

Underground Potash Mining Needs Improvement? Aerodyne GPC Cyclone Comes To the Rescue.



Potash Mine

An underground potash mine (pictured on left) in Canada wanted to improve the air quality throughout the mine. The amount of airborne particulates was becoming cause of concern for the miners' health and safety. To help address these concerns the mine was looking at installing dust collectors at various high dust areas. These areas included the various conveyor transfer points located throughout the mine.

Since the mine is underground, space is at a premium. They began looking into different dust collectors that could fit inside the mine, yet not take up too much floor space. Too large of a foot print and the vehicle and foot traffic would be disrupted. Too tall of a height and the dust collector wouldn't fit inside the mine.

Traditional cyclones were too tall to fit in the available area. The limited height of the mine shaft wouldn't allow the cyclone to fit inside plus allow for a dust bin and exit ductwork. While, baghouses and cartridge collectors took up too much floor space and were more expensive than they were willing to spend.

They then contacted Aerodyne about the GPC cyclone. The compact size of the GPC cyclone allows it to fit in areas traditional cyclones can't fit. The GPC cyclone is between 50% and 33% of the size of an equivalent traditional cyclone. The horizontal GPC cyclone allows it to be suspended from the mine ceiling, thereby freeing the floor for ground traffic.

The GPC cyclone also has a high dust particle removal efficiency. It removes around 99% of particulate that are 20 micron and larger. This was ideal for the mine. More than 50% of their dust was greater than 20 microns.

After discussing the application, Aerodyne recommended our horizontal GPC-20 (1500 ACFM) due to its small profile and an Armadillo Vacu-Valve. The horizontal GPC's compact design allowed it to be installed on a skid hanging from the mine ceiling. The skid included an exhaust fan and Vacu-Valve. The system was installed



GPC-20 with fan for potash mine



Armadillo Vacu-Valve

so that the mine floor was open with only a container to collect the rock dust from the Vacu-Valve on the floor.

Since the particles collected were potash and rock dust, the Armadillo Vacu-Valve was perfect as an airlock. The Vacu-Valve has a long history of operating successfully in mines and quarries. The heavy duty sleeve provides for a long life with abrasive rock dust. Since rock dust is heavy and doesn't bridge easily, the materials easily flows through. They also like that the Vacu-Valve doesn't require a motor. This helps save operational costs while also helping the environment.

To learn more about the different types of Dust Collection Methods, [click here](#) to download our free white paper. To request a brochure of the Aerodyne GPC Dust Collector, please visit www.DustCollectorHQ.com. For more information regarding the full line of Aerodyne industrial dust collection products and material airlock valves, call (440) 543-

7400, toll-free at (800) 358-7546, or e-mail dc@dustcollectorhq.com.

About Aerodyne — Aerodyne (<http://www.dustcollectorhq.com/>) has been specializing in solving dry material handling problems for more than 60 years through such products as high-efficiency cyclone dust collectors and low-cost, low-maintenance, material-handling valves. Aerodyne operates under the corporate motto "Clean Our World®", addressing material handling challenges through innovation, customer commitment, and environmental stewardship.