Wallerawang Quarry Project

Continuation and Expansion

State Significant Development Modification Assessment

(DA 344-11-2001 MOD 3)

January 2020

Cover photo

Wallerawang Quarry (DPIE 2019)

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Executive Summary

Walker Quarries Pty Ltd (Walker), a subsidiary of Sitegoal Pty Ltd, owns and operates the Wallerawang Quarry Project, located approximately eight kilometres northwest of Lithgow in the Lithgow local government area.

The Project operates under a State significant development consent issued on 19 October 2004 (DA 344-11-2001), which has been modified on two previous occasions. The modified consent permits the extraction of approximately 3.5 million tonnes of quartzite from within the Project area, at a rate of up to 500,000 tonnes per annum (tpa) until July 2020.

Walker is seeking to further modify this consent to access an increased quantity of quartzite and associated hard rock materials. This would be achieved by increasing the approved extraction area from 6.5 hectares (ha) to 13.3 ha and increasing the depth of extraction by 70 metres (m), from 930 m AHD to 860 m AHD. The modification proposes that the total recoverable resource would be increased from 3.5 to 15 million tonnes and the life of the Project would be extended by 30 years to July 2050.

The modification would not change the Project's approved annual extraction or transportation rates or its hours of operation or number of employees.

The proposed modification was submitted under section 4.55(2) of the *Environmental Planning and Assessment Act 1979*. Walker's Statement of Environmental Effects assessed the impacts of the proposed modification, and included specialist studies for biodiversity, noise, air quality, Aboriginal and historic cultural heritage, groundwater, surface water and geotechnical stability.

The Department exhibited the proposed modification in a local newspaper and notified all members of the community who previously made submissions regarding either DA 344-11-2001 or its subsequent modifications. The Department also requested advice from eight State Government agencies and Lithgow City Council (LCC).

The Department's assessment of the proposed modification carefully considered the key issues of biodiversity, ground and surface water impacts and Aboriginal heritage, as well as issues raised in the single public submission and the agency advice received. The public submission raised concerns about progressive rehabilitation, potential health impacts from exposure to silica dust and on-site surface water management. Following its assessment, the Department considers that most potential impacts of the proposal are either minor or negligible and can be suitably managed by conditions of consent and by Walker's proposal to offset the biodiversity impacts of clearing native vegetation.

However, an issue that remains significant is the modification's potential interactions with groundwater resources on the site. Walker proposed to excavate up to 40 m below the natural water table and that any intercepted groundwater and collected rainfall within the extracted void would be discharged to the Coxs River. The Project site is within the Sydney Drinking Water Catchment. Water samples taken from groundwater bores on the site indicated that the ANZECC freshwater default values would be exceeded for cadmium, nickel, lead and zinc.

Both the Department and the EPA are concerned at this prospect. The Department currently does not have confidence in the predictions of the groundwater modelling, as the data sets for groundwater levels and quality were not sufficiently robust to engender certainty. For this reason, the Department supports the EPA's advice that

the quarry not be permitted to extract material from below the water table until *"a contemporaneous environmental assessment and approval process at a later stage"* has been undertaken.

Such an assessment can easily be achieved during the modified Project's operation as it is not projected to excavate below the water table for at least 15 years. During this time, more robust data sets for groundwater levels and quality can be obtained to improve the confidence of the groundwater model predictions.

Walker responded by stating that it would:

- no longer seek to discharge water from the final void to the Coxs River;
- not extract below 902 m AHD, unless approved by the Secretary;
- establish and map the wet weather level of the water table on the site;
- update and submit a revised Groundwater Impact Assessment (GIA) based upon an improved data set for inputs to the model to aid a future assessment of whether extraction below the water table is acceptable.

The Department considers that this is a reasonable approach, but that this assessment should be undertaken as part of a separate future development application or modification application, rather than as a "post approval" requirement of the modified consent conditions. The Department has therefore recommended conditions of consent to prevent excavation of materials from below the water table and to limit the life of the Project until July 2040, which represents an additional 20 years of operations, rather than the 30-year extension requested by Walker.

Other matters of potential environmental impact have been addressed by minor changes to the existing conditions of consent and the existing requirement for all site environmental management plans to be reviewed and updated to address the changes resulting from this modification application.

The Department considers that the Wallerawang Quarry Project, as modified, would continue to provide benefits to the Lithgow region through its production of construction materials and its direct employment of 15 persons, potentially for another 20 years. The Project has the benefit of direct and safe access to the Great Western Highway, which means that trucks transporting product from the Project do not traverse local roads through either rural or residential areas to a State road. Therefore, the Department considers that the proposed modification is in the public interest and recommends that the modification application be approved, subject to the limitations set out above.

Contents

1. Introduction

This report provides an assessment of an application to modify State significant development (SSD) consent DA 344-11-2001 for the Wallerawang Quarry Project (the Project). The proposed modification seeks approval to expand the existing extraction area, expand stockpile areas and clear approximately 14.1 hectares (ha) of native vegetation. The proposed modification also seeks to extend the Project's life by 30 years to July 2050.

1.1 Background

Walker Quarries Pty Ltd (Walker), a subsidiary of Sitegoal Pty Ltd, owns and operates the Project, located approximately eight kilometres (km) northwest of Lithgow in the Lithgow local government area (LGA) (**Figure 1**). The Project is located over three parcels of land that includes freehold land owned by Sitegoal Pty Ltd and Crown land managed by the Forestry Corporation of NSW and the Crown Lands Division of the Department of Planning, Industry and Environment (the Department).

Walker's existing consent permits the extraction of approximately 3.5 million tonnes of quartzite from within the Project area, at a rate of up to 500,000 tonnes per annum (tpa), until July 2020.

Walker has stated that, due to its delayed commencement of extraction operations in 2014, low annual extraction rates, and a period of care and maintenance, a significant portion of the Project's approved quartzite resource would remain unrecovered within its approved consent period. Therefore, Walker is seeking to extend the Project's operational life to enable the maximum recovery of both the approved resource and further identified resources.

1.2 Approval History

The Project operates under a Ministerial (ie State significant) development consent for extractive industry granted under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). While the Project was appropriately classified as an extractive industry at the time of its development application (in November 2001) and grant of its consent (on 19 October 2004), it nonetheless required grant of a mining lease under the *Mining Act 1992*. This is because quartzite is prescribed as a mineral under Schedule 1 of the *Mining Regulation 2016*. Thus, the Project is an "extractive industry" under the EP&A Act but a "mine" under the *Mining Act 1992*. The existing development consent boundary coincides with mining lease ML 1633, which was granted in July 2009.

The Project is approved to extract, process and transport up to 500,000 tonnes per annum (tpa) of quartzite and other hard rock materials. This extracted product is transported by road to the Lithgow, Blue Mountains and Sydney regions. The development consent has been previously modified on two occasions (see **Table 1**).

Table 1 | Summary of previous modifications

Mod No.	Summary of Modifications	Approval Authority	Type	Approval Date
MOD 1	• Regularise the operation of existing stockpile extension areas and the processing plant; and • Permit various erosion and sediment control works.	Minister	75W	25 August 2017
MOD 2	• Extension of quarrying operations until July 2020.	Minister	4.55(1A)	7 December 2018

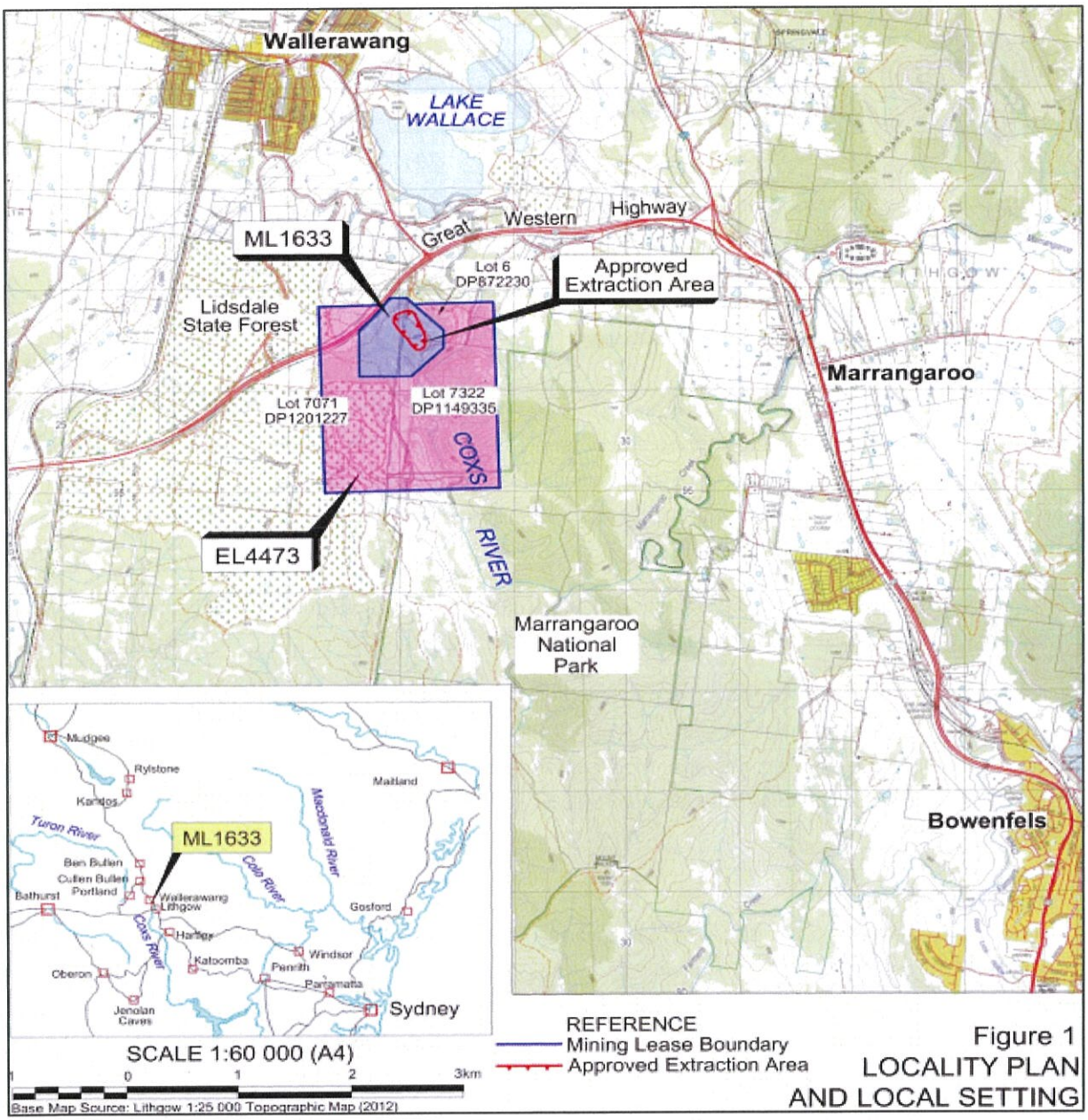

Figure 1 | Site location

2. Proposed Modification

On 21 June 2019, Walker submitted a modification application that proposed (see **Figure 2**):

- expanding the Project's existing extraction and stockpile areas. The proposal seeks to increase the extraction area from 6.5 to 13.3 ha and to increase the depth of extraction from 930 to 860 m AHD;
- extracting up to 15 million tonnes of hard rock and crushable material (including quartzite, hornfels and sandstone) at the existing approved extraction rate of 500,000 tonnes per annum (tpa);
- clearing approximately 14.1 ha of native vegetation; and
- extending the Project's operational life by 30 years until July 2050.

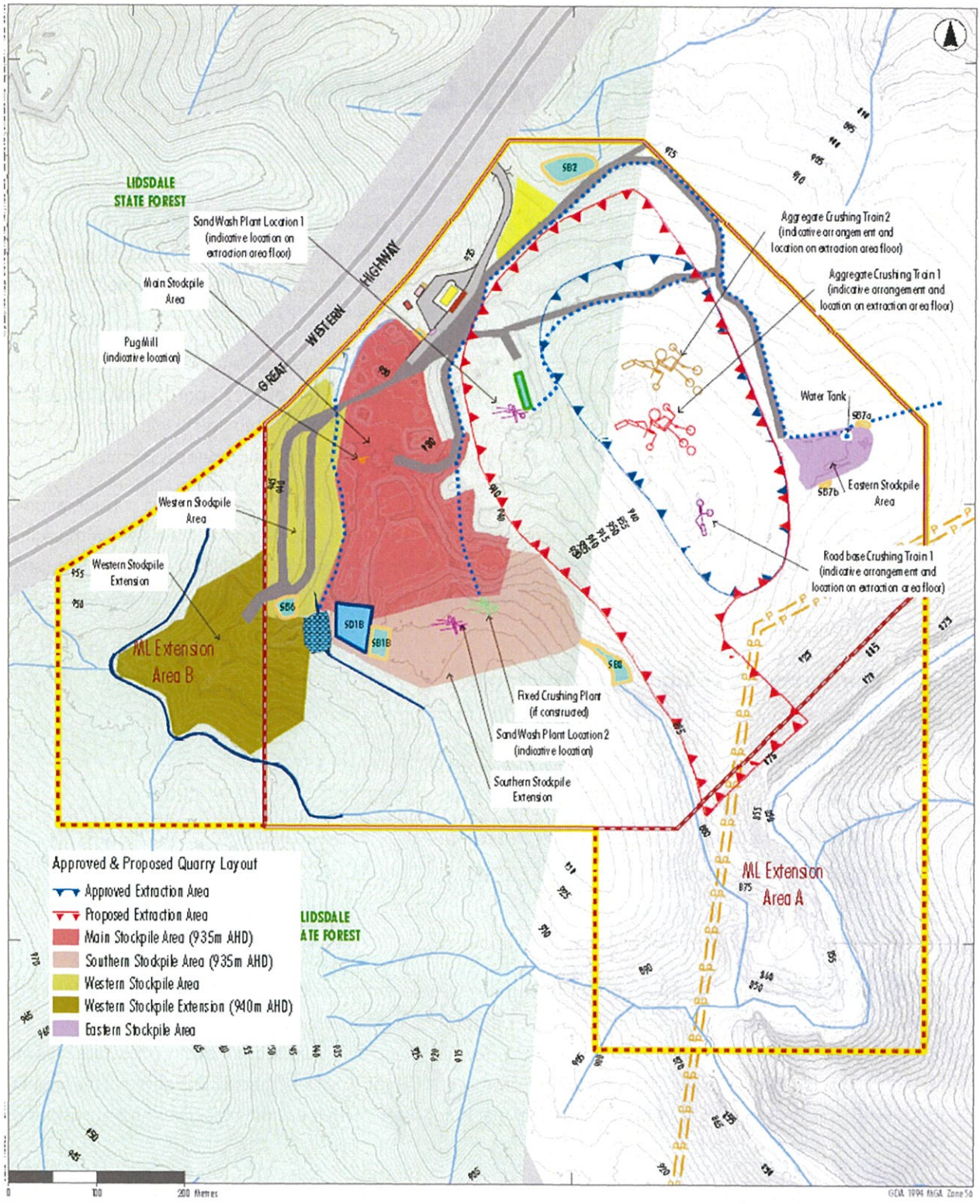

Figure 2 | Proposed site layout

The modification would not change the Project's approved extraction or transportation rates, hours of operation or number of employees. The modification application is supported by a Statement of Environmental Effects (SEE, see **Appendix A**).

3. Statutory Context

3.1 Modification

This application seeks to modify development consent DA 344-11-2001 in accordance with section 4.55(2) of the EP&A Act. Under section 4.55(2), a development consent cannot be modified unless the consent authority is satisfied that the proposed development would remain substantially the same as the development for which consent was originally granted.

The more significant changes under the modification are the clearing of vegetation and the extension of the Project's operational life. At the Department's request, Walker provided a legal opinion from Hicksons Lawyers on whether the proposed expansion of activities and extension to the Project's life would fall within the power to modify a consent under section 4.55(2) or would require lodgement of a new development application.

The Department has carefully considered this matter. After weighing up the issues involved and consideration of the legal advice provided by Walker, the Department considers that the modification is consistent with section 4.55(2) of the EP&A Act as most of the core elements of the Project, such as the nature of the Project (ie an extractive industry) and its operational hours, extraction and transport limits and number of employees, would remain unchanged.

3.2 Environmental Planning Instruments

Several environmental planning instruments (EPIs) apply to the proposed modification, including:

- *SEPP (Mining, Petroleum and Extractive Industries) 2007 (Mining SEPP);*
- *SEPP (Sydney Drinking Water Catchment) 2011;*
- *SEPP 33 – Hazardous and Offensive Development;*
- *SEPP 44 – Koala Habitat;*
- *SEPP 55 – Remediation of Land;* and
- *Lithgow Local Environmental Plan 2014 (Lithgow LEP).*

The Department has considered the modification against the relevant provisions of these EPIs, as well as Walker's consideration of these matters in its SEE. Under the Lithgow LEP, extractive industry is permissible with consent in that part of the site which is zoned RU3 (Forestry). Under the Mining SEPP, extractive industry is permissible with consent in that part of the site which is zoned E4 (Environmental Living). The Department considers that the Project, if modified, could continue to operate in a manner that is consistent with the aims, objectives and provisions of these EPIs.

3.3 Consent Authority

The Minister for Planning and Public Spaces (the Minister) is the consent authority for the application under section 4.5(a) of the EP&A Act. Walker has not reported any political donations and Lithgow City Council (LCC) did not object to the modification. One submission was received which did not object to the modification. Therefore, the Director, Resource Assessments, may determine the application under the Minister's delegations dated 11 October 2017 and 25 June 2019.

3.4 Objects of the EP&A Act

The Minister or delegate must consider the objects of the EP&A Act when making decisions under the Act. The Department has assessed the proposed modification against the objects of the EP&A Act as set out in its section 1.3. The objects of most relevance to the decision of whether to approve the proposed modification are:

- Object 1.3(a): *to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources*;
- Object 1.3(b): *to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment*;
- Object 1.3(c): *to promote the orderly and economic use and development of land*;
- Object 1.3(e): *to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats*;
- Object 1.3(f): *to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)*; and
- Object 1.3(j): *to provide increased opportunity for community participation in environmental planning and assessment.*

The Department considers that the proposed modification encourages the proper management and development of resources (Object 1.3(a)) and the promotion of the orderly and economic use of land (Object 1.3(c)), since the proposed modification:

- involves a permissible land use on the subject lands;
- allows for the extraction of quartzite material in accordance with the conditions of a Mining Lease for the Project and the extraction of additional extractive materials; and
- maintains socio-economic benefits for the Lithgow and NSW communities.

The Department has considered the principles of ecologically sustainable development (ESD, Object 1.3(b)) in its assessment of the proposed modification. The Department has also noted Walker's consideration of these matters in its SEE for the proposed modification. The Department considers that operation of the Quarry would remain consistent with the principles of ESD under the proposed modification. The Department's assessment has sought to integrate all significant environmental, social and economic considerations in its decision-making.

The Department has considered the protection of the environment and heritage (Objects 1.3(e) and (f)). The Department recognises that the proposed modification would introduce additional impacts on biodiversity due to the proposed vegetation removal. These impacts have been mitigated and are otherwise offset. The Department's consideration of biodiversity and Aboriginal heritage impacts is set out in **Sections 5.1** and **5.4**, respectively.

The Department exhibited the proposed modification and made the accompanying SEE publicly available (Object 1.3(j)) (see **Section 4**).

3.5 Landowner's Consent

Under clause 115(1)(h) of the *Environmental Planning and Assessment Regulation* 2000 (EP&A Regulation), consent from the owners of land to which a development consent for extractive industries applies is required for any modification application to be lodged in respect of that consent. Consent is also required from any owners of land outside the consent area that may be subject to the modification application.

Walker has provided copies of correspondence from the Forestry Corporation of NSW and the Department's Crown Lands Division which consent to the modification application. The requirements of clause 115 are therefore satisfied.

4. Engagement

4.1 Department's Engagement

In accordance with Division 2 of Schedule 1 of the EP&A Act and clause 118 of the EP&A Regulation, the Department:

- exhibited the proposed modification in a newspaper that circulates in the Lithgow LGA;
- made the SEE available on its Major Projects website; and
- displayed copies of the SEE at LCC's office.

The Department requested advice from eight Government agencies, being the Department's Crown Lands and Water Divisions and Department of Primary Industries (CLW&DPI), the Department's Division of Resources and Geoscience (DRG), the Department's Biodiversity and Conservation Division (BCD), WaterNSW, the NSW Resources Regulator (RR), the Environment Protection Authority (EPA), the Forestry Corporation of NSW (FCNSW) and Roads and Maritime Services (RMS). LCC was also invited to comment on the proposed modification (see **Section 4.2**).

The Department also notified 152 persons who had previously made submissions either in respect of the original development application or the later modification applications (see **Section 4.3**).

The Department received expert advice from eight agencies and LCC during exhibition and one submission from a member of the public (see **Appendix B**).

On 13 August 2019, officers of the Department undertook a site visit along with officers from WaterNSW. The site visit provided an opportunity to inspect key areas relating to the modification application including the existing quarry and proposed expansion area and stockpile areas.

4.2 Government Agency Advice

Advice was received from BCD, CLW&DPI, DRG, EPA, FCNSW, RMS, RR and WaterNSW. LCC also provided comments on the modification application.

BCD advised that Walker's Biodiversity Development Assessment Report (BDAR) contained some minor inconsistencies with the *Biodiversity Conservation Act 2016* (BC Act). BCD requested additional information and noted that the BDAR should be certified as being compliant with BCD's Biodiversity Assessment Methodology (BAM) within 14 days of the submission date, which had not occurred. BCD also identified that the BAM required the Biodiversity Credit Report to be appended to the BDAR.

BCD did not identify any issues regarding the SEE's Aboriginal cultural heritage assessment and recommended that Walker consult with Registered Aboriginal Parties (RAPs) regarding salvage of identified Aboriginal objects.

The **CLW&DPI** response contained advice from the Department's Water and Crown Lands Divisions and Natural Resource Access Regulator (NRAR).

DPIE – Water requested that it be consulted by Walker in the preparation of a standalone Groundwater Management Plan (GWMP). The GWMP would need to include details such as proposed monitoring, trigger levels and "make good provisions" for potential impacts to Basic Landholder Rights bores.

DPIE – Crown Lands advised that the proposed extension area covered an environmentally sensitive area on Crown land but considered that the proposed activity would have minimal impact.

NRAR advised that any works within waterfront land or watercourses must be conducted in accordance with its *Guidelines for Controlled Activities*. NRAR identified that Walker's Water Access Licence (WAL) is for an entitlement for 100 megalitres per year (MLpa) but is a zero share WAL. Therefore, Walker would need to obtain the appropriate water entitlements prior to extraction of any water.

Walker later clarified that it had quoted an incorrect WAL number in its SEE and that it does in fact hold a water entitlement of 100 MLpa associated with the correct WAL number.

DRG considered that the Project would permit continuity of quartzite mining operations and permit the efficient extraction of an additional 12 to 15 million tonnes of quartzite resource. This would result in economic benefits from the continued employment of 15 workers and total royalties of $7.7 million being paid to the State. DRG also confirmed that the modification included land not covered by Walker's existing mining lease. DRG suggested that Walker consolidate its existing mining lease with any additional lease that it obtained. DRG recommended that Walker consider potential resource sterilisation in the process of identifying the location of any biodiversity offset areas.

EPA considered that the likely and possible water impacts of the proposal on the Coxs River and its catchment had not been adequately identified, assessed and mitigated. On this basis, EPA initially did not support the modification application. EPA requested additional information regarding the impact assessment for surface and ground water regarding:

- Coxs River water quality objectives and site discharges;
- Coxs River tributaries diversion;
- extraction below the water table; and
- progressive rehabilitation.

Following the provision of additional information by Walker in its Response to Submissions report (RTS), the EPA considered it had sufficient information on surface water impacts but considered that Walker should not extract material from below the water table as this could impact water quality in the Coxs River catchment.

EPA recommended conditions of consent to mitigate and manage noise and air quality impacts.

WaterNSW raised a range of concerns about potential impacts to water quality within the Coxs River, namely:

- proximity of the proposed southern extension area to the Coxs River and impacts from earthworks on steep slopes;
- diversion of an ephemeral second/third order tributary of the Coxs River for the proposed extension of stockpile areas;
- predicted baseflow reduction in the Coxs River (8-15% reduction based on groundwater modelling); and
- discharge of water from the Project's final void to the Coxs River.

However, WaterNSW also identified that these concerns could be alleviated through the review and update of the Project's Soil and Water Management Plan and Rehabilitation Management Plan, in consultation with WaterNSW.

FCNSW advised that Walker's mining lease covers quartzite extraction, but the other materials proposed to be extracted would be subject to an agreement between Walker and FCNSW. Such agreements generally do not extend beyond five years without the relevant Minister's approval and, in any event, would not exceed 20 years. FCNSW requested that the Project's Mining Operations Plan (MOP) which addresses operations undertaken under ML 1633, is updated, should the application be approved. It also requested to be notified of the outcomes of consultation with RAPs regarding the salvage and relocation of Aboriginal objects on FCNSW's land.

RR highlighted that several matters it had recommended were addressed in the SEE had been overlooked. RR raised concerns with the use of the existing MOP as justification for the proposed rehabilitation outcomes and final landform. RR highlighted that MOPs must be consistent with a Project's development consent and not vice versa.

RMS identified potential visual impacts on motorists travelling on the Great Western Highway (GWH). Walker proposed to direct on-site lighting away from the GWH and away from vantage points to the north. RMS also recommended that Walker review and, if necessary, update its Blast and Explosives Management Plan and its Noise Management Plan.

LCC did not object to the modification but requested more information about the Project's measures to reduce visual impacts on travellers on the GWH.

Based on the modification's proposed 30-year extension and potential community impacts, LCC requested that developer contributions, either in accordance with its Section 94A Development Contributions Plan and/or a Voluntary Planning Agreement (VPA), be required by any approval for the modification.

4.3 Community Submission

One community submission was received that provided comments and also raised concerns regarding:

- progress of rehabilitation;
- use of overburden in rehabilitation;
- water diversions and onsite collection and re-use of water; and
- safety measures in place to protect workers' health due to the presence of silica.

The submission also stated that the life extension of 30 years appeared excessive but, if there was a market for the extracted products, it would be good for employment.

4.4 Response to Submissions

Walker submitted its RTS on 30 September 2019, which was forwarded to agencies for review and any additional advice. Additional advice was received from BCD, EPA, DRG, RR and LCC (see **Appendix C**).

Following review of the RTS, BCD stated that its concerns had been addressed.

RR considered that Walker still hadn't provided a consideration of alternatives to the use of the Project's final void.

EPA advised that anticipated surface water impacts could be addressed via review and revision of the Project's Soil and Water Management Plan to address the changes that would result from the proposed modification. However, EPA also advised that its concerns about groundwater remained unresolved. The RTS did not contradict EPA's understanding that the level of the water table is between 870 and 900 m AHD. As Walker proposed to extract to a level of 860 m AHD, EPA maintained its concern that extraction below the water table could cause impacts to groundwater quality. As extraction to this depth is not planned to occur for at least 15 years (2035), EPA recommended that groundwater interactions be subject to a separate contemporaneous environmental assessment, ie not be approved as part of this modification application. This would allow for more data about groundwater levels and water quality to be collected and allow for a more robust assessment.

The Department's consideration of groundwater impacts is set out in **Section 5.2**.

LCC reviewed the RTS and maintained that Walker should pay developer contributions. LCC cited several mines and quarries operating in the Lithgow LGA that pay developer contributions under a VPA or similar scheme. Initially, LCC considered that heavy vehicles from the Project would, at times, travel on roads under its authority and therefore Walker should pay developer contributions for their upkeep.

However, the Project's access is via a private haul road with direct access to the GWH. No heavy vehicles rely on LCC's roads to travel from the Project to arterial State roads and they are therefore unlikely to create unusual wear and tear on LCC infrastructure. Therefore, the Department considers that it would be unreasonable for Walker to pay developer contributions for road maintenance.

LCC then referred to, and provided, its *Section 94A Development Contributions Plan for Lithgow City Council October 2015 as amended December 2016*. The Department has had regard to this Plan during its assessment. The Plan seeks to fund the provision of services used by residents of the LGA and is based on a contribution of 1% of the cost of a development. For the modification, this would amount to $11,000.

5. Assessment

In assessing the merits of the proposal, the Department has considered the:

- EIS for the original project;
- EA and SEE for the two previous modifications;
- SEE for the proposed modification;
- advice received from agencies and the public submission;
- Walker's RTS and agency responses;
- relevant EPIs; and
- requirements of the EP&A Act, including the objects of the Act.

The Department considers that the key issues for assessment of the proposal are biodiversity impacts, ground and surface water quality impacts and Aboriginal cultural heritage. LCC also raised an issue concerning developer contributions. The Department's consideration of biodiversity impacts is provided in **Sections 5.1**, groundwater impacts are assessed in **Section 5.2**, surface water impacts are addressed in **Section 5.3** and Aboriginal cultural heritage are covered in **Section 5.4.** The Department's consideration of developer contributions and other issues is included in **Section 5.5**.

5.1 Biodiversity

The expansion of the Quarry proposed in the modification would require clearing of up to 14.1 ha of native vegetation. The SEE included a BDAR prepared in accordance with the BAM. The BDAR identified that several Plant Community Types (PCTs) and threatened fauna species would be impacted and that biodiversity credits would need to be retired to offset these impacts.

The PCTs and threatened fauna species were compared against those listed under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* and found not to require further assessment for Commonwealth purposes.

5.1.1 Flora Impacts

The BDAR study area (see **Figure 3**) included the proposed modification area plus a 1,500 m buffer, covering 1135.6 ha in total, as required by the BAM. Mapping identified the presence of PCT 732 – *Broad-leaved Peppermint – Ribbon Gum grassy open forest in the north east of the South Eastern Highlands Bioregion*, and PCT 1093 – *Red Stringybark – Brittle Gum – Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion*. The proposed expansion would require the clearing of up to 5.5 ha of PCT 732 and 8.6 ha of PCT 1093. The study area also included a pine plantation that did not require additional assessment as does it not contain native species.

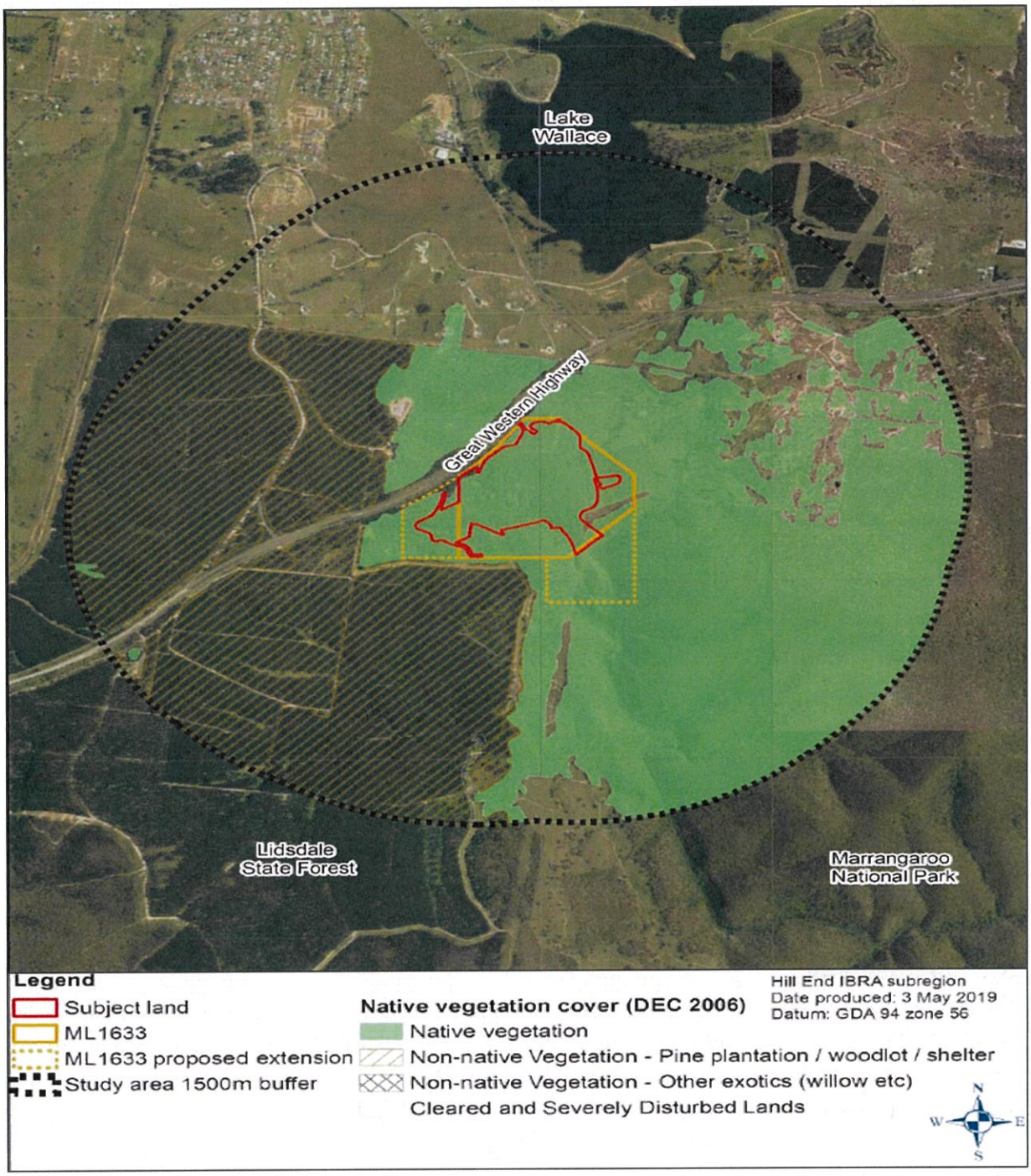

Figure 3 Study area for BAM assessment

The BDAR outlined measures to avoid impacts on native vegetation. During preparation of the SEE, Walker reduced the Project's footprint by configuring the perimeter of the extraction area to maintain a riparian buffer to the Coxs River and reduced the size of its stockpile areas by increasing their height.

The proposed clearing of PCT 732 and PCT 1093 would require the retirement of 214 and 273 ecosystem credits respectively. BCD identified that the BDAR had not been certified as compliant with the BAM nor had the required Biodiversity Credit Report been appended to the BDAR. Walker addressed these matters in its RTS, to the satisfaction of BCD.

No other matters were raised regarding the preparation of the BDAR. There are a range of options available to Walker to retire its biodiversity offset requirements, as set out in **Section 5.1.3**.

5.1.2 Fauna Impacts

The BDAR identified that proposal's primary impacts on fauna would be removal of habitat that could be used by threatened species for foraging and/or breeding. Based on the attributes of the location and vegetation, the BAM identified 18 fauna species potentially occurring on the site. Of these, four species were further identified as not requiring additional assessment as the site conditions, location and/or attributes were not conducive for their presence.

In accordance with BCD's advice, targeted surveys were conducted at the optimal times of the year for detecting threatened species potentially occurring on the site. **Table 2** provides a summary of the survey efforts undertaken. No threatened species were observed on the site.

Table 2 | Fauna species surveys

Species	Survey Effort	Result
Diurnal Birds	Targeted surveys conducted in July, October and November 2018.	None of the candidate threatened species or stick nests were observed on the site.
Nocturnal Birds	Targeted surveys conducted July, August, September, October and November 2018.	None of the candidate species were observed on the site.
Invertebrates	Targeted surveys conducted in September, October and November 2018.	None of the candidate species were observed on the site.
Mammals - non flying	Spotlighting was conducted for approximately two hours over three nights in July, October and November 2018.	None of the candidate species were observed on the site.
Mammals - Bats	One bat (Large-eared Pied Bat) was identified as a candidate species. Targeted surveys were conducted over 19 nights during July, October and November 2018.	No Pied Bats were detected on the site.

The Department considers that assessment of fauna impacts has been appropriately conducted in accordance with the BAM.

5.1.3 Biodiversity Offsets

Walker would need to retire 487 ecosystem credits to offset impacts of clearing 14.1 ha of vegetation. No species credits would need to be retired. Under the BC Act, the options available are:

- purchasing and retiring the equivalent biodiversity credits to establish a stewardship site;
- funding a biodiversity conservation action that benefits the impacted biodiversity;
- committing to deliver on-site ecological rehabilitation that creates the same ecological community for threatened species; or
- paying an offset amount into the Biodiversity Conservation Fund.

Walker has identified that it likely to satisfy its offset requirements through a combination of these options. The Department considers that this would be an acceptable approach.

Walker requested, and the Department supports, a staged approach to the retirement of biodiversity credits. It is proposed that the required 487 credits be split into four tranches reflecting the proposed six quarry stages (see **Figure 4**) in the following manner:

- 136 credits – Stages 1 and 3 (initial extraction area extension);
- 167 credits – Stages 2 and 4 (remaining extension of quartzite extraction area and southern stockpile area);
- 127 credits – Stage 5 (Western Stockpile area extension); and
- 57 credits – Stage 6 (Cobble Extraction area).

The Department has recommended conditions of consent that would require Walker to retire all biodiversity credits for each tranche before any of the associated vegetation is cleared. This approach would encourage Walker to consider all alternatives before committing to the expansion of the Western Stockpile or Cobble Extraction areas, both of which are contingent on finding markets for non-quartzite and cobble materials. Based on current prices to purchase and retire biodiversity credits, it would cost Walker in excess of $1 million to retire the credits needed for these two Stages. The SEE states that Walker is unsure as to whether it would need to extend its operations into these two areas, but that it included this vegetation clearing to ensure that it had considered the worst-case scenario.

Should Walker be able to manage its operations without an extension to either or both its Western Stockpile and Cobble Extraction area, then it would save the substantial cost of retiring (respectively) 127 and 57 biodiversity credits. More importantly, these areas of native vegetation would remain intact. Had the proposed condition of consent required all biodiversity credits to be retired upfront, then Walker would have little incentive to avoid clearing these particular areas of native vegetation.

The Department has relied on advice from BCD in its assessment of biodiversity matters and is satisfied that the Project's impacts to biodiversity values have been adequately described and assessed. It is also satisfied that the proposed biodiversity offset mechanism(s) would encourage the minimisation of the Project's biodiversity impacts and that all residual impacts would be appropriately offset.

5.2 Groundwater

Original SEE Proposal

The Quarry is located within the Upper Coxs River sub-catchment of the Hawkesbury-Nepean River catchment. The current consent for the Project permits the extraction of resources down to 930 m AHD while the SEE proposed that this would be deepened to 860 m AHD. As the water table on site currently ranges between approximately 870 and 900 m AHD, the modified Project's operations were originally proposed to intercept the water table.

Walker's SEE identified that the Project expansion could produce groundwater impacts including:

- aquifer interference;

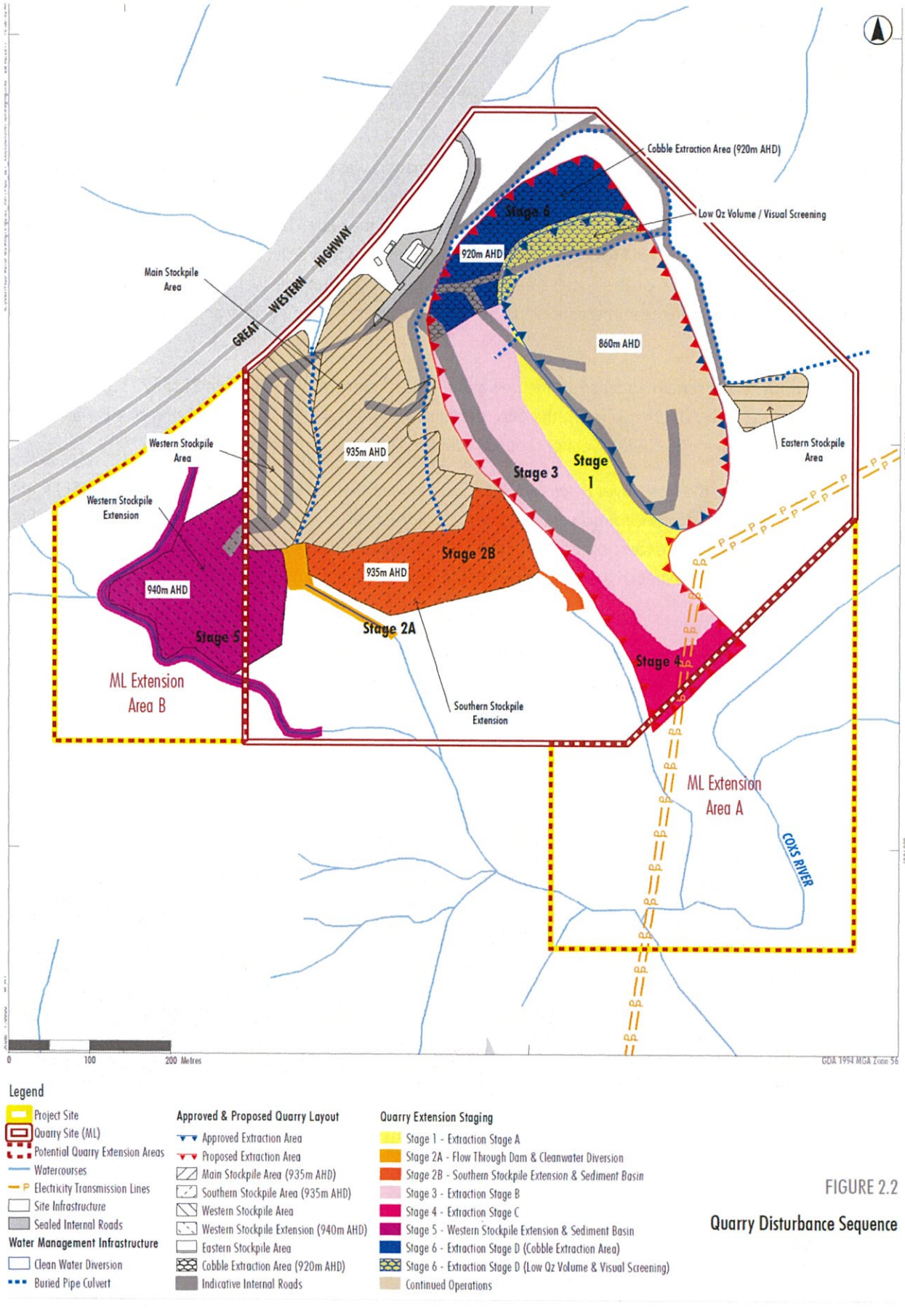

Figure 4 Proposed disturbance stages

- drawdown of surrounding bores,
- reduction to baseflow in the Coxs River;
- impacts on groundwater dependent ecosystems (GDEs); and
- utilisation of groundwater.

A groundwater impact assessment (GIA) addressing these matters was included in the SEE. The GIA was based on the creation of a numerical hydrogeological model to approximate local groundwater conditions. A cross-section of the proposed Project extension and the inferred location of the water table some 200 m distant from, and parallel to, the GWH is shown in **Figure 5**. The model was then used to predict the modified Project's impacts on the groundwater resources of the local area. The GIA predicted that the water table would experience a drawdown of 35 to 40 m in the immediate vicinity of the extraction area, reducing to one metre at distance of one kilometre (to the west).

Based on modelled uncertainty scenarios, the dewatering rate is predicted to vary from 31 to 1771 m^3/d, with the base case being 70 m^3/d. On this basis, the GIA predicts that the Project, by its interception of the water table, would extract, or "take", 25.55 ML/year of groundwater from the local groundwater resource.

The Project lies within the *Coxs River Fractured Rock Groundwater Source of the Water Sharing Plan* (WSP) *for the Greater Metropolitan Region Groundwater Sources*. Walker has obtained a Water Access Licence for 100 ML within this WSP which is in excess of the predicted 14.60 ML/year requirement that the quarry would generate should it be permitted to extract material from below the water table.

The other 10.95 ML/year of the 25.55 ML "take" needs to be accounted for under the *Upper Nepean and Upstream Warragamba Water Source (Wywandy Management Zone) of the Water Sharing Plan for the Greater Metropolitan Unregulated River Water Sources*. Walker has a zero allocation WAL for this WSP, and proposed to trade within the water market to obtain an allocation of at least 11 ML.

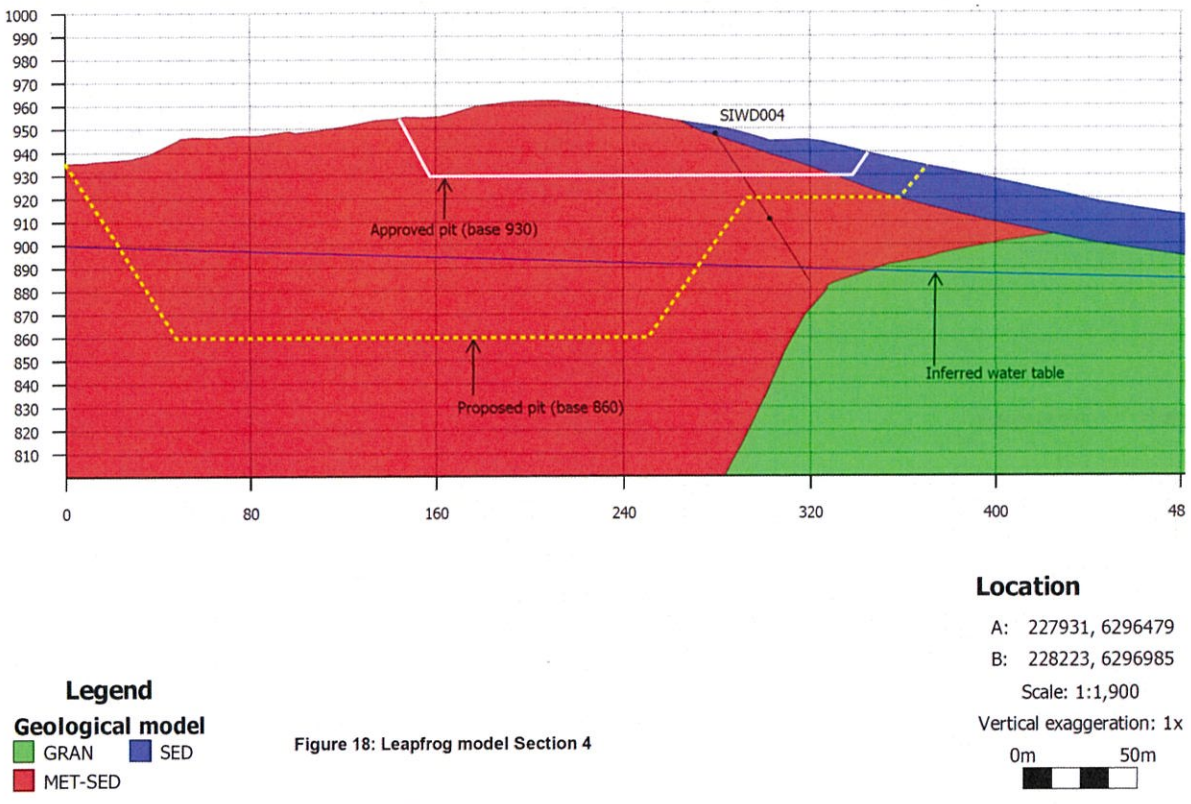

Figure 5 Quarry cross-section with inferred water table

Concerns over the Original Proposal

- *Proposed Final Void*

The original proposal would have resulted in a final quarrying void that would capture groundwater and incident rainfall. Walker proposed that a borehole be drilled through the floor of this void to allow any collected water to drain via a pipeline to the Coxs River. This management approach was questioned by both WaterNSW and the EPA.

In its RTS, Walker considered the concerns expressed by WaterNSW and the EPA and provided a preliminary assessment of the option of a final void that would retain collected waters. This included a preliminary water and salt balance model which indicated that the water level would take 200 years to reach equilibrium and would be unlikely to overtop the void.

The Department does not support Walker's proposed approach to the management of the final void, which essentially is to select the best option at some point in the future, ie it would "*complete a detailed constraints and opportunities analysis for final void options as part of a detailed quarry rehabilitation and closure plan*". Without a clear presentation of defined options and their benefits and impacts, the Department cannot be certain as to either the modification's proposed final configuration of the site or the manner in which the site would be managed in the long-term. The Department considers that this information should be an integral part of the proposal and therefore should be available for assessment.

- *Existing Groundwater Monitoring*

Walker has established three groundwater monitoring bores that collect groundwater level data by automatic loggers (see **Figure 6**). Data from these loggers was collected from mid-2018 until March 2019 and presented in the GIA. These data show that groundwater levels did not vary significantly and did not seem to respond to rainfall events during the monitoring period.

The groundwater monitoring program initiated by Walker, at the request of DPIE - Water, is a sound start in gaining understanding of the existing groundwater regime on the site. However, the area was, and is currently, experiencing drought conditions. The Department considers that a longer data collection period is required to achieve an appropriate level of certainty for this assessment.

- *Void Water Quality*

Groundwater samples from the three bores were sampled and analysed on three occasions; in August, September and October 2018. The groundwater was found to be a calcium carbonate type fresh groundwater with an electrical conductivity of 460 to 975 uS/cm. However, the following elements were found at levels above the ANZECC 2000 default trigger values for freshwater:

- Cadmium;
- Nickel;
- Lead; and
- Zinc.

The analysis of groundwater samples from these three monitoring bores provides a valuable indication as to local groundwater quality. However, the data set is not sufficiently large to provide the Department with confidence that the quality of water accumulating in the post-quarrying void can be well-predicted. These concerns are elevated by Walker's original proposal to release the accumulating water in its final void to the Coxs River.

The Department does not consider that the groundwater data set adequately supports prediction of the impacts of extracting quarrying materials from below the water table. The remedy to this situation is to collect a larger data set so that fluctuations in the water table and the quality of groundwater on the site is established with certainty. In practical terms, this would take a significant but somewhat uncertain period of time (at least a few years), as it would depend on the data set capturing variations in rainfall patterns and the effect that rainfall and evaporation would have on void water quality.

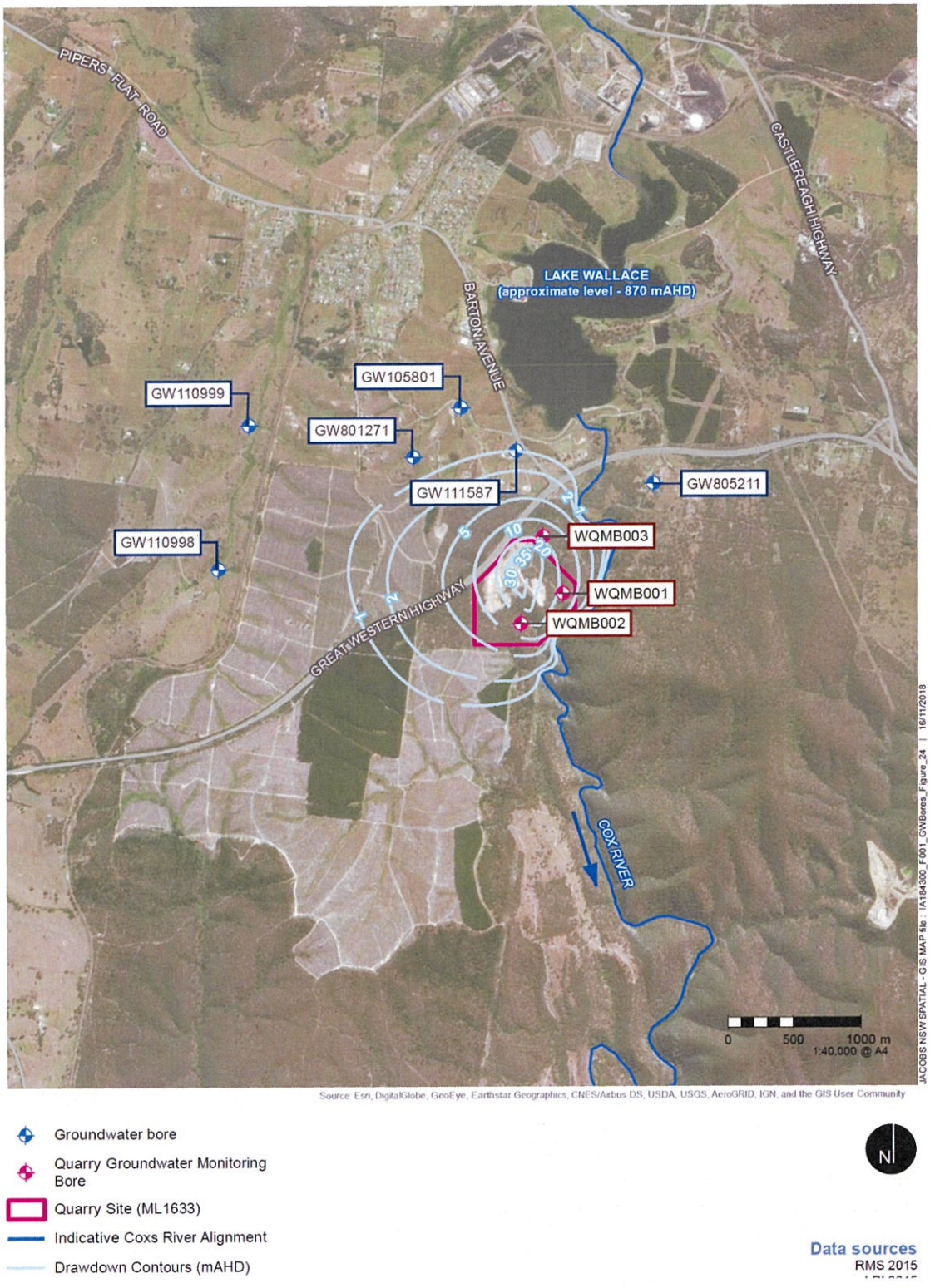

Figure 6 Groundwater bores and model drawdown contours – SEE proposal

- *Reductions to the Coxs River Baseflow*

The GIA predicts that, under the original proposal, there would be a reduction of 30 m^3/day (m^3/d) in baseflow to the Coxs River. This represents a reduction of 11% of mean flow regime for the river. Other scenarios modelled baseflow reductions of between 8 and 15%. This would be a loss of water from Sydney's Drinking Water Catchment.

- *Drawdown of Groundwater for Other Water Users*

The proposal is subject to the requirements of the *NSW Aquifer Interference Policy* (AIP). The minimal impact thresholds of the AIP include that the drawdown at any bore should be less than two metres. The base case produced by the application of the groundwater model is shown in **Figure 6.** This figure indicates that the GW111587 bore to the north of the site is predicted to experience a drawdown of one metre under the original proposal. Other scenarios were modelled to account for some of the uncertainty that is inherent in groundwater modelling. The maximum predicted drawdown of any of these scenarios is four metres at the same bore, which would exceed the AIP's minimal impact threshold.

The GIA recommended that *"a water supply bore census should be undertaken following the Quarry extension approval, as this will assist in the resolution of claims of bore viability being impacted, should such claims be made"*. It also recommended that *"a compensation or mitigation strategy should be prepared and included as part of the Quarry Soil and Water Management Plan. The strategy should identify the approach to assessing impacts on groundwater supply and present mitigatory or compensatory measures"*

Walker maintained that the Project would not cause a change in the beneficial use of groundwater resources by other water users. The Department is not fully confident that this AIP criterion would be achieved under the original proposal. The Department considers that these matters should be considered as part of a revised GIA, prior to any approval to extract resources from below the water table.

- *Groundwater Dependent Ecosystems*

The SEE reviewed the Bureau of Meteorology's GDE Atlas to identify potential terrestrial and aquatic GDEs within the vicinity of the Quarry. No high priority GDEs were identified within 10 km of the Quarry or within the study area. However, the Atlas maps broad areas as *"high potential terrestrial GDE"* and parts of this area could potentially be subject to a drawdown of up to 35 m. These areas were considered in the SEE's flora and fauna assessment. Based on knowledge of the depth to the water table, it is unlikely that any mapped GDE areas would be accessing groundwater or impacted by the extension of the quarry. No concerns are held by the Department in this regard.

Revised Proposal and Residual Assessment

For the reasons set out above, the Department supports the EPA's advice that the Project not be permitted to extract material from below the water table until *"a contemporaneous environmental assessment and approval process at a later stage"* has been undertaken.

The Department informed Walker of its view that extraction from below the water table was not justified by the SEE and RTS on the basis of the lack of certainty with the outcomes of the water model and the limited period and extent of water monitoring. Walker responding by stating that it would:

- no longer seek to discharge water from the final void to Coxs River;
- not extract below 900 m AHD, unless approved by the Secretary;
- establish and map the wet-weather level of the water table on the site; and
- update and submit a revised GIA, based upon an improved data set for inputs to the groundwater model.

The Department considers that this is a reasonable approach to the uncertainties that exist with the current GIA and the concerns expressed by WaterNSW and the EPA. However, the Department agrees with the EPA that "*a contemporaneous environmental assessment and approval process at a later stage*" should be undertaken following the collection of a robust data set to support a revised GIA. This would be best achieved in the context of a subsequent development application or modification application, which would allow for the relevant agencies to conduct a thorough review of a revised GIA.

This simple restriction on Walker's original proposal eliminates nearly all groundwater issues that were associated with the original proposal. That is, there would be no interception of groundwater and therefore no impacts on either baseflows to the Coxs River or other water users under the AIP. Groundwater would not flow into the void and so the water accumulating in it would be much less in quantity and be dominated by rainfall and surface runoff. Walker could apply for a further modification to its development consent providing that it had obtained a sufficient set of groundwater, rainfall and evaporation data to support any future proposal to extract beneath the water table and had prepared a certain and fully assessed management strategy for its post-quarrying final void.

The Department has therefore recommended conditions of consent that prevent the extraction of materials from below one metre of the highest recorded water table. This would set an extraction limit of 901 m AHD unless Walker undertakes further investigations to establish and map groundwater levels with greater certainty. Extraction of material would then be permitted below 901 m AHD, provided that this one-metre buffer to the water table was still maintained.

5.3 Surface Water

Walker proposed in its SEE that water be allowed to drain from the final void into the Coxs River and the water discharge quality parameters of this discharge be based on sampling and analysis of the current water quality within the river in the vicinity of the site.

The Coxs River is within the Sydney Drinking Water Catchment and it is important that water quality and water flows within this catchment are protected. The *SEPP (Sydney Drinking Water Catchment) 2011* was established to protect water quality within the catchment and requires that new development applications demonstrate a 'neutral or beneficial effect on water quality' in the catchment.

While the proposal does not constitute a new development application, the EPA nonetheless considered that any water discharged from the site should be required to have a 'neutral or beneficial effect on water quality' in the catchment and that the calculation of quality parameters should not be influenced by discharges from coal mines and power stations upstream of the Project. The EPA has been active over many years in reducing the impacts from upstream sources and continues its efforts to improve overall water quality with the Coxs River catchment.

Walker addressed this issue by committing to operate its final void without discharging water to the Coxs River. The Department, the EPA and WaterNSW are satisfied that this approach would protect surface water quality within the Coxs River catchment.

There is also some potential for contamination of surface runoff by sediment from construction and operation of new site facilities, such as the proposed stockpile extensions. All facilities not draining to the final void would drain to the Coxs River. Walker proposes to construct diversion drains, sediment dams and facilities in accordance with the guidance in the "Blue Book" and also to revise and update its existing Project Soil and Water Management Plan.

The Department is satisfied that this approach would also protect water quality within the Coxs River and therefore in Sydney's Drinking Water Catchment. The Department has recommended a condition of consent that requires Walker to revise and update its Soil and Water Management Plan to address all new facilities to be constructed on site, and that this plan be prepared in consultation with WaterNSW and the EPA.

5.4 Aboriginal Cultural Heritage

The SEE includes an Aboriginal Cultural Heritage Assessment (ACHA) prepared in consultation with the local Aboriginal community and the relevant legislation and guidelines, particularly the *"Code of Practice for the Investigation of Aboriginal Objects in New South Wales (DECCW, 2010a)"* and *"Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010b)"*.

Ten Registered Aboriginal Parties (RAPs) were identified and consulted during the preparation of the ACHA, with two groups assisting in the field work undertaken on 29 August 2018. No new Aboriginal sites were located during the course of the fieldwork.

However, the proposed extension would destroy a site, previously known as WQ1, identified during studies conducted for the original Project in 2000. WQ1 was described in 2000 as being an artefact scatter, containing 22 artefacts, but when re-inspected in 2018, only 16 remained due to erosion and surface water flows. It was also identified in 2018 that the site had not been registered in the Aboriginal Heritage Information Management System (AHIMS) in 2000. The site was registered in AHIMS in 2018 and is now known as Site #45-1-2802 (see **Figure 7**).

Existing conditions of consent protect this site and require Walker *"not to disturb"* the *"potential site area"* and to *"protect and conserve the area ... throughout the life of the development"*.

The ACHA recommended that, subject to the agreement of the RAPs, salvage of the artefacts at Site #45-1-2802 be undertaken by a qualified archaeologist together with the RAPs. Limited salvage excavation is proposed, with all recovered artefacts to be reburied at a location agreed by the RAPs where no future developments are planned or likely.

Walker has also committed to implement the following safeguards, controls and management measures:

- all ground disturbance activities must be confined to the area assessed by the ACHA;
- an Aboriginal Cultural Heritage Management Plan (ACHMP) to be produced in consultation with the RAPs and BCD;
- artefacts at Site #45-1-2802 to be salvaged and relocated to a safe location (agreed to by the RAPs) away from impacts arising from the project or other planned or future developments;
- an Aboriginal Site Impact Recording Form to be completed by the archaeologist and submitted to AHIMS, recording the salvage results of the site, within four months of salvage being completed;
- the agreed location and the manner of reburial of the Aboriginal objects to be detailed in the ACHMP following consultation with RAPs. A site card would be submitted to AHIMS to register the location of any reburied artefacts. Alternatively, the Aboriginal community may prefer that Aboriginal objects to be held by an Aboriginal community or other party. Should this be the preferred option, it would be identified in the ACHMP;
- should disturbance outside of the Heritage Study Area be proposed, the area would be subject to further field survey prior to disturbance;
- inductions for staff and contractors involved will include awareness of the legislative protection requirements for Aboriginal sites and objects in NSW and relevant fines for non-compliance; and
- if, during the course of the proposal, Aboriginal artefacts or skeletal material are noted, all work will cease and the procedures in the *Aboriginal Heritage: Unanticipated Finds Protocol* would be followed.

These recommendations were provided to all RAPs. Both organisations that responded (Murra Bidgee Mullagari Aboriginal Corporation Cultural Heritage and Muragadi Heritage Indigenous Corporation) supported the recommendations.

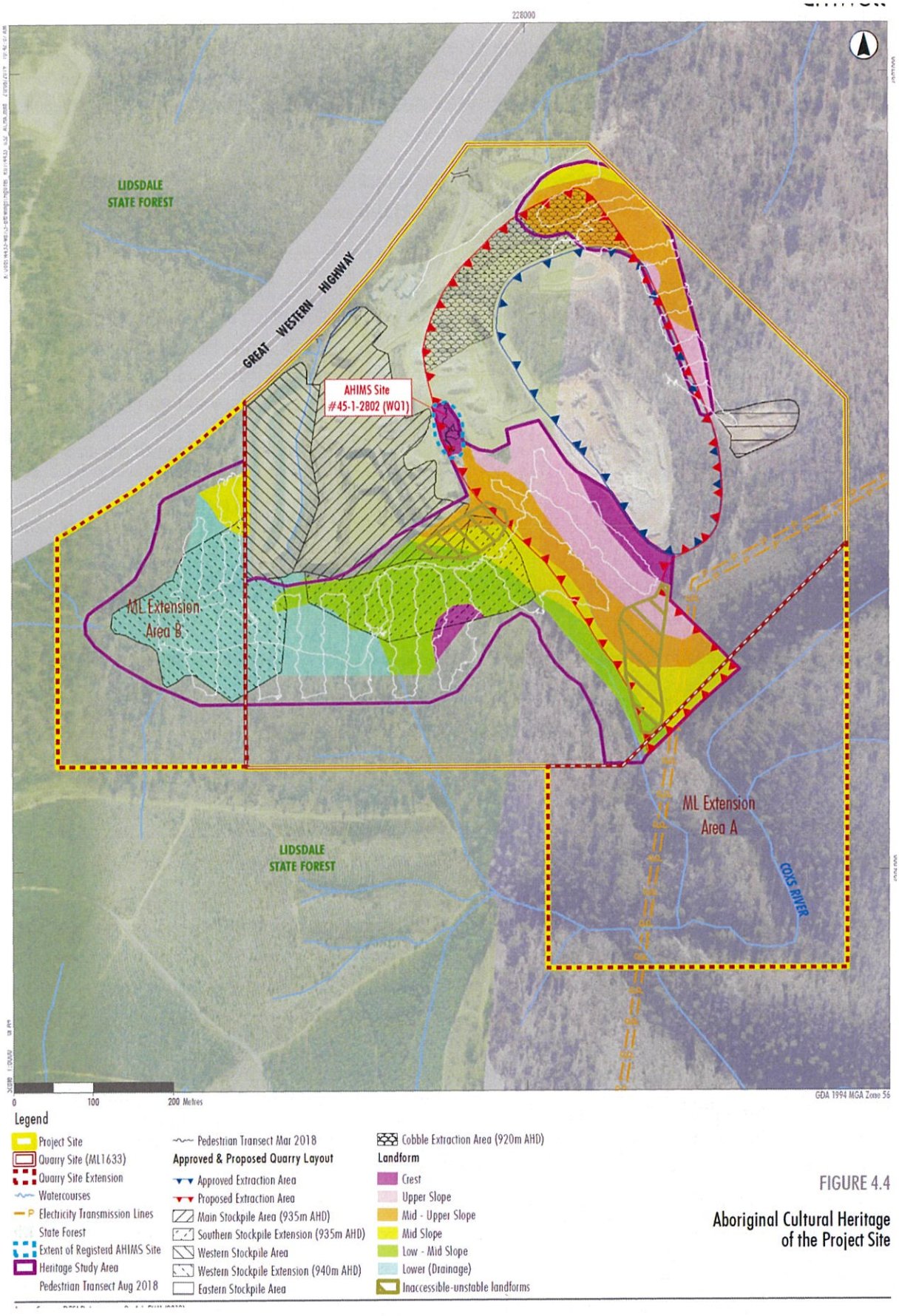

Figure 7 Location of Site #45-1-2802 (previously WQ1)

BCD considered that consultation with RAPs was conducted in accordance with the relevant guidelines and that the two RAPs had accepted the recommendations. The Department is satisfied that appropriate consultation with RAPS has been undertaken and that the planned treatment of Aboriginal cultural heritage on the site is appropriate. The Department has recommended conditions of consent that require Walker to produce an ACHMP for the site, in consultation with the RAPs and BCD, that incorporates the ACHA's recommendations. Site #45-1-2802 would be destroyed, with the artefacts salvaged and reburied at a location agreed by the RAPs.

5.5 Other Issues

Other impacts resulting from the proposed modification are considered to be minor or negligible. A summary of the Department's consideration of these matters is included in **Table 3**.

Table 3 | Summary of other issues raised

Issue	Findings	Recommended Condition
Traffic	• No changes are proposed to the transport of products from the Project or employee-generated traffic movements. • Walker constructed a dedicated intersection from the Project to the GWH, prior to the commencement of operations on the site in 2014. This enables traffic to enter and exit from the site with safety.	• No changes to conditions are considered necessary.
Air Quality	• The SEE's assessment of air quality included modelling of particulate matter (PM) for both PM_{10} and $PM_{2.5}$ for annual average and maximum 24-hour average. Total suspended particulate (TSP) concentration and dust deposition levels were also modelled. • The proposed modification would meet all applicable air quality criteria. • Potential health aspects of silica impacts for employees would be addressed by a respirable dust monitoring program for Project employees.	• Review and update the Project's Air Quality Management Plan to account for the proposed modification.
Noise	• The SEE included a Noise and Vibration Impact Assessment (NVIA) prepared in consideration of the Noise Policy for Industry (NPfI) and the Voluntary Land Acquisition and Mitigation Policy (VLAMP). • The results of the NVIA demonstrated that operational noise levels would comply with relevant NPfI criteria for the daytime, evening and night time assessment periods at all assessed receivers. • No noise-related concerns were raised by EPA during exhibition. EPA recommended that the revised NPfI noise criteria be applied to the Project. The Evening criterion would reduce from 43 to 39 dB(A) and the Night criterion would reduce from 39 to 35 dB(A). The Day criterion would remain unchanged at 43 dB(A).	• Revised lower noise criteria for the Evening and Night periods are recommended. • Review of the Project's Noise Management Plan required to account for revised noise criteria and the extension of facilities.
Blasting	• The Project's blasting operations are predicted to continue to comply with existing criteria for overpressure and vibration.	• The Project's existing Blast Management Plan must be reviewed and updated to reflect the proposed modification.
Historic Heritage	• The SEE included a Historic Heritage Assessment that did not identify any items of historic heritage that would be affected by the proposed extension.	• No changes to conditions are considered necessary.

Visual	• RMS and LCC advice identified potential visual impacts for motorists on the nearby GWH. • The Department's consideration of the SEE and the RTS confirms that there would be no material change to the visual impacts of the Project. Extraction operations would take place at lower elevations than currently and stockpile locations are screened from views of local residents and travelers on the GWH.	• No changes to conditions are considered necessary.
Rehabilitation	• Walker has sought the views of FCNSW (as principal landowner) as to its requirements for rehabilitation of the site, once quarrying operations are completed. • FCNSW requires that all infrastructure, including roads and water storages, are removed and the site is returned to native forest vegetation. • The RR is also responsible for the oversight of rehabilitation through the MOP required under the terms of ML 1633. • The Department is satisfied that the rehabilitation of the site would occur in accordance with the wishes of the landowner and to the standards required by the RR.	• The Project's existing Rehabilitation Management Plan must be reviewed and updated to include the proposed extension, in consultation with relevant agencies and to the satisfaction of the RR. • The existing MOP would need to be updated to address the modification. This is a process regulated by the RR.
Developer Contributions	• LCC advised that Walker does not pay developer contributions and its view that it would be reasonable to require contributions for the modification. • LCC cited several mining and extractive industries operating in the Lithgow LGA that make voluntary contributions for community enhancement. • The Department considers that it is appropriate for Walker to contribute to the provision of community services in the Lithgow area in accordance with the provisions of LCC's *Section 94A Development Contributions Plan*. • For this Project, a contribution of $11,000 has been proposed by LCC. Walker has agreed to this and proposed that it be directed by LCC to the NSW Rural Fire Service (RFS).	• A condition of consent is recommended requiring Walker to contribute to the provision of community services within the Lithgow LGA.
Social	• Walker consulted with identified stakeholders, including nearby residents, community groups, LCC, government agencies and employees. • Visual and noise impacts were identified as being of greatest concern, while the economic benefits of continued direct employment for 15 workers and the provision of extractive materials to local markets were viewed as positive impacts. • Visual and noise impacts are considered above.	• The Department considers that the proposal would have no major social impacts. Walker has agreed to make a contribution towards provision of community services in the Lithgow LGA.

5.6 Recommended conditions

A notice of modification (see **Appendix D**) and a consolidated version of the Project's development consent (see **Appendix E**), as proposed to be modified, have been prepared.

The Department has recommended conditions for offsetting biodiversity impacts in a staged manner, to allow for the possibility that either or both the Western Stockpile extension and Cobble Extraction areas are not needed and the associated vegetation clearing can be avoided.

The recommended conditions provide for a staged approach to the management of groundwater impacts on the Project site. Impacts would be initially avoided by requiring extraction activities not to be undertaken below 901 m AHD, one metre above the maximum predicted height of the water table in the area proposed to be extracted.

Should Walker undertake studies which establish a more exact height of the water table across the Project area then, with the approval of the Secretary, extraction may occur to a greater depth but still not within one metre of the maximum recorded water table.

Prior to any extraction below the water table a revised GIA would need to be produced and submitted with a new development application or modification application and subject to a thorough assessment process at that time. The revised GIA would need to draw upon a much larger data set for groundwater levels and water quality for input parameters to the groundwater model than are currently available.

Proposed conditions also require that a new ACHMP is developed and implemented and that all existing Project management plans are reviewed, and if necessary, updated to reflect the changes in operations due to the modification. Revised noise impact assessment criteria are proposed for the Evening and Night periods, in accordance with the outcomes of the NIA.

The Department has also taken the opportunity to contemporise other conditions of consent to reflect current drafting standards.

The Department has provided draft conditions to Walker for comment. Walker has accepted most of the proposed conditions but has objected to the Department's recommendation that approval to operate the Project would finish in July 2040 and not July 2050, as requested. The Department considers that its recommended extension of 20 years, which would give the Project a total operational life of 30 years is reasonable and in line with other mining and extractive industry consents. Additionally, materials proposed to be extracted from the site (other than quartzite) would be subject to an agreement between Walker and FCNSW. FCNSW has advised that such agreements generally do not extend beyond five years and, in any event, would not exceed 20 years. The Department therefore has maintained its position that approval for the Project to conduct extractive industries (including the extraction of quartzite under ML 1633) not extend beyond 2040.

6. Evaluation

Walker's modification application seeks to expand its Wallerawang Quarry Project to enable it to operate for another 30 years, at similar production rates as currently approved. It proposes to clear up to 14.1 ha of native vegetation and to extract material from below the water table.

Walker's proposed modification would not change the Project's approved extraction or transportation rates, hours of operation or number of employees.

Only one submission was received from the public. This may indicate a low level of impact of the current Project on its neighbours and an effective community consultation program undertaken by Walker prior to the lodgement of its modification application.

The advice received from Government agencies and LCC raised several issues that require the implementation of management, mitigation or offsetting measures to ensure that the impacts of the proposal would remain at an acceptable level. The Department considers that the four key issues associated with this proposal are:

- the impacts of clearing of up to 14.1 ha of native vegetation;
- potentially complex groundwater management issues;
- protection of surface water quality within Sydney's Drinking Water Catchment; and
- management of Aboriginal cultural heritage.

As shown in **Figure 4**, Walker proposes that the modification would extend the Project in six distinct stages. The SEE's biodiversity assessment of vegetation proposed to be cleared has identified, by the use of the BAM, that 487 ecosystems credits would need to be retired to offset this proposed clearing. No species credits would need to be retired.

Walker requested, and the Department supports, a staged approach to the retirement of biodiversity credits. It is proposed that the required 487 credits be split into four tranches in the following manner:

- 136 credits – Stages 1 and 3 (initial extraction area extension);
- 167 credits – Stages 2 and 4 (remaining extension of quartzite extraction area and southern stockpile area);
- 127 credits – Stage 5 (Western Stockpile area extension); and
- 57 credits – Stage 6 (Cobble Extraction area).

Walker is unsure as to whether it would need to extend its Western Stockpile and Cobble Extraction areas. Should Walker be able to manage its operations without an extension to these areas, it would not incur the substantial cost (likely to be in excess of $1 million) of retiring 184 biodiversity credits. These areas of native vegetation would also remain intact. Had all biodiversity credits been required to be retired upfront, then Walker would have little incentive to avoid clearing of native vegetation.

The Department is satisfied that the Project's impacts to biodiversity values have been adequately described and assessed in the SEE. It is also satisfied that the proposed biodiversity offset mechanism(s) would encourage the minimisation of Project's biodiversity impacts and that all residual impacts would be appropriately offset.

As shown in the cross-section of proposed quarrying operations in **Figure 5**, the originally proposed modification would result in a significant change in terms of groundwater impacts. The currently approved operation does not permit any excavation within at least 30 m above the water table. The proposed modification would involve extracting up to 40 m below the water table.

The Project lies within the Coxs River catchment, which is part of Sydney's Drinking Water Catchment. The Department needs to carefully consider any predicted impacts to groundwater resources. This required the use of a mathematical model to predict impacts to groundwater quality, and any impact to water supplies, such as loss of base flow or the impact of groundwaters from the extraction area discharging to the River. As initially proposed, Walker intended to discharge water collected in the Project's final void directly to the Coxs River.

As detailed in **Section 5.2**, the Department does not consider that the GIA's groundwater model has a sufficiently large data set of water table levels and ground water chemical analyses to lead to confidence in its predictions. The Department therefore considers that Walker should not be permitted to excavate below the water table unless, and until, it has prepared groundwater modelling based on a larger and more robust set of water quality and water level data collected over time and a range of climatic conditions.

For the above reasons. the Department supports the EPA's advice that the quarry not be permitted to extract material from below the water table until "*a contemporaneous environmental assessment and approval process at a later stage*" has been undertaken. The Department considers that this would be best achieved by the submission

of a revised GIA as part of a new development application or modification application. The following matters can be addressed by conditions of consent that require Walker to:

- not discharge water from the final void to Coxs River;
- not extract below 901 mAHD, unless approved by the Secretary; and
- establish and map the wet weather level of the water table on the site.

Walker has accepted the advice it received from the Department, WaterNSW and the EPA on this important issue of protection of water supplies within the Sydney Drinking Water Catchment by accepting the approach contained in the recommended conditions of consent and no longer seeking to discharge water from the final void to the Coxs River.

Walker does not support the Department's proposal that its approval to conduct quarrying operations be limited to 20 years, rather than the 30 years which it had sought. Given that its extraction approval from FCNSW is not expected to exceed 20 years and that Walker would not meet its proposed extraction limit (ie one metre above the highest recorded water table) for at least 15 years, a 20-year Project life seems more appropriate to the Department than 30 years. In addition, section 4.55(2) of the EP&A Act requires that the modified consent is "substantially the same" as the development consent originally granted. The Department notes that consent DA 344-11-2001 was granted in 2004 for a period of 10 years following grant of the required mining lease (which took place in 2009).

Other matters of potential environmental impact have been addressed by minor changes to conditions of consent, such as reducing noise criteria for Evening and Night periods and requiring management plans to be updated to address this modification application. One new management plan (for Aboriginal Cultural Heritage) is required, on the recommendation of BCD.

The Department considers that the Project, as modified, would continue to provide benefits to the Lithgow region through its production of construction materials and its direct employment of 15 employees for another 20 years. The Project has the benefit of direct and safe access to the GWH, which means that trucks transporting product from the Project do not traverse either rural or residential areas to gain access to the State road network. In recent years, the Project has demonstrated that it can operate in accordance with its consent. Therefore, the Department considers that the proposed modification is in the public interest and should be approved.

7. Recommendation

It is recommended that the Director, Resource Assessments, as delegate of the Minister for Planning and Public Spaces:

- **considers** the findings and recommendations of this report;
- **determines** that the application Wallerawang Quarry Project Modification 3 (DA 344-11-2001 MOD 3) falls within the scope of section 4.55(2) of the EP&A Act;
- **accepts and adopts** all of the findings and recommendations in this report as the reasons for making the decision to grant approval to the application;
- **modifies** the consent DA 344-11-2001; and

- **signs** the attached approval of the modification (**Appendix D**).

Recommended by:

22/01/2020

Anthony Barnes
Senior Planning Officer
Resource Assessments

Recommended by:

Colin Phillips
22/01/2020

Colin Phillips
Team Leader
Resource Assessments

8. Determination

The recommendation is: **Adopted / Not adopted by:**

26/02/2020

Matthew Sprott
Director
Resource Assessments

Appendices

Appendix A – Statement of Environmental Effects

https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=DA344-11-2001-MOD-3%2120190621T060800.187%20GMT

Appendix B – Submissions

https://www.planningportal.nsw.gov.au/major-projects/project/14751/submissions/13111/3251

https://www.planningportal.nsw.gov.au/major-projects/project/14751/submissions/12921/3251

Appendix C – Response to Submissions Report

https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=EXH-1450%2120190930T014740.063%20GMT

Appendix D – Notice of Modification

Appendix E – Consolidated Consent