STATUTORY DECLARATION

Evidence (Miscellaneous Provisions) Act 1958 (Vic)

I, Mark Fothergill of 3 Gray Spence Crescent, West Pennant Hills, New South Wales do solemnly and sincerely declare that:

1 I am the General Manager, Infrastructure Strategy and Engineering for the APA Group. I have been in my current role since October 2007.

2 My responsibilities in this role include oversight of engineering solutions for the APA Group's gas transmission pipelines, including the Victorian Transmission System (**VTS**).

3 This declaration deals with the following issues:

(a) The extent to which the VTS currently has sufficient capacity to meet demand;

(b) The way in which capacity may be increased by the APA Group through engineering solutions where there is demand to do so; and

(c) The types of engineering works which may be required in future to address changing safety standards and other issues affecting the VTS.

Capacity on the VTS

4 The VTS is currently designed with sufficient capacity to meet 1-in-20-year peak day demand. This is the minimum design requirement set by the Australian Energy Market Operator (**AEMO**). The VTS does not have any material surplus capacity above the minimum requirement set by AEMO.

5 The APA Group will only expand the total capacity of the VTS in response to customer demand, and will not expand capacity speculatively. Therefore I would not expect the overall capacity of the VTS as a whole to exceed the minimum AEMO requirement in future.

6 While the VTS as a whole is designed to meet the minimum AEMO requirement, different parts of the VTS are subject to greater utilisation than others. There are three 'zones' of the VTS which are discussed below:

(a) The Northern Zone;

(b) The South West Pipeline (**SWP**); and

(c) The Longford Zone.

7 The most heavily utilised zone of the VTS is the Northern Zone. This zone of the VTS is frequently fully utilised (around one day every month), meaning that 100% of daily capacity in the Northern Zone is being used.

8 The capacity of the Northern Zone was recently increased by approximately 20TJ / day. Since this expansion, this part of the VTS has continued to be fully utilised relatively frequently (again, around one day every month).

9 The SWP is also fully utilised on winter peak days (typically around one or two days each year).

10 The Longford Zone, with potentially some inter-day LNG vaporisation support from the Dandenong LNG storage facility, has sufficient capacity to provide additional supply on days when either the Northern Zone and/or the SWP is being fully utilised. The Longford Zone can provide additional capacity such that the VTS as a whole can meet 1-in-20-year peak day demand.

11 The projected capacity and utilisation of the VTS in each zone is set out in Table 1 below. This shows that there is no material surplus capacity on the VTS.

Table 1: VTS capacity and utilisation

Year	**2013**	**2014**	**2015**	**2016**	**2017**
Forecast Peak Day Demand	**TJ**	**TJ**	**TJ**	**TJ**	**TJ**
AEMO winter 1 in 20 peak day system demand forecast (medium scenario)	1273	1269	1274	1282	1291
Culcairn	38	38	68	68	68
Estimated Gas-fired Powered Generation (GPG)	25	25	25	25	25
Total	**1336**	**1332**	**1367**	**1375**	**1384**
Forecast Peak Day Demand on Pipeline Sections					
Demand on SWP	353	353	402	402	402
Demand on Northern Zone	152	155	187	187	188
Demand on Longford-Melbourne	983	979	995	1003	1012
Forecast Capacity					
Capacity on SWP	353	353	414	414	414
Capacity on Northern Zone	152	155	187	187	188
Capacity on Longford – Melbourne	1030	1030	1030	1030	1030

Utilisation on Peak Day					
Utilisation on South West Pipeline	100%	100%	97%	97%	97%
Utilisation on Northern Zone	100%	100%	100%	100%	100%
Utilisation on Longford-Melbourne	95%	95%	97%	97%	98%

Notes: (1) peak day system demand forecasts are taken from the AEMO Victorian Gas DTS Medium Term Outlook (2011), Table A1-9; (2) peak day demand forecasts for each zone are capped at the capacity of that zone (meaning that any excess demand in a particular zone is not reflected).

Engineering solutions to increase capacity

12 The APA Group is currently planning two projects (with Final Investment Decision due early 2013) to meet demand on the VTS:

(a) A compressor at Winchelsea which is designed to increase the capacity of the SWP by around 60TJ / day, and which is expected to be operational sometime in 2015; and

(b) Additional looping and pipeline uprating in the Northern Zone, which will expand the capacity of this zone by around 30TJ / day, and which is expected to be operational sometime in 2015.

13 These planned measures are reflected in Table 1 above, which shows the capacity of the SWP and Northern Zones increasing in 2015.

14 Notwithstanding these measures, the Northern Zone is projected to face some capacity constraints over the next five years, and the SWP will have very little spare peak day capacity. This is shown in Table 1 above.

15 The APA Group had also planned another project, known as the Western Outer Ring Main (WORM), which would have potentially eased capacity constraints, by facilitating flows between the SWP and other parts of the VTS. However as this project has not received regulatory approval, it is unlikely to proceed in the next five years. Notwithstanding, in my view this would be a prudent engineering solution to current and expected future capacity constraints, and therefore the APA Group may seek to implement this solution in future.

Other engineering works which may be required in future

16 Engineering works on pipelines such as the VTS may be required for several reasons, including:

(a) To ensure the capacity of the pipeline can meet current and projected demand (as noted above);

(b) To ensure the design of the pipeline is compliant with safety standards, which may change over time;

(c) To adapt the design of the pipeline to changes in the external environment, such as increasing urbanisation; and

(d) To repair ageing parts of the pipeline.

Changes to safety standards

17 The key safety standards relevant to the VTS are set out in the AS2885 Pipeline Code. These standards are subject to change with major revisions released in 2007 and 2012.

18 Safety standards are often changed, sometimes as the result of reported accidents or catastrophes involving gas pipelines either in Australia or overseas. A recent example of such an event is the explosion of a pipeline in San Bruno (a suburb of San Francisco in the United States), which occurred on 9 September 2010. The operator has reduced the operating stress level and capacity and embarked on a comprehensive review and enhancement of the integrity of high consequence assets.

Urban encroachment

19 Changes in safety standards may affect the stress level at which a pipeline may be operated, which may differ between urban and non-urban areas. The standard already includes special provisions for construction of new assets in urban and sensitive areas to control release rates. I believe that similar provisions will inevitably be retrospectively applied to existing pipelines. This will mean that parts of a pipeline may need to be de-rated, which means that the capacity of that part of the pipeline is reduced or in some circumstances completely foregone. In this situation, additional capacity would need to be added in another part of the part of the pipeline in order to continue to serve the same level of demand.

20 For example, as part of a recent expansion of the Roma to Brisbane Pipeline (**RBP**), the APA Group has allowed for a de-rating of part of the existing pipeline in anticipation of future changes in safety standards. To compensate for the loss of capacity associated with de-rating, 6 kilometres of increased diameter looping was installed at a cost in excess of $3 million per kilometre.

21 As urban areas expand, their footprint can encroach upon existing pipelines. Where this occurs, the design of the existing pipeline may need to be augmented to ensure that it is safe for urban areas. The problem for urban areas is managing energy release, which has two key objectives: firstly, to eliminate risk of rupture; and secondly, to limit the maximum energy release rate.

22 The types of augmentation which may need to be undertaken to address urban encroachment may include:

(a) Installing physical barriers to eliminate threats;

(b) Relaying the section with an increased thickness of the pipeline walls;

(c) De-rating or decommissioning parts of the pipeline (refer RBP example above); and/or

(d) Installing additional looping or interconnections to provide additional capacity to compensate for de-rating other parts of the pipeline.

23 In an urban environment these jobs will be longer length and will be considerably more expensive than the original cost of building those parts of the pipeline.

24 The APA Group monitors projections of urban growth in the Melbourne area in anticipation of possible urban encroachment on the VTS. **Exhibit 1** to this declaration is a map showing current projections to 2030 of urban growth in the Melbourne area.

25 Based on the current projections of expansion of the Melbourne urban area (as shown in **Exhibit 1**), I expect that around 71 kilometres of pipeline in the VTS could need to be augmented over the next 15 years to account for urban encroachment. This is because the pipeline in areas which are expected to become urbanised is currently serviced with thin-walled pipeline (less than 7 millimetres thick) which is more susceptible to energy releases which could potentially pose a threat of injury or death in properties adjacent to the pipeline. If the cost of this augmentation is similar to the cost associated with augmentation of the RBP, this would imply a total cost of around $200 million to address this issue.

Ageing and corrosion of pipeline assets

26 A further issue which potentially affects all pipelines is corrosion as the pipeline ages. Corrosion can cause the wall thickness of the pipeline to be reduced, which can give rise to safety issues.

27 Where a pipeline becomes corroded, this can require substantial engineering works to repair the corroded part of the pipeline. These works can involve:

(a) Excavation of the damaged part of the pipeline;

(b) Assessing the corroded area;

(c) Re-coating and/or 'sleeving' of the damaged part of the pipeline; and/or

(d) Replacing badly corroded parts of the pipeline.

28 This issue has recently affected the Moomba to Sydney Pipeline, which is another APA Group asset. The APA Group has spent approximately $100 million over the past five years on engineering solutions to address this issue.

29 Although I cannot precisely predict when and the extent to which corrosion will begin to materially affect the VTS, I expect that it will start to become an issue as the VTS continues to age.

I acknowledge that this statutory declaration is true and correct and that it is made in the belief that a person making a false declaration is liable to the penalties of perjury.

DECLARED at HSBC Centre, 580 George Street, Sydney NSW 2000)
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on 9th of November 2012

before me:

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Mark Fothergill

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AINSLIE BAIRD
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SYDNEY NSW 2000

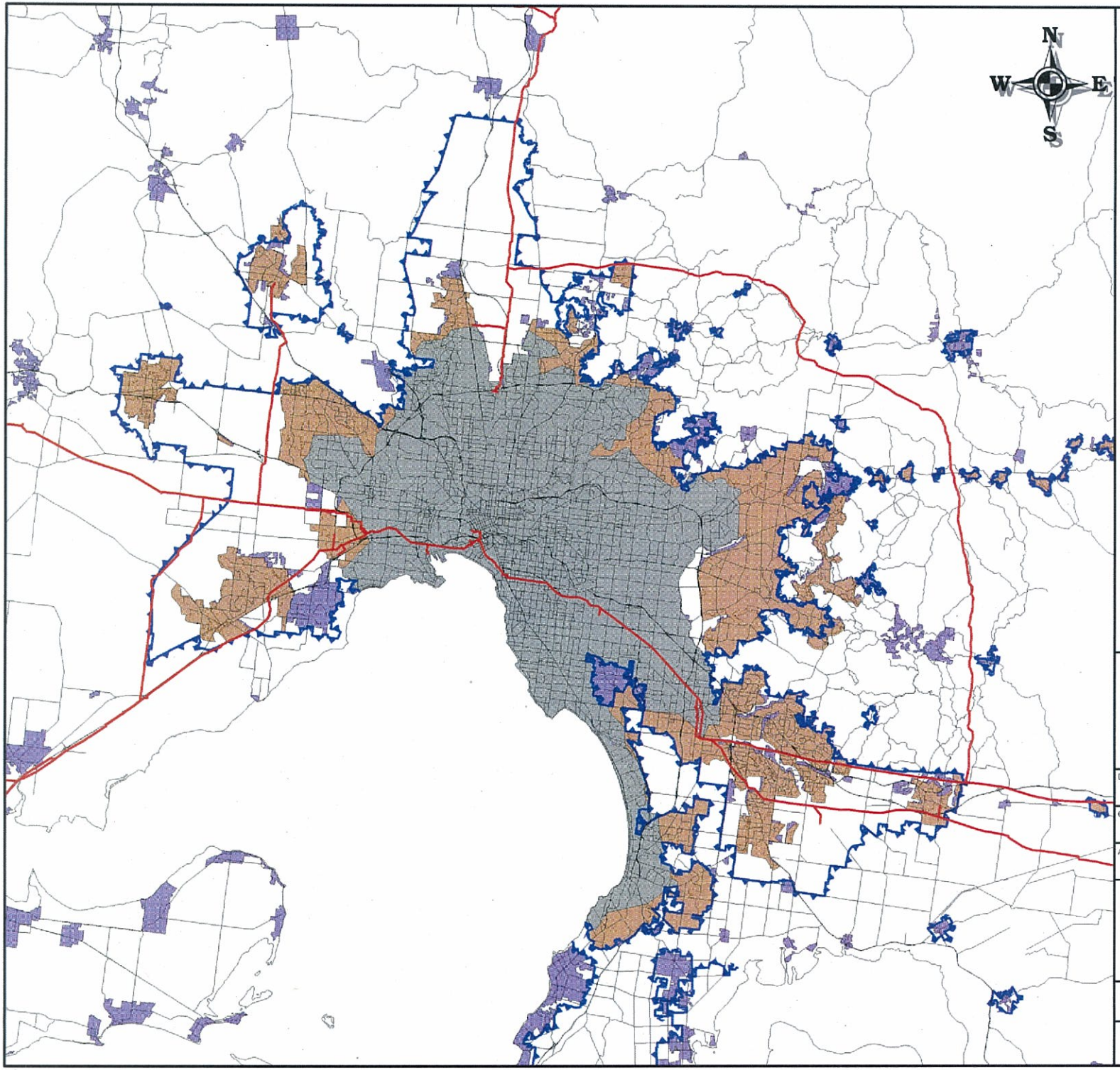

Exhibit 1 to the Statutory Declaration of Mark Fothergill dated 9 November 2012

LEGEND

- APA Group Pipelines
- Roads

Source: VICMAP Planning Dataset - July 2012

- 2030 Urban Growth Boundary
- 1971 Built Up Area
- 2001 Built Up Area

Source: VICMAP Features of Interest Dataset - March 2012

- 2010 Built Up Area

URBAN ENCROACHMENT ON APA GROUP PIPELINES

DRAWN: M. HARRIES	DATE: OCT 2012
CHECKED:	FILENAME: UGBEncroachment.wor
APPROVED:	

APA Group

DRAWING NO. ENCROACHMENT MAP — REV. A