

Drilling and DHEM to test brownfields exploration targets

Highlights

A 1,900m drill program and a Down Hole Transient Electromagnetic (DHEM) survey will be used to define three major near mine geophysical anomalies identified earlier this year (See Images 2,3,4)

- **This will define future exploration and underground mine development strategies, as VMS systems typically consist of multiple ore zone systems**
- **Each geophysical anomaly is located within a 9km² area surrounding the current mineral resource and existing mine infrastructure (Image 1). Each anomaly was identified through a Fixed Loop Transient Electromagnetic (FLTEM) survey completed during 1Q19**
- **Drilling will commence during August 2019 with the DHEM program to conclude during September 2019**

Superior Lake Resources Limited (ASX: SUP) (“Superior Lake” or the “Company”) is pleased to announce that it will commence a 1,900m drill program during August at the Company's Superior Lake Zinc Project (“Project”) in Ontario, Canada.

The drill program and the subsequent DHEM survey is targeting three major near mine geophysical anomalies identified by the Company through a Fixed Loop Transient Electromagnetic (FLTEM) survey carried out in 1Q19.¹

The FLTEM survey targeted a small 9km² area surrounding the existing resource and mine infrastructure. This area was selected as any new discovery could be accessed more efficiently and economically through the existing mine development, thereby allowing for a potential increase in future production and / or extension of mine life.

As part of that exploration program, the Company completed the first DHEM survey at the Project, specifically targeting Pick Lake. Pick Lake was selected as a “test case”, given significant mineralisation was already known to exist. As a result, if EM could successfully detect and define the known mineralisation, it would confirm this was an appropriate exploration tool to use at the Project.

The result was positive as Pick Lake was clearly identified, thereby increasing the Company's confidence that electromagnetics is a highly suitable technique for identifying new anomalies at Superior Lake.

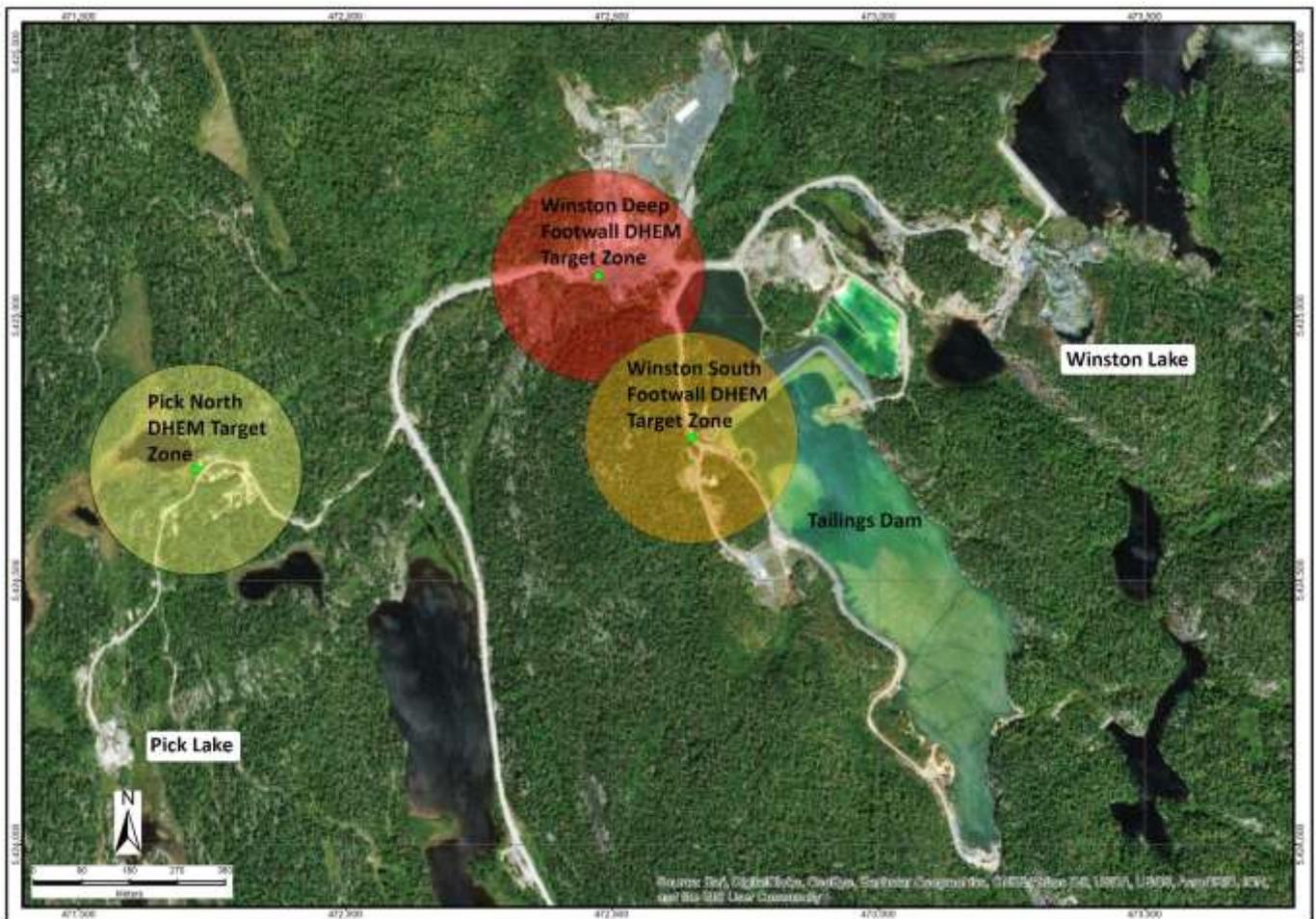
The Company expects to commence drilling in mid-August with the DHEM survey to commence shortly thereafter. The total program is anticipated to be completed by late September.

¹ ASX release dated 28 March 2019, “Geophysics program identifies further anomalies”. Superior Lake confirms that it is not aware of any new information or data that materially affects the information included in the announcement of 28 March 2019.

Non-Executive Director Peter Williams² commented:

"The exploration results from earlier this year which utilised multiple new age exploration techniques for the first time at the Project, has significantly increased our confidence that this is the right path for the Company to both efficiently and effectively identify new potential economic deposits in the area. Any new discovery of economic mineralisation, has the potential to significantly change the Project's parameters, both in terms of mine life and potentially an increase in future production."

Image 1: Plan view of the Superior Lake Project and the geophysical targets



² Peter Williams is a non-Executive Director at Superior Lake Resources and widely regarded for his expertise specifically in the field of geophysics. He was previously Chief Geophysicist and Manager of Geoscience Technology for WMC Resources, was a founding member of Independence Group Limited and developed high powered 3 component 3D TEM applications that lead to the discovery of over 75,000 tonnes of nickel at the Victor Long Nickel Mine in Kambalda.



Proving DHTEM is as the appropriate exploration tool for Superior Lake

Being a historical operation, mineralisation at the Winston Lake and Pick Lake deposits is well understood. The mineralisation at Pick Lake consists predominantly of massive fine to medium grained sphalerite and pyrrhotite with minor chalcopyrite and pyrite, which is significant from a geophysical perspective as these are the sulphides that respond so effectively to electromagnetics. At Winston Lake, the mineralisation is massive fine to coarse homogenous mix of sphalerite, pyrrhotite, pyrite and chalcopyrite. Importantly, both styles are easily identified through modern EM technology.

During the drill program completed earlier in 2019, a DHTEM program was undertaken at Pick Lake, a known deposit, in order to confirm if EM could successfully detect and define potential mineralisation. If the DHTEM was successful, it would provide the Company further confidence regarding the use of modern EM technology across the brownfields target area. The results were positive as Pick Lake was clearly identified, thereby increasing the Company's confidence that DHTEM is a highly suitable technique for identifying new anomalies at Superior Lake.

Identification of EM anomalies through FLTEM

In late 2018, the Company commenced the first exploration program at the Project in more than 20 years, incorporating multiple modern exploration techniques, many used for the first time at the Project, across only a small portion (9km²) of the total tenement area (175km²). This brownfields area, which is located adjacent to the significant existing infrastructure and the Pick Lake deposit, which is currently the subject of a Definitive Feasibility Study, was selected due to its high prospectivity as it hosts two high-grade VMS deposits (Winston Lake and Pick Lake).

Central to this program was a high powered, FLTEM geophysics program designed to test identified and unknown targets.

The Company considered multiple EM technologies, however elected to utilise FLTEM survey, along with a high-powered transmitter and state of the art magnetic field sensors due to the capacity to test at depths similar to the Winston Lake (> 300m) and Pick Lake (>450m) deposits.

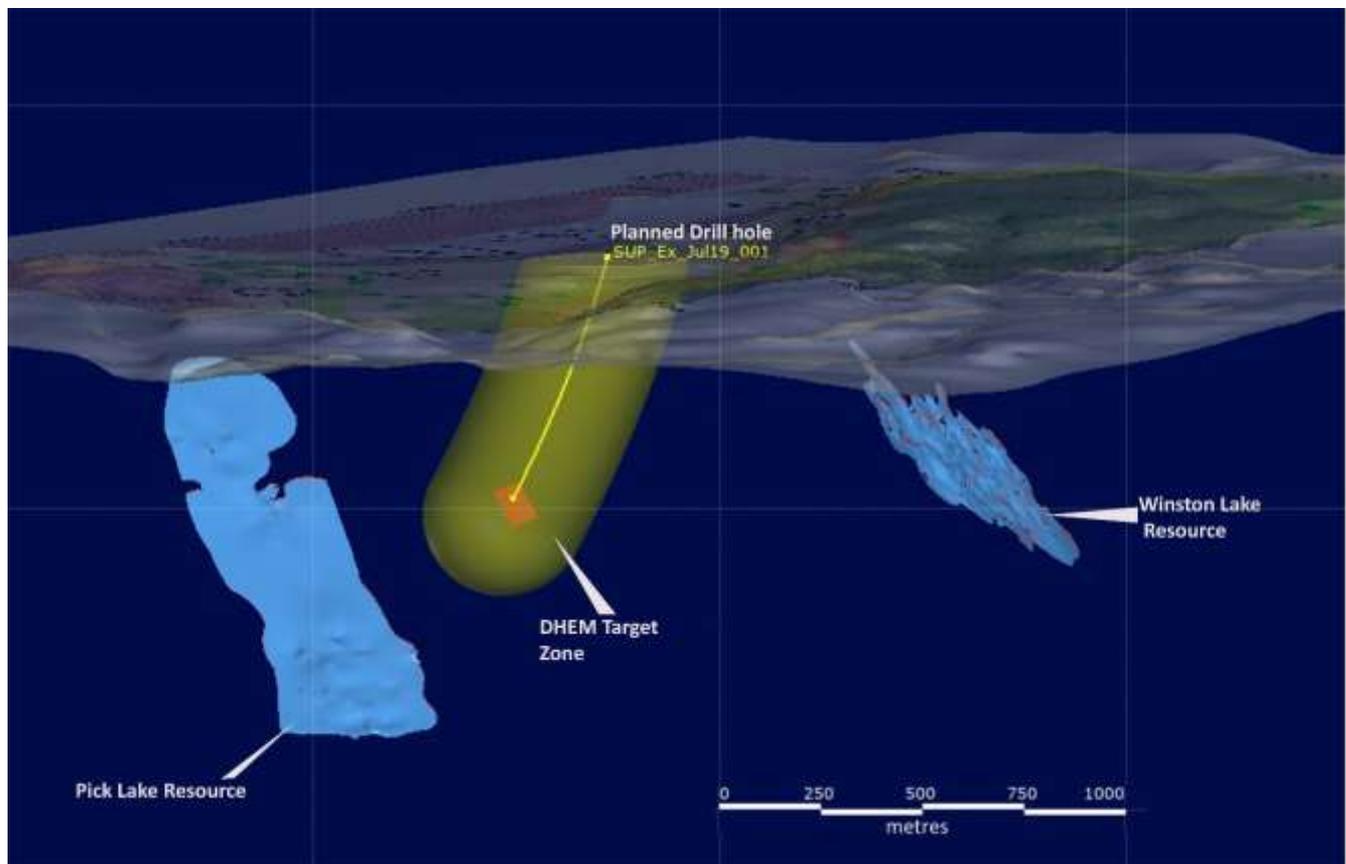
From this program, three major geophysical anomalies were identified with their location in relation to the Winston and Pick Lake deposits as well as the existing infrastructure highlighted in Image 1 above.

Pick North EM Anomaly

The Pick North conductor (previously Conductor 3), is a chargeable anomaly located to the north of the Pick Lake orebody that is supported by the “Pick 1” alteration/lithochemical target described in the ASX announcement dated 30 January 2019.³ This identification of a strong conductor along strike from known economic VMS mineralization, supported by geochemistry and alteration mapping is a significant development and gives strong support to the target.

This anomaly is modelled at approximately 650m in depth and will be tested with a single 700m drillhole followed by DHEM. The DHEM will search an area with a radius of approximately 200m. Image 2 below highlights the location of the planned hole, the targeted coverage volume of the DHEM as well as its proximity to the Winston and Pick deposits.

Image 2 – Pick North DHEM target area and planned drill hole

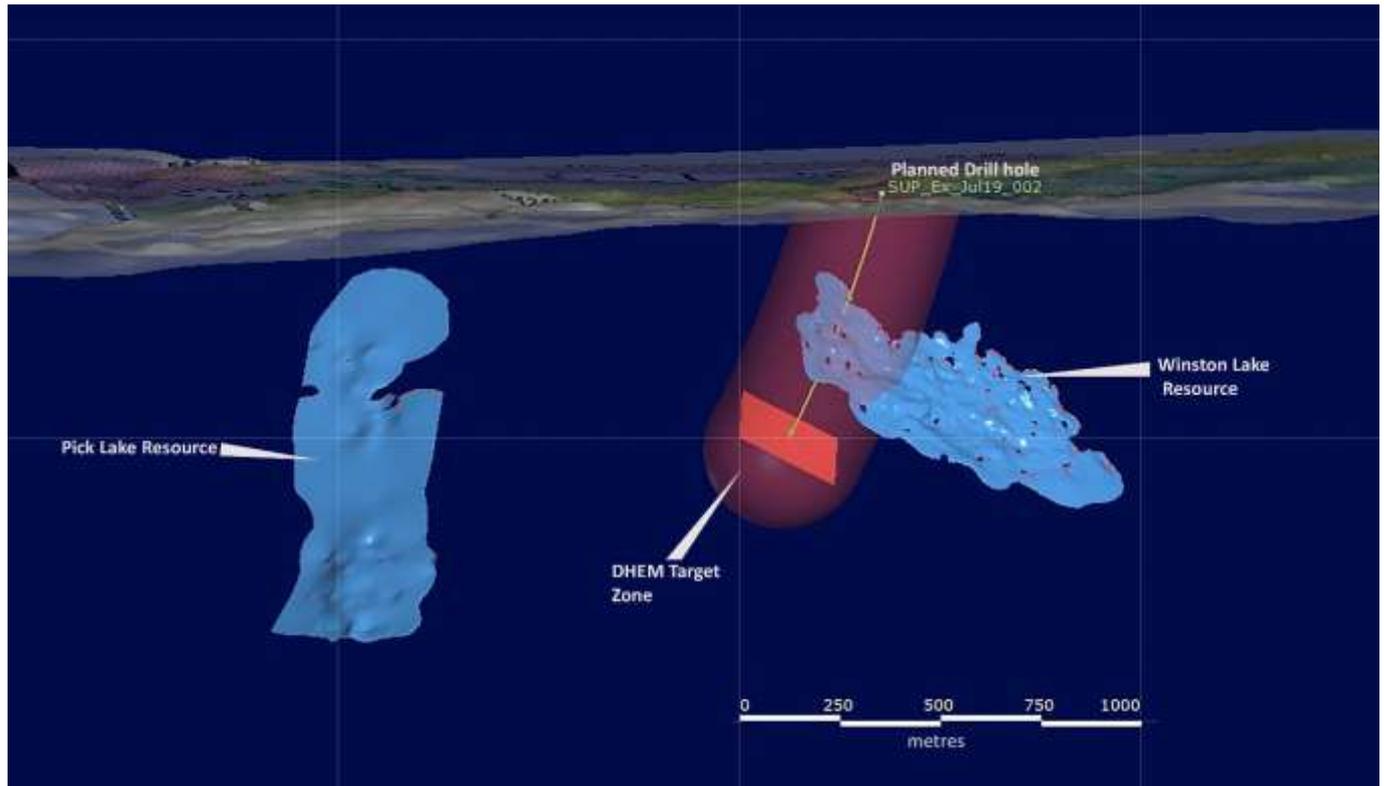


³ ASX release dated 30 January 2019, “Multiple near mine zinc targets identified”. Superior Lake confirms that it is not aware of any new information or data that materially affects the information included in the announcement of 30 January 2019.

Winston Deep EM Anomaly

Winston Deep (previously referred to as Conductor 2) is a shallow conductor in the footwall to the Winston Lake orebody with modelled dimensions of 200m x 120m. This anomaly is modelled at a depth of approximately 475m and will be tested with a single drillhole to a depth of 500m followed by DHTEM. The DHTEM will search an area with a radius of approximately 200m. Image 3 below highlights the location of the planned hole, the targeted area of the DHTEM as well as its proximity to the Winston Lake deposit.

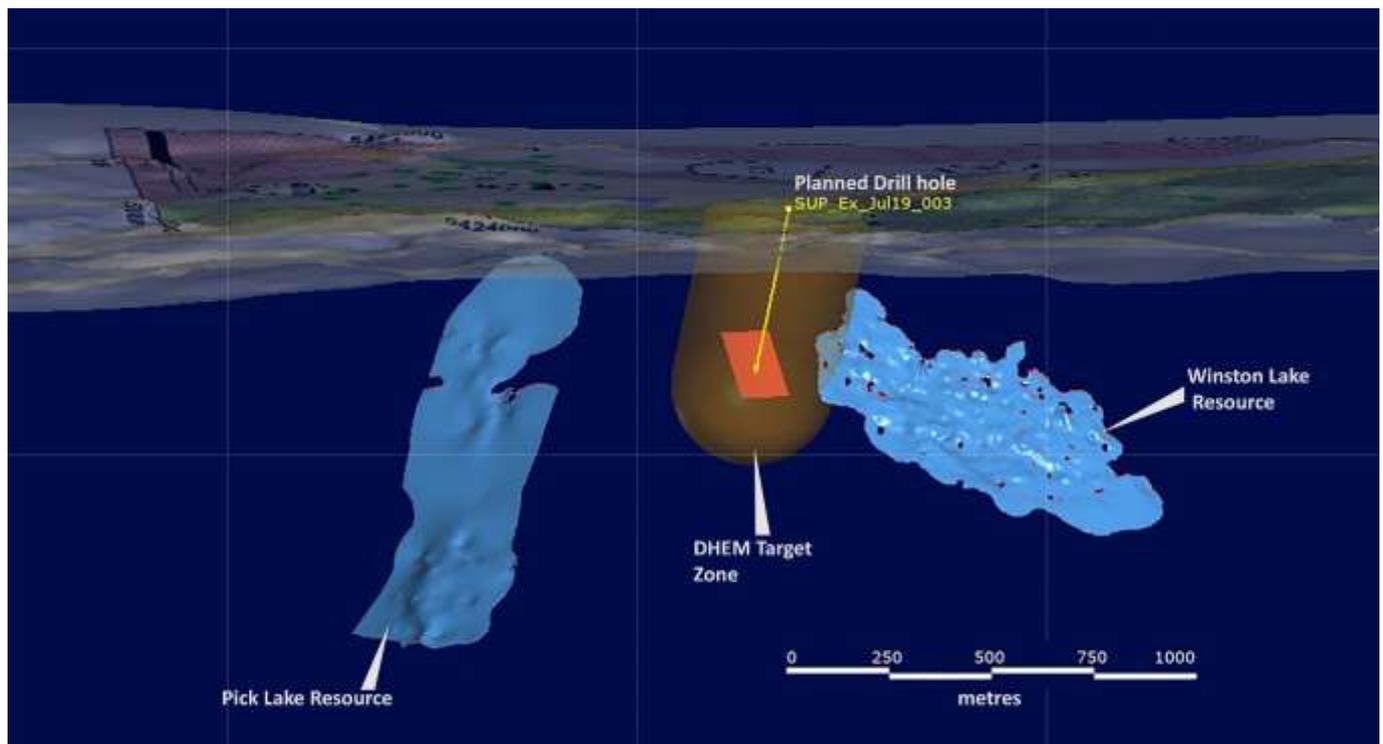
Image 3 – Winston Footwall DHTEM target area and planned drill hole



Winston Footwall South EM Anomaly

Winston Footwall South (previously referred to as Conductor 1), is a new major conductive anomaly located adjacent to the Winston Lake deposit in the footwall. This anomaly is significant as it measures 300m x 150m, has not been tested by historical drilling and is very proximal to existing underground mine infrastructure. The anomaly is modelled around 650m in depth and will be tested with a single 700m drillhole followed by DHEM. The DHEM will search an area with a radius of approximately 200m. Image 4 below highlights the location of the planned hole, the targeted area of the DHEM as well as its proximity to the Winston Lake deposit.

Image 4 – Winston Footwall DHEM target area and planned drill hole



About the Company

Superior Lake Resources Limited

Superior Lake Resources Limited is focused on the redevelopment of the Superior Lake Zinc Project in North Western Ontario, Canada. The Project is a high-grade zinc deposit with a JORC resource of 2.35 Mt at 17.7% Zn, 0.9% Cu, 0.38 g/t Au and 34 g/t Ag.⁴ A Restart Study completed in 2018, forecasted the Project will produce approximately 46,000tpa Zn with forecasted AISC of US\$0.51/lb.⁵

Superior Lake Mineral Resource at 3% Zn cut-off grade					
Classification	Tonnage Mt	Zn%	Cu%	Au g/t	Ag g/t
Indicated	2.07	18.0	0.9	0.38	34
Inferred	0.28	16.2	1.0	0.31	37
Total	2.35	17.7	0.9	0.38	34

To learn more about the Company, please visit www.superiorlake.com.au, or contact:

David Woodall Chief Executive Officer +61 8 6117 0479

⁴ ASX announcement 7 March 2019 "Increase in Superior Lake Mineral Resource". Superior Lake confirms that it is not aware of any new information or data that materially affects the information included in the announcement of 7 March 2019 and that all material assumptions and technical parameters underpinning the Mineral Resource estimate in the announcement of 7 March 2019 continue to apply and have not materially changed.

⁵ See ASX announcement "Outstanding study confirms Superior Lake as low-cost project" dated 10 October 2018. The Company confirms that it is not aware of any new information or data that materially affects the information in that announcement (save for the 200,000 tonnes increase in the Mineral Resource estimate announced on 7 March 2019), and that all material assumptions and technical parameters underpinning the production targets and forecast financial information based on production targets in that announcement continue to apply and have not materially changed. The inclusion of the 200,000 tonnes will not materially affect the throughput set out in the Restart Study.