APPENDIX I   GRANTS PIT STERILISATION REPORT

Core Exploration Ltd

Grant's Pit

Sterilisation Report

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INNOVATION IDEAS CONCEPT

Executive Summary

In July 2018, BUXTON INNICON Pty Ltd (Innicon) was approached by B Duncan of Core Exploration (Core) to provide a report to understand whether the proposed Grant's Pit void, post open pit mining activities, should be backfilled and if so, would any sterilisation of the resource beneath the Grant's pit occur.

Below is a summary of findings for the main areas covered during the study.

Literature Study

Innicon is not aware of any other sterilisation studies for the Grant's Mine. During the study Innicon had access to the Hydrology Report by CloudGMS to be used for the Feasibility Study, the life of mine mining and ore production schedule, the Pre-feasibility Study Optimisation Report by Proactive Mining, various plans and site layout files including the waste rock dump and industry examples of the cost and methodology used by others for the backfilling open pit voids.

Pit Backfill Methodology

There are likely 2 cost competitive methods viable to backfill the Grant's pit void being Method 1 – Digger and truck fleet with dozer push, and Method 2 - Digger with mobile conveyor system and dozer push. All the other methods appear unviable due to a combination of the separation distances between the WRD and pit centroids, particle distribution and sizing, or cost.

A reasonable amount of site infrastructure post LOM production and mining will be required to support a pit backfilling operation including on site offices, road access, services and water for dust suppression.

The site diversion bund will need strategic decommissioning if the waste material is being used for pit backfill.

Backfill material

There is theoretically a small deficit of total mined waste for pit backfilling (15.7 MLCM for a 15.8 MLCM void) not including any cover material for water shedding for the pit footprint.

There is actually a deficit of backfill material up to 2.1 MLCM (best case) or 5.9 MLCM (likely case if waste for 2 x TSF Cells is required to remain in place) due to 2.0 MLCM of waste already committed to other critical areas like water storage dams and access roads and diversion bunds.

Available waste for pit backfilling includes waste used to hold and eventually encapsulate the 2 x TSF's in the WRD (3.7 MLCM).

Climate

Due to the nature of the climate in the NT, backfilling the pit is assumed to be viable for 6 months of the year in the dry season. Wet season climate is regarded as unsuitable for backfilling due to the potential for tiphead subsidence due to mass material sliding.

The pit dewatering infrastructure (e.g. power, pumps, piping, dams, roads etc) will be required to ensure that the pit base is reasonably dry near the live tip face toe out point due to ground water ingress and surface water pit wall runoff.

The total time to safely backfill the pit considering climate conditions will be up to 9.8 years post the end of processing.

Tailings Storage

To re-mobilise and re-establish the TSF from its current proposed location (encapsulated within the WRD), would cost up to an additional $1.7M or an increased pit backfill placement cost of $54.7M (up from $53.0M).

The establishment of a new TSF as an alternative to the proposed WRD encapsulated option would increase the ML disturbance area by up to 25 ha.

Scheduling

An extension to the LOM Schedule and associated fixed overheads will occur if backfilling activities are required. There would need to be more investigation into the impact on the LOM schedule taking into consideration and special dumping and storage requirements for both tailings and waste material that would likely be required.

Underground Mining

If the pit is backfilled, the only way the resource beneath the pit can be access is from the surface either by a surface decline or via a shaft. If a decline option is considered compared to a portal access from deep within the pit void, the additional cost to establish a twin decline would be $20M.

Future Mining

If the Grant's pit is backfilled, the void cannot be used as a water storage for future mining in the area. Core have identified multiple potential Lithium resources within a 25km radius of Grant's. Initial groundwater studies (Knapton / Fuller 2018) show that there is limited water available in the region. Historically there are a few bores with low yields that would not be suitable to support future mining.

Any dams in the near vicinity of Grant's, such as Observation Hill Dam, would themselves not have sufficient storage capacities to support future mining activities.

If the Grant's pit is backfilled, there is limited potential to undertake a future pit "cutback" to access further ore already delineated at the base of the pit but currently not economic.

Environment and Community

If the pit void is backfilled, there will be a deficit of backfill material which will result in a pit lake. It is unknown if community wish for a final amenity that provides for a commercial or recreational use post mine closure.

Mine Closure

In order to achieve a water shedding final landform over the pit footprint, a subsidence of 3m of the pit backfill has been assumed and a final surface of 1 in 100 sloping outwards from the pit centre has also been assumed. This has resulted in an additional 1.2 MLCM of material required for backfilling and has been included in the pit volume totals.

There is a deficit of backfill material in order to achieve a water shedding structure. This will result in a final landform of a pit lake.

A final landform of a pit lake will require additional erosion sediment controls and drainage structures infrastructure to manage surface water ingress and runoff estimated at $0.75M noting the cost to maintain the lake perpetuity has not been costed.

Economic Analysis

Core have indicated that the NPV for the Grant's project would be $140M with an IRR of 142%. Innicon notes that a pit backfilling cost of $53M obviously reduces both the NPV and IRR by a small margin without making the project unviable noting that this may not reach internal Core project return hurdles.

Core have also indicated that the Grant's underground NPV would be much less than the Open Pit and yet to be finalised. Innicon notes that if the pit were to be backfilled, then, the cost of developing a decline from surface as an alternative to starting a decline from a nominal depth from surface of 162m from within the pit, would be and additional $20M which would not meet Core's internal hurdle rate. In Core's view the development of the underground resource beneath the Grant's pit would not be considered if pit backfilling was required.

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1   INTRODUCTION

1.1   Scope

Innicon was approached by B Duncan (Core) to provide a 'Sterilisation Report" to understand whether the proposed Grant's Pit void, post open pit mining activities, should be backfilled. The study was to include a better understanding of:

- Pit void backfilling methodologies

- Climate

- Tailings storage

- Work, Health and Safety

- Underground mining

- Mine closure

- Environmental and Community

- Economic analysis

1.2   Objectives

The aim of the "Sterilisation Study" was to better understand any impacts and consequences due to backfilling the Grant's open pit void and provide Core with conclusions and recommendations.

1.3   Guidelines

1.3.1   Project Methodology

Innicon used Core's current LOM Schedule (based on a pending Definitive Feasibility Study to be released sometime in 2019) and supporting physicals from a recent tender process, current pit void backfilling methodologies and cost estimates from industry (including Innicon's own experience), and various reports including water modelling reports, to support the Sterilisation Study.

Innicon's approach was to categorise a backfill inventory made up of tailings, waste rock and other material used for site surface infrastructure. Once the inventory was established, volumes for the varying types of backfill enabled costs to be worked up and differing backfill combinations to be determined.

The pit void volume was calculated from the LOM Schedule (total volume mined from the pit) and distances from the centroid of the WRD to the centroid of the pit were tabled for inputs to calculate the cost of material placement and operational logistics.

Innicon understood that Core's preferred methodology to place material into the pit was using the existing mine fleet (or similar) as well as considering any alternatives if they appeared to be a better solution.

As part of the Study, Innicon assessed the impact and consequences that backfilling the pit would have on:

- any potential to exploit any underground resource beneath the pit;
- mine closure goals;
- work, health and safety of people and plant during backfill operations;
- tailings already placed; and
- overall economics of the project

Once the above was formulated, a series of approaches was finalised and a SWOT (in the form of Strengths and Weaknesses) carried out for each.

Innicon then provided Conclusions and recommendations to Core.

1.4   Terms and Definitions

Au	-	Gold
BCM	-	Bank cubic metre (in this case the in-situ volume with no swell factor applied)
Core	-	Core Exploration Ltd
DMS	-	Dense Media Separation process to generate a saleable lithium concentrate
Digger	-	Nominal +100 tonne class excavator commonly used in open pit mining
DFS	-	Definitive Feasibility Study
Dozer	-	Bulldozer used to push waste, rock, ore or any loose material around
EIS	-	Environmental Impact Statement
IRR	-	Internal Rate of Return
JORC	-	Australasian Code for Reporting of Mineral Resource and Ore Reserves
Grant's	-	Proposed Grant's mine site
Innicon	-	Buxton Innicon Pty Ltd (Sean Buxton)
LCM	-	Loose cubic metre volume (includes a swell factor of 30%)
LOM	-	Life of Mine
ML	-	Mining Lease (application or other) granted by the NT government
MLCM / MBCM	-	Millions of either LCM or BCM

NPV	-	Net Present Value
NT	-	Northern Territory
PFS	-	Pre-feasibility Study
Pit	-	Grant's Open Pit void
ROM	-	Run of Mine (relation to ROM Pad) where mined ore is stacked ready for processing
Study	-	this Sterilisation Study within this report
Swell Factor	-	Material expansion factor (30% for Core), when once excavated then placed
Truck	-	Nominal +70 tonne class dump truck commonly used in open pit mining
TSF	-	Tailings Storage Facility
UG	-	Underground
Waste	-	Waste rock from the waste rock dump
WRD	-	Waste Rock Dump which encapsulates 3 x TSF cells

1.5   Consultants used

Sean Buxton, Managing Director Buxton Innicon Pty Ltd - Experienced Operations / General Manager in both Open Pit & Underground Mines for over 28 years. Strong operations and technical professional specialising in Gold and and Base Metals, Feasibility Studies, greenfields mine startup, Heap Leach, Contractor and Project Management, Intellectual Property (IP) and Research and Development (R&D).

1.6   Disclaimer

The information contained in this document is solely for the use of the client(s) identified on the cover sheet, and for the purpose for which it has been prepared. Buxton Innicon Pty Ltd does not accept any liability for any claim arising out of or in connection with any of the information contained within this document. No party or individual shall copy, modify or publish any part of this document without written authorisation from Buxton Innicon Pty Ltd.

1.7   Location and Ownership

Core's "Finniss Lithium Project" encompasses a large landholding in the Bynoe Tin Tantalum-Pegmatite Field. The Bynoe field is one of the most prospective areas for lithium in the NT and has many similarities to Greenbushes in WA, one of the world's largest spodumene deposits.

The Finniss Lithium Project (Including the Grant's Lithium Resource) is located approximately 32km west of Darwin on the Cox Peninsula area.

1.8   Tenements

The "Grants Lithium Resource" is located on Core's 100% owned exploration tenement EL29698 adjacent to the Cox Peninsula Road, approximately 25 kilometres in a straight line from Darwin, the capital of the NT. A mineral lease ML31726 covering the proposed activities is under application.

1.9   Project History

Core's, Northern Territory (NT) Lithium Project Includes the Mount Finniss Tin Tantalum Mine – the largest historically producing tin and tantalum pegmatite mine in the NT, and a further 25 historic tin tantalum pegmatite mines in the lithium rich Bynoe pegmatite field.

Core has been working towards both a PFS and DFS since late 2017. As part of the approvals' process, this study will form part of a submission to relevant NT Regulatory bodies and a recent EIS Supplement and is required by early March 2019.

2   LITERATURE STUDY

2.1   Introduction

There have been no known studies / reviews for sterilisation of the proposed pit undertaken prior to this study. The only study that will be referred to was groundwater modelling study.

2.2   Ground Water Modelling

The following discussion re groundwater and further discussion in the document re a pit lake is from the DRAFT Report v0.2 by Knapton / Fuller, 2018, (Cloud GMS) – "Development of a Groundwater Model for the Grant's Lithium Project" which outlined the development of a numerical model to assess groundwater impacts due to the mining of the pit.

The aquifer beneath the pit is a is a fractured and weathered rock aquifer with minor groundwater resource. Generally, there are few groundwater bores or users within 13km of the pit with historical bore yields in the area less than 0.5 L/s with groundwater intersected in the base of the weathered zone and where drilling intersects fracture zones.

Depth to groundwater ranges from less than 1 m in the wet season up to 5.5 m in the dry season. The main recharge mechanism is expected to be where water is added to groundwater through the percolation of rainfall over a widely distributed area. Evapotranspiration and diffuse discharge are likely to be the key groundwater discharge mechanisms. Groundwater in the shallow laterite and alluvial sediments is very fresh (<25 EC) and has similar chemical characteristics to rainfall (Knapton / Fuller, 2018).

Modelling indicates that generally, the pit void during the LOM and pit lake post closure, will not adversely affect groundwater levels or water quality.

3　PIT BACKFILLING

3.1　Introduction

There are several methods that could be used to backfill a pit void using the WRD as a source for material summarised below:

1. Digger and truck fleet with dozer push

2. Digger and mobile conveyor system with dozer push

3. Long Dozer push with large equipment

4. Hydraulic transfer

The author will describe the impacts, the consequences and undertake a brief Strengths and Weaknesses for each method.

3.1.1　Method 1 - Digger and truck fleet with dozer push

This method is a common method for the transfer of bulk waste rock material from a WRD to a pit edge for the purposes of backfilling. The method simply employs a digger and truck fleet most likely the same as that used for the mining of the pit. Mining fleet typically used for this application would consist of:

- 1 x +100 tonne excavator / digger

- 3 x 777F CAT Fixed body dump trucks

- 1 x 16M CAT Grader

- 2 x D10T CAT Dozers

- Ancillary support mobile plant including service truck, light vehicles

- Supporting technical, spotters and supervisory staff

For the purpose of this study, the productivity and cost workups assumed the digger to work from the WRD centroid and the trucks tipping at the pit centroid – nominally 1km. Two dozers were used with one supporting the digger on the WRD whilst the other dozer managed the live pit edge tip head. The grader ensures that running tracks for the trucking fleet is on grade, as smooth as can be on dumped, rough waste rock surfaces and clean of any debris that falls from the trays of trucks.

All backfilling activity was assumed to be done on dayshift only to ensure that there is full visibility of all areas during daylight hours. Visibility of tipheads is critical given this particular live tip face would be as deep as 225m noting that any early tell-tale signs of cracking at the tiphead, slumping of the live tip face or changes in tipping conditions at depth can only be seen in clear daylight. The tip face stands at a nominal 37 degrees which is the typical angle of repose for rock waste mixtures of fresh and oxide.

Prior to any work beginning a plan would be established as to the excavation sequencing on the WRD and the tiphead locations at varying areas around the pit. The plan would be risk assessed for environment and safety with all identified controls put in place to ensure that there is minimal chance of any incident.

The typical cycle for backfilling would be as follows:

- Daily inspections of the tip head at the edge of the pit for cracks or subsidence and to ensure that safe distances are maintained from where trucks will be tipping and where the live tiphead edge would be.

- Daily inspections of the pit floor, ramp and walls as well as the base of the live tip head

- Daily inspection of the WRD including to ensure that upcoming excavations will be stable, that the material being hauled is suitable (e.g. not too bog; particles too fine; too much moisture content), traffic management plan for the area is appropriate, and that excavations are according to a progressive established plan

- Once inspections are completed, the truck tipping location is setup with markers (e.g. coloured painted 44 gallon drums) and the excavation area on the WRD is setup with traffic delineation and survey marks for any limits to excavation

- Before tipping begins, a spotter is positioned at a point where they are in full view of the dozer operator, tiphead, tip face, pit ramps and walls, isolated from mobile equipment and in radio contact with the backfilling fleet. The spotters role is to immediately notify the truck and dozer operators of any changing condition that may lead to a sudden slumping or subsidence event.

- Diggers then establish a "dig face" up to 3.0m high and load the trucks

- Trucks then haul the waste material up to 1km on-way to the designated tipping point which is managed by the dozer and also marked the delineators

- Once the load is dumped, the dumped waste material is pushed to within a designated distance from the tiphead edge (e.g. 5m) noting that the dozer operator must maintain a set volume of material to be always in front the dozer blade which will in effect "shunt" the front material over the edge and down to up to 225m in a controlled manner. This material in front of the blade also will enable the dozer to slow down in the event of tip face subsidence.

- At the end of the shift, the area near the tiphead face is barricaded off (or isolated), all working areas left in a safe and stable condition and a survey done of the areas excavated and tipped to compare against the plan

- The cycle continues each dayshift as per the digging and tipping plan

Due to the tight, conical shape of the pit, the ramp sections which occur frequently on each pit wall as the pit gets deeper will be quickly "cutoff" as the live tiphead progresses both around the surface perimeter and outwards towards the pit centroid. This will mean that inspections of the base of the tip face and in the pit floor will generally be done from the surface.

The type of material to be tipped into the pit will also need to be carefully monitored. Unsuitable material would include material that has too many fines, clays or too much moisture. These materials when tipped on a large tip face have the potential to form thin layers that act as a slipping surface and will result in the bulk of the waste rock material tending to "slide" or "slip" over these layers rendering tiphead areas unsafe for both dozing and truck tipping due and therefore increasing the potential of large scale subsidence or uncontrolled slumping.

It is preferable to have dry weather when tipping material over the edge into the pit. If material becomes too wet, the same issue of rock "slipping" over rock suddenly poses a potential for sudden subsidence as described above. Wet weather also results in water runoff from the pit walls ending up at the base of the pit which will also be the base of the tip face. This can create a dangerous condition where at up 225m down the tip face, the "toe out" point can become soft, waterlogged and weak and this will trigger a sudden slump or subsidence all the way to the area where personnel and equipment are working.

Although there is the potential for serious conditions to develop using this method, if the right critical controls are put in place, the chance of a sudden large slump or subsidence is reduced and the potential to harm or damage equipment is minimised.

3.1.2 Method 2 - Digger and mobile conveyor system with dozer push

This method would be suited for transfer of bulk rock material from the WRD to the pit over any distance. There is still a mobile equipment fleet required in addition to a conveyor – stacker system including:

- 1 x +100 tonne excavator / digger

- 1 x 777F CAT Fixed body dump trucks

- 1 x 16M CAT Grader

- 2 x D10T CAT Dozers

- Mobile screening plant

- Rotating stacker conveyor system

- Ancillary support mobile plant including service truck, light vehicles

- Supporting technical, spotters and supervisory staff

This method would employ less personnel but has the disadvantage of requiring a screening plant to ensure a constant, homogenous, medium sized feed prior to material entering the conveyor system. A digger would feed a mobile screening plant and move in a sequential order across the WRD. Any material too large for the conveyor – stacker would be screened off and would need further placement by the digger into a truck. A large amount of capital would be required to set up this method noting that the truck, grader and 1 x dozer would be under utilised compared to Method 1.

One advantage of this method over others is that there would be less interaction and exposure of personnel and equipment at the pit tiphead.

For the purpose of this study, this method was not used as the basis for costing or analysis although it does warrant further study.

3.1.3 Method 3 - Long Dozer push with large equipment

This method would be suited to a situation where the distance between the WRD centroid and pit centroid was less than 600m (CAT Performance Handbook ED47) for a very large dozer e.g. CAT D11. The method simply employs multiple very large dozers pushing rock waste side by side from the WRD to pit tiphead.

For the purpose of this study, this method was not viable for Grant's due to the large pushing distances and therefore not considered.

3.1.4 Method 4 - Hydraulic transfer

This method would be suited to a situation where the WRD was made up of mostly fines which would be transported as a slurry via a pipeline deposited into the pit.

For the purpose of this study, this method was not viable for Grant's due to the large amount of water required for pumping, the complex and capital prohibitive pit dewatering setup, and the fact that the WRD is made of mostly waste rock with and therefore not considered.

4 BACKFILL MATERIAL CATEGORISATION

Innicon has based the costings and backfilling discussion on Method 1 (above). There are several backfilling materials available for the pit as follows:

- Waste rock that has been mined from the pit during the LOM and dumped on the WRD with a swell factor typically of 30% (LCM) of the in-situ volume (BCM). The WRD would undergo some compaction as it was built but when remobilised again it assumed that the material tipped into the pit will be the same (LCM) and that no further swell occurs. Particle sizing will vary from very small (-5mm) to medium (5mm to 1m) and large (+1.0m).

- Tailings from the wet pre-screening of ore before it enters the DMS processing circuit. Particle sizing will be -0.5mm pumped from the thickener tank to the TSF cells

- Rejects from the DMS processing of ore that do not report as a lithium concentrate saleable product for Core but does contain lithium grade. Particle sizing -6mm.

Total waste mined from the pit is 12.1 MBCM or 15.7 MLCM (swell factor of 30%). The pit backfill inventory can be split as follows:

- 2.042 MLCM committed to roads, dams and other infrastructure but not TSF requirements (see *Figure 13*)

- 13.681 MLCM rock waste in the WRD and diversion bund

    o Note that of the waste remaining in the WRD includes waste committed to the base that forms the TSF cells and enough for a TSF cover on mine closure to ensure a water shedding structure remains totalling a minimum of 3.730 MLCM of – Innicon has not included any of these likely commits in the backfilling calculations

    o Included in the available waste is the diversion bund which would require strategic removal during pit backfilling to prevent site and pit inundation from surface flooding

Innicon has assumed that all of the WRD waste rock material (13.681 MLCM) is available for backfilling (net of tailings within the TSF) including any waste tied up with the 2 x TSFs. This assumes that the TSF cells can remain intact for mine closure - this is to be discussed in the Tailings Storage and Mine Closure sections and a potential fatal flaw for a filled pit with a water shedding structure.

With reference to *Figure 13*, it can be seen that there is a backfill material deficit (2.139 MLCM) i.e. not enough material to fill the pit without deconstructing all site infrastructure earthworks which include access roads and critical dams which are required to enable backfilling activities over a +6 year backfilling period.

5   CLIMATE

When considering using Method 1 for the pit backfilling, the weather will play in important role. In the NT, there is typically 2 main seasons a "dry" (from May to September) and "wet" (from October to April the following year).

Innicon will assume that the available time to backfill the pit as well as ensuring a safe live tiphead (i.e. minimal potential for mass rock to slip and cause sudden subsidence over a 225m long live tipping face) would be from mid April to mid October each year – a total of 6 months – generally the driest times in the NT (see Figure 6)

Assuming that there are 30 days available each month, an equipment availability of 95%, then this would mean 28.5 / days would be available for pit backfilling. As described above, pit backfilling would be best done on dayshift meaning 28.5 dayshifts would be available each month. This leaves 6 months with 28.5 days available for a total of 171 dayshifts available each year for backfilling in dry conditions. If an additional 30 days are added assuming some dry days either side of the dry season and also assuming that water can be pumped from the pit safely (also keeping the live tip face toe out dry), then the total annual dayshifts available would be 201 dayshifts per year.

The total expected shifts to backfill the pit are estimated at 1,963 shifts (see *Figure 12*) meaning that to completely fill the pit would take 9.8 years.

6   TAILINGS STORAGE

The WRD at Grant's is a more complex structure than normal waste rock dumps.

By end of Grant's LOM, the WRD will fully encapsulate 2 x TSF cells containing dewatered tailings from the feed preparation (wet screening) process prior to entering the DMS processing circuit (see Figure 7). The tailings particle sizes are nominally less then -0.5mm. In addition to encapsulated tailings, the WRD will store a larger fraction of -6mm "rejects" generated from the DMS process. The rejects are expected to contain lithium grade but not for consideration for Core for this LOM.

As described in Method 1 above, the tailings components of the WRD would not be considered for placement within the pit due to the high probability of slippery layers forming on the live tip face and therefore increasing the potential for a sudden subsidence of mass material. The rejects component would likely be separately stored for potential future processing (currently not being considered by Core).

Innicon has assumed the WRD encapsulating the 2 x TSF cells includes a 1.3m deep base upon which the cells themselves are constructed and would require at least 17.5m depth of waste rock cover not including a post stage of topsoil covering, contouring and seeding to establish a water shedding structure. The total waste that would be associated with the TSF would be 3.730 MLCM.

As discussed above in Backfill Material Categorisation, the waste associated with the TSF has been included in the available waste for pit backfilling – this assumption a fatal flaw for any mine closure water shedding structure over the pit surface footprint. If the TSF waste were to remain (likely requirement), this would mean the backfill material deficit which was 2.139 MLCM would increase to 5.870 MLCM – an amount that would mean leaving a pit lake rather than a water shedding structure.

If all the waste committed to encapsulate and form the base of the 2 x TSFs was used to replace the deficit, the cost would increase by greater than $1.0M (additional complexity of removal compared to excavating a WRD), and the tails would need to be remobilised and re-established into a new large TSF (not costed or included in the current LOM). Core currently has a very limited disturbance footprint on the ML and currently has no allowance for an additional TSF not encapsulated within the WRD. It would be estimated that from industry baseline data that a cost of $2.00 / tonne of tailings would be enough to re-establish a new TSF coming to an additional $1.2M (not costed or included in the current LOM).

7 SCHEDULING

It is unknown exactly what impact the backfilling of the void would have on the current LOM schedule except that it would be likely that the LOM duration would be extended to enable backfilling activities.

Any extension to the LOM schedule as it is currently will impact the NPV due to an extension of fixed overheads likely similar to that experienced during the production of concentrate given that a large portion of the mining fleet would need retaining to undertake backfilling activities.

8 UNDERGROUND MINING

Innicon understands that there is a lithium resource beneath the current Grant's proposed pit design (see Figure 9 – Excerpt from Core Exploration ASX Announcement 22 October 2018 showing underground potential at Grant's and Figure 10 – Excerpt from Core Exploration presentation to "Diggers and Dealers, WA 2018" showing underground potential at Grant's).

Any backfilling of the pit void at the end of the LOM would mean that access to any underground mine via a portal from up to 162m beneath natural surface (within the pit) would not be possible. Instead a 1,296m equivalent access via a decline from surface would be required.

In order to establish a 1,296m decline from surface (to a nominal 162m below surface), a second means of egress would be required noting a single decline would be beyond secondary ventilation limits. This means a primary exhaust fan would be required to be setup. The 2 options available would be a second (or return air) decline with a primary exhaust fan, or a ventilation shaft and primary exhaust fan. Innicon will work up costs for a second decline option.

Innicon has assumed that to access the underground orebody beneath Grant's, a 1 in 8 gradient twin decline developed from surface with 20m long truck loading, connection or infrastructure cuddies every 100m would be required. Total development metres to reach the equivalent 162m below the pit surface would be 2,851m. Additional ground support in the form of steel armoured tunnels (e.g. ARMCO) would be required to establish a surface portal. Most of waste committed to access roads and other infrastructure would still be required to support underground activities (see above discussion in Backfill Material Categorisation).

The total cost for the twin decline development and associated infrastructure would be $19.958M.

9   FUTURE MINING

If the Grant's pit is backfilled, there is limited potential to undertake a future pit "cutback" to access further ore already delineated at the base of the pit but currently not economic. The additional cost to excavate the waste from the pit would be at least double the $53.004M cost to place the waste into the pit estimated at $106M.

A recent pit optimisation shows that a pit depth of -205mRL is achievable given favourable economic conditions within reasonable sensitivity ranges. The current pit depth is -185mRL indicating that a pit cutback option for future mining would be an option given the right economic conditions.

10 ENVIRONMENT AND COMMUNITY

Innicon is not aware of the results of consultation with community re the preferred final amenity post mine closure. This report assumes that the community will not require the pit void for some other amenity (e.g. recreational purposes, commercial ventures etc) and therefore requires backfilling.

11 MINE CLOSURE

Innicon has assumed that there will be a deficit of material to completely fill the pit. This will mean that a water shedding final landform is not possible and a pit lake would result.

DRAFT Report v0.2 by Knapton / Fulton, 2018, (Cloud GMS) indicates that a pit lake will not adversely alter the groundwater flow regime generally. Innicon recommends further study in this area due to the shallow nature of the resulting pit lake compared to that referred in the report.

If the pit void is to be backfilled, the WRD would be classified as a "temporary structure" and would therefore not require progressive rehabilitation as all of the material within the WRD (net the tailings) would end up in the pit void.

Once a pit lake was established, there would still be a requirement for management of water that entered via surface runoff and additional surface water drainage and erosion and sediment control structures for the perpetuity of the lake – estimated cost up to $0.75M for construction with maintenance an additional cost. Innicon recommends further studies for design and costs associated with the setup and maintenance of pit lakes in the NT.

12 CONCLUSIONS AND RECOMMENDATIONS

12.1 Conclusions

12.1.1 Pit Backfill Methodology

There are likely 2 cost competitive methods viable to backfill the Grant's pit void being Method 1 – Digger and truck fleet with dozer push, and Method 2 - Digger with mobile conveyor system and dozer push. All the other methods appear unviable due to a combination of the separation distances between the WRD and pit centroids, particle distribution and sizing, or cost.

A reasonable amount of site infrastructure post LOM production and mining will be required to support a pit backfilling operation including on site offices, road access, services and water for dust suppression.

The site diversion bund will need strategic decommissioning if the waste material is being used for pit backfill.

12.1.2 Backfill material

There is theoretically a small deficit of total mined waste for pit backfilling (15.7 MLCM for a 15.8 MLCM void).

There is actually a deficit of backfill material up to 2.139 MLCM (best case) or 5.869 MLCM (likely case if waste for 2 x TSF required to remain in place) due to 2.042 MLCM of waste already committed to other critical areas like water storage dams and access roads and diversion bunds.

Available waste for pit backfilling includes waste used to hold and eventually encapsulate the 2 x TSF's in the WRD (3.730 MLCM).

12.1.3 Climate

Due to the nature of the climate in the NT, backfilling the pit is assumed to be viable for 6 months of the year in the dry season. Wet season climate is regarded as unsuitable for backfilling due to the potential for tiphead subsidence due to mass material sliding.

The pit dewatering infrastructure (e.g. power, pumps, piping, dams, roads etc) will be required to ensure that the pit base is reasonably dry near the live tip face toe out point due to ground water ingress and surface water pit wall runoff.

The total time to most safely backfill the pit, considering climate conditions, will be up to 9.8 years post the end of processing.

12.1.4 Tailings Storage

To re-mobilise and re-establish the TSF from its current proposed location (encapsulated within the WRD), would cost up to an additional $1.7M or an increased pit backfill placement cost of $54.704M (up from $53.004M).

The establishment of a new TSF as an alternative to the proposed WRD encapsulated option would increase the ML disturbance area by up to 25 ha.

12.1.5 Scheduling

An extension to the LOM Schedule and associated fixed overheads will occur if backfilling activities are required. There would need to be more investigation into the impact on the LOM schedule taking into consideration and special dumping and storage requirements for both tailings and waste material that would likely be required.

12.1.6 Underground Mining

If the pit is backfilled, the only way the resource beneath the pit can be accessed is from the surface either by a surface decline or via a shaft. If a decline option is considered compared to a portal access from deep within the pit void, the additional cost to establish a twin decline would be $19.958M.

12.1.7 Future Mining

If the Grant's pit is backfilled, the void cannot be used as a water storage for future mining in the area. Core have identified multiple potential Lithium resources within a 25km radius of Grant's. Initial groundwater studies (Knapton / Fuller 2018) show that there is limited water available in the region. Historically there a few bores with low yields that would not be suitable to support future mining.

Any dams in the near vicinity of Grant's, such as Observation Hill Dam, would themselves not have sufficient storage capacities to support future mining activities.

If the Grant's pit is backfilled, there is limited potential to undertake a future pit "cutback" to access further ore already delineated at the base of the pit but currently not economic.

12.1.8 Environment and Community

If the pit void is backfilled, there will be a deficit of backfill material which will result in a pit lake. It is unknown if community wish for a final amenity that provides for a commercial or recreational use post mine closure.

12.1.9 Mine Closure

In order to achieve a water shedding final landform over the pit footprint, a subsidence of 3m of the pit backfill has been assumed and a final surface of 1 in 100 sloping outwards from the pit centre has also been assumed. This has resulted in an additional 1.184 MLCM of material required for backfilling and has been included in the pit volume totals.

There is a deficit of backfill material in order to achieve a water shedding structure. This will result in a final landform of a pit lake.

A final landform of a pit lake will require additional erosion sediment controls and drainage structures and infrastructure to manage surface water ingress and runoff estimated at $0.75M noting the cost to maintain the lake in perpetuity has not been costed.

12.1.10   Economic Analysis

Core have indicated that the NPV for the Grant's project would be $140M with an IRR of 142%. Innicon notes that a pit backfilling cost of $53.004M obviously reduces both the NPV and IRR noting that it still may not meet internal Core project return hurdles.

Core have also indicated that the Grant's underground NPV would be much less than the Open Pit and yet to be finalised. Innicon notes that if the pit were to be backfilled, then, the cost of developing a decline from surface as an alternative to starting a decline from a nominal depth from surface of 162m from within the pit, would be and additional $19.958M which would not meet Core's internal hurdle rate. In Core's view the development of the underground resource beneath the Grant's pit would not be considered if the pit was backfilled.

13 BIBLIOGRAPHY

Duncan, B. (2019)	LOM Schedule spreadsheet (excel) - CoreEx_FS_LOM Schedule_RevE.xlsx
Knapton, A. and Fulton, S. (CloudGMS) (2018)	Development of a Groundwater Model for the Grants Lithium Project Draft Version 0.2
Buxton, S. (2018)	Industry references including backfilling of an open pit in NSW
Buxton, S. (2018)	1800811_Schedule of Rates Tables - Mine Services Agreement.xlsx
Millbank, J. (Proactive Mining) (2018)	Grant's Lithium Project – Prefeasibility Optimisation Study for Core Exploration, May 2018

APPENDIX 1 – INTRODUCTION
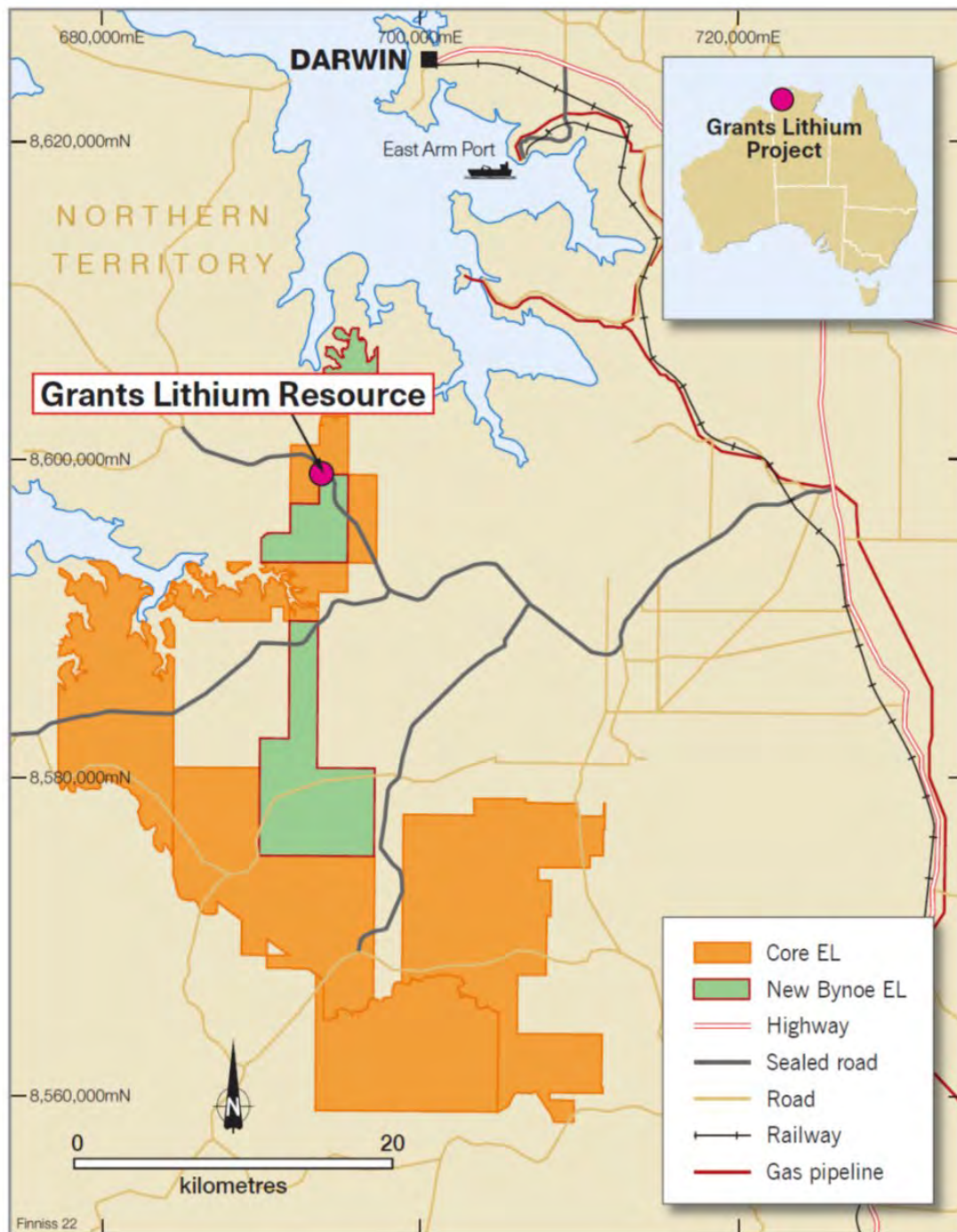
Figure 1 - Grant's Lithium Resource

Figure 2 - Overview of Mine Site relative to Darwin
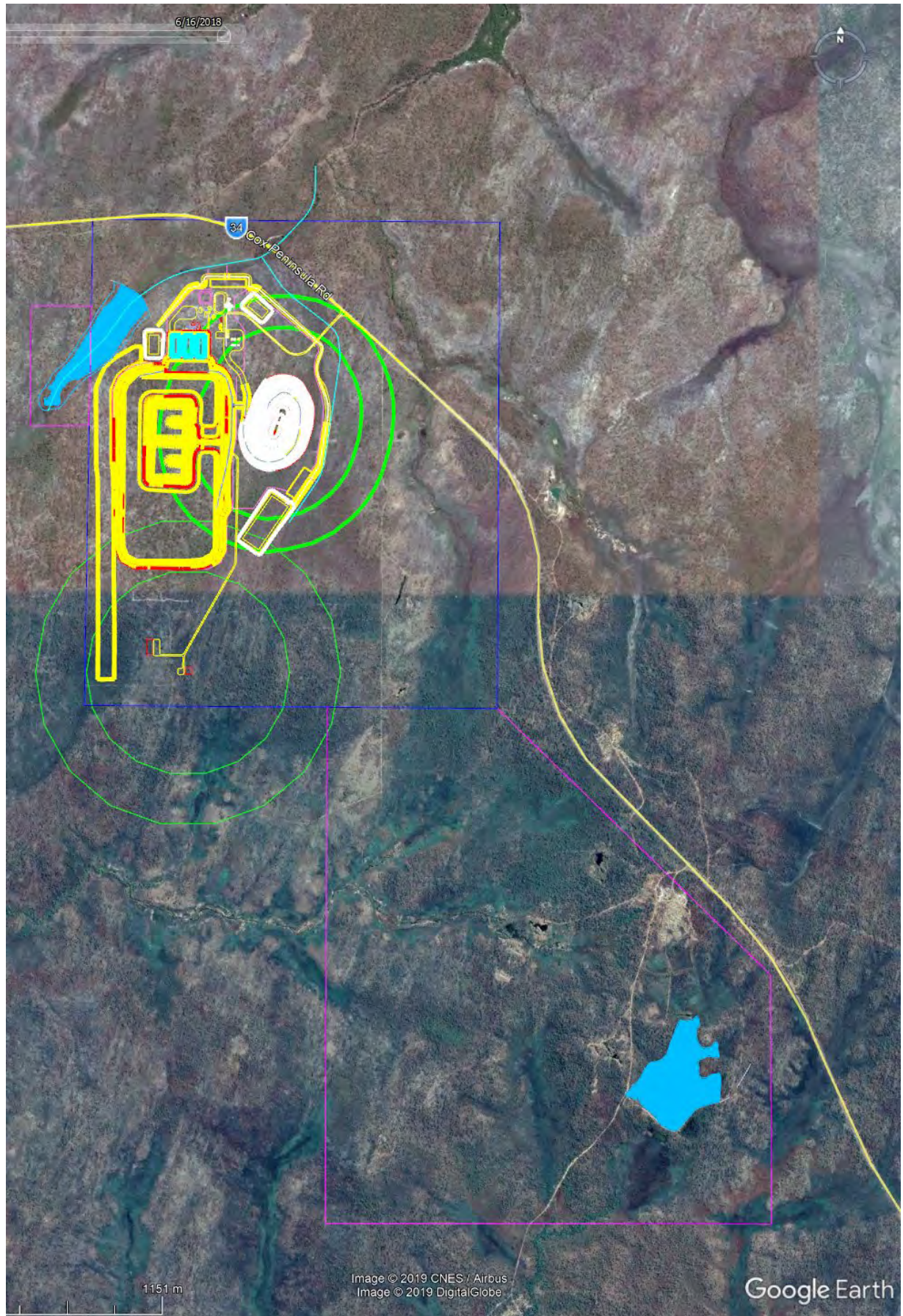
Figure 3– Access Road take-off points from Cox Peninsula Rd and overall site layout (updated Feb 2019) at Grant's

APPENDIX 2 – PIT BACKFILLING
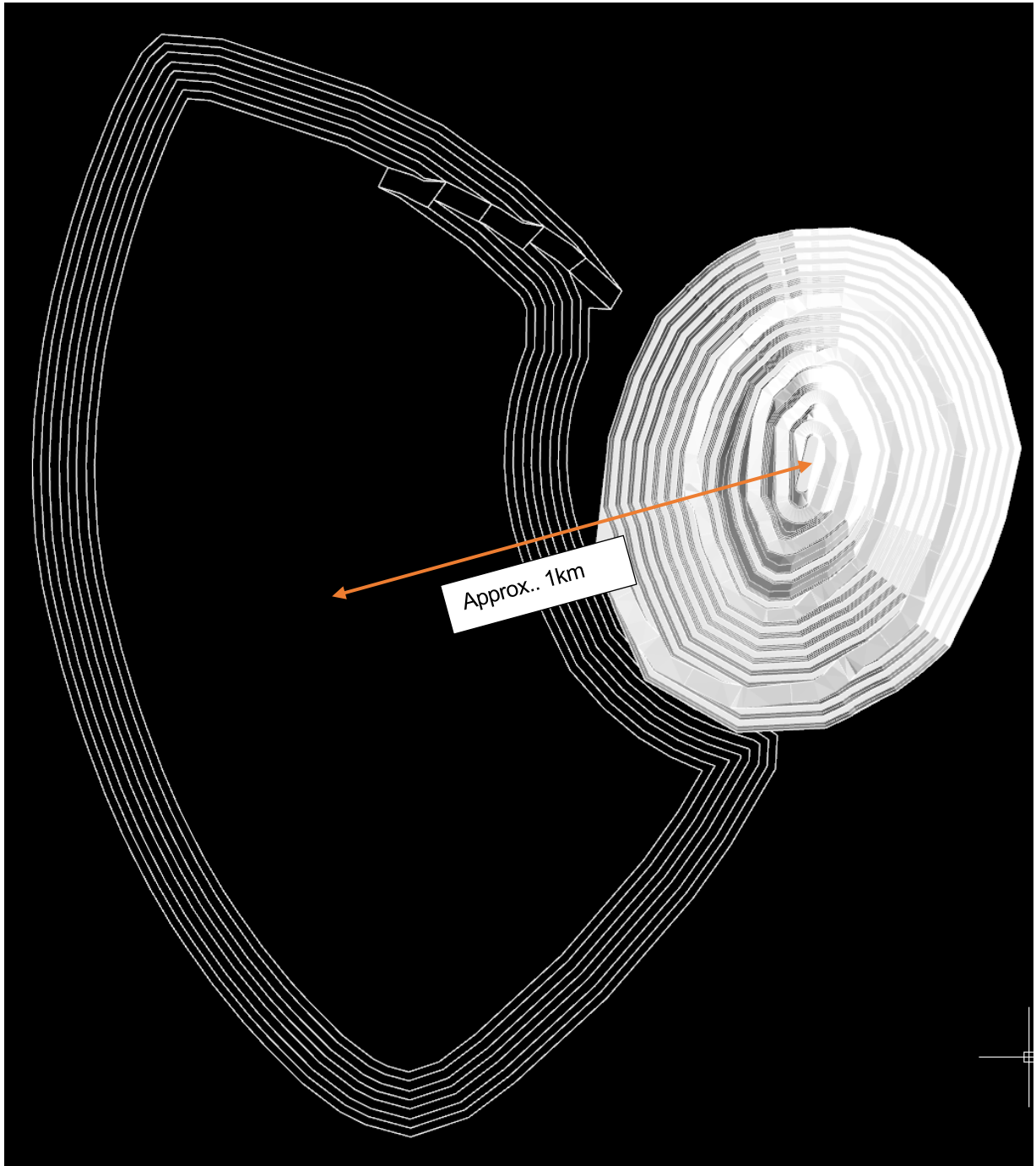
Figure 4 – Nominal distance between Centroids of the WRD and Pit (Generic methodology using PFS WRD and Pit shape) noting no material changes compared to updated designs
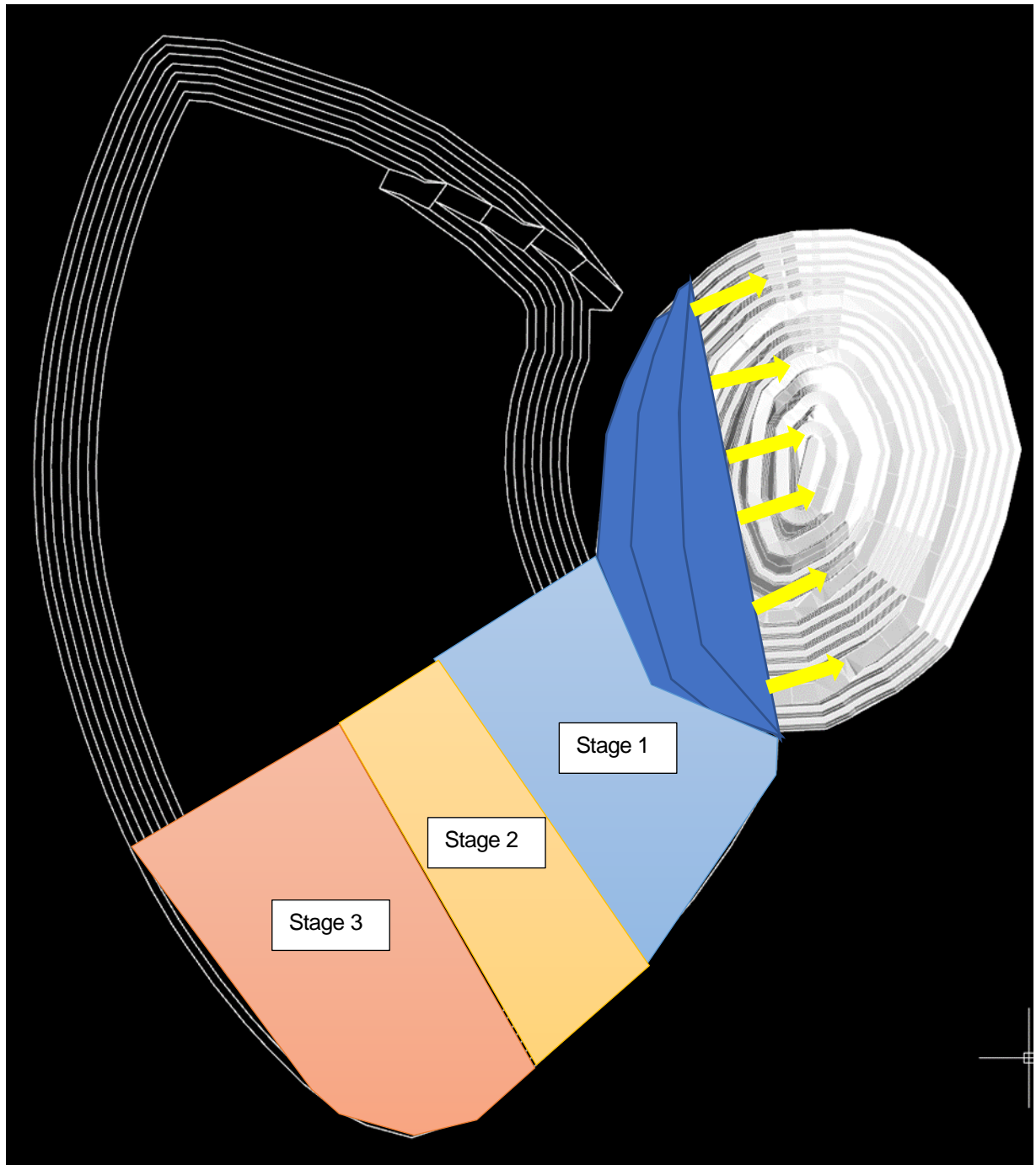
Figure 5 – Typical Sequencing of backfilling (Generic methodology using PFS WRD and Pit shape) noting no material changes compared to updated designs

APPENDIX 3 - CLIMATE
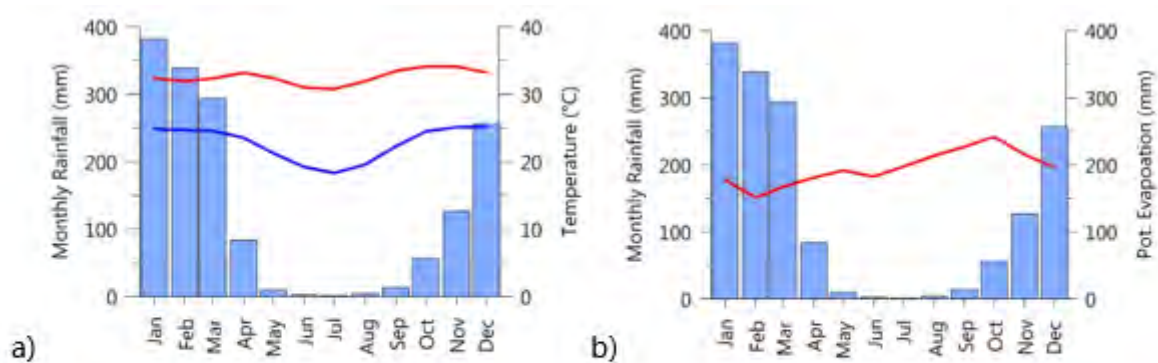
Figure 2-2 Average monthly rainfall compared to average max and min temperatures and average monthly rainfall compared to monthly potential evaporation for the period 1900-2018 (SILO Data Drill).

Figure 6 – NT average rainfall, temperatures and evaporation rates (Knapton / Fuller Grant's Lithium Groundwater Modelling Study Report v0.2 DRAFT 2018)

APPENDIX 4 – TAILINGS STORAGE
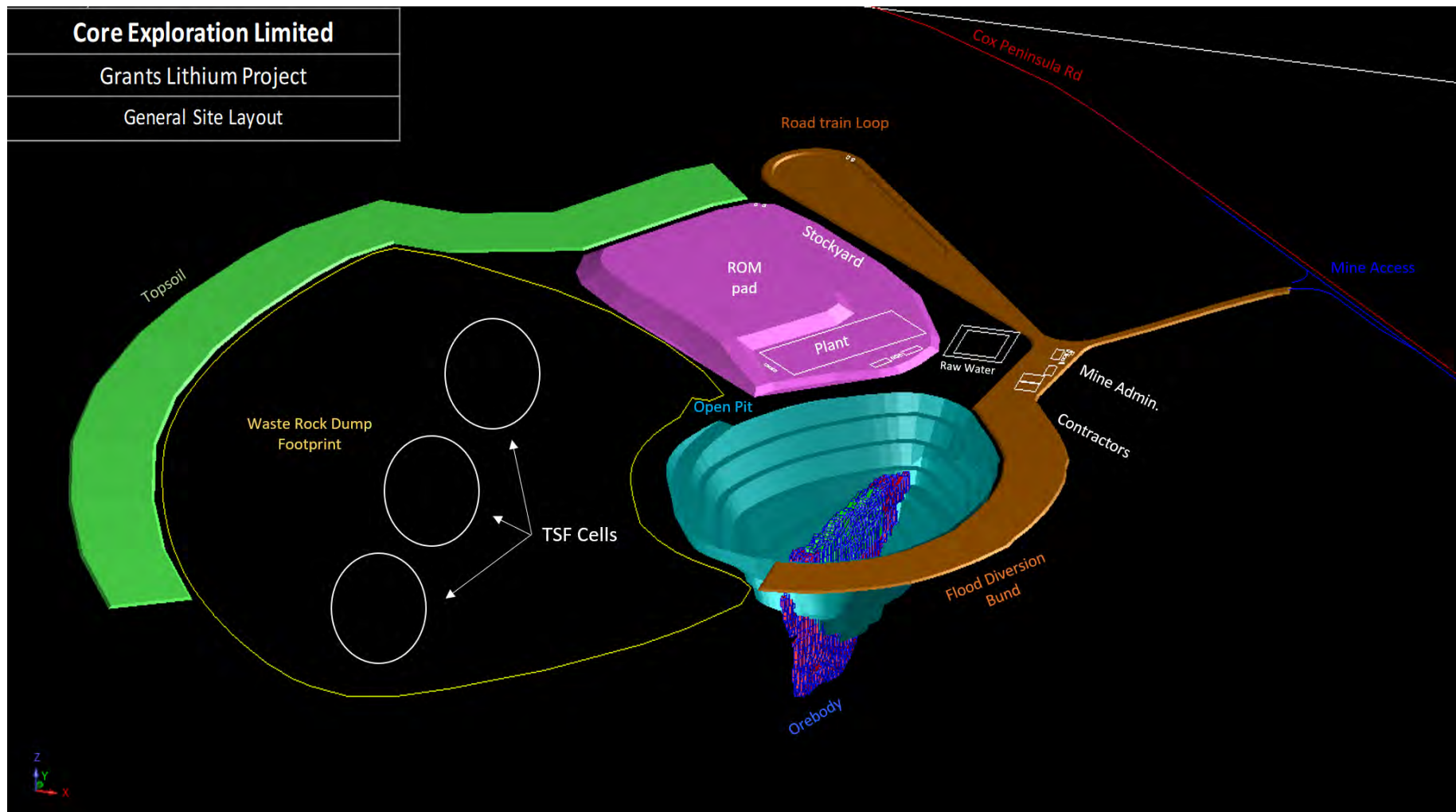
Figure 7 – Grant's site layout showing TSF location within WRD

APPENDIX 5 – UNDERGROUND

Underground Decline from Surface		Units	Comments
Pit Depth	162	m	Portal location within 40m from pit base of pit if pit not filled
Fresh air decline from surface			
Gradient	0.125		1:8 down
Decline	1296	m	
Cuddy Length	20	m	
Cuddy interval	100	m	Includes pump cuddy, refuge chamber, connections to return air decline etc
Cuddy total	259	m	
TOTAL fresh air development	**1,555**	**m**	
Return air Decline to surface			
Decline	1296		Second means of egress and exhaust for long decline beyond secondary ventilation limits
TOTAL return air development	**1,296**	**m**	
Development Cost $	7,000	$ / m	Include labour, equipment, pumping, vent, fans, services, 30m armco tunnel at surface etc
TOTAL Cost $	**19,958,400**		

Figure 8 – Underground decline from surface calculations

Grants Lithium Resource

The results of the Mineral Resource Estimate are provided in Table 1 and Figures 1-4. The Mineral Resources are reported at a high cut-off of 0.75% Li_2O.

Mineral Resource Estimate for the Finniss Lithium Project 22 October 2018 – 0.75% Li_2O cut-off				
Resource Category	Oxidation	Tonnes	Li_2O %	Contained Li_2O (t)
Grants Measured	Fresh	1,090,000	1.5	16,100
Grants Indicated	Fresh	820,000	1.5	12,600
Grants Inferred	Fresh	980,000	1.4	14,000
BP33 Inferred*	Fresh	1,420,000	1.4	20,000
Total		**4,310,000**	**1.4**	**62,700**

Table 1. Mineral Resource Estimate for Finniss Lithium Project (0.75% Li_2O Cut-off). *BP33 resource from 23 May 2018 is unchanged.

The Grants ore-body averages 25m wide, is over 300m long and characterised by consistent, high grade spodumene mineralisation from one wall to the other (Figure 1). These characteristics and scale of orebody enable a simple open pit operation producing consistent high grade with low dilution utilising the efficiencies of bulk mining equipment.
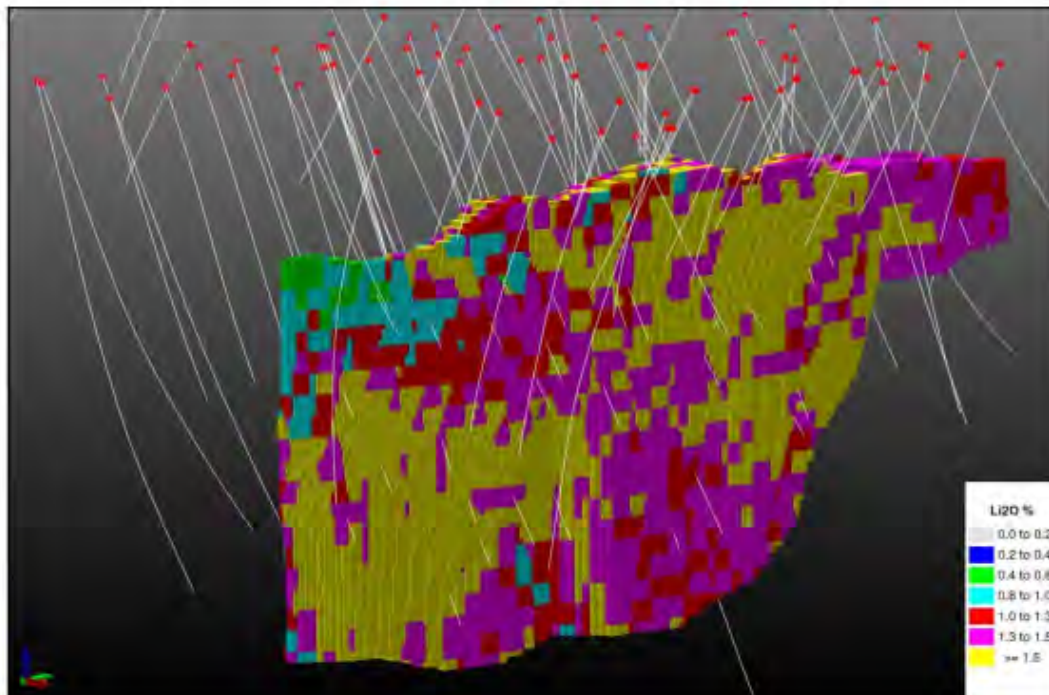
Figure 1. Lithium Grade (% Li_2O) block model for Grants Resource, Finniss Lithium Project.
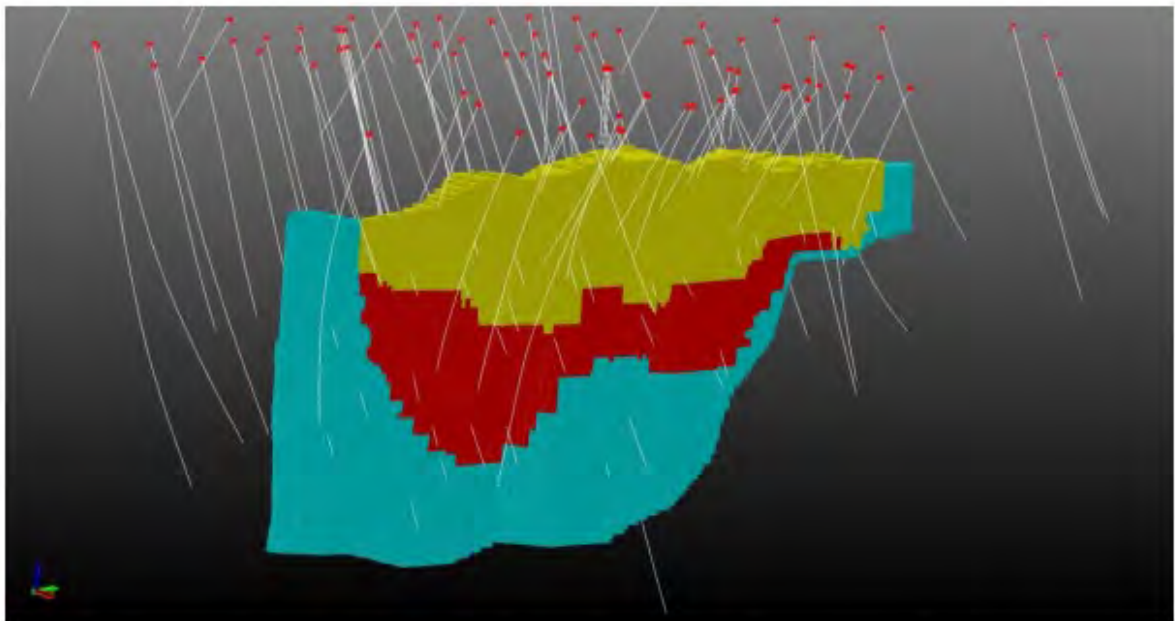
Figure 3. Measured (yellow), Indicated (red) and Inferred (blue) Resource classification at Grants, Finniss Lithium Project.
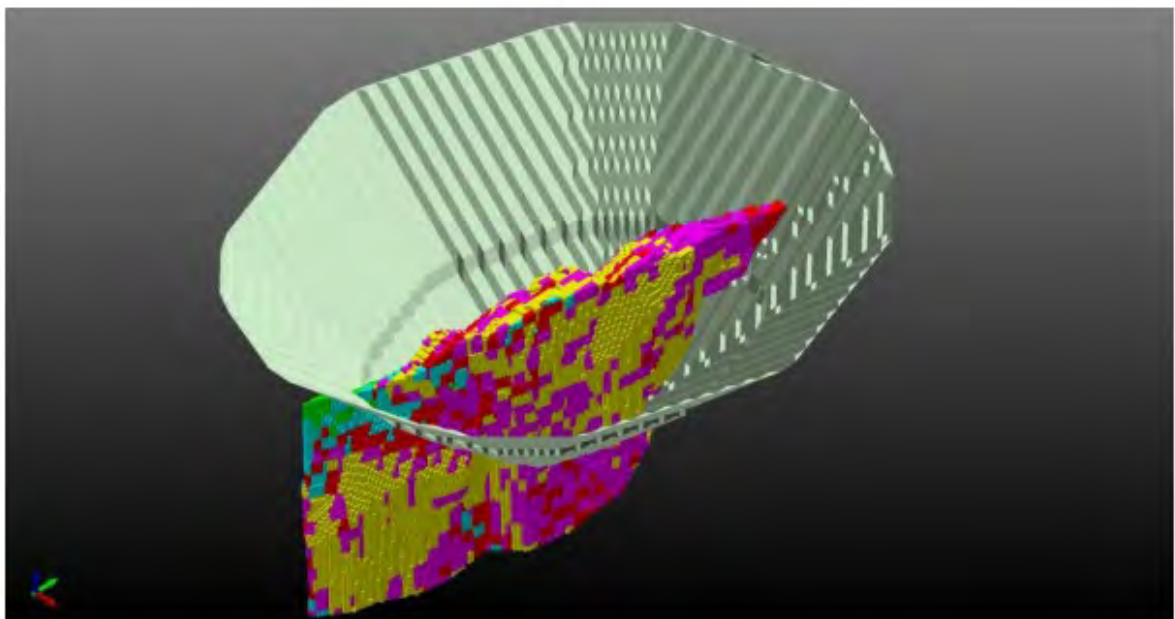
Figure 4. New Grants Resource grade block model and now outdated Pit Shell (from June 2018 PFS), Finniss Lithium Project.

Figure 9 – Excerpt from Core Exploration ASX Announcement 22 October 2018 showing underground potential at Grant's

GRANTS EXPANDING
67M @ 1.6% INTERSECTION OUTSIDE RESOURCE

- Multiple new high-grade lithium intersections outside the Mineral Resource at Grants include:
  - 67m @ 1.57% Li_2O from 191m in FRC151
    - Including 16m @ 2.17% Li_2O
    - And 12m @ 2.08% Li_2O
  - 45m @ 1.72% Li_2O from 188m in FRC154
    - Including 22m @ 2.09% Li_2O
  - 45m @ 1.72% Li_2O from 142m in FRC159
    - Including 16m @ 2.03% Li_2O

- New assays confirm significant extensions directly south along strike and at depth at Grants - outside of the existing defined Mineral Resource.

- These extensions demonstrate the potential to further increase the size of the Mineral Resource and mine life at Grants.

- Expected to have material positive impact on the financial returns from development of the proposed 1Mtpa Finniss Lithium Project.

- Drill Rig at Grants this week   *ASX:CXO 24/7/2018
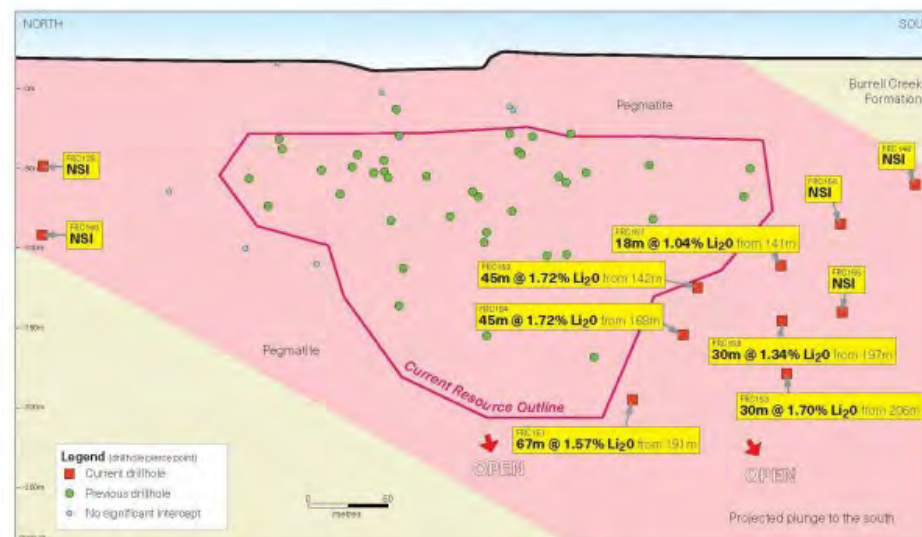
CORE EXPLORATION   ASX:**CXO**

Figure 10 – Excerpt from Core Exploration presentation to "Diggers and Dealers, WA 2018" showing underground potential at Grant's

Sensitivity Runs – Wall Angle

Cases	Concentrate Grade	Recovery	LiO2 Price Source	LiO2 Price	Selling Cost	Wall angle	Mining Costs	Processing costs	Logistics costs	Pit Shell Revenue Factor=1	Metal Price ($/kg)	Pit Floor Bench (mRL)	Total Ore Tonnes (kt)	LiO2 (%)	Rec.LiO2 (%)	Waste Tonnes (kt)	Total Rock Tonnes (kt)	SR W:O
	% LiO2	%	Source	$/kg LiO2	$/kg LiO2	deg	%	%	%									
Case 25	5%	75%	Citi	$ 15.89	$ 1.87	40	100%	100%	100%	25	$ 15.89	-150	1,542.2	1.40	1.05	24,156.2	25,698.4	15.7
Case 1	5%	75%	Citi	$ 15.89	$ 1.87	45	100%	100%	100%	25	$ 15.89	-170	1,709.1	1.39	1.04	23,141.8	24,850.9	13.5
Case 29	5%	75%	Citi	$ 15.89	$ 1.87	50	100%	100%	100%	25	$ 15.89	-195	1,917.2	1.38	1.03	23,551.8	25,469.0	12.3
Case 26	5%	75%	Average	$ 18.13	$ 2.04	40	100%	100%	100%	25	$ 18.13	-160	1,658.8	1.39	1.04	27,962.7	29,621.5	16.9
Case 2	5%	75%	Average	$ 18.13	$ 2.04	45	100%	100%	100%	25	$ 18.13	-180	1,817.5	1.38	1.03	26,357.8	28,175.3	14.5
Case 30	5%	75%	Average	$ 18.13	$ 2.04	50	100%	100%	100%	22	$ 18.13	-200	1,977.5	1.37	1.03	25,266.8	27,244.3	12.8
Case 27	5%	75%	Canaccord	$ 19.73	$ 2.16	40	100%	100%	100%	26	$ 19.73	-165	1,723.3	1.38	1.04	30,353.8	32,077.1	17.6
Case 3	5%	75%	Canaccord	$ 19.73	$ 2.16	45	100%	100%	100%	25	$ 19.73	-190	1,892.3	1.37	1.03	28,891.2	30,783.5	15.3
Case 31	5%	75%	Canaccord	$ 19.73	$ 2.16	50	100%	100%	100%	23	$ 19.73	-205	2,019.6	1.37	1.03	26,714.1	28,733.7	13.2
Case 28	5%	75%	Spot	$ 25.33	$ 2.58	40	100%	100%	100%	24	$ 25.84	-185	1,896.1	1.37	1.03	37,961.1	39,857.2	20.0
Case 4	5%	75%	Spot	$ 25.33	$ 2.58	45	100%	100%	100%	24	$ 27.36	-205	2,032.1	1.36	1.02	34,788.8	36,820.9	17.1
Case 32	5%	75%	Spot	$ 25.33	$ 2.58	50	100%	100%	100%	21	$ 25.33	-205	2,048.3	1.36	1.02	27,761.8	29,810.1	13.6

CORE

Proactive Mining Solutions
OPEN CUT MINE PLANNING & DESIGN
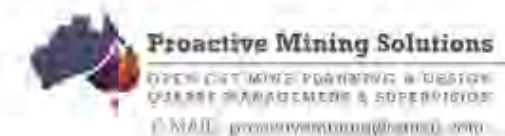QUARRY MANAGEMENT & SUPERVISION
E MAIL proactiveminingsolutions.com

Figure 11 – Typical optimisation run for Grant's Pit showing pit shell depths beyond current design of -180mRL (NOT FOR PUBLIC; INTERNAL DISTRIBUTION ONLY)

APPENDIX 7 – ECONOMIC ANALYSIS

Setup					
	Shifts / Day	1		shifts / day	DS only mining
	Hours / Shift	10.5		hr	Assumed SMU runtime
	Total Material to fill Void	15,821,762		m³ (LCM)	From CorEx_FS_LOM MII Schedule_RevE.xlsx + 849 kLCM additional material required for subsidence and water shedding
	Insitu Material Density	2.40		t/m³	Have used the estimated waste transition density as per the Mining Tender
	Truck Target Payload	96		t	777F with hungry boards and payload monitoring installed
	EX1200 Dig Rate	6200		BCM / Shift	Dig rate heavily dependant of utilisations, operators, material type, etc, performance rate can be (+-30%)
	Fuel Cost	0.8		$ / L	
	Swell Factor	30%		%	Assumed 30% Swell from insitu and placement at dump
	Truck Factor	40.0		BCM / Truck	**** Assuming NO DnB!!! And no other costs allowed, ie support, tech services, etc****

Trucks Required Calc		Length (km)	Speed Unloaded (km/hr)	Speed Loaded (km/hr)	Total Travel Time		
	Haul route lengths						
	WRD Ramp -25vm (1:-10)	0.2	35	25	0.8	minutes	Ramp is 25m vertically up at say 1:10 - will use the steeper 1:8.5 ramp at a shorter distance to emulate this time
	WRD Flat Haul	0.47	35	25	1.9	minutes	
	Haul Road	0.26	35	30	1.0	minutes	From base of WRD Ramp to centroid of pit
	Spot + Load				3.5	minutes	
	Turn + Dump				1.0	minutes	
	Total Haul Time				8.2	minutes	
	Truck Loads / hr / truck				7.3		
	Digger Loads / Hr				17.1		Theoretically calculated, see utilisation at bottom which is more realistic
	Trucks Required				2.3		

Shift Cost					
	Equipment Type	#	Total Cost / Shift inc Op		
	Supervisor	1	$ 840	$	All operators include oncosts
	EX1200	1	$ 4,558	$	
	777F	3	$ 8,960	$	Costs include G.E.T, Fuel, Operators, Fixed & variable rates (calculated), Tyres, etc
	16M	1	$ 2,132	$	Assume Shared WC / Grader
	D10T	2	$ 6,482	$	Assumed 2 dozers, 1 dozer at backfill and 1 in WRD. Backfill dozer should run at 700-1100m3/hr and mining produce 770m3/hr
	Total Shift Mining Cost	8	$ 22,972	$	

Output				
	Dig Rate	8060	(LCM / SHIFT)	
		155	loads	
	Expected Shifts Mining	1963	Shifts	
	Calculated Utilisation	75%	%	
	Total Mining Costs (net overheads)	$ 45,093,643	$	net $0.5 / LCM for Core management and overheads
	Average cost / LCM	$ 2.85	$ / LCM	Note this is assumed not to include and tech support, management, etc. Add an additional 0.3 to 0.7 depending on requirements
	Total Mining Costs (incl overheads)	$ 53,004,524	$	Incl $0.5 / LCM for Core management and overheads
	Average cost / LCM	$ 3.35	$ / LCM	Includes and tech support, management, etc. @ $0.5 / LCM

The only caveat to this is the greater overheads (tech services, management, etc) that is not included.

As for the dozer on the backfill, if the material is Oxides, should easily keep up to a ~100m push (D10T).

Using the cat performance handbook, for a 100m push they should be running at between 580 Lm3/hr with the below correction factors
- Push length of 90m
- 1.0 for oxides
- Slot Dozing – 1.2
- Downhill Grade -20% - 1.4
- Assuming excellent operators - 1

Calc = 580 * 1.0 * 1.2 * 1.4 = 682 m3/hr – ie will run with 980m3/hr for calcs

Figure 12 – Cost workup for backfilling from centroid of WRD to pit using Method 1 (Digger and truck fleet)

	Value	Units	Notes
		Units	
Pit subsidence approx.	3	m	Approx. depth the filled void would subside from natural surface
Additional height to create water runoff	2	m	Approx. additional height required for a water runoff on top of pit void once subsided portion filled to level with natural surface
Total height required	5	m	
Pit perimeter surface Area	236,948	m²	From 23902-100-drg-ge-001-overall project background.kml – encompasses outer bund as well (1.05 expansion factor)
Additional LCM required	**1,184,741**	**m³ (LCM)**	Additional LCM required to fill the subsidence and additional to create a 1 in 100 fall from the centre of the pit outwards
Swell factor	1.3		Typical swell for mined loose waste rock

Total volumes committed outside waste dump

	Value	Units	Notes
Earthworks and Pads	45,768	m²	
height	1.3	m	0.3 rolled cap + 2m base
	77,348	LCM	
Dams and Ponds	167,469	m³	
	217,709.38	LCM	
Diversion Bund	2,425	m	as per CL / polygon created from PRIMERO layouts on google earth (23902-100-drg-ge-001-overall project background.kml)
Cross Section Area	25	m²	
	78,813	LCM	
ROM Pad	423,025	m³	5m height assumed
Truck Loop	14,182	m³	1m base + 0.3m cap assumed
	568,369	LCM	
Site Access Road	1,066	m	as per CL / polygon created from PRIMERO layouts on google earth (23902-100-drg-ge-001-overall project background.kml)
Admin to Pit Road	465	m	as per CL / polygon created from PRIMERO layouts on google earth (23902-100-drg-ge-001-overall project background.kml)
Explosives Compound Road	1,560	m	as per CL / polygon created from PRIMERO layouts on google earth (23902-100-drg-ge-001-overall project background.kml)
ML Perimeter Road	8,230	m	as per CL / polygon created from PRIMERO layouts on google earth (23902-100-drg-ge-001-overall project background.kml)
Secondary Roads (Site Total)	4,700	m	as per LUCAS Tender
TOTAL Roads	**16,021**	**m**	
Road width	14	m	Some roasds will be more than this, some less => average width
Road height	1.3	m	0.3 rolled cap + 2m base
Road Volume	**379,057**	**LCM**	
Pipeline Road	3,500	m	Assume 50% of the 7,000m of road come from Grant's Pit
Road width	12	m	
Road height	21.6	m	
Road Volume	**1,179,360**	**LCM**	
Explosives Compound	12,654	m²	
Explosives Compound Bunds	3,981	m³	Bunds 2.5m high @ 45deg slope
Compound height	1.3	m	0.3 rolled cap + 2m base
Road Volume	**26,561**	**LCM**	
Dam C4 wall			Contingency only not in EIS
Length	563	m	
Base	20	m	
Height	10	m	
Volume	56,300	m³ (LCM)	
Dam C5 wall			
Length	375	m	
Base	20	m	
Height	10	m	
Volume	37,500	m³ (LCM)	
Total Dam Wall Construction	93,800	LCM	Does not include C4 volumes as not in the EIS
Total LCM (includes swell)	**2,042,108**	**LCM**	Does not incl ROM, truck loop, explosives infrastructure volumes

	Value	Units	Notes
Waste Inventory Calculations			
Total Waste from Pit	12,095,340	BCM	
	15,723,942.00	LCM	
Total Waste Committed in infrastructure	2,042,108	LCM	
Total Waste Available for Backfill	13,681,834	LCM	
Backfill material deficit	**2,139,927.91**	**LCM**	Can't have a water shedding mine closure landform; no tails included in backfill

Total volumes not committed outside waste dump BUT required for capping TSF Cells x 2

TSF Cell x 2			
Perimeter	1,741		m
Cross Section Area	56		m²
Height	7.5		m
Volume	97,931		m³ (LCM)
Constructed base of TSF			
Area	198,407		m²
Depth	1.3		m
Volume committed	257,929		m³ (LCM)
Cover required mine closure			
Area	198,407		m²
Depth	17.5		m
Volume committed	3,472,123		m³ (LCM)
Total volume committed for 2 x TSF	**3,730,052**		**m³ (LCM)** Note these have not been included in any calculations for pit backfilling

Figure 13 – Pit backfilling cost inputs for Method 1 including backfill categorisation (waste rock only net of tailings)