Cadia Holdings Pty Limited
1460 Cadia Road
ORANGE NSW 2800
Attention: Mr Michael Dewar, General Manager
Via email:

DOC23/541998

CC: Ms Sherry Duhe
Interim Chief Executive Officer
Newcrest Mining Limited

Dear Mr Dewar,

Regulation of Cadia Valley Operations

I am writing to express the strong concerns of the NSW Environment Protection Authority (**EPA**) in regards to the operations of Cadia Holdings Pty Limited, trading as Cadia Valley Operations (**Cadia**), at the Cadia gold mine.

The EPA is aware of Cadia's Independent Air Quality Audit Report prepared by Zephyr Environmental dated 11 August 2022, which includes vent rise sampling completed by Ektimo Pty Ltd. The sampling measured the concentrations of total solid particles at Vent Rise 8 (**VR8**) and Vent Rise 3 (**VR3**) at 360 mg/m^3 and 62 mg/m^3 respectively. These measurements, especially at VR8, significantly exceed the concentration limits for total solid particles of 50mg/m^3 in the *Protection of the Environment Operations (Clean Air) Regulation*.

The EPA understands that in April 2023, Cadia installed two dry scrubbers at Panel Cave 2 East in an attempt to reduce dust emissions from VR8. As you will be aware, following these works and in response the EPA's prevention notice of 29 May 2023, on 9 June 2023 Cadia provided the *Ektimo Preliminary Report R015051p*, which measured total solid particles at VR8 at concentrations between 200 mg/m^3 and 570 mg/m^3.

These measurements from VR8 continue to significantly exceed the *Protection of the Environment Operations (Clean Air) Regulation* concentration limits for total solid particles. Given these measurements the EPA alleges that Cadia is operating unlawfully in contravention of the *Protection of the Environment Operations Act 1997* (**POEO Act**).

The EPA requires you to take all necessary action to immediately address these issues, including to ensure compliance with the *Protection of the Operations (Clean Air) Regulation*, the POEO Act and your environment protection licence and to ensure that all environmental and health risks to the surrounding community are managed.

Please note that the EPA reserves the right to take further regulatory action in relation to these serious matters raised in this letter.

I would like to remind you that significant financial penalties can be imposed for a breach of the POEO Act and there are provisions that give rise to personal liability for directors and people concerned in the management of offending corporations.

Environment protection licence variation

As you are aware, on 20 June 2023 the EPA issued you with a draft variation to your environment protection licence for comment. Thank you for providing your feedback today in relation to the draft variation. The EPA has taken your feedback into account and has now issued an updated environment protection licence reflecting the draft variation provided to you. A copy of the updated environment protection licence as varied and as now in force is **attached**.

Other matters

For completeness, please note that the EPA is also currently investigating other alleged contraventions of the POEO Act by Cadia. It is the EPA's expectation that Cadia fully complies with all investigative requests and requirements within stipulated timeframes.

If you have any further questions about this issue, please contact Ms Carmen Dwyer. Executive Director, Regulatory Operations Regional, on

Yours sincerely

TONY CHAPPEL
Chief Executive Officer

21 June 2023

Enclosure

Transcript - 18 September 2023 - UNCORRECTED

Pg 24 of 56 – Highlighted Section

FRANCES RETALLACK: Can I add one comment. The air model dispersion report—the Todoroski report that we've included in our submission, which Newcrest actually avoided talking about today—basically assumes that because the Woodville monitor, which is the one closest to the vent shaft, is broadly in compliance, therefore the mine is in compliance. They worked backwards and said, "How much dust must be coming out of vent eight for Woodville monitor to be in compliance?" "Oh, it's 10 per cent of what was measured in the independent expert's report." That 10 per cent number has flowed into the health analysis done by SAGE; nobody is talking about that, either. What has become apparent since the Todoroski report was published is that Cadia has now actually started measuring the dust coming at the bottom of the vent through the filtration system. Whilst it might not be 90 per cent, what's actually being collected isn't that far off what was in the original report. Therefore, the SAGE health report is wrong and the Todoroski air quality report is wrong.

GEM GREEN: We'd appreciate being able to give you that calculation and evidence on notice.

Below is CCSN's response to this question

Emissions are calculated for Vent Rise 8 as follows:

Ektimo / Zephyr Independent Air Quality Audit August 2022

Solid Particles page 6 of 32 (top of next page)

Mg/m^3	360
g/ min	11,000
= g/hr	660,000
= kg/hr	660
= kg /day.	15,840
= tonnes / day	1584
= tonnes / shift	7.9

Filters were submitted to Coal Mines Technical Services (CMTS) for analysis. Analysis was performed according to CMTS test method "Thermal Optical Organic Carbon/Elemental Carbon using the principles of NIOSH Method 5040 and TMDPM01".

Please note, NATA accreditation does not apply to the sampling of diesel particulate matter from stationary sources.

1.4 Results Summary

Monitoring was conducted successfully. Details of measurement results and plant operating conditions can be found in their respective sections later in the report.

Location		VR 3	VR 5	VR 7	VR 8
Sampling Date		2/03/2022	28/02/2022	3/02/2022	1/03/2022
Total Type 1 & 2 Metals	Concentration [mg/m³]	≤0.14	≤0.16	≤0.038	≤0.52
	Mass Rate [g/min]	≤1.8	≤2.9	≤0.72	≤16
Diesel Particulate Matter as Total Carbon	Concentration [mg/m³]	0.98	0.08	0.2	7.4
	Mass Rate [g/min]	13	1.4	3.8	230
Diesel Particulate Matter as Elemental Carbon	Concentration [mg/m³]	<0.03	0.02	0.055	0.068
	Mass Rate [g/min]	<0.4	0.36	1.1	2.1
Solid Particles	Concentration [mg/m³]	62	1.3	13	360
	Mass Rate [g/min]	770	23	220	11,000
Fine Particles (PM_{10})	Concentration [mg/m³]	49	0.69	9.3	220
	Mass Rate [g/min]	620	12	160	6,900
Fine Particles ($PM_{2.5}$)	Concentration [mg/m³]	19	0.24	2.7	74
	Mass Rate [g/min]	240	4.4	46	2,300
Fine Particles ($PM_{1.0}$)	Concentration [mg/m³]	4.9	0.034	0.67	19
	Mass Rate [g/min]	61	0.61	11	600
Crystalline Silica	Concentration [mg/m³]	<0.005	<0.004	<0.004	22
	Mass Rate [g/min]	<0.06	<0.07	<0.07	680
Respirable Crystalline Silica (PM_{10})	Concentration [mg/m³]	-	-	-	14
	Mass Rate [g/min]	-	-	-	420
Respirable Crystalline Silica ($PM_{2.5}$)	Concentration [mg/m³]	-	-	-	4.5
	Mass Rate [g/min]	-	-	-	140

EPA letter dated 21 June 2023

Letter (attached as Appendix) refers to further Ektimo testing which again measured total solid particles at VR8 at concentrations between 200mg/m^3 and 570mg/m^3. Based upon this further EPA testing we assume for the purpose of determining emissions calculations that the Ektimo 360mg/m^3 is reasonable.

Todoroski Air Dispersion Model 2022

Page 42 below

6 DISPERSION MODELLING RESULTS

The dispersion modelling predictions are presented in this section. The results presented include predicted dust and metal concentrations associated with the operation in isolation (incremental impacts).

Note that the purpose of this report is to identify if there is any abnormal contribution from the mine to the measured levels over the ANSTO monitoring period. The report does not attempt to provide modelling for total dust levels for the purposes of assessing compliance, given that the actual monitoring data is most appropriate for that purpose. (Note however that cumulative background data is used to validate modelling performance relative to the measurement data).

The modelled emissions for upcast vent VR8 were scaled down by 90% of PM_{10} and TSP, and 50% for $PM_{2.5}$ in order to reasonably correlate with the actual ambient measurements at Woodville.

Each of the privately-owned and mine-owned receptors of relevance to this study as shown in **Figure 2-1**, were assessed individually as discrete receptors.

Note that privately owned receptors are located further away from CVO than the ambient dust monitors (in most cases), and hence the results at privately owned receptors in most cases will be less affected by CVO dust.

6.1 Dust results

Table 6-1 presents a summary of the highest maximum predicted level at any privately-owned receptors. Associated isopleth diagrams of the dispersion modelling predictions for air quality emissions are presented in **Figure 6-1** to **Figure 6-6**.

The results in **Table 6-1** indicate that no exceedances of the relevant criteria area predicted to arise for the assessed dust metrics.

Table 6-1: Summary of modelling predictions for dust due to CVO only (µg/m³)

Pollutant	Averaging period	Criteria	Maximum predicted results at any privately-owned receptor (CVO only)
$PM_{2.5}$ (µg/m³)	24-hr ave.	25	16.2
	Ann. ave.	-	1.3
PM_{10} (µg/m³)	24-hr ave.	50	38.3
	Ann. ave.	-	4.2
TSP (µg/m³)	Ann. ave.	-	8.2
DD (g/m²/month)	Ann. ave.	2	0.4

"The modelled emissions for upcast vent VR 8 were scaled down by 90% of PM_{10} and TSP and 50% for $PM_{2.5}$ in order to reasonably correlate with the actual ambient measurements at Woodville. "

Page 31 defines modelled emissions as those per the Ektimo report referred to above.

Table 5-5: Summary of estimated dust emissions for the January 2023 to February 2023 period (kg/year)

CVO operations	TSP	PM_{10}	$PM_{2.5}$
CE - General construction work	85,213	15,666	8,947
CE - Loading waste to trucks	144	68	10
CE - Hauling waste to emplacement area	2,472	635	64
CE - Emplacing waste at dump	144	68	10
CE - Dozers working on waste rock dumps	2,877	529	302
CE - Secondary ore crushing	142	51	4
CE - Loading crushed ore into trucks to feed CR01 from storage piles	77,822	36,808	5,574
CE - Loading crushed ore to storage pile from underground	724	342	52
CE - Hauling ore	23,713	6,093	609
CE - Emplacing ore at storage location or CR01	1,612	762	115
CE - Ore processing in mill (x5)	23,378	11,057	1,674
WE - waste rock dumps	148,397	74,198	11,130
WE - pit tailing storage facility	36,250	18,125	2,719
WE - subsidence zone	54,374	27,187	4,078
WE - plant stockpiles and exposed areas	141,034	70,517	10,578
WE tailings storage facilities	468,413	234,206	35,131
Grading roads	1,451	507	45
Conveyors and conveyor transfer points	1,403	663	100
Construction works on the NTSF and STSF			
Stripping topsoil + dozer activity	133,935	24,623	14,063
Loading material to haul truck	1,085	513	78
Hauling material to emplacement area	82,530	21,206	2,121
Unloading material at emplacement area	1,085	513	78
WE - tailings construction area	119,397	59,699	8,955
Total Emissions (kg/year)	**1,407,592**	**604,037**	**106,437**

5.4.2 Upcast ventilation shafts

The modelled emission rates for the upcast ventilation shafts are based on the measured concentrations in the period of interest, per **Ektimo (2022)**. A summary of the pollutant concentrations is presented in **Table 5-6**. The TSP emissions are assumed to contain metals.

Table 5-6: Summary of pollutant concentrations for upcast ventilation shafts (mg/m³)

Pollutant	VR3A	VR5	VR7	VR8
Solid particles (TSP)	62	1.3	13	360
Fine particles (PM_{10})	49	0.69	9.3	220
Fine particles ($PM_{2.5}$)	19	0.24	2.7	74
Al	3.7	0.053	0.68	13
Sb	<0.002	<0.002	<0.002	<0.003
As	0.012	<0.0008	<0.0008	0.004
Ba	0.014	0.0045	0.0058	0.049
Be	<0.0003	<0.0003	<0.0002	<0.0005
Cd	0.00057	0.00032	<0.0002	0.00054
Cr	0.0084	0.0022	0.0042	0.023
Co	0.0026	<0.0003	0.00036	0.009
Cu	0.39	0.0096	0.078	2.9
Pb	0.0056	0.036	0.0034	0.041
Mn	0.089	0.0049	0.016	0.35
Hg	<0.0003	<0.0003	<0.0002	<0.0004
Ni	0.0072	0.11	0.0048	0.017
Se	<0.002	<0.002	<0.002	<0.003
Sn	<0.001	<0.0008	<0.0008	<0.001
V	0.023	<0.0005	0.0033	0.065

Scale down the Ektimo report emissions of 15.84 tonnes / day by 90% results in *assumed emissions of*:

- 15.84 tonnes x (100%-90%) = *1.58 tonnes / day*

Cadia Community Consultative Committee (CCC) Meeting 21 August 2023

Concerns that the amount of dust assumed in the Todoroski Air Dispersion Model may be incorrect were supported by discussions with Mick Dewar – General Manager CVO at the most recent CCC meeting.

At this meeting the following question and answer occurred (extract from the CCC draft minutes):

Q "Is it correct that you are collecting 6 tonnes of dust every shift?" Mike Retallack A. "Yes approx 500 tonnes has been collected to date. We are and remain in compliance." Mick Dewar

6 tonnes / shift would be within the range measured by Ektimo in the original Independent Air Quality Audit.

To date a single "scrubber" has been installed. We believe a total of around 5 scrubbers will be installed and dust collected will be more than the current 6 tonnes / shift.

Q. What studies or investigations do you conduct for the life that exists in the soil (fungi, worms etc)?
A. Will take question on notice and get back to you -Action item

Q. Timeline on when Panuara Road is going to be demolished?
A. We will bring that feedback to you at the residents' meetings

Q. What is the water assessment, considering that the effluent water Cadia receives was previously deposited into Summer Hill Creek?
A. a surface water assessment is carried out and will be available in the report.

Q. Can you state the conditions for the Mod 15 gateway approval?
A. Provide further summary, define impacts on groundwater ecosystems on the Belubula River. Cadia is proposing to put extra material on the outside of that tailings wall.

Q. When do we address the contaminated aquifer (cited Peter Sharpe looking to use the water in a previous drought) - are we going to pump out the aquifer?
A. Nothing in any monitoring to say that it is contaminated
A. Peter Sharpe jumped the gun at what he thought was going to be a water source, but nothing came of it.

Q. Will Newmont executives be based at CVO or Melbourne?
A. Not CVO, likely Perth.

Q. Your production is substantially down, isn't it?
A. It is returning.

Q. What production level are you at?
A. I won't be giving that information as it is market-sensitive.

Q. Do you need more scrubbers for this extension (future cave development)?
A. We are looking at options and determining what solutions are required. Beyond 7 scrubbers underground it becomes questionable.

Q. Is it correct that you are collecting 6 tonnes of dust every shift?
A. Yes, approx. 500 tonnes have been collected to date. We are and remain in compliance.

Q. Is the dust trucked out?
A. Currently transported out in bags and stored in the pit. Eventually, it will go into the wet sump and then back into the mill.

Q. Do you have a photo of the remote dozers in the presentation
A. No not of the remote dozers. We can include an image in the next presentation.

Q. 'Brian Goulsan stated inconsistencies in the report, do you still maintain that the report concludes that it's not your lead?'