



In mining and mineral processing, recovery is a major element of success. The DryVac process can help. Whether for recovering valuable solids or process water that would otherwise be lost, this technology can help increase profitability and sustainability. Operating cost reduction can be realized through the replacement and decommissioning of traditional downstream technologies, and the increased recoveries of previously lost valuable waste materials. Increased operational sustainability is achieved via integrated resource management efficiencies - increased water recovery in concentrate dewatering, lessened impact on transport system and resulting costs. DryVac technology can be fed with pulp densities in the range of 0.5% to 70% while being used for recovery of metals, chemicals and water and as well in the reclamation of valuable tailings, leaving inert tailings product behind.

## APPLICATION: CONCENTRATE DEWATERING

Current technology used by mineral processors to reach target moisture levels (TML) prior to shipment is limited to a range of 7-13% moisture. DryVac technology can consistently deliver moisture level reductions to as low as 0.2-0.5% on a direct feed of flotation concentrates. Virtually 100% of all moisture can be recovered prior to shipment. Reclaimed water can be reused at-site within other unit operations to reduce overall operational demand on local surface and groundwater systems.



## APPLICATION: ACID ROCK DRAINAGE

DryVac's technological capability with respect to dewatering and drying fine materials allows DRYVAC SERVICES to process acid-generating sulphide tailings from a wet to dry product that, depending upon local geography can be disposed of accordingly, used for paste backfill, or as a dry, stackable product.



## APPLICATION: TAILINGS POND RECLAMATION

Aside from the environmental liability associated with the long-term management of these repositories, in many cases, tailing ponds contain valuable metals lost during initial production. DryVac Services, acting as a contract miner, can systematically recover the valuable solids, extract metals and create an inert waste product at the end of the recovery suitable as a dry stack tailings or a paste backfill.



## **DRYVAC MINING APPLICATIONS**

There are DryVac filter press installations worldwide reclaiming valuable materials that would otherwise be lost, while also recovering the water for reuse. Plants can be fed with sludge ranging from 0.5% to 7% solids. The dewatering process can be enhanced by using additional chemical treatment. The sludge is dewatered in the beginning of the process; low-pressure steam (less than 1 bar)) is then applied to the DryVac Elastic Envelope Modules {patent pending} as a vacuum is applied to the filtrate ports, and the drying phase proceeds. The remaining moisture is 'boiled off' in a process that can be halted at any time to achieve the desired moisture level. At the conclusion of the drying phase, the DryVac equipment is opened up and the dried sludge drops to a conveyor or auger below.

### **Solids Drying Capabilities**

- Mineral concentrates including Cu, Zn, Pb, Fe and Platinum Group Metals can be dried to consistently high levels using DryVac technology.
- Fine Coal, such as tailings material, can be trapped, filtered and dried, either for reuse as a blended product with existing clean coal, or as part of palletized energy products blended with other waste materials
- Muds, such as those from drilling operations can be recovered and dehydrated; while the chemicals used in conjunction with the drilling program can also be recovered
- Clay products, such as Kaolin can be recovered and dried for, as an example, reuse as a boiler feed system lubricant in coal-fired energy facilities
- Precipitates, such as Gold and Silver, Hydroxides can be washed and dried effectively without the risk of explosion typically associated with pressure filtration
- Treatment of effluent/sludge from camp water and wastewater, + mine/mill/smelter waste water streams can also be dried effectively

### **Recovery of Solution**

- Full recovery of solution with enhanced ability to recover metals
- Desalination and dehydration of minerals and liquid streams with full recovery of all constituents
- Cake washing applications of precious, base and by-product metals typically for increased recoveries, at-site recoveries and/or the recovery of valuable metals that are penalized/lost under smelter contracts

### **Summary of DryVac Benefits:**

- Relatively simple process with minimal health and safety risks
- Less transportation and disposal costs
- Enhanced treatment is achieved
- Flexibility of disposal options
- Mobile, Modular, or Permanent units available
- Service Contracts Available
- Real-time PLC uplink via satellite is available for remote monitoring
- Replaces combination dewatering and drying, with one process.

Examples include:

- o Belt Press and Thermal Dryer
- o Centrifuge and Drying Ponds
- o Solar Evaporation Systems
- Dramatically Reduces labor and material handling expenses
- For more details on how we can be of service, please contact us directly at 1-800-992-9113

Dehydration and Environmental Systems LLC  
864 St. Francis Way, Rio Vista, CA 94571  
ph: 800-992-9113 www.dryvac.com fax: 707-374-7505

