



News Release

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MacDonald Mines Reports Positive Metallurgical Results of the Oxide Sands at its Wawa-Holdsworth Project, Wawa, Ontario

Toronto, Ontario – July 11, 2017 - MacDonald Mines Exploration Ltd. (TSX-V: BMK) ("MacDonald Mines", the "Company", or "BMK") announces the completion of preliminary metallurgical test work on the Oxide Sands at its Wawa-Holdsworth Project, Wawa, Ontario. MacDonald Mines contracted SGS Minerals Services Laboratory (SGS) in Lakefield, Ontario to conduct metallurgical test work and investigate potential processing methods (see April 5, 2017 News Release). Test work was conducted by SGS Laboratories between April and June, 2017.

Highlights from preliminary test work on the Oxide Sands include:

- The concentration ratio of gold in rougher flotation averaged 6.0:1
- The concentration ratio of silver in rougher flotation averaged 5.2:1
- Reduction of feed volume in rougher flotation by approximately 85-90%
- The Oxide Sands can be processed by a simple crushing/flotation process
- No caustic treatments are necessary
- The processing will require low power requirements
- The waste material is inert (>70 percent silica/quartz)

Quentin Yarie, MacDonald's President and CEO commented "*Preliminary test work on the Oxide Sands at our Wawa-Holdsworth Project are very positive and show that conventional flotation techniques can be used to concentrate the gold, silver and potential platinum/palladium in the sands. These results are in line with our plans to bring the oxide sands into production by producing a concentrate for shipping to an off taker.*"

Further test work will include:

- A deportment study to identify the main forms of the gold, silver, platinum and palladium occurrences;
- Optimization of the grind for rougher flotation and other flotation reagents;
- Analysis for platinum and palladium; and
- Conducting cleaner flotation with regrind for both open and closed-circuit tests.



Preliminary Test Work

MacDonald Mines supplied a bulk sample of Oxide Sands from the Wawa-Holdsworth Project to SGS as the master composite for the test work. SGS's test work focused on head characterization of the master composite for head assay and mineralogy, composite grindability and recovery methods for precious metal extractions (gravity separation, magnetic separation and flotation). Alva Kuestermeyer, Metallurgical Engineer at Golder Associates, Lakewood, CO, has reviewed SGS's test program and results, and found them completed to accepted industry standards.

The master composite was blended, homogenized and crushed at SGS to different sizes for the mineralogy and head assay analyses, and as feed material to the respective recovery tests. A sub-sample of the master composite was analyzed for precious metals and sulphur with the assay results of 3.94 grams/ton (g/t) gold, 49.6 g/t silver, 0.15 g/t platinum, 0.35 g/t palladium and 0.14% sulphur. Mineralogy results indicated the presence of quartz (71.5%), micas (22.6%), iron oxides (1.91%) and chlorite (1.08%). Pyrite was the primary sulphide mineral, but accounted for only 0.33% of the total mass. Heavy liquid separation showed that the gold was largely associated with silicates and not sulphides. Grindability testing indicates a relatively soft material with a Bond ball mill work index of 10.6 kilowatt-hour per ton at a grind mesh size of 150 microns.

Positive test results were obtained with flotation in the two conducted tests. Feed materials for two flotation tests were 2-kilogram sub-samples of tailings from the gravity separation tests. Flotation test conditions were done at P₈₀ grind sizes of 114 (test F1) and 72 microns (test F2), natural pH (7.0-7.7) and 40% solids using standard flotation chemicals and reagents of copper sulphate and potassium amyl xanthate (PAX) as activators and collectors, and methyl isobutyl carbinol (MIBC) as a frother. Maxgold was used as a second collector in the F2 test. The flotation results for the rougher concentrate yielded gold recoveries of 72% to 76% for the two tests. The silver recoveries vary significantly from 58% to 73% with the higher recovery at the finer grind.

The flotation results are summarized in the table below:

Test	P80 Grind Microns	Recoveries, %		Assays, g/t	
		Gold	Silver	Gold	Silver
F1	114	72.3	57.9	27.6	286
F2	72	76.1	73.2	17.3	223

No assays were done in the flotation tests for platinum or palladium.

The test results indicate that neither gravity nor magnetic separation would be applicable for the recovery of precious metals from the Oxide Sands at the Wawa-Holdsworth Project.



About the Wawa-Holdsworth Project

The project is located near Hawk Junction, approximately 20 km north east of Wawa, Ontario. The Holdsworth property consist of a contiguous block of 18 fee simple absolute patented claims, including surface and mining rights covering approximately 705 acres.

Project Highlights

- Neighboring Richmond's Island Gold Mine, Argonaut's Magino Gold Project and Goldcorp's Borden Project
- Numerous gold showings with diversified mineralization styles occurring in a 500 metres-wide deformation corridor
- Year-long road access and easy access to rail, road, electrical power, labour force and suppliers

Overview of MacDonald's Exploration Program

Historic work by previous operators defined three gold targets on the Wawa-Holdsworth Project:

- Greenstone-hosted quartz-carbonate vein deposit (Soocana Vein System and Reed-Booth Showing);
- BIF-hosted gold deposits (gold-bearing pyrite zones in an Algoma-type iron formation);
- Gold-bearing Oxide Sands developed from the weathering of the auriferous Pyrite Zones.

MacDonald Mines is focusing its near-term exploration program on the Oxide Sands. These appear to extend for more than 2 kilometres on the property as corroborated by MacDonald's recent airborne magnetics results (*see* June 1, 2017 News Release) and reach a depth of at least 8 metres.

The soft and relatively unconsolidated Oxide Sands material can be extracted like an aggregate. The Company is working to better define the Oxide Sands as it continues to prepare for their potential extraction.

On-site Quality Assurance/Quality Control ("QA/QC") Measures

Oxides Sands samples and grab samples were transported in security-sealed bags for analyses at SGS in Cochrane, Ontario. Individual samples are labeled, placed in plastic sample bags and sealed. Groups of samples are then placed into durable rice bags and then shipped. The remaining coarse reject portions of the samples remain in storage if further work or verification is needed.

MacDonald Mines has implemented a quality-control program to comply with best practices in the sampling and analysis of all samples. As part of its QA/QC program, MacDonald Mine inserts external gold standards (low to high grade) random standards,



blanks, and duplicates of Oxide Sands samples. MacDonald also sends representative samples and/or rejects to secondary labs for confirmation.

Qualified Person

Quentin Yarie, P. Geo. is the qualified person responsible for preparing, supervising and approving the scientific and technical content of this news release.

About MacDonald Mines Exploration Ltd.

MacDonald Mines Exploration Ltd. is a mineral exploration company headquartered in Toronto, Ontario focused on gold exploration in Canada. The Company has built a portfolio of safe-jurisdiction, infrastructure-rich projects that demonstrate the greatest market potential for return. The Company is aggressively advancing its highly prospective Wawa-Holdsworth Project.

The Company's common shares trade on the TSX Venture Exchange under the symbol "BMK".

To learn more about MacDonald Mines, please visit www.macdonaldmines.com

For more information, please contact:

Quentin Yarie, President & CEO, (416) 364-4986, qyarie@macdonaldmines.com

Or Mia Boiridy, Investor Relations, (416) 364-4986, mboiridy@macdonaldmines.com

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