**PIONEERING COARSE PARTICLE FLOTATION – TRANSFORMATIVE INSIGHTS FROM FIVE YEARS OF OPERATION**

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**ABSTRACT**

The mining industry has seen a shift towards sacrificing metal recovery for power intensity by simply coarsening primary grind. There is an economic limit to this practice which can be overcome by the adoption of new technologies. For Cadia, this meant a shift away from conventional, power intensive fine grinding flowsheets towards the adoption of coarse particle flotation technology. This new style of flowsheet has potential to deliver significant reductions in concentrator footprint, power and water demand and enable the future use of environmentally preferential tailings storage options like dry stacking or co-mingled deposition. Newmont Cadia took a significant step forward in proving the technical viability of coarser processing for base metals when a full-scale trial of the Eriez HydroFloat™ units were commissioned in August 2018 in a tailings scavenger duty. The success of the trial installation provided Newmont with an alternative technology case when pursuing mill expansions. Subsequent Newmont studies concluded that the expansion of coarse particle flotation (CPF) capacity delivered an improved business case over additional fine grinding and a second CPF project progressed to execution. Post completion of the expansion project in 2022, 75% of concentrator feed at Cadia is treated through coarse flotation systems. This has enabled Newmont to leverage this technology to exploit the material properties of the separated streams. The separated, fines deficient, tailings sands have value as embankment construction material and are a key basis of the tailings future at Cadia. This paper will examine the current reduction in power intensity being delivered by coarse flotation at Cadia and how the site tailings opportunity to further leverage the technology is being developed.