

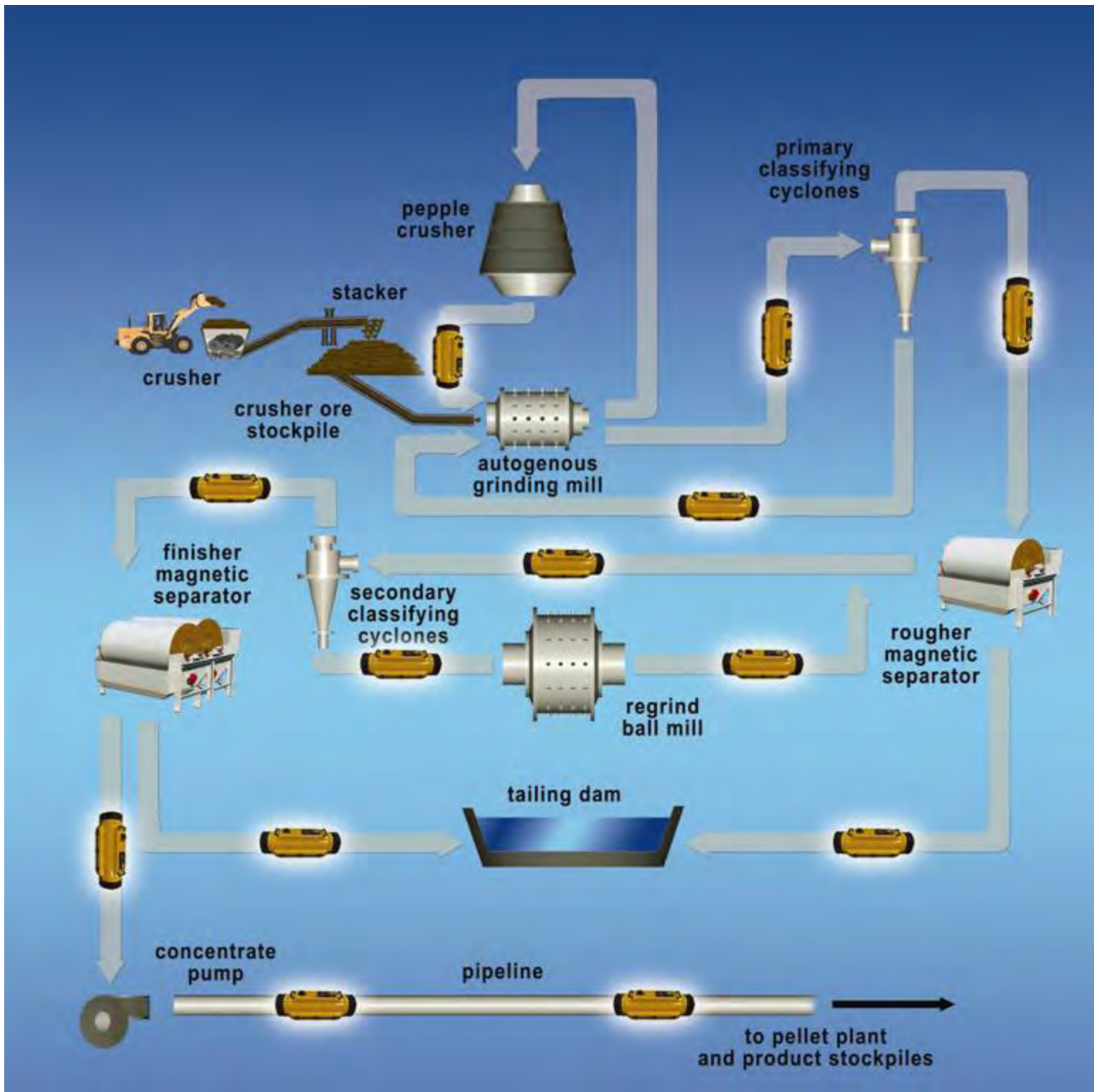


CiDRA Minerals Processing -magnetite concentration process solutions

- The only guaranteed volumetric flow and gas volume fraction solution
- Improve material balance accuracy and reliability
- Enables tighter classification control in the presence of changing ore conditions and operating constraints
- Enhanced management of magnetic concentrate-to-tails ratio
- Improved tailings/pipeline pump efficiency
- A breakthrough in process measurement technology

CiDRA Minerals Processing

-magnetite concentration process solutions



CiDRA Minerals Processing

-magnetite concentration process solutions

The *SONARtrac* clamp-on system provides a non-intrusive, on-line, real-time measurement of the volumetric flow and amount of entrained air/gas present in any liquid-continuous-phase process fluid. The system also provides a measurement of only the liquid portion of the flow by compensating for the amount of entrained gas/air in the process line.

Insensitive to changes in magnetite density, the *SONARtrac* clamp-on system is completely immune to the magnetic properties of magnetite. It does not suffer from abrasive wear (compared with in-line devices) or signal attenuation (as in ultrasonics) associated with medium to high solids contents.

The *SONARtrac* Process Monitoring System is the ideal solution for your concentrator.

SONARtrac Process Monitoring Systems have been installed in magnetite concentration and processing facilities in U.S., Canada, Mexico, Chile, Sweden and Australia.

- Accurate/repeatable low life cycle cost volumetric flow
- Enables accurate mass balance in the presence of air
- Enables tighter classification control in the presence of changing ore conditions and operating constraints
 - Increased recovery
 - Increased mill throughput
 - Reduced mill electrical power consumption
- Enhanced management of magnetic concentrate to tails ratio
- Improved tailings/pipeline pump efficiency
- Pipeline leak detection and monitoring



SONARtrac Process Monitoring Systems, sonar based clamp-on technology for the most challenging processes.

CiDRA Minerals Processing

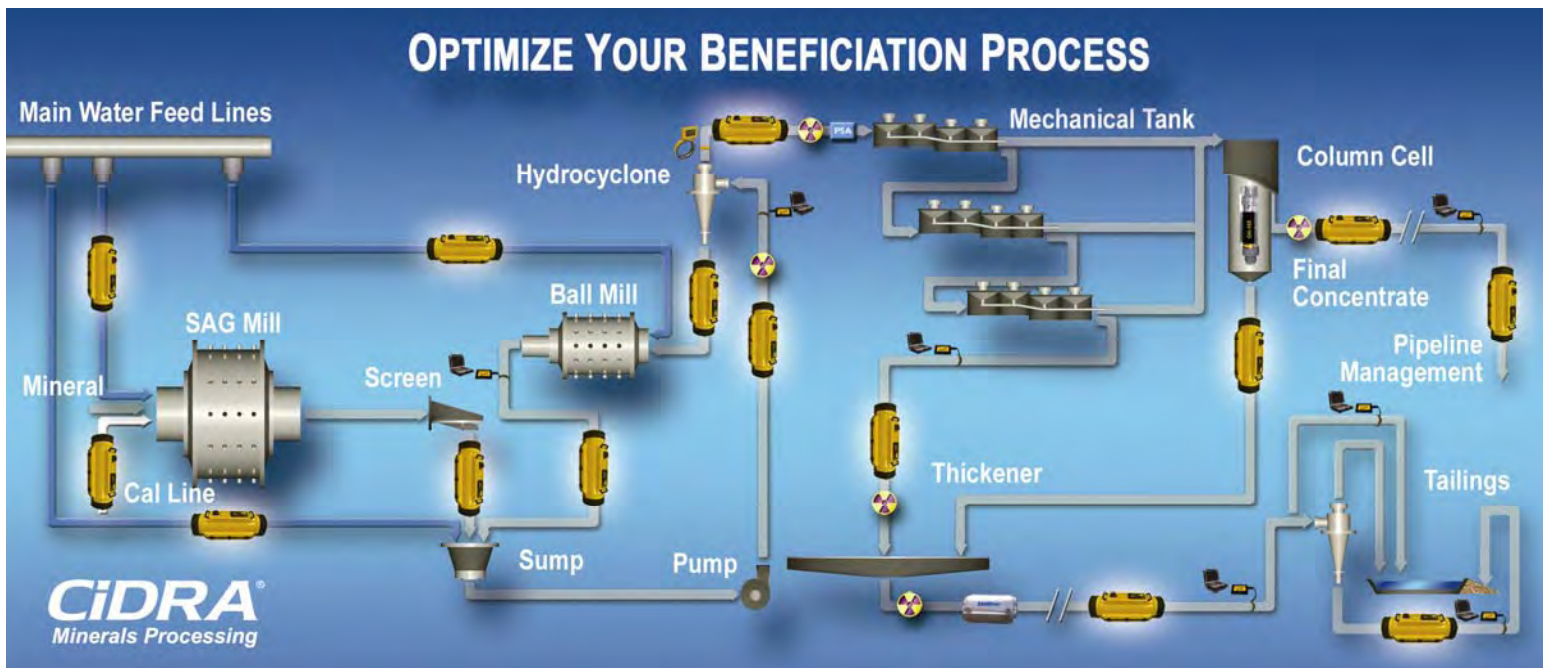
-magnetite concentration process solutions

Applications for *SONARtrac* Technology Magnetite Concentrator Facility

Hydrocyclone Feed Lines
Hydrocyclone Overflow Lines
Screen Lines
Ball Mill Discharge Lines
Tailings Lines
Vertical Mill Feed Lines

Final Concentrate Lines
Flux Lines
Underflow pumps
Filter feed pumps
Concentrate thickeners

General Applications for *SONARtrac* Technology



Pregnant Leach Solution Lines
Raffinate Lines
Hydrocyclone Feed Lines
Hydrocyclone Overflow Lines
Hydrocyclone Underflow Lines
Water Feed Lines
SAG Mill Discharge Lines
Thickener Feed - Underflow / Overflow

Ball Mill Discharge Lines
Water Recovery Lines
Tailings Lines
Flotation Feed Lines
Tanks/Column Cells (Gas Holdup)
External Sparger Lines
Reagent Lines
Pipeline Monitoring

CiDRA[®]
Minerals Processing

CiDRA
Wallingford, CT 06492
203.265.0035
www.cidra.com