FEDERAL SENATE INQUIRY INTO THE IMPACTS ON HEALTH OF AIR QUALITY IN AUSTRALIA

NSW MINERALS COUNCIL SUBMISSION

MARCH 2013

About the NSW Minerals Council

The NSW Minerals Council (NSWMC) is a not for profit, peak industry association representing the State's $20 billion minerals industry. NSWMC provides a single, united voice on behalf of our 100 member companies: 40 full members (producers and explorers), 25 associate members (junior explorers) and 35 associate members (service providers) and works closely with government, industry groups, stakeholders and the community to foster a dynamic, efficient and sustainable minerals industry in NSW.

NSWMC is a major stakeholder in many of the environmental, social, regulatory and economic issues critical to the sustainable development of NSW. The industry acknowledges the community has concerns about the impacts of mining, particularly in the areas of recent and planned future growth. The NSW mining industry is committed to being a constructive partner with the Government and other stakeholders in addressing these concerns.

Executive Summary

The NSW Minerals Council welcomes the Federal Senate inquiry into the impacts on health of air quality in Australia. Mining is one of many sources of particulate matter and as a result the mining industry has taken significant steps to improve knowledge about its contribution to particulate emissions and the effects on ambient air quality in mining regions. The NSW mining industry works collaboratively with government and the community on these issues.

In New South Wales, extensive research and monitoring by both industry and government agencies is underway to better understand air quality impacts, and how air quality could in turn affect human health.

Objective data must inform air quality management

Air quality and health are important and sensitive issues. It is critical that they are considered using the available science and evidence, rather than on opinion and conjecture. Unfortunately, in relation to the mining industry, much of the debate has been clouded by unsubstantiated claims and inflammatory remarks, often by anti-mining activists whose primary aim is to erode the reputation of the industry.

In response to genuine community concerns, the NSW coal industry has been working to continually build our understanding of air quality issues and improve our management practices. Extensive research and monitoring by both industry and government agencies has been underway for several years to better understand air quality and improve mine site management practices. Much of the work has focused on the Upper Hunter Valley, which has a high concentration of open cut mining as well as several large population centres.

The work completed or underway includes ambient air quality monitoring, reviews of health data, characterisation of particulates, particulate monitoring along the rail corridor, research into best practice dust management and the development of sophisticated air quality management systems at mine sites.

Ambient PM_{10} concentrations in the Upper Hunter largely met national health standards during 2012

The first monitors in the Upper Hunter Air Quality Monitoring Network were established in December 2010. Now complete, the 14 monitors in the network are providing real time, objective information about PM_{10} concentrations in the region, and three monitors are also monitoring $PM_{2.5}$. The network has been designed to monitor air quality in three large population centres against national health standards, with the remaining locations designed to identify particle sources and background concentrations, as well as monitor smaller communities.

Over 2012, of the three large population centre monitors (Singleton Central, Muswellbrook Central and Aberdeen), only Singleton Central had more than the 5 days above the 24 hour PM_{10} criteria allowed under the national health standards (with 6 days). Muswellbrook had one day exceeding the standards and Aberdeen had none. While caution is needed in assessing a single year's data, the results indicate that ambient PM_{10} concentrations are largely within the national health standards, which are among the strictest in the world.

Evidence indicates mining has a relatively small influence on $PM_{2.5}$ exposure in major population centres

$PM_{2.5}$ is regarded as being of greater health concern than PM_{10}. Only a small proportion of mines' particulate emissions comprise of $PM_{2.5}$ and the Upper Hunter Air Quality Monitoring Network indicates that mining has a relatively small influence on $PM_{2.5}$ concentrations at the three $PM_{2.5}$ monitors.

While the NEPM advisory 24 hour reporting standard for $PM_{2.5}$ of 25 $\mu g/m^3$ is met the vast majority of the time, with only 7 days' exceedences across the three monitors over the 26 months of data, the data shows a distinct seasonal trend. The colder months in both 2011 and 2012 recorded higher daily concentrations than the summer months, with all 7 exceedences of the advisory reporting standard occurring between the months of June and October. While a study aiming to characterise the particles

is underway, there is a high probability that wood smoke from domestic heating makes a significant contribution to these higher winter readings and $PM_{2.5}$ exposure more generally in the region.[1]

Any serious attempt to address air quality must objectively assess all sources of particulate matter that have an impact on air quality.

Scientific studies indicate coal dust from coal trains is not significant in NSW

The transport of coal by rail, and its potential to impact on air quality along the rail corridor, is another issue that has been the focus of attention. Again, this has been an issue that has attracted exaggerated claims about particulate emissions and potential health impacts. However, trackside air quality monitoring in the Lower Hunter and Newcastle has shown little difference in the dust generated by coal trains, passenger trains and freight trains, and wind tunnel testing of coal from a range of mines in NSW showed little potential for dust emissions from the surface of the coal.

NSW Health data show comparable health in mining regions to other parts of NSW

Analysis of health data by NSW Health has shown that conditions presenting to GPs and medications prescribed by GPs in the Upper Hunter region are similar to those in the rest of non-metropolitan NSW. The analysis found that while there appeared to be slightly higher rates of management for asthma and other respiratory problems, the report could not rule out the possibility that these may have been "chance findings".

These local studies are much more relevant than those undertaken overseas, which are based on different mining methods and standards, different air quality standards and in communities with different socio-economic status, and have little relevance to NSW.

The mining industry continues to improve air quality management

The mining industry is taking significant steps to improve air quality management. The industry is working constructively with the government to implement improvements to mine site dust management, and has worked collaboratively with the community through the Upper Hunter Mining Dialogue over the past three years to identify concerns and develop projects to address them.

The industry will continue our work to build understanding of mining related air quality issues and develop appropriate, evidence based responses.

[1] http://www.environment.nsw.gov.au/media/DecMedia11062802.htm

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1 The facts on air quality

1.1 There are a range of activities that can produce particulate matter

Both natural and man-made activities produce particulate matter emissions. Coarse particles ($PM_{2.5-10}$) are derived primarily from mechanical processes resulting in the suspension of dust, soil, or other crustal[1] materials from roads, farming, mining and dust storms. Coarse particles also include sea salts, pollen, mould, spores, and other plant parts. Mining emissions are primarily composed of coarse particulate matter (i.e. PM_{10}).

Fine particles or $PM_{2.5}$ are derived primarily from combustion processes, such as vehicle emissions, wood burning, coal burning for power generation, and natural processes such as bush fires. Fine particles also consist of transformation products, including sulphate and nitrate particles, and secondary organic aerosol from volatile organic compound emissions.

Most evidence suggests that particles in the $PM_{2.5}$ size range are more harmful than the coarser component of PM_{10}. It is also important to note that emission levels are not necessarily linked to exposure levels, and that the concentration of exposure ultimately determines the impact of emissions on human health.

1.2 Emissions from mining

Mining operations are a source of particulates and a significant amount of work goes into managing particulate emissions. The vast majority of dust from mining activities consists of coarse particles larger than PM_{10}, generated from activities such as mechanical disturbance of rock and soil materials by dragline or shovel, bulldozing, blasting, and vehicles on dirt roads. Particles are also generated when wind blows over bare ground and stockpiles. These larger particles are more likely to have amenity impacts than health impacts.

A recently released Australian Coal Association Research Program project has again confirmed that that $PM_{2.5}$ emissions form a small proportion (less than 11%) of total particulate emissions from Australian coal mines.[2]

Fine particles from vehicle exhausts and mobile equipment are also produced at mine sites, though they generally only account for a relatively small amount of the particles emitted during the mining process. Fine particles produced at mine sites are manly from vehicle and mobile equipment exhausts.

Within the mining industry, dust emissions are predominantly generated by open-cut coal mining operations.

1.3 Australian air quality standards are among the most stringent in the world

In Australia, the Ambient Air Quality National Environment Protection Measure (NEPM) establishes national standards for criteria pollutants, including PM_{10}. The goal of the NEPM is to ensure compliance with the standards within 10 years of commencement, in order to attain ambient air quality that allows for the adequate protection of human health and wellbeing in cities and large towns The NEPM was extended in 2003 to include advisory reporting standards for $PM_{2.5}$.

When compared with the rest of the world, Australia's air quality criteria are among the most stringent.

For example, the most recent revision to ambient air quality standards for PM occurred in the United States. The US EPA review of the National Ambient Air Quality Standards (NAAQS) for particles has lowered the annual average standard for $PM_{2.5}$ from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ to provide increased protection against health effects associated with long- and short-term exposures (including premature mortality, increased hospital admissions and emergency department visits, and development of chronic respiratory disease) (US EPA, 2013).

However the revised US EPA NAAQS for annual $PM_{2.5}$ is still 50% higher than the Australian NEPM advisory reporting standard.

1 Crustal dust refers to dust generated from materials derived from the earth's crust.

2 ACARP Project C21034, PM2.5 Particulate Emission Rates from Mining Operations, released March 2013.

The US EPA NAAQS 24-hour average standards for $PM_{2.5}$ and PM_{10} remain unchanged (at 35 $\mu g/m^3$ and 150 $\mu g/m^3$, respectively). Again, both of these standards are higher than the Australian NEPM ambient air quality standards.

2 Air quality in New South Wales

2.1 NSW air quality regulation

In New South Wales, outdoor air quality is governed by both State and Commonwealth regulations. As discussed earlier, the NEPM provides air quality standards that are applied in cities and large towns across Australia. NEPM standards apply to average concentrations across a region.

The New South Wales Environment Protection Authority (EPA) also has regulatory criteria for assessing ambient air quality. The criteria are consistent with, and more comprehensive than, the NEPM. NSW EPA Impact Assessment Criteria are used to assess PM in localised areas, for example, close to the mine itself.

The standards imposed by the regulatory authorities take into account what is known about health effects on people with asthma, lung conditions, and heart disease.

2.2 2008 Greater Metropolitan Region Emissions Inventory

The NSW 2008 Air Emissions Inventory (which took four years to produce), looks at over 850 air pollutants in NSW's greater metropolitan regions of Sydney, Newcastle, and Wollongong and is the most comprehensive study of air emissions in Australia.

The inventory acknowledges that emissions can come from a variety of sources, including car emissions and bushfires, as well and mining and other industries.

Of note in relation to the mining industry is that improvements in air quality practices at NSW mining operations have resulted in the overall increase in mining emissions in the Hunter region being significantly lower than the increase in coal production during the 2003-2008 period.

The inventory also indicated that man made air emissions in Sydney were steadily declining despite marked increases in Gross State Product (up by 68%), vehicles kilometres travelled (up 26%) and population (up 18%).

2.3 NSW State of the Environment Report 2012

The NSW Government recently released it 3-yearly State of the Environment Report. The report provides an update on the status of the main environmental issues facing NSW and has been prepared by the NSW Environment Protection Authority (EPA).

In relation to air quality, the report states that air quality in NSW continues to improve. National standards for most regulated air pollutants are met in NSW, but there are continuing exceedences of the goals for particle pollution.

The report states that bushfires and dust storms are major causes of these exceedences, along with stubble burning, coal mine dust, and wood heaters in regional areas. It also acknowledges that air quality indoors can be worse than it is outside and may pose health risks in many enclosed environments.

2.4 Wood smoke

In NSW, wood smoke has been identified major cause of air pollution. The NSW Environmental Protection Authority and NSW Health have acknowledged that wood smoke from wood heaters and open fire places are a major cause of air pollution, accounting for up to half of the particle pollution in the Sydney metropolitan region and up to 85 per cent in some regional areas during the cooler months.

The NSW Government has allocated $1 million funding for local councils to create wood smoke reduction initiatives in a bid to cut pollution and minimise health risks to the community.

3 Air quality monitoring and research in NSW

Monitoring networks have been established in NSW to monitor air quality impacts and ensure compliance with the NEPM.

The EPA operates 37 monitoring sites for PM_{10} and 11 monitoring sites for $PM_{2.5}$. This includes the recent extension of their network by establishing the Upper Hunter Air Quality Monitoring Network (UHAQMN), consisting of 14 monitoring sites in strategic locations, including the major population centres of Singleton and Muswellbrook.

3.1 Upper Hunter Air Quality Monitoring Network (UHAQMN)

Upper Hunter coal producers and power generators have funded the UHAQMN, which, for the first time gives the community, the industry and regulators real-time information about regional air quality. All fourteen sites are up and running. The UHAQMN is funded by coal producers to demonstrate that industry acknowledges its impacts on air quality and is committed to managing its dust emissions.

The UHAQMN measures air quality in line with the national standard for PM_{10} (coarse particles), which is the same standard used at other government operated air quality monitoring sites in NSW. While there is no national standard for $PM_{2.5}$ (fine particles), the UHAQMN is measuring $PM_{2.5}$ at monitoring stations in Singleton, Muswellbrook and Camberwell for research purposes.

Ambient PM_{10} concentrations in the Upper Hunter largely met national health standards during 2012

The first UHAQMN Annual Report was released in January 2013, using data from the 14 monitoring sites that have been gradually established since 2010. The report makes the distinction between monitors in the larger population centres - which are appropriate to assess against air quality standards - and monitors in smaller communities, diagnostic stations and background stations. These distinctions are important to understand what data can be used to assess potential impacts on communities, and what data is there to help assess sources of emissions.

Of the three large population centre monitors (Singleton Central, Muswellbrook Central and Aberdeen), only Singleton Central had more than the 5 days above the 24 hour PM_{10} criteria allowed under the national air quality standards (with 6 days). Muswellbrook had one day exceedence and Aberdeen had none. As expected, the diagnostic monitors (located close to mines) recorded PM_{10} concentrations above the air quality standards at a higher frequency, but are not appropriate to assess against these standards, as they are not reflective of the air quality experienced by the general population

In terms of $PM_{2.5,}$ which are viewed to have a greater health risk, Singleton Central met the annual average $PM_{2.5}$ advisory reporting standard with an annual average of 8 $\mu g/m^3$. Muswellbrook exceeded the advisory reporting standard, with an annual average of 10.1 $\mu g/m^3$. The EPA has acknowledged on several occasions that it is likely that smoke from wood heaters in Muswellbrook makes a significant contribution to $PM_{2.5}$ concentrations during cooler months of the year.

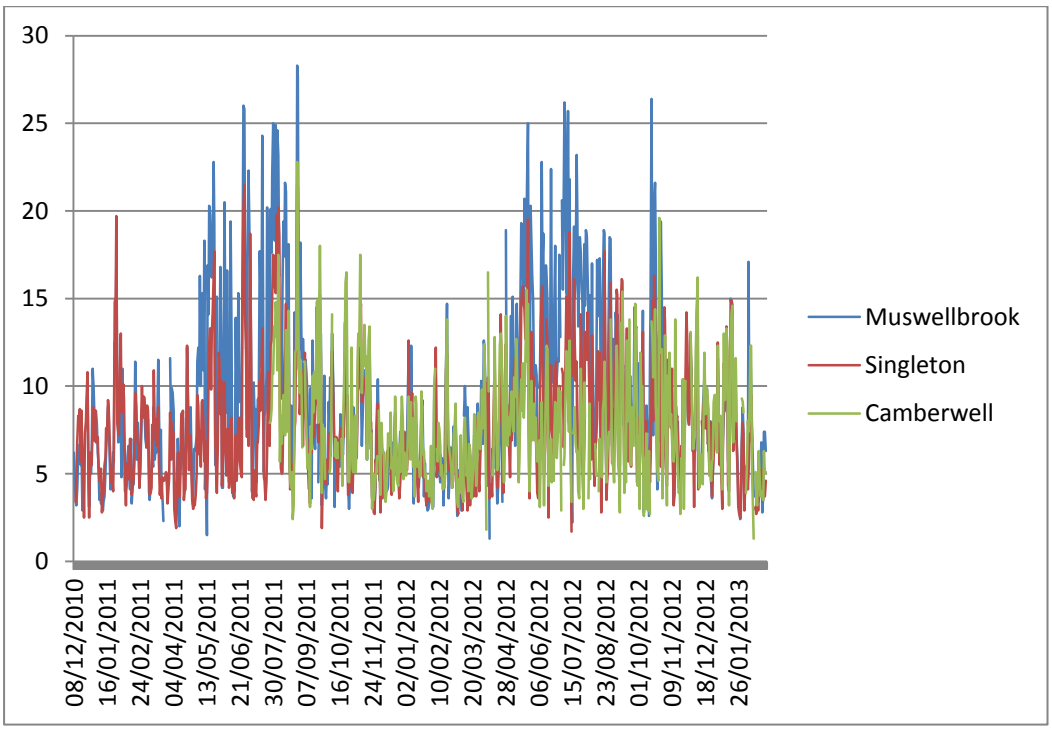
Ambient air quality data indicates mining is a relatively small influence on $PM_{2.5}$ exposure in major population centres

$PM_{2.5}$ is being monitored at three locations in the network – Singleton, Muswellbrook and Camberwell. The graph below shows the $PM_{2.5}$ 24 hour average concentration ($\mu g/m^3$) since each monitor was established. The data shows two things:

1. The NEPM advisory reporting standard for $PM_{2.5}$ of 25 $\mu g/m^3$ is met the vast majority of the time, with only 7 days over the 26 months of data from 8 December 2010 to 27 February 2013 exceeding the reporting standard, all at the Muswellbrook monitor.

2. There is a distinct seasonal trend to the data, with the colder months in both 2011 and 2012 recording higher daily concentrations than the summer months. While a study aiming to characterise the particles is underway, there is a high probability that wood smoke from domestic heating makes a significant contribution to these higher winter readings.

$PM_{2.5}$ 24 hour average ($\mu g/m^3$) in the Upper Hunter Air Quality Monitoring Network



As well understanding PM_{10} and $PM_{2.5}$ concentrations across the Upper Hunter region, understanding the composition of $PM_{2.5}$ particles is particularly important before any conclusions can be drawn about the potential health impacts of certain exposure levels to $PM_{2.5}$.

3.2 Scientific studies indicate coal dust from coal trains is not significant in NSW

Recent community concerns about air quality along the rail network in NSW have led to calls for coal train wagons in NSW to be covered. Research to date suggests that this would be an extremely expensive action that would have little or no effect on dust and air quality near rail lines.

Two recent pieces of research have investigated the potential for coal dust emissions from coal trains in NSW:

Australian Rail Track Corporation (ARTC) research

ARTC undertook pilot trackside air quality monitoring at two points in the rail network at the beginning of 2012, in accordance with its Environmental Protection Licence conditions.

The results of the pilot study, released in September 2012, indicate little difference between the average dust generated by loaded coal trains, unloaded coal trains, freight trains and passenger trains. In addition, the frequency of passenger and freight trains is much higher than that of loaded and unloaded coal trains. A second round of monitoring has been completed, with the results due to be reported in the first half of 2013.

Xstrata Coal NSW research

Xstrata Coal NSW has undertaken wind tunnel testing of various coal types across its NSW mines to determine the potential for coal dust emissions from loaded coal wagons. The testing simulated travel times, travel speeds and conditions experienced during rail transport from different mines to ports.

The research indicates that the moisture content of the coal types tested makes dust emissions from the surface of loaded coal wagons unlikely during transport from mine to port.

These pieces of research indicate that coal dust emissions from the surface of loaded coal wagons is unlikely to be a significant source of dust along the rail corridor and that covering coal wagons would not have any significant effect on air quality.

Queensland's experience is not directly transferrable to New South Wales

Many factors influence the potential for coal dust emissions including train speed, wind speed, coal properties (dustiness, moisture content and particle size), frequency of train movements, vibration of the wagons, profile of the coal load, transport distance, loading and unloading practices, wagon design and climate.

These factors vary significantly between Queensland and NSW. For example, in Queensland there is higher evaporation, the majority of coal trains travel a much greater distance than in NSW, and the trains travel at higher speeds.

As a result, the potential for dust emissions from loaded coal wagons is different between Queensland and NSW. The decision to veneer the surface of loaded coal wagons with dust suppressants to reduce the level of coal dust emissions in Queensland followed extensive Queensland-specific research.

Specific studies are required in NSW, which are being carried out. The industry is working with rail operators, Government regulators and the community to determine the best response to air quality concerns along the rail corridor.

3.3 Health data show comparable health in mining regions to other parts of NSW

In response to community concern about the potential impacts of air quality on human health, the NSW Chief Health Officer established an Air Pollution Expert Advisory Committee (EAC) in 2010. This committee is tasked with providing objective, expert advice on the current scientific evidence relating to air pollution and public health, to complement the ongoing policy and research work already undertaken by the Department of Health. To date, the work of the EAC and NSW Health does not show significant differences in the health of mining communities, compared to other parts of NSW.

The EAC and NSW Health have completed a number of studies to date including:

- *Singleton Cancer Cluster Investigation* – in 2010 the EAC investigated a cluster of five cases of brain tumours in Singleton. All of the people with tumours had lived in Singleton for 35 years or more. Three had work associations with the coal industry. The investigation found that the rate of these tumours in the Singleton area (and tumour rates in nearby Cessnock, Maitland and Muswellbrook, all of which have long term associations with coal mining) was not significantly different from the rate for all of NSW over this period.

  The investigation found no specific local factor that might have caused each of the residents to develop a brain tumour and that the Singleton cluster of brain tumours was most likely due to chance.

- *Initial assessment of the design of the Upper Hunter Air Quality Monitoring Network (July 2010*) – the EAC recommended that $PM_{2.5}$ monitoring be undertaken in Singleton, Muswellbrook and a rural community with high impact from the local mines, such as Camberwell. These recommendations have been incorporated into the UHAQMN.

- *Analysis of BEACH (Bettering the Evaluation and Care of Health) general practitioner data to examine the potential health effects of the mining industry and other exposures in Singleton, Muswellbrook and Denman (November 2010)* – this report by NSW Health found that conditions presenting to GPs and medications prescribed by GPs in the Upper Hunter region are similar to those in the rest of non-metropolitan NSW. The report found that while there appeared to be slightly higher rates of management for asthma and other respiratory problems, the report could not rule out the possibility that these may have been "chance findings".

- In 2010 NSW Health released a report on respiratory and cardiovascular diseases and cancer among residents in the Hunter New England Area Health Service (HNEAHS).

  The report used regularly collected health data to:

  - assess the health of the residents of Hunter New England;
  - to compare the health of the residents of Hunter New England to the health of residents across the state; and
  - examine the variation in health within the HNEAHS in relation to the distribution of coal mining and coal-powered electrical power generation activity within this area.

The report showed that there are higher than average rates of some conditions such as respiratory and cardiovascular problems in the region as a whole, but reached no conclusion about the role of air pollution. The report found that further investigation was required to determine the role of pollutant exposure and suggested that other recognised disease risk factors including smoking needed to be considered.

3.4 Overseas studies are not always relevant to NSW

Inadequately researched and misleading reports such as that commissioned by Beyond Zero Emissions in 2012 *"Health and Social Harms of Coal Mining in Local Communities: Spotlight on the Hunter Region"* have falsely heightened community concern. The report incorrectly attempts to draw parallels between international research findings and the Hunter region.

For example, the report relies on studies produced in relation the Appalachia region of the US. This is immediately problematic given that most mining in this region takes the form of mountain-top mining. This method is not used in NSW, or Australia. Not only are the types of mining and the nature of regions referred to in the report unique to the United States, they have no relevance or commonality with those of the Hunter.

It should also be noted that this report has not been publicly endorsed or acknowledged by any academic institutions or government agencies, including NSW Health, despite the involvement of the University of Sydney's Health and Sustainability Unit.

The NSW Government has taken the lead on providing resources to undertake objective and scientific work to better understand air quality in NSW and what the potential impacts are on human health.

3.5 Further research in NSW is underway that will shape next steps

The EAC also has a number of projects underway and that are due to be completed in 2013:

- *Special Additional Pollution Measures* – PM_1 and $PM_{2.5}$ monitors have been placed in Camberwell, Muswellbrook and Singleton. The aim of this project is to determine whether there is significant variance between fine and very fine particles throughout the Upper Hunter. The findings of this project will then form the basis of a health study relating to PM_1 and $PM_{2.5}$, if a health study is seen as the most appropriate way forward.

- *Upper Hunter fine particle characterisation study* – see details below.

Upper Hunter fine particle characterisation study

Given that there are multiple sources of $PM_{2.5}$, including mining, wood smoke from solid fuel heaters and other forms of combustion (e.g. road and rail transport, coal-fired power generation and coal-seam spontaneous combustion), NSW Health and OEH commissioned a research study to better understand the composition and source of fine particles in the Upper Hunter.

Who is involved in the study?

The project is jointly funded by OEH and NSW Health. CSIRO and ANSTO are undertaking the sample analysis and reporting. A project team involving OEH, NSW Health, CSIRO and ANSTO researchers is overseeing the project.

What is being measured and where?

The field-sampling component of the study was carried out over a 12-month period (to cover all seasons) at the two larger secure UHAQMN sites in Singleton and Muswellbrook. CSIRO has installed high-volume samplers at these UHAQMN sites and collected samples of $PM_{2.5}$ particles on quartz filters on a one-day-in-three cycle.

How will be data be used?

Analysis of these data will provide:

- a description of the contributors to fine particles in the Upper Hunter

- an estimate of which sources are important and their relative contribution to fine particles in the Upper Hunter
- an indication of any weekly and seasonal changes in PM2.5 particles in the Upper Hunter.

When will the data be available?

The sample collection component commenced on 4 January 2012 and is now complete. This data is now being be properly analysed and interpreted, with a final report anticipated by the end of the study in June 2013.

4 The mining industry continues to improve air quality management

The NSW mining industry takes the issue of air quality very seriously. In NSW the majority of our mining employees also live in the communities near where mining takes place, so community concerns are our concerns. The NSW mining industry is doing a lot of work to ensure acceptable air quality outcomes across our mining communities**.**

4.1 Working with Government

In NSW the mining industry is working collaboratively with the EPA to ensure a more coordinated approach to dust and air quality issues, particularly in the Upper Hunter. In 2012, as part of their "Dust Stop" program, the EPA placed legally binding Pollution Reduction Programs (PRPs) on mines, requiring them to assess their current operations against best management practice and determine the most effective way to significantly reduce their on-site dust emissions.

In 2013, the EPA formed an Air Quality Working Group to work with the NSW mining industry on key air quality issues. Further PRPs are currently being implemented and are focused on managing dust on haul roads, overburden and stockpiles, and modification of operations during adverse weather conditions at coal-mining operations in NSW.

4.2 Community engagement

Recognising the concerns of the community in the Upper Hunter Region, the NSW Minerals Council started the Upper Hunter Mining Dialogue (UHMD) in 2010, acknowledging that with the benefits of the growth of the mining industry in this region also come increased impacts.

One of four Industry Working Groups in the UHMD, the Emissions & Health Working Group is focused on projects to improve operational practices and better inform the community about the facts and science around air quality and health in the Upper Hunter region. In 2013, two key projects of this group are the development and implementation of:

- A weather forecasting tool to allow operations to anticipate adverse weather conditions and keep are record of steps taken on-site to minimise impacts on air quality;

- A communications strategy to ensure regular information sharing between government, industry and the community about research into air quality and the progress of the UHAQMN.

4.3 Collaborative industry research

In addition to the extensive site-specific monitoring, assessment and research that operations undertake to manage their dust emissions, many environmental and social impacts of mining have been addressed through the Australian Coal Association Research Program (ACARP). Australian black coal producers contribute millions of dollars to collaborative research that is conducted to improve the coal mining industry's practices. ACARP's mission is to research, develop and demonstrate technologies that lead to the safe, sustainable production and utilisation of coal.

A significant number of projects currently underway are focused on managing dust from mines. Examples of relevant projects include:

- The development of a matrix that will inform operations of the best suppressants to use on haul roads under various conditions

- The development of a set of scientifically robust, Australia-specific dust emission factors that will enable better understanding and more effective management of dust emissions.

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