TSX-V: LI

Vancouver, BC, Canada. September 17, 2009 **NEWS RELEASE**

NR: 09-07

Lithium One Reports ADDITIONAL DRILL RESULTS including 33.5 METRES OF 1.68% Li_2O at the James Bay Lithium Project

Lithium One Inc (the "Company") (TSX-V: LI), is pleased to announce diamond drill results from the newly discovered pegmatite dyke swarm #15, as well as the Company's first set of diamond saw channel sample results from the James Bay Lithium Project in Quebec. Pegmatite Swarm #15 is located **500 metres northwest** of the nearest previously known surface pegmatite. Highlights of the results from the 10 drill holes reported include **33.5m of 1.68% Li_2O, 23.0m of 1.72% Li_2O and 3.4m of 3.46% Li_2O** (true widths). Geologist-supervised diamond saw channel samples from eight of the principal dykes yielded consistent grades, **between 1.34% and 1.76% Li_2O over true widths between 11 and 28.5 metres.** Pegmatite drill intercepts greater than five metres are summarized in Table 1, and channel sample results are reported in Table 2.

Table 1. Phase 2 Drilling Results, September 1st to September 16th 2009
(Drill Intercepts > 5 metres, cut-off grade 0.8% Li_2O)

Hole #	From	To	True Width (m)	Li_2O (%)
JBL09-43	5.40	44.33	33.5	1.68
JBL09-47	84.90	134.40	23.0	1.72
JBL09-45	41.48	77.00	30.3	1.21
JBL09-44	49.83	73.12	21.2	1.27
JBL09-42	89.26	113.22	17.2	1.42
JBL09-48	19.42	36.47	14.2	1.56
JBL09-50	36.55	52.57	14.1	1.48
JBL09-49	28.77	40.77	8.5	1.80
JBL09-46	80.08	92.08	7.2	1.99
JBL09-46	131.97	146.47	8.7	1.53
JBL09-46	50.82	56.48	3.4	3.46
JBL09-47	47.95	59.85	5.5	1.59
JBL09-42	119.10	126.70	5.5	1.26
JBL09-51	88.94	94.36	3.7	1.35

The results reported are from Pegmatite Swarm #15, a new spodumene occurrence not previously mapped or investigated. Swarm #15 is comprised of two dykes, with the larger dyke reaching more than 30 metres in thickness at the centre. It is ovoid in shape, 100 metres by 30 metres at the surface, extending to 200 metres of strike length in the subsurface as it rakes to the southwest at 55 to 60 degrees. The smaller dyke reaches a true thickness of five to six metres. This phase of drilling has

tested approximately 70 to 80 metres of strike length. In addition, the Company's field team has identified geophysical anomalies that may be related to additional pegmatites beneath overburden.

Lithium One President and CEO, Patrick Highsmith, commented, "*Our James Bay Lithium Deposit continues to impress us with thick near-surface intercepts of high grade lithium. Once we realized the significance of the newly discovered Dyke Swarm #15, we decided to move one of the drill rigs west to test it. These thick intercepts of more than 1.20% Li_2O are the result. It is clear now that the pegmatites on the west end tend to be the thickest and richest so far on the property. The coarse spodumene crystals in this area can lead to spectacular accumulations of lithium, such as the 3.4 metre interval of 3.46% Li_2O reported in hole 46. This is equivalent to more than 40% spodumene.*"

Drill holes are collared at as close to 50 metre spacing as field conditions allow, an interval judged necessary to optimize a resource calculation expected later in the program. Hole JBL09-42 was drilled at an azimuth of 340 ^{o}, while all other holes reported were drilled inclined at an azimuth of 160^o. Dykes in Swarm #15 were found to dip more steeply than previously drilled dykes, as such all intercepts reported here have been converted to true width. Hence, these values are believed to be close to true width, but the true width may in some cases be less than reported here subject to further geological investigations.

Channel Samples

The Company also employed diamond saw channel samples in order to systematically evaluate the extensive surface exposures. A total of eight channels were cut under contract by Nord-Fort Inc, and sampled under supervision of the project manager. The channels were selected to best represent each of the dyke swarms currently being investigated by this Phase 2 program.

Table 2. Channel Sample Results

Dyke Sampled	Width (m)	True Width (m)	Li_20 (%)
CS-Dyke7.2	15.0	11.0	1.62
CS-Dyke8.7	34.5	25.4	1.68
CS-Dyke9.2	18.0	14.7	1.37
CS-Dyke11	19.5	17.2	1.55
CS-Dyke12	23.5	12.9	1.76
CS-Dyke13	20.5	18.4	1.55
CS-Dyke14	32.5	28.5	1.54
CS-Dyke15	36.0	27.6	1.52

Note: *These channel samples are cut oblique to strike direction in order to sample across the direction of crystal growth, the channel lengths have been converted to true width for reporting here. Hence, these values are believed to be close to true width, but the true width may in some cases be less than reported here subject to further geological investigations.*

This type of sampling collects a very high quality sample of continuous material. For that reason, diamond saw channel cuts are considered to be of comparable quality to drill core samples. This sample medium offers the opportunity for high quality surface samples to augment the subsurface drill samples and facilitate rigorous resource calculations.

The Company has approved an expansion of the drill program to 12,300 meters. Two core drills continue to be on track for completion of this phase of drilling during September. Management is considering a small winter drill program to fill in areas of the grid where steep outcrop or swampy conditions make for difficult access. More detailed tables of drill results, maps, cross-sections and photos of the project will be posted to the Company's website: www.lithium1.com.

Quality Control

The Company logs, collects, and cuts the drill core on site. Channel samples were cut, sampled and tagged by a contractor between the 10th and the 22nd August 2009 under the supervision of the project manager on site. Samples are sealed and shipped to TJCM (Table Jamésienne de Concertation Minière) in Chibougamau for sample preparation. The prepared samples are then sent by courier to COREM in Québec City for Li_2O assay by multi-acid digestion and AA finish. COREM is a government-industry consortium of applied research for the treatment and processing of mineral substances, with a track record in lithium analysis and ore beneficiation. Certain of their laboratories are certified ISO 9001:2000 by BNQ and the analytical laboratory is certified ISO 17025:2005 for certain procedures. The laboratory employs quality control systems throughout that are compliant with ISO 9001 and ISO 17025 standards. The company is employing a rigorous quality assurance and quality control program, including the insertion of analytical control samples and field duplicates, as well as the tracking of replicate analyses and check assays from an independent laboratory. The SGS laboratory in Toronto is serving as a check lab, which is accredited by the Standards Council of Canada to ISO/IEG 17025: 2005.

The work program is under the supervision of Mr. A. James McCann, the Company's consulting exploration manager for Quebec. Mr. McCann is a licensed Professional Geologist in Quebec and a qualified person as defined by National Instrument 43-101. He has reviewed and approved the contents of this press release.

About Lithium

Lithium is a light, highly reactive metal with use in a variety of industrial applications including ceramics, lubricants and pharmaceuticals. The fastest growing market for lithium is as lithium carbonate for use in batteries, including those in cell phones, computers and new generations of electric and hybrid vehicles. Lithium from spodumene is in silicate form and following mining and production of a concentrate, requires processing to be converted to lithium carbonate. Technology for the conversion of spodumene ore to lithium carbonate has been in use for over 20 years.

About Lithium One:

Lithium One Inc is a well-financed explorer and developer of mineral properties with a specific focus on lithium. The Company now has two major lithium projects: the Sal de Vida lithium brine project in Argentina and the James Bay bulk tonnage spodumene project in Quebec. Lithium One believes that lithium demand will grow as its value and efficacy in "green energy" applications is fully realized. The Company's strategy is to build a portfolio of high quality lithium assets.

ON BEHALF OF THE BOARD OF DIRECTORS,

Patrick Highsmith, M.Sc.
President and Chief Executive Officer

Lithium One Inc

1238-200 Granville Street
Vancouver, BC V6C 1S4 Canada
Email: info@lithium1.com

Website: www.lithium1.com

FOR FURTHER INFORMATION, PLEASE CONTACT

Robert Orr
Telephone : 604-697-6259
Fax: 604-408-4799
Email: ro@lithium1.com

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