

## REINVENTING BITUMEN EXTRACTION

- X 99+% bitumen recovery.
- X 99+% bitumen purity.
- X No contaminated tailings.
- X No tailings ponds.
- X 20% reduction in green house gases.



**VARYPETROCHEM**  
LLC

VPC High Shear Process/CAC-24

## INTRODUCING THE VPC HIGH SHEAR PROCESS: GAME-CHANGING TECHNOLOGY IN OIL SANDS BITUMEN EXTRACTION.

### Thinking outside the solvent box.

Imagine the possibilities and cost-saving benefits of bitumen extraction without froth, without diluent, without tailings ponds, without environmental contaminants.

The VARY Petrochem (VPC) patent-pending CAC-24 chemistry and High Shear Process is a completely diluent-free extraction process that will revolutionize oil sands bitumen extraction forever.

### The VPC High Shear Process

The process utilizes the CAC-24 chemistry in combination with high shear to separate bitumen from solids, including fine clay—without forming any intractable emulsions. The more shear, the more effective the process.



OIL SANDS



CAC-24



VPC PROCESS



RESULTS

### Specific gravity is the key to success.

With a specific gravity of 1.01 to 1.04, VPC's CAC-24 chemistry is slightly higher than bitumen, thus allowing separated bitumen to float to the surface without creating a froth.

CAC-24 is not a solvent nor surfactant, it is non-reactive, non-toxic and contains no VOCs.

CAC-24 chemistry delivers 99+% pure bitumen yield to the upgrader. Extraction is significantly more productive with higher output, reduced costs and greater profits.

### Applications: a limitless future.

The introduction of the VPC High Shear Process, combined with a unique approach to developing "next-step" solutions, opens countless opportunities in a variety of petroleum based applications including oil sands, sludge treatment, asphalt and polymers.



### ECONOMIC ADVANTAGES



- ✓ 99+% bitumen recovery
- ✓ No solvent froth treatment
- ✓ Lower capital costs
- ✓ Lower energy costs
- ✓ Higher output

### ZERO ENVIRONMENTAL IMPACT



- ✓ No contaminated tailings
- ✓ No tailings ponds
- ✓ All solids are dry, stackable and immediately reclaimable
- ✓ Process creates no environmental contaminants
- ✓ No solvents in the extraction process