



TLCCG

Tullamarine Landfill  
Community Consultation Group

# MEETING NOTES

WEDNESDAY

24 May, 2017

6:00pm for 6:30 – 8:30 pm

Hume Global Learning Centre  
1093 Pascoe Vale Road, Broadmeadows

**Facilitator** – Jen Lilburn    **Note taker** – Andrea Mason

## MEETING PURPOSE

To provide an update on site rehabilitation.

## ATTENDEES

**Community:** Sam Cetrola, Ovi Clements, Graeme Hodgson, Peter Barbetti, Kim Westcombe, Julia Law, Helen van den Berg, Jos van den Berg

**EPA Victoria (EPA):** Jeremy Settle (Senior Environment Protection Officer), Alistair Nairn (Advisor - Community & Environmental Partners)

**Cleanaway:** Kieren McDermott (Environment Specialist), Olga Ghiri (Stakeholder and Community Relations Manager), Lachlan James (Environmental Specialist), Mark Globan (Regional Manager Victoria Post Collections), Guy Edgar (Environmental Business Partner)

**Other guests:** Alex Schiavoni (EHS), David Corrigan (Kleinfelder), Josh Scandrett (Kleinfelder), Julia Noel (EPA, Environmental Audit Unit), Leigh Bryant (EPA, Manager, Environmental Audit Unit).

**Apologies:** Lolita Gunning, Prue Hicks, Cherine Fielder, Harry van Moorst, Alan O'Brien (Environment and Technical Manager)

**Facilitator:** Jen Lilburn

**Note taker:** Andrea Mason

## ABOUT THESE NOTES

*Notes were taken and produced by Andrea Mason. We aim to provide detailed minutes that cover the key information that was provided in the meeting. However, these minutes are not intended to be a transcript of the meeting, and discussions, comments and questions have been summarised to reduce the overall length of this document.*

*Presenters were given the opportunity to review the notes relating to their item to ensure the discussion was accurately summarised, and that it details best available knowledge at the time of the meeting. Additional comments received after the meeting have been highlighted as such.*

*These notes will be posted on the Tullamarine Community Information page on the Cleanaway website <http://www.cleanaway.com.au/community/major-project/tullamarine-closed-landfill-vic/> and will be available to the general public. Meeting participants should advise Andrea Mason or Jen Lilburn if they would like their name removed from this public document.*

The intent of these meeting notes is to promote open communication between Cleanaway, local government, community and EPA Victoria. They are not to be used in a manner that compromises this objective.

# AGENDA

1	Welcome, Introductions, Jen Lilburn
2	EPA Audit Unit presentation, Julia Noel
3	Operations Update, Kieren McDermott
4	Groundwater Sampling (new bore holes), Kieren McDermott
5	Update on community-chosen consultant review, Alistair Nairn
6	Actions, Wrap Up, Next meeting, Jen Lilburn

## ACTIONS FROM THE MEETING

**Action 240517\_1:** EPA to report to TLCCG on how many of the audit reports for the Tullamarine landfill sites have been reviewed under the EPA quality assurance program.

**Action 240517\_2:** Cleanaway to resend to TLCCG members the links to the information regarding LNAPL levels and testing procedures from EHS reports.

**Action 240517\_3:** Cleanaway to check for research references related to natural attenuation and send to TLCCG members.

**Action 240517\_4:** Cleanaway to investigate the format of the last two flare emission reports and if possible align in a table format illustrating trends in efficiencies

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## ITEM 1. WELCOME, JEN LILBURN

**Jen Lilburn** (Convenor) welcomed everyone and general introductions were conducted.

### Hume City Council representation

Olga advised that she had approached the new Councillors in 2016 to invite them to TLCCG. The Councillors have been made aware of the group, meeting dates and the Cleanaway website. To date there has been no response. Cleanaway offered to make a new approach to Hume City Council councillors to invite representation on TLCCG and it was suggested that an approach from community members may reinforce the importance of this landfill issue to the community and this consultation group.

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## ITEM 2. EPA AUDIT UNIT UPDATE, JULIA NOEL AND LEIGH BRYANT

Julia provided an overview of the EPA Audit Unit and its role in overseeing the audit process which is central to the landfill site regulation and its management.

There are 10 staff in the EPA and 70 registered external auditors. EPA's team is responsible for ensuring the audit process reaches its purpose. The duty holder of each site chooses the auditor from the EPA's designated pool of auditors. EPA sets the standards for the audit process and the auditors. Each auditor needs to adhere to the EPA rules of data collection and reporting. EPA then ensures that the audit is made public according to EPA rules for publication.

The EPA Audit Unit manages the recruitment, appointment, ongoing performance reviews and reappointment of external auditors in their pool according to specific criteria. Auditors are appointed for terms of 2 – 5 years and are assessed before they can reapply for a further term.

EPA manages the quality assurance process for audit reports. Not all audits are reviewed. Approximately 200 are received each year and a selection of these (approx 10%) are reviewed for both technical content and how the process and conclusions are communicated. The reports must be easy to follow and the process must be clearly outlined.

EPA ensures as much information as possible related to the audit is provided to the public on their website [www.epa.vic.gov.au](http://www.epa.vic.gov.au) including publishing all the standards that EPA uses for auditor appointment, conduct, assessments and report guidelines.

This process also enables EPA to engage with the users of the system e.g. community and business to ensure they understand the process and can give feedback on their perceptions of the process.

**COMMENT:** *We have been looking closely at the audits related to the Tullamarine site since 2007 and are not pleased with the process. We don't believe that the system is rigorous and it seems that a site can get stuck with the same auditor forever. When an audit report regarding dioxin levels was found by the community to be incorrect by a factor of 1 million and therefore dangerous to the community, we were told that the auditor had made and consequently corrected a 'typo' in the report - however this amended report has never been seen. How can we be expected to have trust in a system that allows an error of that magnitude? It is understood that the EPA is under resourced however this is a government issue and the community has raised this responsibility with them in the past. Tullamarine is the most toxic landfill in the state and we believe that given its history and the poor management of the site in the past, EPA should always review the audits for this site.*

**QUESTION:** **Has every audit report for the Tullamarine landfill been reviewed?**

**JULIA:** Not all audits have an EPA quality assurance review and it isn't the EPA's role to 'redo' the work of the auditor. I understand that you believe that this site should be treated differently because of its high-risk profile.

**JEREMY:** The recent audit report relating to Tullamarine buffer land and was reviewed by EPA.

**Action 240517\_1:** EPA to report to TLCCG on how many of the audit reports for the Tullamarine landfill sites have been reviewed under the EPA quality assurance program.

In answer to further questions from TLCCG members, Julia and Leigh advised that

- the parameters for selecting a review ensure that there is a reasonable spread of reviews for each auditor and that sites associated with redevelopment projects or that have potential risks for groundwater contamination or other risk triggers are reviewed.
- Reviews may be undertaken on request from other departments within EPA or from external sources such as the community.
- A review could also be considered if an auditor is of interest to particular community groups, government or the EPA, has been newly appointed, or has been flagged for review.
- Reviews are undertaken throughout an auditor's term.
- There are different types of appointments based on three categories of work and many auditors have joint accreditation across these categories.
- EPA has the necessary expertise within EPA to properly and forensically review the audit reports and to pick up faults. Where necessary experts from the other applied science units are included in the review process

**COMMENT:** *The community believes that the EPA should appoint the most rigorous auditor available for each task and not use those of the company's choice. Where the auditor is employed by the landfill manager there is potential for a conflict of interest. If the reports were submitted to EPA first, this would prevent any perception of lack of independence. We agree that the costs should be borne by the company.*

**LEIGH:** The current process for appointing auditors reduces the possibility of conflict for the EPA and allows EPA to assess their work independently of the audit process itself.

**JEN:** The community needs to understand how the Audit Unit in general can communicate to the community in a way that provides comfort that the right decision has been made and that the EPA can be trusted.

**QUESTION:** **The current auditor for Tullamarine has been working on the project for 13 years. Wouldn't it be better if the process allowed the appointment of another auditor with a fresh perspective as a safeguard?**

**JULIA:** This auditor was reviewed by EPA to ensure that they are meeting the requirements and the company has reengaged that auditor.

**ALISTAIR:** There is an advantage to having the one auditor who has developed a deep understanding of the site over the longer timeframe.

**COMMENTS:** *Any auditor should be able to pick up on the issues with the site and make recommendations. The community feels that a 'fresh set of eyes' would be helpful after some time. We believe that the EPA should control the auditor's appointment (but not their payment).*

**QUESTION:** **The reported volume of Light Non-Aqueous Phase Liquid (LNAPL) in the landfill has varied in many audit reports from 300ML to 60ML. In the past 13 years, the current auditor has not been able to provide definite figures so that we know how much LNAPL is in the landfill. Why is this still unknown?**

**KIEREN:** The calculations were undertaken by EHS Support and the reports submitted to the auditor.

**COMMENT:** *The community has formally requested the algorithms in writing. There is no explanation for the differences in the results from the last two reports.*

**ALEX:** The methodology, assumptions and results were documented in the last two reports. Following the initial estimates and in light of better science around LNAPL, the process was reviewed. There is now better modelling available and the process has been refined however we still can't give exact information regarding the volume of LNAPL present in the landfill.

**Action 240517\_2:** *Cleanaway to resend to TLCCG members the links to the information regarding LNAPL levels and testing procedures from EHS reports.*

**COMMENT:** *LNAPL is a huge issue for the community members who have to live with it affecting our health. There have been changes in information received over the years as the science and processes improve. The community is hopeful that there will be better information available in the future as the EPA reforms take place however we are uncomfortable with the current process, where audit reports are viewed by the company first rather than the EPA. The community needs to know that the EPA audit process is rigorous, that the auditor is at arm's length from the company and that there is no need for the community to continue to review and challenge the reports.*

**QUESTION:** **Does the EPA Audit Unit have the power to draw on the subcontractor reports related to the audit report in order to check any data?**

**JULIA:** Yes, EPA can access the individual assessment reports and these are also available as appendices in the reports and are available to the public on the EPA website.

Leigh Bryant thanked TLCCG members for their feedback and advised that it would be considered by EPA in future revisions of the audit review process.

## ITEM 3. OPERATIONS UPDATE, KIEREN MCDERMOTT

Kieren provided an overview of the recent activities undertaken by Cleanaway across the landfill operations. Results from these activities will be made available as they come in.

### Recent Activities

- ▶ MB61L sampling report completed
- ▶ Groundwater sampling at new wells completed
- ▶ Snap shot of In Situ parameters on all groundwater boreholes completed
- ▶ Groundwater sampling, all boreholes, commenced
- ▶ Review of Bore Network Depths, commenced
- ▶ Evaluation of stormwater connection nearing completion

### Tullamarine Planned Activities

- ▶ New Groundwater Well Sample Results Report [Underway]
- ▶ Ambient Air Testing [Underway]
- ▶ Develop Stormwater Concept Design with the Assistance of Community [Underway]
- ▶ Install Landfill Gas Extraction Wells on Mound 3 [Late 2017]
- ▶ Next groundwater technical review [Late 2018 / Early 2019], Technical Review for Auditor Review [TRAR]

Grey = task underway; Blue = task commencing

### **QUESTION: Why are there extra gas extraction pipes being installed – is there more gas production expected?**

**KIEREN:** There is already gas extraction being undertaken from the leachate wells in good quantities but extra vertical wells are expected to improve the flow rate of gas from the wells.

### **QUESTION: At what stage will community consultation begin for the stormwater plans and design?**

**KIEREN:** The reports from Golder are expected in the next few weeks and we will consult with both Friends of Moonee Ponds Creek (FOMPC) and the TLCCG forum.

**OLGA:** Cleanaway has already met with FOMPC to discuss their concerns.

**JEN:** It would be helpful if Cleanaway could indicate in their report on the design where community input was helpful in the design process.

## ITEM 4. GROUNDWATER SAMPLING (NEW BORE HOLES), KIEREN MCDERMOTT

Kieren gave an overview of the sampling that has taken place in the borehole (MB61L) which is within the buffer land adjacent to the landfill.

### MB61L Trend [1,2-DCE]



### Monitoring Results for 1,2-Dichloroethane

Date	1,2-Dichloroethane mg/L
20-Mar-13	0.09
17-Sep-13	0.13
22-Oct-13	0.13
06-Jul-15	0.11
10-May-16	0.016

### MB61L Location



The most recent Groundwater Technical Review for Auditor Review (TRAR) raised issues regarding the trend in readings for Volatile Organic Compounds (VOC) and the number of samples taken for the MB61L borehole. The final report was delivered in November 2016 and recommended further testing which has already been undertaken by Kleinfelder. These new results from two more rounds of testing were sent to TLCCG in May 2017 and show that there is a stable or downward trend in VOC levels in that borehole.

**QUESTION: Why is there such a significant drop (tenfold) in the 1,2 dichlorethane levels - is it fluctuating or has it been broken down?**

**KIEREN:** The drop is consistent with expectations of the chemical processes in groundwater contamination once the landfill was capped.

**JOSH/DAVE:** The chemical compounds undergo a process of degradation over time when dissolved in groundwater known as 'natural attenuation'. It was beyond the scope of the report to identify what the exact process for the degradation of 1,2 dichlorethane is or what the resulting chemicals from that degradation are, however, it did identify a reduction in concentrations over the past 3 years, which is an important factor in determining the presence of natural attenuation processes.

More sampling will be required to verify the trend into the future. However, this reducing concentration trend is considered consistent with the predicted outcome on the leachate plume as a result of constructing a landfill cap.

**QUESTION: The last sample was May 2016. When is the next due?**

**KIEREN:** The next round of groundwater sampling has begun so the results should be available soon and we can check the trend.

**[Note post meeting:** Cleanaway is in the process of preparing a Monitored Natural Attenuation Assessment of the Groundwater on key boreholes around the landfill including MB61L. The assessment will be available to the community for comment toward the end of the year.]

In response to *Action 220217\_1 Cleanaway to ask EHS Support for an explanation of the decision-making process in which it was determined that leachate extraction was not feasible*, EHS support provided a memo which was sent to the TLCCG members in May 2017. Kieren reported on the memo.

### **Leachate Trial Follow Up Question**

- ▶ *Transmissivity value in MB40 in upper end of marginal range.*
- ▶ *Why not keep pumping?*

### **Transmissivity Values Used**

- ▶ Pumping is viable if T value is greater than 0.074
- ▶ Pumping may/may not be viable if T value is between 0.0093 and 0.074
- ▶ Pumping not viable if T value is less than 0.0093

The Transmissivity values are guided by US standards.

## **MB40 Test Results      T value = m<sup>2</sup>/day**

- ▶ MB40 result, T value = 0.027
- ▶ Approx 2.1 litres was extracted from well during pumping.
- ▶ No evidence of LNAPL from waste during pumping.
- ▶ MB40 took 6 days to recover 83% of original thickness.
- ▶ Approx 1.7 litres entered the well from waste over a 6 day well period.

## **MB40 Findings**

The findings indicate it is not practical to pump the LNAPL at MB40,..  
..however Cleanaway plans to test again Jul/Aug 2017

## **References**

API, 2012. *LNAPL Transmissivity Workbook: A Tool for Baildown Tests Analysis and User Guide*. American Petroleum Institute. (API, 2012).

ASTM E2856 – 11, 2012. *Standard Guide of Estimation of LNAPL Transmissivity*.

ITRC (Interstate Technology & Regulatory Council). 2009. *Evaluating LNAPL Remedial Technologies for Achieving Project Goals*. Washington, D.C.: Interstate Technology & Regulatory Council, LNAPLs Team. [www.itrcweb.org](http://www.itrcweb.org).

### **QUESTIONS: Why can't we extract the LNAPL so that it cannot get into the groundwater or Port Philip Bay? If any of the LNAPL could be extracted would that speed up the degradation process?**

**ALEX:** The practicability assessments were undertaken to determine which recovery options were available that would materially increase degradation rates. It was concluded that it would take over 300 years to pump. However, the landfill gas extraction system will enable the LNAPL to be degraded much faster than it could be pumped.

The extraction process only removes LNAPL from the vicinity of the well and not the whole waste system. The amount of LNAPL that can be extracted from one well is low and restricted by the transmissivity and low recharge rates into the well so there would be no significant effect on the degradation rates.

### **QUESTION: Is the testing well in the wrong place?**

**ALEX:** Other wells tested across the landfill had less LNAPL than well MB40 and were not viable for pumping. The options considered that might speed up the process were discounted as they all required making more holes/damage to the cap and therefore carried much greater risks to the community and the workers from potential vapour emissions.

The LNAPL risk profile is mostly due to the surface area of the LNAPL and not the volume of the LNAPL. Until the surface area is reduced, there is no change in risk profile. The landfill gas extraction system will result in the highest reduction of the surface area.

**QUESTION: Could the wells with small amounts of LNAPL in them have an absorbent material installed in them to soak up any LNAPL and then be removed?**

**ALEX:** Using an oil absorbent material was considered in the past but there is a high spill risk at the surface associated with this process, which poses unacceptable risks for workers, the community and the environment.

**COMMENT:** *The community is being told that Cleanaway and their consultants are doing as much as they can to manage the LNAPL and that the bugs are doing a good job. But the community doesn't believe that and we don't want to wait for news of a catastrophe. All mechanisms should be used to remove, absorb, destroy the LNAPL as quickly as possible.*

**ALEX:** The transmissivity numbers in the borehole tests and the ability to extract the LNAPL is a reflection on the ability of that product to move in any direction. Based on that information, it has been concluded that the LNAPL shouldn't change and become more mobile.

**LACHLAN:** Cleanaway relies on and is satisfied with the technical advice from the consultants and we manage the risks accordingly. We have monitoring in place to manage these risks.

**ALEX:** Contingencies and triggers have been put in place to monitor the risks. The technical review also includes reviews of new technology which may be available in the future.

**QUESTION: Can you provide the initial papers that tested and proved the theory of natural attenuation for oils? Who did the original testing?**

**ALEX:** In the initial EHS reports the potential for natural attenuation was not considered significant – volatilisation was thought to be the more significant process for reducing LNAPL. The gas extraction system data analysed by EHS indicated that natural degradation was assisted by the gas extraction. Our numbers are based on site specific findings developed by EHS and not other research papers.

**Action 240517\_3:** *Cleanaway to check for research references related to natural attenuation and send to TLCCG members.*

**QUESTIONS: Are these results only for the MB40 well? Shouldn't there be more wells in the south and steeper side of the landfill site?**

**ALEX:** The other wells were tested but their Transmissivity was too low for further pumping. The results discussed were in relation to a specific question regarding MB40.

There will more tests undertaken in July/August based on the LNAPL thickness and transmissivity results. Mounds 1 and 2 and have already been tested as they were the priority. All these new tests will be in Mound 3 or outside the landfill in response to community concerns.

**COMMENT:** *The removal of 1.7L of LNAPL over 6 days shows that there is still some LNAPL moving and even though the movement is slow at least there is some LNAPL being removed.*

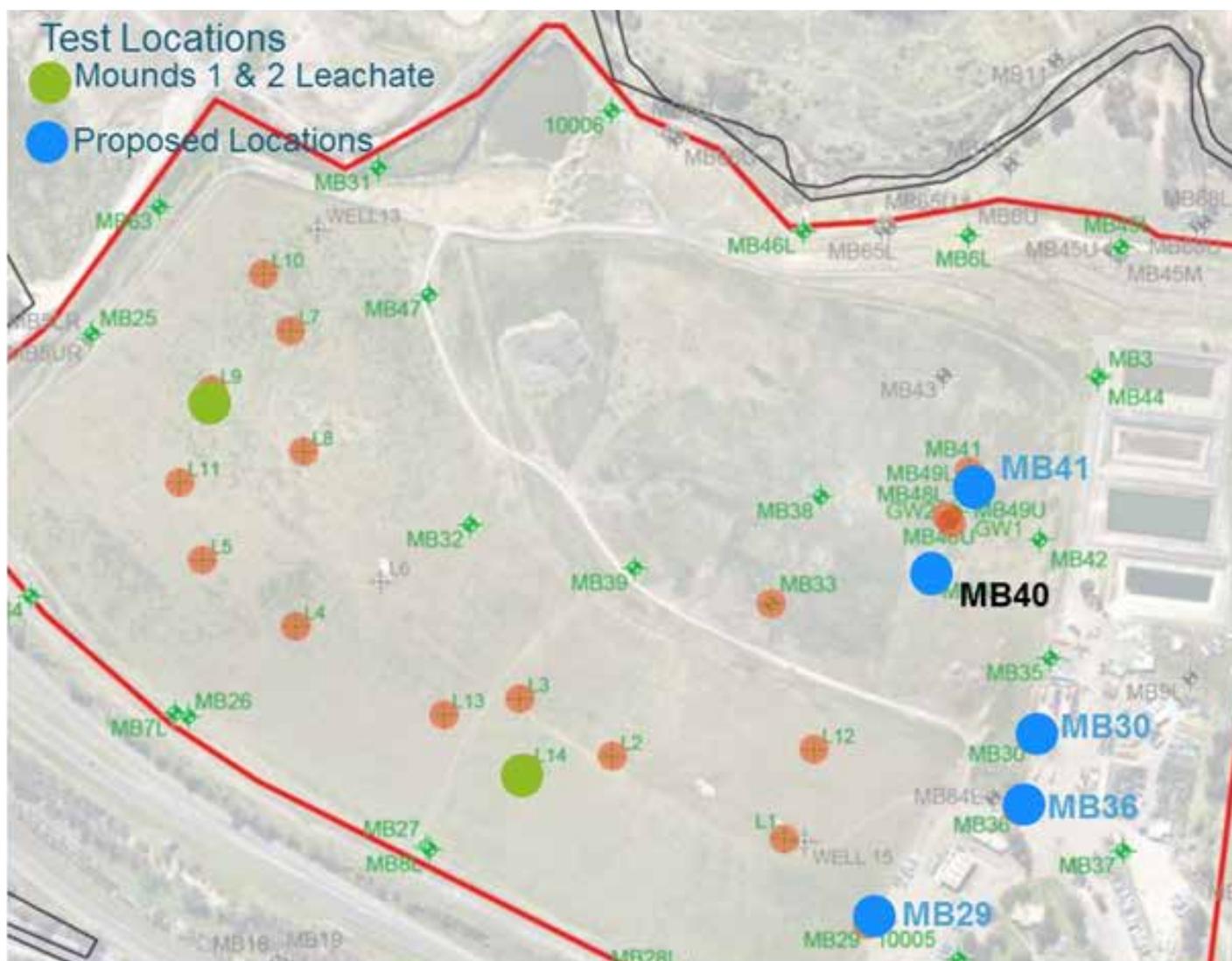
**QUESTION: What happens to the 1.7L of LNAPL that is extracted?**

**KIEREN:** It is removed offsite and incinerated.

**QUESTION:** Cleanaway maintains that the science is indicating volatilisation of the LNAPL and its destruction in the flare is significant in its removal. The measure of a chemical's toxicity is based on how much a person can safely take in a 3-hour period which is a short timeframe, so how can the current level of monitoring be acceptable? What is the risk level trigger for the community to evacuate because of toxic chemical emissions?

**KIEREN:** There is continuous flow, temperature and pressure monitoring on the flare and systems in place to notify of any failures in the flare system.

**JEREMY:** EPA does not require any sites to do any stack monitoring. Cleanaway is undertaking this monitoring in response to community concerns. There is no trigger level for evacuation in the State Environment Protection Policy (SEPP) Air Quality Management. The levels are based on an average over a year and are influenced by many natural variabilities making it very difficult to interpret.



## ITEM 5. UPDATE ON COMMUNITY-CHOSEN CONSULTANT REVIEW, ALISTAIR NAIRN

Alistair reported that EPA Victoria and the community were still waiting on the report from the US consultant who has been interrupted by a legal case in the US - leading to serious delays.

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## ITEM 6. OTHER ITEMS

### Flare Emissions reports

Jen thanked Cleanaway for following up on TLCCG member's concerns regarding the format and readability of reports but noted that there was still no explanation given for the differences in the last two flare emission reports from Kleinfelder and that the data was not presented in a comparative table format.

**KIEREN:** The first report was for the results of the flare stack emissions and the second report related to the flare stack efficiency and stack emissions making it very difficult to provide results that can be compared to each other. Future reports will be comparable to the latest report table.

**DAVE:** The reports used completely different technologies which cannot be compared against each other.

**COMMENTS:** *The formats of the two reports are still not satisfactory - the format needs to show the trends against the standards for both test methodologies. Each different test should still be able to have the emissions data compared against the relevant standard to show the trend.*

**Action 240517\_4:** *Cleanaway to investigate the format of the last two flare emission reports and if possible align in a table format illustrating trends in efficiencies.*

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**Next meeting:** The next meeting is scheduled for Wednesday October 18, 2017 (tbc).

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**Jen thanked everyone for their contributions.**

**Meeting closed 8.30pm.**