INQUIRY INTO PERFORMANCE OF THE NSW ENVIRONMENT PROTECTION AUTHORITY

Organisation: Date received: Hunter Community Environment Centre 29/08/2014

Hunter Community Environment Centre.

Submission to the Performance of the NSW Environment Protection Authority Inquiry

Legislative Council inquiry conducted by the General Purpose Standing Committee No. 5.

The Director General Purpose Standing Committee No. 5 Parliament House Macquarie St Sydney NSW 2000

29^h August, 2014

Dear Director,

The Hunter Community Environment Centre (HCEC) welcomes the opportunity to contribute our submission to this Inquiry, and offer our support and co-operation to the Committee members in their investigations and deliberations.

We wish to express our support for the Committee's inquiry into the organisational culture and performance of the Environmental Protection Agency (EPA), as per the terms of reference agreed by the Parliament on 19th June.

It is the strong belief of the Hunter Community Environment Centre that this inquiry is in the best interest of the people of New South Wales, and will improve the EPA's capacity to serve as a strong and effective environmental regulator that can protect community health and act in the interest of a safe and healthy environment. We further believe that this inquiry is necessary for restoring community confidence in the EPA as an institution, given that its performance in recent years has fallen short of community expectations.

As such, we look forward to assisting the Committee in their investigation wherever possible. In particular, we note that as part of the Inquiry, a public hearing has been scheduled in the Hunter Valley for Monday 10^h November 2014. We believe that hearing will better enable key individuals and groups in our region to provide valuable information to the inquiry, and also allow Committee members to see the environmental impacts of coal dust pollution firsthand. The Hunter Community Environment Centre is happy to assist in arranging the site visit if required. In addition, we are available to brief the Committee or Committee members on the background regarding the coal dust pollution, and the community, industry and agency studies on particulate pollution in the Hunter, at your convenience between now and the hearing date.

Although we support and endorse many of the general recommendations made by stakeholder groups in the affected case study areas, and specifically all of the recommendations forwarded in the Nature Conservation Council submission, we have concentrated our submission on Section 1(a)(ii) of the Terms of Reference, specifically:

EPA investigations and public statements about the effects of coal dust pollution in the Hunter

Recommendations

In brief, HCEC gained access under freedom of information laws to correspondence between the EPA and other government agencies on coal dust pollution studies conducted in the Hunter Valley rail corridor in 2012-2013. We maintain and can demonstrate that these documents reveal a systematic public relations effort by the EPA to conceal the extent and impact of pollution caused by uncovered coal trains passing through residential areas.

In undertaking this inquiry, we call on the Committee to:

- Confirm that the handling of the coal dust pollution studies by EPA staff, including the CEO, constitutes **a breach of public trust**.
- Confirm that the coal dust pollution studies have demonstrated uncovered coal wagons are significant sources of particulate pollution in the rail corridor with environmental and public health impacts.
- Confirm that the current regulatory arrangements for the management of particulate pollution for coal trains are inadequate to meet the performance objectives of the EPA under the Act.
- Recommend that the EPA direct all coal rail operators to **urgently implement** appropriate dust mitigation strategies, including the covering and washing of coal wagons.
- Recommend that the EPA initiate action against ARTC for failure to adhere to the conditions of their licence relating to their required pollution reduction program.
- Recommend to the Planning Minister that no major developments of coal haulage and export coal facilities in Newcastle and the Hunter Valley be approved until an independent and accurate assessment of existing ambient air quality is obtained.

Background

The Australian Rail Track Corporation (ARTC), a Commonwealth-owned corporation, is licenced by the NSW EPA for pollution caused by trains hauling coal from Hunter Valley mines to the Newcastle Port along the rail corridor for which ARTC holds a lease.

Under the terms of this licence, the EPA required ARTC to install monitoring stations along the Hunter Valley line to monitor dust generated by different train movements, and to report back to the NSW EPA and the public. The aim of this activity was investigate the levels of dust generated by coal train movements in the Hunter. The company was to monitor particle pollution adjacent to the rail corridor during February and March 2012.

Technical reviews of the company's report on this monitoring were critical of the methodology, data analysis and conclusions. A requirement for an additional monitoring program was issued, requiring air quality monitoring from November 2012 through to January 2013.

One week after the release of ARTC's second report, the Hunter Community Environment Centre (HCEC) was emailed another, earlier version of the report from an anonymous source. The leaked version (dated 24 ^h May) contained conclusions that fundamentally contradicted those in the publicly released version (dated 30 ^h May). In the six days between the 24/5 and 30/5, fifteen of the report's eighteen conclusions were changed. In three instances, the conclusions were inverted to delete or insert the word 'no' or 'not ' to reverse the report's finding. Five conclusions were modified to significantly reduce the pollution levels associated with coal trains. Three new conclusions were added to the 30/5 version, minor changes were made to three and one conclusion was deleted.

Based on the inconsistencies between these two reports, HCEC launched a freedom of information inquiry to obtain "all documents relating to the Australian Rail and Track Corporation Pollution Reduction Program from September 2012 to June 2013". In November 2013, HCEC received access to over 3,000 pages of correspondence.

The correspondence between officials in the EPA, the Office of Environment and Heritage (OEH), the Environment Minister's office, NSW Health and the ARTC demonstrates that pollution monitoring studies were released despite internal criticism by technical reviewers, that the EPA had pre-determined how to communicate the findings before receiving the reports, and that public assurances made by the Environment Minister and EPA Chief Executive directly contradicted the findings of the technical reviews.

The correspondence and the inconsistencies between draft and final reports demonstrate our two central claims that:

- 1. The EPA systematically misrepresented the findings of pollution monitoring studies and has acted to obscure the conclusion of the reports that coal trains cause a significant amount of particle pollution, with directly attributable impacts on community health.
- 2. ARTC appear to have been operating in breach of their licence conditions throughout 2012 and 2013. The objectives of their operating licence have not been addressed; their monitoring studies have been criticised, discredited and rejected by the NSW Government as inadequate.

Further Information

Please note, that the correspondence between several government departments relating to the coal pollution licence conditions held by the Australian Rail Track Corporation obtained by the Hunter Community Environment Centre under freedom of information laws has not been included as an appendix. For the accessibility of the Committee, however, these documents can be freely and readily downloaded here: <u>http://miningleaks.com.au/hunter-coal-dust-cover-up</u>. We have also provided a guide to the documents that we have appended to this submission as Appendix G.

We provide the following documents in support of our submission:

- **Appendix A:** Results of a residential survey of 580 households in Newcastle suburbs in June 2012, which sought to identify community knowledge, concerns and values relating to the proposed fourth coal terminal. This report was published as "Sick of Coal: Community Attitudes Towards the Fourth Coal Terminal in Newcastle" in August 2012.
- Appendix B: Results of a residential air quality study which monitored particle pollution levels in residential areas in Newcastle and the Lower Hunter. This report was published as "Coal Dust in Our Suburbs: A Community-Led Study of Particle Pollution in Newcastle and the Lower Hunter Coal Train Corridor" in March 2013.
- **Appendix C:** The results of particle pollution monitoring undertaken beside the Newcastle coal corridor and released as briefing paper "Coal train pollution signature study" in August 2013.
- Appendix D: A guide to World's Best Practice to minimise particle pollution from coal trains, terminals and stockpiles, prepared by the Hunter Community Environment Centre based on an extensive literature review of national and international guidance and guideline products. This review was initially published in June 2013 as "Protecting Communities from Coal Dust: A Guide to Best Practice Dust Minimisation". This guide is a working document subject to scheduled and ongoing revision.
- **Appendix E:** A tabular comparison of the conclusions in the draft version (24/05/2013) and final (published) version (30/05/2013) of the ARTC's second coal pollution report. This appendix also highlights the difference in the data records used the two reports.
- **Appendix F:** Briefing notes from University of Newcastle, Public Health Academics meeting (7/6/13) to review the ARTC PRP Study May 2013, compiled by Assoc/Prof Nick Higginbotham.
- **Appendix G:** HCEC's prepared page-by-page guide to the documents obtained under the freedom of information inquiry and a guide to their significance, published in January 2014.

Please do not hesitate to contact me with any questions or clarifications - I can be contacted via email or via telephone on at your convenience.

Thank-you in advance for your consideration, and on behalf of the Hunter community, I look forward to the opportunity to support the Committee and Committee members in this vital work.

Sincerely, John Mackenzie.

Dr John Mackenzie Community Liaison Hunter Community Environment Centre

Submission to the Performance of the NSW Environment Protection Authority Inquiry

1. About the Hunter Community Environment Centre (HCEC)

The Hunter Community Environment Centre was established in 2004 to assist the Hunter community to work towards social and environmental justice. It serves primarily as a resource hub, that provides enabling facilities and support to groups and individuals working towards improved community health, environmental protection and social change. It is a non-profit incorporated association that exists for its members, volunteers and the community more broadly.

The HCEC also exists to share information, network and build relationships and community cohesion amongst environmental and social justice groups. Groups that use the centre include but are not limited to the Africa Australia Alliance for Peace and Reconciliation (AAAPR), Transition Towns Newcastle, Climate Action Newcastle, Nourishing Newcastle, The Newcastle Environment Collective, the Pacific Australia Network on Globalisation (PANG) and the Coal Terminal Action Group.

Coal Terminal Action Group

The Hunter Community Environment Centre is a foundational and convening member of the Coal Terminal Action Group (CTAG) – an alliance of over twenty community, resident, environmental, consultative and local planning non-governmental organisations in the Newcastle and Hunter-Central Rivers regions. CTAG actively represents the interests of over 5,000 supporters, including the members of its constituent organisations.

CTAG members currently include: the Australian Coal Alliance, Australian Youth Climate Coalition, the Barrington Gloucester Stroud Preservation Alliance, Climate Action Newcastle, Correct Planning and Consultation for Mayfield Group, Gloucester Residents in Partnership, Hunter Bird Observers Club, Hunter Community Environment Centre, Hunter Communities Network, Hunter Environment Lobby, Islington Village Community Group, the National Parks Association (Hunter Branch), the Nature Conservation Council of NSW, Our Green Corridor, Parks and Playgrounds Movement, Rising Tide Newcastle, Singleton Shire Healthy Environment Group, Stockton Community Action Group, Tighes Hill Community Group, and the Wilderness Society Newcastle Branch.

CTAG was formed at a community meeting on 12^h April 2012 to unify the concerns and issues of a wide range of non-governmental groups in their opposition to a proposed fourth coal-loading terminal in Newcastle. As a foundational activity of the alliance, CTAG coordinated a survey of community attitudes toward the proposed fourth coal terminal for Newcastle; 580 households in Newcastle suburbs were surveyed in June 2012 with the findings published in the *Sick of Coal: Community attitudes toward the proposed fourth coal-loading terminal in Newcastle* report in August 2012.

This report is included in this submission as Appendix A.





As demonstrated in Figure 1, the survey found the increase of coal dust, and the associated health, amenity and pollution impacts, was overwhelmingly the top concern of residents in relation to the fourth coal terminal proposal, with dust mentioned more than twice as frequently as any other issue. The findings of this survey were consistent with the social impact assessment conducted by Coakes Consulting on behalf of the proponents of the fourth coal terminal as part of their Environmental Assessment, which also identified air quality, health, contamination, transport, climate change, environmental issues as significant sources of community concern.

CTAG Dust and Health Committee

Based on the issues identified in the community survey, CTAG formed a Dust and Health Committee, with a specific brief to conduct robust and defensible community-based action research science to better specify air quality issues from existing and proposed developments in the Newcastle region. Since its formation, the CTAG Dust and Health Committee has undertaken several such studies to accurately quantify the dust, health and air quality issues currently experienced in the Newcastle region.

Since mid 2012, the Dust and Health committee have undertaken the following activities:

- 1. Collated and presented particle pollution monitoring data from all publicly available sources (EPA, NCC, PWCS, Orica and other companies);
- Interpreted these data to present a comprehensive and independent assessment of current levels of particulate pollution (PM₁, PM_{2.5} and PM₁₀) which identified 200 exceedances of national standards during 2012;
- 3. Assessed the current reporting arrangements and recommending arrangements to ensure monitoring results are communicated in an accessible and timely manner;
- 4. Assessed the adequacy of the current monitoring network and developing recommendations for improving the network's coverage and integration;
- Proposed studies to adequately assess current particulate pollution sources (including diesel exhaust emissions), in particular fine particle pollution levels and associated health impacts;
- 6. Recommended measures to mitigate particle pollution levels and community health impacts;
- 7. Submitted evidence to the Senate Inquiry into the Health Impacts of Air Quality and addressing their hearing in Newcastle;

- 8. Published a guide to World's Best Practice to minimise particle pollution from coal trains, terminals and stockpiles;
- 9. Monitored particle pollution levels in residential areas in Newcastle and the Lower Hunter; and publishing the 'Coal Dust in Our Suburbs' report;
- 10. Monitored particle pollution beside the Newcastle coal corridor and released the 'Coal train pollution signature study'; this research was featured in an episode of ABC's science program Catalyst;
- 11. Developed communication materials to enable Newcastle residents to clearly understand the air quality impacts on health; and
- 12. Identified further necessary studies and advocating for their funding.

Of particular relevance to the terms of this inquiry are the two air quality monitoring studies: the first in the residential suburbs adjacent to the coal infrastructure facilities; and the second at key identified locations along the coal rail corridor.

2. Residential Air Quality Study

During December 2012 and January 2013, community groups monitored air quality at eleven residences in Newcastle and the Lower Hunter to assess the level of particle pollution in residential areas close to coal trains and stockpiles.

The report, published as "Coal Dust in Our Suburbs" and attached to this submission as Appendix B, presents an overview of the study, and the results from sites selected to represent varying distances from coal haulage and transport infrastructure.

The analysis of monitoring data and the conclusions drawn are based upon independent analysis and interpretation carried out by air quality experts Associate Professor Howard Bridgman and Dr Jill Sweeney.

The monitoring undertaken during our study of suburban coal dust revealed concentrations of particle pollution well above the National Environment Protection Measure (NEPM) for Ambient Air, which defines the national standard for particle pollution. According to the NEPM, particle concentrations averaged over 24 hours should remain below 50 micrograms per cubic metre (μ g/m³). The NEPM allows for five exceedances of this standard in a calendar year, to account for natural events such as bushfires and dust storms.

Particle concentrations in Tighes Hill and Carrington reached or exceeded the NEPM for PM_{10} on five of the seven days of monitoring. In Carrington, the NEPM standard was exceeded on every day of monitoring, and three 24-hour PM_{10} averages were above $75\mu g/m^3 - 50\%$ higher than the standard.

Monitoring also demonstrated that the suburbs closest to the Port of Newcastle and industrial infrastructure such as coal loaders and coal train lines, experience worse air quality (PM_{10} and $PM_{2.5}$) compared with the Newcastle EPA monitor. Particle concentrations in Mayfield, Mayfield East, Tighes Hill and Carrington are generally two to four times higher than recorded by the EPA's monitor during the same time period. The EPA monitor is approximately three kilometres away from the nearest source of coal infrastructure.

Suburb	Location/s	Highest PM ₁₀ level recorded (micrograms per m ³ averaged over 24 hours)	Number of days that the national standard was exceeded	Distance to nearest coal train line or stockpile
Mayfield	Crebert Street	52.4	3 of 6	700m to coal trains 1000m to stockpile
Mayfield East	O'Mara Street	62.2	3 of 6	150m to coal trains 750m to stockpile
Carrington	Garrett Street	80	5 of 5	500m to coal trains 600m to port 800m to stockpile
Tighes Hill	Henry Street	67.3	5 of 7	300 to coal trains 550m to stockpile
East Maitland	Charles Street	51.7	1 of 2	150m to coal trains
East Maitland	Cumberland Road	60.2	1 of 7	300m to coal trains
Lochinvar	Winders Road	50.9	1 of 7	100m to coal trains

Figure 2. Summary of PM₁₀ exceedances in residential locations in Newcastle and Lower Hunter (from "Coal Dust in Our Suburbs", Appendix B).

HCEC and other member groups of CTAG maintain that the residential air quality study provides a rationale for decisive intervention to improve urban air quality in Newcastle and the Lower Hunter, specifically in those locations near coal infrastructure. Findings from this monitoring demonstrate the air quality standard has been reached and exceeded in multiple locations. This must be taken into account in the assessment of future development applications with potential air quality impacts. It also demonstrates the need to better understand the source and character of particle pollution in the region, such that appropriate mitigation and management actions can be implemented to improve community air quality.

'Coal Dust in Our Suburbs: Particle Pollution in Newcastle and the Lower Hunter' (Report) <u>http://hcec.org.au/20130417/coal-dust-our-suburbs-particle-pollution-newcastle-and-lower-hunter</u>

Dust in Our Suburbs media

'Killer air', The Project (Channel 10), 2/5/13

http://www.youtube.com/watch?feature=player embedded&v=06 um aOJ-4

'Dark cloud over Newcastle port's safety' *Daily Telegraph* 8/3/13

http://www.heraldsun.com.au/news/national/dark-cloud-over-newcastle-ports-safety/story-fndo317g-1226592752941

'Dust data sparks fears over fourth coal loader' NBN News 8/3/13 http://www.nbnnews.com.au/index.php/2013/03/08/dust-data-sparks-fears-over-fourth-coalloader/

'Group raising funds to measure coal train dust' *Newcastle Herald* 5/6/13 <u>http://www.theherald.com.au/story/1552487/group-raising-funds-to-measure-coal-train-dust/</u>

3. Coal Train Air Quality Study

On the basis of the findings from the residential air quality study, the Coal Terminal Action Group Dust and Health Committee designed and implemented a study to determine the contribution of particulate pollution from coal trains to ambient air quality. With more than 100 coal trains passing through residential areas each day, Lower Hunter residents have become increasingly concerned and informed about the impacts of pollution from uncovered coal wagons, and supportive of measures to reduce this pollution.

The findings from this report, released publicly "Coal train pollution signature study" in August 2013, are appended to this submission as Appendix C.

Between Monday 15 July and Wednesday 17 July 2013, members of several community groups monitored particle pollution levels in residential areas of Beresfield, Hexham and Mayfield. With expert advice and assistance, particle pollution concentrations were monitored while 73 loaded and unloaded coal trains passed. The Osiris equipment utilised for the study allowed for concurrent monitoring of four particle sizes: PM₁ and PM₂₅ that are associated with combustion (e.g. train locomotives) and the larger PM₁₀ particles, which are more indicative of coal and TSP (coarse fractions up to PM₃₀ in size).

The study aimed to answer two research questions:

- 1. What is the particulate profile (signature) of loaded and unloaded coal trains?
- 2. What is the increase in particulate matter associated with the passage of loaded and unloaded coal trains, measured by comparisons with pre-train particle concentrations? Is the proportion of increase the same across all particulate fractions (PM₁₀, PM₂₅ and PM₁)?

The study was the first of its kind in Australia. Crowd-funded by more than 100 donors, the study was entirely designed and conducted by members of community groups. They were advised and assisted by experts and academics and utilised industry-standard equipment. The results of the study were analysed by University of Newcastle public health researchers.

A total of 73 coal trains were observed during the three days of monitoring. The corresponding pollution data were analysed to generate 'signatures' which depict particle concentrations before, and during the trains' pass by. The method compares a two-minute average pollution level before each train to a two-minute average while the train was passing by the monitoring equipment. Eight signatures are examined in this study. These signatures were selected to demonstrate an indicative range of signatures under various conditions (wind direction, wind speed, train speed, train type etc).

All coal train signatures were associated with a significant increase in PM_{10} particle pollution levels. In the case of Signatures 1 and 5, this represents increases of 94% and 427% respectively for loaded coal trains. Signature 6 found significant increased PM_{10} concentrations, 1210% above background. In sum, coal trains increase PM_{10} levels by between 94% and 1210%. While coal trains pass, particle pollution concentrations increase up to 13 times pre-coal train levels.

While the study was not intended to compare different types of trains, a number of freight and passenger trains were captured in our signature measurements. We noted city link trains did not produce a definable signature, while freight trains and the XPT did show signatures in some cases, but they were much smaller in comparison to those observed for coal trains, and of much shorter duration.



Figure 3. Coal train pollution signature captured 14:18 Tuesday 16/07/2013

Coal Train Pollution Signature Study (Report) http://www.hcec.org.au/sites/default/files/CoalTrainSignatureReportAug2013.pdf Coal train pollution signature study media 'Coal Dust', ABC Catalyst feature, 22/8/13 http://www.abc.net.au/catalyst/stories/3831563.htm 'Coal train shock air-quality find', Newcastle Herald, 23/8/13 http://www.theherald.com.au/story/1723571/coal-train-shock-air-quality-find/ 'Coal Dust along rail corridor at dangerous levels', Maitland Mercury, 23/8/13 http://www.maitlandmercury.com.au/story/1724877/coal-dust-along-rail-corridor-atdangerous-levels-study/

4. ARTC Coal Pollution Monitoring Studies

During the same period as the community research into particulate pollution was being undertaken, analogous research was commissioned by and conducted on behalf of the Australian Rail Track Corporation (ARTC). ARTC is a wholly government-owned corporation that manages the transportation of coal in the Hunter Valley from pit to port. According to its 'Hunter Valley Corridor 2012-2021 Capacity Strategy', the ARTC will spend \$3.5 billion upgrading the Hunter coal rail network to accommodate the planned increase in volume of coal exports.

The ARTC, a Commonwealth-owned corporation, is licenced by the NSW EPA for pollution caused by trains hauling coal from Hunter Valley mines to the Newcastle Port along the rail corridor for which ARTC holds a lease. Under the terms of this licence (EPL3142), the ARTC was issued a Pollution Reduction Program (PRP) requiring the company to monitor particle pollution adjacent to the rail corridor during February and March 2012. To address the requirements of the PRP, ARTC commissioned the consulting firm Environ to conduct particle pollution monitoring in Mayfield and Metford beside the Hunter coal corridor.

The EPA had received ARTC's report on this monitoring at the time of a community forum held in June 2012. Community groups requested, but were not provided with access to this report.

The report, 'Pollution Reduction Program 4: Particulate Emissions from Coal Trains', was released in late September 2012. The report concluded that concentrations coinciding with loaded and unloaded coal train passes are statistically higher for PM_{10} and PM_{25} than concentrations recorded during passenger train passes.

The Chairman of the NSW EPA Mr Barry Buffier communicated the findings of ARTC's first report. Mr Buffier asserted that the report demonstrated no significant difference between the emissions associated with different train types. Mr Buffier's statements were inconsistent with the report's conclusions.

ARTC report #1 'Pollution Reduction Program 4: Particulate Emissions from Coal Trains' http://www.artc.com.au/library/Work%20Program%20PRP%204.2.pdf

Report #1 media

⁶Dust up on rail tracks', *Newcastle Herald* 29/9/12 http://newsstore.smh.com.au/apps/viewDocument.ac;jsessionid=49C8AE76D6BBA503A1F1 D9FA041E39BC?sy=afr&pb=all_ffx&dt=selectRange&dr=1month&so=relevance&sf=text&sf= headline&rc=10&rm=200&sp=brs&cls=1807&clsPage=1&docID=NCH1209296S2E070ESLJ ⁶Dust study released for Hunter coal trains' *Rail Express* 3/10/12 http://www.railexpress.com.au/archive/2012/october/october-3rd-2012/top-stories/dust-studyreleased-for-hunter-coal-trains ⁶Minister dismisses coal train dust claim' *The Northern Daily Leader* 17/3/13 http://www.northerndailyleader.com.au/story/1369558/minister-dismisses-coal-train-dustclaim/?cs=159

The Coal Terminal Action Group wrote to NSW Premier Barry O'Farrell expressing several concerns with this first report and seeking a commitment to further studies. Technical reviews of the company's report (henceforth PRP4.1) on this monitoring were critical of the methodology, data analysis and conclusions. A second Pollution Reduction Program (PRP4.2) ARTC was issued, requiring further monitoring from November 2012 through to January 2013.

Given the limitations of the first report, ARTC commissioned Katestone Environment to conduct a second round of monitoring between 30 November 2012 and 29 January 2013. The second report was launched 31/5/13 by ARTC chief executive John Fullerton.

CTAG requested that NSW Environment Minister Robyn Parker ensure ARTC's reports were independently reviewed before being released or relied upon to inform policy and regulation. This did not occur for either report. Instead, Associate Professor Nick Higginbotham arranged for independent experts at the University of Newcastle to review the report.

This review is provided as Appendix F.

Their assessment called into question data generated when the wind was blowing coal dust away from the monitoring equipment and the comparison made between particle pollution associated with passenger trains which take less than 10 seconds to pass and coal trains which take between 1-4 minutes to pass.

The NSW Environment Protection Authority chairman and chief executive, Barry Buffier commented in regional media that, on the basis of the second report, "The EPA will not consider imposing additional requirements on industry, such as covering of coal loads, unless clear evidence becomes available which demonstrates the need for further studies or measures to control coal dust emissions from loaded coal trains."

ARTC report #2 'Pollution Reduction Program 4.2: Particulate Emissions from Coal Trains' <u>http://www.artc.com.au/library/news 2013-05-31 A1.pdf</u>

Report #2 media

'Covered wagons en route for coal' *Newcastle Herald* 7/6/13 http://www.theherald.com.au/story/1558060/covered-wagons-en-route-for-coal/?cs=305 'ARTC says no need to cover coal trains' ABC Online 31/5/13 http://www.abc.net.au/news/2013-05-31/artc-says-no-need-to-cover-coal-trains/4725334 'Study says coal trains not dustier than others' *Newcastle Herald* 10/6/13 http://www.theherald.com.au/story/1540732/study-says-coal-trains-not-dustier-thanothers/?cs=305 'Greens slam coal report' *Maitland Mercury* 5/6/13 http://www.maitlandmercury.com.au/story/1549815/greens-slam-coal-report/?cs=171

'Contentious dust study gets review', Newcastle Herald, 16/7/13 http://www.theherald.com.au/story/1639967/contentious-dust-study-gets-review/?cs=305

One week after the release of ARTC's second report, HCEC and the Australian Greens were emailed another version of the report from an undisclosed source. This version of the report, dated 24/5/13, drew different conclusions. In the six days between the 24/5 and 30/5, fifteen of the report's eighteen conclusions were changed. In three instances, the conclusions were inverted to delete or insert the word 'no' or 'not ' to reverse the report's finding. Five conclusions were modified to significantly reduce the pollution levels associated with coal trains. Three new conclusions were added to the 30/5 version, minor changes were made to three and one conclusion was deleted.

A tabular comparison of the conclusions in the draft report (24/05/2013) and final report (30/05/2013) is provided as Appendix E.

Inconsistencies between draft and final reports from ARTC http://www.hcec.org.au/20140204/leaked-coal-dust-report-sparks-call-special-commissioninquiry

'Cover-up' media

'Coal train report cover-up claim', The Telegraph, 12/6/13 <u>http://www.dailytelegraph.com.au/news/coal-train-report-cover-up-claim/story-fni0cx4q-1226662106852</u>
'Community group unearths coal report tampering', ABC News, 14/6/13 <u>http://www.abc.net.au/news/2013-06-14/community-group-unearths-coal-report-</u>

tampering/4755832 'Major error' in coal dust report forces review, Sydney Morning Herald, 3/7/13 http://www.smh.com.au/business/carbon-economy/major-error-in-coal-dust-report-forcesreview-20130703-2pbt2.html#ixzz2rAnSJFfC

As a result of the community outrage over the inconsistency between the draft and final reports, and the EPA rushed to an independent peer review to determine whether the conclusions reached were scientifically valid. The review, which was undertaken by Dr Luke Knibbs from the University of Queensland, was published on 13 ^h July, 2013, and found there was a major error with the statistical analysis undertaken by ARTC's consultants and that this error affects 'the scientific rigour of the study and the robustness of its conclusions'.

The EPA then engaged Professor Louise Ryan, Distinguished Professor of Statistics, at the University of Technology in Sydney, on the recommendation of the NSW Chief Scientist and Engineer, Professor Mary O'Kane, to undertake a thorough independent review of the statistical analyses used in the ARTC report. Reiterating the findings for Dr Knibbs, Professor Ryan found that there were some serious limitations with the statistical analyses used in the report and recommended a re-analysis of the data. This report was published in September, 2013.

The EPA engaged Professor Ryan to subsequently undertake re-analysis of the data in the ARTC report, which was released in February 2014. This report confirmed the community concerns that coal trains are a significant source of particle pollution. Among Professor Ryan's conclusions:

- "There are clear and statistically significant elevations in particulate concentrations when a train passes by the monitoring station."
- "There is approximately a 10% increase in the various kinds of particulate measurements associated with freight and coal trains."
- "The effects were apparent and remained significant for all available particulate measures, including TSP, PM10, PM2.5 and PM1, especially for freight and coal trains (loaded or empty)."
- "While our analysis has shown that the average air concentrations in particulate levels are fairly similar for both loaded and unloaded coal trains, the total aggregate exposure associated with a loaded coal train may be different than that for an unloaded coal train because the passing durations vary so much."

Review of the ARTC studies by independent experts

Dr Knibbs full review:

http://www.epa.nsw.gov.au/resources/air/ARTC report review Jul 01 2013.pdf Professor Ryan's peer review: http://www.epa.nsw.gov.au/resources/air/ARTC %20report review Sept 2013.pdf Professor Ryan's statistical re-analysis http://www.epa.nsw.gov.au/resources/air/ARTCreanalysisFeb2014.pdf

5. Analysis of the GIPA Correspondence

Based on the inconsistencies between these two reports, HCEC issued a Government Information (Public Access) Request for access from the EPA to "all documents relating to the Australian Rail and Track Corporation Pollution Reduction Program from September 2012 to June 2013".

This GIPA request was also prompted by the extent of the variation between the community studies, and the industry-backed and EPA endorsed studies, and the findings from Dr Knibbs and Professor Ryan that the studies did not withstand technical or scientific scrutiny.

In November 2013, HCEC received access to over 3,000 pages of correspondence on this matter. This was provided as GIPA 289/EPA089. The documents demonstrate a failure to protect the environment by senior EPA employees and the agency's CEO, and a systematic public relations effort to conceal the extent and nature of pollution caused by uncovered trains.

The correspondence between several government departments relating to the coal pollution licence conditions held by the Australian Rail Track Corporation obtained by the Hunter Community Environment Centre under freedom of information laws has not been included in this submission. For the accessibility of the Committee, however, these documents can be freely and readily downloaded here: http://miningleaks.com.au/hunter-coal-dust-cover-up.

We have also provided a guide to the documents that we have appended to this submission as Appendix G.

Below, a summary of the findings from the HCEC's analysis of the more than 3,000 pages of correspondence is provided.

ON THE FIRST PRP REPORT (PRP 4.1)

- There are multiple admissions in the internal EPA correspondence indicates that drafting PRP4.1 was a "mad rush" to complete the study by the end of the year, and the design of the study be negotiated with ARTC. The EPA sought amendments to the design of the study that would streamline the PRP to anticipate and appease ARTC's opposition.
- ARTC's report on PRP4.1 was not adequately reviewed, with various EPA officers, NSW Health and OEH staff were given between less than 48 hours (and in some instances, less than 2 hours) to review and comment on the 60 page technical draft PRP. The GIPA documents reveal a frantic exchange of emails during this period. This deadline was imposed within the EPA to meet a pre-determined media deadline for comment on the first ARTC report. Some of the most significant technical experts within the EPA were given as little as 2 hours to review the report.
- Despite these time constraints, internal reviews nonetheless revealed major deficiencies in ARTC's monitoring study. Critical observations made by one staff member were not noted at the time and only (re)discovered several months later in 2013.
- The internal reviews revealed "plain bad calculations" and "basic arithmetical mistakes". One reviewer warned that technical errors "will no doubt be picked up by someone when the report is released. EPA should consider what consequences may result from the report being published with these errors." Another reviewer observed that, "the data suggest a difference between train and no train... contrary to the conclusion of the report." An EPA officer commented that, "A couple of our technical experts have had a cursory review as part of the mad rush to get the media plan finalised but as yet they have not undertaken a proper adequacy review to determine the implications of the pilot study for the next stage. And no-one has done a proper check to see if they implemented all our comments on the draft. I am also concerned by the amount of errors that lan picked up through a quick review. There may be more errors that a thorough review by our boffins would pick up."
- A draft version of PRP4.1 required ARTC to provide the EPA with their report then to
 respond to comments from the EPA. Contrary to this requirement, the EPA prepared
 a media plan before seeing the report. The EPA's statements deny that loaded
 coal trains result in higher levels of coal dust than other types of trains were prepared
 BEFORE the EPA received the ARTC report.
- The drafted media plan by the EPA public relations staff included a media comment to attribute to NSW Health stating that "there is no apparent health concern", and that "the results of the pilot monitoring program indicate no difference in the levels of air particulates generated by coal and other train movements at the two monitoring sites." This second statement directly contradicted the report's findings. Health officials requested that their comment be changed to "would generally not result in adverse health impacts", a statement that was repeated widely in subsequent EPA communication about the report.

ON THE SECOND PRP REPORT (PRP 4.2)

- The scope of ARTC's second study was reduced dramatically as a consequence of intra- and inter-departmental consultation. This included dropping the requirement to monitor in locations at variable distances from the rail corridor, to monitor in schools, to characterise particles in order to assess the proportion that are coal, and to use monitoring equipment that met Australian Standards.
- The EPA decision not to require ARTC to monitor at more than one location in their second study (dropping the residential suburb of Mayfield) was made to satisfy ARTC. The company anticipated costs of \$25-50,000 to install a wayside monitor. This decision was retrospectively justified on other grounds.
- Review of the second ARTC report by the OEH Strategic Science Section revealed major flaws with the study's methodology, analysis and conclusions. An independent review was commissioned. The terms of reference for this review explicitly excluded

reviewing the monitoring methodology, despite the concerns raised by OEH reviewers. Instead the EPA stated their confidence in the methodology. Senior EPA staff, including Director General Barry Buffier, were primarily motivated to minimise community and media attention, even when that meant releasing the report before there had been an independent review.

- The EPA drafted assurances about the potential health impact of particle pollution and attributed them to NSW Health despite their own internal review having highlighted major flaws in the methodology and conclusions of the report and before receiving the final ARTC report. These comments were drafted by an EPA staff member who anticipated that NSW Health would be uncomfortable with the statements (on the basis of a meeting between Health and EPA officials) but stating, "I see no harm in trying it on them." These assurances were repeated in public and media commentary, ministerial statements and correspondence with community groups. NSW Health responded that the ARTC report "should not be used for providing health advice." NSW Health refused to have the comments attributed to them and they were subsequently deleted from EPA's media statement.
- Despite the correction of major errors, and ARTC acknowledging that there is a difference between PM_{2.5} pollution associated with coal trains and other types of trains, the EPA maintained their statement that there was no difference.
- Before receiving the second ARTC report, the EPA determined they would not require wagons to be covered. The department's internal review confirmed that coal trains cause a significant increase in particle pollution concentrations.

6. Managing and minimising air quality impacts

Regulatory intervention is needed to improve Newcastle's air quality and ensure particle pollution remains below the NEPM and WHO standards. Measures must be taken to significantly reduce particle pollution from the three existing coal terminals and from the tens of thousands of uncovered coal wagons that pass through (and close to) residential areas in the Lower Hunter each year.

In June 2013, the Hunter Community Environment Centre published 'Protecting Communities from Coal Dust: A guide to best practice dust minimisation', which is provided in this submission as Appendix D.

The Guide was based on an extensive literature review and drew on comparable reviews and guides developed in Australia and internationally. What is evident from this review is that best practice involves implementing an overall strategy that uses all available methods and techniques in a comprehensive and integrated way to reduce the impacts of fugitive dust and particulate emissions.

There are three sources of particulate pollution associated with the rail corridor:

- 1. Fugitive emissions from coal dust off the top of open wagons;
- 2. Air pollution caused by re-suspension of settled particles on or near the track; and
- 3. Emissions from the train's power source (eg diesel engine).

The monitoring studies conducted during 2013 by both the Australian Rail Track Corporation and the Coal Terminal Action Group indicate that unloaded coal wagons are an even more significant source of PM_{10} particle pollution than loaded coal wagons (see Figure 4 below). This may be because of the greater exposed surface area in an empty coal train wagon and the fact that the (smaller) exposed surface of a loaded coal wagon is generally 'profiled' and washed. Both covering and high-pressure washing is necessary for coal wagons whether they are full or empty.

Figure 4 compares a two-minute average pollution level before each train to a two-minute average while the trains were passing by the monitoring equipment. It shows that unloaded coal trains are also a significant source of pollution.





Figure 4 shows that all coal train signatures were associated with a significant increase in PM_{10} particle pollution levels. In the case of Signatures 1 and 5, this represents increases of 94% and 427% respectively for loaded coal trains. Signature 6 increased PM_{10} concentrations significantly, up to 1210%. In sum, coal trains increase PM_{10} levels by between 94% and 1210%. While coal trains pass, particle pollution concentrations increase up to 13 times precoal train levels. Signature 3 represents a grain train.

It is important to note that the data collected during the second ARTC study are currently being re-analysed by Professor Louise Ryan at the behest of the NSW Chief Scientist. The study's methodology and conclusions were described as 'deeply flawed' by technical reviewers. In short, the NSW Government and the wider community have not yet received reliable advice concerning the extent to which coal trains contribute to elevated particle concentrations in urban areas. As a consequence, HCEC believes that it is vital and urgent that the Committee recommend to the Planning Minister that no major developments of coal haulage and export coal facilities in Newcastle and the Hunter Valley be approved until an independent and accurate assessment of existing ambient air quality is obtained.

6. Conclusion

Our close reading of the internal correspondence relating to the air pollution study documents demonstrate:

- 1. The EPA systematically misrepresented the findings of pollution monitoring studies and has acted to obscure the conclusion of the reports that coal trains cause a significant amount of particle pollution, with directly attributable impacts on community health.
- 2. ARTC appear to have been operating in breach of their licence conditions throughout 2012 and 2013. The objectives of their operating licence have not been addressed; their monitoring studies have been criticised, discredited and rejected by the NSW Government as inadequate.

Specifically, we contend that:

- The EPA prepared a media statement about the ARTC Pollution Monitoring Report before the report had been submitted.
- The report confirmed that coal trains pollute. A technical review of the report prepared by the Office of Environment and Heritage for the EPA confirmed this conclusion. The report and this technical advice contradicted the media statement prepared by Mr

Buffier, but he persisted in issuing the media statement and several others in the months that followed assuring the Parliament and wider public that the study found no evidence that coal trains increase particle pollution.

- Mr Buffier and EPA officials sought to provide public health assurances in media and Parliamentary statements contrary to advice received from NSW Health.
- Serious shortcomings in the design, conduct and interpretation of the ARTC Pollution Monitoring Report were identified by the OEH technical reviewers, but Mr Buffier and his staff prepared public statements and briefings for Environment Minister Robyn Parker stating that the ARTC study was robust, reliable and that the conclusions did not justify a regulatory response. These statements were used as the basis of Parliamentary addresses and responses to Questions on Notice by the Minister.

Representatives from the HCEC have since raised this with the Energy and Resources Minister in person, the Environment Minister and the Premier in correspondence, and with Mr Buffier directly. The only substantive response that we have received to date came via a media statement from the EPA, advising us to lodge an ICAC complaint.

This media statement can be downloaded here: http://www.epa.nsw.gov.au/epamedia/EPAMedia14020901.htm.

The HCEC is to date not satisfied with this as a sufficient response to the serious issues that we have raised in relation to the handling of these coal dust studies, and to the regulation of air quality in the Hunter by the EPA generally.

We therefore request that the members of the Committee review the evidence provided by the HCEC with a view to:

- Confirm that the handling of the coal dust pollution studies by EPA staff, including the CEO, constitutes **a breach of public trust**.
- Confirm that the coal dust pollution studies have demonstrated uncovered coal wagons are significant sources of particulate pollution in the rail corridor with environmental and public health impacts.
- Confirm that the current regulatory arrangements for the **management of particulate pollution for coal trains are inadequate** to meet the performance objectives of the EPA under the Act.
- Recommend that the EPA direct all coal rail operators to urgently implement appropriate dust mitigation strategies, including the covering and washing of coal wagons.
- Recommend that the EPA initiate action against ARTC for failure to adhere to the conditions of their licence relating to their required pollution reduction program.
- Recommend to the Planning Minister that **no major developments of coal haulage and export coal facilities in Newcastle and the Hunter Valley be approved** until an independent and accurate assessment of existing ambient air quality is obtained.

The handling of the coal pollution monitoring studies by the EPA demonstrates the importance of reforms that would:

- Better allow for public scrutiny by making its internal processes accessible and transparent. The continuing controversy attached to the EPA's handling of the studies could have been alleviated by providing access to the data and its interpretation.
- Routinely involve independent experts in developing environmental policy (e.g. ensuring peer review of reports and including independent experts on advisory panels). The correspondence revealed the limited internal capacity for technical review of the studies. Independent, external experts would have provided robust review of these reports, and help to restore community confidence in policy decisions based on industry-funded evidence.