

South Australia's Environment Protection Authority

Beverley Community Working Group



Tuesday 5 July 2016



Agenda

1. Welcome and thankyou to SA Health
2. Final report
3. Summary of data from validation report
4. Next steps and timing
5. Pilot mitigation study
6. Simple measures that may improve indoor air quality
7. Responsible (liable) persons
8. Next meeting
9. Questions
 - Non-cancer risks of TCE
 - Short-term health issues

Welcome and thankyou

Tonight we are pleased to welcome our colleagues from SA Health, who have made themselves available to answer questions based site specific results at the end of the presentation.

Most importantly we would like to thank residents who let us onto their properties, and in some cases into their homes, for their cooperation and assistance over the last few months.

Final report received from Golder

The EPA received the final report from Golder Associates on 28 June 2016, and wrote to all residents in the site specific assessment area on the same day.

An email was sent with a copy of this correspondence and a summary of the results to members of the Beverley Community Working Group on the same day.

A media release was distributed by the EPA on 30 June 2016, which triggered media interest...

Media Release

Environment Protection Authority

30 June 2016



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Beverley environmental results prompts more tests

The Environment Protection Authority (EPA) has released the latest results from an ongoing environmental assessment of the Beverley area which had previously identified properties that required further testing.

The work took place near Pope Street to validate initial testing for trichloroethene (TCE) vapour that was undertaken last year.

EPA Operations Director Science, Assessment and Planning, Peter Dolan, said the assessment area included 181 residences with 48 properties among them, identified as needing further testing to verify the preliminary results.

“Based on computer modelling to predict indoor air levels of TCE vapour intrusion, the EPA offered residents from 48 properties an opportunity for site-specific testing but only 20 accepted the offer,” Mr Dolan said.

The test results from these properties revealed:

- Two properties that fell within the ‘no action’ response range with concentrations less than detection limits, and therefore considered ‘safe’.
- Five properties that fell within the ‘validation’ response range with concentrations between detection limits and 2 $\mu\text{g}/\text{m}^3$, and therefore considered ‘safe’.
- Eight properties that fell within the ‘investigation’ response range with concentrations between 2 and 20 $\mu\text{g}/\text{m}^3$ and further indoor testing is therefore likely.
- Five properties that fell within the ‘intervention’ response range with concentrations between 20 and 200 $\mu\text{g}/\text{m}^3$ and actual indoor testing is likely.

The EPA has informed property owners of the results and the next steps that will be required for further testing.

“The report has identified the potential for a contamination source to exist in the vicinity of Pope Street,” Mr Dolan said.

“Further sampling will be offered to property owners where required, including a pilot trial for the installation of a vapour mitigation system which will be organised in the coming months.”

The EPA is also continuing its work to determine the scope for a potential future groundwater prohibition area to apply a formal ban on the extraction of groundwater in the area through a bore.

Residents have been reminded not to use groundwater for any purpose until further notice.

Further information on the Beverley environmental assessment work is available on the [EPA website](#) or by contacting the Site Contamination Team on 1800 729 175.

For further information please contact Chris Metevelis: 0439 137 641

Environment Protection Authority

- “Five properties ...fell within the ‘intervention’ response range with concentrations between 20 and 200 $\mu\text{g}/\text{m}^3$, and actual indoor testing is likely.”
- “Further sampling will be offered to property owners where required, including a pilot trial for the installation of a vapour mitigation system which will be organised in the coming months.”



SA News

Five Beverley homes face evacuation over contamination fears

Brad Crouch Medical Reporter, The Advertiser
June 30, 2016 12:32pm

- [Beverley residents refuse EPA offer to evacuate](#)
- [Clovelly Park: Haunting silence of a suburban ghost town](#)
- [EPA report reveals more about Clovelly Park contamination scare](#)
- [Clovelly Park toxic scare spreads](#)
- [Residents in 25 Clovelly Park homes told to leave](#)

FIVE properties at Beverley may face evacuation after ongoing testing for potentially dangerous contamination identified 48 properties needing further testing.

The work took place near [Pope St](#) to validate initial testing for [trichloroethene \(TCE\)](#) vapour

- The offer to relocate (not evacuate) four residents was made in **September 2015**, when the EPA first received predictions of over $20\mu\text{g}/\text{m}^3$ in these properties.
- The EPA discussed these preliminary results with health experts and offered temporary relocation for these residents as a precaution while any health risks were better understood through further testing.
- To date one family has accepted this offer.

Data Summary

- The EPA has tested soil vapour, crawl space/sub slab or indoor air at a total of 20 privately owned residential properties.
- Levels of TCE were predicted in indoor air for 21 properties and tested at 9 properties.
- Based on modelled data indoor air concentrations are predicted in the following ranges:

Predicted indoor air range ($\mu\text{g}/\text{m}^3$)	Action Level	No. of Properties	Proposed Next Steps
<2	Validation	3	Resample
2 < 20	Investigation	5	Resample + Indoor Air
20 < 200	Intervention	3	Resample + Indoor Air

Data Summary

Properties where indoor air has been tested fall into the following ranges:

Actual indoor air range ($\mu\text{g}/\text{m}^3$)	Action Level	No. of Properties	Proposed Next Steps
<2	Validation	3	Resample
2 < 20	Investigation	4*	Resample
20 < 200	Intervention	2	Pilot mitigation trials

**One of the properties in this category only reported the concentration of $2 < 20 \mu\text{g}/\text{m}^3$ within an uninhabited basement area.*

Attenuation factors – Beverley data

Crawl Space	µg/m ³	21	17	31	19	22	68	42	20	170	45	110	28
Indoor Air (Radiellos)	µg/m ³	1.3	0.81	4.9	5.4	4	4.8	4.8	4.8	6.2	41	19	21
Measured Attenuation Factor	<i>Indoor Air</i>	0.062	0.048	0.158	0.284	0.182	0.071	0.114	0.240	0.036	0.911	0.173	0.750
	<i>Crawl Space</i>												
Percentage reduction between CS and IA	%	94%	95%	84%	72%	82%	93%	89%	76%	96%	9%	83%	25%

Mean percentage reduction between CS and IA	75%
Median percentage reduction between CS and IA	83%
Worst measured percentage reduction between CS and IA	9%
Best measured percentage reduction between CS and IA	96%

Next Steps and timeframes

- Next stage of works scheduled for July/August and will be a mix of validation and broader assessment works.
- EPA is investigating new technology to determine potential source locations.
- Priorities of the next stage of works are to:
 - Validate modelling and confirm results from previous testing
 - Delineate the extent of the soil vapour and groundwater contamination
 - Identify source locations

Pilot mitigation study

- Two properties have recorded consistent concentrations of TCE within the intervention action level range ($20 < 200 \mu\text{g}/\text{m}^3$)
- The EPA is planning on undertaking a pilot mitigation study to include these two properties, which will involve an active ventilation system designed to reduce the indoor air vapour.
- The EPA is in the process of scoping and seeking quotes from consultants for this work

Practical mitigation measures

Simple measures that may potentially reduce concentrations of TCE vapour within indoor air are based on two broad concepts:

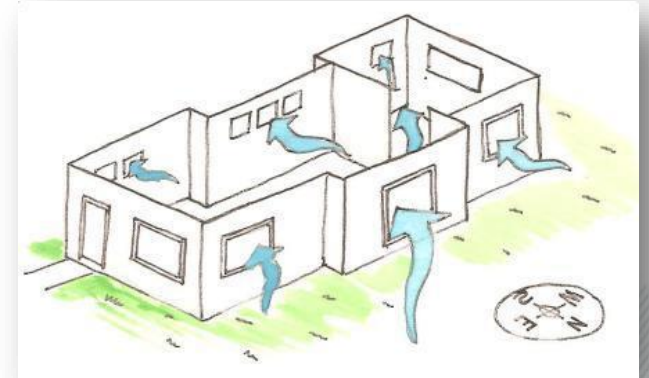
- A) Increasing the amount of ventilation inside the home from outside
- B) Reducing the amount of vapour entering the home from below the ground

**This information is provided for advice only, and the EPA cannot guarantee reduced TCE concentrations*

Passive mitigation measures

Opening doors and windows when possible

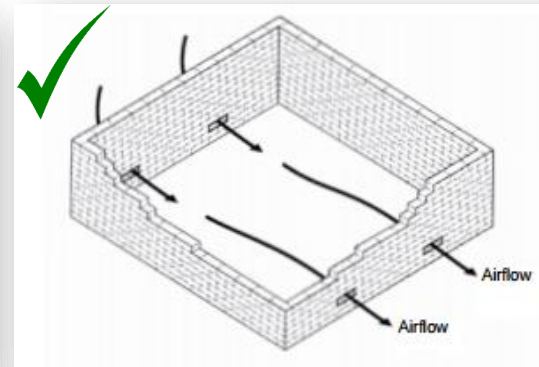
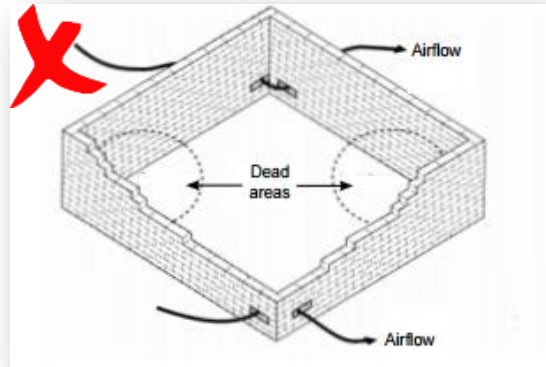
- More practical in summer
- However, even opening internal doors may be beneficial



Ensuring crawl space vents are kept clear

- Increasing ventilation through the crawl space may reduce vapour entering indoors
- This may include adding additional ventilation vents

Passive mitigation measures



Passive mitigation measures

Sealing noticeable cracks and gaps

- May prevent the amount of vapour entering into the home



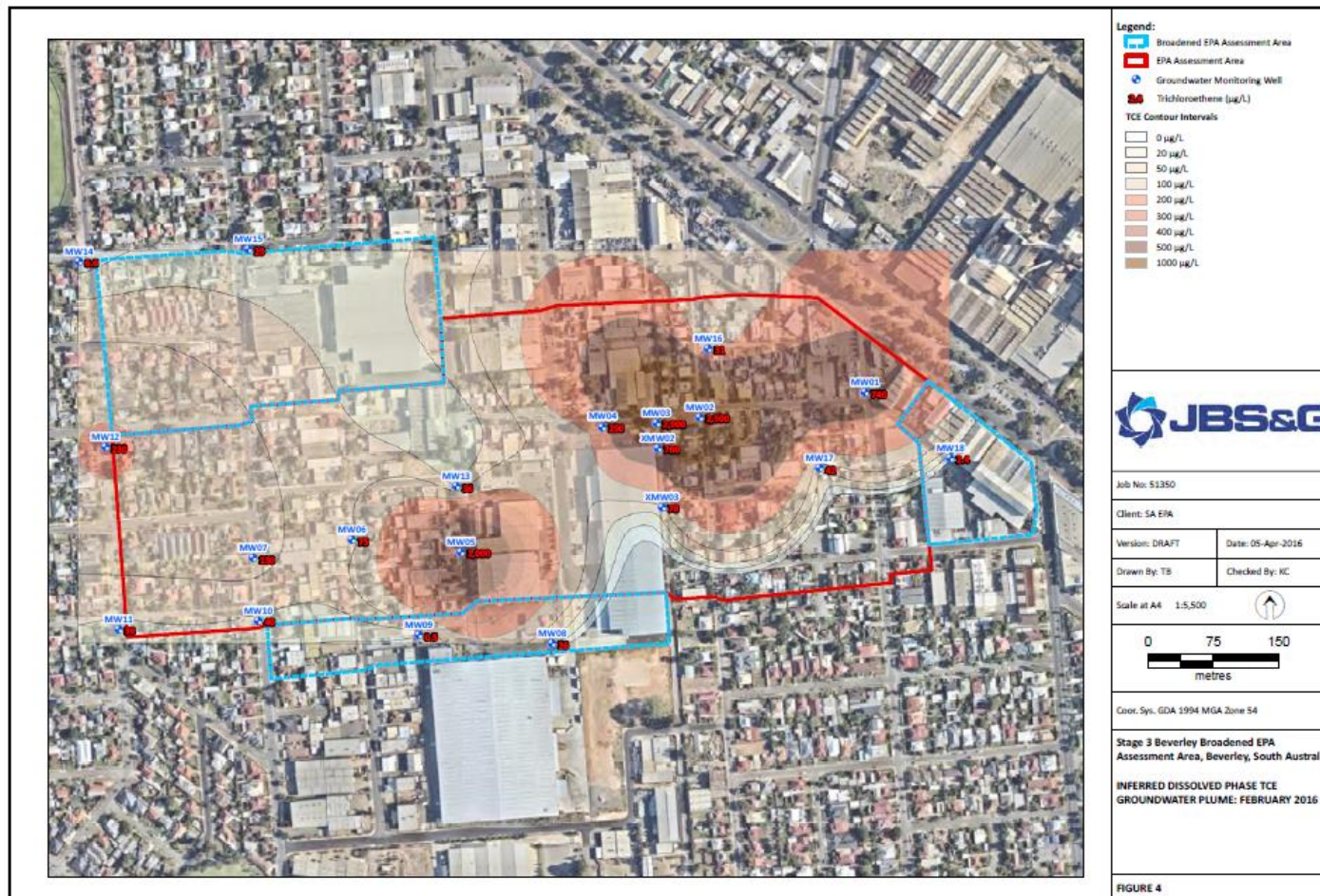
Responsible (liable) persons

The *Environment Protection Act* (1993) gives the EPA powers to force responsible (liable) person to undertake assessment or remediation.

A responsible person can be forced to undertake work even if they do not operate in an area anymore.

Providing a responsible person or company has not died or ceased to exist and has reasonable funds to undertake work, the EPA can issue them with an order.

Responsible (liable) persons



Document Path: W:\Projects\JBSG Australia\Beverley\51350_SA_EPA_Beverley_Stage 3\ArcGIS\Map\Groundwater Concentrations TCE - Feb 2016 ugt.mxd
Image Reference: www.earthmap.com.au - Imagery Date: 6 February 2016

Community engagement in Beverley

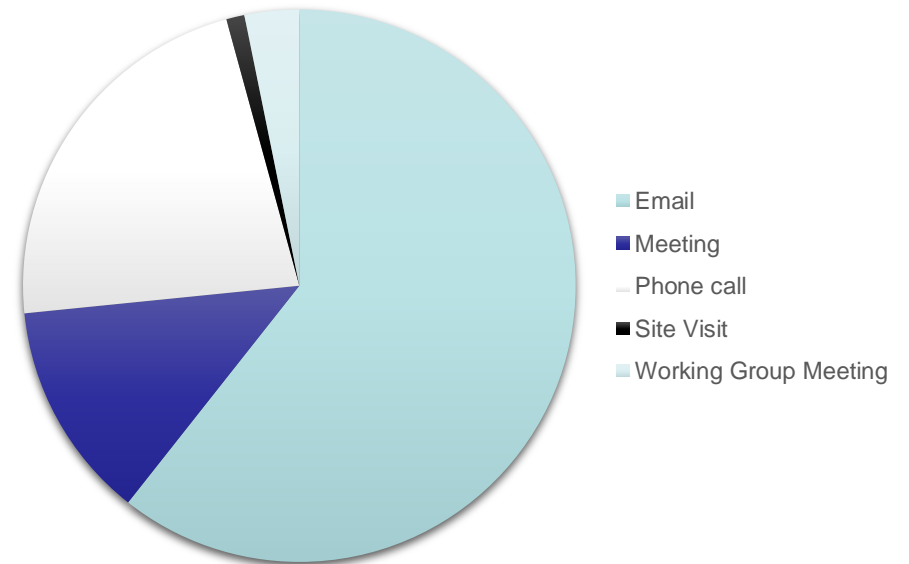
- **16 June 2015** – first community working group meeting held
- **7 July 2015** – community working group meeting
- **2 September 2015** – community working group meeting
- **29 September 2015** – community working group meeting
- **19 January 2016** – community working group meeting
- **24 February 2016** – community working group meeting
- **22 March 2016** – community working group meeting
- **17 May 2016** – community working group meeting
- **30 May to 14 June 2016** – personal meetings with people whose homes were tested.
- **14 June 2016** – special residents' meeting for people whose homes were tested. Dr Kevin Buckett (Director, Public Health) and Dr David Simon from SA Health attended.

New position established

Principal Adviser, Community Engagement - interactions with Beverley residents since 22 February 2016

Beverley

Engagement type	Number interactions
Email	57
Meeting	12
Phone call	21
Site Visit	1
Working Group Meeting	3
Grand Total	94



Next Meeting



Proposed for **Tuesday 23 August 2016**

Questions?

Questions

- Non-cancer risks of TCE
- Short-term health issues