Pioneer RESOURCES LIMITED
ABN: 44 103 423 981

ASX ANNOUNCEMENT

4 February 2020

ASX: PIO

New thick, high-grade lithium intercepts highlight strong potential for resource growth at Pioneer Dome

Successful second drilling program in Dome North Area infills the Cade Deposit and discovers significant new zone at the Davy prospect, ~1.4km to the west

HIGHLIGHTS

⇒ **Outstanding results received from second phase of drilling completed prior to Christmas in the Dome North Area, with key highlights including:**

⇒ **Cade Deposit – *significant infill intersections within Inferred Resource of 8.2Mt at 1.23% Li2O:***

- **31.6m @ 1.31% Li_2O** from 72 metres (PDRCD292)
- **27.4m @ 1.38% Li_2O** from 131 metres (PDRCD294)
- **27.2m @ 1.46% Li_2O** from 209 metres including **11m @ 1.79% Li_2O** (PDRCD295)
- **22.2m @ 1.72% Li_2O** from 128 metres (PDRCD318)
- **22.3m @ 1.49% Li_2O** from 199metres (PDRCD319)

⇒ **Davy Prospect – *new zone of mineralisation located ~1.4km west of Cade Deposit:***

- **9m @ 1.31% Li_2O** from 56 metres (PDRC325)
- **8m @ 1.27% Li_2O** from 26 metres (PDRC326)
- **22m @ 1.44% Li_2O** from 153 metres, including **10m @ 1.75% Li_2O** (PDRC324)

⇒ **Spodumene now intersected in four pegmatites within the Dome North Area.**

⇒ **Results highlight the potential to increase Mineral Resources in the Dome North Area which are currently based only on the Cade Deposit: 8.2Mt @ 1.23% Li_2O.**

⇒ **The Cade Deposit remains open down-dip and down-plunge and the new Davy Prospect (previously known as Spodumene'Target 3') is open at depth and along strike.**

⇒ **An initial Exploration Target of between 17-27Mt at a grade of between 1.0-1.4% Li_2O has been established for the Dome North Area, in addition to the Cade Deposit (therefore a targeted endowment of 25-35Mt inclusive of the Cade deposit).** *Investors are cautioned that the potential quantity and grade of the Exploration Target is conceptual in nature. There is insufficient exploration information generated to estimate a Mineral Resource and it is uncertain that further exploration will result in the estimation of a Mineral Resource.*

⇒ **Leading engineering group Primero (ASX: PGX) has been engaged to undertake an initial test work program designed to assess the amenability of mineralisation from the Cade Deposit to be concentrated using standard processes.**

www.PIOresources.com.au

Tel: +61 8 9322 6974 email: pioneer@PIOresources.com.au
Address: Ground floor, 72 Kings Park Road West Perth Western Australia 6005
Postal: PO Box 1787West Perth Western Australia 6872

Pioneer Resources CEO, Tim Spencer, said: "In just two drilling programmes we have demonstrated that the Dome North Area is highly prospective for spodumene mineralisation with excellent lithium grades and widths. This represents a fantastic return for what was a modest but targeted drilling program undertaken prior to Christmas and there are clear opportunities to make further discoveries and increase Mineral Resources.

"We have appointed Primero to undertake first-pass metallurgical test work that will help us understand our options as we advance the Project. The outcomes of that work along with further target identification will assist us in planning our next phase of drilling with a view to rapidly advancing what appears to be a substantial emerging lithium asset in a prime location in WA's Eastern Goldfields."

Pioneer Resources (ASX: PIO; "Pioneer" or "the Company") is pleased to report highly encouraging results from the second drill program completed prior to Christmas at its 100%-owned Pioneer Dome Project (refer ASX announcement: 8 November 2019).

PROGRAMME OVERVIEW

The programme focused on the Dome North group of lithium prospects, where Pioneer has previously discovered a suite of spodumene-bearing pegmatites (Figure 1). It consisted of a combination of resource drilling at the Cade Deposit and exploration drilling at five additional targets, and consisted of 45 Reverse Circulation (RC) holes totalling 8,365m and seven holes (RC pre-collars with diamond tails) totalling 641.8m.

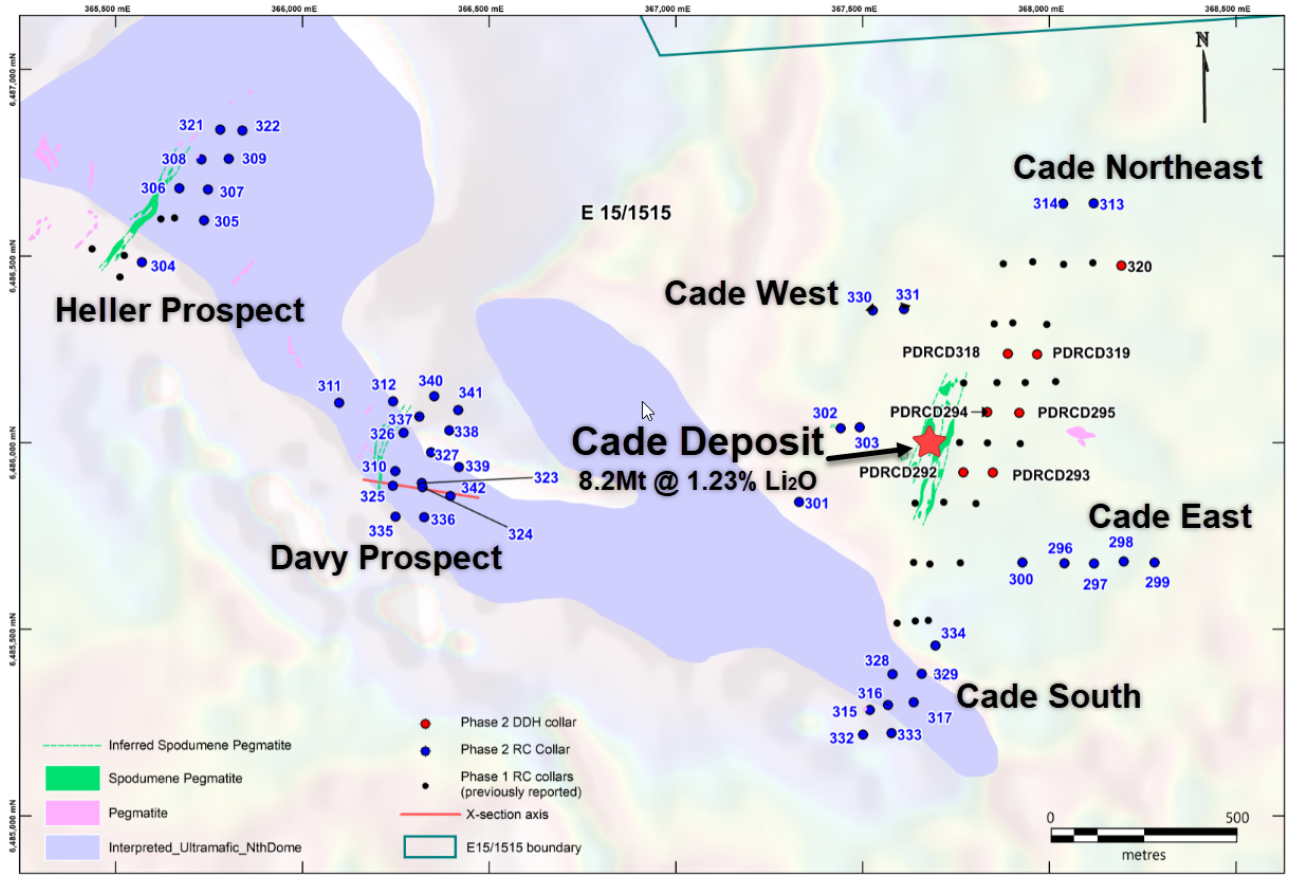

Figure 1: Plan view of the Dome North Area located in the northern zone of the greater Pioneer Dome Project.

Of the five targets drill tested, two new mineralised pegmatites were intersected (the Davy and Cade South Prospects). Drilling at three targets to the east, north-east and west of Cade did not intersect significant

mineralisation, however the drilling has provided information that will be used to further target potential offset extensions and/or sub-parallel pegmatites to the Cade Deposit.

RC drilling tested a combination of anomalies generated from rock chip and soil geochemistry and a Deep Ground Penetrating Radar (DGPR) survey carried out in October, where spodumene-pegmatite on-surface fragments had been mapped coincidental with magnetic lineaments striking north-northeast – the favourable orientation of known spodumene bearing pegmatites in the Dome North Area.

Six diamond-tailed drill holes (RCD) further delineated the Cade Deposit and provided representative core samples for metallurgical test work to be undertaken by Primero, a leading engineering group with extensive experience with West Australian hard rock spodumene deposits. A seventh RCD hole tested Cade and Cade NE at depth.

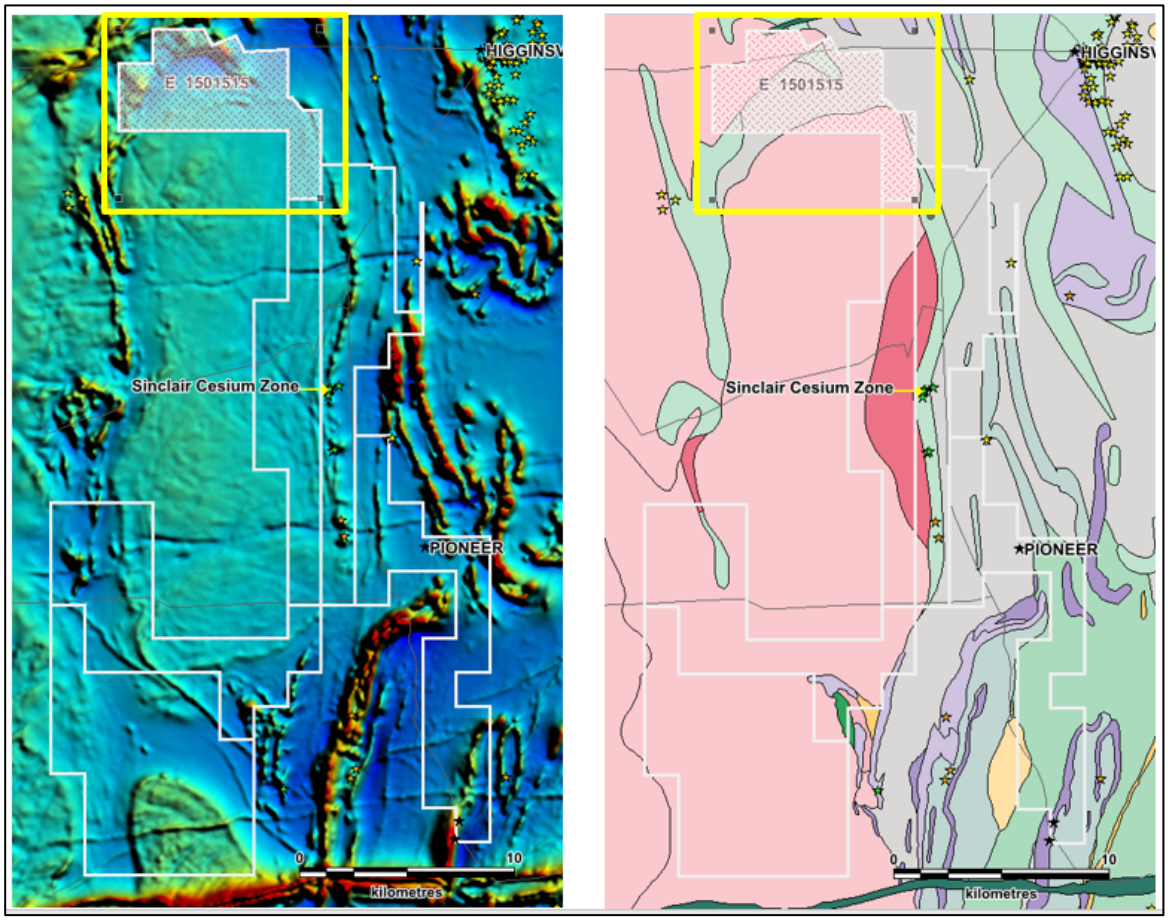

Figure 2: Location map over regional magnetics (left) and 1:500k geology (right) showing the Dome North Project Area (yellow box) and Pioneer Dome tenement boundaries (white outlines).

CADE DEPOSIT (Inferred Mineral Resource – 8.2Mt at 1.23% Li_2O)

Six RCD holes were completed into the Cade Deposit with exceptional lithium grades and widths returned. Noticeable characteristics of the deposit are the consistency of its mineralogy, in particular the spodumene crystal size and distribution.

The first RC drill programme completed in August 2019 was spaced on 160m x 80m and the six RCD holes infilled the pertinent sections to 80m x 80m. The Cade Deposit remains open at depth.

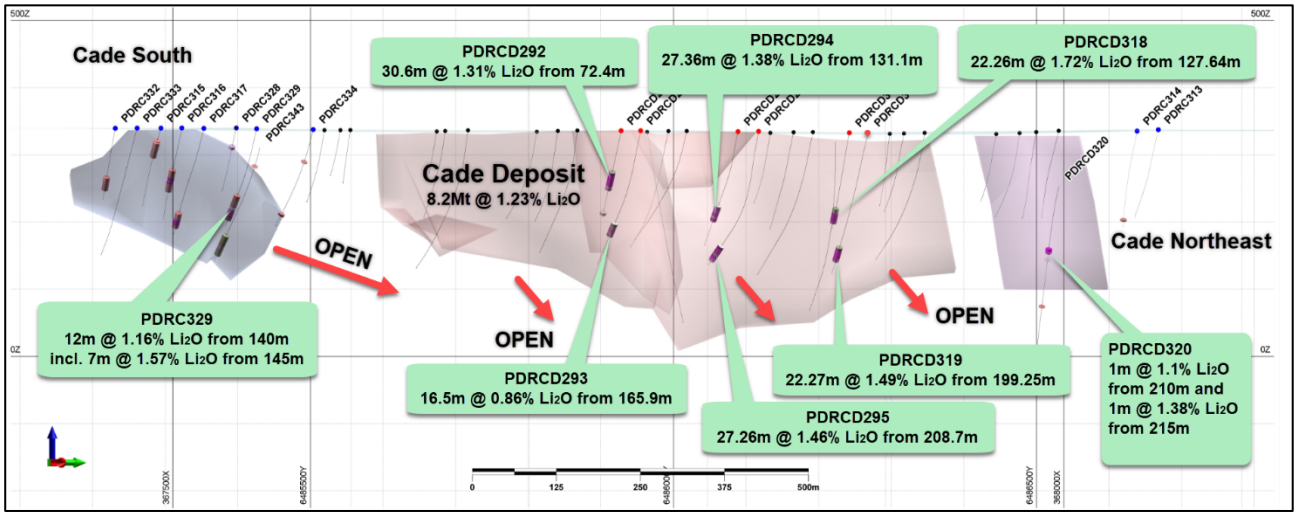

Figure 3: Long Section view looking west showing the location of the six diamond drill holes (red drill collars) into the Cade Deposit and the proximity of Cade South and Cade NE Prospects to the Cade Deposit. The scale bar is 500m.

The following table contains a summary of the six RCD holes:

Hole ID	From (m)	To (m)	Interval (m)	Li_2O (%)
Cade Spodumene Deposit				
PDRCD292	72.40	103.00	30.60	1.31
PDRCD293	165.90	182.30	16.50	0.86
PDRCD294	131.10	158.46	27.36	1.38
PDRCD295	208.70	235.96	27.26	1.46
including	**210.00**	**221.00**	**11.00**	**1.79**
PDRCD318	127.64	149.90	22.26	1.72
Including	**128.00**	**131.28**	**3.28**	**3.92**
PDRCD319	199.25	221.52	22.27	1.49

DAVY PROSPECT (New Discovery)

The 'Davy Prospect' was named after Sir Humphrey Davy, who is jointly credited with first isolating lithium in its elemental, metallic form – achieved by applying electrolysis methods.

The Davy pegmatites and spodumene mineralisation have been delineated along 450m of strike and to a maximum vertical depth of 250m. The pegmatites intersected dip approximately 60-75° to the east, displaying multiple dyke-like geometries with significant spodumene intersections ranging from 4m to 22m. The spodumene is white to pale green within a predominantly albite, quartz, muscovite pegmatite. The mineralisation remains open along strike to the north and south with an interpreted southerly plunge

The following table contains significant drill intersections from the Davy Prospect:

Hole ID	From (m)	To (m)	Interval (m)	Li_2O (%)
Davy Prospect				
PDRC310	43	56	13	1.33
and	60	65	5	1.18
PDRC324	153	175	22	1.44
Including	**155**	**165**	**10**	**1.75**
PDRC325	56	65	9	1.31
Including	**57**	**58**	**1**	**2.93**
PDRC326	26	34	8	1.27
Including	**27**	**31**	**4**	**1.70**
PDRC327	113	126	13	1.16
Including	**114**	**121**	**7**	**1.57**
PDRC335	122	138	16	1.00
Including	**127**	**135**	**8**	**1.34**
PDRC337	37	43	6	1.44
Including	**38**	**39**	**1**	**2.65**
and	**85**	**87**	**2**	**1.86**

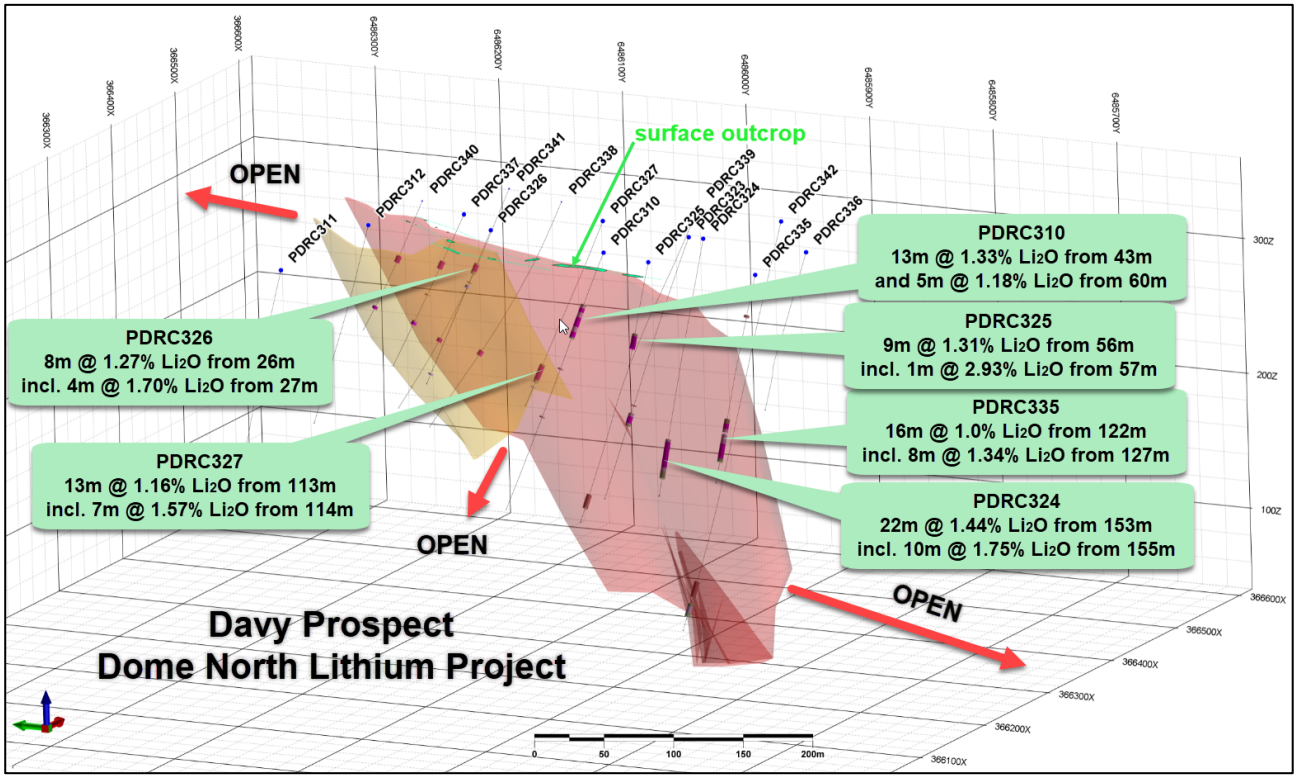

Figure 4: Davy Prospect – modelled pegmatites oblique view looking north-east. Main pegmatite body (red) and the footwall pegmatite (orange)

CADE SOUTH PROSPECT (New Discovery)

Drilling at the Cade South lithium discovery, located ~180m south of the Cade Deposit, has delineated a spodumene-bearing pegmatite with a best intersection of 12m @ 1.16% Li_2O from 140m including 7m at 1.57% Li_2O from 145m. A total of nine RC holes were completed.

The pegmatite extends over a strike length of 320m and has been tested to a vertical depth of 170m with pegmatite intersections encountered over a down-hole thickness of up to 36m. The pegmatite is zoned in mineralogy dominated by albite, quartz, muscovite +/- potassium feldspar in the south with spodumene concentration increasing along strike, constrained to the central core zone of the pegmatite body. The spodumene zone is currently 80m in length and remains open along strike to the north. It is still unclear whether Cade South is an offset south extension to the Cade Deposit or a separate sub-parallel striking pegmatite trending north directly east of the Cade Deposit. Significant intersections from Cade South are summarised below:

Cade South Prospect				
Hole ID	**From (m)**	**To (m)**	**Interval (m)**	**Li_2O (%)**
PDRC329	140	152	12	1.16
Including	**145**	**152**	**7**	**1.57**
PDRC343	206	210	4	1.00
including	**207**	**208**	**1**	**1.95**

METALLURGICAL TEST WORK ON THE CADE DEPOSIT

The Company has met with metallurgists from Primero (ASX:PGX) to plan 'first pass' test work on mineralisation from the Cade Deposit. Primero, a multi-disciplinary engineering group specialising in the design, construction and operation of resource projects, has been involved in several of WA's spodumene projects including Pilgangoora (ASX: PLS) Mt Cattlin and and Bald Hill.

The Cade Deposit currently hosts a maiden Inferred Mineral Resource of 8.2Mt @ 1.23% Li_2O and has significant scope for further growth. Other mineralised pegmatites have been identified within the Dome North Area, such as the Davy, Heller and Cade South Prospects, and the Company believes that these offer excellent potential for the delineation of additional Mineral Resources with further successful drilling.

Understanding the processing characteristics at an early stage in the Project's evaluation will assist in determining the optimum development path alternatives for the Dome North Area.

The test work will commence in February and should be completed by the end of May this year. The objective for undertaking the metallurgical testing is primarily to determine processing and recovery characteristics using Dense Media Separation processing ('lower capex') and whether or not flotation processing ('higher capex') will also be required. The findings from the Primero test work will form the basis of the process design criteria for early stage economic evaluation of the project.

Tim Spencer
Chief Executive Officer
Pioneer Resources Limited

This ASX release has been approved by the Board of Directors

For further information:
Tim Spencer, Chief Executive Officer
Pioneer Resources Limited
T: +61 8 9322 6974
E: tspencer@pioresources.com.au

Investor Relations
Nicholas Read
Read Corporate
T: +61 8 9388 1474
E: nicholas@readcorporate.com.au

About Pioneer Resources Limited

Following successful completion of the Sinclair Caesium Mine, Pioneer is now a well-funded and active explorer focused on key global demand-driven commodities, looking for its next opportunity to create shareholder wealth through exploration and project development.

The Company operates a portfolio of strategically located lithium, caesium, nickel, cobalt and gold projects in mining regions in Western Australia, plus a high-quality lithium asset in Canada.

Lithium: In addition to the Pioneer Dome LCT Project, the Company holds a 51% Project interest in the Mavis Lake Lithium Project, Canada where Company drilling has intersected spodumene.

Nickel: The Company owns the Golden Ridge Project which includes the suspended Blair Nickel Sulphide Mine, located between Kalgoorlie and Kambalda, WA. Near-mine target generation is continuing, with the Company announcing a new disseminated nickel sulphide drilling discovery at the Leo's Dam Prospect in 2018, highlighting the prospectivity of the greater project area.

Cobalt: Also found as a wide-spread hydromorphic layer throughout the eastern Golden Ridge Project, cobalt is another commodity with demand expanding in response to its requirement in the manufacture of cobalt-based batteries in certain electric vehicles and electricity stabilisation systems (powerwalls). Other uses for cobalt include in the manufacture of super-alloys, including jet engine turbine blades, and for corrosion resistant metal applications.

Gold: Pioneer's key gold projects are free-carried with well credentialed JV partners:

- Acra JV Project near Kalgoorlie W.A.: Northern Star Resources limited has earned a 75% Project Interest and continues to fully fund exploration programmes until a decision to mine with Pioneer retaining a 25% interest.
- Kangan Project in the West Pilbara W.A: A farmin & JV agreement with Novo Resources Corp and Sumitomo Corporation will fully fund gold exploration programmes until a decision to mine is made, with Pioneer retaining a 30% interest.
- Balagundi Project: A farmin & JV agreement with where Black Cat Syndicate Limited may earn a 75% interest in the Project located at Bulong, near Kalgoorlie, W.A. Black Cat will then fully fund gold exploration programmes until a decision to mine is made, with Pioneer retaining a 25% interest.

COMPETENT PERSON

The information in this report that relates to Exploration Results is based on information supplied to and compiled by Mr Stuart Kerr. Mr Kerr is a full time employee of Pioneer Resources Limited and holds shares/equity based securities in Pioneer Resources Limited. Mr Kerr is a member of the Australian Institute of Geoscientists and has sufficient experience which is relevant to the exploration processes undertaken to qualify as a Competent Person as defined in the 2012 Editions of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Caution Regarding Forward Looking Information

This document may contain forward looking statements containing estimates based on specific assumptions.

Forward-looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward-looking statements as a result of a variety of risks, uncertainties and other factors. Forward-looking statements are inherently subject to business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking information provided by the Company, or on behalf of, the Company. Such factors include, among other things, risks relating to additional funding requirements, metal prices, variations to sales agreements, exploration, development and operating risks, competition, production risks, regulatory restrictions, including environmental regulation and liability and potential title disputes.

Forward looking statements in this document would be based on the Company's beliefs, opinions and estimates as of the dates the forward-looking statements are made, and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

Circumstances or management's estimates or opinions could change. The reader is cautioned not to place undue reliance on forward-looking statements.

APPENDIX 1 – DOME NORTH AREA – DRILL HOLE COLLAR LOCATIONS

Table 2
Drill Hole Collar Locations

Hole ID	Prospect	Type	Easting (m)	Northing (m)	RL (m)	Depth (m)	Dip (°)	Azimuth (°)
PDRC296	Cade East	RC	368040	6485677	333.4	163	-60.2	269.76
PDRC297	Cade East	RC	368120	6485676	332.1	162	-60.22	270.44
PDRC298	Cade East	RC	368199	6485682	331.1	150	-60.06	272.49
PDRC299	Cade East	RC	368282	6485679	329.9	156	-59.94	275.62
PDRC300	Cade East	RC	367928	6485679	335.8	108	-60.53	86.48
PDRC301	Cade West	RC	367330	6485841	330.3	150	-59.92	271.97
PDRC302	Cade West	RC	367441	6486039	329.6	162	-60.1	269.38
PDRC303	Cade West	RC	367492	6486041	330.3	108	-59.74	270.5
PDRC304	Heller	RC	365570	6486483	353.3	156	-59.93	295.52
PDRC305	Heller	RC	365737	6486596	354.9	264	-60.4	272.48
PDRC306	Heller	RC	365670	6486681	353.1	96	-59.35	268.7
PDRC307	Heller	RC	365747	6486678	351.1	180	-55.16	270.21
PDRC308	Heller	RC	365729	6486759	349.3	90	-59.72	267.55
PDRC309	Heller	RC	365803	6486760	347.9	210	-55.8	268.86
PDRC310	Davy	RC	366248	6485924	348.2	198	-60.6	295.04
PDRC311	Davy	RC	366098	6486107	353.9	150	-60.44	270.74
PDRC312	Davy	RC	366242	6486111	352.3	156	-55.2	267.77
PDRC313	Cade North East	RC	368119	6486641	337.3	156	-59.63	269.09
PDRC314	Cade North East	RC	368037	6486640	335.3	162	-60.66	272.09
PDRC315	Cade South	RC	367519	6485284	339.6	138	-56.74	266.22
PDRC316	Cade South	RC	367568	6485297	339.8	156	-59.99	273.68
PDRC317	Cade South	RC	367637	6485305	339.3	192	-55.98	270.88
PDRC321	Heller	RC	365780	6486839	346.5	120	-59.89	271.95
PDRC322	Heller	RC	365839	6486836	346.2	300	-60.72	270.25
PDRC323	Davy	RC	366320	6485892	345.5	198	-61.18	292.55
PDRC324	Davy	RC	366322	6485881	344.9	192	-60	266.35
PDRC325	Davy	RC	366242	6485884	346.4	78	-59.97	268.39
PDRC326	Davy	RC	366271	6486026	349.7	120	-59.54	294.23
PDRC327	Davy	RC	366344	6485974	343.8	144	-60.32	294.42
PDRC328	Cade South	RC	367580	6485380	339.9	108	-60.27	268.95
PDRC329	Cade South	RC	367659	6485380	338.7	168	-60.09	267.92
PDRC330	Cade West	RC	367527	6486354	327.8	156	-60.21	270.36
PDRC331	Cade West	RC	367611	6486358	328.5	156	-60.61	269.52
PDRC332	Cade South	RC	367501	6485218	339.4	120	-60.66	272.92
PDRC333	Cade South	RC	367578	6485222	339.6	216	-60.2	264.82
PDRC334	Cade South	RC	367695	6485456	337.6	168	-60.37	266.68
PDRC335	Davy	RC	366249	6485802	342.9	156	-60.02	270.48
PDRC336	Davy	RC	366326	6485800	341.4	120	-60.17	279.43
PDRC337	Davy	RC	366313	6486070	347.3	120	-59.74	302.98
PDRC338	Davy	RC	366393	6486033	340.8	188	-60.44	296.45
PDRC339	Davy	RC	366419	6485935	341.2	246	-60.21	295.97
PDRC340	Davy	RC	366353	6486124	342.4	102	-59.55	295.64
PDRC341	Davy	RC	366417	6486087	339.7	177	-59.52	296.73
PDRC342	Davy	RC	366396	6485857	342	306	-61.36	274.43
PDRC343	Cade South	RC	367704	6485375	338.4	234	-59.71	267.53
PDRCD292	Davy	RCD	367770	6485920	335.8	150.3	-60.31	271.3
PDRCD293	Davy	RCD	367849	6485920	335.8	240.3	-60.68	269.62
PDRCD294	Davy	RCD	367834	6486082	334.5	201.3	-60.33	270.88
PDRCD295	Davy	RCD	367920	6486080	334.8	246.3	-60.16	273.94
PDRCD318	Davy	RCD	367889	6486238	332.7	159.25	-60.96	271.92
PDRCD319	Davy	RCD	367967	6486237	332.8	245	-59.84	271.67
PDRCD320	Cade North East	RCD	368193	6486474	337	411.2	-55.91	270.63

APPENDIX 2A – DOME NORTH AREA – REVERSE CIRCULATION DRILL HOLE STATISTICS

Hole_ID	Depth From	Depth To	Interval Width	Li_2O (%)	Li_2O (%) intercept description
PDRC304	121	128	7	0.9	7m @ 0.9 %
PDRC304	132	135	3	0.86	3m @ 0.86 %
PDRC307	155	167	12	1.08	12m @ 1.08 %
PDRC309	189	190	1	0.56	1m @ 0.56 %
PDRC310	43	56	13	1.33	13m @ 1.33 %
PDRC310	60	65	5	1.18	5m @ 1.18 %
PDRC317	168	170	2	0.84	2m @ 0.84 %
PDRC323	136	144	8	0.97	8m @ 0.97 %
PDRC324	153	175	22	1.44	22m @ 1.44 %
PDRC325	56	65	9	1.31	9m @ 1.31 %
PDRC326	26	34	8	1.27	8m @ 1.27 %
PDRC326	42	45	3	0.95	3m @ 0.95 %
PDRC327	113	126	13	1.16	13m @ 1.16 %
PDRC329	140	152	12	1.16	12m @ 1.16 %
PDRC335	122	138	16	0.99	16m @ 0.99 %
PDRC335	113	117	4	0.45	4m @ 0.45 %
PDRC337	37	43	6	1.44	6m @ 1.44 %
PDRC337	85	87	2	0.93	2m @ 0.93 %
PDRC338	121	125	4	1.23	4m @ 1.23 %
PDRC338	166	168	2	1.29	2m @ 1.29 %
PDRC340	43	48	5	1.16	5m @ 1.16 %
PDRC340	83	84	1	0.99	1m @ 0.99 %
PDRC341	118	121	3	0.71	3m @ 0.71 %
PDRC342	288	289	1	1.36	1m @ 1.36 %
PDRC343	206	210	4	0.99	4m @ 0.99 %

APPENDIX 2B – DOME NORTH AREA – DIAMOND DRILL HOLE STATISTICS

Hole_ID	Depth From	Depth To	Interval Width	Li_2O (%)	Li_2O (%) intercept description
PDRCD292	72.4	103	30.6	1.31	30.6m @ 1.31 %
PDRCD293	165.85	182.4	16.5	0.86	16.5m @ 0.86 %
PDRCD294	131.1	158.5	27.36	1.38	27.36m @ 1.38 %
PDRCD295	208.7	236	27.26	1.46	27.26m @ 1.46 %
PDRCD318	127.64	149.9	22.26	1.72	22.26m @ 1.72 %
PDRCD319	199.25	221.5	22.27	1.49	22.27m @ 1.49 %
PDRCD320	215	216	1	1.38	1m @ 1.38 %
PDRCD320	210	211	1	1.1	1m @ 1.1 %

Appendix 3 – Dome North Area, Pioneer Dome Project – JORC Code 2012 Table 1 Criteria

The table below summaries the assessment and reporting criteria used for the Heller, Davy, Cade South deposits and the Cade Mineral Resource estimate and reflects the guidelines in Table 1 of The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012).

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (eg cut Faces, 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.	• Reverse circulation (RC) samples from holes drilled from surface reported. • Single metre samples were collected in calico bags via a cone splitter directly from the cyclone on the RC drill rig. Three-metre composite samples for intervals that were considered to have low LCT element concentrations from the pXRF data were collected from the sample piles via an aluminium scoop. • HQ3 core samples from holes with RC pre collars. • pXRF analysis was undertaken on each 1m sample using a Bruker S1 Titan 600 handheld portable XRF analyser for internal use, and not reported herein.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	• Industry-standard reverse circulation drilling, using a face-sampling hammer with a booster and auxiliary compressors used to ensure dry samples. • RC: Individual one metre samples were collected using a cyclone and a cone splitter into sub samples of approximately 3.0kg weight, the cyclone was regularly cleaned to minimise contamination. • Industry-standard HQ3 triple tube diamond core drilling using a diamond-set cutting bit. • Duplicate samples (RC only) and Certified Reference Standards were inserted at regular intervals to provide assay quality checks. The standards and duplicates reported within acceptable limits. • Samples are considered 'fit for purpose'.
	• Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	• RC drilling was used to obtain 1 m samples from which approximately 3.0 kg was sampled. • 3.0kg samples were crushed then split to produce a 100g sample which was pulverised by zirconium bowl pulp mill to nominal P80/75um to produce a standard charge for analysis. • Half core samples of lengths determined by geology vary in weight. • Lithium exploration package of elements: analysed by a four-acid digestion with a Mass Spectrometer (MS) determination (Intertek analysis code ZR01 / 4A Li MS-48). The quoted detection limits for this method are a lower detection limit of 0.1ppm and an upper detection of 5000ppm Li. Most other elements have a similar analytical range. Any over range samples were re analysed by a sodium peroxide zirconium crucible fusion with a detection range of 1ppm to 20% Li.
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).	• Reverse Circulation Drilling, 4.5-inch drill string, 5.25 – 5.75-inch face-sampling hammer, auxiliary and booster compressors used to exclude ground water. • HQ3 standard core drilling.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed.	• During RC drilling the geologist recorded occasions when sample quality is poor, sample return was low, when the sample was wet or compromised in another way. • During diamond drilling the core recovery was measured and recorded from every drilled core run and compared against the drillers core blocks of known drill depths.
	• Measures taken to maximise sample recovery and ensure representative nature of the samples.	• Sample recovery is good for RC drilling using the equipment described. • RC Sample recovery is mostly under the control of the drill operator and is generally influenced by the experience and knowledge of the operator. • Sample recovery for core drilling is usually very high. HQ3 triple tube enables better representation of the core and measurable recovery. • Core measurements enable core recoveries to be calculated and form part of the QA/QC record.
	• Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• Because the sample recoveries are assumed to be high, any possible relationship between sample recovery and grade has not been investigated.
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.	• All holes were logged in full and fields captured include lithology, mineralogy, sulphide abundance and type, alteration, texture, recovery, weathering and colour. • All diamond drill holes were orientated with reference to bottom of the hole and geotechnically and structurally logged for recovery, RQD, fracture frequency and alpha/beta measurements on oriented core. • SG measurements were acquired on all rock types of half core samples using the Archimedes water submersion method. • The detail captured is considered high and fit for purpose.
	• Whether logging is qualitative or quantitative in nature. Core (or costean, Face, etc) photography.	• Logging is qualitative but includes quantitative estimates on mineral abundance. • Qualitative litho-geochemistry based on pXRF analyses is used to confirm rock types. • A representative sample of each RC drill metre is sieved and retained in chip trays for future reference. •
	• The total length and percentage of the relevant intersections logged.	• The entire length of the drill holes were geologically logged.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • 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.	• RC drilling - Individual one metre samples were collected via a cone splitter directly attached to the cyclone dry and wet. Individual samples were approximate 3.0kg. The bulk residue was laid out in order on the drill pad. • Individual RC drilling metre samples of the pegmatite (target zone) were submitted to the laboratory. Three metre composites were collected for the remainder of the drill hole and sent to the laboratory. • HQ3 diamond core from the pegmatite (target zone) was half cut then quarter cut from one half only for lab submission leaving three quarters of the core in the core tray for future work. Sample length was dependent on geological contacts and ranged from minimum 20cm to maximum 120cm. • The sample collection, splitting and sampling for the types of drilling used is considered standard industry practise.
	• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	• Cyclones are routinely cleaned after each 6m rod. • Geologist looks for evidence of sample contamination, which was recorded if seen.

Criteria	JORC Code explanation	Commentary
		• The use of booster and auxiliary compressors ensures samples are dry, which best ensures a quality sample. • The cut core was sampled with the right-hand side of the core always collected for chemical analysis, the orientation line was retained where possible.
	• Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.	• Standard Reference Material is included at a rate of 1 per 30 samples. • Duplicate samples were collected from a second calico sample taken directly off the cone splitter attached to the drill rig. Duplicates are routinely inserted at a 1 per 30 samples for RC drilling. • No duplicates were inserted for the diamond drill core. • Laboratory quality control samples were inserted in accordance with the laboratory procedure with the performance of these control samples monitored by the laboratory and the company.
	• Whether sample sizes are appropriate to the grain size of the material being sampled.	• The sample size is considered industry-standard and appropriate for the style of deposit being sampled.
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.	• The sample preparation and assay method used is considered standard industry practice and is appropriate for the deposit other than: • A zirconium bowl is used to grind the sample to be analysed to minimise Fe contamination for the mineralised pegmatite samples.
	• For geophysical tools, spectrometres, handheld XRF instruments, etc, the parametres used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	• Pioneer owns a Bruker S1 Titan 600 handheld XRF instrument which it used to provide the geologist with basic, qualitative litho-geochemistry data and may be used to assist with selecting zones for sampling. Zones have been selected due to elevated caesium, niobium, tantalum, gallium, rubidium, thallium or tin. • Intervals during RC drilling identified as not obviously mineralised have been sampled with three metre composites. • Standards and blanks are routinely analysed with the Bruker to ensure the instrument is operating as expected and correctly calibrated.
	• 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.	• Standards and laboratory checks have been assessed. The standards show results within acceptable limits of accuracy, with good precision. Internal laboratory checks indicate very high levels of precision.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes.	• Significant intersections are calculated by experienced staff with these intersections checked by other staff. • No holes have been twinned.
	• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	• Pioneer has a digital SQL drilling database where information is stored. • The Company uses a range of consultants to load and validate data and appraise quality control samples.
	• Discuss any adjustment to assay data.	• There has been no adjustment to any 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.	• The collar locations of the holes have been accurately surveyed by a licenced surveyor using an RTK differential GPS. • Downhole surveys were collected every 10m from surface to bottom of hole by the AXIS Mining Technology north seeking gyro tool, surveys were carried out by an experienced drilling operator.
	• Specification of the grid system used.	• MGA94 (Zone 51).

Criteria	JORC Code explanation	Commentary
	• Quality and adequacy of topographic control.	• Topographic control is by RTK DGPS, carried out by a licensed surveyor. • A surface DTM was created locally using the surveyed drill collars.
Data spacing and distribution	• Data spacing for reporting of Exploration Results.	• Exploration RC drilling was drilled on panels spaced between 40m and 160m apart with drill holes 40-80m apart, dependent on the size of the target area. • Diamond drilling at the Cade Deposit was spaced 80m from existing drill panels with holes spaced 80m apart.
	• 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.	• A Mineral Resource estimate has been completed for the Cade Deposit and classified as Inferred. • Mineral Resources are not being reported for the other prospects.
	• Whether sample compositing has been applied.	• Sample compositing has been applied for the reported assays for RC drilling. • Diamond drilling assays are geology dependent and sample intervals range from 10cm minimum – 160cm maximum.
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 and reported if material.	• The strike of the mineralisation at the Cade Deposit is interpreted to be broadly north-south, and dipping east, therefore holes have been drilled at -60° towards 270^0 to intersect the mineralisation as close to perpendicular as possible. • Down hole intersection widths are estimated to closely approximate true widths based on the interpreted dip of the pegmatite bodies and the orientation of the drilling.
Sample security	• The measures taken to ensure sample security.	• Pioneer uses standard industry practices when collecting, transporting and storing samples for analysis. • Drilling pulps are retained by Pioneer off site.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Sampling techniques for assays have not been specifically audited but follow common practice in the Western Australian exploration industry. • The assay data and quality control samples are periodically audited by an independent consultant.

Section 2 - Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code 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	• The Pioneer Dome drilling reported herein is entirely within E15/1515 which is a granted Exploration Licence. • The tenement is located approximately 60km N of Norseman WA. • Pioneer Resources Limited is the registered holder of the tenement and holds a 100% unencumbered interest in all minerals within the tenement. • The tenement is on vacant crown land. • The Ngadju Native Title Claimant Group has a determined Native Title Claim which covers the Pioneer Dome project.

Criteria	JORC Code explanation	Commentary
	• 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.	• At the time of this Statement E15/1515 is in Good Standing with no known impediments to Pioneer's operations within the tenement.
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• There has been no previous lithium exploration drilling or sampling on the Pioneer Dome Project other than by Pioneer Resources Ltd. Previous mapping by the Western Australian Geological Survey and Western Mining Corporation (WMC) in the 1970's identified several pegmatite intrusions however these were not systematically explored for Lithium or associated elements.
Geology	• Deposit type, geological setting and style of mineralisation.	• The Project pegmatites are consistent with records of highly differentiated Lithium Caesium Tantalum (LCT) pegmatite intrusion. This type of pegmatite intrusions are the target intrusions of hard rock lithium deposits. The Cade Deposit and reported lithium occurrences are considered part of the LCT Pegmatite group and Albite-Spodumene Type.
Drill hole Information	• 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, including 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 depth plus hole length. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	• Refer to Appendix 1 of this announcement.
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. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Li_2O intercepts calculated using 0.5% cut off with a maximum 3m internal dilution and no external dilution typically applied except where drill hole logging (e.g. continuous pegmatite) and assays indicate wider internal dilution is warranted. • Higher grade intervals calculated using 1.3% Li_2O cut off. No upper cuts applied. • There are no metal equivalent values reported.
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 lengths are reported in the Appendices attached to ASX announcements which list drill hole statistics. • The current geological interpretation, based on drilling and geological surface mapping, suggests that the true widths approximate the down hole widths.

Criteria	JORC Code explanation	Commentary
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Refer to figures in this report.
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 reporting of Exploration Results.	• Comprehensive reporting of drill details has been provided in Appendix 1 of this announcement.
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.	• All meaningful and material exploration data has been reported.
Further work	• The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• Planned further work includes geological modelling – 3DM update at Cade and on new spodumene and pegmatite discoveries. • First stage metallurgical test work at Cade. • Extensional and exploration drilling for lithium and potential co-products within the Pioneer Dome Project.