

Cadia not linked to lead in district water tanks

A new lead fingerprinting analysis has found no evidence linking Cadia to the lead sampled in district rainwater tanks.

The study, conducted by the University of South Australia, examined 88 sludge samples collected by Cadia during the district water sampling program against samples from Cadia's ore body, and other soil and rock samples from the surrounding area.

The report was independently interpreted by Emeritus Professor Brian Gulson from Sydney's Macquarie University and found that 74 of the 88 samples (84%) had no correlation with Cadia ore. Of the remaining 14 samples (16% of the total), both the Cadia orebody and district soil samples exhibit similar characteristics, and they recorded the lowest concentration of lead amongst all the sludge samples.

Cadia General Manager, Mick Dewar, said the isotope analysis is part of a suite of studies commissioned in response to concerns raised by the community, and is the second independent air and water quality investigation to be undertaken over the last 15 months in the Cadia District.

"Cadia continues to work diligently and methodically alongside the community and the NSW EPA to address concerns around air and water quality in the district," Mr Dewar said.

"The health and safety of people is not a negotiable for Cadia. We are committed to mining in a responsible and sustainable manner, ensuring the protection of the environment and wellbeing of local communities.

"The latest vent emission monitoring results, received this week and provided to the EPA, show that we are operating in compliance with clean air regulations."

Emeritus Professor Brian Gulson said like human fingerprints, lead has individual markers that set them apart called isotopic signatures.

"Samples of soil, rock, sludge and water containing lead were tested for their isotopic signatures to find out from where the lead originated. If all of the lead with this fingerprint came from Cadia, we would expect to see a higher concentration in the samples closer to the mine, tapering off in a clear pattern, which is not the case," Emeritus Professor Gulson said.

The findings of the lead fingerprinting analysis are supported by the results from the community drinking water sampling program, the 12-month ANSTO particulate study, historical and current air quality monitoring data, and a revised Air Quality Dispersion Model that shows site boundary and receptor point compliance limits are being met.

In the coming weeks, Cadia will receive the last independent report, a human health risk assessment, which will provide a comprehensive assessment of the overall air quality in the district, and importantly the community's health and wellbeing.

A copy of the lead fingerprinting analysis report and a fact sheet summarising the key findings is available on the Cadia website.

The [report](#) and [fact sheet](#) summarising the findings are on the Cadia website.

Additional information provided by way of background and for context setting:

Timeline of Events

<p>February 2022 – Cadia, in collaboration with the community, commissions ANSTO to conduct a 12-month particulate characterisation study in the Cadia Valley</p>	<p>The study assessed the PM2.5 dust contribution from Cadia to the regional air shed over a 12-month period. Samples were taken from four tests sites in the district (Panuara, Mandurama and Millthorpe) with Orange used as a reference point.</p>
<p>August 2022 – Independent Air Quality Audit Report released</p>	<p>Cadia published an Independent Air Quality Audit report that found dust emission exceedances coming from a ventilation exhaust rise that exhausts air from underground crushers and mine workings. We have been working to address this through a range of measures, including the installation of dust filtration plants in the underground crushing stations where dust originates. The first of these plants were commissioned in May 2023 and more are scheduled to come online in forthcoming months.</p>
<p>February 2023 – Cadia notified of community self-testing water tanks</p>	<p>A small number of residents living near the mine informed Cadia that they had self-tested the quality of the water in their water tanks and found elevated levels of contaminants, including lead. We were up to that point unaware of concerns about the water quality from individual water tanks. While we were not provided with any formal reports, we took their concerns seriously and immediately arranged for independent water sampling to be done in the area for any resident who wanted it, with water samples taken from water tanks and taps inside their home. Regardless the potential source of contamination, we also offered fresh drinking water to any resident in the area who requested it.</p>
<p>March and April 2023 - Independent Community Water Sampling program commences</p>	<p>In total, 145 residences were tested in March and April this year. To ensure transparency and independence, each tested residence received their results directly from the independent experts. The results from samples taken from taps showed eight residences had elevated levels of different contaminants, of which seven have been attributed to building and/or plumbing materials, such as copper piping, galvanised steel and old roofing. All properties have undertaken building inspections to assist in identifying any contributing factors, cleaning, and refiling of their water tanks and where appropriate, first flush or filtration systems, regardless of where the contamination may have come from.</p>
<p>March 2023 – Cadia commissions additional independent studies</p>	<p>To assist in identifying the source of any contaminants found in proximity to our mine and any potential health impacts, we also commissioned a Health Risk Assessment by an external environmental expert and undertook lead isotope testing and a dust fingerprinting study, both studies have now been completed, and the Health Risk Assessment will conclude over the coming weeks which pulls in all data received throughout the program.</p>

<p>May 2023 – Draft variations to licence obligations received</p>	<p>The variations to our Environment Protection Licence (EPL) largely formalised the actions we have already taken and were already well progressed. Cadia continues to work openly and constructively with the EPA and local residents in a transparent and factual manner, including sharing the results of the various studies as they are finalised.</p>
<p>June 2023 – Cadia receives notice to comply immediately from EPA</p>	<p>In addition to the actions already underway, Cadia took immediate action to curtail known sources of dust in the underground operation to meet the EPA’s requirements. To ensure these measures were safe and effective, our site team tasked with underground dust mitigation immediately developed and implemented a revised operating plan for the underground mine which has allowed Cadia to reduce dust emissions while working towards the planned commissioning of additional interim dust filtration units on an accelerated timeframe.</p> <p>Various measures above and beyond those already in progress included:</p> <ul style="list-style-type: none"> • the installation of additional dust sprays and spray curtains, • re-configuration of dust extraction systems, • further monitoring of vent rise emissions, • installation of additional dust sampling instrumentation in the underground mine, • monitoring of surface and underground dust sampling instruments, • identification of further acceleration of the additional dust filtration units currently on order and • proposals for alternative sampling locations, including robust sampling methodology and instrumentation specifications. <p>The latest vent emission monitoring results, received on Monday 17 July and provided to the EPA, show that Cadia continues to operate in compliance with Clean Air Regulations</p>
<p>July 2023 – ANSTO report released</p>	<p>Report received and provided to the community. Key findings from the report include:</p> <ul style="list-style-type: none"> • Australia has some of the most stringent air quality standards in the world, and monitoring conducted over the 12-month period shows these standards are met around Cadia and in the region more broadly. • The study focused on the characterisation of PM2.5 particles within the regional airshed and determining fingerprints and sources.

	<ul style="list-style-type: none"> • The study revealed that Cadia only contributed to a portion of the soil particulate matter. • Soil was the least significant source of air pollution, with less than 10 percent of the particles detected during the 12-month period originating from it. • Metals of concern recently identified by the community, such as lead, nickel, selenium, and chromium, were not consistent within the soil fingerprint and were not in exceedance of any national standard.
<p>July 2023 – Lead isotope analysis released</p>	<p>Report received and provided to the community. Key findings include:</p> <ul style="list-style-type: none"> • The University of South Australia examined 88 sludge samples collected from water tanks in the district, against samples from Cadia’s ore body, and other lead isotopes across the Cadia Valley and surrounding areas. • The lead found in 74 of the 88 samples (84%), has no correlation with the signature from Cadia. • Of the remaining 14 samples (16% of the total), both the Cadia orebody and district soil samples exhibit similar characteristics, and they demonstrate the lowest concentration of lead among all the sludge samples.
<p>Next Steps</p>	<p>SAGE Human Health Risk Assessment will be provided to Cadia later this month and will be provided to both the community and EPA.</p>