SUSTAINABLE SOLUTIONS FOR MINING AND REMEDIATION

DISA

NOVEL PROCESS

- HPSA is a mechanical process (i.e. no chemicals) leveraging particle - particle collisions.
- HPSA focuses on liberating minerals along their intergranular boundary lines, creating a much more efficient liberation at particle sizes that are coarser than the industry standard.
- Slurries are transported by high-pressure pumps through opposing nozzles, creating impinging jets contained in a collision housing.

GEN A Deployed at an Iron Tailings Site

SELECTIVE LIBERATION

- HPSA uses the difference in Mohs hardness between the base mineral and target mineral for selective liberation, which provides a more energy efficient alternative to conventional grinding mills.
- By liberating target minerals from the gangue, the post-HPSA material can be more efficiently separated by size classification or flotation for increased grade and recovery.
- Due to HPSA's ability to selectively liberate, the target minerals are efficiently concentrated earlier in the processing sequence, which reduces the amount of overall material that needs processing. This creates opportunities to reduce or remove downstream unit operations.

HPSA Skid

CONTINUOUS OPERATION

- HPSA can be used as a stand alone system (typically for remediation and tailings applications) or as a "plug and play" unit in the grinding/regrinding stage of the processing circuit (replacing the need for ball mills, rod mills, and/or attrition scrubbers).
- Throughput scaling options based on processing needs - currently offering units with a range up to 50 TPH.
- Units can be applied to any circuit with minerals that benefit from selective liberation. Successful applications currently include, but are not limited to: Uranium / Vanadium / Phosphate / Potash / Graphite / Copper / Molybdenum / Gold / REEs.

GEN B Full Circuit

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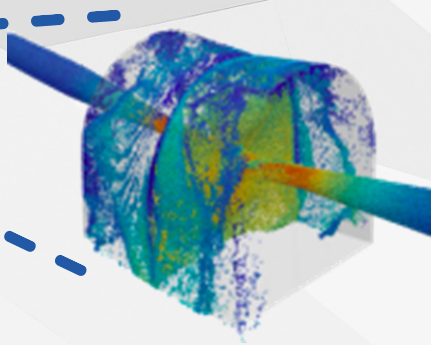
DISA FILTER SAND



APPLICATION

- Filter sand is used in a variety of mining applications including well water filtration, water reuse, source water filtration, leaching pads, tailings, and many more.
- Currently, when filter sand is saturated with contaminants, it is discarded and replaced with new sand. This replacement can be very costly.
- HPSA technology has been proven to remove contaminants from filter sand so it can be regenerated and re-used as “clean sand” back to the filtration process.

FILTER SAND IMAGES

0 min **5 min** **10 min** **30 min**

HPSA Processing Time

CONCLUSION

- After HPSA processing, quartz content increased from 67% in the feed material to 94% in the product material.
- Post-HPSA sand is now able to be recycled back to the filtration process as clean sand. This process is 50% more economical than replacing the contaminated sand.