



**BLIGH
TANNER**

REVIEW OF SITE INVESTIGATIONS

Company. Burdekin Shire Council
Contact. Dr Nick Wellwood
Position. Director, Infrastructure, Planning and Environmental Services
Date. 27 May 2020
2019.0611

DOCUMENT CONTROL SHEET

DOCUMENT

Review of Site Investigations

JOB NUMBER

2019.0611

PROJECT MANAGER

Dr Michael Lawrence

CLIENT

Burdekin Shire Council

CLIENT CONTACT

Dr Nick Wellwood

VERSION	AUTHOR	REVIEWED	APPROVED	DATE
Draft	Michael Lawrence	Sean Hinton	Michael Lawrence	27/05/2020

Cover Image: Nelsons Lagoon Borefield

Bligh Tanner Pty Ltd

ABN 32 061 537 666

Level 9

269 Wickham Street

PO Box 612

Fortitude Valley

Qld 4006 Australia

T +61 7 3251 8555

F +61 7 3251 8599

blightanner@blightanner.com.au

blightanner.com.au

EXECUTIVE SUMMARY

Per and Poly Fluoroalkyl substances (PFAS) were detected in the Ayr drinking water supply during statewide screening by Queensland Health. Following the detection, investigations of likely sources were undertaken. The Ayr and Home Hill fire stations have been identified as contaminated sites.

QFES has engaged AECOM as part of a 6-stage site investigation process. The reports referenced in this response are "Detailed Site Investigations" (DSIs) for these sites that are intended to be Contaminated Land Investigation Documents as Stage 3 of the process. The scope of the detailed site investigations is to determine the contamination on the site, and to the site boundaries. The DSIs have since been certified by a contaminated land auditor as meeting the requirements of the *Environmental Protection Act 1994* as Stage 4 of the assessment process.

Bligh Tanner has reviewed the Detailed Site Investigations, and the Contaminated Land Auditor Certification reports.

The DSIs clearly identify that soil, surface water and groundwater at Ayr and Home Hill are contaminated with PFAS.

In the case of Ayr, the groundwater contamination is between 7000 and 9150 times the Australian Drinking Water Guidelines (ADWG) health guideline values. This is highly significant as the community's groundwater is extracted for human consumption, and there is no current treatment process for either community that will reduce the contamination, if present. Home Hill groundwater was contaminated at ~725 times the ADWG health guideline value.

The Home Hill Detailed Site Investigation report is reasonable and should be followed up with detailed investigations to determine the off site migration of PFAS, as is the intent of the Stage 5 report. It is noted that the Home Hill report specifically identifies the possibility for PFAS migrating beyond site boundaries at concentrations that may exceed human health and ecological guideline values.

The Ayr report differs from the Home Hill report in that surface water samples were able to be collected, and on-site hydrant and potable water taps were also tested. It also differs in that while the groundwater concentrations are an order of magnitude higher, the statements regarding the potential for off-site migration are more limited and less explicit. However, there is an acknowledgment that "local flow is likely to be towards the southeast towards Nelson's Lagoon". Further, it notes that "council has water supply bores in that area and that they may influence groundwater flow". As such, much of the DSI is reasonable.

Had the detailed site investigation reports limited their conclusions to the sites, and the likelihood for offsite migration (and thus the need for further work) they would meet the requirements. However, the Ayr report then goes on to speculate about the source of PFAS in tap water and make inferences that are poorly justified.

The focus of the majority of the discussion is the Ayr detailed site investigation and CLA certification report.

In the view of Bligh Tanner, the detailed site investigation for the Ayr site is flawed in that it does not clearly articulate the significant likelihood of a plume of PFAS migrating through groundwater down gradient toward known drinking water bores that show evidence of PFAS contamination. Rather the report authors have chosen not to engage with Council to obtain pertinent information that reasonably should have been considered.

The Contaminated Land Auditor then goes further than would be expected in an audit report. While at some points the CLA certification report identifies the need to identify PFAS migration offsite, it also provides significant extrapolations of the data, and interpretations that are not based on the evidence provided in the site investigation. Significant conclusions of the CLA are therefore arguable.

However, if appropriately detailed Stage 5 investigations are undertaken to characterise the extent and direction of off-site migration of the contaminants, the concerns about the reports are less relevant.

GLOSSARY

Term	Definition
AFFF	Aqueous firefighting foam – historic foams were a highly concentrated source of PFAS
CLA	Contaminated Land Auditor
CLID	Contaminated Land Investigation Document
DES	Department of Environment and Science
DSI	Detailed Site Investigation
NEMP	National Environmental Management Plan
PFAS	Per and polyfluoroalkyl substances (a broad grouping of all such chemicals)
PFHxS	Perfluorohexane sulfonic acid – one of the broader PFAS grouping with a specific health guideline value as a sum with PFOS
PFOA	Perfluorooctanoic acid - one of the broader PFAS grouping with a specific health guideline value
PFOS	Perfluorooctane sulphonic acid one of the broader PFAS grouping with a specific health guideline value as a sum with PFOS
QFES	Queensland Fire and Emergency Services
QH	Queensland Health

1 REVIEW OF DETAILED SITE INVESTIGATION AND CONTAMINATED LAND AUDITOR CERTIFICATION REPORTS FOR AYR AND HOME HILL

1.1 Overview

The fire stations at Home Hill and Ayr have been identified as a source of significant PFAS contamination. This has resulted in QFES developing a 6-stage approach to conduct an environmental investigation. The reports referenced in this document are the "Detailed site investigations" on the sites, which are Stage 3^{1,2}. The site investigations have subsequently been certified by a contaminated land auditor, as part of Stage 4^{3,4}.

QFES have commissioned AECOM to develop detailed site investigations (DSIs) for the Home Hill and Ayr Fire Station sites. The objectives of the DSIs were to characterise potential PFAS impacts in soil, groundwater, tap water, surface water and sediment including concentration and distribution, "within and at the boundaries of" the sites to assess the potential risks to human health and the environment and to update the PFAS conceptual site model (CSM).

That is, the scope of the site investigations was limited to the presence of PFAS on the sites.

It is well known that PFAS, specifically the PFAS compounds in aqueous firefighting foams (AFFFs), are highly mobile. Assessment of the impacts offsite are indicated to be a part of the Stage 5 response (if directed by DES). While both the Home Hill and Ayr conceptual site models indicate the potential for offsite migration, the statements for Home Hill are more explicit (despite groundwater having an order of magnitude less PFAS detected.)

Recommendations regarding the identification and management of PFAS can be found in the PFAS NEMP 2.0.

1.1.1 Findings of the Detailed Site Investigations

Home Hill

- 1) There is PFAS contamination of the soil (up to 0.22 mg/kg) and groundwater (0.5 µg/L) at the Home Hill Fire Station site
 - a. **Soil contamination exceeds the residential use – accessible soil health guideline value⁵**
 - b. Soil contamination is within the commercial and industrial land use health guideline value⁵
 - c. **Groundwater contamination is 725 times the Australian Drinking Water Guideline Health Guideline Values⁶**

Ayr

- 2) There is significant contamination of the soil (0.418 mg/kg), surface water, and groundwater (64.1 µg/L) on the Ayr Fire Station site (e.g. an order of magnitude higher in groundwater)
 - a. **Soil contamination exceeds the residential use – accessible soil health guideline value⁵**
 - b. Soil contamination is within the commercial and industrial land use health guideline value⁵
 - c. **Groundwater contamination is 7000 to 9170 times higher than the Australian Drinking Water Guideline Health Guideline Values⁶**

The site investigation report has clearly identified that the QFES sites are hot spots with significant contamination of soil and groundwater with PFAS at the site from the historical use of aqueous firefighting foam on the site.

PFAS, specifically the compounds used in aqueous firefighting foam, are well known to be mobile in groundwater⁵ and the environment, for example as seen at sites several kilometers away from the main contamination zones of the Amberley, Oakey and Williamstown air force bases.

1.2 PFAS at Ayr

PFAS was identified in high concentrations at the Ayr site in soil, groundwater, surface water and tap water.

The DSI executive summary¹ indicates that PFAS “may migrate” offsite. The Contaminated Land Auditor (CLA) report⁴ concurs and indicates that an offsite investigation is warranted. That is, a Stage 5 assessment as identified in the DSI should be conducted.

In the opinion of Bligh Tanner, the detailed site investigation and contaminated land auditor (CLA) have both attempted to minimise the implication that the QFES contaminated site may have impacted the drinking water supply.

As the DSI report and CLA certification report only determined PFAS on site, such speculation regarding off site transport belongs in the Stage 5 report, and should not be speculated upon without evidence.

Despite minor inferences of the potential for offsite contamination, there appears to have been no effort to engage with Council to understand the location or extent of contamination of the drinking water supply. Rather, there appears to be an effort to minimise the potential link from the highly contaminated QFES site to the town drinking water supply.

Given that there was a meeting in October 2019 with the Director-General Department of Premiers and Cabinet, (minutes attached, Appendix A) where the attendees included senior executives of QFES, DES, Premier and Cabinet and Council and specific information relevant to these reports was tabled and discussed. Ignoring the information provided is a major oversight that undermines the credibility and applicability of the reports.

Information that could have been considered included:

- Council mapping indicating stormwater infrastructure (and stormwater flow directions to Nelsons Lagoon)
- Borefield mapping overlain with PFAS results (clearly identifying the contaminated borefield and specific results for contaminated bores).

While the detailed site investigation report was written with a scope of determining the extent of contamination on the site, and at the site boundaries, the report then goes on to make various statements regarding potential off site receptors.

1.2.1 Detailed Site Investigation – Ayr

In our opinion, the detailed site investigation report:

- **Does identify contamination of the soil and groundwater**

The point source contamination of the Ayr site is potentially as severe as the Oakey Airforce Base. See page 199 of

<https://www.defence.gov.au/Environment/PFAS/Docs/Oakey/Reports/AACOakeyPMAP.pdf>

which is a map prepared by AECOM.

It is noted that at Oakey, the contaminant plume, also from the application of PFAS containing AFFFs has migrated several kilometres from the primary contamination site through

groundwater flow. In the view of Bligh Tanner, it is almost certain that there is a PFAS contamination plume emanating from this site, spreading through the groundwater at Ayr. It is therefore imperative that Stage 5 as noted in the QFES staged approach is undertaken immediately, and comprehensively to identify the current extent of the expected plume, the expected future migration, and the impact of the contamination across a broader area within Ayr. The outcome of the Stage 5 report should then form the basis of future remedial actions that will protect the health of the Ayr community.

- **Does not describe the local hydrogeology to a sufficient level.**

The conceptual site model also notes that there are potential alternate PFAS sources that may have contaminated the drinking water bores. There is no acknowledgement that the actual concentrations in groundwater at the QFES site are more than **7000 times higher** than (and **up to 9157 times higher** e.g. 64.1 µg/L) the ADWG drinking water health guideline value. While there are certainly other potential sources of PFAS in general, when a site is this significantly contaminated, suggesting other sources without justification is a diversion.

- **Infers groundwater flow by plotting “inferred groundwater contours” that connect bore levels of different measured water depths to the same contour line.**

The current inferred flow is coarse. This is insufficient and needs to be fully characterised in Stage 5. We suggest that the flow direction indicated by the 4 depths measured is potentially more directed towards the Nelsons Lagoon borefield than is acknowledged.

- **Demonstrates no understanding of the Council stormwater system**

The detailed site investigation states that stormwater/ surface runoff is through drains onto Queen Street. No further analysis is provided about where that stormwater flows, however, the conceptual site model identifies Kalamia Creek as the receiving environment for stormwater and sediment.

In our view, this should have been challenged by the Contaminated Land Auditor.

The mapping provided by Council to QFES demonstrates that stormwater actually flows down Queen St towards Parker Street where it enters stormwater drains that discharge directly to Nelsons Lagoon. That is, there is a clear stormwater runoff pathway by which PFAS washed off the QFES site can contaminate the borefield. Kalamia Creek is shown to be in a separate stormwater catchment.

- **Made no attempt to identify the location of the contaminated water supply bores**

The DSI report provides a link to the Qld Health PFAS website. The relevant section for Ayr directs readers to the Council website, where there are press releases (e.g. 26 November, 17 Dec 2019, predating revisions of this report) that identify Nelsons Lagoon borefield as the location of the contaminated bores.

Given Council has shared information with QFES at the highest level, arguing that the “location of the off-site water supply bore impacted with PFAS is not known” demonstrates that no effort was made to identify the contaminated bores.

The DSI concludes that:

“PFAS detected in tapwater is understood to be sourced from water supply bores in the Nelsons Lagoon Borefield or South Ayr Borefield. As the location of the off-site water supply bore impacted with PFAS is not known, the potential source cannot be ascertained.”

More appropriate wording may have been:

“No attempt was made to identify the location of the contaminated town water supply bores. Given the known mobility of AFFF sourced PFAS, the various mechanisms and extent of migration of PFAS from the highly contaminated site need to be identified. This will be the focus of the Stage 5 investigations.”

1.2.1.1 Conceptual Site Model:

- Identifies PFAS in tap water as possible
- Identifies PFAS in surface water as possible.
- Identifies PFAS in creek sediment as possible.

The CSM infers offsite transport, as would be expected. As such, a detailed Stage 5 investigation is warranted,

1.2.2 Contaminated Land Auditor Certification Report

The detailed site investigation has been audited by a contaminated land auditor (CLA) who has certified that the detailed site investigation meets the requirements of the EP Act S389.

The CLA report states that the report meets the stated aims, which is constrained to contamination on site, and at the site boundaries, and assesses the site for suitability to continue to be used for commercial/ industrial purposes. It also goes on to state the following:

*However, based on the identification of elevated contaminant concentrations (sum of PFOS & PFHxS) greater than human health and ecological assessment criteria in all four on-site groundwater monitoring bores, **further (offsite) investigation is warranted.***

The off-site investigation should seek to confirm (or otherwise) to what extent impacted groundwater (and potentially surface water) has migrated beyond the site boundary and if so, whether contaminants have migrated off-site at concentrations likely to pose an unacceptable human and/ or ecological health risk to sensitive receptors located downgradient of the site. Any additional investigation should also seek to determine any connectivity between the shallow aquifer (Quaternary alluvium deposits) at the site and down-gradient users of the Burdekin River Alluvium aquifer in particular.

This is listed in the detailed site investigation as the intent of Stage 5.

Bligh Tanner agrees with the executive summary – there is a high likelihood that there has been significant migration of PFAS from this site over the past 18 years (consistent with other AFFF PFAS contaminated sites). Given that Nelsons Lagoon is down gradient of the contamination source, the extent of the contamination plume emanating from the QFES site should be fully investigated.

However, there are a number of speculative aspects to the auditor's report that are not based on an assessment of the evidence provided in the Detailed site investigation.

For example: the auditor states:

*"Given it is understood tap water is not sourced on site, rather supplied to the site as a reticulated source by Burdekin Shire Council from the Ayr Water Supply network (bores located at Nelsons Lagoon (6 bores), South Ayr (12 bores) and Ayr Council chambers (1 bore)), **the detections identified are not deemed to be directly associated with site activities or associated with the detectable concentrations of PFAS observed in shallow site groundwaters.***

*Although PFAS compounds have been detected in shallow groundwater underlying the site during this investigation, **the Auditor considers there to be a relatively low likelihood that PFAS at the site has impacted upon the town water supply** given the Ayr water supply bores are either located up/ cross gradient of the site, or, in the case of the Nelsons Lagoon borefield, over 700 m away from the site boundary. Thus **there is a perceived low likelihood that contamination sourced from the site could have migrated, at the observed concentrations, to the Nelsons Lagoon borefield.***

The Auditor acknowledges the comments above are based on interpretation of existing limited information only and considers that further off-site investigation to fully delineate PFAS impacts in groundwater beyond the site boundary and determine if the aquifer in which the water supply bores is screened has been impacted by site activities is warranted, in order to fully close out this potential exposure pathway."

These speculative statements are contrary to the role of a contaminated land auditor. In general, auditors should normally assess compliance with requirements or otherwise, suggest improvement opportunities where appropriate, but should never express unsubstantiated opinions.

Given that Stage 5 of the assessment process as stated in the detailed site investigation is for an assessment of offsite impacts, the CLA's statements that pre-empt Stage 5, and lead the upcoming investigation to "fully close out this potential exposure pathway" are leading, unjustified, and should preclude this auditor from advising on the scope of the Stage 5 investigation of offsite migration of the contaminants.

These types of statements are beyond the scope of a typical contaminated land auditor certification report.

There are two likely scenarios whereby PFAS is likely to have migrated offsite.

- 1) Stormwater runs off from the QFES site onto Queen St. From here it flows towards Parker Street where it enters the stormwater drains that discharge directly into Nelsons Lagoon. (See Flood Study Map, tabled in October 2019).
- 2) PFAS migrates through groundwater to the Nelsons Borefield.

While the Groundwater hydrology is not properly defined in either the DSI, or in the CLA report, the groundwater flow is broadly inferred to flow to the South East in the broad direction of the Nelsons Lagoon Borefield.

A third possible scenario is direct application of 3M Light Water firefighting foam within Nelsons Lagoon itself (anecdotal and unable to be substantiated). However, this was noted during the meeting on October 24, 2019, and in the opinion of Council representatives present, was acknowledged by the Director, Scientific Branch as possible.

Bligh Tanner has previously undertaken an assessment of the speciation of PFAS in the drinking water supply at Ayr. That analysis identified that the PFAS suite that was present was from an electrochemically generated formulation consistent with the known signature of 3M Light Water (the specific foam used by QFES).

In the opinion of Bligh Tanner, the presence of PFAS in the groundwater at the Ayr fire station at between 7000 and 9500 times the drinking water health guideline value upgradient of the Nelsons Lagoon borefield presents a significant health risk to the Ayr community.

2 CONCLUSIONS & RECOMMENDATIONS

The detailed site investigations, while arguable in some respects are generally appropriate given the stated limitation to identify the extent of contamination on the site and at the site boundaries.

The following facts are known.

- AFFFs known to contain PFAS were stored and used (applied to the ground) in training on both sites
- Groundwater at both Home Hill and Ayr is shallow (approximately 4 m at Ayr and 8m at Home Hill)
- At Home Hill, groundwater is contaminated at more than 700 times the Australian Drinking Water Guidelines health guideline value.
- At Ayr, the contamination is at least an order of magnitude higher with concentrations in triplicate samples between 7000 and 9150 times the ADWG health guideline value.
- PFAS are mobile through the soil profile, and especially through groundwater.
- Shallow groundwater is disinfected and supplied as drinking water in both Ayr and Home Hill.
- Nelsons Lagoon is only 700 m from the confirmed high-level contamination at the Ayr fire station site.
- Groundwater flow from the contaminated site is in the direction of Nelsons Lagoon.
- The Ayr Fire Station is within the Nelsons Lagoon Stormwater Catchment (council flood mapping)
- Stormwater and surface water drainage from the Ayr fire station site is onto Queen St
- There is built stormwater infrastructure that intercepts and transfers stormwater from the corner of Parker and Queen St directly into Nelsons Lagoon.
- Drinking water for Ayr was predominantly sourced from 6 water supply bores located within Nelsons Lagoon.
- The groundwater at Nelsons Lagoon is contaminated with PFAS.

Therefore, given the above facts, Bligh Tanner confidently concludes that both sites are likely to have generated significant PFAS contaminant plumes that are migrating from the site.

The Stage 5 assessment is clearly required for both Ayr and Home Hill.

A competent and complete Stage 5 report for both Ayr and Home Hill would be expected, at a minimum, to clearly identify the local hydrogeology of the underlying aquifer, and identify the vertical and lateral extent of any PFAS plume in the groundwater surrounding the primary sources of contamination.

3 REFERENCES

- 1 AECOM. PFAS Detailed Site Investigation – Ayr Fire Station, 47-49 Soper Street, Ayr, Queensland. (AECOM, Fortitude Valley, 2020).
- 2 AECOM. PFAS Detailed Site Investigation Home Hill Fire Station, 83 Tenth Avenue, Home Hill, Queensland. (Fortitude Valley, 2020).
- 3 Sciences, E. E. Auditor Certification Report and Statement of Reasons: Home Hill fire station, 83 Tenth Avenue, Home Hill, Qld. (Newstead, 2020).
- 4 Sciences, E. E. Auditor Certification Report and Statement of Reasons: Ayr fire station, 47-49 Soper Street, Ayr, Qld. (2020).
- 5 Zealand, H. o. E. A. a. N. PFAS National Environmental Management Plan Version 2.0. (Commonwealth of Australia, Canberra, 2020).
- 6 NHMRC & NRMCC. *Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy*. (Commonwealth of Australia, 2011).

APPENDIX A MEETING MINUTES

MINUTES

Meeting: Burdekin Shire Council PFAS issues

Date: 24/10/2019

Cr Lyn McLaughlin Mayor – Burdekin Shire Council
 Mr Terry Brennan CEO – Burdekin Shire Council
 Dr Nick Wellwood Director Infrastructure and Planning – Burdekin Shire Council
 Dr Michael Lawrence Associate Director – Bligh Tanner, for Burdekin Shire Council
 Mr Dave Stewart Director General – Department of Premier and Cabinet
 Mr Adrian Jeffries Executive Director – Environment Policy Department of Premier and Cabinet
 Present: Ms Megan Stiffler A/Assistant Commissioner for Fire and Rescue Service Directorate- Queensland Fire and Emergency Services
 Mr Adam Stevenson A/Deputy Commissioner – Queensland Fire and Emergency Services
 Dr Michael Logan Director Scientific Branch – Queensland Fire and Emergency Services
 Dr Suzanne Huxley A/Executive Director, Health Protection, Queensland Health
 Mr Andrew Connor Executive Director – Investigations – Department of Environment and Science

Item	Minute
1	Introduction from Mayor Burdekin Shire Council: Appreciate the time given to attend the meeting. Burdekin Shire Council is looking for a way forward. Council understands that the use of PFAS containing firefighting foam was previously considered best practice. Council is not looking to assign blame but noted that firefighting foam was the most likely source of contamination. Rather, Council needs assistance. Noted that since Erin Brockovich came to Queensland, that there has been increased customer interest and contact to council. At this stage Council has not engaged with the media and has tried to provide information and work cooperatively with regulators. DG Stewart indicated that Government is also looking for a shared pathway forward.
2	Burdekin Shire CEO – the Nelsons Borefield has historically provided up to 80% of the water supply for Ayr. The bores were considered high quality and require no treatment other than chlorine. The identification of PFAS in 2018 has resulted in the need to remove 2 of the 6 bores from service has had an impact on the ability to supply water. The loss of capacity has required council to reduce system pressures (to reduce consumption) and has also resulted in reduced system pressure. This reduction in pressures is negatively impacting firefighting flows. It was noted that there has been significant expense in monitoring, and in identifying and developing alternate bores at Conlan St. However, the high capacity central bores in Ayr are instrumental in the current network configuration. Alternate supply options include expanding Racecourse Bores, but this would require treatment for Fe and Mn. Most alternate borefields are likely to require a network reconfiguration. It was also noted that the current government policy of immediately notifying a detection of a chronic health parameter without confirmation has had negative impacts and requested a review of this policy.
3	Burdekin Shire Council -Director Infrastructure Services – reiterated the technical challenges of the loss of the most contaminated bores from the Nelsons Borefield. Maps of Nelsons Borefield in relation to the QFES site were tabled and discussed. Operationally, some of the Nelsons Borefield bores can be operated and the total PFAS maintained below the ADWG Health Guideline Value. However, it is considered likely that over time the contaminant plume may migrate and result in other bores becoming unusable. Council has concern that the current health guideline value for PFAS may be reviewed and lowered in line with several US states. Council has considered treatment, but the technical challenges are complex, and will result in a contaminated waste. Abandonment of the borefield is the best long term option (when there is an alternate supply available).

Item	Minute
4	Executive Director -Investigations – Department of Environment and Science. PFAS is complicated with regard to identification of sources. Noted that the bores are currently being operated in a way that maintains the water supply under the ADWG Health Guideline, but there is uncertainty as to whether this will remain the case. Noted that the firefighting foam is an obvious source, but investigations are continuing. Expects a report quite soon. Mayor McLaughlin indicated that there is a hot spot at the QFES site and has concerns about the ongoing monitoring and management costs to council. Bligh Tanner raised that there is also a potential emerging environmental issue with continued use of Nelsons as this will result in the release to environment above the 99% species protection value.
5	QFES – A/Assistant Commissioner – Department is going through a defined process, verified by Contaminated Land Auditors regarding determining the relative contribution. Director Scientific Branch – Described the Contaminated Land Investigation process, including independent Audit of the appropriateness of the process. Indicated that use of these foams ceased in 2003. Council raised the question about direct application of foam into Nelsons Borefield for fire training, and QFES indicated that all potential uses were being followed through. Indicated that 20L of foam would require 11000ML dilution to reduce concentrations below ADWG Health Guidelines, so small uses can be significant contributors to contamination.
6	Director General Premier and Cabinet: Looking for solutions so that they can be presented to Treasury and or Cabinet. Requested an indication of timeframe by when Council estimated Nelsons Borefield may need to be abandoned.
7	Director Infrastructure Planning and Environment -Burdekin Shire Council indicated 18 months, but with high uncertainty. E.g. continued use of the bores would likely result in an exceedance. Dr Logan and Dr Lawrence noted that PFAS would be expected to migrate over time, and that while Bore 6 is currently under guideline values, that the expectation would be that concentrations will likely increase. Council noted that there were options such as treating the Racecourse bores, but this was estimated at \$18-20M. Council tabled costings of potential options going forward, including new bores, system reconfiguration and or treatment. Noted that the costings are +/- 20%.
8	The Director General Premier and Cabinet had to leave to attend another meeting
9	Executive Director – Environment Policy – Department of Premier and Cabinet indicated a desire to coordinate response across government noting that this is a wider issue. Discussion ensued – Director Scientific Branch QFES indicated QFES will follow the Contaminated Land Investigation process and take actions as required by the Regulator. Infrastructure Planning and Environment BSC indicated that the current government policy regarding immediate notification is problematic – e.g. the QFES tap where it was subsequently proven that the town water supply was not contaminated. CEO Burdekin Shire Council indicated the desire to work together and share information, but that the media are investigating. A/Assistant Commissioner QFES also indicated that communication should be co-ordinated so that all parties are working together. Executive Director – Environment Policy – Department of Premier and Cabinet - Reiterated that joint statements are the most desirable outcome.
10	Director Infrastructure Planning and Environment BSC – indicated that a working committee on the science, and a working committee for infrastructure choices are required.
11	Executive Director Investigations noted that there are legacy issues in sewage treatment, and that prevention is the best option.
12	Executive Director Environment Policy indicated that he will liaise with CEO Burdekin Shire Council and work towards identifying a preferred solution so that costings can be presented to Treasury.

Meeting closed 2:40pm

Brisbane

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley
QLD 4006, Australia

T +61 7 3251 8555
F +61 7 3251 8599
blighttanner@blighttanner.com.au
www.blighttanner.com.au

Sydney

Level 32, 101 Miller Street
North Sydney
NSW 2060 Australia

T +61 2 8019 7221
blighttanner@blighttanner.com.au
www.blighttanner.com.au

**BLIGH
TANNER**