

THE

UPPER HUNTER MINING DIALOGUE NEWSLETTER

DIALOGUE

DECEMBER 2021

SHINING THE LIGHT ON

MINE REHAB

THE UPPER HUNTER'S GROWING SUCCESS STORY

GOOD NEWS IN THE AIR

AIR QUALITY FOLLOWS NSW POSITIVE TREND

BACK ON THE ROAD

UHMD GEARS UP FOR BUSY YEAR



WORKING TOGETHER FOR THE HUNTER

The Upper Hunter Mining Dialogue (the Dialogue) was established in 2011 by the region's miners in response to community concerns about infrastructure and services, mine rehabilitation, water use and air quality.

The Dialogue brings together local miners, community and business leaders, environment groups, residents, regulators and other industries to better understand and address these challenges together and create a better life for all in the Upper Hunter.

The Dialogue is a collaborative effort addressing local community priorities by understanding its concerns and then working together to develop and implement solutions.

If you're interested in becoming involved in the Dialogue, please register your interest via email to info@miningdialogue.com.au



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THE WORD FROM THE CHAIR

Sarah Withell
UHMD Chair



At the time of writing this column for the Dialogue's May newsletter, it looked very much as if the storm clouds of Covid-19 had well and truly cleared.

What a difference a few weeks can make.

Only a month or so later, the Covid storm was back in full force.

While the Upper Hunter was impacted by the resurgence of Covid, thankfully we did fare better than many of our neighbours with comparatively few local cases.

So far, we have been relatively fortunate because of the good work and commitment to being Covid-Safe in our communities. In particular, our mining industry stepped up with strict controls, testing and support for vaccination programs.

I feel for the people in our community – particularly our business people – who have again been impacted by the last few months' resurgence of Covid. However, the impact would have been more significant if our mining industry had "caught" Covid.

I'm happy to say the Dialogue has continued its important work while operating within Covid-Safe guidelines. I am extremely proud of the way our committees and industry and joint working groups have continued to participate and continued to meet as scheduled by "gathering" online via Zoom to discuss Dialogue projects and strategies.

It demonstrates the ongoing commitment of the community and industry to the success of the Dialogue.

As a result the Dialogue's major environmental projects have continued to be delivered. As detailed in this newsletter, results from our Rehabilitation Principles and Commitments Project and the Water Accounting Framework have been updated to include 2020 rehabilitation progress and Hunter River water usage.

Likewise, the Dialogue Air Quality Monitoring Network Analysis Project's newly updated data provides positive results for the Upper Hunter region.

We know that rehabilitation of mined land is important to the Upper Hunter community and we have focused on rehab rules, processes and progress in this newsletter.

The Dialogue's Economic and Social Development Joint Working Group collaborated with the Muswellbrook Chamber of Commerce to stage a very successful Procurement Networking Event in June.

Unfortunately, a similar event planned for August in conjunction with the Singleton Business Chamber had to be postponed due to Covid. The Dialogue is working with Singleton Business Chamber to host the event in the new year.

Covid restrictions on gatherings also impacted on other Dialogue plans and events, including our planned November Community Forum which, unfortunately, had to be postponed until next year.

After a very busy start to 2021, our face-to-face activities also had to be curtailed from July onwards.

The second half of the School Mine Tours Program was also suspended. Before being parked up, the tours program had been in top gear from April to June with more than 600 students from across the region getting the opportunity to tour working mines. Our community engagement activities were also put on hold.

We're looking forward to the ongoing easing of restrictions and we're committed to having all activities back on schedule in 2022.

As always the Dialogue is keen to have input from community representatives. If you are a member of the Upper Hunter community and want to make the region a better place for all to live, please express your interest via email at info@miningdialogue.com.au

GEARING UP FOR A BUSY 2022

FULL SCHEDULE PLANNED FOR YEAR AHEAD

The Upper Hunter Mining Dialogue is gearing up for a busy 2022.

While the Dialogue completed a busy schedule in the first six months of 2021, Covid stalled activities planned for the second half of the year including community engagement, the School Mine Tours Program, a Singleton Procurement Networking Event and the Dialogue's Community Forum.

Pending ongoing relaxation of Covid restrictions, the Dialogue is planning the return of its full schedule in the new year.

The School Mine Tours Program will again be offered to all schools in the Singleton, Muswellbrook and Upper Hunter school catchments. The tours program sees Year 5 and Year 9 students from across the Upper Hunter district tour working mines to learn about the benefits and impacts of mining.

Due to Covid in 2021, the program was "parked" in June - halfway through its schedule – but not before conducting 21 tours from 17 schools with 615 students and 36 teachers participating. The 2022 program will be offered on the basis of the tours complying with any ongoing restrictions at Upper Hunter mines.

The Dialogue's 2021 community engagement schedule was also impacted by Covid as many local community events were cancelled or postponed. The Dialogue did attend the Upper Hunter Show and Tocal Field Days but had to shelf plans to attend other local events due to the pandemic's re-emergence in June.

A full community engagement schedule is being prepared for 2022.

In June, The Dialogue and Muswellbrook Chamber of Commerce and Industry co-hosted a Procurement Networking Event in Muswellbrook to bring together the



For what is set to be a busy 2022, the Dialogue is planning a full schedule of activities including the return of the School Mine Tours Program and hosting of its Community Forum.

mining industry and local suppliers. The successful Muswellbrook gathering was to be followed by a Procurement Networking Event in Singleton in August, but it had to be cancelled. The Dialogue and Singleton Business Chamber are working together to host the event in 2022.

Likewise, Covid restrictions scuttled plans for the Dialogue's Community

Forum which had been planned for November. The Community Forum is a valuable event in the Dialogue calendar as it brings together Dialogue partners – from mining, government and community – to network and identify any issues that need to be addressed collaboratively.

The Forum has been rescheduled to Tuesday 29 March, 2022.



REBUILDING THE LAND

Rehabilitation of mined land is important to the Upper Hunter community. Rehabilitation consistently tops the priority list in the Dialogue’s community surveys conducted at local shows and events. This edition of The Dialogue focusses on rehabilitation in response to the strong community interest and requests for more information on “rehab”.

Rehabilitation is rebuilding or regenerating mined land to a safe and stable landform.

As open cut mines progress, rock and dirt is dug out to allow the coal found in seams underneath to be extracted and processed.

The rock and dirt is stockpiled close to the mine and is called overburden.

As the mine follows the coal seams the mine actually physically moves, leaving a pit behind it.

Typically, the overburden is then transported back to progressively fill in the now mined-out portion of the site as the mine moves into new areas.

Often a residual void will be left when mining is finished. A residual void is an open area, typically a pit, that remains open after rehabilitation of a mine is complete.

There are a number of reasons why residual voids may remain as part of the final landform including insufficient material to fill the

remaining pit and access to further resources in the future that might otherwise be uneconomic to recover.



Residual voids can be repurposed for a variety of uses including water and materials storage and a range of other novel uses.

Rehabilitation can take a variety of forms – for example the land can be returned to bushland or be developed as grazing land to provide an agricultural industry after mining has finished.

Once placed in the pit, the overburden is generally covered with fertile topsoil and grasses and trees are planted to suit the mine’s Development Consent’s agreed final land form and use.

Rehabilitation occurs progressively; typically following the active mining area. Where possible the mine will place topsoil that is collected from the active mining area directly onto previously disturbed land.

Techniques vary from site to site depending on individual site’s requirements and operations, but often the rehabilitation program can occur within metres of the active mining operation.

Modern rehabilitation techniques employed by Upper Hunter mining companies include the increasing use of drones which can be used to seed new rehabilitation areas as well as the ongoing monitoring of growth and play a vital role in the eradication of weeds.

No matter what techniques are used, if quality rehabilitation is undertaken the community can receive benefits from employment, new business ventures and the potential provision and use of new assets and landscapes when mining has finished.



MINING’S ‘HIDDEN FACE’

Rehabilitation could be described as the hidden face of mining in the Upper Hunter.

The aim of rehabilitation is to return the land disturbed by mining to a condition that meets the NSW Government’s strict standards and to suit its final land use as set out in the development consent.

Thousands of hectares of rehabilitated land which has been returned to native bushland are spread across the Upper Hunter and much of it is indistinguishable from surrounding areas of land that has never been mined.

That’s because the mine’s rehabilitation experts take great care in selecting species of native trees and grasses that suit the Upper Hunter’s ecosystem.

In some cases, mature rehabilitated land is actually in better shape than neighbouring unmined land due to the scientific decisions made by

mining rehabilitation experts in terms of land shape, addition of fertile topsoils, minerals, fertilisers, plant species and ongoing monitoring.

Rehabilitation techniques vary from mine to mine depending on the individual site’s needs and what is planned for the rehabilitated land’s end use such as natural bush land or grazing paddocks.

As at the end of 2020, according to data collected by the Upper Hunter Mining Dialogue, the Upper Hunter contained 14,242 hectares of rehabilitated mined land.

That means almost 40 per cent of land that has been mined in the Upper Hunter has been rehabilitated and grows every year as rehabilitation progressively follows the mining operations.

SECURITY FOR THE FUTURE

Rehabilitation of mined land is planned long before mining begins and continues well after mining has finished.

Mining companies have a responsibility to rehabilitate land for the purpose of establishing a safe and stable and sustainable environment.

All mining companies must lodge security deposits with the NSW Government – before any mining activity takes place on the mining title. The security deposits act as a form of insurance to cover the full cost of rehabilitation.

Using a NSW Government calculation tool, an estimate of rehabilitation costs is determined for decommissioning, landform establishment, revegetation, habitat establishment and environmental and rehabilitation monitoring.

This information is used to set the size of the company’s security deposit per project.

Progress of rehabilitation is monitored throughout the mine’s life and is done progressively – land is rehabilitated as mining occurs.

The NSW Government’s compliance and enforcement programs ensure mine site rehabilitation follows the agreed plans towards meeting the final rehabilitation and landform outcomes.

Mining companies also provide the Government annual reports on their rehabilitation progress and demonstrate how they are meeting their approved rehabilitation objectives.

Government regulators regularly conduct on-site inspections to ensure rehabilitation is progressing to plan in terms of timing and quality.

Heavy penalties can be imposed on mining companies for non-compliance to their rehabilitation plan.

Security deposits are not released in full until the Government is satisfied mine site rehabilitation has been successfully implemented and is sustainable.

As of July 2021, the NSW Government held almost \$3.4 billion in security deposits as rehabilitation security.



GROWING SUCCESS

Rehabilitation of mined land continues to be a growing success story in the Upper Hunter.

The latest results from the Dialogue's Rehabilitation Principles and Commitments Project have found that 848 hectares of rehabilitation was undertaken in 2020. This brings the total area of mined land under rehabilitation in the Upper Hunter to a record 14,242 hectares or about 38 per cent of all land disturbed by mining.

The project collects annual land disturbance and rehabilitation data from all operating mines in the Upper Hunter, with collated data dating back to 2012. The project also tracks other land uses by mining including the amount of land held as biodiversity offsets, land managed by mines for agricultural purposes and buffer land.

In 2020, land newly disturbed by mining totalled 1,380 hectares. The annual rehabilitation to disturbance ratio of 0.61 means for every hectare disturbed, 0.61 hectare of rehabilitation was undertaken.

The 2020 rehabilitation rate was impacted by the start of new mine projects and the continued expansion of existing projects.

All mines go through life cycles where, at the beginning of the cycle, as new mining areas are being developed, disturbance generally outweighs rehabilitation. However, the rehabilitation rate grows as the mine progresses.

The amount of land estimated to be held as biodiversity offsets increased in 2020 by 4.5 per cent to 43,689 hectares, land managed for agricultural purposes decreased slightly to 59,160 hectares and the estimated amount of buffer land increased by 2.3 per cent to 48,175 hectares.

Full results from the Rehabilitation Principles and Commitments Project can be found on the Dialogue's website at miningdialogue.com.au



THE RULES OF REHABILITATION

All mines follow a cycle beginning with exploration and moving on to government approval, production and closure.

Rehabilitation is an integral component of mine site operations, from the very start of exploration through to mine closure and relinquishment of the site.

Long before mining even occurs, mining companies make a commitment to both the NSW Government and the community that they will progressively rehabilitate the land disturbed during operations to a specified state suited to its agreed post-mining land use.

Mining companies have a commitment to rehabilitate the land and leave the site in the best condition possible.

Companies do not decide how to achieve these outcomes alone. There is a detailed series of legal and regulatory frameworks that guide good practice rehabilitation and take into consideration community views.

Before mining can start at any site, the project must pass a series of assessments and approvals before gaining development consent from the NSW Department of Planning and the Environment.

Development applications, which must be approved before mining begins, include details of the rehabilitation strategy and post mining landform.

The NSW Government Resources Regulator has introduced new conditions which will apply to all mining leases. The conditions support best practice mine site rehabilitation by ensuring

progressive rehabilitation occurs in a manner that achieves sustainable final land uses following the completion of mining.

Lease holders will be required to demonstrate that the rehabilitation of land and water disturbed by mining is safe and stable and can support the future final land use(s) approved through the development consent.

Lease holders will be required to:

- prevent or minimise harm to the environment
- rehabilitate land and water as soon as reasonably practicable after disturbance occurs
- achieve the approved final land use for the mining area as set out in the:
 - rehabilitation objectives statement
 - rehabilitation completion criteria statement
 - final landform and rehabilitation spatial plan
- undertake a rehabilitation risk assessment and implement measures to eliminate, minimise or mitigate risks to achieving the final land use
- prepare and implement a rehabilitation management plan
- prepare an annual rehabilitation report which describes the progress of rehabilitation over the annual reporting period
- prepare a program which includes the schedule of mining and rehabilitation activities for the next three years demonstrating how rehabilitation will occur as soon as reasonably practicable after disturbance.



RAIN BRINGS POSITIVE FLOW FOR OUR RIVER

A wetter than average year in 2020 had positive flow on effects for the Hunter River.

With increased rainfall compared to previous years, 2020 saw 500 billion litres (or 500 gigalitres) of water enter the river system in the Upper Hunter. This compares to 214 gigalitres in 2019 and 188 gigalitres in 2018.

In fact, 2020 had the highest flow on record measured by the Dialogue's Annual Water Accounting Framework Project which has tracked the region's Hunter River water usage since 2014.

According to the project's updated data, almost three quarters – or 74 per cent – of the water stayed in the river system after extraction of water by mining, agriculture, residents and other businesses.

Mining extracted 3.6 per cent of the river flow with most of the total water used by mines (55 per cent) sourced from onsite rainfall/runoff.

Agriculture, residents and business users accounted for 22.1 per cent of the water extracted from the river system.

Three per cent of mine water was discharged into the Hunter River, following several years without any discharge events. The significantly wetter than average conditions meant that river flows were higher, companies increased their water storage, and had more opportunities to discharge water into the Hunter River.

Full details of the Water Accounting Framework Project can be found on the Dialogue's website at miningdialogue.com.au

PROJECT TRACKS AIR QUALITY TRENDS

Air quality in NSW and the Upper Hunter significantly improved in 2020 compared to the two previous years, according to new results from an Upper Hunter Mining Dialogue environmental project.

The Dialogue's Air Quality Monitoring Network Analysis Project tracks trends in Upper Hunter air quality compared to other NSW regions monitored by the NSW Department of Planning, Industry and the Environment. With results from 2020 now included in an update to the report, the

study includes PM10 and PM2.5 concentration data for eight years dating back to 2013.

On the back of a wetter than average year, air quality improved in 2020 across all monitored regions in the study including the Upper Hunter. The project report says "the 2020 data indicates the annual PM concentrations have seen a significant improvement across all regions/groups compared with observations during 2019."

The report also notes changes in Upper Hunter air quality are "generally consistent with changes experienced across the rest of NSW" with no discernible impact to these (PM10) trends from mining operations.

The report notes a direct correlation between rainfall and PM concentration levels with drier years featuring higher

concentrations and poorer air quality. Drought and bushfire impacted years in 2018 and 2019 recorded high particulate readings across all regions.

"2020 shows a significant increase in annual rainfall and a corresponding decrease in annual PM10 concentrations," the report says.

"Lower than average rainfall is associated with above average particulate matter concentrations. The mechanisms for this are associated with progression of drought conditions, including increased prevalence of wind erosion/dust storms and bushfire activity."

Full details of the Air Quality Monitoring Network Analysis Project including updated data can be found on the Dialogue's website at miningdialogue.com.au

SURVEY HELPS SHAPE FUTURE

Community, mining industry, business and state and local government representatives are helping shape the Dialogue's future by participating in a Community Perception Survey.

Currently being conducted independently by Stable Research on behalf of the Dialogue, this is the Dialogue's third community research project and builds on previous research studies in 2010 and 2016.

Past and present Dialogue stakeholders with an interest in mining and the future of the Upper Hunter are being interviewed across various subject categories to provide a diverse mix of opinions on the issues and opportunities for the Dialogue and the Upper Hunter region.

Through in depth interviews conducted by Stable Research, the survey aims to identify how the Dialogue and key issues impacting on the Upper Hunter are perceived by stakeholders.

The interviews cover four key areas:

- Involvement with the Dialogue
- Perceptions of coal mining in the Upper Hunter
- Perceptions of current Dialogue themes including air quality, rehabilitation of mined land, water and economic and social development issues
- Future opportunities for the Dialogue and Upper Hunter

The Dialogue expects a report on the Community Perception Survey this year.



BACK IN BUSINESS

The Dialogue was back in business in June with its 2021 Muswellbrook procurement networking event.

The Upper Hunter Mining Dialogue and Muswellbrook Chamber of Commerce and Industry joined forces to present the two-part event for local supply businesses.

More than 100 people attended a breakfast update on the NSW Mineral Council's latest Expenditure Survey results for the region, as well as the procurement networking event with local suppliers engaging with procurement representatives from Upper Hunter mining companies.

Upper Hunter businesses will have another chance to take part in a similar procurement networking event being organised with the Singleton Business Chamber.

The Singleton event was originally planned for August but had to be postponed due to Covid restrictions.

The 2022 date for the Singleton event will be announced once it is confirmed.

For more information about the Dialogue's Business Procurement Events, see: miningdialogue.com.au/business/procurement-events

LIGHTS, CAMERA, ACTION!

It will soon be "lights, camera, action" for the Dialogue's latest video project.

Pre-filming work has begun on an educational video which will showcase mined land rehabilitation.

A draft script is being finalised for the video which will be used to communicate the importance of mine rehabilitation.

In particular, the video aims to highlight the innovative strategies and methods that lead to positive outcomes for the mining industry,

government and the community.

The Dialogue has previously produced two educational videos:

• **Clearing the Air** which explains measures taken by Upper Hunter Mines to mitigate dust issues. It can be viewed at miningdialogue.com.au/project/weather-forecasting

• **The Lifecycle of a Mine** which, as well as detailing the lifecycle of a mine - from exploration to final rehabilitation - also allows viewers the chance to see a blast up close, "drive" a haul truck and "operate" giant coal loaders. This video is available in 360 degree virtual reality format or standard format and can be viewed on a PC or smartphone. It can be found at miningdialogue.com.au/engagement/virtual-reality