ASX Announcement
ASX: SUP
18th December 2018
superiorlake.com.au

SUPERIOR LAKE RESOURCES

Superior Lake drilling hits new footwall zone of 25.2% Zinc

Highlights

- Drilling at the Superior Lake zinc project discovered a new footwall zone and confirmed high-grade mineralisation.
- The intersections include:
  - **New** footwall zone - 0.35m @ 25.2% Zn, 0.18% Cu; and
  - Mid-Pick - 1.56m @ 20.12% Zn, 0.8% Cu.
- Both areas are outside the current JORC resource, giving potential to increase it
- Drilling continuing, with further results expected January 2019
- Results have potential to increase 6.5-year mine life, lift production and lower costs
- Company to release a Definitive Feasibility Study by mid-2019.

Superior Lake Resources Limited (ASX: SUP) is pleased to announce an exploration drill program at its Superior Lake Zinc Project ("Project") in Ontario, Canada has intersected high-grade zinc at the Mid Pick zone and identified a new footwall zone within 9m of the Pick Lake deposit.

Results included:

- Mid-Pick zone: 1.56m @ 20.12% Zn, 0.8% Cu (Figure 1)

- New footwall zone: 0.35m @ 25.2% Zn 0.18% Cu.

These results have the potential to further improve project economics for Superior Lake.

An October 2018 Restart Study, forecasted the Project will produce approximately 46,000tpa Zn over an initial 6.5-year mine life, with an AISC of US$0.51/lb (see ASX announcement dated 10 October 2018). The Company will complete a Definitive Feasibility Study for the Project by mid-2019.

In addition to the first drill program, a litho-geochemistry and structural review of the Project has identified five high priority targets. These targets, in association with the drilling and the new geophysical anomaly defined by DHTEM, will be tested to 1,000m with a surface geophysics program over a 3km x 3km area scheduled for February 2019.

Figure 1: High-Grade Intersection PL-18-01

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Superior Lake Chief Executive Officer David Woodall said:

"This is an outstanding start to the exploration program. Assuming similar success from the remaining hole in the current program, we are confident of defining an initial resource at Mid-Pick, as well as increasing the Project's mine life.

"The Superior Lake Zinc Project has the potential to be in the lowest-cost quartile of zinc producers globally, given the low estimated operating costs and low estimated initial capital cost due to the infrastructure already in place. Further discoveries will improve our economics."

Mid-Pick drill program

The Pick Lake deposit comprises high-grade zinc mineralisation that extends over a downdip distance of 1,200m and has a JORC resource of 2.15 Mt @ 17.7 % Zn, 0.9% Cu. Whereas the upper and lower areas have been intensively drilled from underground, the area between the upper and lower Pick, known as Mid-Pick, sits outside the resource and requires additional drilling to fully test this area.

The drilling program currently being executed comprises of approximately 1,750m, with a single parent hole combined with 'daughter' holes testing the up dip and strike of the area of interest. To date, the parent hole has been completed along with the first daughter hole (assays pending expected in January 2019) and a down hole geophysics survey.

Figure 2: Significant Brownfields Exploration Potential

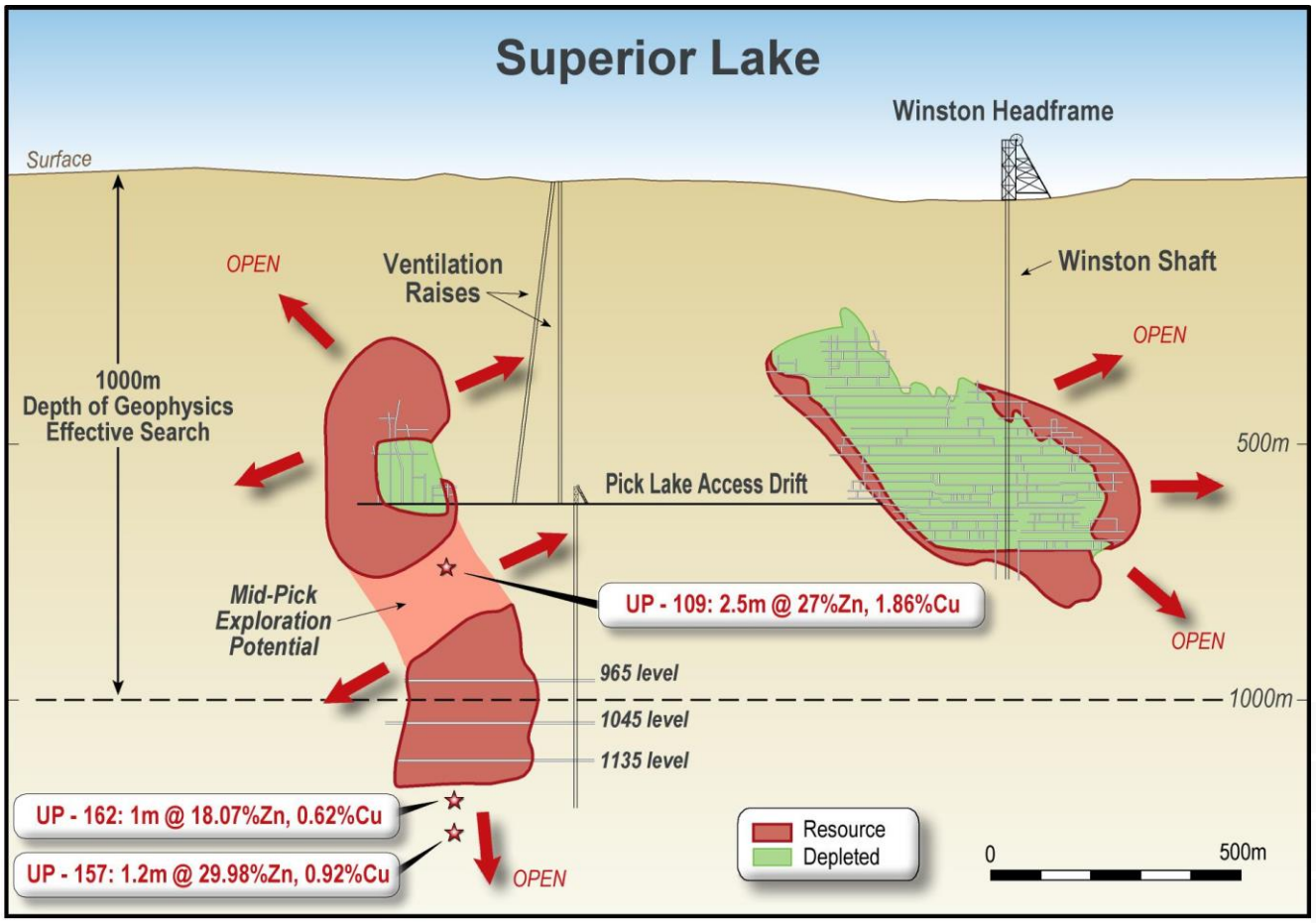
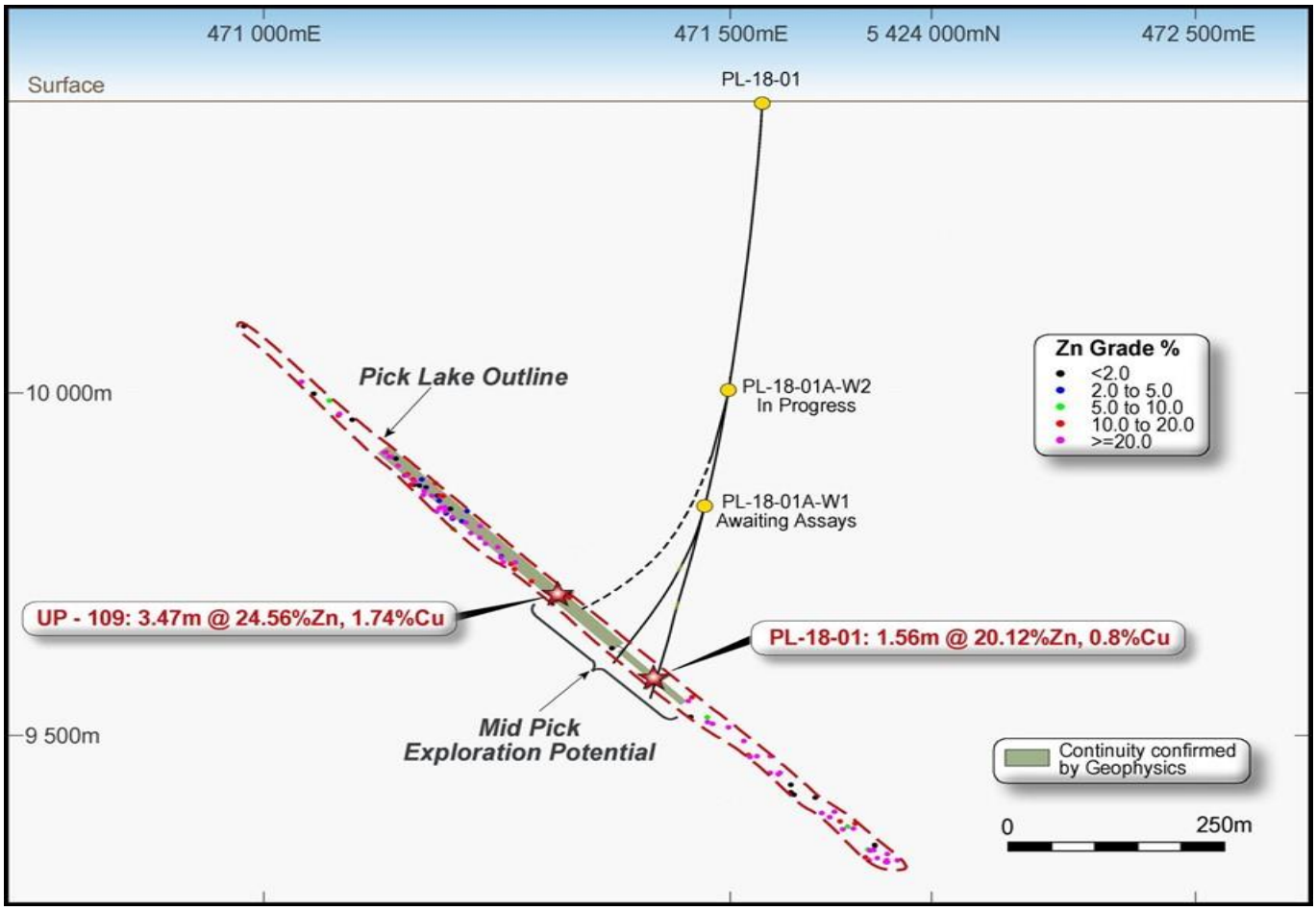


Figure 3: Mid-Pick Drilling Program targeting Additional Resource Potential



The single parent hole, the first drill hole at the Project in more than 20 years, successfully intersected high-grade zinc mineralisation of 1.56m @ 20.12% Zn, 0.8% Cu. Importantly, both the grade and thickness were in line with previous drilling completed at the Project, as highlighted in Table 1.

The intersection of a new zone 9m into the footwall, 0.35m @ 25.2% Zn, 0.18% Cu, will require follow up work reviewing the Pick Lake drilling database, additional intercepts of the present drill program, and geophysics. This high-grade zone of predominately sphalerite was intersected in hole PL-18-01 and PL-18-01-W1 (awaiting assays – January 2019)

Down-hole geophysics successfully identified the higher grade and thickest portions of copper in the Pick Lake Ore Body and confirmed continuity of ore between upper and lower Pick resources. Superior Lake has planned follow-up work for February 2019 as part of a surface geophysics program over a 3km x 3km area, adjacent to the Winston and Pick deposits, that will test exploration potential to a depth of 1,000m.

This surface geophysics program is the first stage of an exploration strategy designed to test the area which hosts the Exploration Target* of between 2.1 to 5.2 million tonnes at a grade ranging between 13.3% to 15.4% Zn (see ASX Announcement dated 26 September 2018).

**The potential quantity and grade of the Exploration Target is conceptual in nature and therefore is an approximation. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.*

Table 1: Historical drill intersections at Pick Lake[1]

Hole ID	Width (m)	Zn (%)	Cu (%)
UP-0103	2.0	8.25	0.21
UP-0105	2.0	16.5	0.95
UP-0106	2.0	14.09	0.81
UP-0107	2.0	8.79	0.12
UP-0108	2.0	10.46	0.35
UP-0109	2.5	27	1.86
UP-0110	2.0	14.82	0.8
UP-0111	2.0	16.43	1.02

About the Company

Superior Lake Resources Limited

Superior Lake Resources Limited (ASX: SUP) is focused on the redevelopment of the Superior Lake Zinc Project in North Western Ontario, Canada. The Project is one of the highest-grade zinc deposits globally with a JORC resource of 2.15 Mt at 17.7% Zn, 0.9% Cu, 0.4 g/t Au and 33.5 g/t Ag. A Restart Study completed in 2018, forecasted the Project will produce approximately 46,000tpa Zn over an initial 6.5 year mine life, with an AISC of US$0.51/lb, putting the Project in the lowest cost quartile globally. The Company is currently working towards the release of a Definitive Feasibility Study by mid-2019.

Table 2: Superior Lake Mineral Resource at 3% Zn cut-off grade

Classification	Tonnage	Zn%	Cu%	Au g/t	Ag g/t
Indicated	1,992,000	17.8%	0.9%	0.4 g/t	33.7 g/t
Inferred	152,000	15.4%	0.9%	0.4 g/t	31.2 g/t
Total	2,145,000	17.7%	0.9%	0.4 g/t	33.5 g/t

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

David Woodall Chief Executive Officer +61 8 6143 6740

[1] As per Superior Lake's announcement dated 3 July 2018. Superior Lake confirms that it is not aware of any new information or data that materially affects the information included in the original announcement.

Competent Persons' Statement

Exploration Target and Exploration Results

The information contained in this announcement that relates to the exploration target and exploration results is based on, and fairly reflects, information compiled by Mr. Alfred Gillman, an independent consultant Superior Lake Resources Limited. Mr. Alfred Gillman is a Fellow and Chartered Professional of the Australian Institute of Mining and Metallurgy and was engaged as a consultant to Superior Lake Resources to complete the JORC (2012) resource. Mr. Gillman has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Gillman consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

Mineral Resources

The information in this announcement that relates to the Mineral Resources on the Superior Lake Project was first reported by the Company to ASX on July 3rd, 2018. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements, and in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Appendix 1

Drill hole information

The Company provides the following information in accordance with Listing Rule 5.7.2.

Hole ID	Easting	Northing	RL	Length (m)	Azimuth	Dip (collar)	Dip (interval)	From (m)	To (m)	Interval (m)	Zn%	Cu%
PL-18-01	471530	542064	10422	879	290	-86.7	-75.75	839.5	840.0	0.5	3.83%	1.17%
								840.0	841.06	1.06	27.8%	0.629%
								848.84	849.19	0.35	25.2%	0.18%

At the date of this announcement the Company has only received the initial results shown above, further results from this program are expected in January 2019.

Appendix 2

JORC Code, 2012 Edition Table 1

Section 1 Sampling Techniques and Data

Criteria	Explanation	Commentary
Sampling Techniques	Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Aspects of the determination of mineralisation that are Material to the Public Report.	The Pick Lake targets were sampled by diamond core drilling. The drilling was carried out by Chibougamau Diamond Drilling Ltd. Drill core was sampled at variable intervals guided by changes in geology. The drill hole collar location was surveyed by Superior Survey Inc. Sample preparation was undertaken at ALS Thunder Bay laboratory. Samples were weighed and logged with details entered into a master sampling tracking spreadsheet. Sample preparation and analyses were conducted by ALS Laboratories located at Thunder Bay and Vancouver. Samples were dried and each sample was fine crushed to >70% passing a 2mm screen. A 250g split was pulverised using a ring and puck system to >85% passing 75-micron screen. The analytical technique used for all samples initially involved a four-acid digest followed by multi-element ICP-ES analysis producing results for base metals and gold. • Method OG62 for zinc, • Method OG62 copper, • Method FA- AA for gold, • Method OG62 silver
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	Drilling technique for all holes was diamond drilling with HQ-size (63.5mm diameter) core. Drill core in angled holes is being oriented for structural interpretation. Downhole surveys were carried out at 30m intervals by gyro instrumentation.
Drill Sample Recovery	Method of recording and assessing core and chip sample recoveries and results assessed. recovery and ensure representative nature of the samples. Whether a relationship exists between sample	Depths were measured from the core barrel and checked against marked depths on the core blocks. Core recoveries were logged and recorded in the database. Sample recoveries were high with >85% of the drill core having recoveries of >97%. There is no discernible relationship between recovery and grade, and therefore no sample bias.

	recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.	Detailed core logging was carried out with recording of weathering, lithology, alteration, veining, mineralisation, structure, mineralogy, RQD and core recovery. Drill core was photographed indoors, wet and with flash, in core trays prior to sampling. Each photograph includes core tray labels detailing hole number and depth interval. All holes were logged in full. 100% of the core is logged.
	Sub-Sampling techniques and sample preparation If core, whether cut or sawn and whether quarter, half or all core taken.	Drill core was sawn in half using a core saw. All samples were quarter core and were collected from the same side of the core. Duplicate, standard and blank check samples are submitted with drill core samples. The sample sizes are considered appropriate to the grain size of the material being sampled.
Sub-sampling techniques and sample preparation	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in-situ material	All samples were taken from diamond core.

	collected, including for instance results for field duplicate/second-half sampling.	
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	Sample preparation and analyses were conducted by ALS Laboratories located at Thunder Bay and Vancouver. Samples were dried and each sample was fine crushed to >70% passing a 2mm screen. A 250g split was pulverised using a ring and puck system to >85% passing 75-micron screen. The analytical technique used for all samples initially involved a four-acid digest followed by multi-element ICP-ES analysis producing results for base metals and gold. • Method OG62 for zinc, • Method OG62 copper, • Method FA- AA for gold, • Method OG62 silver
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Senior technical personnel from the Company (Project Geologist) collected and inspected the samples. Primary data were collected by employees of the Company at the project site. All measurements and observations were recorded onto hard copy templates and later transcribed into the Company's digital database. Digital data storage, verification and validation are managed by a Perth-based data management consultant. No adjustments or calibrations have been made to any assay data.

	Discuss any adjustment to assay data.	
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control.	P01 Collar drill hole collar location was surveyed by Christina Burk of Superior Survey Inc. Drill collar AZ 291-12-16, 5424063.761N, 471530.525E and at an EL 421.900.
Data spacing and distribution	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied.	This drilling program is for exploration purposes and spaced up to 50m from the nearest historic lode intersection. On completion of the program, the data spacing and distribution will be sufficient to establish the degree of geological and grade continuity appropriate for Mineral Resource and Ore Reserve estimation procedures. No sample compositing has been applied.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed	The mineralised zone comprises a steeply dipping planar body of massive sulphide mineralisation. The drillholes intersect with the mineralisation at a high angle such that drillhole intercepts are almost equivalent to true width. However, the necessary corrections are applied to achieve true width intercepts. No sampling bias is believed to have been introduced.

	and reported if material.	
Sample Security	The measures taken to ensure sample security.	Assay samples were placed in poly sample bags, each with a uniquely numbered ticket stub from a sample ticket book. Sample bags were marked with the same sample number and sealed with a plastic cable tie. Company personnel delivered the sample bags directly to ALS Laboratories for sample preparation and analysis.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	All digital data is subject to audit by the independent data manager.

Section 2 Reporting of Exploration Results

Criteria	Explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Pick Lake Project comprises 297 claim units (each claim unit is 400mx400m or 16Ha in area) totalling 47.5km2. The claims are made up of a number of claims acquired in August 2016 and claims recently staked and registered in October 2017. The total of all claim areas is >17,000Ha. Superior is the legal and beneficial owner of 70% of the issue capital of Ophiolite Holdings Pty Ltd (ACN 617 182 966) (Ophiolite). Ophiolite is a proprietary exploration company and is the legal and beneficial owner of the zinc and copper prospective "Pick Lake Project", located in Ontario. Please see ASX announcement dated 6 December 2017. Superior Lake currently has an option over the Winston Lake project claims. These claims are owned by FQM. For further details please refer to ASX announcement dated 21st February 2018.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The claims are in good standing.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The Pick Lake deposit was discovered in 1983 and the Winston Lake deposit was discovered in 1982. The Pick Lake and Winston Lake project areas have been the subject of a variety of exploration campaigns. Some of the previous explorers include Zenamc Metal Mines Limited, Falconbridge Copper Corporation, Minnova, Inmet Mining, Noranda, and Silvore Fox. Please refer report filed on SEDAR for further details - Independent Technical Report on the Pick Lake Property, Pays Plat Lake and Rope Lake Area, Ontario, Canada, dated June 19, 2013 prepared by Bruno Turcotte, MSc, P. Geo and Remi Verschelden, BSc, P. Geo (filed June 21, 2013 on SEDAR). This report can be accessed via the url: http://www.sedar.com under the company name "Silvore Fox".
Geology	Deposit type, geological setting and style of mineralisation	The Pick Lake deposit occurs at the extreme western edge of the Winston-Big Duck Lake sequence of volcanic rocks, approximately 35 metres above a granitic contact. Aeromagnetics within the Project area depicts a distinctive V shaped sequence of magnetic and non-magnetic units converging to a northern "V" apex and appears remarkably similar to the aeromagnetic character of the older Archean Warriedar Fold Belt in Western Australia which hosts the Golden Grove VMS deposits. The Pick Lake deposit occurs as a large sheet like zone of massive sulphides within a series of bedded pyroclastic rocks. Hydrothermal alteration exists in both footwall and hangingwall rocks resulting in varying assemblages of quartz, cordierite, biotite, anthophyllite, garnet, chlorite and sericite with minor disseminated sulphides. The hydrothermal alteration zone appears to be spatially related to the Winston Lake deposit; recent structural mapping provides evidence that Pick Lake and Winston

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<td>Lake are hosted within the same stratigraphic horizon. The Anderson showing, located near the southeast shore of Winston Lake, appears to be the surface expression of the Pick Lake deposit. This is a rusty pyritic weakly altered series of bimodal volcanics. Massive sulphides of the Pick Lake deposit occur from approximately 300m to 1200m vertically and over a strike length averaging 250 metres. The lower portion of the deposit appears to increase in strike length to approximately 500 metres. The deposit strikes at 20 degrees and dips to the east at 50 degrees. The thickness of the deposit is generally between 2 and 4m, however, locally it is up to 14 metres in width. Sulphide mineralisation is generally very consistent, composed of a fine-grained mixture of sphalerite (50-80%) and pyrrhotite (5-35%) with minor chalcopyrite (0-5%) and pyrite (0-3%). Commonly contained within the sulphides is up to 5% transparent rounded quartz inclusions up to 3mm in size as well as rare (1-3%) sub-rounded biotitic volcanic inclusions. The contacts to the deposit are typically knife sharp and commonly show the presence of minor amounts of silica.

The Winston Lake deposit lies at the top of the Winston Lake sequence within cherty exhalite and altered felsic-to-intermediate laminated ash tuff. In places, gabbro forms the hanging wall for the deposit. The footwall consists of altered mafic flow rocks and felsic-to-intermediate volcaniclastic rocks which are underlain by altered quartz and feldspar porphyritic rhyolite and feldspar pyritic basalt with intercalated sulphide-rich, bedded, tuffaceous rocks which, in turn, are underlain by the "Main" quartz fledspar porphyry which is intruded by gabbro and pyroxenite. Hydrothermal alteration, confined to the Winston Lake sequence, and later metamorphism of altered rock have resulted in spectacular assemblages of cordierite, anthophyllite, biotite, garnet, sillimanite, staurolite, muscovite and quartz coincident with an increase in iron, magnesium, and potassium and a decrease in sodium and calcium. Zinc content is directly proportional to the intensity of alteration. High copper values occur at the flanks and top of the alteration "pipe" with the core of the pipe containing relatively depleted copper values. The most common forms of ore are finely banded sphalerite and pyrrhotite and massive-to-coarsely banded sphalerite and pyrrhotite with minor pyrite and chalcopyrite and up to 45% of sub-angular mafic and felsic fragments averaging 3cm in diameter. The north-striking and 50 degrees eastwardly dipping deposit has a strike length of 750m and width of 350m. It has an average true thickness of 6m and is open to depth.</td>
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<tr>
<td>Drill hole Information</td>
<td>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:
easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception</td>
<td>
<table>
<tr><th>Hole ID</th><th>East</th><th>North</th><th>RL</th><th>Length</th><th>Azimuth</th><th>Dip (collar)</th><th>Dip (intersection)</th></tr>
<tr><td>PL-18-01</td><td>471530</td><td>542064</td><td>10422</td><td>879</td><td>290</td><td>-86.7</td><td>-75.75</td></tr>
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	depth hole length.	
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated	Intercept grades are length weighted. No cut-off grades have been used.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	Downhole intercepts and true widths have been reported.
Diagrams		Refer to body of announcement for figures.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading	Assay results for significant intercepts have been tabulated in Appendix 1.

	reporting of Exploration Results.	
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Exploration activities carried out by other parties include surface geochemistry, drilling, surface geology mapping, VTEM, structural mapping. Refer to the report filed on SEDAR for further details - Independent Technical Report on the Pick Lake Property, Pays Plat Lake and Rope Lake Area, Ontario, Canada, dated June 19, 2013 prepared by Bruno Turcotte, MSc, P. Geo and Remi Verschelden, BSc, P. Geo (filed June 21, 2013 on SEDAR). This report can be accessed via the url: http://www.sedar.com under the company name "Silvore Fox".
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	The following work is planned for the Pick Lake Project: • Downhole geophysics • Surface TEM geophysics