Newmont™
CADIA

Modification 16
Northern Tailings Storage Facility Buttress Optimisation

Attachment B
Consolidated Project Description and Summary Comparison Table
Cadia East Project and Modifications 1 - 17

This attachment provides a summary of approved operations under the Cadia East Project (Project Approval 06_0295 [PA 06_0295], as modified), consistent with the *State significant development guidelines – preparing a modification report: Appendix E to the State significant development guidelines* (New South Wales [NSW] Department of Planning and Environment, 2022).

The project description associated with the proposed Modification 16 (PA 06_0295 Mod 16) would not materially alter the approved environmental impacts associated with the Cadia East Project, and the Cadia Valley Operations (Cadia) would continue to operate in accordance with the requirements and conditions of PA 06_0295.

The updated project description provided below should be read in conjunction with the Cadia East Project Environmental Assessment and subsequent modifications.

Project Overview

PA 06_0295 (as modified) provides for the consolidated operation of the Cadia East Underground Mine, the Cadia Hill Open Cut Mine (now used to store tailings), the Ridgeway Underground Mine, the concentrate dewatering facilities east of Blayney (only the Cadia Valley Operations Dewatering Facility [CVO Dewatering Facility] is in operation), and a wide range of ancillary and supporting infrastructure.

Together these operations are referred to as Cadia, and include:

- mining operations at Cadia until 30 June 2031;
- continued underground mining of approximately 525 million tonnes (Mt) of ore from the Cadia East Underground Mine;
- continued underground mining of approximately 96 Mt of ore from in the Ridgeway Underground Mine (inclusive of Ridgeway Deeps);
- processing of up to 35 million tonnes per annum (Mtpa) of ore (with on-site processing rates permitted to increase from 32 Mtpa to 35 Mtpa, subject to Condition 6A of Schedule 2 of PA 06_0295);
- continued use of ore processing facilities including operation of onsite mills, gravity circuits, flotation circuits, a Molybdenum Recovery Plant, concentrate pipelines and the CVO Dewatering Facility to the east of Blayney;
- the management of tailings streams as part of an integrated tailings management system allowing for the production of recovered sands and emplacement of tailings and recovered sands within three on-site tailings storage facilities (TSFs), being the Northern TSF (NTSF), Southern TSF (STSF) and Pit TSF (PTSF) to their approved heights;
- placement of waste rock produced by the mining activities in the existing South Waste Rock Dump;
- transportation of concentrate and products offsite via pipeline, road and rail for domestic and export markets;
- re-alignment of sections of Cadia and Panuara Road;
- continued use of existing surface facilities and ancillary activities, and construction and use of approved, augmented, relocated and new surface facilities and ancillary activities to support the abovementioned operations, including:
    - ventilation systems including upcast, downcast and ventilation fans;
    - pre-conditioning of overburden above the Cadia East Underground Mine deposit;
    - service and distribution boreholes;
    - dewatering and potable water bores;

  - underground crushing stations;
  - explosive facilities;
  - concrete batching plant;
  - storage of ore process consumables;
  - overland and underground conveyors;
  - tailings emplacement areas;
  - workshops and stores;
  - administration buildings; and
  - offices and bathhouses;
- surface water management and supply infrastructure including water treatment facilities and associated infrastructure including pipeline and pumping systems;
- buried and overhead power supply infrastructure;
- piped service including potable water supply, mine wastewater removal, process and fire water supply, concentrate pipeline and return water pipeline between Cadia and the CVO Dewatering Facility etc.;
- underground mine access;
- communications and monitoring services including communications towers, etc.;
- access roads and other minor infrastructure within Cadia;
- portable buildings, as required;
- other associated infrastructure required to service the approved and proposed mining operations;
- other associated modifications to existing infrastructure (as well as construction of some new infrastructure), plant, equipment and activities to allow mining of the Cadia East and Ridgeway underground mine deposits and integration with the approved Cadia operations;
- recovered sand demonstration embankment, including pipeline and pumping infrastructure; and
- use of recovered sand for TSF buttressing and emplacement/stockpiling works.

Table B-1
Summary of Approved Operations (as Modified)

Project Component	Approved Operations
Mine life	Mining operations until 30 June 2031.
Ore Processing	Processing of up to 35 Mtpa of ore (with on-site processing rates permitted to increase from 32 Mtpa to 35 Mtpa, subject to Condition 6A of Schedule 2 of PA 06_0295).
Operating hours	24 hours per day, 7 days per week with the exception of specified activities, such as the construction of TSF raises and embankment extensions and train loading operations, where restricted hours of operation apply.
Mining areas	Mining areas include: • Cadia East. • Ridgeway. • Cadia Hill (now completed).
Mining method	Cadia Hill - conventional open pit mining methods (mining now completed). Ridgeway - underground sub-level and block caving with development of associated surface subsidence zone. Cadia East - underground panel caving with development of associated surface subsidence zone.
Surface infrastructure	Continued use of existing surface facilities and ancillary activities, and construction and use of approved and new surface facilities and ancillary activities to support operations.
Waste Rock Management	Deposition in the North and South Waste Rock Dumps and mined-out void of the Cadia Extended open pit. Cadia East waste rock to be deposited in the South Waste Rock Dump. Material for the construction of the NTSF encapsulation and STSF embankment construction to be sourced from Non-Acid Forming (NAF) material from the site waste rock dumps.
Tailings management	Use of the NTSF and STSF and raising of these storages via centreline/downstream embankment lifts. Installation of additional buttressing of the STSF and NTSF embankments. Deposition of tailings in the Cadia Hill open pit to its full capacity, to a (pre consolidation) level of approximately 713 metres Australian Height Datum (m AHD). Construction of a recovered sand demonstration embankment (also referred to as trial tailings embankment) from hydrocyclone sands sourced on site. Use of recovered sand to buttress the southern embankment of the NTSF and emplacement/stockpiling of excess recovered sand in the STSF.
Ventilation Adit	The mining complex includes several ventilation adits/shafts for ventilation of underground mining areas. Decommissioning and closure of existing adit VR101 located within the Cadia Hill open pit. Ventilation shaft within the current approved mine disturbance footprint to replace adit VR101.
Concentrate Transport and Dewatering	Concentrate is transported from the ore processing facilities via a concentrate pipeline to the Blayney Dewatering Facility (now decommissioned and Modification 15 proposed to remove all conditions associated with the decommissioned Blayney Dewatering Facility). The construction and operation of the CVO Dewatering Facility to the east of Blayney and the subsequent decommissioning of the existing Blayney Dewatering Facility (now complete). Concentrate pipeline from Cadia to the CVO Dewatering Facility. Transport of dewatered mineral concentrate by rail to the eastern seaboard.
Process Consumables	Use of various chemicals and reagents typically used in gold/copper mining and processing. Sodium Hydrosulphide (NaHS) Solutioning Plant (located adjacent to the Molybdenum Recovery Plant) to produce NaHS on-site to meet Cadia's operational requirements.

Table B-1 (Continued)
Summary of Approved Operations (as Modified)

Project Component	Approved Operations
Water Supply and Management	Water supply sourced from the Cadiangullong Dam, Flyers Creek Weir, Cadia Creek Weir, Orange Sewage Treatment Plant treated effluent, Blayney Sewage Treatment Plant treated effluent, on-site groundwater bores, Belubula River, Cadia Extended open pit and site runoff. Additional pipeline/pumping systems and raising of the Upper Rodds Creek Dam. Transfer of supernatant tailings water from STSF and NTSF for reuse within the mine water management system. Internal tailings return water pipeline and pumping systems from Cadia Hill open pit.
Power Demand and Supply	Peak demand to 194 megawatts (MW) (using existing power supply infrastructure). 132 kilovolt (kV) electrical substation. A network of electrical transmission infrastructure to distribute electrical power to surface and underground operations across Cadia.
Site access	Primary access is provided via two main existing access roads via Ridgeway Road and the Molybdenum Plant Access Road.
Workforce numbers	An approved workforce of up to 2,110 full time equivalent (FTE) operational and construction personnel. An intermittent maintenance workforce of up to 700 FTE personnel.
Final landform	Includes South Waste Rock Dump, North Waste Rock Dump, NTSF, STSF, Cadia East Subsidence Zone, Ridgeway Subsidence Zone, Cadia Hill open pit, Cadia Extended open pit, Cadiangullong Dam, Upper Rodds Creek Water Holding Dam and other water management infrastructure. The final landform of Cadia Hill pit would be a pit lake (i.e. a wet cover). No intersection between the Cadia East Underground Mine subsidence zone and Cadia Hill open pit in the long term and, therefore, two separate final void waterbodies would remain.
Offset areas	• Black Rock Range Offset Area. • Flyers Creek and Belubula River Offset Area. • Stratton Vale Offset Area. • Tunbridge Wells and Caringle Offset Area.

Table B-2
Summary Comparison Table - Cadia East Project and Modifications 1 – 17

Approval or Modification	Mining Methods	Life of Mine Ore Production	Waste Rock Management	Life of Mine	Tailings Management	Ore Processing	Concentrate Dewatering and Transport	Water Supply and Management	Operational Employment	Other	Key Changes to Approved Cadia East Environmental Impacts
Cadia East Project (incorporating all previously approved Cadia Valley Operations [CVO])	Cadia Hill - conventional open pit mining methods. Ridgeway - underground sublevel and block caving and associated surface subsidence zone. Cadia East - underground panel caving and associated surface subsidence zone.	Cadia East - approx. 449.5 Mt. CVO - approx. 561 Mt.	Deposition in the North and South Waste Rock Dumps and mined-out void of the Cadia Extended open pit. Cadia East waste rock to be deposited in the South Waste Rock Dump.	Mining up until approx. 2030. Project Approval to 2031.	Use of the NTSF and STSF. Raising of these storages via upstream embankment lifts.	Processing of up to 27 Mtpa of gold and copper ore. Construction and operation of a Molybdenum Recovery Plant.	Transport of dewatered mineral concentrate by rail. Gold/copper concentrate transported from the ore processing facilities via a concentrate pipeline to the Blayney Dewatering Facility. Construction and operation of new CVO Dewatering Facility and concentrate pipeline.	Cadiangullong Dam, Flyers Creek Weir, Cadia Creek Weir, Upper Rodds Creek Dam, Orange Sewage Treatment Plant treated effluent, Blayney Sewage Treatment Plant treated effluent, on-site groundwater bores, Belubula River, site runoff and pipeline/pumping systems.	Average 880 to max approx. 1,300.	Not Applicable.	Not Applicable.
Modification 1 Cadia Hill Decline	Underground decline from Cadia Hill open pit, including bulk samples and ventilation.	0.02 Mt of additional ore.	Additional 0.8 Mt of waste rock.	No change.	No change.	No change.	No change.	No change.	No change.	Not Applicable.	No material environmental implications.
Modification 2 Blayney Dewatering Facility	No change.	No change.	No change.	No change.	No change.	No change.	Upgrade to dewatering facility capacity in Blayney and extending the life of the facility by two years.	No change.	No change.	Related to delay in establishment of CVO Dewatering Facility.	Addition of acoustic control elements which resulted in a decrease in local operational noise levels.
Modification 3 Cadia Road Pipeline Relocations	No change.	No change.	No change.	No change.	No change.	No change.	Realignment of concentrate and return water pipelines to follow existing Cadia Road rather than realigned route.	No change.	No change.	Option retained to relocate to originally approved alignment.	Minor reduction in approved land disturbance.
Modification 4 Pre-conditioning by Hydraulic Fracturing	Preconditioning of the Cadia East host rock from the surface using hydraulic fracturing.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	Not Applicable.	Negligible impacts on groundwater above those already approved. Noise impacts associated with drilling operations were temporary and limited.
Modification 5 Pre-conditioning by Blasting	Preconditioning of the Cadia East host rock from the surface using blasting techniques.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	Not Applicable.	Negligible impacts on groundwater above those already approved. Complied with existing blasting criteria. No additional noise impacts to those already assessed and approved.
Modification 6 Processing Rate Modification	No change.	Cadia East - approx. 456 Mt. CVO - approx. 562 Mt.	No change.	No change.	Minor upgrades to tailings infrastructure.	Processing of up to 32 Mtpa of gold and copper ore.	No change.	Contingent transfer of tailings water to Cadia Hill open pit for water management.	No change.	Upgrades to ore handling and processing facilities and associated increase in electricity demand. Other administrative updates.	Negligible noise emissions and no change to criteria. Negligible impacts on water supply.
Modification 7 Biodiversity Offset Modification	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	Modification of approved Biodiversity Offset Area.	No change.
Modification 8 Administrative Modification	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	Updating Project Approval schedule of lands.	No change.

Table B-2 (Continued)
Summary Comparison Table - Cadia East Project and Modifications 1 – 17

Approval or Modification	Mining Methods	Life of Mine Ore Production	Waste Rock Management	Life of Mine	Tailings Management	Ore Processing	Concentrate Dewatering and Transport	Water Supply and Management	Operational Employment	Other	Key Changes to Approved Cadia East Environmental Impacts
Modification 9 Surface Pre-conditioning and On-Site Warehouse	Additional preconditioning of Cadia East host rock from the surface using hydraulic fracturing.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	Included on site warehouse.	Negligible impacts on groundwater above those already approved. Cumulative noise emissions compliant with noise limits.
Modification 10 Molybdenum Plant Relocation	No change.	No change.	No change.	No change.	No change.	Relocation of the Molybdenum Recovery Plant including an upgrade in feed capacity from 460,000 tonnes per annum (tpa) to 500,000 tpa.	No change.	No change.	No change.	Increase in molybdenum product transported off-site. Relocation of the approved mine access road intersection.	No change.
Modification 11 Cadia Hill Tailings	No change.	No change.	No change.	No change.	Deposition of 30 Mt tailings into Cadia Hill open pit. Infrastructure established to support in-pit tailings deposition.	No change.	No change.	Pipeline installed to return Cadia Hill tailings water to water management system.	No change.	Minor infrastructure upgrade.	Negligible impacts on water resources above those already approved.
Modification 12 Cadia Hill Tailings Continuation Modification	No change.	No change.	No change.	No change.	70 Mt of additional tailings disposal in Cadia Hill open pit. Total life of mine tailings disposal volume unchanged.	No change.	No change.	No change.	No change.	Not applicable.	No change.
Modification 13 Cadia Hill Tailings Completion Modification	No change.	No change.	No change.	No change.	Deposition of tailings in the Cadia Hill open pit to its full capacity to a (pre-consolidation) level of approximately 713 m AHD. This would provide an additional 177 Mt of capacity in the Cadia Hill open pit. Total life of mine tailings disposal volume unchanged.	No change.	No change.	No change.	No change.	Decommissioning and closure of existing adit VR101, which would be inundated by tailings in the Cadia Hill open pit as a result of the modification. Installation of a ventilation adit outside of the current approved disturbance footprint to replace adit VR101. Construction of additional buttressing for the STSF embankment outside of the approved CVO disturbance footprint.	Negligible impacts on water resources with implementation of proposed preventative and contingency measures. Potential bat habitat within VR101, which is to be decommissioned and closed (monitoring and management measures are proposed to be implemented prior to decommissioning of the adit, to prevent potential impacts to bat habitat). The proposed ventilation adit is located within the approved CVO disturbance footprint. Impacts to biodiversity were therefore assessed and offset as part of the Cadia East Environmental Assessment. Complied with noise criteria. A Biodiversity Development Assessment Report completed for Modification 13 concluded that the cumulative impacts of construction of the STSF buttressing on biodiversity are small, and negligible in the regional context.

Table B-2 (Continued)
Summary Comparison Table - Cadia East Project and Modifications 1 – 17

Approval or Modification	Mining Methods	Life of Mine Ore Production	Waste Rock Management	Life of Mine	Tailings Management	Ore Processing	Concentrate Dewatering and Transport	Water Supply and Management	Operational Employment	Other	Key Changes to Approved Cadia East Environmental Impacts
Modification 14 Processing Rate Modification	No change.	Cadia East - approx. 525 Mt.	Material for the construction of the NTSF encapsulation to be sourced from NAF material from the waste rock dumps.	No change.	NTSF repairs to restore embankment by encapsulation of the slumped section. Repairs are expected to take up to two and a half years to complete and would be contained within the disturbance boundary of future NTSF and STSF embankment lifts. Additional disturbance areas associated with the NTSF and STSF embankments to achieve the approved tailings deposition heights. Use of alternative construction methods for centreline/ downstream lifts. Cumulative tailings disposal volume unchanged.	Processing of up to 35 Mtpa of gold and copper ore (increasing the on-site processing rate from 32 to 35 Mtpa is subject to Condition 6A of Schedule 2 of PA 06_0295).	No change to train movements or loading hours. Capacity of trains would increase (additional load per carriage).	Increase in water demand in-line with proposed increased processing rate. No change to other water supply and storage infrastructure.	Additional 35 personnel on average.	Upgrades to the existing on-site ore processing infrastructure and associated increase in electricity demand. Construction and operation of a Sodium Hydrosulphide Solutioning Plant (located adjacent to the Molybdenum Recovery Plant) to produce sodium hydrosulphide on-site to meet CVO's operational requirements.	Negligible noise and air quality emissions. Negligible impacts on groundwater and water supply. Negligible road traffic impacts. Potential biodiversity impacts offset in accordance with NSW Biodiversity Offsets Scheme.

Table B-2 (Continued)
Summary Comparison Table - Cadia East Project and Modifications 1 – 17

Approval or Modification	Mining Methods	Life of Mine Ore Production	Waste Rock Management	Life of Mine	Tailings Management	Ore Processing	Concentrate Dewatering and Transport	Water Supply and Management	Operational Employment	Other	Key Changes to Approved Cadia East Environmental Impacts
Modification 15 Tailings Storage Facility Embankment Buttressing Modification	No change.	No change to approved mine life ore production rate. Restart of Ridgeway Underground Mine to facilitate mining of 15 Mt of approved resource.	No change.	No change.	Buttressing of the NTSF and STSF, such that the embankment and associated disturbance area extents include areas outside of existing Mining Leases. Construction of a trial tailings embankment from hydrocyclone sands sourced on site. Change to working hours for TSF construction to include evening hours.	Two hydrofloat cells located within the existing CVO Ore Processing Facilities' disturbance footprint. Upgrades to existing PAX facility.	No change to train capacity or total number of train movements. Train arrival and departure activities at the Cadia Dewatering Facility to occur during evening and night-time hours (in addition to approved train arrival and departure activities that occur during daytime hours). Minor administrative changes to remove conditions relating to the former Blayney Dewatering Facility from PA 06_0295.	Further realignment of the Belubula River pipeline. No changes to the overall water supply and management strategy for CVO.	Revised to an average of approximately 1,090 to 1,140 employees with an additional construction/ development workforce of up to approximately 970 personnel. Intermittent shutdown periods require a nominal workforce of approximately 300 to 700 additional personnel during these periods.	Installation and use of two upcast ventilation fans installations on the surface to support the Cadia East underground mine. Change to location of the subsidence impacts from mining at Ridgeway. The total area of predicted subsidence impact is smaller than approved. Expansion of the existing 132 kV electrical substation. The peak power demand is estimated to be 194 megawatts. 20% increase in PAX consumption.	Noise emission increases at Cadia and Cadia Dewatering Facility. No exceedances of the NSW EPA's impact assessment criterion or existing PA 06_0295 criteria are predicted at any privately owned receivers for Modification-only 24-hour PM_{10} or $PM_{2.5}$ concentrations, annual average PM_{10} or $PM_{2.5}$ concentrations, TSP concentrations or dust deposition levels. Negligible impacts on groundwater and water supply. An Aboriginal Cultural Heritage Assessment completed for the Modification concluded that the Modification is unlikely to harm Aboriginal cultural heritage places or objects. Potential biodiversity impacts offset in accordance with NSW Biodiversity Offset Scheme.
Modification 17 Confirmation of Approved Disturbance Footprint	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	Administrative updates to the approved disturbance footprint, as depicted in PA 06_0295, to confirm that all approved disturbance areas and activities are accurately presented, and relocation of the approved hydrocyclone plant.	No change.

Table B-2 (Continued)
Summary Comparison Table - Cadia East Project and Modifications 1 – 17

Approval or Modification	Mining Methods	Life of Mine Ore Production	Waste Rock Management	Life of Mine	Tailings Management	Ore Processing	Concentrate Dewatering and Transport	Water Supply and Management	Operational Employment	Other	Key Changes to Approved Cadia East Environmental Impacts
Modification 16 NTSF Buttress Optimisation	No change.	No change.	No change.	No change.	Recovered sand would be used as buttressing material for a portion of the NTSF southern embankment. Emplacing/ stockpiling of recovered sand not used for buttressing, within the approved STSF disturbance footprint. Placement of recovered sand occurring 24 hours a day, seven days per week.	No change.	No change.	No change.	No change.	Minor increase in electricity usage associated with the pumping of recovered sand. Buttressing the southern embankment of the NTSF using recovered sand, resulting in a gentler slope for the final landform. Integrate the approved recovered sand demonstration embankment with the proposed sand buttress at the southern embankment of the NTSF, the integrated buttress to form a permanent feature of the final landform.	Noise levels are generally found to decrease during the day and evening periods when compared with Modification 15. At night, noise levels are generally found to increase by a negligible amount (0-1 dB), with a small number of privately-owned residential receivers east and southeast of the site subject to increases ranging 1-4 dB (with no exceedances of criteria). No exceedances of the NSW EPA's air quality impact assessment criterion or existing PA 06_0295 criteria are predicted at any privately owned receivers for Modification-only 24-hour PM_{10} or $PM_{2.5}$ concentrations, annual average PM_{10} or $PM_{2.5}$ concentrations, TSP concentrations or dust deposition levels. Negligible changes to existing visual impacts. Negligible changes in impact to surface water and groundwater. The Modification is expected to reduce GHG-producing fuel consumption, such that the Large Emitters Guide would not be required.

Notes:
Modification 10 (i.e. development as was last modified under section 75W) is the basis for comparison against Modification 16 (in addition to Modifications 11 to 15 and 17).
CVO = Cadia Valley Operations.
dB = decibels.
EPA = Environment Protection Authority.
Mt = million tonnes.
NTSF = Northern Tailings Storage Facility.
STSF = Southern Tailings Storage Facility.
Mtpa = million tonnes per annum.
tpa = tonnes per annum.
TSF = tailings storage facility.
TSP = Total Suspended Particulate.
PAX = Potassium Amyl Xanthate.
PM_{10} = particulate matter with equivalent aerodynamic diameter of 10 microns or less.
$PM_{2.5}$ = particulate matter with equivalent aerodynamic diameter of 2.5 microns or less.