

## 5.0 PROJECT DESCRIPTION

### 5.1 Objectives

As part of the life of mine planning process at the Rocglen mine, further exploration drilling was undertaken at the site to better define the local geological features, as well as to provide additional data for inclusion in a review of the mine plan. This program identified additional economic coal reserves that could be accessed by an extension to the existing open cut. On this basis, Whitehaven proposes to expand operations at the Rocglen Coal Mine in order to maximise resource recovery and allow for improved mine progression.

The objectives of the Rocglen Coal Mine Extension Project are to:

- Develop the on-going open cut operations with a focus on:
  - maximising resource recovery and maintaining continuity of coal production from the existing Rocglen Coal Mine beyond the currently projected life of mine;
  - maximising the use of existing infrastructure; and
  - securing on-going employment opportunities and socio-economic flow-on benefits;
- Provide additional out-of-pit emplacement area to accommodate overburden material from the existing operations and proposed pit expansion; and
- Continue to conduct mining at Rocglen in an environmentally responsible manner to ensure the potential for adverse impact is minimised.

### 5.2 Outline

**Figure 6** illustrates the layout of the Project Site as proposed under the Rocglen Extension Project. While Whitehaven undertook preliminary feasibility assessments for several development layout options (both within the Project Site and extending beyond the Project Site), the proposed configuration was selected as the optimal option in light of mining efficiency, operational, environmental, economic and land ownership considerations. Specific refinements are outlined in the following sections.

**Table 11** summarises and compares the primary components of the existing Rocglen Coal Mine operation approved under PA 06\_0198 (including PA 06\_0198 MOD 1) and those of the proposed Rocglen Extension Project to be assessed and determined under Part 3A of the EP&A Act.

**Table 11– Major Components of the Approved Operation and Proposed Project**

Aspect	Existing Approved Rocglen Coal Mine Operation	Proposed Rocglen Extension Project
Project Site Area	Approximately 366 hectares.	An additional 94 hectares of land, bringing the total area to approximately 460 hectares. See <b>Figure 6</b> .
Production	Extraction and processing of up to 1.5 Mt of ROM coal per year.	No change.
Coal Seams	Upper Glenroc, Lower Glenroc and Belmont.	No change.
Mine Life	Between seven and ten years.	Up to an additional four years over the originally anticipated seven to ten years. See <b>Section 5.3</b> .

Vegetation Removal	Progressive campaign approach, with the extent of clearing undertaken in each campaign just sufficient for the subsequent year of mine development.	No change.
Soil Stripping and Stockpiling	Topsoil and subsoil stripping is undertaken separately to 15 cm and 35 cm, respectively, using open bowl scrapers and placed directly on mined, backfilled and reshaped areas awaiting rehabilitation or in designated stockpile areas adjacent to the areas of surface disturbance.	Methodology will generally remain the same with different varying depths of topsoil and subsoil suitable for stripping and different designated stockpile areas. See <b>Section 5.4</b> .
Overburden and Interburden Management	Overburden is blasted and loaded into trucks for transfer and placement in one of the two out-of-pit emplacement areas (Northern and Western Emplacement Areas) or in-pit within completed sections.	Methodology will remain the same with expansion of the Northern Emplacement Area's footprint and height to accommodate a maximum of 12 Mbcm (15 Mlcm) of material from current operations and proposed pit expansion. See <b>Section 5.5</b> .
Coal Extraction	Open cut mining methods (truck and excavator), with extraction of additional reserves uneconomical to extract by open cut methods using auger mining techniques.	No change.
Open Cut Area	Approximately 114 hectares, plus 2.05 hectares approved for emergency highwall stabilisation works (PA 06_0198 MOD 1).	Expansion of the open cut design limit by approximately 50 hectares to a total area of approximately 164 hectares. See <b>Section 5.6</b> .
Resource Recovery	Up to approximately 15 Mt of ROM coal. See <b>Section 4.5</b> .	Up to an additional 5 Mt of ROM coal. See <b>Section 5.6</b> .
Coal Processing	Transfer of mined coal by haul truck to a coal handling and processing area located immediately south of the limit of the open cut pit for crushing, screening and loading into trucks for transport off-site.	No change.
Coal Storage	Stockpiling of up to 150,000 tonnes of ROM coal on site.	No change.
Infrastructure	Site offices, workers amenities, workshop, fuel farm, coal crushing and handling plant, truck loading bin, weighbridge and surface water management system.	No additional building improvements. The surface water management system will be updated to effectively cater for the expanded operations. See <b>Sections 5.9.1, 5.9.2 and 7.5</b> .
Product Coal Transport	All crushed and screened coal is transported approximately 30 km to the Whitehaven CHPP, via a purpose built section of road between Rocglen and Hoad Lane, and from Hoad Lane via an established coal haulage route for selective washing, stockpiling and dispatch by both rail and road.	No change.
Site Services	Systems in place for potable water, operational water, power, communications, fuel and explosives.	No change.
General Waste	Systems in place to manage general wastes, routine maintenance consumables, waste oils and grease, sewage and hydrocarbon-contaminated water.	No change.

Coal Rejects	A proportion of the coarse and fine coal rejects are approved to be returned from the Whitehaven CHPP to Rocglen for placement in the mined-out areas of the open cut.	No change.
Equipment	As listed in <b>Table 8</b> , various items of earthmoving and mining equipment throughout the life of the project.	The only change to the current fleet would be the addition of one 1250 excavator in the pit to enable cleaner and more efficient mining (smaller machine). See <b>Section 5.6</b> .
Hours of Operation	Mining operations are permitted to occur 24 hours a day, Monday to Saturday, with the exception of public holidays.	No change.
Employment	54 full-time jobs, with flow on employment for truck drivers (coal haulage contract) and additional indirect employment.	No change to employment levels, however employment positions would be maintained for the additional 4 years of project life.
Rehabilitation	While the major portion of rehabilitation activities would occur close to the cessation of mining, progressive rehabilitation will be undertaken through the life of the mine.  Of the total anticipated disturbance area, approximately 84.4 hectares is to be restored as rehabilitated native vegetation (36 percent), with the remaining 152.6 hectares to be restored to rehabilitated agricultural land (64 percent).	Methodology will essentially remain the same, with the primary differences being the configuration of the final landform and final land use.  Of the total anticipated disturbance area, it is proposed to restore approximately 206 hectares as rehabilitated bushland (58 percent), 147 hectares as rehabilitated pasture (41 percent), with the remaining 5 hectares comprising the retained highwall of the final void (1 percent). See <b>Section 5.7</b> .
Biodiversity Offsetting	A <i>Biodiversity Offset Strategy</i> resulting in the protection and rehabilitation of approximately 195.3 hectares, comprising the protection of 44.9 hectares of remnant woodland, enhancement planting and rehabilitation to 90.4 hectares and an additional 60 hectares within the Whitehaven Regional BioBank Site. See <b>Section 4.17</b> .	Revised <i>Biodiversity Offset Strategy</i> to compensate for the Project impacts and the impacts to the previously approved offset areas (i.e. cumulative impacts) on a 'like for like' basis with the equivalent of over 525 hectares of vegetation to be offset within the Whitehaven Regional BioBank Site. This will provide an offset to impact ratio of 4.75:1. See <b>Section 5.8</b> .
Road Relocations	The relocation of sections of Wean Road and Jaeger Lane.	Further relocation of the Jaeger Lane section only. See <b>Section 5.9.3</b> .
Environmental Management	A comprehensive set of environmental management plans and monitoring programs.	The current environmental management plans and monitoring programs will be reviewed and updated as required. See <b>Sections 7.0 and 8.0</b> .

It is intended that the Rocglen Extension Project will be fully integrated with the remaining operational life of the current approved Rocglen mine, which will enable Whitehaven to operate under a single Project Approval over the life of the Project.

The Project is described in sufficient detail below to provide an overall understanding of the nature and extent of activities proposed over and above what is currently approved under PA 06\_0198. Detail has not been provided in this section with regards to a number of aspects relating to the existing mining operation, including vegetation removal, coal extraction methods, hours of operation, coal processing, coal storage, site servicing, general waste management and employment, given that these will continue to be undertaken on-site as approved under PA 06\_0198.

### 5.3 Mining Sequence and Mine Life

**Figure 14** shows the intended annual sequencing of coal mining within the open cut pit area, which will encompass the existing Rocglen open cut pit approved under PA 06\_0198 and the proposed pit expansions (see **Section 5.6**). As stated above, the Project will be integrated with the remaining operational life of the existing Rocglen mine, which should enable Whitehaven to operate under a single Project Approval over the life of the Project.

The annual sequencing of coal mining was developed in order to ensure the efficient mining of coal, minimise haul lengths and permit effective overburden emplacement (both out-of-pit and in-pit) to enable the progressive formation of the post-mining landform and reduce the amount of disturbed land at any one time. Most importantly, the annual mine sequencing was refined in order to ensure that following completion of coal extraction the size of the final void remaining at mine closure is minimised, the low walls and highwall can be appropriately battered and rehabilitated to ensure a stable landform, and is located and shaped to minimise possible geotechnical and safety issues.

Through maintaining the approved maximum 1.5 Mtpa production rate at Rocglen, it is anticipated that the proposed Rocglen Extension Project will enable open cut mining for approximately 11 years following the issue of Project Approval and the subsequent issue of a new or amended mining lease. This represents an increase to the projected life of the mine, for coal extraction, of up to four years. Year 1 of the Rocglen Extension Project will see mining in the northern tip of the open cut pit and it will generally advance in a southerly direction over the life of the mine concluding in Year 11.

Given that the original project was approved to produce up to 1.5 Mt ROM coal annually, and based on an estimated mine life of seven to ten years, the potential resource recovery under PA 06\_0198 is up to approximately 15 Mt. The original EA prepared by R.W. Corkery & Co. in 2007 states an identified in-situ resource of 14.18 Mt, with a further 0.48 Mt available should auger mining proceed (i.e. a total resource of 14.66 Mt).

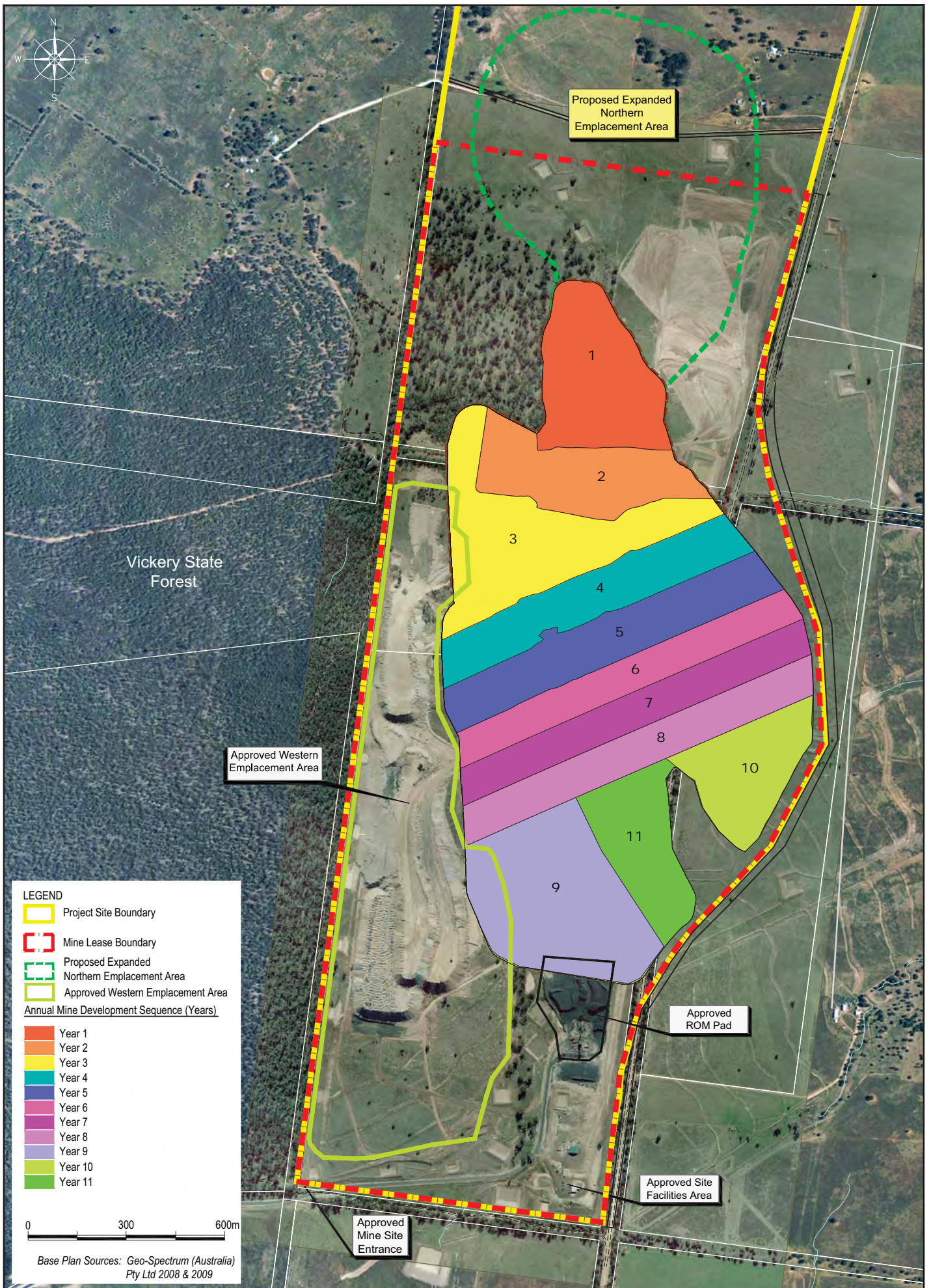
Cumulatively, between the three economical seams, it is estimated that an in-situ resource of up to approximately 18.5 Mt is currently available within the Project Site. This comprises up to 13.5 Mt remaining for recovery under the original Project Approved PA 06\_0198 (see above) and up to an additional 5 Mt not previously considered in the life of mine plan and proposed to now be extracted as part of the Rocglen Extension Project. A reduction in open cut coal production in any year, for example due to reduced demand or unfavourable geology being encountered, would not alter the mining sequence. Rather, it would simply reduce the extent of surface disturbance that year and, most likely, extend the mine life.

Mining operation are dynamic and the conceptual mine plan and mine sequence may be subject to changes as additional geological data is gathered or due to operational requirements or technological advances. On this basis, approval is sought for the general mining footprint and extent of associated activities presented below, with any refinements to the conceptual mine plan to be addressed as part of the Mining Operations Plan (MOP) process managed by the I&I NSW.

The conceptual mine layout and progression of mining operations over the life of the Project is represented indicatively by Years 1, 5 and 10 as shown on **Figure 15** and summarised below.

#### Years 1 and 2 of Expanded Operation

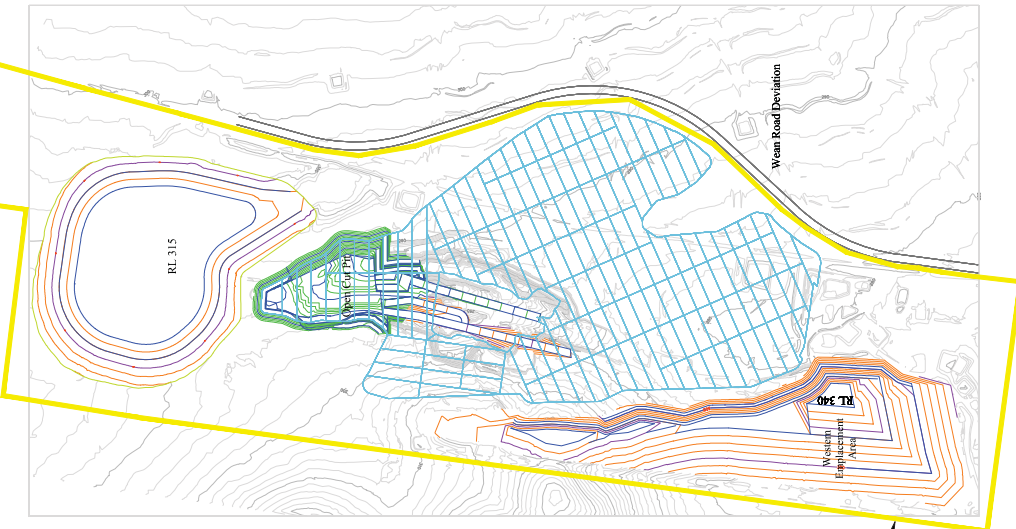
Mining will focus on the development of an access ramp through an area already being mined under PA 06\_0198, followed by coal extraction from the northern-most extent of the expanded pit and progressing in the southerly direction. All overburden material will be placed in the expanded out-of-pit Northern Emplacement Area.



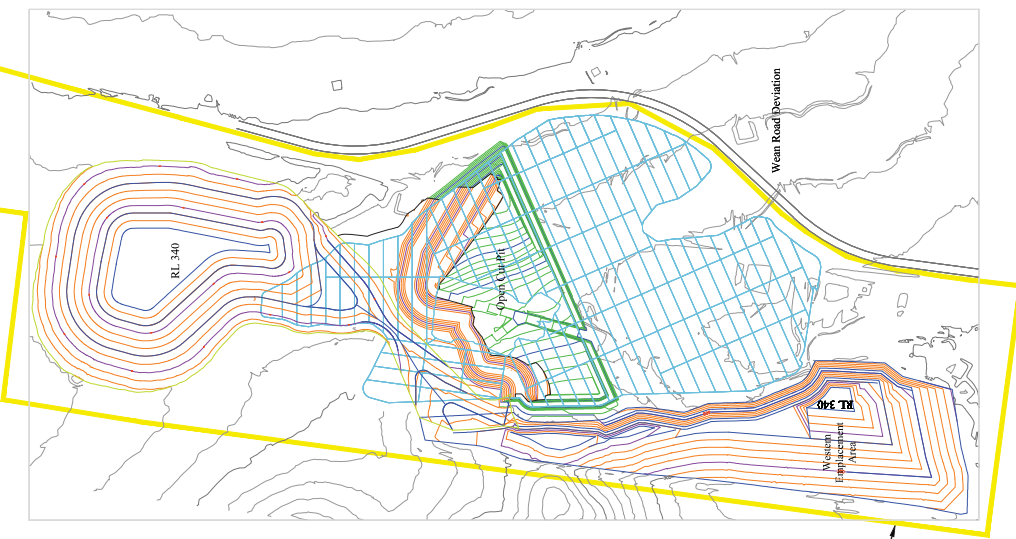
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Rocglen Coal Mine Extension Project  
Annual Mine Development Sequence

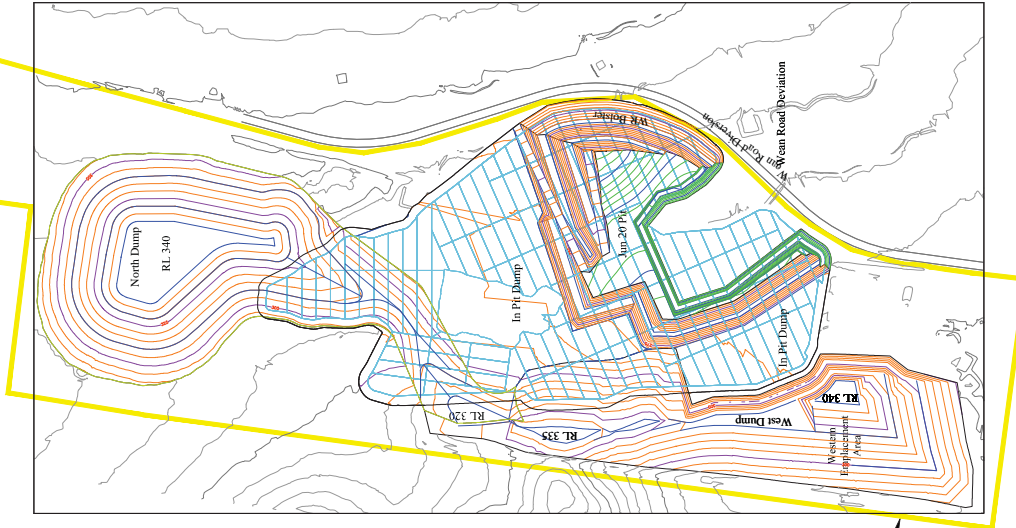
**FIGURE 14**



Year 1 of Expanded Operation



Year 5 of Expanded Operation



Year 10 of Expanded Operation



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Base Plan Source: MMG Civil P/L