



17 February 2014

Committee Secretary
Joint Select Committee on Northern Australia
PO Box 6021
Parliament House
CANBERRA ACT 2600

Via email: jscna@aph.gov.au

Dear Committee Secretary

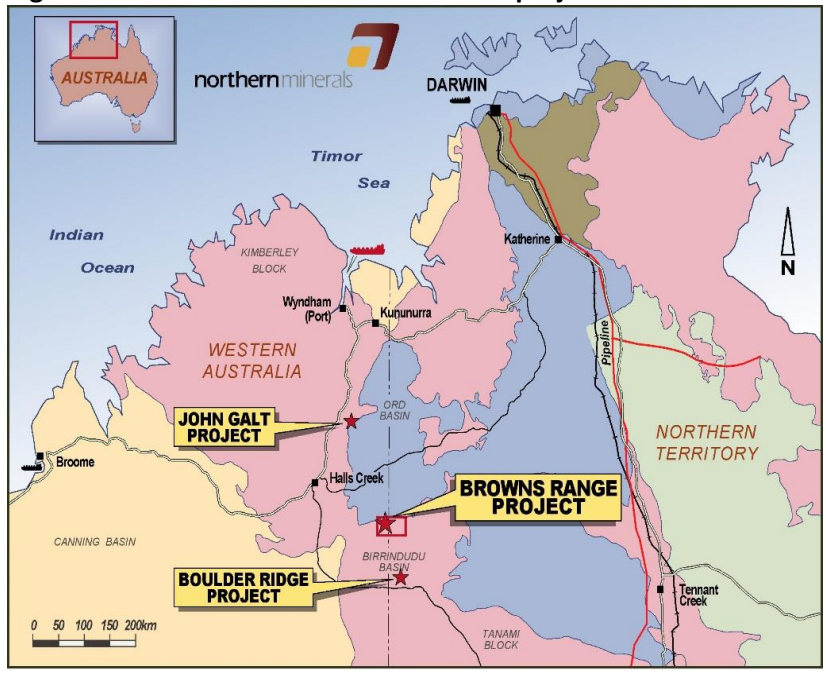
SUBMISSION TO THE JOINT SELECT COMMITTEE ON NORTHERN AUSTRALIA

Northern Minerals is pleased to make the following submission to the Commonwealth House of Representatives Joint Select Committee on Northern Australia. As a member of the Chamber of Minerals and Energy (WA) Northern Minerals fully supports and endorses the Chamber's submission, however would like to take this opportunity to provide a detailed overview of Northern Minerals, its projects in Northern Australia and its vision for future development in the region.

Overview Northern Minerals

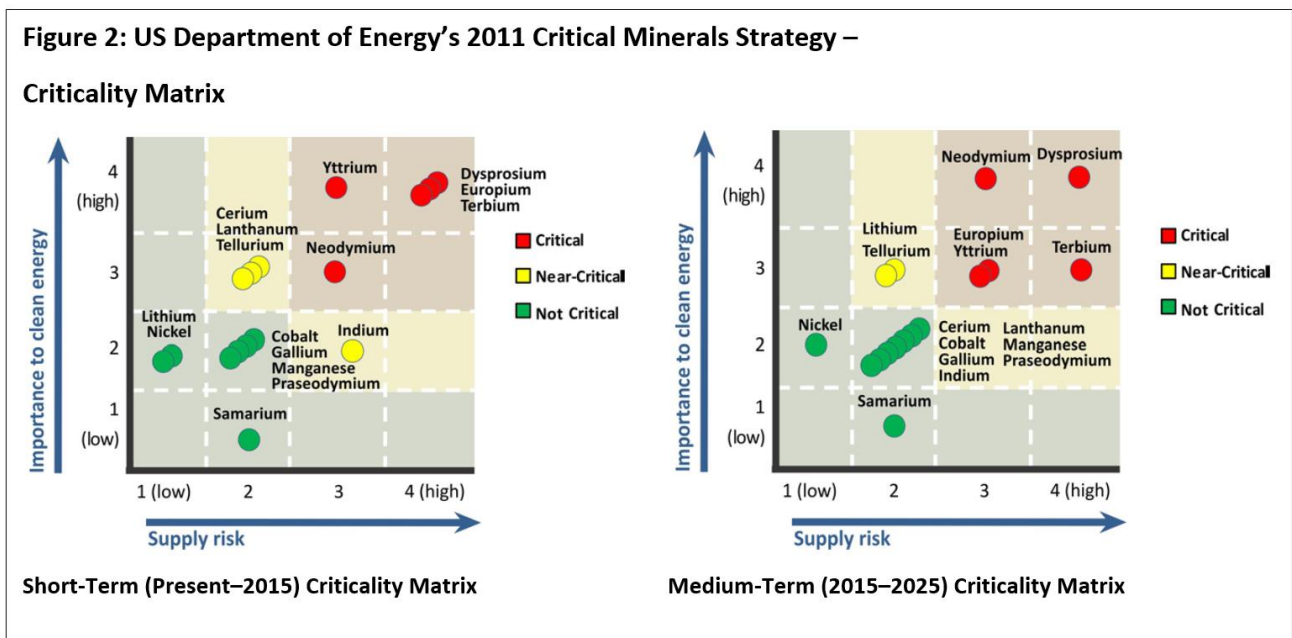
Northern Minerals currently has three heavy rare earth element (HRE) exploration projects located in the East Kimberley (WA) and Tanami (NT) regions of Australia; the Browns Range, John Galt and Boulder Ridge projects (figure 1).

Figure 1: Locations of Northern Minerals' projects



Northern Minerals' flagship project, the Browns Range Project (the Project), is located in the East Kimberley region approximately 160 kilometres south east of Halls Creek. While the remoteness of the Project provides challenges, it also presents opportunities for an economically disadvantaged area with high unemployment and a heavy reliance on government services. The Project is an important prospect to assist in addressing these issues by providing future economic development and regional investment opportunities.

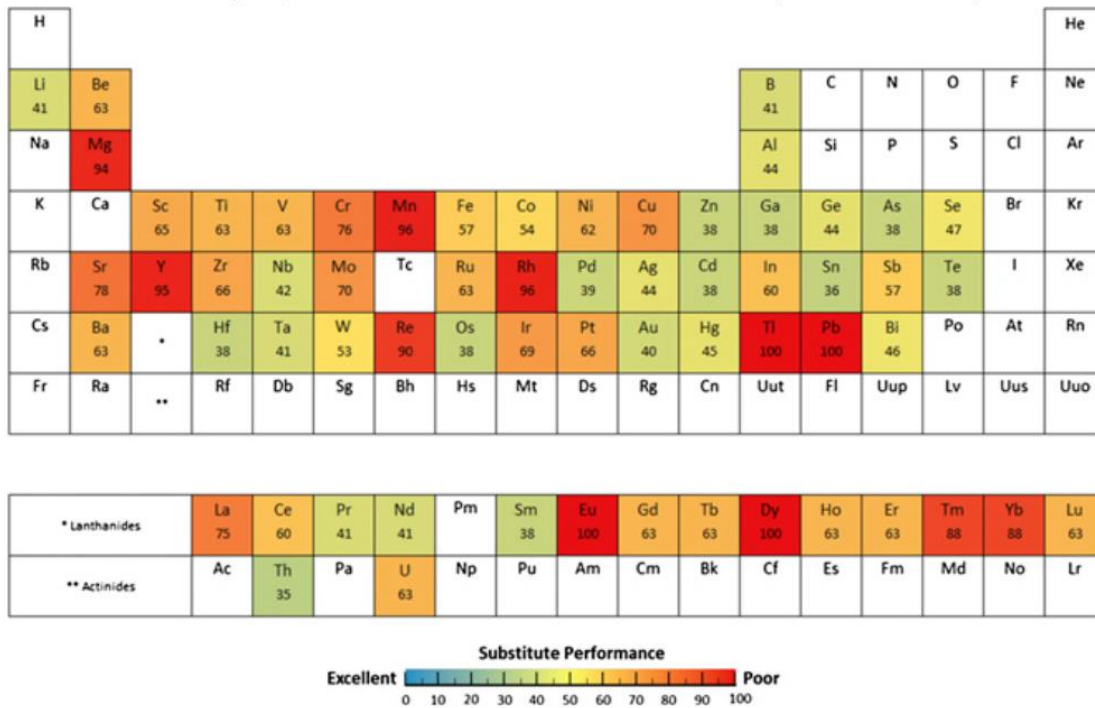
The Project is focused on producing HREs, and outstanding exploration results have allowed Northern Minerals to define a mineral resource of 28,084 tonnes of total rare earth oxide. The resource has a high proportion of the three key elements Dysprosium, Yttrium and Terbium. These elements are used in clean energy technology such as hybrid vehicles, energy efficient lighting and wind turbines, and hi-tech medical hardware such as PET and MRI scanners. Future supplies of HREs, in particular these elements, are critical with demand far exceeding supply and very few significant sources both inside and outside of China, which is reducing exports annually. Countries such as the US, South Korea, Japan and Germany are reliant on China's supply to sustain these high technology production industries locally. This supply shortage has resulted in the United States identifying these elements as critical in the Department of Energy's 2011 Critical Minerals Strategy report. Figure 2 shows the Criticality Matrices from the aforementioned report which indicates that Dysprosium, Yttrium and Terbium are a high supply risk in the short and long term.



This criticality and China's dominance has resulted in many of these countries investing large sums of money into research and development in order to find substitutes. However, a recent Yale University report (2013) shows that the current substitutes developed for some elements, in particular Dysprosium, Yttrium and Terbium, perform poorly and are inadequate (figure 3).



Figure 3: The periodic table of substitute performance. Showing current substitution performance for rare earth elements (Harper, Nassar, and Reck, 2013, Yale University, New Haven, CT)



The Project is currently in development phase, and studies to date have been positive providing a strong indication that the Project will begin construction in 2015 and production in 2016, making it a new global supplier of HREs. Northern Minerals’ large tenement holding and positive drill results to date provides confidence that ongoing exploration will result in the discovery of additional HRE resources.

Northern Minerals works closely with the local community, in particular Ringer Soak which is located approximately 40 kilometres from the Project and has a fluctuating population of approximately 160 people. The Company collaborates and consults regularly regarding the Project, local issues and assists where possible with community maintenance. Northern Minerals is committed to providing economic opportunities to the local community and to date has employed up to six local Aboriginal people on the Project, providing a 28 per cent local employment rate. To support this commitment Northern Minerals is currently developing a local employment strategy, which will provide a road map for the Company to achieve its local employment targets through training and identification of positions suited to local capabilities.

Enhance trade and other investment links with the Asia-Pacific

The Project provides a unique opportunity for Australia to facilitate and enhance links with the Asia-Pacific region. As a result of rare earths criticality in supporting local manufacturing industries, rare earths are considered a strategic resource in Asia. China as the dominant supplier of rare earths produces 90 per cent of global production and its annual reduction in exports has increased the need for many Asian countries to identify and develop non-Chinese sources of rare earths.

The Project’s high occurrence of the three critical elements Dysprosium, Yttrium and Terbium has resulted in it gaining international interest from countries such as the US, South Korea, Japan, Germany and China. Recently, the Company announced the signing of a non-binding Memorandum Of Understanding (MOU) with



Sumitomo Corporation, a Japanese global mining and mineral processing organisation which is involved in rare earth element development and electronic management services in Asia, the United States and Europe. As an integral link in the global supply chain for manufacturing of clean energy, high tech and medical hardware, the Project's development will broaden Australia's mineral inventory, profile and strengthen trade and investment links with Asia.

Recommendation: Government engages with stakeholders to understand the infrastructure required for projects of Asia-Pacific significance to strengthen trade and investment links.

Address impediments to growth

The Kimberley region is one of the fastest growing regions in Western Australia. This growth coupled with the limited economic opportunity and low workforce and education participation rates, has resulted in a number of significant challenges. Two of the major challenges are a high reliance on government services and payments, as well as limited government housing. The limited government housing and lack of a private housing market means that regional communities such as Halls Creek and Ringer Soak do not have the infrastructure to support a large permanent workforce. As a result, many local people have moved away from the region in search of economic opportunity. With the possibility of new developments such as the Browns Range Project, these people are now looking to return to their communities.

Recommendation: Government reviews and considers strategies to improve housing and economic opportunities for local communities.

Northern Minerals is committed to providing as many local economic opportunities as possible through the development of the Project. With an unemployment rate of over 29 per cent in Halls Creek and Ringer Soak, the Project has the potential to make an impact on these severely economically disadvantaged communities.

During the construction phase an estimated temporary workforce of 450 people will be required and once operational a permanent workforce of approximately 300. Various permanent roles will be available, including accommodation village and warehouse workers, surveyors, shot fitters, truck and plant operators, site clerks, mining production supervisors, electricians and processing facility operators. As the first potential new development to come on line in the local area, Northern Minerals will continue to work with the local community to ensure benefits are achieved.

Recommendation: Government engages with stakeholders to gain a holistic view of the different local social and economic challenges of individual regions and understand what is required to support developments that provide economic opportunities.

Set conditions for private investment and innovation

The increasing costs of doing business and declining productivity has presented Australia a number of challenges in maintaining its international competitiveness. The closure of manufacturing operations means Australia needs to look beyond and investigate potential new industries. The development of the Project presents a significant opportunity to develop a new high value manufacturing industry in Australia. The Project will be the first HRE operation in Australia to process rare earths through two stages, the beneficiation and the hydrometallurgical processes, producing a HRE mixed oxide. From this a unique opportunity is presented to take processing from a HRE mixed oxide, to a full separation of individual rare earth elements and then onto the manufacture of alloys and magnets, which are essential for the development of clean energy and high tech applications.



The rare earth industry provides a significant amount of local economic opportunities. These opportunities have been recognised by the Chinese Government who has established a fully integrated rare earth operation in Baotou, Inner Mongolia. Baotou Steel Rare-earth Hi-tech Co. (Baogang Rare-earth), a subsidiary of Inner Mongolia-based Chinese steel producer Baotou Iron and Steel, is the world's largest vertically integrated supplier of rare earths. It controls the entire rare earth processing chain from mining, cracking, separation, metal and rare earth product manufacturing and also operates a technical research institute. This integration plus the reduction of China's rare earth export quotas has resulted in global companies such as General Electric (GE) migrating large production industries into China to secure supply for products such as MRI scanners. The emergence of this large specialist manufacturing industry has resulted in the development of a specialist industry in Baotou that provides significant employment and local economic development opportunities in the region.

Providing additional rare earth supply options e.g. fully separated elements, alloys and/or magnets will result in the broadening of the global rare earth customer base, by including customers looking for supplies of further refined products, such as Siemens, Hyundai-Kia and GE. Australia has the capability to develop this high value manufacturing industry, which could open the pathway for new business offerings and increase Australia's international manufacturing competitiveness.

Recommendations:

Government engages with stakeholders to investigate the possibility of a rare earth processing and manufacturing industry in Australia.

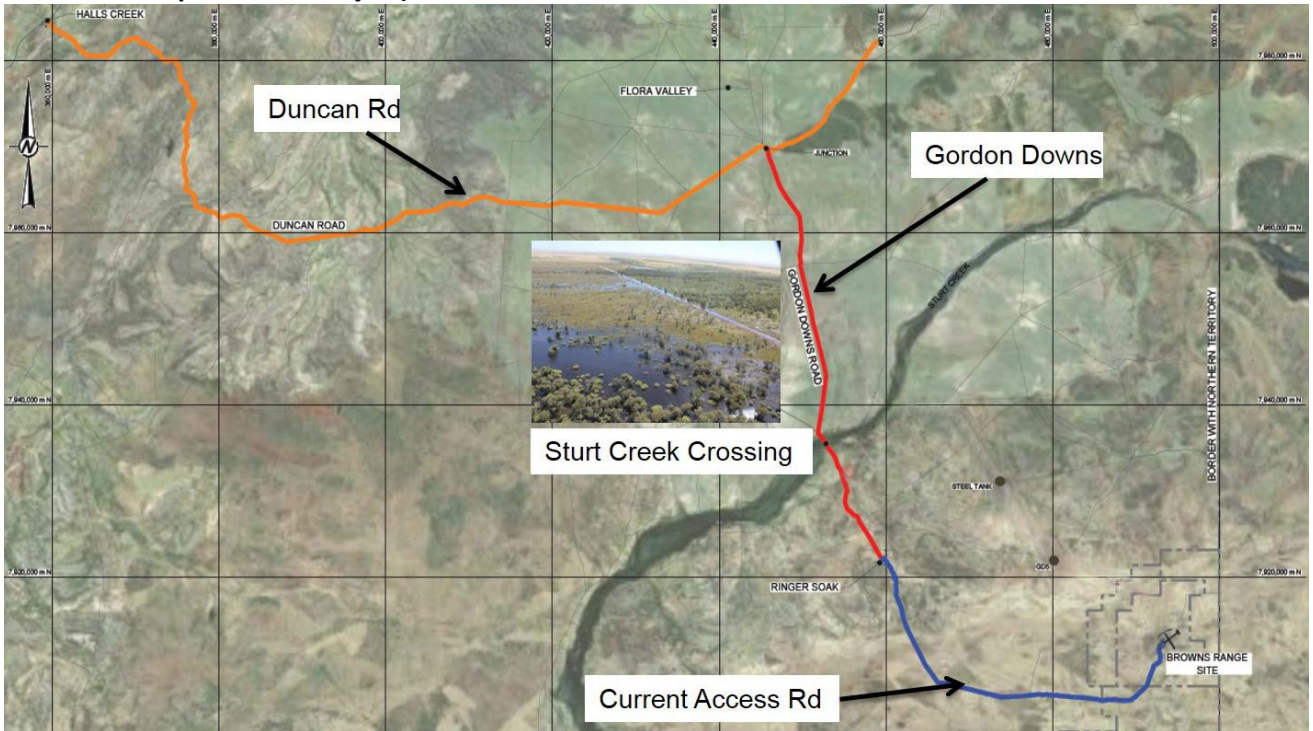
Government delegation visits Baotou to further understand the potential opportunities of a new rare earth industry in Australia.

Identify the critical economic and social infrastructure needed to support the long term growth of the region, and ways to support planning and investment in that infrastructure.

Projects in the Kimberley region face a number of challenges, in particular high development costs due to lack of supporting infrastructure and the vastness of the region. The Ringer Soak community and Northern Minerals face significant public road access challenges due to the remoteness, weather conditions and high cost of ongoing road maintenance. Access to the Ringer Soak community and the Project is via the unsealed Duncan Road from Halls Creek (112km) and the unsealed Gordon Downs Road (44km) to Ringer Soak (figure 4). The major infrastructure concerns are; the first 40 kilometres out of Halls Creek on the Duncan Road, the Gordon Downs Road north of Sturt Creek and flooding of the Sturt Creek crossing on the Gordon Downs Road, which impedes access to the Ringer Soak community and the Project. In addition, these roads are used by tourists, government service providers and for cattle transport.



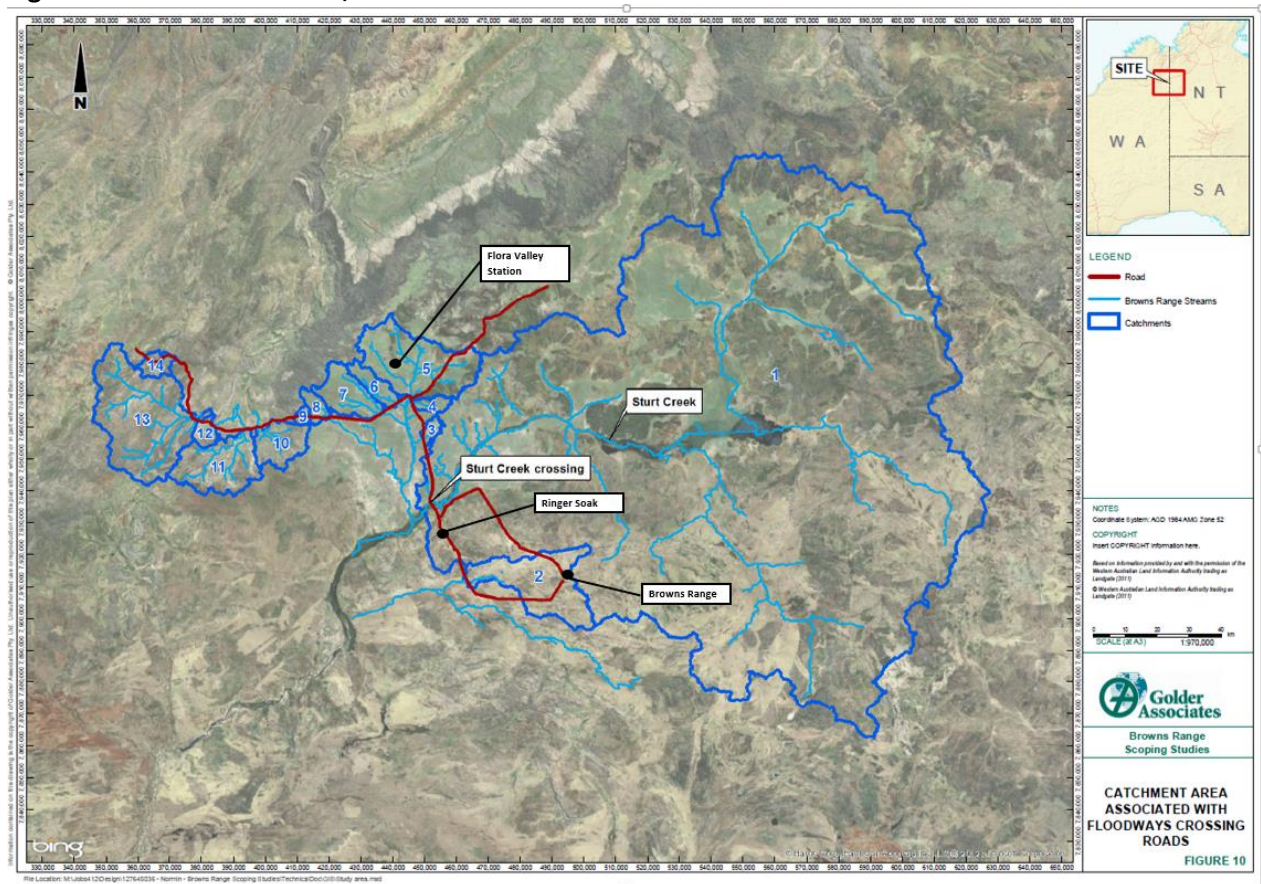
Figure 4: Duncan and Gordon Downs roads (Note: current access road upgrade and maintenance is being considered as part of the Project)



Rising water levels in the Sturt Creek is the primary factor in restricting access to Halls Creek from the Project and Ringer Soak community, for up to three months or more of the year, during the wet season. The contributor to the rising is not only localised rainfall, but also rainfall falling within the Sturt Creek catchment area, which covers an area of 55,090 km², to the north and east of the Project (figure 5). The Sturt Creek drainage is slow moving, due to the reduced relief of the area, causing waters to remain in the drainage channels for an extended period of time during the wet season.



Figure 5: Water catchments, Sturt Creek



With limited access to Halls Creek, Ringer Soak’s closest essential services, many community members from Ringer Soak migrate to Halls Creek during the wet season, resulting in social challenges such as overcrowding due to housing shortages. The community members who remain in Ringer Soak during wet season are isolated from Halls Creek, restricting access to essential services and fresh food supplies.

As part of the Project’s development Northern Minerals will fund and construct a suitable Project access road to and from Ringer Soak. However, access to the Project from Halls Creek is via public roads, the Gordon Downs and Duncan roads. These roads will need to be upgraded in order for the Project to be operational. Northern Minerals is currently engaging with the Shire of Halls Creek to seek their support in prioritising this work. The Company has however, not yet received confirmation that funding is available to upgrade these public roads.

These improvements to local road infrastructure will not only improve safety and access times, reducing overcrowding, they will also assist in facilitating the development of the Project which will provide access to training and local employment, reducing the local communities’ reliance on government payments and improving local economic development. As the first significant development in the local area, the Project is an important prospect in addressing the economic disadvantages experienced in the region.



Northern Minerals and the Ringer Soak community have realistic expectations about the levels of government funding available for public road improvements in remote areas. It is appreciated by both parties that it is not economically viable for the roads to be sealed and upgraded to all weather access, but are aiming for improvements and maintenance to be undertaken to address these challenges. Consideration for government funding is reasonable given that the upgrades are to public roads and the associated benefits that can be achieved.

Assessments undertaken by Northern Minerals to date suggest that the costs associated with these upgrades are considerably lower than other proposed regional road infrastructure projects. The lower cost coupled with the associated project benefits provides a unique opportunity to improve social and economic outcomes in the region.

Recommendation: Government considers investment in regional infrastructure, in particular the modest upgrade of the Gordon Downs and Duncan Roads, to support regional development and local employment.

I would be happy to appear before the Committee to discuss this submission in more detail, and would also like to take this opportunity to invite the Committee or any of its Members to visit the Browns Range Project at any stage.

Yours sincerely

George Bauk
Managing Director / CEO

