

AGENDA

Upper Hunter Mining Dialogue

Joint Environment Working Group

UHMD Resource Centre, Upstairs of the Town Square Shopping Centre
Suite 1, 159 John Street, Singleton NSW 2330

Wednesday 11 March 2020, 9:00 am to 12:00 pm

Teleconference Details:

Dial-in Info: +61 2 8319 9443

Participant Code: 462-628-08 / Organiser Code: 715-817-27

Agenda items		Attachments
1.	Welcome and Apologies (5 mins)	
2.	Minutes and actions of the previous meeting (5 mins)	
3.	Presentation: Cattle Grazing Trials (Justine Cox, Department of Primary Industries)	
4.	Review of 2019 Annual Forum Outcomes	Yes
5.	Presentation: Air Quality Monitoring Network - Changes to Hourly Averages (NSW Office of Environment, Energy and Science - Representative TBC)	
6.	Update on Emissions & Health Projects (20 mins)	Yes
7.	Update on Land Management Projects (20 mins)	Yes
8.	Update on Water Projects (20 mins)	Yes
9.	Update on Communications Activities (10 mins)	
10.	Update on other Dialogue Working Groups/Committees (10 mins)	
11.	Project Proposal: Neville Hodkinson, "Coordinated Coal Mining Air Pollution Mitigation Controls, Options as WHO & NEPM Standards lower in the Hunter".	Yes
12.	Other Business (5 mins)	
13.	Next Meeting & Close (5 mins)	

**Upper Hunter Mining Dialogue
Joint Environment Working Group - 11 March 2020**

Agenda Item 2

DRAFT MINUTES

**Upper Hunter Mining Dialogue
Joint Environment Working Group Meeting**

**UHMD Resource Centre, Upstairs of the Town Square Shopping Centre
Suite 1, 159 John Street, Singleton NSW 2330**

Wednesday 11 September 2019: 9.00 am to 11.45 pm

Attending:

Julie Thomas (Chair)	Muswellbrook Coal Company
Andrew Reid	MACH Energy Australia
Cameron Archer	University of Newcastle
Carolyn Herlihy	Hunter New England Health
Craig White	Bengalla Mining Company
Jeff Esdaile	Community member
Jim Morgan	Wybong Action Group / NSW Farmers' Association
Jonathon Deacon	BHP
Ken Bray	Hunter Valley Water Users Association
Paul Amidy	Glencore
Matt Parkinson	AGL Macquarie
Sharon Pope	Muswellbrook Shire Council
Bob Mackie	theresource
James Barben	NSW Minerals Council
Craig Milton	NSW Minerals Council

Guests:

Jess Wegener - via teleconference	Firesticks Alliance
Toby Whaleboat	Hunter Local Land Services
Dayjil Fincham - via teleconference	HEC

Apology:

Bill Baxter	Yancoal
Chris Quinn	The Bloomfield Group
Chris Knight	The Bloomfield Group
Daniel Lewer	Hunter Land Management
Glenda Briggs	NSW Department of Primary Industries
Jo Powells	NSW Department of Primary Industries
John Watson	Glencore
Karen Marler	NSW Environment Protection Authority
Laurie Perry	Wonnarua Nation Aboriginal Corporation
Natalie Hewitt	Community member
Neville Hodgkinson	Singleton Shire Healthy Environment Group
Peter Jaeger	Peabody Energy
Peter York	Thiess
Tim Roberts	University of Newcastle
Tony Cox	NSW Department of Industry

1. Welcome and apologies

The Chair welcomed members and noted apologies received.

2. Minutes from Previous Meeting

The minutes and actions from the previous meeting were accepted.

3. Presentations: Cultural Burns and Indigenous Mentoring Programs

a. Firesticks Alliance - Jess Wegener

Ms. Wegener joined via teleconference to provide an overview of the Firesticks Alliance and the cultural burns they are undertaking.

b. Hunter Local Land Services - Toby Whaleboat

Mr. Whaleboat provided a summary of the Cultural Burn Mentoring Program. Members queried whether industry would take up these practices. Industry members advised that there is a requirement to demonstrate that land has resilience to burning, and there is a lot of potential to integrate these practices to managing mine rehabilitation land. Mr. Whaleboat advised that they are looking to study the soils to show the impact that burns have on soil composition.

ACTION:

- **Dialogue secretariat to distribute Firesticks Alliance and Local Land Services presentations and other materials (fact sheets, flyers) to members.**

4. Update on Emissions and Health Projects

Mr. Milton and Mr. Barben advised on the work the Dialogue has undertaken to develop the air quality data analysis project scope, and the two proposals currently under consideration from CSIRO and ERM. Members weighed up which of the proposals better balanced the Dialogue's objectives, with value for money, timeliness and providing the study with as much credibility and independence as possible. Given the delayed start, members acknowledged that this is unlikely to be wrapped up by the end of 2019, although recognised the importance of ensuring an agreed approach.

Members preferred the Dialogue to continue engaging with CSIRO, noting that although this is a Dialogue-initiated project and there may be some perceived bias from the outset, the CSIRO brand is powerful and should provide the Dialogue with the desired outcomes. Members queried what will happen if the project identifies something we have not suspected. The CSIRO report factors in a peer review, and Dialogue stakeholders will also have an opportunity to review via the project steering committee.

Members queried whether the drought may be impacting on the background pollution and if this is greater than normal, thereby exacerbating the industry's results. Industry members advised that where exceedances are recorded, there may be further information provided at a later stage regarding dust events and the original figures can then be recalculated and determined whether they have caused an exceedance or not. Mr. White advised that Bengalla have been undertaking Air Quality monitoring in 2018, which showed that the background pollution was 5 micrograms higher than what it normally has been. Further, the site approvals permit the sites to generate a certain level of dust and that this may need to be better understood by the community.

ACTION:

- **Dialogue secretariat to review CSIRO proposal and seek a reduction in costs and/or leverage more value from the proposal.**

5. Update on Land Management Projects

Mr. Milton provided an overview of the 2018 rehabilitation and disturbance results, with members noting the increases in both total rehabilitation and disturbance made this is a nuanced story to communicate to stakeholders.

Members queried what impact the current prolonged dry conditions are having on rehabilitation progress at sites. Mr. Barben advised that although there may be some level of impact, more rehabilitation is still occurring than in previous years, although it is worth noting that sites are in different stages of operation, with some sites in the commencement phase causing significant levels of disturbance.

6. Update on Water projects

Mr. Milton provided a brief overview of 2018 water accounting results.

Dayjil Buhle (HEC) joined via teleconference to provide clarity on a number of figures that Working Group members queried regarding the higher Environmental Flow, and reduced water reuse in the past year.

- Ms. Buhle advised that the water reuse figure reduced as a result of the new water sharing between Ravensworth and Mt Owen. Ravensworth started to pump tailings to Mt Owen's West Pit storage in 2018 and hence any tailings bleed return is reporting to Mt Owen storages as a system inflow. Note that from 2019 onwards, Ravensworth, Mt Owen, Liddell and Integra will be reporting as one operation (i.e. the Greater Ravensworth Area) to avoid issues like this as their internal reporting picked up this issue in 2018.
- Ms. Buhle advised that the environmental flow value is the sum of the gauged flow volumes from the Goulburn, release from Glenbawn Dam and release from Glennies Creek Dam. If we look at these three numbers over the last two years (2017/18 – refer graph below) you can see that while gauged flow from the Goulburn has decreased (as expected with the drier weather), release from the dams (particularly Glenbawn) has increased. This may be because WaterNSW is trying to supplement the lower natural flows but will also be affected by long range forecasting and operation of the dam itself.

Members also discussed the water allocations for irrigators and the fact that despite there being drought conditions, allocations for 2019 are above 90%. Members agreed that this could be useful for contextual information.

ACTION:

- **Dialogue secretariat to communicate contextual information regarding Environmental Flow and Reuse figures in the promotion of 2018 water accounting results.**

7. 2019 Annual Forum Planning

Mr. Barben provided an overview of the 2019 Forum Agenda and opened up discussion on what format the members felt the discussion sessions could take this year to ensure these continue to provide the Dialogue with quality ideas and feedback to guide the Dialogue's activities and future projects.

Members encouraged the Dialogue secretariat to find out more about what the NSW government speakers intend to present on before agreeing to their request to speak and ensure that they focus on what the community wants to know rather than what they want to speak about. Mr. Barben advised that it seems they do have a long-term post-mining focus at the moment, which would be of benefit to stakeholders to learn more about.

Members agreed that while there are long-term plans and redevelopment opportunities, these ultimately need to focus on providing employment opportunities at the end, and many of these may be in currently unknown industries which require flexibility and foresight in the planning and approvals process to accommodate.

Members suggested the possibility of question-asking apps or technology to assist in the process, potentially via SLIDO or other mechanisms to put some targeted questions to stakeholders. A post-event survey will also be prepared and launched during the event so that members can provide feedback immediately following, whereas in previous years there has been a slight delay of a day or two.

8. Communications Update

Mr. Mackie provided an update on the various communications and engagement activities the Dialogue is progressing. Mr. Mackie advised that the School Mine Tours has focused on the reporting of students being involved, while the involvement of the 60 or so teachers involved in the process has been under-reported. Members welcomed the positive feedback on the Virtual Reality resources.

9. Update on other Committees and Working Groups

Mr. Barben provided an update on the Joint Advisory Steering Committee, noting the Dialogue's recent

efforts to secure a new Chair in Sarah Withell to replace the vacancy left by David O'Brien, and discussions with local business chamber presidents regarding the vacant community/business position on the JASC.

10. Other Business

No other business was discussed.

11. Next Meeting / Close

The meeting closed at 11:45 am.

**Actions arising from meeting
UHMD Land Management and Water Joint Working Group Meeting**

Action	Responsibility	Status
Cultural Burns Programs		
Dialogue secretariat to distribute Firesticks Alliance and Local Land Services presentations and other materials (fact sheets, flyers) to members.	Dialogue secretariat	Completed
Air Quality Analysis Project		
Dialogue secretariat to review CSIRO proposal and seek a reduction in costs and/or leverage more value from the proposal.	Dialogue secretariat	Completed
Water Accounting Framework		
Dialogue secretariat to communicate contextual information regarding Environmental Flow and Reuse figures in the promotion of 2018 water accounting results.	Dialogue secretariat	Completed

**Upper Hunter Mining Dialogue
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Agenda Item 3

PRESENTATION: ACARP PROJECT UPDATE - EXAMINATION OF PAST AND PRESENT MINE REHABILITATION TO GRAZING LAND AS A GUIDE TO FUTURE RESEARCH

Justine Cox, Research Officer, Soils, NSW Department of Primary Industries

Justine Cox is a Soil Scientist for the New South Wales Department of Primary Industries and works predominantly in the horticultural arena. Her work includes research into soil issues for the macadamia, blueberry, vegetable, melon and banana industries.

Justine has worked on soil erosion for the macadamia industry, mulches for the blueberry industry, including compost and biochar and is currently evaluating compost and biochar for soil carbon sequestration and greenhouse gas reduction in the banana, melon and blueberry industries.

Justine has taken over the reporting responsibilities for this project (alongside Harry Rose) following the retirement of Neil Griffiths from NSW DPI at the end of August 2019, which she is co-managing alongside Nigel Phillips, who has assumed financial management of the project.

The objective of this project was to undertake a desktop collation and review of past and present mine rehabilitation pasture work undertaken in the Hunter Valley coal region, and conduct field assessment on a range of selected sites to evaluate pasture and soils to identify practices which are most successful, and likely to support sustainable grazing.

Justine will be presenting on the outcomes of the project, with the final report being drafted and reviewed by industry monitors.

FOR INFORMATION/DISCUSSION

**Upper Hunter Mining Dialogue
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Agenda Item 4

OUTCOMES FROM 2019 FORUM

Issue

It is important to reflect on the recent 2019 Forum and review the feedback received from stakeholders via the discussion sessions and the participant survey to evaluate the success of the event and determine the Dialogue's future priorities and activities.

Background

The 2019 Forum was held on 19 November 2019 at the Singleton Civic Centre, with over 150 attendees participating in the event's morning presentation session, an information and networking session, and an afternoon discussion session.

The discussion sessions provided an opportunity for Dialogue stakeholders to provide honest and frank feedback on what is working well, and where the Dialogue could improve across five key themes:

1. Economic and Social Development
2. Stakeholder Engagement and Communications
3. Air Quality, Emissions and Health
4. Land Management, Rehabilitation and Land Use
5. Water Quality and Stewardship

The feedback from the 2019 Discussion Sessions has provided a range of considerations for the Dialogue's Working Groups and Steering Committees to help determine the Dialogue's priorities, projects and activities to be undertaken in 2020. A summary document of the feedback received (Attachment A) has been included for discussion

Further, the Forum Participant Survey (Attachment B) has useful feedback on how the 2019 event was perceived by stakeholders, as well as help the Dialogue consider how we may improve future events.

The 2019 Forum Report is also being prepared, which will contain an overview of the day, the feedback received, and a summary of the projects undertaken by the Dialogue in 2019.

Recommendation:

- **That the Working Group review the Summary of the Forum Discussion Session and the Forum Participant Survey and discuss which issues the Dialogue could play a role in addressing through projects in 2020.**

FOR DISCUSSION

Attachments:

- A. Feedback from 2019 Forum Discussion Sessions**
- B. Results and Feedback from 2019 Forum Participant Survey**

**UPPER HUNTER MINING DIALOGUE 2019 FORUM
DISCUSSION AND FEEDBACK SESSIONS
Tuesday 19 November 2019**

Key Questions:

- 1. What are we doing well in this theme? What should we keep the same?**
 - Participants are to consider any past or current projects, activities or initiatives that have provided positive outcomes for the Upper Hunter.
 - These could be Dialogue or industry projects, or look further afield at local or state government, business, or community initiatives.

- 2. What are some opportunities for improvement?**
 - What can industry do better in terms of this theme? Spend some time discussing any ideas that may address issues in this theme.
 - Focus on 2 or 3 ideas or suggestions identified by your group and discuss in as much detail as possible about issues related to that theme - we want to get to the core of the issue.

1. Economic and Social Development

- **Improve stakeholder understanding of the Upper Hunter Economic Diversification Project**
- There is no information about who is leading this project, what its purpose is, how it is relevant to the community, and whether it is successful? Given there is little outward reporting to the wider Upper Hunter stakeholders on a potentially important project for the region as a whole, the Dialogue could assist by liaising with the NSW Government and sharing their work and key findings to help improve community understanding on efforts to diversify the Upper Hunter economy.
- **Address the skills shortages and demand for trades trainees, apprentices, and graduates in the Upper Hunter** - There's a long-term decline and gap in the pipeline of suitable candidates. The Dialogue could work with industry partners to determine whether any mining companies or their suppliers require any specific trades and promote these needs to the local community and education and training providers. The Dialogue could support this idea by linking to existing job advertisements or careers portals on the Dialogue website (via a 'Jobs Hub'). This would also help to articulate the broad range of careers that are available in industry.
- **Refining the Procurement Information Hub** - Participants provided positive feedback on the site from initial observations, however given its recent launch few participants had the opportunity to review in full. Need to complete outstanding information and determine how to improve the resources offered and increase engagement in the long-term. The Dialogue can consider linking to other existing hubs (e.g. Localised Singleton, HunterNet etc.)
 - Smaller companies are interested in supplying to mines but may struggle with paperwork (i.e. the procedures and attachments required to accompany tender applications) - Consider developing a proforma template seeking consistent generic information for local companies to complete and attach to the tender for jobs/supply of product automatically without having to do each time.
- **Refining the Business Events** - The 2019 events were well received, and feedback showed they were a step in the right direction as participants valued the opportunity to have face-to-face discussions. Forum participants suggested the Dialogue seek to expand the format of these events in 2019 by considering including different themes to keep it fresh, engaging and relevant to attendees:
 - Longer more detailed workshop-style events that delve deeper into the procurement process

- Focus on how to overcome barriers to access
- Capacity building for relationship development skills of local businesses
- Incorporating Meet the Miner or Buyer programs or initiatives
- **Determine if any opportunities to standardise mining procurement/induction requirements could improve supplier engagement with industry in the Upper Hunter** - Participants provided feedback that mines across the Upper Hunter have individualistic approaches to doing things onsite. The Dialogue could consider liaising with industry partners to determine what commonalities exist across industry and look at developing some sort of standardisation aid or tool for mining, similar to a building/construction white card, to help identify a standard level of skills, training or requirements that are required across all sites. Specific comments related to:
 - Businesses advised of the need for one regulatory body that identifies standards for equipment and inductions that are universally accepted. While this is a good idea, it may be potentially difficult to implement. The Dialogue firstly needs to understand if this is possible, and if not, what the reasons are. Potential reasons may be site legal requirements, due diligence, each site has standards that fit in with their own risk management system.
 - Another standardisation idea related to electrical or hire services, who reported that although they have equipment that meets the required Australian standard, they receive conflicting advice at different sites across the Hunter as to how their products need to be labelled or coloured onsite. The Dialogue could assist in getting some agreement across operations.
- **Improving information about induction requirements** - Supplier participants reported instances where staff entering and exiting mine sites to undertake business can feel 'stuffed around' due to not being made aware of the induction process or other site requirements from the company. If sites were aware of these requirements involved, they could factor these into their tender, but due to a lack of awareness, this can cause supplier staff to work overtime. The Dialogue could help improve supplier understanding via an 'Induction Hub', or minor amendments to each company's page on the Dialogue website that provides specific guidance regarding insurances, induction requirements, medical requirements. This is likely to be relatively similar across sites, but the Dialogue could establish a generic induction process to guide.
- **Greater focus on contemporary social issues** - As many of the initial social issues raised when the Dialogue was first established have been addressed through the Social Impacts and Infrastructure Working Group projects, the Dialogue may need to consider how we can facilitate progress in terms of emerging social issues 2020. This may involve identifying initiatives and exploring opportunities regarding social research of issues in the region to better understand our stakeholders. The Dialogue could seek to leverage off work that the Hunter Research Foundation (HRF) Centre has done through economic and social surveys, e.g. an analysis of HRF Centre data on housing prices to create a narrative about long-term economic diversification in the Upper Hunter and how this is changing over the years (which would likely show that mining's share of economy is decreasing over time meaning the region's economy is diversifying).

Other considerations:

- **Feedback about engaging the NSWICC in Dialogue activities** - Debbie Barwick has joined the Joint Working Group and will present on the Chamber's activities in March.
- **Addressing industry image images and contribution to local economies** - Feedback on these was prominent in most table discussions. However, this particular matter is more within the remit of NSWMC advocacy rather than for the Dialogue to pursue as a project or activity. The Dialogue will continue to focus on promoting positive stories about the projects and activities we are undertaking in the Upper Hunter. For reference, key questions posed included:
 - Why is the industry not attracting quality applicants?
 - What can the Dialogue do to improve their image and showcase what careers the industry can provide?
 - Better coordination of social investment activities/investment.
 - Communication about the spend of mining in Upper Hunter communities

- **Future careers** - Participants encouraged the Dialogue to seek to link career pathways to futuristic jobs that appeal to the youth (e.g. autonomy, mechatronics).
- **Mining industry in participation in local communities and economy** - Participants provided feedback encouraging industry employees to actively participate and support community cultural and sporting events or competitions. They felt this could provide an opportunity for these staff to explain what contribution the mines make to the local economy (e.g. supporting community groups, improving skills and training across the region).

2. Stakeholder Communication and Engagement

- **Evaluate the School Mine Tours Program**
 - Participants suggested that the Dialogue survey those involved in the School Mine Tours Program to date to determine their satisfaction with the experience and how they could be improved. This will likely need to be teachers only for existing tours, as students have moved on up to 2-3 years ahead of their date of tour from when the pilot program commenced. A quick survey after the completion of tours from this point forth would provide incremental feedback.
 - Participants suggested sustained engagement and building on the initial relationship from the tour by engaging with students in the classroom before/after the tour. This may better help the syllabus connect to the tour.
 - Participants were keen to expand the tours beyond the Upper Hunter into the Lower Hunter, Sydney and Newcastle schools. This is dependent on the sites undertaking the tours and the program already has a significant impost on site resources across the Upper Hunter.
 - Participants encouraged the Dialogue to leverage off parents, siblings and other key family members to expand community engagement with the tours to help the broader community.
 - Reinforce key messages regarding what the tours are actually about (neutrality and learning) to dispel false information.
- **Utilise existing networks and community avenues to better distribute Dialogue material** - Consider promoting the Dialogue newsletter in libraries or markets, sending to all relevant government departments, or linking in better with local publications like @theCoalface to share newsletter information.
- **Share stats on the Dialogue website, social media and newsletter readership** - Participants were keen to better understand the visitation rates of the Dialogue website, Facebook page and newsletters to determine how effective we are at communicating our stories. The Dialogue can easily prepare a regular update to the Communications Working Group on this information to help monitor what is working well and what needs improving.
- **Making the Forum more accessible** - The Forum is open to all community members to attend. The Dialogue sends out an invitation to all stakeholders on our database (approx. 500 contacts). However, there is a perception that the event is an exclusive event for industry or representatives of business and other organisations, and that there is no opportunity for the general community to be involved and provide input into how the day will run. The Dialogue could explore how to engage more proactively with prospective participants throughout the year to ensure that everyone knows the Forum is inclusive, and there is an opportunity for anyone to provide input and feedback into the program to ensure this event provides value for those attending. Participants noted the lack of community engagement and recommended that attracting more community members be the Dialogue's priority for future events.
- **Making the Dialogue more accessible** - Participant feedback demonstrated that certain stakeholders have a limited understanding of how the Dialogue works in terms of organisational structure, processes, key objectives, frequency of meetings and how to gain access or approach

the Committees and Working Groups. The Dialogue could help facilitate a better understanding by revising relevant sections of the website that provides an overview, as well as by providing a regular concise Dialogue summary in each newsletter edition given that new readers may access these resources at any time without full prior knowledge of the history of the Dialogue.

- Participants also provided feedback that they would like to see greater involvement of the community in the Dialogue's Committees and Working Groups. The Dialogue may need to make it more explicit which working groups are open to all community members to attend and that a simple registration will enable their attendance.
- Participants were keen to reverse the process and felt that getting the community to present to mines would be a worthwhile exercise compared to the usual mining companies presenting to the community at Working Group meetings and future Forums. It could be worth seeking a presentation from the members of the community actively campaigning on air quality to better understand their concerns.
- **Continue face to face and proactive engagement with stakeholders** - Participants welcomed the Dialogue's attendance of major regional events that provide value to the Dialogue in terms of engagement, as well as regular presentations to CCC's, councils and other key community groups. Suggestion to keep this flexible and look for any available avenues (online and physical) that will achieve the desired results.
- **Revitalisation of the name or brand?** - There was some feedback that perhaps the Dialogue brand was not cutting through and that consideration be given to a new name or brand.
- **Leveraging Dialogue partner networks to share content** - Participants identified that the Dialogue could improve the way we share content by utilising other networks to spread our message and vice versa.
- **Further engagement with secondary students on land use** - Participants were keen to see the Dialogue engage with local secondary students particular on the issues of post-mining land use of mine sites - many of these students may be future residents of the region and may provide feedback that differs from conventional idea. Participants suggested hosting a competition open to school or university students.
- **Better use of website and social media** - Participant feedback pointed to issues with the website user interface, buried information and connection/navigation issues. The Dialogue acknowledges that the current website is constrained by poor IT infrastructure and an inability to significantly change content. The Dialogue website will likely be upgraded in the latter half of 2020 and will seek to address these issues and present the information in a more streamlined manner, with the ability to make edits where necessary. Another suggestion was for the Dialogue to better leverage other comms channels, e.g. government information, fact sheets and videos. This matter was discussed earlier in 2019 with various representatives of the Joint Environment Working Group and would be worth following up in 2020 to ensure the Dialogue is sharing relevant content from government partners.
- **Virtual reality and video resources** - Can we make the video freely available to those who have VR headsets? Is there a way to recut the video so that it can be viewed as a standard video as well? Participants also suggested filming some videos to get our messages across rather than relying only on text, e.g. interviewing students after a tour. Participants also suggested the sites could arrange for their tours to be filmed, and to promote on their own socials, and share with the Dialogue to promote.

3. Air Quality Emissions & Health

- **Promote findings of Air Quality project** - Participants responded positively to the ERM Air Quality project presentation overall and were keen to see what the full outcomes of this analysis would provide, given the ongoing recent poor air quality the region is experiencing. The Dialogue has an opportunity to provide some factual analysis to the community based on this independent data and can investigate any other innovative ways to provide/showcase this information.

Participants were keen to see independent reporting of this analysis, with ERM undertaking the study and CSIRO

- **Provide information on industry air quality management practices to clarify community expectations**
 - There is a mismatch between results presented and the air quality the community is currently experiencing, given the data being analysed was between 2013 and 2018. This highlights the gap between community expectations of air quality management and what the mines in the region are legally permitted to do within their scope of operations. There is an opportunity for the Dialogue to make it clear through the air quality analysis report what mines are legally permitted to do to improve community understanding.
 - Participants also raised the cumulative impacts of air quality and what each individual mine is doing to manage cumulative impact across the region. There is an opportunity to reshare the actions that mines take to reduce air quality when poor air quality is forecast via the Clearing the Air video and demonstrate that industry actively forecasts and responds to poor air quality by adapting their site practices.
 - Much of the community remains unaware of what practices the industry has in place to manage air quality onsite. The first line of engagement could be with site CCC's and encourage these members to share any publicly available air quality analysis and results with their networks. Furthermore, mining company employees further down the ladder could be better utilised and encouraged to share this information within the community.
 - Participants want to see more reaction to short term spikes in dust measurements from both regulators and miners. Is this done relative to 24-hour criteria? The Dialogue could help facilitate this information gap by finding out what industry is doing in this area and communicate to stakeholders.
- **Working with OEH to provide feedback on improving air quality monitoring data access and content** - Participants were interested in visualising the data analysis via an app that covers a 24-hour basis. It may be worth communicating this to DPIE OEH that such an app would help improve understanding within the community, as opposed to a website that stakeholders may find difficult to navigate. Participants also recommended sharing OEH and EPA material on the Dialogue website to promote these alongside existing resources.
- **Revisiting previous dust composition studies** - Previous studies have indicated that there is a cumulative impact on certain Hunter regions affected by air quality, e.g. Camberwell and Bulga, which can find up to 35% coal dust. Perhaps it is worth revisiting the surveys/studies looking at dust composition. However, there may be differences in results, as the original study was conducted following a period of rainfall, after a previous prolonged dry spell.
- **Provide information on industry drought preparation** - Participants were unsure of what planning industry undertakes for water cart usage/dust suppression based on potential for water restrictions. This issue was raised across the three Environment themes, and the Dialogue could assist in preparing and communicating how the industry is preparing for drought and projecting water use for the coming years.
- **Particulate matter and human health** - Participants were not sure what the exact correlation is between increase in PM10 and 2.5 on human health and considered how the Dialogue could help to communicate and monitor this issue? The Dialogue could assist by distributing the DPIE OEH's 'Mine Dust and You', and 'Air Quality' Fact Sheets, and could send to sites to attach with employee communications.
- **Engaging with the health sector regarding air quality impacts/insights** - Participants recommended the Dialogue seek to engage with health professionals to understand the exposure risk to human health from elevated PM10 and PM2.5 particles in the region, and better manage the available information to allow health professionals help the community. It could be worth seeking a presentation from David Meredith at Coal Services to update the Joint Environment Working Group on this matter, as well as seeking a meeting with Doctors for the Environment if possible, to better understand their concerns.
- **Sustained industry management of air quality practices** - Participants were keen for industry to continue their focus on training employees and empowering them to take responsibility for their

air quality impacts as everyone should be doing what they can to reduce emissions. This includes all the actions as listed in the Clearing the Air video.

- **Innovative use of air quality data** - Participants acknowledged that the DPIE (Environment, Energy and Science) air quality monitoring network data provides the community with up to date information on air quality in the Upper Hunter. Feedback on how to further utilise this data included billboards of measured data, the development of an app, daily dust reports for the Upper Hunter and an enhancement of existing forecasting methods.
- **Focus on new rehabilitation** - Participants identified the imbalance between newly disturbed and newly rehabilitated land and that this continues to have an impact on the region's air quality.

4. Rehabilitation & Final Land Use

- **Grazing Trials/Studies on Rehabilitated Mine Land** - Participants advised that the Grazing trials were progressing well and were keen for the Dialogue to discuss and promote these results in early 2020 once completed. The NSW Department of Primary Industries has been invited to provide an update at the next Joint Working Group meeting.
- **NSW Government GIS Rehabilitation Portal** - Participants welcomed the release of this resource as it will help demonstrate that rehabilitation is being progressively completed and will be a positive story to share with stakeholders once launched. However, this continues to be a closed resource with limited input from industry, and limited access to provide feedback from the community.
- **Improve communication to demonstrate rehabilitation methods** - Participants commented on the lack of understanding from stakeholders on what the term 'rehabilitation' actually means, as it is defined as seeding rather than the mature rehabilitation the general community would expect. Participants discussed the use of biosolids/composts for rehabilitation, as well as recent studies on what species grow well on rehab land to facilitate pasture growth for final land use options. The Dialogue could help facilitate a better understanding of what mine rehabilitation involves by providing non-technical information and showcasing some Upper Hunter sites, what is involved, who is responsible, and what the different landform types, design types and erosion models are involved. Examples could involve the new Geofluff design of rehabilitation which leads to better shaping outcomes.
- **Rehabilitation Results Annual Fact Sheet** - Participants noted that it had been good to pull this information together and showcase results with transparent information between sites. The Dialogue could look to further enhance this resource by communicating some of the desired information above. Participants noted the need to change the methodology for communicating rehabilitation to improve understanding.
- **Virtual Reality Rehabilitation Video** - Participants reacted positively to these resources, noting this is a good example of quality rehabilitation that allows stakeholders to visualise something which is difficult to see without a familiarity of what rehabilitation involves.
- **More community access sites to view rehabilitation** - Participants discussed the fact that once people can access rehabilitation sites, visualise it and walk amongst it, they will have a far better understanding of the process and what is involved. The Dialogue could help facilitate a better understanding of rehabilitation via revisiting the potential for establishing some viewing platforms, however this issue has been raised previously and there were council requirements, work health and safety, and access issues to consider.
- **Greater involvement of indigenous groups in rehabilitation and land management groups** - Participants noted the recent presentation from Local Land Services and Firesticks Alliance and encouraged the Dialogue to continue to engage with these organisations to contribute to land use planning and land management discussions in the Upper Hunter.
- **Case studies on post-mining land use** - Participants noted that there is little understanding of how sites can be used productively post-mining given there are few contemporary examples of this having been completed. The Dialogue could help improve education of potential reuse by

showcasing sites in the closure phase that are looking to attract redevelopment opportunities e.g. West Wallsend and Rhondda. Different tables stressed the need to build in greater flexibility to approval for post-mining land uses that enable logical and needed industries to beneficially use this land post-mining, as the way we are going we will likely lose out on these opportunities and lock in uses that may not provide any benefit to nearby communities. The Dialogue could play a role in raising this awareness.

- **Focus on reducing the gap between annual rehabilitation and disturbance** - Participants commented that while there was no doubt rehabilitation was being undertaken, there was still disparity each year between rehabilitation and disturbance. The Dialogue may need to better demonstrate that disturbed areas are being rehabilitated either by showcasing photos from new large rehabilitation activities from the recent year. Participants identified the dust generation from active dump areas noting that this adds to the perception that rehabilitation is not being undertaken.
- **Investigate employment opportunities in rehabilitation** - The extent of mining across the region will provide significant jobs for both current and future generations in terms of rehabilitating sites to closure and relinquishment. Perhaps the Dialogue could investigate the economic contribution this may provide the region.

5. Water Quality and Stewardship

- **Water Accounting Framework** - Participants engaged in a discussion about consistent state-wide reporting using the WAF framework, similar to what is being done with the rehabilitation GIS portal. This would help ensure better forecasting of water supply and demand given recent drought conditions.
- **Develop rehabilitation case studies** - Participants discussed the possibility of developing case studies on the following issues:
 - Tailings storage and water treatment to show reclaimed water is used
 - Site forecasts for how to use water in ongoing drought conditions.
 - Water efficiency projects
 - Innovation
 - Ravensworth Greater Water Sharing Scheme
- **Revisit tank water quality study** - Given the continued poor air quality the region is currently experiencing, participants flagged if it is worth reviewing the Camberwell tank study for drinking water/tank water impacts from pollutants.
- **Examine water use of other industries** - Work with other sectors to utilise runoff and identify water quality needs. Perhaps the mining industry could help.
- **Investigate use of unused pit voids for pumped hydro** - This would ease pressure on current supply and enable to catch more water in storage.

Attachment B:

Upper Hunter Mining Dialogue 2019 Forum - Participant Survey Results

Response Rate

34 respondents from 145 attendees = 23.4%.

Key Observations:

- The majority of respondents were invited to the Forum directly via a Dialogue email, or were referred by a colleague
- The average score for the Registration process was 4.47 (up from 4.37 in 2018), with 94% of respondents rating it 4 or above.
- The average score for rating the Forum overall was 4.12 (up from 3.87 in 2018), with close to 85% of respondents rating it 4 or above. Respondents commented on the organisation and information provided in the sessions, however suggested more community and youth participation and less structured discussion sessions.
- When asked what the Forum highlight was, respondents indicated three main highlights:
 - Air Quality Presentation from Damon Roddis comparing impacts in Upper Hunter to the rest of NSW, and other speakers to hear latest news and updates on projects.
 - Networking opportunities during the information session, particularly between both suppliers and mining companies, and between community members and mining, council and business reps.
 - Openness of discussions in the afternoon workshop, being able to connect and understand different points of view.
- Almost a third of respondents indicated the 2019 Forum was better than the previous year, with a further 24.2% indicating it was on par with the previous year (Note: 2018's event had a significant increase in favourable feedback compared to the 2017 event). Nearly 40% of participants were first time attendees. Comments indicated that the Civic Centre kept everyone one together, while the Racecourse venue was too spread out and the weather on the day meant the outside displays were disturbed by the wind.
- Respondents rated the venue's food and facilities favourably. The quality of food received an average of 4.56 (up from 4.25) and the quality of conference facilities received an average of 4.57 (up from 4.3). Comments indicated that this venue was an appropriate choice for the amount of attendees present and the layout of the tables and the display stalls kept the areas separate.
- Respondents rated the opportunity to network with colleagues and other stakeholders an average of 4.42 in 2019 (up from 4.27 in 2018), with nearly 91% of respondents rating a 4 or above (up from 83% in 2018). Comments noted that there was an imbalance between citizens to mining personnel and associated services, however everyone was engaged and the opportunity to discuss matters with state government representatives was welcomed.
- Common suggestions on how we could improve networking opportunities in the future included:
 - Publishing a list of attendees in advance to help facilitate discussions.
 - Actively promoting and seeking to secure attendance of community members would help provide balance.
 - Potentially extending day into early afternoon to encourage more in-depth discussions or have in-depth discussion sessions earlier in the day to secure this feedback and end with the networking session, so if people have no other issues to discuss they are free to leave.
 - Allow businesses to share information about what they do in an information pack which delegates take with them.
 - Networking sessions may be intimidating for some people as it often appears the people at the stands are catching up with people, they already know which may be uncomfortable to break into for conversation. Some thought into how to assist members of the public who may not feel overly comfortable in this environment may help as its these voices the Dialogue really needs to hear.

- 88% of respondents felt they had enough opportunities to raise or discuss the issues of most importance to them, up from 87% in 2018. Comments included that the discussion sessions were a bit restrictive and needed more flexibility to raise everyday concerns that might not have fit into the five existing themes. It may be worth considering having a session in which the Dialogue invites suggestions or ideas for projects or initiatives that may be undertaken in the future.
- Respondents suggested other stakeholders for inclusion in the Forum could include more general community members; left, green and health representatives to provide a non-mining balance e.g. local doctors; local indigenous community members; local politicians; Lions and Rotary members; School Leaders and teacher representatives; and health, age and disability care groups.
- Respondents suggested some methods to improve engagement with community stakeholders, which included:
 - There is a perception this event is invitation only and that any feedback received is what industry wants to hear or already knows. We need to make it clear that it is open to all.
 - Having an out-of-business-hours forum given that many community members have weekday obligations during business hours, and those that are in attendance are retirees potentially limiting the broad engagement the Dialogue is seeking to facilitate.
 - Increased and targeted advertising through social media could help improve attendance.
 - Perhaps we need to ask members of the public who didn't attend why they didn't want to come.
 - Through each Forum, the community has documented for the Dialogue the key mining issues and that perhaps it is time to respond to these.
 - Resume interaction with schools, much needed feedback from future generations.
- Topics that respondents listed to be addressed at future Forums included:
 - Future resilience Employment prospects post mining Valuing intrinsic nature versus economics.
 - Post-mining matters, including mine relinquishment, future land use, employment prospects, building community resilience
 - Pollution minimisation and monitoring results, continue health and environment focus
 - Drought management, water conservation
 - Continue ATSI involvement
 - RR's mapping program showcase and performance of rehabilitation, show actual results on screen rather than figures only.
 - Presentation from the schools - what is the Upper Hunter they wish to see in 2040?
- Suggestions for improvements the Dialogue can make for 2019 included:
 - More balanced debate, appeared too one-sided for some attendees
 - Youth engagement
 - Examples of how companies collect, manage and report various environmental data - appears to be low awareness of these requirements
 - Perhaps each mine GM could agree to innovative mine pollution minimisation and dispersion measures to cut in half the PM10 and PM2.5 readings.
 - More time for table discussions and question time, consider using SLIDO apps to help facilitate these questions.
 - Open the agenda up to encourage people to contribute new ideas / knowledge / suggestions. The current format, while great for networking, does not do quite enough to encourage open discussion.
 - More input from stakeholders outside the industry.
- 94% of respondents advised they are planning to attend a future Forum event (up from 71% in 2018), with only 6% possibly attending. No respondents advised they would not attend.
- 31% of respondents represented the mining industry (down from 43% in 2018), with a further 31% of respondents indicating they were representing themselves or a community group. 16% of respondents were from local businesses (down from 25% in 2018). The remaining 20% or so were from local/state government and research organisations.
- Nearly 73% of respondents were from Upper Hunter locations (up from 65% in 2018), with the remainder either from the Lower Hunter (incl. Newcastle) or Sydney.

1. How did you hear about the Forum?		
Answer Choice	Responses	%
NSWMC email	16	47.1%
Other	9	26.5%
Colleague	7	20.6%
Social media	2	5.9%
TOTAL	34	100.0%
Note: No responses for NSWMC website, social media, and radio		
Other Comments (9): <ul style="list-style-type: none"> ● email from the dialogue ● Hunternet ● Member of MD E&H ● Member of JASC ● Muswellbrook Chamber of Commerce ● Business Friend ● Word of mouth ● member -Upper Hunter mining environment group ● Email 		

2. How would you rate the registration process? (on a scale of 1-5, where 1 is unsatisfactory, 5 is excellent)		
Answer Choice	Responses	%
5	19	55.9%
4	13	38.2%
3	1	2.9%
2	1	2.9%
1	0	0.0%
TOTAL	34	100.0%
Note: Mean score of 4.47 for 2019 (up 0.1), 2018 mean score: 4.37, 2017 score: 4.21		
Other Comments (3): <ul style="list-style-type: none"> ● Think the invitation needs to be sent wider than just the business community. ● I just rocked up! ● my company registered for me so unable to rate 		

3. How would you rate the Forum overall? (on a scale of 1-5, where 1 is unsatisfactory, 5 is excellent)		
Answer Choice	Responses	%
5	10	30.3%
4	18	54.6%

3	3	12.1%
2	1	3.0%
1	0	0.0%
TOTAL	33	100.0%

Note: Mean score of 4.12 for 2019 (up 0.25), 2018 mean score: 3.87, 2017 mean score: 3.60

Other Comments (10):

- Workshops were too structured. Community members had things they wanted to raise that did not fit the categories.
- I think we need to re-energise the forum and attract a broader range of community stakeholders.
- It was a good overall information session.
- It was great, I just had not attended one before so didn't know what to expect.
- First time attending Forum, well organised and very informative.
- Enjoyed the increased delivery "flexibility".
- Need to attract more general members of community.
- Good forum with relevant content, I felt there was missing representation of young people and families. Much of the community members able to attend were of an older demographic.
- Good information.
- Did not like the data chunking of air quality, fails to address this important issue appropriately from an impartial scientific perspective.

4. What was the highlight of the 2019 Forum for you?

Comments (32):

- Important collective discussions for future planning in our region and suggest more left attendees are invited such as hunter renewal.
- Air quality presentation was interesting.
- The general level of open discussion between all participants/
- Being able to speak with the various mine site representatives at the stalls.
- Meeting the CEO of the Aboriginal Business Commerce Group.
- The openness for the discussions.
- Networking and the workshop.
- Discussion tables were very successful, connecting with others and understanding different points of view.
- Exhibits exposure.
- Procurement forum was a welcome addition; both in creating supply chain connectivity, & the opportunity to network with both stand holders & attendees.
- The speakers were excellent.
- Damon Roddis on air quality presentation.
- The information provided about air quality.
- Networking session.
- The opportunity to network with a broad cross-section of stakeholders involved in the mining industry in the region.
- The opportunity to have easy access to the companies procurement people and the local Chambers of Commerce and the Councils.
- Networking with Mining companies and others. Learning about what the mines are offering and comparing to other parts of the state.
- Seeing the capabilities of the mapping program that the people from NSW Resource Regulators were demonstrating. The virtual reality experience provided at the UHMD stand.
- Involvement and engagement of the mining sector and the community.
- Could not stay long, so not applicable.
- Presentation on air quality results.
- Meeting new suppliers.
- Presentation on air quality of Hunter Valley compared to other areas.
- The discussion tables with community members were interesting.
- Networking with other businesses, community groups & community members.
- The networking session was really useful.
- Workshops.
- Presentation by Damon Roddis ERM on air quality data.
- Networking.

- The air quality presentation explaining the increasing dust trends across all of NSW, not just the Hunter Valley.
- Great opportunity for industry, government and community to come together and discuss what each of us are doing.
- Chance to hear the latest news and updates on the projects.

5. How would you rate this year's Forum compared to last year?

Answer Choice	Responses	%
First time attending	13	39.4%
Not as good as previous year	1	3.0%
On par with previous year	8	24.2%
Better than the previous year	11	33.3%
TOTAL	33	100.0%

Other Comments (5):

- Venue fit for purpose
- The race club at Muswellbrook was a better venue being indoors and outdoors.
- More people, more opportunity for input
- The Civic Centre kept everyone one together. At the Racecourse it was too spread out and the displays outside were easily blown about. Being inside this year meant displays weren't disturbed by the wind.
- Did not attend last year

6. How would you rate the conference facilities and food at the Forum venue, Singleton Civic Centre? (on a scale of 1-5, where 1 is unsatisfactory, 5 is excellent)

Answer Choice	Quality of Food		Conference Facilities	
	Responses	%	Responses	%
5	19	59.4%	17	60.7%
4	12	37.5%	10	35.7%
3	1	3.1%	1	3.6%
2	0	0.0%	0	0.0%
1	0	0.0%	0	0.0%
TOTAL	32	Mean: 4.56	28	Mean 4.57

Note: 2018 mean scores were 4.25 (Quality of food) and 4.3 (Conference Facilities). 2017 mean scores were 3.50 (Quality of food) and 3.26 (Conference Facilities)

Other Comments (8):

- Could have been an opportunity to have locally sourced food as a feature to spark conversation and develop a deeper understanding of regional impacts of mining.
- The venue was good for the amount of people and having the site stalls away from the actual tables worked well.
- Excellent.
- Much better to be inside in an air-conditioned environment with more space.
- The Civic Centre has had some great improvements made.
- No further comments.

- Food was excellent!
- Good venue.

7. How would you rate the Forum as an opportunity to network with colleagues and other stakeholders? (on a scale of 1-5, where 1 is unsatisfactory, 5 is excellent)

Answer Choice	Responses	%
5	17	51.5%
4	13	39.4%
3	3	9.1%
2	0	0.0%
1	0	0.0%
TOTAL	33	100.0%

Note: Mean score of 4.42 in 2019 (up 0.15), 2018 mean score: 4.27, 2017 mean score 4.0

Other Comments (3):

- There was a huge imbalance of concerned citizens to mining companies and associated services.
- wonderful opportunities, everyone was very engaged.
- Opportunity to engage with state government is opening doors.

8. Do you have any suggestions on how we could improve networking opportunities?

Comments (20):

- Hunter futurepreneurs link.
- Possibly allocate extra time.
- Email more groups that are concerned about the future from coal and the ones that are seriously concerned for the health of the community, including mine workers and their families.
- Please provide a list of who will be there in advance and their titles.
- Hunter Air Quality cannot be dismissed by ERM Study of UHAQMN Averages.
- Continue to offer a networking-encouraging session (i.e.; the procurement session).
- It would be nice to see some more community members there.
- I believe the day could have taken the whole day or early afternoon
- Allow companies to just have one stall instead of two stalls. The stand can still be targeted to the focus areas, but I think one stall will still promote robust conversation.
- No, there was lots of time to catch up with people.
- I think the networking opportunities at the forum, particularly the Networking Session, work for people who aren't shy, but for those who are it may be a bit intimidating. A lot of the time people at the stands appeared to be catching up with people they already know, a shy person is unlikely to feel comfortable breaking into those conversations. I don't have answers unfortunately, but I think some thought needs to be put into this, particularly to assist members of the public who may not feel overly comfortable in this environment in the first place. It's their voices that the Dialogue really needs to hear. The table discussion session was better from this point of view.
- Early observation was there weren't many community participants, mainly industry and Council representatives, although this may have changed after I left.
- Spread Forum's further apart from each other. One earlier in the year, and one towards the end of the year would be more beneficial.
- Limit how many are run, we found that stakeholder engagement with procurement lower than the previous year.
- There appeared to be a slight drop in numbers for the round table sessions. perhaps have these earlier in the day.
- Allow businesses to share information about what they do in an information pack which delegates take with them.
- No. the session worked well.
- Overall satisfactory.

9. Did you have enough opportunities to raise or discuss the issues of most importance to you?

Answer Choice	Responses	%
Yes	29	87.9%
No	4	12.1%
TOTAL	33	100.0%

Other Comments:

- More flexibility in workshop to raise concerns. Wanted to talk about final land use, but facilitator kept to revegetation of disturbed areas.
- Exceptionally poor road infrastructure. Opportunity to show real time air quality video. Unsustainable 12 Hour Rosters
- Air Quality and Community Health
- The discussion points in the interactive sessions were a bit restrictive. They related to existing initiatives and ways to improve them. It would be good to have at least one section where you invite suggestions or ideas for projects or initiatives that the UHMD might tackle in future.

10. Were there any other stakeholders (individuals or organisations) you think should have been included in the 2019 Forum that were not in attendance?

Comments (24):

- Green, left, health representatives, lack of the other members non-mining input
- More community members, including GPs and school leaders.
- Just more so the general community - we need to think of a way to attract the "everyday" people - in order to speak with the majority - this potentially means an after-hours forum
- As stated, with regards to networking. There needs to be a balance, otherwise it just becomes a back-patting exercise to Billionaire Mining Companies
- SAFEgroup Automation - We provide really good solutions to collecting a lot of the data the Environmental guys need for EPA reports and all compliance reports actually, would have been good to have had our stand there.
- NSW Indigenous Chamber of Commerce attended for the first time this year after hearing about the Forum from another source, would appreciate being on the invite list for future forums.
- Local GP's from Singleton & Muswellbrook.
- Just community.
- More general community.
- More encouragement for community - doctors interest in air quality.
- Schools, NFP Organisations, Young People, Aboriginal and Torres Strait Islander community members. These groups were underrepresented on the day.
- The doctors that are most interested in the health aspect of mining e.g. Dr Vickers, Dr Au etc.
- I'm not sure what the proportion of community attendance was, but it seemed there were not many members of the public there. They are the voices that need to be heard.
- Can't comment because of limited attendance time.
- More advertising to encourage local supplier participation.
- Muswellbrook Shire Council were vastly underrepresented.
- More diversity in thought through attendees with opposing views. Healthcare, aged care, disability groups.
- Not that I can think of.
- Local aboriginal community. Broader community involvement - the event was invitation only, so the feedback that is received is feedback that the industry either wants to hear or already knows.
- Worthwhile to invite local polities?
- Rotary, Lions Club, Local School Leaders or teacher representatives (Environmental / Careers teachers).

11. How can we improve our engagement with community stakeholders to encourage greater participation in Dialogue activities? (Suggest any community engagement initiatives, channels or methods that might be better utilised by the Dialogue).

Comments (19):

- Schools. Ask the kids. They will be dealing with the impacts and artifacts of our adult decisions.
- Perhaps consider a night time forum and use social media to attract a broader range of community stakeholders.

- Possibly some more advertising in local newspapers & coal face.
- The Dialogue meetings need to be better advertised through Facebook, build emails lists of community groups, and Community radio, based on subjects relevant.
- Over 10 Years the Community have documented for the MD the Mining issues. it's time to respond in kind.
- Maybe connect with more community groups via email i.e. Men's Shed etc.
- Greater promotion through social media - local media
- Prepare a formal invitation to community that is shared not just with chamber emails but local NFP interagency groups. Also connect with school captains to get feedback from young people. Prepare an invitation that companies can use to share with their key stakeholders.
- Increased presence in Social Media.
- I am not sure. I believe I have not seen the information to this event until my colleague mentioned it on Monday before. I am not sure what channels would be most appropriate. I for one do have information overload and will pick the things that are relevant. For me it was relevant from the business side being able to network with the procurement side of mining and to see how what I do fits in with mining operation and staff wellbeing. I also appreciated being able to share my experiences and offer solutions from a health practitioner perspective. I do believe that advertising through the various notice boards on Facebook may be a possibility and making people realise that everyone is welcome and can have their say, or at least find out what is being done.
- Perhaps we need to ask members of the public who didn't attend why they didn't want to come. Maybe having it at a different time (evening, weekend) would make it more accessible for them. The people there in their work capacity are being paid to be there, but community members would have to take leave from their jobs to attend during a weekday. Perhaps there's other reasons they didn't come, but these need to be understood.
- Perhaps through the CCCs and local Councils.
- More engagement to attract local suppliers.
- Not sure but there needs to be many more community groups represented. Perhaps having the forum on a weekend or evening when people may be more available to attend
- Actively promote. I wasn't aware I could just register to attend. It felt like a closed group until I attended & participated.
- Already pretty comprehensive. Perhaps through mining workers to their families and friends.
- Consider timing of consultation activities - to broaden engagement outcomes, seek to engage with the community outside traditional methods (e.g. after hours, at sporting events, in the local shopping centre, not just when the industry wants something). Take on board the feedback from the forum and broaden the conversation around the harder issues - acknowledge impact and then create tangible responses.
- Possibly held at night to allow engagement with some companies / people who are at work. General comment is that the community members are mostly retirees.

12. Please list any topics you would like to see addressed at future forums

Comments (18):

- Future resilience Employment prospects post mining Valuing intrinsic nature versus economics.
- Mine relinquishment and exploration of 'best use' of land post mining, with a cumulative focus, not individual mines.
- More presentations from local and state government of post mining strategic planning - the onus should not be on the industry alone to decide the future of the region.
- Need to continually address the dust monitoring results being conducted to get the message out to the general public. What companies are doing to manage water and water restrictions.
- Extremely long travel times to work. Serious lack of road infrastructure, (Singleton Bypass) Highlight Mining companies fined for breaches and ask for their explanation. 12 hour rotating rosters that are unsustainable and unhealthy for workers with shift times that alienate families and the community at large. The reason is to reduce labour, WHY. Ask the question about the use of Fly in Fly out workers and the large use and abuse of contract labour, recently highlighted in the Newcastle Herald of very poor treatment by mines.
- Mine Pollution Minimisation & Dispersion.
- Continue on the path of health and environment and more new initiatives.
- Environmental issues - school tours linked to the curriculum - opportunity for community groups to present their viewpoints.
- Aboriginal and Torres Strait Islander participation
- Regional skills and labour force issues Economic diversification - in addition to procurement from mines Mine rehabilitation - planning and best practice Energy futures for the region and beyond.
- I think air quality always need to be part of it.
- A presentation from NSW Planning on factors they consider in approving new mines or extensions of mines. It seems like they are approving too many, so maybe they could explain this. A presentation from the NSW Resource Regulators on their mapping program and the level of open, disturbed land

- in the Hunter each year, to see if it really is increasing over time as it appears to be.
- The impact to the community of biodiversity offset land - is this the right approach. How do we get a coordinated approach to land use including final voids?
- community health.
- Update on performance of rehab land.
- Discussed in Forum. Should be in the notes.
- Presentation from council - perspective on land use planning. Presentation from schools - students or teachers or both, feedback on their experiences Presentation on future setting - what do we want the valley to look like in 2040?
- working in harmony projects- tell the story of coexistence.

13. What improvements can we make for future events? Is there anything you'd like to see more, or less of?

Comments (14):

- Youth engagement
- Presentations, networking and stalls were good. Workshop was good but a little restricted.
- As this was my first event, I thought overall it was very well done and do not have any improvement suggestions at the moment.
- Perhaps presentations about these subjects by people or groups of alternate views. Proper debate about real subjects that affect this community. Factual and Integral Mining Dialogue.
- Examples of how the different companies, manage data, collect data and report the data to the authorities that they report to.
- Each of 14 Mines "G Manager" to provide innovative Mine Pollution Minimisation & Dispersion measures that could half the 2019 PM10 and PM2.5 24 Hr. Avg UHAQMN readings
- Table discussions were very robust this year so maybe enhance on that aspect, more time for table presentations and question time.
- Maybe another 60 minutes.
- Presentations were full of good information but could be more engaging Add Slido like question and answer tool to promote audience engagement with the presenters.
- A more open agenda that encourages people to contribute new ideas / knowledge / suggestions. The current format, while great for networking, does not do quite enough to encourage open discussion.
- Non that I know of.
- None come to mind. Continue to focus on one aspect for a detailed update (e.g. air quality this year).
- 90 minutes too long.
- More input from stakeholders outside the industry.

14. Are you planning to attend a future Dialogue Forum event?

Answer Choice	Responses	%
Yes	31	93.9%
Possibly	2	6.1%
No	0	0.0%
TOTAL	33	100.0%

15. Who were you representing at this year's Forum?

Answer Choice	Responses	%
Mining Industry	10	31.3%
Individual or Community Group	10	31.3%
Business community	5	15.6%
Local Government / Council	3	9.4%

Government Department	3	9.4%
Other (please specify)	2	6.3%
Research Institution	1	3.1%
Local Media	0	0.0%
TOTAL	32	100.0%
Comments (2):		
<ul style="list-style-type: none"> ● NSW Indigenous Chamber of Commerce ● Independent Chair of CCCs 		

16. Who were you representing at this year's Forum?		
Answer Choice	Responses	%
Muswellbrook	5	15.6%
Singleton	14	43.8%
Other Upper Hunter	4	12.5%
Newcastle/Lower Hunter	8	25.0%
Sydney	1	3.1%
TOTAL	32	100.0%
Comments:		
<ul style="list-style-type: none"> ● Kurri Kurri area ● Rutherford ● Central Coast ● Brisbane ● Broke 		

**Upper Hunter Mining Dialogue
Joint Environment Working Group - 11 March 2020**

Agenda Item 5

PRESENTATION: Upper Hunter Air Quality Monitoring Network - Changes to reporting on air quality - Department of Planning, Industry and Environment, Environment, Energy and Science Group (representative TBC)

DPIE has recently changed to reporting hourly averages for air [pollutants, rather than rolling 24-hour averages on its air quality monitoring websites. The Air Quality Index has also been modified and will be applied to the hourly averages. See the following link for further information regarding this change:

<https://www.dpie.nsw.gov.au/air-quality/air-quality-concentration-data-updated-hourly>

The change is in response to the air quality issues associated with the bushfires and the desire to report data that is more relevant and accurate at shorter timeframes. Given the rapid introduction of this change, there was a lack of consultation and AQI categories are 'interim'.

Representatives from the Environment, Energy and Science (EES) Group within DPIE recently hosted a webinar on the challenges encountered in measuring, reporting and forecasting of air quality in NSW during the 2019-20 bushfire season.

FOR INFORMATION/DISCUSSION

**Upper Hunter Mining Dialogue
Joint Environment Working Group - 11 March 2020**

Agenda Item 6

EMISSIONS AND HEALTH UPDATE

Please see below for a summary of current Dialogue projects and other activities being undertaken in the Emissions and Health area:

Analysis of Upper Hunter Air Quality Monitoring Network Data

As one of the key projects supported by the Dialogue's Joint Advisory Steering Committee in 2019, the Dialogue has been seeking to conduct an analysis of Upper Hunter Air Quality Monitoring Network data to provide an assessment of long-term trends on PM10 and PM2.5 levels.

The Dialogue has engaged ERM to undertake the study, which involves an analysis and interpretation of existing air quality monitoring network data (specifically PM 10 and PM 2.5) and other relevant contextual climate information (e.g. rainfall, temperature, weather and climate, wind speed/direction, solar exposure) to create a narrative around air quality in the Upper Hunter and answer the following questions:

1. Has the Air Quality in the Upper Hunter Valley changed since monitoring began? and
2. Is the Air Quality in the Upper Hunter Valley measured at the monitoring stations different from Air Quality measured at other locations in NSW?

Damon Roddis (Principal, Air Quality) provided a presentation at the 2019 Forum containing some preliminary results from the analysis undertaken to date. There was significant discussion of this project through the discussion session feedback, as well as in the participant survey, and the presentation slides were of keen interest to many stakeholders not in attendance.

The Dialogue secretariat is awaiting a review of the draft report from ERM and will seek to distribute to key stakeholders shortly for feedback

Upper Hunter Air Quality Monitoring Network - Winter 2019 Updates

The Winter 2019 seasonal air quality update was recently published, see update below for reference. Upper Hunter air quality for 1 June to 31 August 2019 was generally good to fair. Muswellbrook and Singleton recorded very good to fair air quality indices within national benchmarks 96% and 98% of the time, respectively. Conditions in the region continued to be dry and warm, resulting in elevated particle levels from local dust sources, including those from industrial activities, combined with long-range dust transport during widespread dust events.

- Levels of nitrogen dioxide (NO₂) and sulfur dioxide (SO₂) were below benchmark concentrations.
- Daily average levels of fine particulate matter PM_{2.5} (particles less than or equal to 2.5 microns in diameter) were above the 25 µg/m³ (micrograms per cubic metre of air) benchmark on 2 June at Muswellbrook and 8 June at Muswellbrook and Singleton. These were likely due to woodsmoke, with elevated levels from late evening to early morning on cold days under calm and variable conditions.
- Daily average levels of PM₁₀ (particles less than or equal to 10 microns in diameter) were above the 50 µg/m³ benchmark on 22 days (7 and 13 June, 2, 12, 21, 23 and 26 July, 3, 6–9, 14–17, 19–21, 23–25 August). Regional maximum daily PM₁₀ levels on these days ranged from 50.2 to 128.4 µg/m³.
 - There were no days over the PM₁₀ benchmark at Bulga, Wybong and Merriwa (however no data were available at Merriwa during eight days in August) and up to 16 days at Camberwell).
 - At the large population sites, PM₁₀ levels were over the benchmark on 8 August (Aberdeen and Muswellbrook), 9 August (Aberdeen and Singleton) and 19 August (Muswellbrook) due to long range dust transport and on 23 August (Aberdeen) potentially due to local dust sources, including those from industrial activities.
 - The most extensive event occurred from 8 to 9 August, being an exceptional event due to the contribution of long-range dust transported from South Australia across central and northern NSW during the passage of two cold fronts, along with local dust.

- Elevated levels on these days occurred under moderate to strong west to northwest winds, likely also causing dust contribution from local sources, especially at those sites near mines. Elevated hourly particles observed at the Merriwa background station and Aberdeen on these days, show the influence of particles from outside the valley.

Full report:

<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Air/air-quality-monitoring-network-upper-hunter-winter-2019-200060.pdf>

Air Quality in the Upper Hunter Valley - NSW Government Fact Sheet

The NSW Department of Planning, Industry and Environment (Energy, Environment and Science Division) recently published an Upper Hunter air quality brochure, which can be viewed here:

<https://www.environment.nsw.gov.au/research-and-publications/publications-search/air-quality-in-the-upper-hunter-valley>

Leanne Graham recently attended the 2019 Forum and distributed the brochure amongst participants during the information and networking session. This will supplement the Dialogue's Air Quality Fact Sheets and covers similar content such as the health impacts and the various projects and activities the Government is undertaking to protect people and air quality in the Upper Hunter.

The Department has also recently published fact sheets regarding Emergency air quality monitoring in response to bushfires (a series of temporary emergency incident air quality monitoring instruments have been deployed) and Monitoring for dust events.

Upper Hunter Dust Risk Forecasting Scheme

No update.

Recommendation:

- That Working Group members discuss recent air quality issues and provide feedback on the Dialogue's current air quality projects.

FOR INFORMATION/DISCUSSION

Attachment: Upper Hunter Air Quality brochure

Air quality in the Upper Hunter Valley

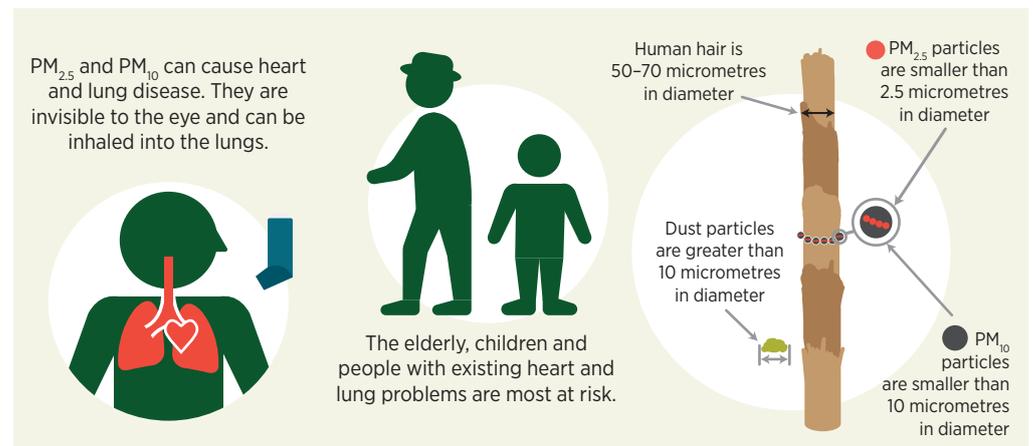
Your local air quality monitoring network

The NSW Government has been running 14 air quality monitoring stations in the Upper Hunter since the air quality monitoring network was fully established in 2012. We measure common air pollutants and weather conditions continuously. Air pollution levels are reported and updated hourly on the environment website.

Health effects of common air pollutants

Common air pollutants, such as particulate matter (referred to as PM_{10} and $PM_{2.5}$) and gases, are emitted from human activity and natural sources. PM_{10} and $PM_{2.5}$ also form in the air from chemical reactions between particles and gases, such as SO_2 (sulfur dioxide) and NO_2 (nitrogen dioxide). Long-term exposure to $PM_{2.5}$ from vehicles, industry, wood smoke and fires can cause heart and lung disease. Short-term exposure may exacerbate the symptoms of these diseases.

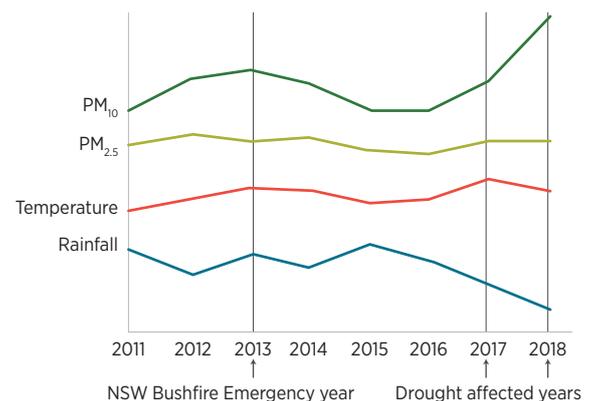
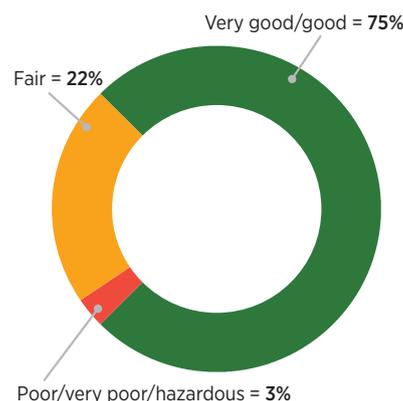
Most of the dust we see is made up of larger particles that are filtered out by our nose and throat. The smaller particles, PM_{10} and particularly $PM_{2.5}$, have the greatest health effects, because they can travel deep into the lungs.



Trends in air quality

Air quality in the larger population centres, Muswellbrook, Singleton and Aberdeen, met national standards 97% of the time in 2012-2018.

In warm dry years, the PM_{10} and $PM_{2.5}$ particle levels increase, and air quality decreases.





What's happening in the Upper Hunter?

Climate, weather and low-lying terrain, as well as local particle sources, can influence air quality levels significantly in the Upper Hunter.

Particle pollution sources

The major sources of particle pollution in the Upper Hunter are coal mining, coal-fired electricity generation, non-road vehicles and equipment, planned burning and bushfires, windblown dust and household wood heating.

Dust travels a long way

Strong winds raise loose soil and transport dust over long distances. Windblown dust may travel from western parts of the state to the Upper Hunter when conditions are dry. Rain washes out pollutants in the air. When the ground is wet, windblown dust decreases.

The seasons influence our air quality

Smoke from wood heaters increases PM_{2.5} particle levels in cooler months. Smoke from hazard reduction burning in autumn to spring and bushfires in spring and summer increase PM₁₀ and PM_{2.5} particle levels.

Windblown dust during dry conditions, especially in spring and summer, increases PM₁₀ particle levels. Winds typically flow from the south-east in warmer months and change to north-westerly in cooler months.

Low-lying terrain may trap particle pollution

Low-lying areas may trap air pollutants overnight when the air is calm. In winter, wood smoke from household wood heaters may build up to harmful levels in Muswellbrook and Singleton.

Climatic influences

Drought increases dust and bushfire risk. Climate change intensifies hot dry phases in natural climate variability.

Case study: Sources of PM_{2.5} particles in Muswellbrook and Singleton in 2012

The CSIRO studied the make-up of PM_{2.5} particles collected at Muswellbrook (M) and Singleton (S), in 2012–2013, the first years of operation of the Upper Hunter Air Quality Monitoring Network. The findings led the government and councils to raise community awareness of the potentially harmful levels of PM_{2.5} from wood smoke in winter. The bar graphs below show the findings of the study.

Sources of overall air pollution		Sources of PM _{2.5} air pollution (%)	
Vehicles and industry	Coal mining activity and equipment, coal-fired power stations and motor vehicles emit PM ₁₀ , PM _{2.5} , NO ₂ and SO ₂ .	M 31%	S 40%
Wood smoke from home heating	Household wood heating in cooler months emits PM _{2.5} particles.	M 31%	S 15%
Sea salt combined with particles from industry	Sea salt combines with particles from industry, over time, to form PM _{2.5} particles.	M 13%	S 17%
Bushfires and planned burns	Smoke from bushfires and hazard reduction burning emits PM ₁₀ and PM _{2.5} .	M 12%	S 8%
Soil	Dust storms transport windblown PM ₁₀ and PM _{2.5} particles across the region.	M 10%	S 12%
Fresh sea salt	PM ₁₀ and PM _{2.5} particles are blown inland as fresh sea salt from the coast.	M 3%	S 8%

Air quality varies across the Upper Hunter due to local particle sources and surface exposure to wind

Particle levels vary between monitoring stations, due to local particle sources and exposure to wind. Four types of monitoring stations help to understand the air quality throughout the region. Stations in larger population centres and smaller communities measure air quality experienced in these centres.

Diagnostic stations measure air quality near mines to help diagnose sources and movements of particles. Background stations measure air quality at the north-west and south-east extents of the Upper Hunter.



For more information

Simple steps to protect your health: www.health.nsw.gov.au/environment/air/Pages/simple-steps.aspx

Air pollution alerts by email or SMS: www.environment.nsw.gov.au/aqms/subscribe.htm

Air pollution levels (updated hourly): www.environment.nsw.gov.au/aqms/uhunteraqmap.htm

Common air pollutants: www.health.nsw.gov.au/environment/air/Pages/common-air-pollutants.aspx

NSW Air Quality Index: www.environment.nsw.gov.au/topics/air/understanding-air-quality-data/air-quality-index

Upper Hunter air quality monitoring network: www.environment.nsw.gov.au/topics/air/monitoring-air-quality/upper-hunter

Upper Hunter Air Quality Advisory Committee: www.epa.nsw.gov.au/working-together/community-engagement/community-news/upaq-advisory-committee

Seasonal air quality reports: www.environment.nsw.gov.au/topics/air/upper-hunter-air-quality-reports

How to reduce your wood smoke: www.epa.nsw.gov.au/news/media-releases/2019/epamedia190619-wood-smoke-isnt-good-smoke--tips-to-reduce-wood-heater-pollution

How the EPA regulates industry: www.epa.nsw.gov.au/your-environment/air/industrial-emissions

Industry compliance with project approvals: www.planning.nsw.gov.au/Assess-and-Regulate/About-compliance/Inspections-and-enforcements

Upper Hunter Fine Particle Characterisation Study: www.environment.nsw.gov.au/topics/air/research/previous-research/upper-hunter-fine-particle-characterisation-study

What are we doing to protect people and air quality in the Upper Hunter?

Clean air is important for our health. Air pollution is a local, regional and global issue. The choices and actions of governments and people can improve the liveability of our communities.

Getting the message out

Air quality alerts are issued to the media and subscribers when air quality is poor. Hunter New England Health encourages community members to check the local air quality index to find information on current air pollution levels. Seasonal and annual newsletters report air quality compliance with national health goals.

Regulating industry

The NSW Government actively regulates industry to reduce emissions of air pollutants. The EPA requires mines to minimise dust from their activities. It inspects mines, especially during hot, dry weather. The EPA reviews the licences of mines, power stations and other industries to limit emissions.

The Department of Planning, Industry and Environment's Compliance Team regulates coal mines through a project approval procedure. The approval has conditions to manage air quality, including a requirement to implement an Air Quality Management Plan to monitor and minimise air pollution.

The NSW Resources Regulator regulates the exposure of workers to dust as well as mine rehabilitation.

Minimising smoke impacts from bushfires

The NSW Government reduces the risks of large bushfires by conducting controlled hazard reduction burning, which also benefits our native ecology. Weather conditions are considered when planning hazard reduction burning, to minimise air quality impacts.

Heating homes sensibly

Wood smoke from household wood heating increases particle pollution in cooler months. The NSW Government and local councils offer support to help householders switch to cleaner heating sources.

Reducing soil exposure

Effective land management means improving ground cover. Rehabilitation of exposed and disturbed soil surfaces reduces the risk of windblown dust.

Have your say

- To have your say on air quality in the Upper Hunter, email info@epa.nsw.gov.au, marked 'For the attention of the Upper Hunter Air Quality Advisory Committee'.
- To report pollution, phone 131 555 (the NSW Environment Protection Authority's Environment Line) or email info@epa.nsw.gov.au.
- For urgent health issues, please contact your GP or hospital emergency department. To report public health concerns, contact Hunter New England Health Population Health, on (02) 4924 6477.

Photo: Singleton Air Quality Monitoring Station (Jason Potts/DPIE)
Published by Environment, Energy and Science. Department of Planning, Industry and Environment. ISBN 978-1-922317-44-5 EES 2019/0618 October 2019, revised October 2019

**Upper Hunter Mining Dialogue
Joint Environment Working Group - 11 March 2020**

Agenda Item 7

UPDATE ON LAND MANAGEMENT PROJECTS

Please see below for a summary of current Dialogue projects and other activities being undertaken in the Land Management area:

Rehabilitation Principles and Commitments - 2018 Results

Since the August 2019 meeting, the Dialogue has updated the table of annual results to include the 2018 results, and some explanatory notes to provide context to the results. See the latest figures here:

<http://www.nswmining.com.au/dialogue/latest-projects/land-management/rehabilitation-principles-and-commitments>

Individual company reports can also be accessed via the following link:

<http://www.nswmining.com.au/dialogue/rehabilitation-reporting/reports>

Following positive feedback from the 2017 project, the Dialogue sought to once again produce a rehabilitation infographic to highlight key results and emerging trends as the project continues to progress. A copy of the infographic fact sheet has been included for reference, and can also be accessed via the following link:

<http://www.nswmining.com.au/getattachment/Dialogue/Latest-Projects/Land-Management/Rehabilitation-Principles-and-Commitments/UHMD-Rehabilitation-Results-2018-Complete-Results.pdf>

Planning is underway to commence the collection of industry data from the 2019 calendar year for reporting this year. Working Group representatives will be contacted shortly with a request for this company data.

Rehabilitation Principles and Commitments - Reporting on Buffer Land

The Dialogue's Steering Committee members supported a project to gather additional information about buffer land through the collection of 2018 data for the annual rehabilitation reporting project. The Dialogue was able to collect and report this data in publishing the 2018 rehabilitation principles and commitments results.

The majority of the 47,000 ha of buffer land held by mining companies is categorised as Agricultural land (90%). Another 8% of the total buffer land figure is made up of Other land (whether vacant land, land not suitable for use or uncategorised), with the final 2% consisting primarily of residential land. Commercial land and recreational land were reported in relatively minor amounts by mining companies.

This project has highlighted that there are differing interpretations of what constitutes 'buffer land' as well as the various subcategories listed. Industry feedback received through this initial data request will help the Dialogue to refine how buffer land is considered when seeking this information moving forward.

Grazing Trials / ACARP study into rehabilitation projects

See Agenda item 3

Beneficial Reuse of Voids summary document

At the February 2019 Dialogue meetings, the Steering Committee Members supported the publishing of the Beneficial reuse of voids report materials and felt that this work would be of benefit to improve stakeholder understanding of post-mining land use in the Upper Hunter.

The report was released prior to the 2019 Forum, and can be accessed on the Dialogue website via the following link:

<http://www.nswmining.com.au/getattachment/Dialogue/Latest-Projects/Land-Management/Investigation->

Pilot Pathway for Post-Mining Land Use

Work continues to advance case studies to test the pilot pathways for post mining land uses. NSWMC and member companies continue to advocate for action on this matter with a variety of regulators including the Department of Resources and Geoscience and the Resources Regulator.

While it was understood that resourcing was to be allocated within DPIE to manage this matter, this is yet to occur, and the matter is currently being managed by Michael Wright and Stephen Wills.

Investigating Availability of Long-Term Void Water Quality Information Members

The Dialogue is encouraging industry members with any available long-term water quality data from anticipated voids to provide this to the Dialogue to assist in building up a bank of information to help better inform industry's work in this area.

Synoptic Plan

No update.

Recommendation:

- **That Working Group members discuss the recent developments with land management projects.**

FOR INFORMATION / DISCUSSION

Attachment: 2018 Rehabilitation Principles and Commitments Infographic

REHABILITATION

Industry Principles & Commitments



Upper Hunter
Mining Dialogue

2018 Results & Insights

Since 2012, the Upper Hunter Mining Dialogue has been collecting annual rehabilitation data and information from mining operations across the Upper Hunter to provide information to the community regarding the amount of progressive rehabilitation being undertaken. The project supports two of the Dialogue's primary land management goals:

1. To decrease the time that disturbed areas are left without final or temporary cover, recognising that different mining operations are at different points in rehabilitation.
2. To achieve a consistent level of best practice, quality, integrated rehabilitation – both within the industry and with future land uses - across the Upper Hunter and to be a responsible steward of the land.

REHABILITATION PRINCIPLES AND COMMITMENTS

All Dialogue member companies have agreed to a set of common principles, developed by the Joint Environment Working Group, to drive improvements in the speed of rehabilitation and to provide aggregate data to the community about total land disturbed and rehabilitated. The Principles are as follows.

- Principle 1** Include rehabilitation planning in mine planning;
- Principle 2** Undertake progressive rehabilitation;
- Principle 3** Minimise time that disturbed areas are left without vegetation;
- Principle 4** Prioritise areas of rehabilitation and temporary cover to reduce impacts;
- Principle 5** Meet target for rehabilitation progress identified in the Mining Operations Plan; and
- Principle 6** Set quality targets for rehabilitation in the Mining Operations Plan and implement a monitoring program to measure performance.

Rehabilitation	2018 Result
A: Total land area disturbed and not yet rehabilitated at the beginning of the reporting period	21,816 ha
B: Total amount of land newly disturbed within the reporting period	1,666 ha
C: Total amount of land newly rehabilitated within the reporting period	1,071 ha
D: Total land area disturbed and not yet rehabilitated at the end of the reporting period (D=A+B-C)	22,411 ha
E: Total area of rehabilitation at all operations at the end of the reporting period	12,714 ha
F: Annual rehabilitation to disturbance ratio (C:B)	0.64
G: Overall proportion of disturbed land rehabilitated	36.2%
Estimate of total land held as biodiversity offsets	41,139 ha
Estimate of the total area of land managed for agricultural use (e.g. grazing, cropping, viticulture)	59,212 ha
Estimate of the total amount of buffer land	47,064 ha

Local Government Area Sizes	
Muswellbrook LGA	340,500 ha
Singleton LGA	489,300 ha
Total	829,800 ha
Mining Land Use	
Total mining rehabilitation completed	12,714 ha
Total disturbed land awaiting rehabilitation	22,411 ha
Total disturbance across Upper Hunter LGAs	35,125 ha
Other Land Use	
Total agricultural land use	243,200 ha
Total protected areas (incl. National Parks)	310,600 ha
Total urban area (Residential, Business and Industrial)	2,700 ha

To find out more, visit miningdialogue.com.au

Industry rehabilitation data for 2018 was kindly provided for this project by Glencore, Yancoal, The Bloomfield Group, BHP, Muswellbrook Coal Company, Peabody Energy, Mount Pleasant Operation, Bengalla Mining Company and Malabar Coal. Contextual information has been sourced from the NSW Department of Primary Industries, Australian Bureau of Statistics, Singleton City Council and Muswellbrook Shire Council.

REHABILITATION

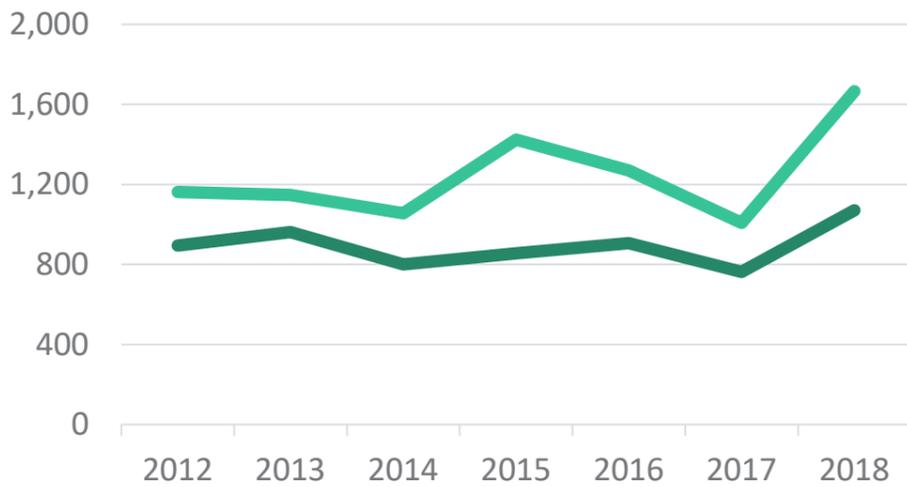
Industry Principles & Commitments



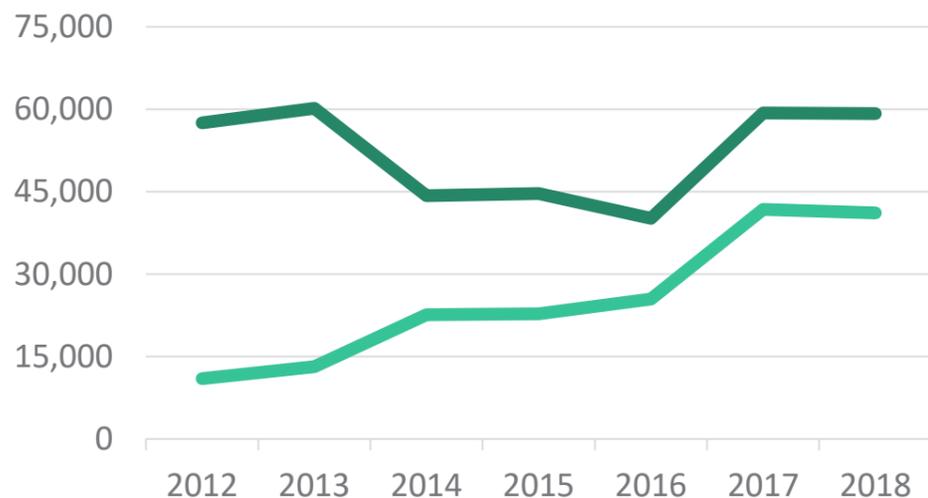
Upper Hunter Mining Dialogue

2018 Results & Insights

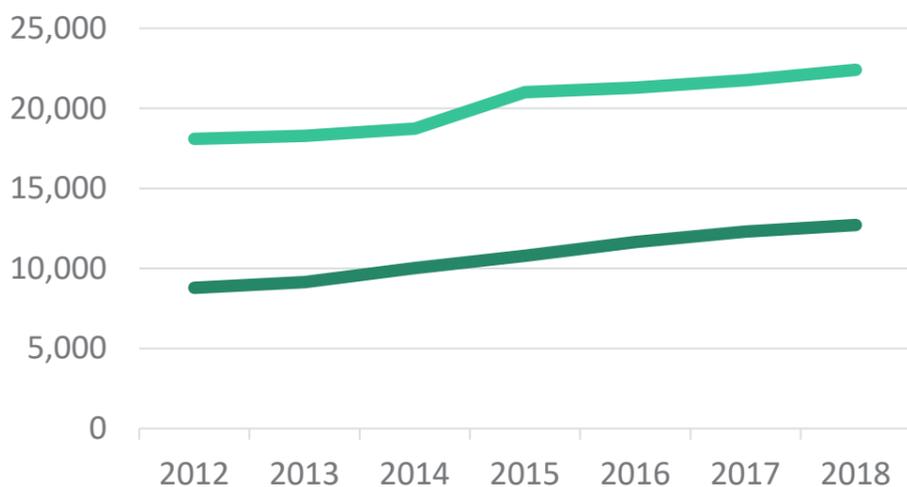
Land newly rehabilitated vs. Land newly disturbed (hectares)



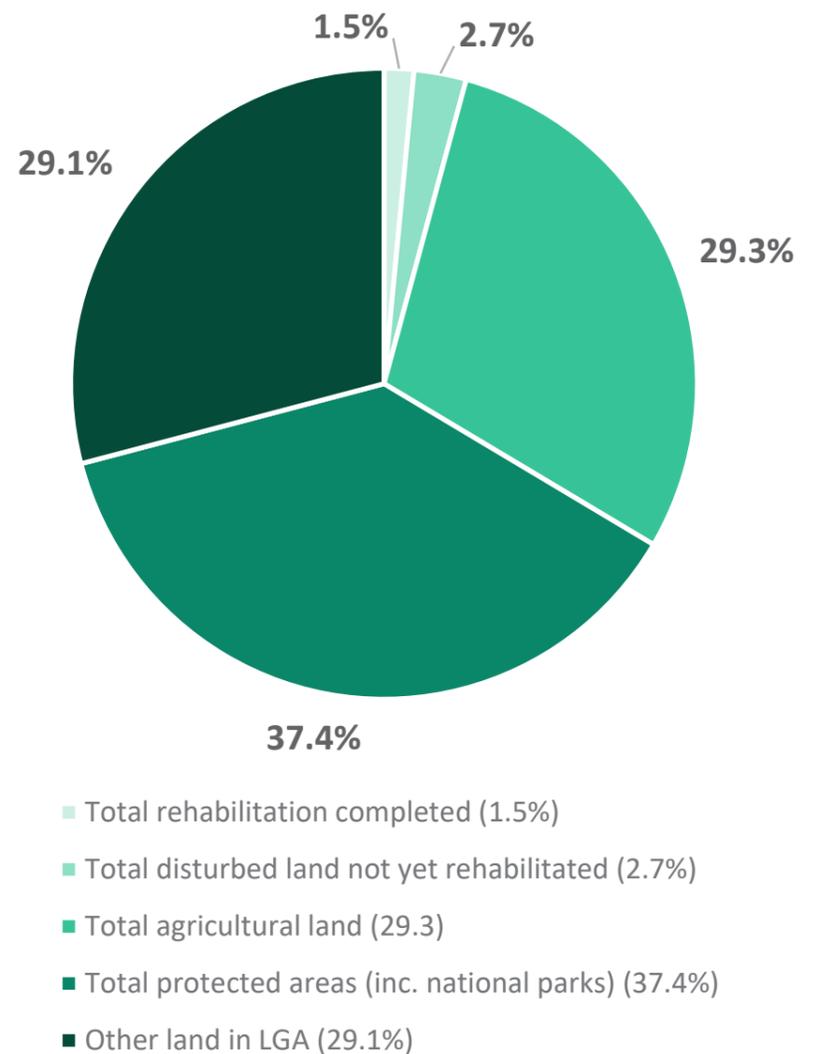
Total managed land vs. Total biodiversity offsets (hectares)



Total land rehabilitated vs. Total land disturbed and not yet rehabilitated (hectares)



Land Use in the Upper Hunter (Muswellbrook and Singleton LGAs)



Key Land Uses

Total rehabilitation completed	12,714 ha
Total disturbed land not yet rehabilitated	22,411 ha
Total agricultural land	243,200 ha
Total protected areas (including national parks)	310,600 ha
Other land in LGA (includes land uses such as residential, business, industrial, biodiversity offsets, industry managed land)	240,875 ha

Total Muswellbrook & Singleton LGA area **829,800 ha**

Note: The figures above are presented using available NSW Government data and industry rehabilitation data. Figures may overlap between the land uses.

Just **2.7%** of all land in the Upper Hunter was actively disturbed by mining in 2018

Over **36%** of all disturbed mining land in the Upper Hunter is under rehabilitation

Since 2012, **45%** more new rehabilitation has been undertaken in the Upper Hunter

There is almost **4** times the amount of biodiversity offsets in 2018 compared to 2012

To find out more, visit miningdialogue.com.au

**Upper Hunter Mining Dialogue
Joint Environment Working Group - 11 March 2020**

Agenda Item 8

UPDATE ON WATER PROJECTS

Please see below for a summary of current Dialogue projects and other activities being undertaken in the Water area:

Water Accounting Framework - 2018 Water Use Results

The Dialogue published industry water use data for the 2018 calendar year prior to the 2019 Forum, and can be accessed via the Dialogue website here:

<http://www.nswmining.com.au/dialogue/water-accounting-framework/uhmd-2018-water-usage-results>

The Dialogue is developing a Fact Sheet/Frequently Asked Questions (FAQ) document to help improve general understanding of some of the complex aspects of the water accounting framework, which was provided concurrently with the 2018 results from Dayjil Buhle at HEC.

Planning for the collection of industry water use data in the 2019 calendar year is currently underway. Working Group members will be contacted shortly with an information request.

Water Accounting Framework - Contextual Information and Industry Case Studies

As part of the 2018 WAF data request, the Dialogue secretariat has also sought to gather additional information from industry to provide some context to annual water results. This project was supported by the Steering Committees at the recent Dialogue meetings to discuss 2019 projects.

The Dialogue received annual statements from most members and published a document on the Dialogue website, in a similar fashion to the Dialogue's annual Rehabilitation Principles and Commitments report which each individual company completes. The 2018 Water Use Summary Report can be accessed here: http://www.nswmining.com.au/getattachment/Dialogue/Water-Accounting-Framework/UHMD-2018-Water-Usage-Results/Upper-Hunter-Mining-Dialogue_Water-Accounting-Framework_2018-Water-Use-Summary-Report.pdf

The Dialogue received several water stewardship or water saving initiatives that have been implemented in the Upper Hunter, however further detail is needed to develop these into case studies. The Dialogue will be working with those companies shortly to draw out this information to supplement the water reporting activities.

Hunter River Salinity Trading Scheme (HRSTS) Water Quality Study

Following the completion of the initial study into the water quality at Hunter River Salinity Trading Scheme discharge points compared to the overall health of the Hunter River, the Steering Committee met with the EPA and the University of Newcastle to discuss the need for a follow-on study. It was considered that, given the good performance of the scheme, that further studies may not be necessary. The steering committee thought it important to close out the issues identified in the initial study and are currently considering the need for further studies.

The Dialogue Secretariat sought advice from hydrological consulting firm HEC on a monitoring protocol to examine the actual discharge levels under regular discharge conditions. Given the sampling was taken during a prolonged dry period, the results are not representative of discharge conditions and would impact the results. The monitoring protocol has been provided to member companies and enacted when a discharge event occurs.

Given the recent wet conditions and potential for upcoming flow events, the Dialogue is examining the possibility of re-commencing site sampling to determine results under normal discharge conditions. The Dialogue secretariat will advise on any further developments as they arise.

Recommendation:

- That Working Group members discuss the progress made with the Dialogue's current water projects.

FOR INFORMATION / DISCUSSION

Attached: 2018 Water Accounting Framework Results

UPPER HUNTER WATER BALANCE 2018



Upper Hunter Mining Dialogue

Mining's water use

The Upper Hunter Mining Dialogue assessed water use by the mining industry in the Upper Hunter in 2018. Using a common accounting framework, mining companies have reported their water inflows and outflows from operations. This has helped them to manage their water use and embark on water saving and reuse opportunities.



MORE THAN **2x**

as much water evaporated from the Hunter River System storage dams as was extracted from the Hunter River System by mining companies

The mining industry used

JUST 8%

of water in the Upper Hunter River System

22%

of mine water came from rivers and alluvial aquifers

27%

of mine water was sourced from onsite rainfall and runoff

33%

of water was sourced from deep aquifers that are of limited use to other water users due to their high salinity

The mining industry

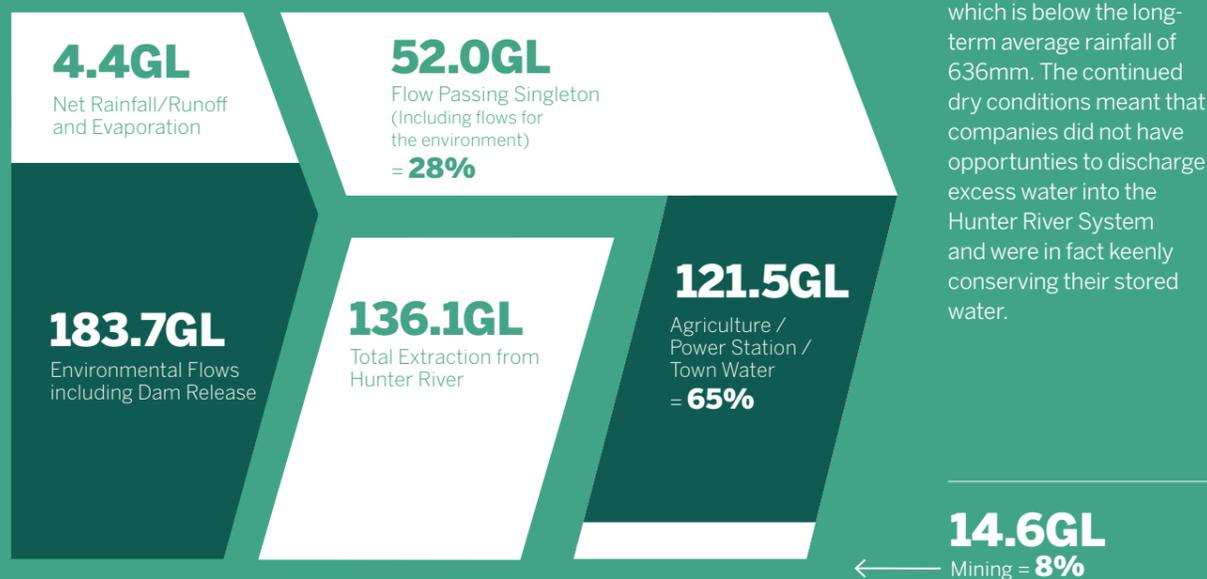
REUSED 46%

of its water onsite

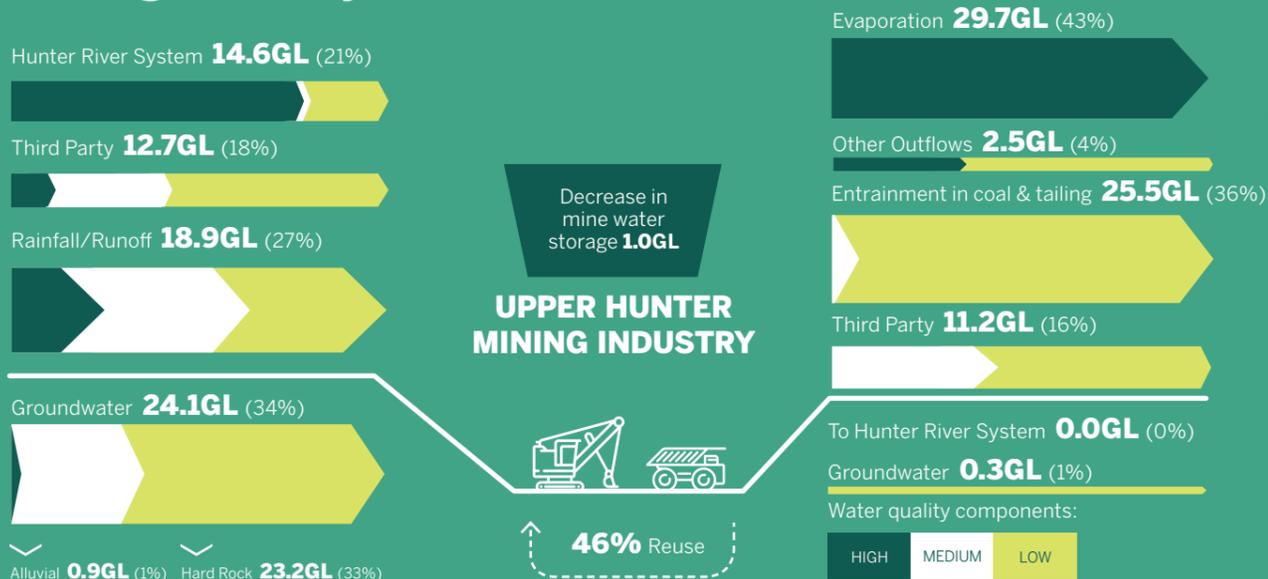
ZERO

mine water was discharged into the Hunter River

Hunter River System Extraction



Mining Industry Water Use Balance



To find out more, visit miningdialogue.com.au

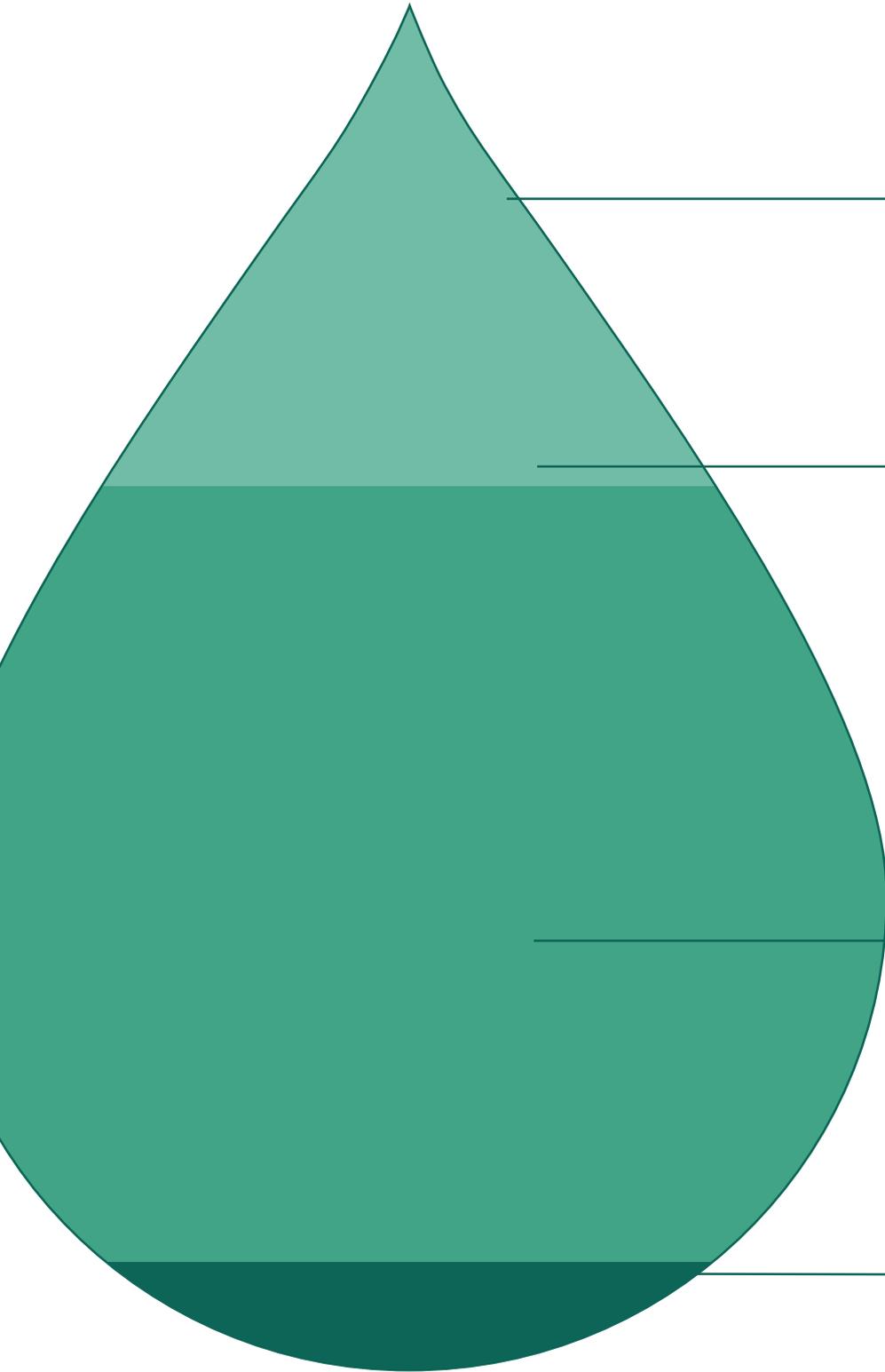
The NSW Minerals Council has compiled the data in this infographic using the best available information. Since water accounting is a complex task that relies on estimates and computer models, there are corresponding limits to the accuracy of the information. Sources: Bureau of Meteorology; DPI Water; NSW Minerals Council data.

THE HUNTER RIVER 2018

A precious water resource for
the Upper Hunter



Upper Hunter
Mining Dialogue



2018 was a drier
than average year.
That year

**188
BILLION
LITRES**

entered the river system
in the Upper Hunter.

28%

of that water stayed in
the river.

The amount of water
extracted and used by
farmers, residents and

65%

MINING

used less than

8%

of the water in the system.

To find out more, visit miningdialogue.com.au

The NSW Minerals Council has compiled the data in this infographic using the best available information. Since water accounting is a complex task that relies on estimates and computer models, there are corresponding limits to the accuracy of the information. Sources: Bureau of Meteorology; DPI Water; NSW Minerals Council data.

**Upper Hunter Mining Dialogue
Joint Environment Working Group - 11 March 2020**

Agenda Item 9

UPDATE ON COMMUNICATIONS ACTIVITIES

School Mine Tours Program

- Planning for the 2020 School Mine Tours Program is well underway with all mines involved in the 2019 program committing to supporting the program by hosting tours again in 2020. The Dialogue is looking to expand the program in 2020 and has invited the four Scone-based schools to participate, potentially adding another 200 students to the program. In 2109 775 students and about 40 teachers from 18 schools based in the Singleton – Muswellbrook school catchment participated in 22 tours across 12 mine sites. Muswellbrook-area mines have agreed to host additional tours if needed to accommodate the Scone school students. The 2019 numbers compare to 650 students in 2018. It is proposed to start the tours program a month earlier – in April – to allow for a more balanced schedule across the year instead of last year’s jammed program in September/October.

Virtual Reality Experience update

- The Virtual Reality Experience has become a mainstay of the Dialogue’s community engagement displays and is attracting viewers of all ages and from all walks of life. The development and incorporation of a summary video has greatly improved the ease of operation and viewer experience. The summary video, which also incorporates the scripted voice over, automatically takes viewers through the entire mining experience without having to navigate manually from stage to state.

Community and stakeholder engagement

- The Dialogue continues to keep a busy schedule of displaying at community events. The 2020 schedule of confirmed events includes the Upper Hunter Show, Tocal Field Days, Broke Village Fair, Singleton Show and the Hunter Coal Festival. Additional events will likely be added to the schedule throughout the year.
- The Dialogue’s newsletter – now titled simply “The DIALOGUE” – will be published early May. The newsletter has been redesigned and expanded.
- The 2019 Annual Forum was captured on video. The short video has been posted on the Dialogue’s Facebook page and features positive statements from community members.

Media

- The Dialogue continues to gain positive publicity in local media. Published articles in recent months have included pre-event promotion of the Annual Forum followed by an article wrapping up the forum’s presentations and discussions and various articles and photos of the School Mine Tours Program. The Annual Forum also featured a live broadcast with Radio 2NM airing live interviews with industry, government and community forum participants. Articles and photos have also been posted on the Dialogue’s Facebook page.

FOR INFORMATION

**Upper Hunter Mining Dialogue
Joint Environment Working Group - 11 March 2020**

Agenda Item 10

UPDATE ON OTHER DIALOGUE WORKING GROUPS/COMMITTEES

The Dialogue has several Committees and Working Groups with differing objectives. It is important to share information and knowledge amongst all Dialogue groups where relevant to help inform discussions.

Please see below for updates on various Dialogue Working Groups and Committees:

Joint Advisory Steering Committee

This was Sarah Withell's first meeting as Chair, following her appointment to the position in July 2019. This leaves the Committee with an industry vacancy, which the Dialogue secretariat will canvass with the Industry Steering Committee members for representation in early 2020.

The JASC met in September, and again prior to the Forum in October, to plan for the upcoming Forum and finalise the program. Members were keen to replicate the success of the 2018 event and make a few refinements to improve the event further. Members stressed the importance of showcasing the progress made across the range of 2019 projects, and there was a clear need to tie together the importance of the discussion session in helping to create the Dialogue's future priorities.

Mike Kelly (Muswellbrook Chamber of Commerce) and Sue Gilroy (Singleton Business Chamber) have joined the JASC, representing the business and community.

The JASC is scheduled to meet next on **Wednesday 25 March 2020** from 1:00 pm to 3:00 pm, with a presentation from the Biodiversity Conservation Trust to better understand how this land is managed and what outcomes we are seeing in terms of increasing biodiversity and habitat from endangered species.

Communications Working Group

The Communications Working Group met and discussed the Dialogue's progress across a number of relevant projects. Of keen interest was the 2019 Forum and how best to attract community stakeholders. Members provided a range of suggestions the Dialogue adopted in a multi-pronged campaign including radio, print, targeted emails, and distribution across networks.

The CWG is scheduled to meet next on **Tuesday 17 March 2020** from 2:00 pm to 4:00 pm.

Joint Economic and Social Development Working Group

The Joint Working Group last met in mid-September, to discuss the progress made in relation to the two key projects supported in 2019, including:

- Dialogue Procurement Information Hub - Work was underway to source procurement information from sites to host on the Dialogue website to improve supplier understanding of how to engage with local mining businesses.
- Mining Procurement Business Events - The Muswellbrook event had just been held with the Singleton event rapidly approaching, providing a timely opportunity to discuss what worked well and where the Dialogue could improve.

The JESDWG is scheduled to meet next following this Joint Working Group meeting, with a presentation from Debbie Barwick, NSW Indigenous Chamber of Commerce, on her organisation's current activities and priorities.

FOR INFORMATION/DISCUSSION

**Upper Hunter Mining Dialogue
Joint Environment Working Group - 11 March 2020**

Agenda Item 11

PROJECT PROPOSAL: “Coordinated Coal Mining Air Pollution Mitigation Controls, Options as WHO & NEPM Standards lower in the Hunter”

Background

Neville Hodkinson, Singleton Shire Healthy Environment Group has presented the Upper Hunter Mining Dialogue secretariat with a document detailing a proposed project focused on developing air pollution mitigation options in the Upper Hunter mining industry. Below is a brief summary based on a larger document submitted, which will be attached in full as an additional document outside these papers with the email to members. Mr. Hodkinson will be presenting to the Working Group on this project proposal.

<p>Background / Key Issue(s)</p> <p>The focus of this Mining Dialogue Project is to develop alternate Mining Industry Air Pollution Emission Mitigation Options that can be introduced over and above existing 2019 Mine Operating Practices (Dust Stop, Weather forecasting, Blast size & Stemming, etc.) to firstly (Stage 1 by 2020) lower the Air Quality Particulate Matter Exposure experienced especially by Singleton Shire Residents to achieve the Feb 2016 National NEPM(Ambient Air Quality) Standards requirements.</p> <p>Secondly (Stage 2 by 2030), to progressively implement Mine Air Pollution Mitigation Protocols for yet further lowering below these 2016 NEPM Australian National Standards to minimum levels as guided by World Health Organisation initiatives since 2013; such as the provision for their further reductions foreshadowed under WHO PM Disease Review since 2016. This is especially so for the emerging Nanoparticle Disease Research of Combustion formed, and Diesel Particulate Exhaust Emissions from mining equipment now confirmed as present penetrating into Human Brains and Organ Tissues. Nano Diesel Particles currently would only be so far included as NEPM PM2.5 reducing goal in 2025.</p> <p>This Mining Dialogue Project targets to identify over two Stages, a Suite of Mine Pollution evolving Mitigation Options, preferable targeting Pollution Emission Sources and their Air Pollution Drifting Patterns and Cumulative Air Pollution Expanse influences that daily expose Near Neighbour Residents: and thus provide the basis for Pollution Mitigation Strategies that can be progressively incorporated by Hunter Valley Mining Industry Companies over the next 25 Years to catch up with, and achieve the ever reducing and emerging Human Health Air Quality Standards as detailed by the United Nations, WHO and IARC since 2013 for Mortality, Morbidity, and Loss of Life Expectancy.</p>
<p>Background</p> <p>In 2008 the Singleton Shire Concerned Residents Disease observations of the Hunter Valley Mining and Power Station Air Pollution Cocktail Drifting Patterns provided the layman’s view and the basis (SSHEG 2010 Dec doc) for NSW Chief Health Officer’s Expert Advisory Group investigations into Local General Practitioner Doctors and Resident’s Disease associations of the Mining Industry Airborne Pollution; especially “Near Neighbours to Industrial Emission Sources of Air Pollution”.</p> <p>Community observations of hours and days of accumulated “Valley Haze and Mine Dust Drifting Patterns” remains at odds with the Atmospheric Dispersion EIS 25 Year Models that estimate only the Downwind Air Pollution Contaminants, as a “form of concentration contours that merely reduce to reflecting Wind Rose information averaged over long Time Periods”. As early as 1985, ANU were investigating as a prelude to Industrial Development, a Risk Assessment Scheme for Air Quality in the Hunter Valley of NSW; proceeding from the identification of the Particle Pollution Sources, their transport Pathways from the Sources to Residents Sites, their eventual Environmental Impact from the transported Pollution Dose Exposure of Residents as well as their atmospheric stability conditions limitations that remain in use today; although refined by PAE Holmes et al since, through to 2010.</p> <p>Resident’s Hour by Hour Mine Drifting Air Pollution Exposure Disease Impacts are being encountered daily by Singleton GP’s soon after these hourly Mine Pollution Exposures. Camberwell and Maison Dieu</p>

UHAQMN SMS messaging Alerts and exceedances are glaring examples of these unacceptable Disease Impacts! The Diurnal Variability, the Time of Day Air Drifting Patterns, Seasonal Weather Patterns, the changing Landscape of working Mine Voids, Overburden Mountains and their Orientation over 25year Mine cycles are critical elements to the Dispersion of Mining Industry Air Pollution containment changes. Mine Air Pollution should otherwise be contained within the Mine Lease boundaries and by any Buffer Zones provided.

The Hunter Valley Coal development focus emerged shortly after the establishment of the Electricity Commission of NSW formed in 1950; taking over and managing Electricity Generation across the State, connecting to Snowy Mountains Generation, Coal and Generation in Central Coast by 1960's, and Liddell Power Station developed in association with Kurri Kurri Aluminium Smelter by 1971. Air Pollution Dispersion in the enclosed Hunter Valley then and now was fundamental to Community Health Protection.

In 1980 the role of Electricity Commission was extended to manage the use of Coal for the generation of Electricity or sell for profit; reduce the cost of Electricity Generation and Supply, and to promote and encourage research into the development of Coal Resources in NSW. The era of cheaper Open Cut Coal Mining emerged in the Hunter Valley, with Bayswater Power Station and Tomago Aluminium Smelter by 1985. Still today Tomago uses 12% of NSW Electricity Capacity, while Newcastle Port Exports up to 100 million Tons of Hunter Coal pa mostly from Open Cut Coal Mining in the Hunter Valley.

The continuation of Open Cut Mining currently without Population Protection Buffer Zones interspersed within Farming Localities, Villages and Towns of the enclosed Hunter Valley in 2019 depends entirely on more accurate Mining Air Pollution Dispersion Methodologies Mitigation Controls that can cater for existing and envisaged Hour by Hour Air Drifting Mine Pollution Dose Exposure of Residents; incorporating the "Near Neighbours Downstream Individual Disease Status Propensity" that lowers allowable PM10, PM2.5 (Fine) and PM10-2.5 (Coarse) hourly Limits of Mine Air Pollution Mitigation Controls.

Project Goals, Objectives & Outcomes

- Develop alternate Mining Industry Air Pollution at Source-Emission Mitigation Options for Stage 1 by 2020 that can be introduced over and above existing 2019 Mine Operating Practices (Dust Stop, Weather forecasting, Blast size & Stemming, etc.) to firstly lower the Air Quality Particulate Matter Exposure experienced especially by any Near Neighbour Residents that at any time are likely, or predicted by UHAQMN Air Pollution Drifting Patterns from other Sources, to exceed the Feb 2016 National NEPM (Ambient Air Quality) Standards requirements of below 50ug/m3 PM10 Daily Average and 25ug/m3 PM2.5 Daily Average.
- Develop an alternate Suite of Mining Industry Air Pollution Emission Mitigation Options for (Stage 2 by 2030) that can be introduced over and above Stage 1 2020 Mine Operating Practices, to progressively implement Mine Air Pollution Mitigation Protocols for yet further lowering below the 2016 NEPM Australian National Standards to minimum levels as targeted by World Health Organisation initiatives since 2013; preferable targeting the Pollution Emission Source and their Air Pollution Drifting and Dispersion Patterns that daily expose Near Neighbour Residents, and so as to achieve further reductions foreshadowed under WHO and IARC Particulate Matter Disease Review since 2016. This is especially so for the emerging Nanoparticle Disease Research of Combustion formed and Diesel Particulate Exhaust Emissions from mining equipment now confirmed as present throughout Human Brains and Organ Tissues.
- This Mining Dialogue Project Objective, focuses upon the implementation of effective Mine Pollution Mitigation Controls that are seen to recognise the Community Pollution Disease concerns as recently adjudged by the Centre for Air Pollution, Energy and Health Research summary status and references in June 2018 as illustrated in the report: *A Comparison of the Health Effects of Ambient Particulate Matter Air Pollution from Five Emission Sources*

Objectives Stage 1 by 2020

Priority 1:

- Eliminate Visible Mine Blasting Plumes into the Atmosphere.
- Establish the Criteria that warrants Increased Evacuation Zones and specifically likely impacted

Residents evacuation Zones.

- Expand the role of UHAQMN to provide a set of “Air Pollution Mitigation Control Operations Displays.
- Incorporate Mine Control Centre, Red, Amber & Yellow Alarms designed to alert Mine Controllers for the progressive Shutdown of Mining Operations.
- Expand the role of UHAQMN to provide Mitigation Control protection for Camberwell Resident’s excessive UHAQMN PM10 & PM2.5.
- Provide All of Mine Region Pollution Mitigation Options
- Standardise Individual Mine Air Quality Environmental Control Centres Facilities to continuously Monitor and Mitigate by responding to Three Stage Alarming – Red, Amber, Yellow

Priority 2

- Develop Operational Alarms by the analysis of UHAQMN 2012-2019 1 Hour PM10 Data.
- Establish Miners & Community Education Training Regime focusing upon Community Health and Individual Mine Mitigation connectivity to their Near Neighbour Resident’s Exposure.
- Develop Pollution Mitigation Strategies to address the Community Representative Report: - “Air Quality and living with coal mines: insights from the Bulga community”, Mr. Krey the Community Member of Upper Hunter Air Quality Advisory Committee reported in the 22nd November 2018 meeting:

Objectives Stage 2 by 2030 - All Priorities:

- Develop Mitigation Controls for all Mining Operations to meet evolving WHO Guidelines & NEPM Standards using a “Mine Surrounding PM10 & PM2.5 Networks Day & Night Patrols alongside Noise Alarm Patrols”
- Prediction and Reactive Mitigation Control coordinated across all Mining Sites to achieve Valley wide NEPM Standards Compliance.
- Develop detailing for Mine Control Centre Alarm Displays (15 Minute based) at Individual Mines referencing the Location Direction and Distances of their Near Neighbours Residents
- Evaluate the Mine Mitigation Option for Mines to continuously at 5 or 10 Minute intervals, Pathway Trace and Control by reducing their Air Pollution Drifting Patterns at Mine Emission Sources; their Air Pollution Dispersion Patterns both entering and exiting their Mines; and especially Cease Operations where at any Resident Localities they are known to be impacted for one hour by any changing Air Pollution Drifting Patterns that exceeding say 75ug/m³ PM10 one hourly Average exiting the Mine.
- Expand the role of UHAQMN to provide Mitigation Control protection for the entire Upper Hunter Valley impacted by Coal Mining and Coal fired Power Stations.
- Develop Modern Dispersion Visualisation Real Time Displays and Dispersion Parameter Studies.
- Expand the role of UHAQMN to provide NSW Health Disease Risk Evaluation at Muswellbrook, Singleton and Cessnock for Ozone, and PM1.0 with PM2.5

Resources required

Project Duration:

- Intended as a two-year Dialogue Project:
 - One year of draft preparation of forward-thinking strategy,
 - Second year of Implementation Trial and review.

Target Groups:

- Dialogue team with the appropriate UHAQMN involvement and knowledge, and
- Mine Operational Environmental Control Centre involvement for Screen Display Trials of three Stage Alarms and Dispersion outcomes.

Project Benefit:

- Project relates directly to the integration of the Mine Operational Centre Strategy to Lower the overall Air Pollution Levels, fewer UHAQMN Exceedances, and Recognition of Community Health improvements by Local GP’s.

Requires:

- Initial Minerals Council and Mining Dialogue agreement in principle, and
- Connects directly with the Cumulative Health Impacts of “Air Quality and Emissions and Health”;

as discussed and detailed at 2018 Annual UHMD Forum Report.

Recommendation:

- **That Working Group members consider the project proposal and whether this should be supported under the Dialogue's Joint Environment Working Group, having regard to the Dialogue's key Emissions and Health objectives.**

FOR DISCUSSION

Attachment: Full Project Proposal, Neville Hodkinson, Singleton Shire Healthy Environment Group

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Agenda Item 12

OTHER BUSINESS

Updates from Working Group members

To encourage greater awareness of items of interest across the Dialogue's network of stakeholders, the Dialogue Secretariat encourages Working Group members to share updates on their current or future activities and projects that may be of interest to the Joint Environment Working Group members, or the Dialogue more generally.

FOR INFORMATION

**Upper Hunter Mining Dialogue
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Agenda Item 13

NEXT MEETING / CLOSE

Members may note the future Joint Working Group meeting dates for 2020 include:

- Wednesday 10 June 2020
- Wednesday 9 September 2020

FOR INFORMATION