ASSESSMENT REPORT

Section 75W Modification - Bald Hill Quarry Landfill
Increase the Annual Input Tonnage to be Landfilled
(DA No. 262-09-2001)

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1. BACKGROUND

Bald Hill Quarry Pty Limited (the Applicant, BHQ) operates the Bald Hill Quarry Regional (Class 1) Landfill and North Ridge Quarry on its site approximately 8 kilometres south east of Jugiong in southern NSW in the Harden Shire Council local government area (see Figure 1). The Landfill operations, which incorporate an expired quarry void, weighbridge, transfer station, leachate evaporation pond and associated infrastructure, was approved by the then Minister for Planning on 16 August 2002. Quarrying operations continue at the site in accordance with consents issued by Harden Shire Council in 1984 and 1999.

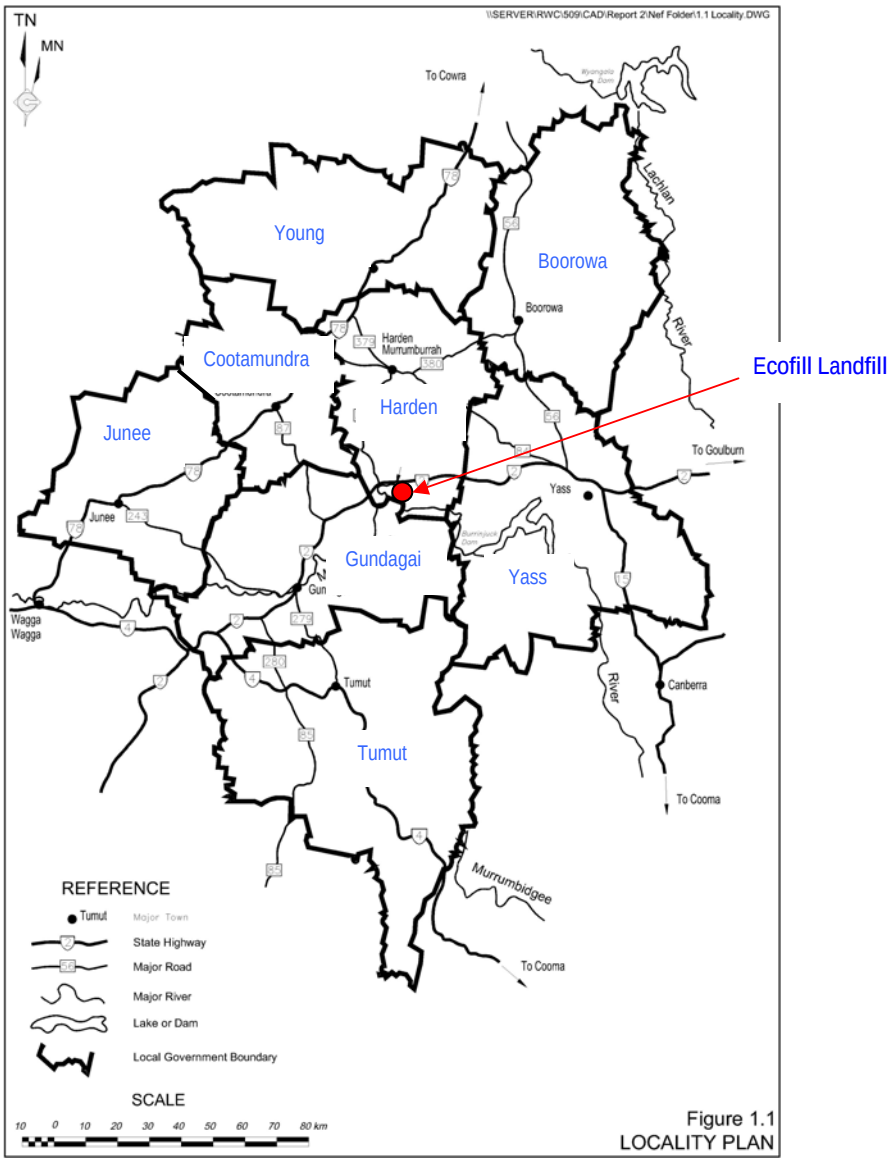

Figure 1: Regional Context

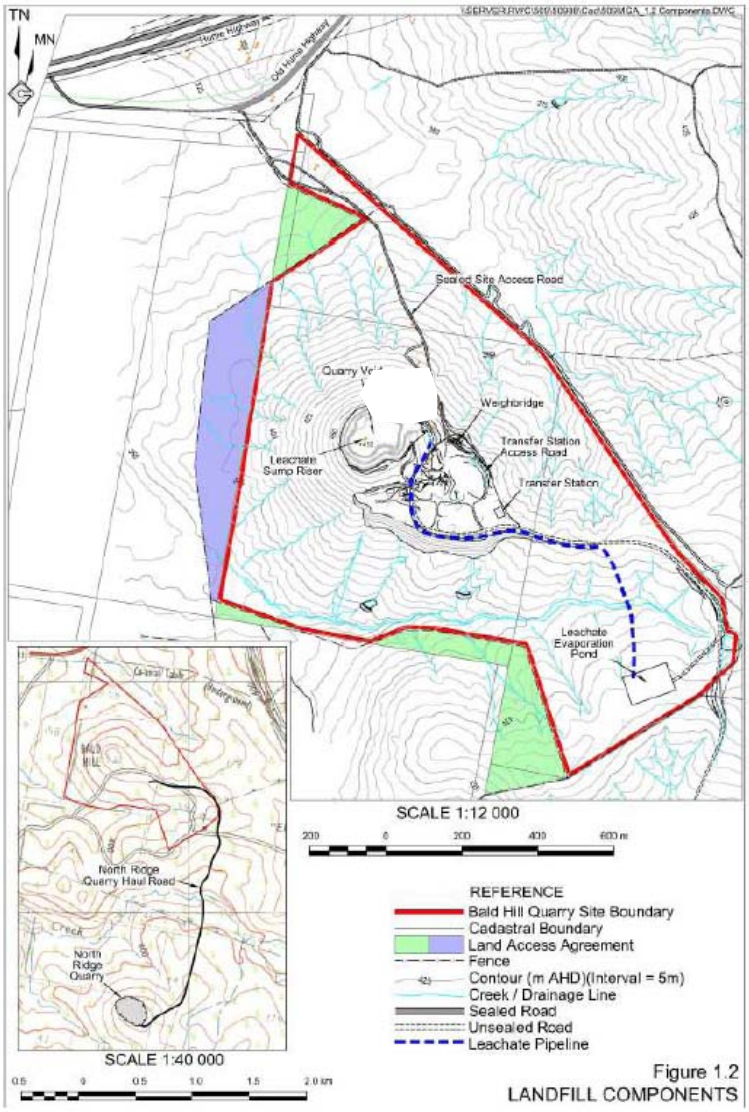

Figure 2: Local Context

Figure 3: Aerial view to the west across the Project site

The landfill has an overall capacity of around 650,000 tonnes and the approved maximum input rate is 20,000 tonnes per annum.

The principal objectives of the landfill, as outlined in the 2001 environmental impact statement (EIS) and the Landfill Environmental Management Plan that supported the original proposal, are to:

- provide a regional solution to a regional waste problem;
- provide a long-term (up to 50 years) landfill site for the exclusive use of the surrounding local government areas;
- accept putrescible waste sourced from the eight local government areas that form the South West Regional Waste Management Group (SWRWMG, formerly South West Waste Group);
- allow the councils that make up the SWRWMG to resolve waste issues regarding disposal sites common to all local government areas involved;
- allow numerous small landfills to be closed and in some cases replaced with transfer stations to separate recyclables and greenwaste prior to the disposable wastes being transferred to the Bald Hill Quarry Regional Landfill, thereby limiting the overall impacts of waste disposal of the Region's solid waste; and
- provide a disposal area for surrounding local government areas while complementing their local transfer stations and recycling efforts.

Notwithstanding the above, the 2002 Minister's consent provides for waste to be sourced from local government areas within the:

- South East Region (formerly South East Region Waste Division);
- Riverina Murray Region (Riverina Economic Region of Councils, REROC); and
- Western Region, as expressly permitted by the EPL.

In 2010, it became evident to the Department that the Applicant was operating above its maximum input tonnage of 20,000 tonnes per annum (tpa). Table 1 lists the types and quantities of waste received at the Landfill between 2006 and 2011. It demonstrates that more than double the approved annual input rate was being landfill. Further, while municipal waste quantities have increased only marginally at a rate of approximately 4% pa, there has been a substantial increase in demand from local commercial sources to dispose of waste at the Landfill.

Table 1: Waste Quantities and Breakdown Received – 2006-2011

	Period				
Customer	**01/07/06-30/06/07**	**01/07/07-30/06/08**	**01/07/08-30/06/09**	**01/07/09-30/06/10**	**01/07/10-30/06/11**
Municipal	16809	17,345	18,450	18,197	19,295
Commercial	3,402	2,405	947	7,432	27,021
Construction	597	281	23	0	502
Asbestos	14.22	165	131	112	174
Total	**20,822.22**	**20,196**	**19,578**	**20,741**	**46,992**

To bring about compliance with its 2002 consent (262-09-2001) and the sites Environment Protection Licence (EPL 2552), the Department issued a Draft Order directing the Applicant to limit the amount of waste that would be received at the site for the remainder of the reporting period. BHQ responded to the Department with an undertaking to limit the quantity of waste received for the period 1 April 2012 to 31 December 2012 to 15,000 tonnes and from 1 January 2013 to 31 December 2013 and subsequent years (or until such time that a modification to increase the annual input tonnage is approved) to 20,000 tonnes.

As a result of the BHQ reducing its waste input to the approved limit of 20,000 tpa, the eight councils within the SWRWMG have been advised that they are no longer able to dispose of their municipal waste at the facility. Further, large commercial waste producers in the region have been forced to dispose of their waste elsewhere or find alternative solutions. It is understood that this has resulted in substantiality longer travel times for waste vehicles and significant logistical problems for those commercial waste producers.

To allow the Landfill to meet the future demand for waste acceptance of both the surrounding councils and the commercial operators within the surrounding eight local government areas, BHQ is seeking to modify its consent to increase the annual input tonnage from 20,000 tpa to 40,000 tpa.

2. PROPOSED MODIFICATION

In June 2012, BHQ lodged an application under section 75W of the *Environmental Planning and Assessment Act 1979* to modify its development consent (262-09-2001-i) to increase the annual input tonnage to be disposed of at the landfill from 20,000 tpa to 40,000 tpa.

The EA for the proposed modification states that the modification would not change the overall capacity of the landfill, nor would it result in any additional infrastructure. The facility would continue to exclusively service only the eight surrounding local government areas in accordance with a Memorandum of Understanding (MOU) between the BHQ and the SWRWMG.

In addition to increasing the annual input tonnage accepted at the site, BHQ also seeks to amend Condition 6.1 of its consent which currently requires the community environment liaison committee to meet at least quarterly.

The Committee, which includes the nearest residential receptors to the project, authorised the Applicant to apply to a reduction in the frequency for Committee meetings from four (4) times a year to once (1) a year.

3. STRATEGIC AND STATUTORY CONTEXT

Section 75W

This application proposes to modify State significant development consent DA No. 262-09-2001 granted by the then Minister for Planning under Part 4 of the *Environmental Planning and Assessment Act 1979* (the Act).

Under clause 8J (8) of the *Environmental Planning and Assessment Regulation 2000*, this consent is taken to be an approval under Part 3A of the Act and can be modified by the Minister under section 75W of the Act.

Section 75W of the Act as in force immediately before its repeal on 1 October 2011, and as modified by Schedule 6A, continues to apply to this development consent in accordance with Clause 12 of Schedule 6A of the Act.

Approval Authority

The Minister was the approval authority for the original project approval, and is consequently the approval authority for this application.

The Executive Director, Major Projects Assessment, may determine this application on behalf of the Minister in accordance with the Minister's delegation dated 14 September 2011, subject to the following:

- where the relevant local Council/s has not made an objection;
- where a political donations disclosure statement has not been made; and
- there are less than 10 public submissions in the nature of objections.

The Department is satisfied that the application meets the terms of the delegation and that the Executive Director may determine the application under delegated authority.

4. CONSULTATION

In accordance with Section 75W of the EP&A Act, the Department:

- publicly exhibited the EA from **Friday 15 June 2012** until **Monday 2 July 2012** (18 days):
  - on the Department's website;
  - at the Department of Planning and Infrastructure's Information Centre, Sydney;
  - at Harden Shire Council; and
  - at the Nature Conservation Council.
- advertised the public exhibition in the Harden Murrumburrah Express newspaper on **Thursday 14 June 2012**;

- notified relevant government authorities including the Environment Protection Authority (EPA), Roads and Maritime Services (RMS), Harden Shire Council (Council) and the NSW Office of Water (NOW); and
- notified and sought comment from landowners in the vicinity of the site.

The Department received a total of **5** submissions during the exhibition period - **4** from government authorities and **1** from the South Western Regional Waste Management Group (SWRWMG).

Representations were also received from the Member for Burrinjuck and the Member for Wagga Wagga on behalf of member councils of the SWRWMG

A summary of the issues raised in submissions is provided below.

4.1 Agency Submissions

Council advised that it currently holds a supervisory EPL for the site and is a member Council of the SWRWMG. While Council advised that it supported the proposed modification, it requested that the following matters be considered in the assessment of the proposed modification:

- that Condition 24.7 be amended to restrict the area from which waste is able to be sourced to the local government areas of the SWRWMG (Boorowa, Cootamundra, Gundagai, Harden, Tumbarumba, Tumut, Yass and Young); and
- additional contributions be levied in accordance with Harden Council's Contribution Plan for Heavy Haulage Developments (2011).

The **EPA** raised no objection to the proposal. However, it did raise the following issues:

- upper quarry walls landfill liner – the existing development consent and EPL requires the landfill operator to prepare and submit a report (within 10 years of commencement of filling) to the EPA which considered in detail the need for a landfill liner in the upper weathered zone of the landfill. Should the increased waste input rate be approved, the EPA requested that BHQ be required to submit the report by 31 December 2012 and that should the report conclude that a liner is required, a wall lining system should be proposed;
- air quality – the assessment demonstrated that any increase in odour or dust levels as a result of the proposal would be well within EPA guidelines. As such, there should be no adverse impacts on surrounding receptors;
- leachate – the leachate reconciliation report provided in the EA demonstrated that the existing leachate pond is capable of containing leachate generated in the landfill in a 90^{th} percentile wet year (eg, 2010) and maintain the required 0.5m pond freeboard. This suggests that sufficient leachate storage capacity exists at the site to contain any additional amount of leachate generated from the increased waste acceptance rate at the landfill. All leachate must continue to the captured and stored in the leachate dam and disposed of by evaporation; and
- should this modification be approved, the Applicant must seek to modify the EPL for the site.

Department of Primary Industries - Office of Water did not object to the proposed modification. It was satisfied that the current water management controls at the facility would address the proposed increase in waste input rate.

Department of Primary Industries - Agriculture NSW reviewed the application with regard to the implications of the resultant landfill to the achievement of earlier conditions of approval relating to rehabilitation required on completion of quarrying operations to a standard suitable for on-going productive agricultural use. The DPI acknowledged that the proposed modification did not propose any change in this regard from the original application in 2001.

The **RMS** emphasised the need to minimise the impacts of the modification proposal on the existing road network and maintain the level of safety, efficiency and maintenance along the existing road network. The RMS requested that the Applicant provide further detail in regard to the traffic impacts, and the status and design of the intersection of the access road and the Hume Highway.

Upon receipt of further information, the RMS did not object to the proposal subject to the development being undertaken in accordance with the information submitted and a number of proposed conditions.

4.2 Stakeholder and Community Submissions

South West Regional Waste Management Group (SWRWMG) advised that, in principal, it supported the proposed modification. Notwithstanding, it requested (and provided justification for) an amendment to the development consent to limit the source from which waste can accepted at the facility to the local government areas that form the SWRWMG.

The **Member for Burrinjuck** and the **Member for Wagga Wagga** made representations on behalf of a number of councils of the SWRWMG in support of the modification to increase the annual waste disposal tonnage, and to request an amendment to the consent to restrict the area from which waste could be accepted at Landfill to only those local government areas of member Councils of the SWRWMG.

Issues raised in submissions are considered in Section 5 of this assessment.

5. ASSESSMENT

The Department has assessed the application on its merits and considers the key issues to be justifiable demand, waste sources, and leachate management. These issues are discussed in detail below. The assessment of other issues is outlined in Table 3.

5.1 Justifiable Demand and Tonnage Allocation

Issue
Whether a justifiable demand exists for the landfill site, having regard to waste disposal capacity requirements, and whether there is sufficient justification to secure the allocation of landfill tonnage.

Consideration

Regional Waste Profile
The SWRWMG (then SWWG) was created to deal with regional waste issues.

In 1999, the SWRWMG commissioned an investigation of the available landfill space within the local government areas within the SWRWMG. The findings of the investigation were documented in a report that formed an appendix to BHQ's original environmental assessment and provided justifiable demand for a regional landfill to accept council (municipal) generated waste.

The investigation showed that the SWRWMG covered an area of approximately 19 square kilometres, had a population of approximately 49,000 and included the following local government areas: Boorowa, Cootamundra, Gundagai, Harden, Junee, Tumut, Yass and Young.

At the time of the investigation, there were ten major landfills in the local government areas within SWRWMG that each accepted in excess of 1,000 tonnes of waste each year. There were 23 smaller village landfills and five transfer stations which received in total over 20,080 tonnes of waste each year. Some 15,267 tonnes of additional waste was being diverted annually through recycling and green waste composting/mulching. The Cootamunda area expected to divert approximately 1,500 tonnes per annum from local landfills to the Bald Hill Quarry Regional Landfill.

The report concluded that five of the ten major landfills in the region would be exhausted within eight years at the then current rates of waste disposal. At that time, four of the SWRWMG councils and 50 per cent of the population in the area would be without landfill capacity. Similarly 14 of the 23 village landfills would be full within five years. The remaining five large and nine small landfill sites faced ongoing issues such as: location concerns; increasing operating costs; community pressure; and strengthened EPA regulations.

Justifiable Demand for the 2002 Consent
As a result of the investigation by the SWRWMG, it was determined that there was urgent demand for replacement landfill space and that the proposed Bald Hill Quarry Regional Landfill was the preferred

option as it would be central to all eight local government areas. The group also considered that the use of a central facility would increase the standard of waste disposal and transfer station operations across all eight local government areas.

The 2001 EIS provided a breakdown of the expected waste contributions from each of the local government areas, stating that collectively the councils would ultimately expect to dispose of approximately 17,800 tonnes of waste annually at the Bald Hill Regional Landfill. More importantly, both the 2001 EIS and the investigation commissioned by the SWRWMG calculated that the waste quantities dispatched to the Landfill could be as much as 25,000 tonnes per year.

The EIS that supported the original application stated that BHQ agreed with representative of the SWRWMG that the authorised sources of waste would be:

- regional transfer stations;
- special events eg. local show, field days; and
- other locations as directed by each council.

Additionally, the EIS stated that it is anticipated that:

- compaction trucks engaged in the collection of domestic household waste in the closer towns (eg. Gundagai, Harden) would deliver directly to the landfill; and
- some commercial waste contractors may deliver directly from the towns where they operate,

While the original approval provided for the acceptance of a proportion of waste from commercial waste contractors, the Department considered that the intent of the proposal was to establish a regional facility that would accept municipal waste from the councils within the SWRWMG.

During the assessment of the original application, the EPA advised that the closure of older, poorly sited, designed and operated waste tips as a result of the new landfill project would provide an overall environmental benefit. The Department concluded that it was satisfied that there was a justifiable demand for the landfill capacity provided by the development.

Justifiable Demand for the 2012 Modification

In regard to the increase in annual input tonnage, Table 1 lists the types and quantities of waste receipts at the Landfill between 2006 and 2011. This table demonstrates that a significant increase in demand for waste disposal capacity is attributed to commercial sources within the local government areas of the SWRWMG. This is compared to municipal waste quantities which have only marginally increased at a rate of approximately 4% pa.

The environmental assessment for the modification states that existing waste quantities are expected to grow, approaching the 40,000 tonne quantity.

Section 2.3.2 of the 2012 environmental assessment states that the eight local government areas that collectively make up the SWRWMG currently deliver approximately 19,000 tonnes annually, and have indicated an existing and future need for 25,000 tonnes per annum. This tonnage refers to council collected municipal waste. Further, the environmental assessment specifically states that the balance (of the proposed 40,000 tonnage) would be sourced from industrial and commercial facilities from within those same LGAs and that waste sources remain unchanged from the original approval.

While municipal waste levels are expected to marginally increase over time, measures for recycling and the diversion of waste planned for implementation in future years by the eight councils represented in the SWRWMG are expected to offset this growth and possibly reduce total future annual inputs to landfill. Some of these measures have already been put in place. This includes the implementation of free recycling services at its transfer stations encouraging the diversion of waste from landfill. Cootamundra, Gundagai and Harden Council have provided collection services for municipal green waste for over 12 months, diverting an estimated 500 tonnes of waste from landfill. Other SWRWMG councils are investigating and evaluating the implementation of this practise in their local government areas. As an interim, these councils are providing a period of free green waste disposal service at transfer stations.

The SWRWMG conducts research and development on recycling and waste diversion practises within its region. It has already identified promising diversion rates achieved by its members and continues to promote good waste disposal practise within local communities. Although this will assist to offset some of the growth in demand for waste disposal in the future, there is still a foreseeable demand for additional landfill space. The indication by some SWRWMG councils to close and cap other smaller landfills within the next few years will add to the demand for waste disposal.

The increasing annual waste disposal rates, coupled with the closure of some of the regions smaller landfills, has resulted in an increasing gap between the amount of waste that needs to be disposed and the amount of waste able to be disposed each year in landfills.

Conclusion
It is evident that there is shortfall between annual waste disposal capacity and the annual waste disposal demand. The Department considers that the consequences of this shortfall are serious, as it is leading to a situation where the SWRWMG will be unable to sustainably manage the disposal of its waste. This situation will only worsen, as the gap between supply and demand becomes larger.

As such, the Department is satisfied that there is a demonstrable need for greater annual capacity at the Bald Hill Quarry Landfill in order to meet the demand for current and predicted waste disposal in this region. Further, the Department is also satisfied that there is adequate justification for securing up to 25,000 of the overall capacity of the annual input tonnage to be available for municipal waste from the council areas within the SWRWMG. The balance of which (ie around 15,000tpa) would be available for commercial or other approved waste. This position is supported by the EPA which supports the Department in securing adequate provision for municipal waste disposal from the SWRWMG.

As such, a condition has been recommended to secure this allocation.

5.2 Waste Source

Issue
Condition 24.7 of the existing Landfill consent allows for waste to be sourced from three broad regions (see Section 1). A number of submissions were made during the exhibition of the modification application requesting that Condition 24.7 of the consent be amended to restrict the source from which waste can be accepted at the facility to only those local government areas within the SWRWMG.

Consideration
2002 Consent
The 2002 Minister's consent provides for a "Solid Waste Landfill – Class 1" that accepts up to 20,000 tonnes of waste, including putrescible waste and other wastes approved by the EPA, for disposal at the facility each year.

Condition 24.7 of the consent allows for waste to be sourced from within the following three broad regions:
- the South East Region (formerly South East Region Waste Division);
- Riverina Murray Region (Riverina Economic Region of Councils, REROC); and
- the Western Region.

It is unclear why the 2002 approval permitted waste to be accepted at the facility from the three broader regions. The 2001 EIS, prepared to support the development application for the Project, stated that the Landfill:
- would provide a long term (that is up to 50 years) landfill site for the exclusive use of the surrounding local government areas that form the South West Waste Group (SWWG now SWRWMG) (see Figure 1);
- would allow the SWWG to resolve issues regarding the availability of landfill space within the LGA's involved;
- would allow a number of small existing regional landfills in the participating local government areas to be closed and others to be replaced with transfer stations that separate recyclables and greenwaste prior to the waste being transferred to the Bald Hill Quarry Landfill; and

- is fully supported by the South West Waste Group (SWWG), a group formed by seven Councils with similar waste issues. The SWWG established a justifiable demand for additional landfill space in the region and the central location of Bald Hill Quarry Landfill makes it the preferred option.

The Department's 2002 assessment report did not include discussion on waste sourcing, and neither the Proponent nor Harden Council are able to advise why the area from which waste could be sourced was extended beyond the boundary of the SWWG to include the three wider regions - the South East Region, the Riverina Murray Region and the Western Region.

Current Application

During the exhibition of the proposed modification, a number of submissions were made requesting that Condition 24.7 of the consent be modified to restrict the source from which waste could be accepted at the facility to only those local government areas within the SWRWMG.

The EA supporting the current modification application reinforces the original objectives of the approved Project, as outlined in the 2001 EIS, that the landfill would exclusively service the eight surrounding local government areas (the member councils of the now SWRWMG).

Further, the EA states:

- *the eight local government areas that collectively make up the SWRWMG currently deliver approximately 19,000 tonnes of waste annually, and have indicated an existing and future need for 25,000 tonnes per annum. The balance would be sourced from industrial and commercial facilities from within those same LGAs; and*
- *the existing waste quantity delivered from all sources within the eight local government areas is expected to continue to approach 40,000 tonnes. Measures for recycling and diversion of waste planned for implementation in future years by the eight local governments are expected to offset growth and possibly reduce total future annual inputs to landfill.*

Notwithstanding the above, BHQ submits that the existing Condition 24.7 provides adequate direction for the area from which waste may be sourced and that the source should not be further restricted to the local government areas of the SWRWMG. Further, BHQ considers that the existing consent reflects the intent of the original DA which was to allow flexibility in determining which nearby councils could deliver waste to the site, yet exclude waste from distant major urban centres such as Canberra or Sydney.

Additionally, to specifically address any issue of 'certainty' in regard to the annual landfill tonnage allocated to the SWRWMG, BHQ has confirmed that it has entered into a legally binding agreement with the SWRWMG to only accept waste from local government areas within the SWRWMG, all of which are member Council's of the regions currently defined in Condition 24.7.

SWRWMG - Justification

In its submission on the proposed modification, the SWRWMG acknowledged that whilst the original intent of Condition 24.7 was to restrict the waste source area and does include the member councils of the SWRWMG, it at the same time allows for other regional councils outside of the SWRWMG to utilise the facility. Further, the SWRWMG considers that the three areas currently specified in the consent are undefined and the 'Western Region' could be construed to incorporate a very large area of regional "western" New South Wales which would benefit from the SWRWMG's financially funded infrastructure and commitments.

Throughout the modification application BHQ refers to the eight local government areas of the SWRWMG, confirming the long term working relationship and commitment of the parties. From the inception of the proposal, the SWRWMG has supported the Landfill to ensure its success and longevity to the benefit of the communities with in the SWRWMG. The SWRWMG provided the infrastructure required to establish the landfill and is committed to the Landfills closure and post closure monitoring responsibilities. The financial liabilities are evidence of the level of involvement and dependability of the SWRWMG on the landfill facility and in this regard the requested amendment to Condition 24.7 would ensure that only communities and commercial operators within the SWRWMG's local government areas would benefit from the Landfill that the SWRWMG supports.

The SWRWMG considers that it would be the member council's and their communities that would be disadvantaged both financially, in that the member Councils have invested significantly in the facility, and environmentally, by needing to find alternate disposal sites should waste from outside the Group areas be permitted. The SWRWMG acknowledged that whilst the agreement between BHQ and the SWRWMG limits the source area to the SWRWMG member Council's local government areas, it is fundamental to the clarity and uniformity of all legal documentation that the development consent replicates and supports the agreement.

The existence of an agreement between the SWRWMG and BHQ sits outside the provisions of the *Environmental Planning & Assessment Act, 1979*. However, while it may be perceived that the SWRWMG's request may restrict the commercial operations of the facility, BHQ has consistently relied upon the support of, and waste generation by the SWRWMG as justification for the facility. This is evident in both the original application and the current modification application.

Conclusion
In considering both the 2001 EIS and the documentation supporting the current modification application, the Department is satisfied that the intent of the Landfill was to exclusively service the local government areas that make up the SWRWMG with the councils that make up the SWRWMG providing the primary source of waste disposed of at the facility.

The SWRWMG contributed funding towards the establishment of the original landfill and Harden Council is required, through the EPL conditions, to fund and carry out closure and post closure monitoring at the landfill.

The EPA advised that waste disposal is an essential municipal service and should be conducted in a planned and orderly manner and that a number of the eight member councils of the SWRWMG have closed their landfills since the Landfill commenced operations in 2003. In addition, the EPA has indicated that the original intent of the landfill was primarily to serve as a regional landfill facility to service the eight councils that make up the SWRWMG.

As such, the Department proposes to modify the existing condition to restrict the source from which waste can be received at the facility to the local government areas that make up the SWRWMG.

5.3 Leachate Management

Issue
That the modification could result in increased leachate generation that would require additional management.

Consideration
The existing landfill operations include a leachate management system that incorporates an evaporation pond which has a maximum capacity of 12,000m^3. Leachate is pumped from the central leachate riser located at the base of the Landfill (see Figure 4 and 5) into four leachate tanks, located at the southern edge bund of the quarry pit. The leachate is then gravity fed to the shallow leachate evaporation pond to the south of the landfill site where evaporation takes place. The leachate pond has a surface area of 9,270m^2. No leachate is permitted to be discharged from the site.

Table 2 provides a summary of the performance of the evaporation pond. A full copy of the Leachate Reconciliation report is contained within Appendix 5 of the EA.

Figure 4: Central Leachate Riser

Figure 5: Leachate Evaporation Pond

Table 2 – Leachate Reconciliation

Year	A Leachate Pumped m^3	B Rainfall mm	C Pond Precipitation + m^3	D Pond Evaporation - m^3	E Calculated Net Residual m^3	E Cumulative Total m^3	C Actual Pond Leachate m^3	D Annual Waste Received (Tonnes)
2005	2,101.2	563	3,686	7,061	0	0	-	
2006	0	180	1,208	7,061	0	0	-	
2007	356.4	459	3,075	7,061	0	0	-	20,822
2008	550.8	494	3,310	7,061	0	0	-	20,196
2009	259.2	458	3,069	7,061	0	0	-	19,578
2010	5,400	1,043	6,988	7,061	5,327	5,327	-	25,741
2011	4,763	715	4,791	7,061	2,493	2,493	-	46,992
2012	3,791	365	2,446	2,330	3,907	3,907	6,891	

Note * - Year total to 30/04/2012

A: Actual leachate volumes (m_3) transferred to the evaporation pond since operations commenced.
B: Rainfall for the Murrumburrah post office (mm) . Source BOM.
C: Calculated Pond Total rain captured (m_3) over pond surface area (6,725 m^3)
D: Annual evaporation rate DLWC (8th Feb 2002) = 1,050mm/y X 6,725m_2 (m^3)
E: Theoretical leachate to pond (m_3) (A + C – D = E)
F: Accumulated theoretical total leachate to be stored (m^3)
G: Actual quantity of leachate held in pond (m_3) as at 20.04.2012

Note:
- Freeboard measured 20th April 2012 was 1,370mm. equates to an air space remaining to accept leachate of 2,109 m^3.
- 9th Decile rainfall year 878mm (Harden DLWC).
- The total leachate capacity of pond at max depth of 2.0m with 0.5 m free board remaining is in excess of 12,000 m^3.
- Estimated leachate volume retained in landfill (30.4.12) is 500 m^3

The Landfill has received waste approaching or exceeding the 40,000 tonnes per annum for the years 2010 (25,741t) and 2011 (46,992t).

As illustrated in Table 2, during periods of high rainfall (ie. in 2010), the capacity of the existing leachate collection and evaporation system demonstrated its capability in containing and managing the leachate.

Conclusion

The leachate reconciliation provided in the EA demonstrates that the leachate ponds are capable of containing leachate generated from the Landfill in a 90th percentile wet year (eg. 2010) and maintain the required 0.5m pond freeboard. The Department and the EPA are satisfied that sufficient leachate storage capacity exists at the site to contain any additional amount of leachate that may be generated due to an increase in the waste acceptance rate at the landfill.

Further, the Department considers that the existing conditions of consent are adequate to ensure any potential impacts from leachate are adequately addressed.

5.4 Other Issues

Table 3: Assessment of other issues

Issue	***Summary***	***Recommendation***
Traffic, Access and Intersection Performance	• Quarry and landfill operations generate a combined (and approved) 16,000 truck movements per year which equates to approximately 60 truck movements per day, Monday to Friday. • The proposed modification would generate an additional (approximate) 2,000 truck movements per year, or 8 movements per day. • All vehicles would continue to access the site via the existing site access road which has direct access to the Hume Highway via an intersection consisting of a two stage crossing with a Channelised Right Turn (CHR) lane and Auxiliary Left Turn (AUL) lane. • The RMS raised no objection to the proposed modification however, it recommended a number of conditions, including: - an audit of the existing intersection to assess its compliance with the intersection treatment required by the RMS and Australian Standards (AS) and the integrity of the existing pavement to cater to the expected turning traffic volumes along the Hume Highway; and - should the intersection be non compliant, the intersection and pavement is to be designed and constructed as required. • BHQ considers that the intersection has been upgraded in accordance with the requirements of the RMS, and that the only outstanding components to be undertaken relate to line marking and top coating. • Both the Department and RMS consider that, with the inclusion of the recommended conditions, the modification would not increase impacts of the landfill operations on the existing road network.	Recommended conditions require BHQ to: • commission an audit of the existing intersection to assess the compliance of the existing intersection with the treatment as required by the RMS, within 3 months of the commencement of MOD 2; and • should the audit demonstrate that the intersection does not comply with the RMS, the intersection and pavement is to be designed and constructed as required and at the cost of the Applicant.
Quarry Liner Requirement	• Under the existing consent, BHQ is required to submit a report to the EPA (within ten years of the commencement of operations) which assesses the integrity of the upper sections of the quarry void and confirms whether a leachate barrier is required due to weathering. • The proposal to increase the annual waste quantity received at the landfill to 40.000 tpa would shorten the time buffer before the waste level reaches the weathered areas. • BHQ has advised that it has commissioned a geotechnical consultant to investigate the options for lining the upper walls of the landfill void, and that the consultant's report would be submitted to the EPA by the end of 2012. • The EPA has requested that Condition 22.1 be amended to ensure that the assessment report be submitted by February 2013. Further, that should a landfill wall liner be identified as required by the report, a wall lining system should be proposed including detail on the type, quantity and permeability of material(s) to be used, and proposed construction and quality assurance methods. • The Department agrees with the EPA and recommends Condition 22.1 be amended to reflect the EPA's requirement.	Recommended condition requires BHQ to: • prepare and submit a report to the EPA (by February 2013) which further assesses the upper weathered stratigraphy of the quarry void and whether there is the need to install a barrier. If a barrier (landfill wall liner) is identified as required by the report, a barrier system should be proposed.
Community Meetings	• BHQ seeks an amendment to Condition 6.1 of its Consent which currently requires it to establish a community environment liaison committee (CELC) to meet <u>at least quarterly</u> to discuss implementation of the Consent and other statutory approvals. • At the CELC's meeting of 14 February 2006, the committee resolved to authorise BHQ to seek approval from the Department on its behalf, to reduce the frequency of Committee meetings to a minimum of once (1) a year. This resolution was reiterated and reinforced in correspondence from Committee members dated March 2012. • As there have been no reported complaints made to the Department or the EPA regarding issues associated with the facility, and given that the request has come directly from representatives of the Committee which comprises the closest residents to the Landfill, the Department considers that the request is reasonable, and as such a modification to Condition 6.1 has been recommended.	Recommended condition requires BHQ to: • establish a community environment liaison committee, comprising representatives of the community and the Applicant, <u>that will meet at least annually</u>.
Air Quality	• PAE Holmes undertook an assessment of the likely odour, dust and greenhouse gas impacts of the proposed modification. <u>Odour</u> • Odour modeling undertaken for the increased waste receipts at the Landfill demonstrated that odour concentrations would be less than 1 odour unit at all private properties, and therefore would not generate any	• No additional conditions are recommended.

	offensive odour. <u>Dust</u> • The current EPL (2552) for the site requires monthly monitoring of dust deposition around the Landfill and air emissions on the Landfill gas flare. • Monitoring results have demonstrated that there have been no exceedances of the maximum annual total deposited dust concentration. • An increase in waste receipts at the site would result in only a small increase in dust from increased truck movements on the access roads, most of which are sealed. This increase in activity would be unlikely to cause an increase in dust above the EPA criteria. <u>Greenhouse gas</u> • A greenhouse gas (GHG) assessment shows that landfill generated methane is the largest contributor to greenhouse gas emissions, but a 67% reduction is achieved by flaring. • Total GHG from the landfill represents 0.034% of NSW's total GHG emissions. • BHQ currently manages GHG emissions by flaring and is undertaking investigations to further reduce its emissions. <u>Conclusion</u> • The Department and the EPA are satisfied with the findings of the assessment and consider that there would not be a significant impact from odour, GHG or dust as a result of the proposed modification.	
Noise	• The distances to nearby residences are all in excess of 1.5km of the Landfill with only three private residences within a 5km grid around the site. Noise levels at those residences would be comparable to existing levels, which are understood to be inaudible. • The primary noise source resulting from the Landfill operations is that associated with vehicle movements. • The modification would result in an additional 2,000 truck movements per year, typically 8 truck movements per day (Monday to Friday). • The EA states that the project would continue to comply with the existing noise limits and noise monitoring would be undertaken in response to a substantiated complaint. • No complaints have been received in relation to the operations of the landfill since it commenced operations, including the period in which it has been operating in exceedence of its 20,000 tonne capacity. • Neither the EPA nor Council raised any concerns regarding noise impacts. • The Department is satisfied that the proposed modification would not increase the overall noise impacts from the site and that existing conditions of consent are adequate.	• No additional conditions are recommended.
Water	• The proposed modification would not change any site infrastructure nor the operational footprint of the Landfill. As such, the existing surface water catchment and management processes are unaffected and remain subject to the provisions of the 2001 EIS and the approved site Landfill Environmental Management Plan (LEMP). • Groundwater integrity and monitoring results for the last 10 years demonstrate the capability of the existing approved leachate management system to adequately protect the groundwater regime. • The EPA raised no concerns regarding surface water or groundwater impacts. • The Department is satisfied that the proposed modification would not have an increased impact on surface water and groundwater processes beyond that assessed in the original project; and that surface water and groundwater processes are adequately managed through existing conditions of consent and the sites LEMP.	• No additional conditions are recommended.
Contributions	• Harden Council requested consideration be given to the Harden Contribution Plan for Heavy Haulage Developments (Nov 2011). • In response to Council's request, BHQ advised that all vehicles would continue to access the site via the existing site access road which has direct access to the Hume Highway - a Federally funded Highway that is not subject to the Harden Contribution Plan. • Further, the bulk of waste that is landfilled at the site is derived from outside Council's LGA and therefore excluded from the plans effects. • As part of Council's approval of the Bald Hill No.2 Quarry North Ridge Development (1999), BHQ was required to undertake road upgrade works and entered into a Road Maintenance Agreement with Council for the Quarry access road. The Agreement included a requirement for ongoing maintenance at the cost of BHQ. • BHQ submits that there isn't sufficient relevance for the application of the Contributions Plan to the proposed modification.	• No additional conditions are recommended.

	• The proposed modification would not result in an increase in employment or an increase in demand on existing infrastructure and resources; and does not have any capital cost. As such, the Department does not consider there to be a nexus between Council's request for additional contributions and the proposed modification.	

6. CONCLUSION

The Department has assessed the merits of the proposal having regard to the objects of the EP&A Act and the principles of *State Environmental Planning Policy (Infrastructure) 2007*. This assessment has concluded that with the implementation of the recommended conditions of approval, the impacts of the Project can be mitigated and/or managed to ensure an acceptable level of environmental performance.

The Department is satisfied that there is a demonstrable need for greater annual capacity at the Landfill in order to meet the demand for current and predicted waste disposal. In addition, the Department is satisfied that an allocation of up to 25,000 tpa should be secured for the SWRWMG's municipal waste. The balance of which (ie around 15,000t) would be available for commercial or other approved waste.

Consequently, the Department is satisfied that the modification is in the public interest and should be approved subject to conditions.

While the EPA has reviewed and agrees with the draft conditions, BHQ has advised that it opposes the recommended conditions concerning the proposed allocation of up to 25,000 tpa for the SWRWMG's municipal waste. BHQ considers that the allocation of any tonnage should be the subject of a commercial agreement between the parties and not a matter which should be the subject of a condition.

As outlined in this report, the Department is satisfied that the condition is justified as it would ensure that there is a regional landfill facility for the councils within the SWRWMG to dispose of its waste. This position is supported by the EPA. Further, the Department considers that the proposed condition is consistent with the intent of the original application and with the current modification application.

7. RECOMMENDATION

It is RECOMMENDED that the Executive Director, Major Projects Assessment:

- approve the proposed modification; and
- sign the attached notice of modification (tagged A).

Christine Chapman
Major Project Assessment

5.12.12

Chris Ritchie 5/12/12.
Manager – Industry
Major Projects Assessment

Chris Wilson
Executive Director
Major Projects Assessment