



# ASX ANNOUNCEMENT



28 APRIL 2017

## MARCH 2017 QUARTERLY REPORT

### Highlights

- Completion of the Authier Pre-Feasibility Study which demonstrated the technical and economic viability of developing a simple, open-cut mine and concentrate production facility
- Maiden JORC Ore Reserve reported for the Authier project
- Authier Phase 2 drilling program commenced. Initial five holes demonstrate extensions of the mineralisation in the western sector
- Further encouraging soil and rock chip samples from Mallina in Western Australia

**Sayona Mining Limited (ASX: SYA) ("Sayona" or the "Company")** is pleased to announce the activities report for the quarter, including completion of the Authier Pre-Feasibility Study ("PFS"), reporting of a maiden JORC Ore Reserve, and commencement of the Phase 2 drilling program. In Australia, an initial soil and rock chip sampling program produced encouraging results.

### Authier, Canada

During the quarter, the Company's primary focus was on the development of the Authier project. The Company's activities included completion of the PFS, reporting of a maiden JORC Ore Reserve and commencement of the Phase 2 drilling program.

### Authier Work Programs

The Company's primary strategy is to focus on completing the studies required to commence the development of the project. Authier is a near-term development project and cash-flow generation opportunity. The Company believes it will create significant share value-uplift potential for shareholders as the project is advanced towards development.

### *Authier Pre-Feasibility Study*

The PFS has been completed to an accuracy of +/-25% and has contributions from a number of leading industry service providers including, SGS Canada and Bumigeme Inc. All of the metallurgical testing has been undertaken at SGS Lakefield. The SGS Lakefield facility has been operating for over 70 years in metallurgical testing and design, and employees have considerable experience in the Canadian lithium industry. Bumigeme Inc is a Canadian firm of consulting engineers based in Montreal, working mainly in the mining and metallurgical sector. Dr Gustavo Delendatti was the Competent Person for the Mineral Resource estimate.

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ASX Code: **SYA**

Key outcomes of the PFS include a pre-tax Net Present Value ("NPV") of C\$140 million over an initial 13-year mine life, based on the current Proven and Probable Ore Reserve estimate of 10.2Mt @ 1.02% Li<sub>2</sub>O at a 0.45% Li<sub>2</sub>O cut-off grade (Table 1).

Table 1 – Authier JORC Ore Reserve Estimate (0.45% Li <sub>2</sub> O cut-off grade)			
Category	Tonnes (Mt)	Grades (%Li <sub>2</sub> O)	Contained Li <sub>2</sub> O
Proven Reserve	4.9	0.97%	47,821
Probable Reserve	5.3	1.06%	55,904
<b>Total Reserves</b>	<b>10.2</b>	<b>1.02%</b>	<b>103,725</b>
<b>Note:</b> The Ore Reserve estimate is based on the details published in a separate ASX release "Authier JORC Ore Reserves", 16 February 2017.			

The pre-tax Internal Rate of Return ("IRR") is estimated at 39% and payback on capital is 2.2 years. The life-of-mine ("LOM") cash operating costs are estimated at C\$334 per tonne (mine gate basis) or C\$367 per tonne FOB Port of Montreal based on a development capital expenditure of C\$66 million and a life-of-mine capital cost estimate of C\$113 million.

Table 2 – Authier Lithium Project PFS Highlights		
Description	Unit	Results
Average Annual Ore Feed to the Plant	tonnes	700,000
Annual Average Spodumene Production	tonnes	99,000
Life of Mine	years	13
Life of Mine Strip Ratio	waste to ore	6:1
Average Spodumene Price	US\$/tonne	515
Development Capital Costs	C\$ million	66
Total Life of Mine Capital Costs	C\$ million	113
Total Net Revenue (real terms)	C\$ million	978
Total Project EBITDA (real terms)	C\$ million	449
Average Life of Mine Cash Costs (Montreal Port FOB basis)	C\$/tonne	367
Net Present Value (real terms @ 8% discount rate)	C\$ million	140
Pre-Tax Internal Rate of Return	%	39
Project Payback Period	years	2.2
Exchange Rate	CAD:USD	0.76

The Company is now looking at a number of optimisation options to significantly enhance the value of the project, including:

- Additional definition and expansion drilling to expand the size of the resource and reserves, and extend the project mine life;

- Further geotechnical test work to assess the potential for a steeper hanging wall pit slope. This would reduce the waste removal requirement and LOM waste to ore ratio;
- The current development approach is to initially construct the project with a planned annual production rate of less than 2,000 tonnes of ore per day. This avoids a lengthy and costly Environmental Impact Assessment. Once in production, the Company will assess the technical and economic viability of expanding the production capacity of the project;
- Further metallurgical test work to improve processing recoveries and concentrate grades. The PFS assumes a metallurgical recovery of 80% and a 5.75% Li<sub>2</sub>O concentrate grade. However, recovery rates of up to 88% and concentrate grades higher than 6% Li<sub>2</sub>O have been achieved in historical metallurgical testing; and
- Other downstream value-adding opportunities including the potential to produce lithium hydroxide.

The Authier deposit will be mined by open cut methods enhanced by the shallow and thick nature of the mineralisation, allowing spodumene ore to be processed from the commencement of mining. The PFS demonstrated a LOM strip ratio of 6:1 (waste to ore) providing a low mining cost. The Company believes with further drilling it can expand the size of the resource, provide better definition of the orebody, and lower the overall waste to ore ratio.

Bumigeme have designed a concentrator plant to process 700,000 tpa of ore feed using conventional flotation technology suitable for a pegmatite orebody. The plant will produce a 5.75% Li<sub>2</sub>O concentrate suitable for feedstock to lithium carbonate conversion plants. Further studies will be undertaken to potentially reduce the iron content of the Authier lithium concentrate for sale to the glass or ceramics industries.

The PFS pricing is based on the May 2016 Deutsche Bank Lithium Industry Study and assumes that concentrates are delivered FOB to an export ship at the Port of Montreal. The LOM average price assumption is US\$515/tonne for a 5.75% Li<sub>2</sub>O concentrate. The modelled price for the PFS is a significant discount to the current market and is considered conservative.

The Company plans to move the project forward with a number of work programs, including:

- Phase 2 resource expansion and definition drilling (in progress);
- Advanced geotechnical and hydro-geological assessments (in progress);
- Metallurgical pilot plant testing;
- Definitive Feasibility Study; and
- Testing of Authier concentrates for the conversion into lithium carbonate.

The Company is also progressing its environmental and Mining Lease permits, and believes the approvals can be achieved within the planned development timetable.

### *Phase 2 drilling Program*

During the quarter, the Company commenced its Phase II resource expansion drilling program. The Company believes there is excellent potential to both expand the size of the existing resource and to optimise and improve the existing resource. In addition, the Company is planning to further expand the total project area resource by drilling the recently discovered lithium pegmatite and undertaking exploration for further mineralised pegmatites.

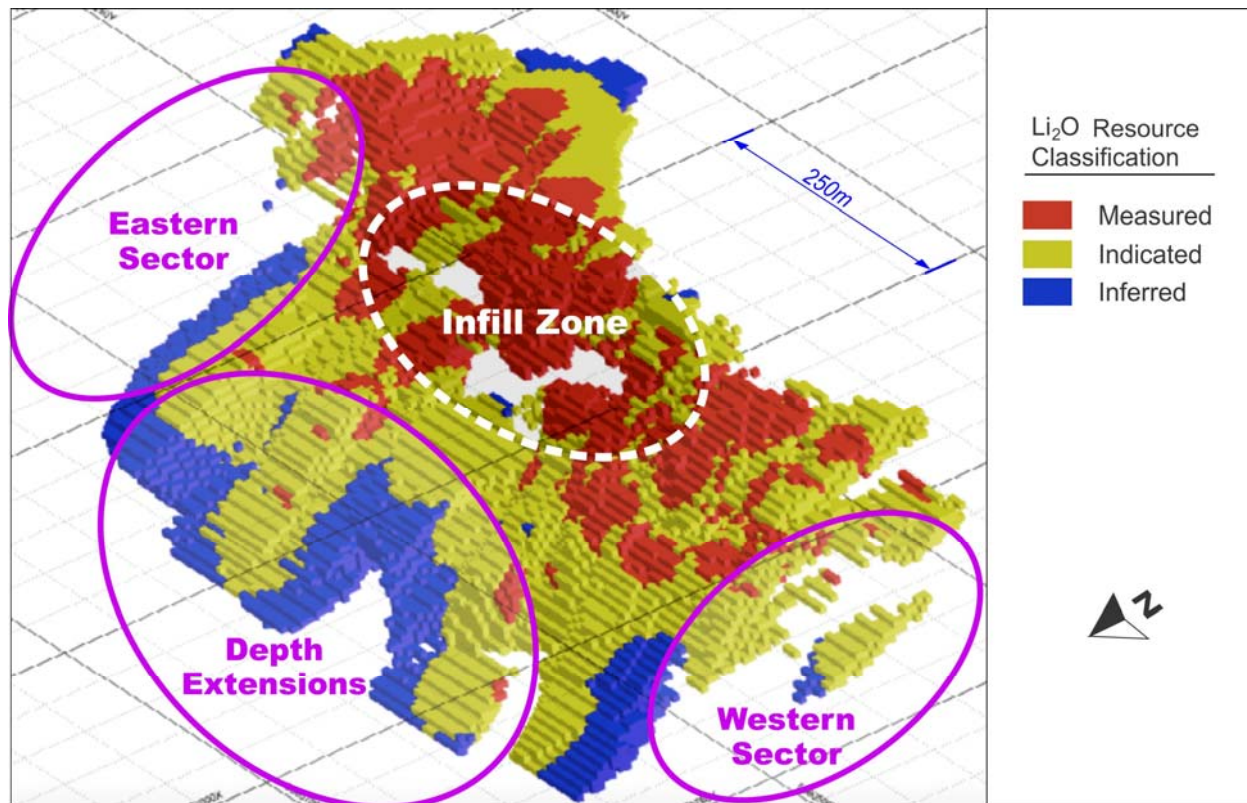
The program incorporates approximately 4,000 metres of diamond drilling. The mineralisation remains open in all directions (see Figure 1) and drilling is being planned with the following objectives, including:

- Defining the mineralised boundaries and lifting the resource categories in the western sector that were not accessible during the 2016 drill program. The 2016 drilling program in the western zone highlighted wide intervals of mineralisation, including 46m @ 1.26% Li<sub>2</sub>O from a depth of 190 metres, including 24m @ 1.62% Li<sub>2</sub>O from 190 metres;
- Testing for mineralisation in the eastern and western strike extensions;
- Infill definition drilling within the main resource zone (Infill zone on Figure 1) where the mineralisation is not well defined and is currently treated as waste;
- Assessing the resource potential of the new northern pegmatite which intersected 7m @ 1.36% Li<sub>2</sub>O from 15 metres. Any new mineralisation within the new pegmatite is likely to fall within the main Authier open-cut pit shell and significantly improve the waste to ore ratio in a future operation; and
- Pegmatites generally occur in “swarms” and the company’s aim is to locate additional mineralised pegmatites in the area.

The drilling program has been designed with three aims, including:

- To improve the overall quality and expand on the size of its JORC 2012 compliant Mineral Resource estimate. The project now has nearly 19,000 metres of diamond drilling in 141 holes. The Company’s plan is to increase the size and confidence levels of the resource and to study the merits of an expansion and/or the value adding potential of the project beyond what has been studied in the current Pre-Feasibility Study which is nearing completion (Figures 1);
- Assess the resource potential of the newly discovered pegmatite (Figure 2); and
- Locate additional lithium mineralised pegmatites.





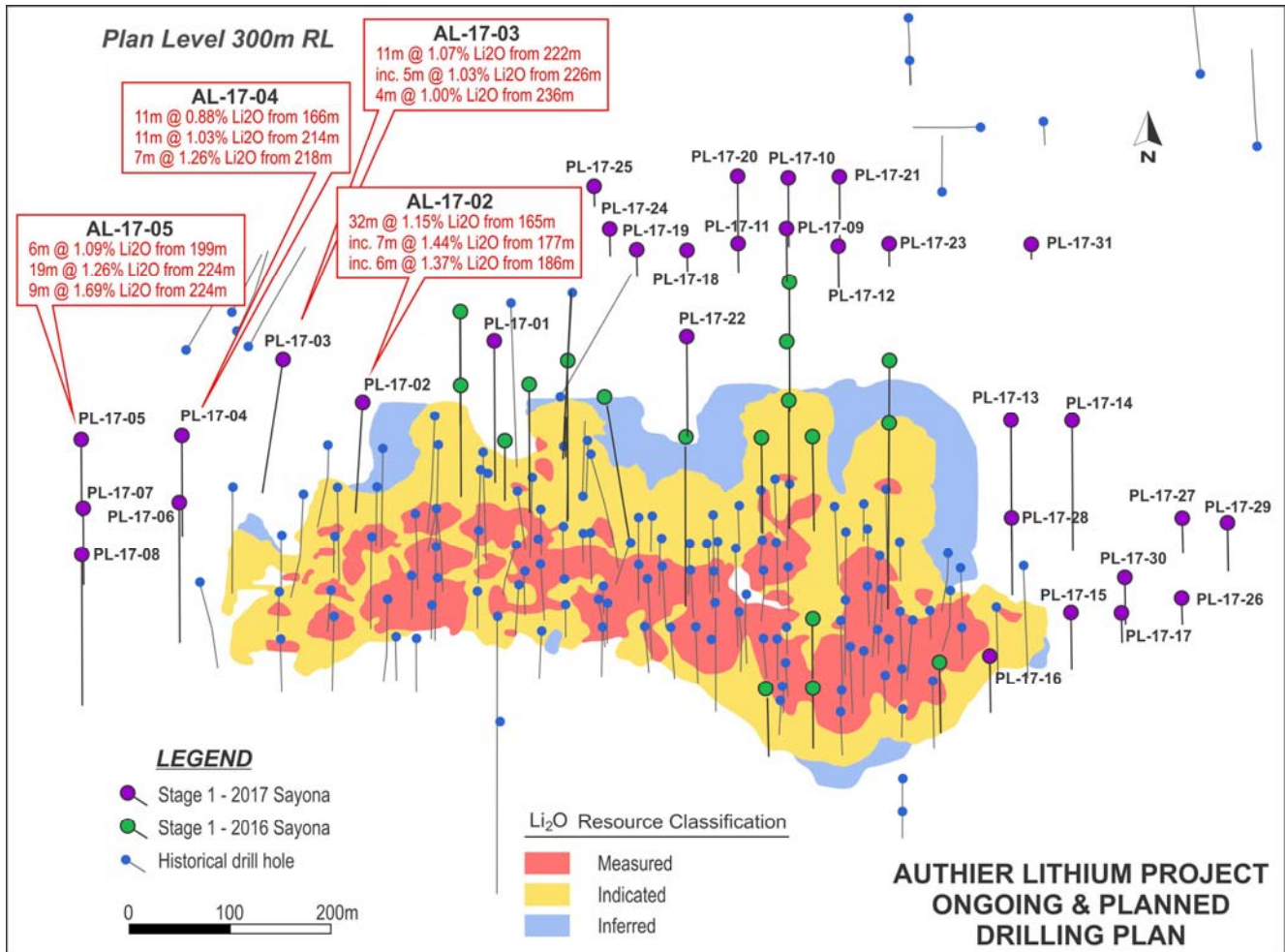
**Figure 1:** Main target zones within the main resource areas for the 2017 drilling program

During the quarter, the Company released the initial results of the drilling focused on targeting extensions of mineralisation in the western sector. Significant intersections from the first five drill holes, include:

- Hole 17-02: 32m @ 1.15% Li<sub>2</sub>O from 165m, including:
  - 7m @ 1.44 % Li<sub>2</sub>O from 177m;
  - 6m @ 1.37 % Li<sub>2</sub>O from 186 m; and
- Hole 17-03: 11m @ 1.07 % Li<sub>2</sub>O from 222m, including:
  - 5m @ 1.42 % Li<sub>2</sub>O from 226m; and
- Hole 17-05: 19m @ 1.26% Li<sub>2</sub>O from 224m, including:
  - 9m @ 1.69% Li<sub>2</sub>O from 224m.

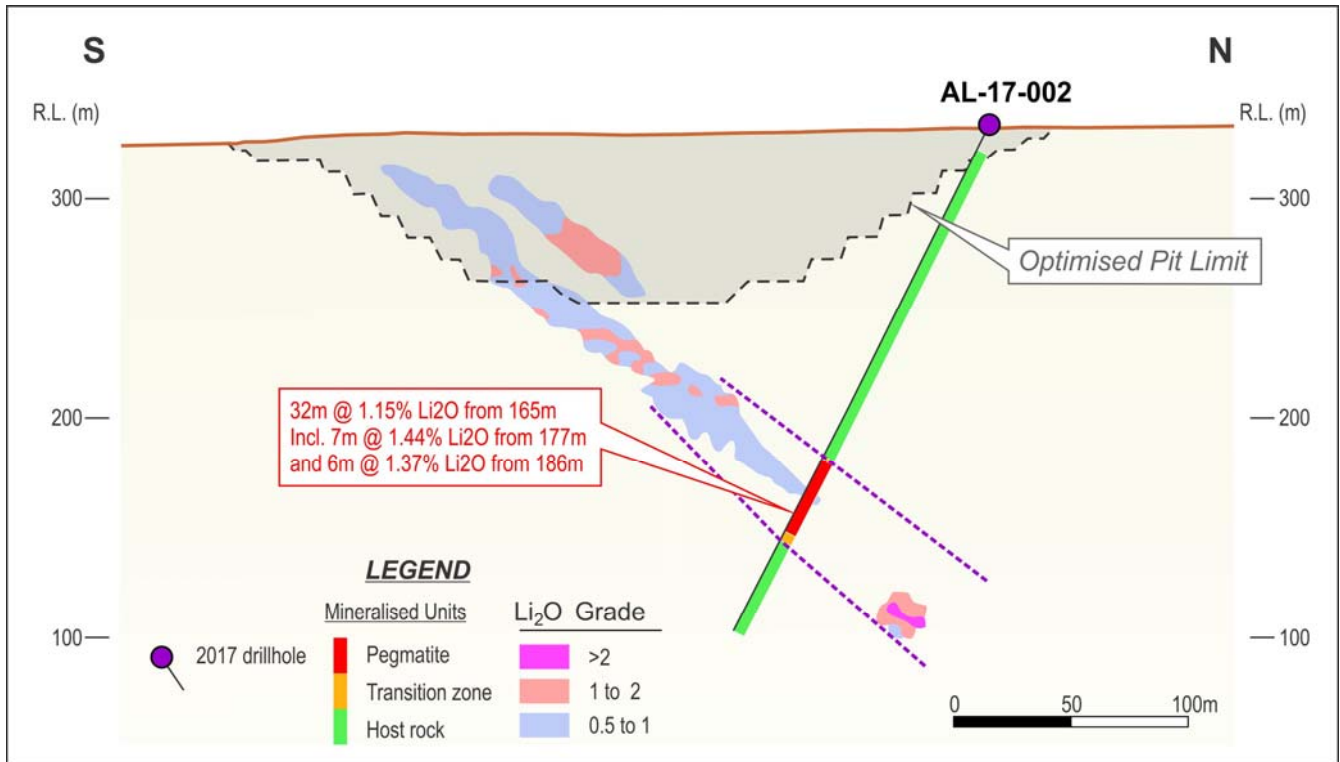
The new holes drilled west of the main Authier pegmatite orebody have successfully demonstrated extensions of the mineralisation at open-cut mineable depths. The results have confirmed an extension of the main pegmatite orebody by 300 metres to the west within the deeper levels and 200 metres west at shallower levels. The mineralisation remains open to the west and further drilling will be required to test the full western strike extent of the deposit.

The Phase 2 drilling program has now been completed. Thirty-one diamond drill holes totalling 4,104 metres have been completed testing extensions of the mineralisation to the west, east and depth in the main orebody, and within the new northern pegmatite. Assay results from the remaining holes are pending.



**Figure 2:** Phase 2 Drilling Program diamond hole collar location plan





**Figure 3:** Cross section in the western sector demonstrating potential for extensions of the mineralisation below the PFS pit depth



**Figure 4:** Diamond drill rig on site (left) and diamond core AL-17-005 showing coarse grain spodumene crystals at 229 to 232 metres depth (right)

## Western Australian Lithium Projects

### Mallina Project

The Mallina project is located 80 kilometres west of the Pilgangoora lithium deposits of Altura Mining and Pilbara Minerals, and compliments the Company's other 1,000 km<sup>2</sup> lithium exploration portfolio in the Pilbara region

The Mallina project overlies Archaean sediments and mafic volcanics which have been intruded by post tectonic monzogranite. The area does not appear to have been prospected for pegmatite mineralisation before the recent discovery, despite the combination of post tectonic granite, structure and proximity to the Wodgina / Pilgangoora lithium discoveries to the east.

During the quarter, reconnaissance and mapping within the Mallina tenement area has focused around the Discovery pegmatite area, with 93 rock and 66 soil geochemical samples collected (see figure 1 below).

The Discovery pegmatite is an albite-spodumene pegmatite mapped over 500 metres of strike extent with rock chip assays up to 2.13% Li<sub>2</sub>O (see ASX release, 21 December, 2016).

The Company's recent work has identified four previously unknown lithium mineralised spodumene pegmatites, which form part of an extensive swarm of pegmatites. The eleven rock samples collected over the Discovery pegmatite returned an average of 1.48% Li<sub>2</sub>O, with all of the samples collected to date in this 500 metres plus strike length target (21 rocks samples) averaging 1.35% Li<sub>2</sub>O. The pegmatite is weathered, in part silicified and has poor outcrop, typically visible over widths of 3 to 5 metres and up to 8 metres, but without the contacts to adjacent greenstone rocks being observed. The true width of the structure is not yet known.

West of the Discovery pegmatite, two other areas of lithium mineralised pegmatites have been identified, with rock samples returning up to 2.65% Li<sub>2</sub>O. These pegmatites are also poorly outcropping, but can be traced intermittently over several hundred metres of strike extent. Additional traversing in this area is planned to more fully understand the extents of the mineralisation.

Significantly, a single pegmatite outcrop, located 900 metres to the south of the Discovery pegmatite was identified and sampled, returning an assay of 3.47% Li<sub>2</sub>O. This area has very poor outcrop and further reconnaissance and sampling will be undertaken to try to define the extents to the mineralisation. The results do however, indicate the potential of the area to host additional mineralised pegmatites. These targets may lie under shallow soil cover.

An orientation soil geochemical programme was undertaken over the known discovery pegmatite. Results to 5,230ppm Li (1.12% Li<sub>2</sub>O) were returned from the coarse soil fraction, indication further sampling could be an effective test of the covered portions of the tenement.



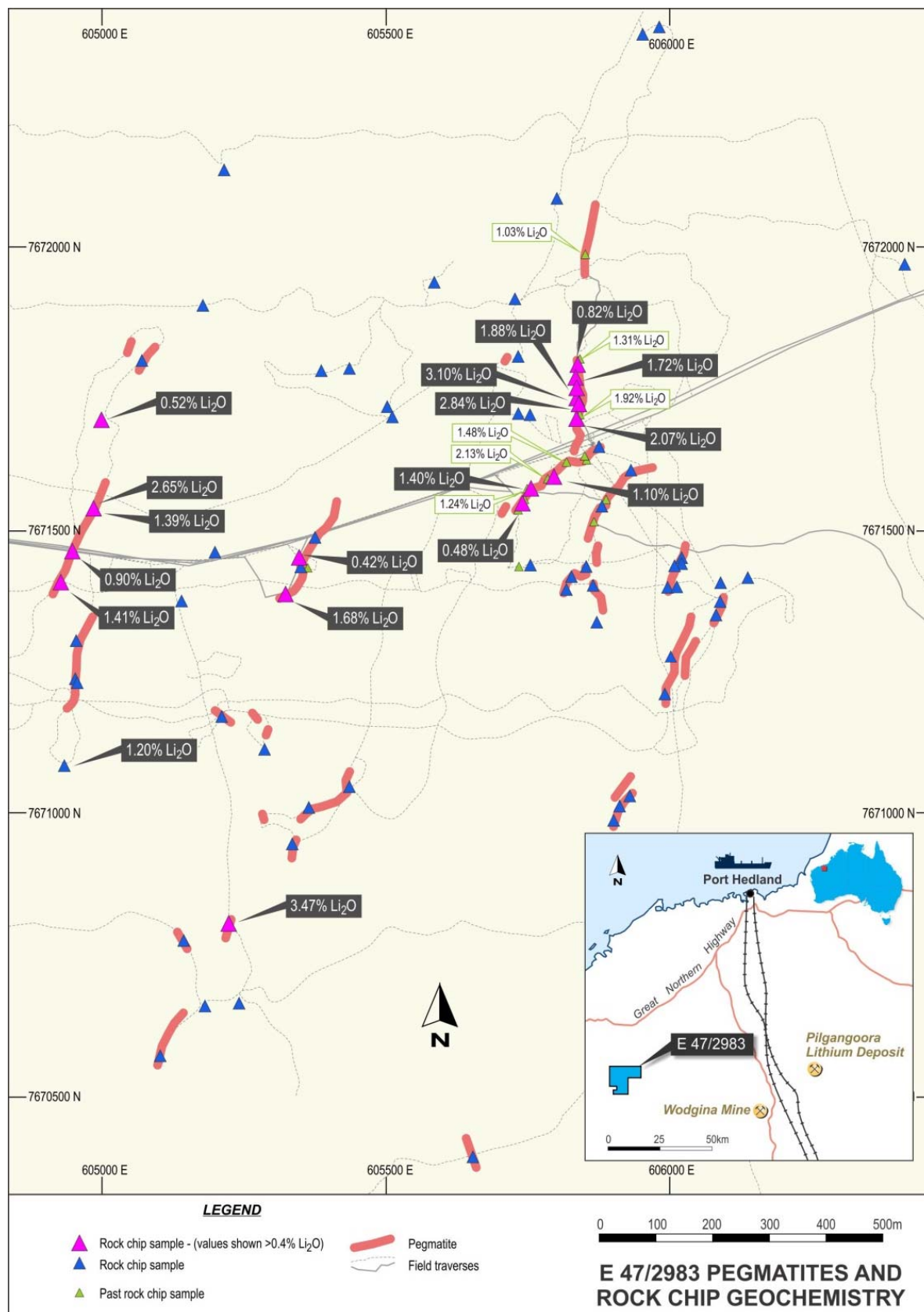


Figure 5: Discovery Pegmatite Area, Mallina Project

Further reconnaissance, mapping and rock sampling is planned in follow up to the strong mineralisation identified to date. Work will focus in the area of newly discovered spodumene pegmatites as well as traversing the unexplored remainder of the tenement area. This work will be complemented by systematic soil geochemistry, to be carried out with the aim of identifying targets under shallow cover. Work will commence as soon as possible, once access after the recent flooding is possible. Work to progress statutory approval to allow drill testing of the targets has commenced.

### **Pilbara Lithium Projects**

Due to the extensive wet weather during the quarter, the Company was unable to progress any of its exploration activities on its portfolio of lithium projects in the Pilbara district.

### **Mt Edon Lithium Project**

Due to the extensive wet weather during the quarter, the Company was unable to progress any of its exploration activities at the Mt Edon lithium project.

### **Corkwood Graphite Project**

There was no exploration activities at the Corkwood project during the quarter.

### **Corporate – Share Purchase Plan**

Subsequent to the end of the quarter, the Company announced an offer to eligible shareholders to apply for new, fully paid ordinary shares (New Shares) in Sayona under a Share Purchase Plan (the SPP).

The SPP is underwritten to \$1,500,000 by Patersons Securities Limited (Patersons) who are acting as Lead Manager and Underwriter to the offer. In addition, the Company has agreed to grant Patersons the right to facilitate an offer of Shares up to \$1,500,000 to be issued at the same price as those under the SPP (Top Up Placement).

Funds raised under the SPP will be used to accelerate the development of the Authier project in Canada. Work programs will be focused on enhancing the value of the project, including:

- Resource upgrade following the completion of the Phase 2 drilling program;
- Geotechnical and hydrogeological programs to improve the pit wall slopes and reduce the life-of-mine waste movement;
- Further metallurgical testing to optimise recoveries and concentrate grades;
- Updating the February 2017 Pre-Feasibility Study and Ore Reserve;
- Studying the potential for producing value-added lithium carbonate and/or hydroxide; and
- Continuation of the environmental and mining lease work programs.

In addition, the Company is progressing its Mallina project in the world-class Pilgangoora lithium district in Western Australia, where mapping and sampling programs have outlined a number of prospective lithium targets.

The SPP provides the opportunity for eligible shareholders to subscribe for up to \$15,000 worth of New Shares without incurring brokerage or other transaction costs.

The issue price will be determined at the issue date of New Shares under the SPP based on a 20% discount to the volume weighted average price of Sayona shares traded on the ASX during the 5 days immediately prior to the issue date of the New Shares.

**For more information, please contact:**

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Sayona Mining Limited is an Australian, ASX-listed (SYA), company focused on sourcing and developing the raw materials required to construct lithium-ion batteries for use in the rapidly growing new and green technology sectors. Please visit us as at [www.sayonamining.com.au](http://www.sayonamining.com.au)

**Previous Disclosure - 2012 JORC Code**

Certain Information relating to Mineral Resources, Exploration Targets and Exploration Data associated with the Company's projects in this March 2017 Quarterly Report has been extracted from the following ASX Announcements:

- Authier Lithium Project JORC Significantly Expanded, 23 November, 2016
- Authier Project Pre-Feasibility Study, 16 February 2017
- Authier Maiden JORC Ore Reserve, 16 February 2017
- Further Spodumene Mineralisation Reported at Mallina, 17 March 2017
- Authier Phase 2 Drilling Program Expands Mineralised Zone, 10 April 2017

Copies of these reports are available to view on the Sayona Mining Limited website [www.sayonamining.com.au](http://www.sayonamining.com.au). These reports were issued in accordance with the 2012 Edition of the JORC Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement. 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.

**Tenement Schedule**

Tenement	Name	Status	Interest at Beginning of Quarter	Interest at end of Quarter
E59/2092	Mt Edon	Granted	80%, with rights to 100% of pegmatite minerals*	80%, with rights to 100% of pegmatite minerals*
E59/2055	Mt Edon West	Granted	100% (pegmatite minerals)	100% (pegmatite minerals)

Tenement	Name	Status	Interest at Beginning of Quarter	Interest at end of Quarter
E45/2364	Tabba Tabba	Granted	Rights to 100% of pegmatite minerals*	Rights to 100% of pegmatite minerals*
ELA45/4703	Tabba Tabba East	Application	100%	100%
E45/4716	Red Rock	Application	100%	100%
ELA45/4726	West Wodgina	Application	100%	100%
ELA47/3475	Friendly Creek	Application	100%	100%
ELA45/4738	Cooglegong	Application	100%	100%
ELA45/4775	Carlindie	Application	100%	100%
E80/4511	Western Iron	Granted	100%	100%
ELA80/4949	Corkwood	Application	100%	100%
ELA80/4959	Killarney	Application	100%	100%
ELA80/4968	Keller	Application	100%	100%
ELA45/4813	Moolyella	Application	100%	100%
<b>Great Sandy Pty Ltd Option</b>				
E47/2983	Mallina	Granted	0%	Option Rights to 80%
E46/1103	Dorringtons	Granted	0%	Option Rights to 80%
E45/4687	White Springs	Application	0%	Option Rights to 80%
E45/4721	Mt Edgar	Application	0%	Option Rights to 80%
E45/4727	Mt Edgar	Application	0%	Option Rights to 80%
E45/4787	Mt Edgar	Application	0%	Option Rights to 80%
E45/4788	Mt Edgar	Application	0%	Option Rights to 80%
E45/4700	Mt Edgar	Application	0%	Option Rights to 80%
E45/4723	Mt Edgar	Application	0%	Option Rights to 80%

#### Authier Canada

Claim Number	Registered holder	Registration Date	Expiration Date	Area (hect)
2116146	Sayona Mining Limited	8/08/2007	7/08/2017	43.24
2116154	Sayona Mining Limited	8/08/2007	7/08/2017	42.88
2116155	Sayona Mining Limited	8/08/2007	7/08/2017	42.87
2116156	Sayona Mining Limited	8/08/2007	7/08/2017	42.86



Claim Number	Registered holder	Registration Date	Expiration Date	Area (hect)
2183454	Sayona Mining Limited	2/06/2009	1/06/2017	42.85
2183455	Sayona Mining Limited	2/06/2009	1/06/2017	42.84
2187651	Sayona Mining Limited	2/09/2009	1/09/2017	21.39
2192470	Sayona Mining Limited	22/10/2009	21/10/2017	21.08
2192471	Sayona Mining Limited	22/10/2009	21/10/2017	21.39
2194819	Sayona Mining Limited	19/11/2009	18/11/2017	42.82
2195725	Sayona Mining Limited	27/11/2009	26/11/2017	29.03
2219206	Sayona Mining Limited	22/04/2010	21/04/2018	5.51
2219207	Sayona Mining Limited	22/04/2010	21/04/2018	17.06
2219208	Sayona Mining Limited	22/04/2010	21/04/2018	55.96
2219209	Sayona Mining Limited	22/04/2010	21/04/2018	42.71
2240226	Sayona Mining Limited	9/07/2010	8/07/2018	42.71
2240227	Sayona Mining Limited	9/07/2010	8/07/2018	42.71
2247100	Sayona Mining Limited	23/08/2010	22/08/2018	42.75
2247101	Sayona Mining Limited	23/08/2010	22/08/2018	53.77