



## **METALLURGICAL TEST WORK CONFIRMS PREMIUM HIGH GRADE 65.8% IRON ORE CONCENTRATE WITH 0.67% V2O5 AT THE MONT SORCIER IRON ORE AND VANADIUM PROJECT**

- **Updated Metallurgical tests confirm historical results by Campbell Resources in the 1970's**

TORONTO, CANADA, February 10, 2020 – Vanadium One Iron Corp. (“Vanadium One” or the “Company”) (TSXV:VONE), is pleased to announce that it has received the results of the Metallurgical Test Work conducted on drill samples from its 100% owned Mont Sorcier Iron Ore and Vanadium Project in Quebec. Vanadium One engaged COREM to complete initial metallurgical tests to confirm and update previous historical work. COREM is a center of expertise and innovation in mineral processing with the largest concentration of resources dedicated to research and development in this field in Canada. COREM has over 20 years of experience having worked on several iron ore projects in Quebec and around the world.

Cliff Hale-Sanders, President and CEO, commented on the results saying *“we are very pleased that the results demonstrate that the Mont Sorcier project is able to deliver a premium, high grade, iron ore product with recoverable vanadium credits. In addition, the concentrate chemistry, with low titanium levels, supports that the concentrate is amenable as direct feed to blast furnaces. These results are being incorporated into an ongoing Preliminary Economic Assessment that is expected to be completed in the coming weeks, which we anticipate will highlight the inherent value in the Mont Sorcier project.”*

The objective of the study was to carry out grindability and concentrability work on composite samples. The grindability tests included the standard Bond abrasion test (Ai), the rod (RWI) and ball mill (BWI) work indexes and the SAG variability test (SVT). The concentrability test work included preconcentration using dry Low Intensity Magnetic Separator (LIMS) and concentration using a Davis tube test and laboratory wet LIMS.

COREM processed drill core composite samples from four zones of the deposit: North High Grade (NHG), North Low Grade (NLG), South High Grade (SHG) and South Low Grade (SLG) with corresponding head grades as illustrated in Table 1.

Table 1: Head grades

Composite sample	Fe <sub>T</sub> (%)	Mag (%)	SiO <sub>2</sub> (%)	Al <sub>2</sub> O <sub>3</sub> (%)	MgO (%)	CaO (%)	TiO <sub>2</sub> (%)	V <sub>2</sub> O <sub>5</sub> (%)
North High Grade (NHG)	32.0	38	22.2	2.1	20.9	0.8	1.2	0.38
North Low Grade (NLG)	24.5	26	26.3	6.0	21.6	1.9	1.0	0.19
South High Grade (SHG)	35.5	45	19.1	1.1	21.0	0.2	1.0	0.50
South Low Grade (SLG)	31.2	39	20.9	1.1	23.2	0.4	0.7	0.25

\* Mag: Magnetic content determined by Satmagan Test

The standard grindability tests average results indicated:

- Abrasion index (Ai): The material was classified as non-abrasive based on Metso's classification of abrasiveness;
- RWI and BWI: The material was classified as hard based on JKMRC hardness classification;
- SVT tests results: The material was classified at the 82.9 percentile, which means that this material was harder than 82.9% of the materials tested by Starkey & Associate Inc.

The head analyses of the composite samples showed that:

- The average total iron grade was 30.8% Fe<sub>T</sub>;
- The average magnetite grade, determined by Satmagan, was 37% mag;
- The average V<sub>2</sub>O<sub>5</sub> grade was 0.33% V<sub>2</sub>O<sub>5</sub>;
- The main impurities were SiO<sub>2</sub> (average of 22.1%) and MgO (average of 21.7%);

Based on the Satmagan and the Fe<sub>T</sub> values, it can be assumed that iron-bearing minerals were not only magnetite. A detailed mineralogical analysis to identify and quantify the other iron-bearing minerals needs to be performed.

Preconcentration, using dry LIMS at a crushing size of 3.35 mm, led to the following metallurgical performances (average) of the magnetic products:

- A weight yield of 84.1%;
- A Magnetite grade of 40% mag with a 98.3% recovery;
- A total iron grade of 32.5% Fe<sub>T</sub> with a 95.1% recovery;
- A vanadium grade of 0.36% V<sub>2</sub>O<sub>5</sub> with a 95% recovery.

Based on these results, it can be concluded that preconcentration would allow for the removal low-grade material, in an early stage of the beneficiation process, and thus results in lower energy costs and reducing some capital requirements for downstream equipment.

During the concentration tests, the Davis tube test results performed on the magnetic preconcentrate showed that, at a grinding size of P95 (P95: 95% passing) of ~38 micron for the four composite samples, the average weight recovery of the magnetic product was 47.3% grading 65.8% of Fe<sub>T</sub>, 89% of magnetite and 0.67% of V<sub>2</sub>O<sub>5</sub>, with corresponding recoveries of 92.0% of Fe<sub>T</sub>, 98.3% of magnetite, and 85.3% of V<sub>2</sub>O<sub>5</sub>. A summary of the Davis Tube results is shown in Table 2.

Table 2. Davis tube results on dry LIMS magnetic products.

Davis tube grinding size (P <sub>95</sub> µm)	Average														
	% Weight - Mag	Fe <sub>T</sub>		Magnetite		V <sub>2</sub> O <sub>5</sub>		SiO <sub>2</sub>		Al <sub>2</sub> O <sub>3</sub>		MgO		TiO <sub>2</sub>	
		Grade (%)	Dist. (%)	Grade (%)	Dist. (%)	Grade (%)	Dist. (%)	Grade (%)	Dist. (%)	Grade (%)	Dist. (%)	Grade (%)	Dist. (%)	Grade (%)	Dist. (%)
212 µm	54.9	58.0	93.1	77	98.5	0.60	87.1	6.9	17.6	0.8	19.4	7.1	19.1	1.5	70.1
150 µm	51.6	61.3	92.7	84	98.6	0.63	86.8	4.8	11.5	0.5	11.3	5.3	13.1	1.5	65.8
106 µm	49.9	62.5	92.3	86	98.4	0.64	85.8	4.1	9.2	0.5	11.6	4.5	10.7	1.5	61.6
75 µm	49.5	64.1	91.3	90	98.1	0.65	86.8	3.2	7.0	0.5	9.7	3.5	8.5	1.5	63.1
45 µm	47.8	65.5	92.2	91	98.5	0.66	85.5	2.4	5.2	0.4	10.4	2.9	6.8	1.3	55.2
38 µm	47.3	65.8	92.0	89	98.3	0.67	85.3	2.2	4.7	0.5	9.7	2.7	6.1	1.3	53.0

Additional tests were performed using a laboratory scale wet LIMS at a P95 grinding size (P95: 95% passing) of 106 µm and 38 µm. This work led to obtain the following metallurgical results:

- For the SHG composite sample:
  - At a P95 of 106 µm, an overall weight recovery of 47.6% of the magnetic product was achieved with the following analysis: 63.8% Fe<sub>T</sub>, 85% mag and 0.85% of V<sub>2</sub>O<sub>5</sub>;
  - At a P95 of 38 µm, an overall weight recovery of 45.0% of the magnetic product was achieved with the following analysis: 65.7% Fe<sub>T</sub>, 89% mag and 0.87% of V<sub>2</sub>O<sub>5</sub>;
- For the NHG composite sample:
  - At a P95 of 106 µm, an overall weight recovery of 44.3% of the magnetic product was achieved with the following analysis: 61.1% Fe<sub>T</sub>, 84% mag and 0.75% of V<sub>2</sub>O<sub>5</sub>;
  - At a P95 of 38 µm, an overall weight recovery of 41.7% of the magnetic product was achieved with the following analysis: 61.8% Fe<sub>T</sub>, 84% mag and 0.75% of V<sub>2</sub>O<sub>5</sub>;
- For both composite samples:
  - The quality upgrade of the concentrate when ground to 38 µm instead of 106 µm was negligible;
  - SiO<sub>2</sub> and MgO grades in the mag concentrate remained similar despite the grinding size;

Based on these results, a more detailed mineralogical work will help in understanding these results and guide in future work to improve the metallurgical performance.

### Qualified Persons Statements

The technical information contained in this news release has been reviewed and approved by Pierre-Jean Lafleur, P.Eng. (OIQ), who is a Qualified Person with respect to the Company's Mont Sorcier Project as defined under National Instrument 43-101. The Mineral Resource Estimate (MRE) is the responsibility of CSA Global and Dr. Luke Longridge and Dr. Adrian Martinez, acting independently, are the Qualified Persons with respect to the MRE.

### About COREM

COREM is a center of expertise and innovation in mineral processing with the largest concentration of resources dedicated to research and development in this field in Canada. COREM has extensive equipment and infrastructure to conduct ore characterization, process development and optimisation and pilot testing in mineral processing.

### About Vanadium One Iron Corp.:

Vanadium One Iron Corp. is a mineral exploration company headquartered in Toronto, Canada. The Company is focused on advancing its Mont Sorcier, Vanadium-rich, Magnetite Iron Ore Project, in Chibougamau, Quebec.

### ON BEHALF OF THE BOARD OF DIRECTORS OF VANADIUM ONE IRON CORP.

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