remediation – approximately 22 jobs.
- ▼ Post construction – approximately 2 jobs.

### 4. Conclusion

In conclusion, in accordance with NSW Planning Circular PS 10-008 dated 10 May 2010, we certify that the estimated Capital Investment Value of the Clyde St, Hamilton North Gasworks Remediation Project of \$11,470,081 excluding GST and contingency is based on industry recognised prices and that the estimate was prepared having regard to the matters set out in clause 255 of the Environmental Planning and Assessment Regulations 2000.

The information provided is accurate at the date of preparation of this Report.

Yours sincerely



Noel Storan

**Director,**

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# Jemena - Hamilton North Clyde St. Gasworks Remediation Project



Client Jemena Gas Networks (NSW) Ltd  
Report No RPT-CIV-01  
Revision 2  
Date 22/03/2018





## **Jemena - Hamilton North**

# **Clyde St. Gasworks Remediation Project**

### **Prepared for**

Jemena Gas Networks (NSW) Ltd

### **Prepared By**

Construction and Remediation Advisory Services

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North Sydney NSW 2060

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### **LIMITATIONS**

This report was prepared for Jemena Gas Networks (NSW) Ltd for the purpose/s stated in Section 1. Construction and Remediation Advisory Services (CARAS) has prepared this document in good faith, but is unable to provide certification outside of areas over which we had some control or was reasonably able to check. The report also relies upon information provided by third parties. CARAS has undertaken all practical steps to confirm the reliability of the information provided by third parties and does not accept any liability for false or misleading information provided by these parties. It is not possible in this document to present all data, which could be of interest to all readers of this report. Readers are referred to referenced documentation for further data. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice in respect to, their situation. All work conducted and documents produced by CARAS are based on a specific scope and have been prepared for Jemena Gas Networks (NSW) Ltd and therefore cannot be relied upon by any other third parties unless agreed in writing by CARAS. The documents(s) and/or information produced by CARAS should not be reproduced and/or presented/reviewed except in full.



## Quality Information

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Approved by	Noel Storan

## Document Control

Version	Date	Description of Revision	Prepared By	Reviewed By	Approved By
0	24/11/2017	Issue to client for review	MBF	NS	NS
1	27/11/2017	Minor amendments	MBF	NS	NS
2	22/03/2018	Revised following changes in Project Requirements	MBF/MB	NB	NS



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## Glossary/Abbreviations

Term	Meaning
<b>CIV</b>	Capital Investment Value
<b>CARAS</b>	Construction and Remediation Advisory Services Pty Ltd
<b>DP</b>	Deposited Plan
<b>EMP</b>	Environmental Management Plan
<b>EPA</b>	NSW Environment Protection Authority
<b>GST</b>	Goods and Services Tax
<b>Jemena</b>	Jemena Gas Networks (NSW) Ltd
<b>LPBL</b>	Low Permeability Barrier Layer
<b>LTEMP</b>	Long Term Environmental Management Plan
<b>MO</b>	Management Order
<b>RAP</b>	Remediation Action Plan
<b>the Project</b>	Clyde St., Hamilton North Gasworks Remediation Project
<b>The Site</b>	Former Newcastle Gasworks at 1 Chatham Road, Hamilton North, NSW 2292
<b>WH&amp;S</b>	Work Health and Safety



## 1 Introduction

### 1.1 Purpose

- 1.1.1 Construction and Remediation Advisory Services (**CARAS**) Pty Ltd has been engaged by Jemena Gas Networks (NSW) Ltd (**Jemena**) to provide an independent review of the proposed construction methodology in order to estimate the Capital Investment Value (**CIV**) for the Clyde Street, Hamilton North Gasworks Remediation Project (**the Project**).
- 1.1.2 This CIV estimate has been prepared in accordance with industry guidelines to an order of accuracy consistent with the current stage of the Project.

### 1.2 Site Location

- 1.2.1 The Project Site is located at the former Newcastle Gasworks at 1 Chatham Road, Hamilton North, NSW 2292. It is identified as Lot 1 in Deposited Plan (**DP**) 79057 and Lot 270 in DP 812689 (**the Site**).
- 1.2.2 The Site is located within the border of the commercial/residential areas of Hamilton North. Surrounding land has been observed to include zones as follows:
- ▼ North and north east – a railway corridor and largely commercial facilities;
  - ▼ North west – commercial properties;
  - ▼ East and south east– Styx Creek, beyond which is a railway corridor and open railway land;
  - ▼ South – Styx Creek, beyond which is the Shell Petroleum Terminal; and
  - ▼ West – residential dwellings and some commercial properties.

### 1.3 Project Background

- 1.3.1 The Site has been declared significantly contaminated land by the NSW Environment Protection Authority (**EPA**) under the Contaminated Land Management Act 1997 (CLM Act) on 18 August 2011 and a Management Order (**MO**) has been issued for the Site on 21 December 2015.
- 1.3.2 In response, Jemena has undertaken a staged remediation approach which comprised 2 Stages: a preliminary remediation works of above ground infrastructure (Stage 1) to prepare the Site for the main remediation works (Stage 2).
- 1.3.3 The Stage 1 works have been completed and a Remediation Action Plan (**RAP**) has been developed by JBS&G for the main remediation works (Stage 2) to address the requirements of the MO in respect to Site contamination (Doc. ref.: 'Stage 2 Remedial Action Plan Former Newcastle Gasworks - 1 Chatham Road, Hamilton North, NSW', 3 October 2017).

### 1.4 Proposed Remediation

- 1.4.1 The proposed remediation works, for which the CIV has been developed, comprise four distinct elements:



- ▼ Installation of a Low Permeability Barrier Layer (**LPBL**) across the entire Site to prevent direct human contact with contaminated soils and reduce infiltration at the Site in order to reduce the amount of contaminated groundwater migrating off the Site. The LPBL must be 0.5m thick with a permeability of less than  $10^{-9}$  m/s and a minimum slope on the final ground surface of 1%;
- ▼ The installation of an approximately 510m subterranean upgradient barrier wall to redirect groundwater flow around the areas of highest contamination impact;
- ▼ Implementation of a Long Term Environmental Management Plan (**LTEMP**) at the Site. The LTEMP will include (as a minimum) requirements for maintenance of the barrier layer, procedures to be followed when the barrier layer is breached including protection measures for subsurface maintenance works, restrictions on groundwater use and a program of ongoing groundwater monitoring.<sup>1</sup>

## 2 Capital Investment Value Estimate

### 2.1 General

2.1.1 The base estimate for the CIV for the Project is \$11,470,081, exclusive of GST and contingency. A breakdown of this estimate is shown in Table 1.

### 2.2 CIV Breakdown

2.2.1 Table 1 below shows the CIV breakdown.

Table 1 - CIV estimate breakdown

ITEM	DESCRIPTION	TOTAL
<b>A – OWNER’S COSTS</b>		
1	PLANNING AND APPROVALS	\$ 527,500.00
2	CLIENT PROJECT MANAGEMENT	\$ 390,000.00
3	CONSTRUCTION, MONITORING AND COMPLIANCE	\$ 380,000.00
4	COMMUNITY CONSULTATION	\$ 50,000.00
5	GEOTECHNICAL CONSULTANCY AND DESIGN	\$ 92,500.00
<b>B – PRELIMINARIES</b>		
1	THE CONTRACTOR’S SITE ACCOMMODATION	\$ 78,775.00
2	THE PRINCIPAL’S SITE ACCOMMODATION	\$ 16,445.00
3	PROJECT MANAGEMENT PLANS	\$ 20,700.00
4	MOBILE PLANT AND EQUIPMENT	Included
5	FENCING	\$ 16,100.00
6	CONSTRUCTION MANAGEMENT	\$ 998,200.00
7	SECURITIES AND INSURANCES	\$ 77,625.00

<sup>1</sup> Doc. ref.: ‘Stage 2 Remedial Action Plan Former Newcastle Gasworks - 1 Chatham Road, Hamilton North, NSW’, JBS&G - 3 October 2017



8	SITE SECURITY	\$ 98,210.00
9	SURVEY	\$ 76,958.00
10	CONTRACTOR'S CONSULTANTS	\$ 194,557.00
11	STAKEHOLDER MANAGEMENT	\$ 17,250.00
12	CONSTRUCTION MONITORING	\$ 4,416.00
13	ENVIRONMENTAL MONITORING	\$ 46,000.00
14	FEES PAYABLE TO 3RD PARTIES OR AUTHORITIES	\$ 17,250.00
15	DEFECT LIABILITY PERIOD	\$ 34,500.00
<b>C – SITE PREPARATION</b>		
1	GENERAL	\$ 336,041.50
2	DEMOLITION AND REMOVAL	\$ 11,408.00
3	PREPARE SITE SURFACE	\$ 342,556.25
<b>D – SITE REMEDIATION WORKS: CUT-OFF WALL</b>		
1	GEOTECHNICAL INVESTIGATION	\$ 36,225.00
2	CONSTRUCT BENTONITE SLURRY WALL	\$ 1,838,160.00
3	MATERIAL MANAGEMENT (ODOUR)	\$ 920,460.00
4	TREATMENT OF CONTAMINATED MATERIALS	\$ 585,269.04
5	DEMOLITION OF OFFICE BUILDING	\$ 17,842.25
6	RELOCATION OF MATERIALS WITHIN CUT-OFF WALL	\$ 90,327.04
7	REPORTING	\$ 11,500.00
<b>E – SITE REMEDIATION WORKS: LPBL</b>		
1	PREPARATION	\$ 373,289.83
2	IMPORT CAPPING MATERIAL	\$ 1,842,961.25
3	FINAL SURFACE 1% GRADIENT	\$ 1,927,055.00
<b>F</b>	<b>ESTIMATED TOTAL</b>	<b>\$ 11,470,081.16</b>

## 2.3 Job Creation

2.3.1 CARAS estimated the number of jobs that would be created by the Clyde St., Hamilton North Gasworks Remediation Project. The estimate of jobs covers personnel that work directly on the project such as project managers, environmental consultants, designers, engineers, technical experts and construction workers. The estimate includes jobs created during pre-construction, construction and post construction stages of the project.

Table 2 - Job creation breakdown

Pre-Construction Activity	TOTAL
Project Management	4



Site Investigation Works	6
Planning & Approvals	4
Design Development	6
<b>Sub-Total</b>	<b>20</b>
<b>Construction Activity/ Remediation</b>	<b>TOTAL</b>
Construction Management & Supervision	4
Site based workforce	12
Consultants	6
<b>Sub-Total</b>	<b>22</b>
<b>Post Construction Activity</b>	<b>TOTAL</b>
Environmental Monitoring & Reporting	2
<b>Sub-Total</b>	<b>2</b>

### 3 Assumptions & Exclusions

#### 3.1 Assumptions

##### 3.1.1 The estimate was developed with the following assumptions:

1. The project will be carried out in accordance with the methodology outlined in JBS&G's RAP (October 2017) and the document "*Project Requirements (Contract Version), Clyde Street Former Gasworks Remediation Project*", Jemena Gas Networks (NSW) Ltd, 16 March 2018.
2. The Contractor shall ensure that the personnel employed in the undertaking of the Works are appropriately capable, experienced, trained, committed and authorised to ensure that the Contractor efficiently and effectively delivers the Works. The Contractor's personnel shall implement and maintain processes, procedures, protocols, methodologies and responsibilities which will ensure that the Contractor efficiently and effectively delivers the Works.
3. The Principal shall ensure that appropriate contingency is allocated for the project.
4. The Site working hours will be specified in the Development Approvals, and are likely to be:
  - ▼ Monday to Friday 7am to 6pm;
  - ▼ Saturdays 8am to 1pm; and



▼ No work on Sundays or Public Holidays.

5. The Contractor shall comply with the provisions and requirements of the Work Place Health and Safety Act and Regulations (2011) at all times. The Contractor shall use plant, equipment, materials and methods that prevent or minimise hazards to personnel and the environment.
6. Community consultation will be required to be carried out throughout the duration of the project.
7. Environmental monitoring will be required for the duration of the project.

## 3.2 Exclusions

3.2.1 The CIV estimate was developed with the following exclusions;

1. No provision for contingency.
2. No provision for escalation.
3. No provision for delay costs beyond what could be reasonably expected.
4. No provision for delay costs associated with obtaining statutory approvals.
5. No provision for costs associated with finance application fees, mortgage stamp duty or similar.
6. No provision for costs related to weather delays.
7. No provision for amounts payable, or the cost of land dedicated, or any other benefit provided, under a condition imposed under Division 6 or 6A, of Part 4 of the Environmental Planning and Assessment Act or a planning agreement under that Division.
8. No provision costs relating to any part of the development or project that is the subject of a separate development consent or project approval
9. No provision for land costs (including any costs of marketing and selling land)
10. No provision for GST (as defined by A New Tax System - Goods and Services Tax - Act 1999 of the Commonwealth).

## 4 Conclusion

In conclusion, in accordance with NSW Planning Circular PS 10-008 dated 10 May 2010, we certify that the estimated Capital Investment Value of the Clyde St, Hamilton North Gasworks Remediation Project of \$ 11,470,081 excluding GST and contingency is based on industry recognised prices and that the estimate was prepared having regard to the matters set out in clause 255 of the Environmental Planning and Assessment Regulations 2000.

The information provided is accurate at the date of preparation of this Report.