

Conybeare Morrison

Pasminco Cockle Creek Smelter Site, Boolaroo NSW

Visual Assessment of Proposed Expansion of Containment Cell

October 2013

Conybeare Morrison International
52 - 58 William Street
East Sydney, NSW 2011
T. 8244 8888 F. 8244 8877
E. mail@cmplus.com.au
www.cmplus.com.au
13126



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Prepared for PCCS subject to deed of company arrangement

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T. 8244 8888 F. 8244 8877
E. mail@cmplus.com.au
13017

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VISUAL ASSESSMENT OF PROPOSED EXPANSION OF CONTAINMENT CELL ON PASMINCO COCKLE CREEK SMELTER SITE, BOOLAROO, NSW

1.0 INTRODUCTION

This Visual Assessment is for the further expansion of the containment cell within the Pasminco Cockle Creek Smelter site from its approved height (MOD 4 to Project Approval 06_0184) of RL 38.0, to a further maximum 4.15m in height of RL 42.15.

The Pasminco Cockle Creek Smelter (PCCS) and the Incitec Fertilisers Pty Ltd (IFL) sites are located approximately 13km south-west of Newcastle and 2km north of Lake Macquarie adjacent to the township of Boolaroo, NSW. The site is bounded to the south by First Street, to the west by Main Road, to the north by the Main Northern Railway line and to the east by the slopes of Munibung Hill.

The Pasminco Cockle Creek Smelter site at Cockle Creek had been in operation for over 100 years with the plant closing for operation in September 2003. Since the plant's closure, the site has been undergoing demolition of its industrial buildings and extensive remediation.

Both PCCS and IFL have received separate approvals under Part 3A of the *Environmental Planning & Assessment Act 1979* (EP&A Act) to remediate their contiguous contaminated sites at Boolaroo. By an approval under s75W of the EP&A Act dated 17 December 2012 (MOD 4 to Project Approval 06_0184), contaminated material from the IFL site was authorised to be placed in the containment cell under construction on the PCCS site. Remediation of both sites is scheduled for completion by the end of 2013.

This Visual Assessment Report is in support of a s75W – *Modification to Minister's approval* under the *Environmental Planning & Assessment Act 1979*, which seeks:

- to increase the volume of the PCCS approved cell, and thereby its height to no more than 4.15m in height from the approved top of cell of RL 38.0 under MOD 4.

2.0 THE SITE

The PCCS and IFL sites are located at the base of the north and north-western slopes of Munibung Hill, north of the township of Boolaroo and east of Cockle Creek as shown on Figure 1.



Figure.1: Aerial view from the east of the PCCS and IFL sites, Boolaroo (1998), with industrial buildings on both sites

2.1 Existing Approvals

Development Application for the demolition of the site's industrial buildings was approved in **March 2005** with removal of the buildings (except for the Old Laboratory, Main Administration Building, Gatehouse and the Effluent Treatment Plan) completed in **October 2006**.

Approval of the Environmental Assessment for the:

- **PCCS site's** remediation works approved on **24 December 2007**, under the Part 3A approval process, which allowed remedial works to commence – Project Approval (MP 06_0184); and
- **Incitec site's** remediation works (MP 08_0221) on **11 November 2010** – with approved height of cell of RL 34.
- **Combined PCCS and Incitec sites'** containment cell (MOD 4) on **17 December 2012** – with approved height of RL 38.0.

The most appropriate remediation methodology for the site's slag materials and contaminated soils and waste material was to contain them within a cell at the central portion of the site. The design and documentation of the containment cell was approved by the Site Auditor and the Office of Environment and Heritage.

Construction of the containment cell commenced in the first quarter of 2009 with all contaminated material to be placed into the cell by the end of 2013.



Figure.2: Aerial view from the east of the PCCS and IFL sites, Boolaroo (2012), with industrial buildings demolished and remediation of the site and Munibung Hill underway

2.2 Construction of the Containment Cell

PCCS has approval to remediate its land principally by excavating contaminated material from the various land areas containing contaminated material and placing the excavated material in a capped containment cell located on the central portion of the site. Figure 3 shows the location of the cell.

The final top surface of the cell will be relatively flat in profile, but graded, and self-draining.

The remediated areas of the site will be refilled, stabilised and regraded for future development.



Figure 3: Aerial view (1998) of the PCCS & IFL sites illustrating footprint of the proposed cell

Approval was granted in December 2012 for the PCCS containment cell to include contaminated material from the IFL site located on the lower western slopes of Munibung Hill. This increased the containment cell from RL 34 to RL 38.0.

The current proposal is to increase the cell from its approved height of RL 38.0 to RL 42.15.

The footprint and the outer area of the containment cell of 19.4 hectares will not change, but the top of the cell will increase in height and reduce in area. The batters of the cell (sloped at 1 in 5) will be vegetated with grasses and low shrubs for slope stability. The cell will be capped with geofabric and clay, with approximately 1m of clean fill over. The top of the cell will be landscaped with turf and small shrubs, and used as open space.

The top of the cell, originally approximately 12 hectares in area, was reduced to approximately 8.4 hectares in area with the addition of the IFL material under the MOD 4 consent. This current proposal will further reduce the cell platform to 6.5 hectares in area, which will include the small batters on the cell platform.

The cell cap details remain unchanged.

The batters on the western side of the cell will be up to approximately 27m in height, from 17-23m approx. in height (as advised by Golder Associates based on their current civil works drawings), above proposed surrounding ground levels.

The batters on the eastern side of the cell will be up to approximately 22m, from 15-18m approx. in height (as advised by Golder Associates based on their current civil works drawings), above proposed surrounding ground levels.

2.3 Existing Visual Environment

Adjacent to the northern portion of the containment cell is the north-western spur of Munibung Hill, with a ridge height of approximately RL 35, with a small localised high point at the north-western tip rising to RL 37. The backdrop of Munibung Hill, to the east, rises to approximately RL 60.



Figure 4: Aerial view from the north-west to the site in the foreground of Munibung Hill (2012)

3.0 SITE VISIBILITY

The visual assessment is of the potential impact of the elevated containment cell as a change to the approved landform on the site. The contaminated cell, in its present, but unfinished form, and approved height of cell at RL 38 (approx.), is used to assess the impact of the additional height proposed by this submission.

The procedure for assessing the site visibility involves:

- Determination of various categories of viewing situation (from outside the site); and
- Identification of those viewing situations outside and inside the site where the cell will be able to be easily viewed.

Locations have been identified, as shown on Figure 5:

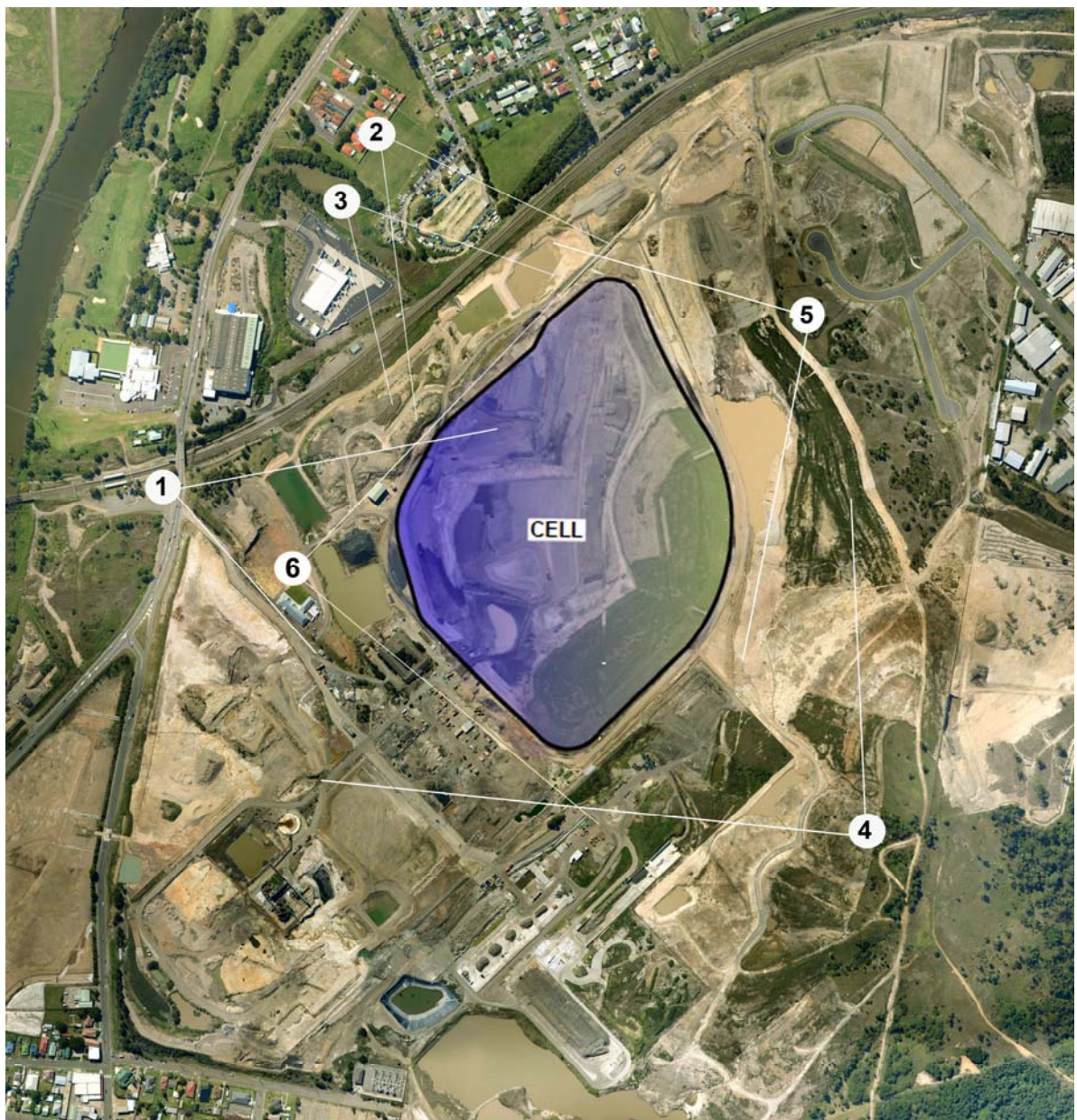


Figure 5: Location of views

3.1 Long Distance Views

From the *Visual Assessment of Cell Structure – PCCS Site* (June 2005) on the original cell structure, the cell was not visible from long distance views into the site from surrounding development, due to distance, topography and surrounding vegetation, particularly around Cockle Creek.

As seen from Figure 6 below, of the constructed cell at RL 33-34, the cell, as seen against its backdrop of surrounding landscape and Munibung Hill, taken in September 2012.



Figure 6: Aerial view of the site and containment cell from Munibung Hill at RL 33-34 (September 2012)

3.2 Medium Distance Views

Location 1

From the entry road to Cockle Creek railway station opposite the entrance to the PCCS site, with lack of vegetation along the Lake Road frontage, the containment cell is clearly visible from this vantage point (Photo 1A).

Photo 1A is of the containment cell taken on 8 October 2013 by Conybeare Morrison (CM+). CM+ was advised that the height of the containment cell on that date was approximately 37.15m. Temporary stockpiles are located on the cell platform.

Photo 1B is a photomontage of the cell height reaching RL 42.15 (approx.) and landscaped with grass and low shrubs.



Photo 1A: View of the site and containment cell from entry road to Cockle Creek station, at approx. RL 37.15 (as advised) , temporary stockpiles located on the cell platform (8 October 2013)



Photo 1B: Photomontage of the same view of containment cell with height of cell raised by up to 4.15m (from its approved RL 38.0 to RL 42.15), with landscape cover over cell and slopes

Location 2

From Jack Edwards Oval to the west of the site, the containment cell is just visible from this location (Photo 2A).

Photo 2A is of the containment cell taken at this vantage point on 8 October 2013. CM+ was advised that the height of the containment cell on that date was approximately 37.15m.

Photo 2B is a photomontage of the cell height reaching RL 42.15 and landscaped with grass and shrubs.



Photo 2A: View of site and containment cell at approx. RL 37.15 (as advised) from Jack Edwards Oval, west of the site (October 2013)



Photo 2B: Photomontage of the same view of the containment cell with height of cell raised by up to 4.15m (from its approved height of RL 38.0 to RL 42.15), with landscape cover over cell and slopes

Location 3

From Kindyarra Park to the west of the site, the cell is only partially visible from this vantage point due to trees obscuring the view of the cell and thereby has no significant visual impact (**Photo 3**).



Photo 3: View of the site from Kindyarra Park, north of Jack Edwards Oval, west of the site (October 2013)

Location 4

From the mid-slopes of Munibung Hill, east of the site, the entire containment cell is clearly visible from this location (Photo 4A).

Photo 4A is of the containment cell taken on 8 October 2013 by CM+, constructed to the level of RL 37.15 (approx.) as advised to CM+, with temporary stockpiles located on the cell platform.

Photo 4B is a photomontage of the landscaped containment cell raised to RL 42.15 with landscaping of grass and low shrubs. The rise of 4.15m (from its approved height of RL 38.0) has no significant visual impact when seen against the site's open landscape environment and back drop of hills beyond.



Photo 4A: View of site and containment cell at approx. RL 37.15 (as advised) from Munibung Hill, east of the site (October 2013)



Photo 4B: Photomontage of the same view of containment cell with height of cell raised by up to 4.15m (from its approved height of RL 38.0 to RL 42.15), with landscape cover over cell and slopes

3.4 Intermediate Views

Location 5

The containment cell is visible from the north-eastern side of the site.

Photo 5A, taken of the containment cell on 8 October 2013, constructed to approximately the height of the RL 37.15 as advised to CM+, with temporary stockpiles located on the cell platform.

Photo 5B is a photomontage of the containment cell raised to RL 42.15, with landscaping of grass and low shrubs.

The rise of approximately 4.15m from its approved height of RL 38.0, removes most of the long views of the hills beyond, but is not of significant impact, with the containment cell blending into the broad landscape of hills beyond.



Photo 5A: View of site and containment cell from north-east at approx. RL 37.15 (as advised), with temporary stockpiles on the cell platform (October 2013)



Photo 5B: Photomontage of the same view of containment cell with height of cell raised by up to 4.15m (from its approved height of RL 38.0 to RL 42.15), with landscape cover over cell and slopes

Location 6

Photo 6A (taken on 8 October 2013) illustrates the containment cell seen from this location from within the site, adjacent to the Former Laboratory building located on the main internal access roadway, which has been retained on the site.

Photo 6A is of the containment cell with its height up to the height of RL 37.15, as advised to CM+. Temporary stockpiles are located on top of the cell platform.

Photo 6B is a photomontage of the containment cell raised to RL 42.15, with landscaping of grass and low shrubs. There is little significant visual impact on the overall environmental landscape of the site.



Photo 6A: View of the containment cell constructed to RL 37.15 (as advised) from location adjacent to the former Laboratory building, with temporary stockpiles on the cell platform (October 2013)



Photo 6B: Photomontage of the same view of containment cell with height of cell raised by up to 4.15m (from its approved height of RL 38.0 to RL 42.15), with landscape cover over cell and slopes

4.0 IMPACT ASSESSMENT

At the completion of site remediation and prior to future development on the site, the whole of the site will be grassed to stabilise the surface. The containment cell will be capped with geofabric and clay, grassed on top and along the battered slopes. The proposed integrated PCCS and IFL containment cell, when viewed from surrounding areas external to the site will blend into the backdrop of the surrounding ridges of Munibung Hill.

The batters are highest on the western side of the cell (Photos 6A & 6B), with heights reaching approximately 27m in height (from current site levels) above the surrounding ground levels. The eastern batter is lower (Photos 5A & 5B), with batter height reaching approximately 22m in height (from current site levels) above the surrounding ground levels.

4.1 Mitigation Measures

To ameliorate the appearance of the containment cell, the cell will be sloped back (1 in 5) and landscaped with turf and low shrubs. While serving a functional purpose of stabilising the slopes/ batters and providing a relatively low maintenance environment, the landscaping will act as a visual mitigation measure.

Despite the size of the footprint of this introduced hill, the completed landscaped cell will become part of the visual landscape of the site blending into the lower spurs of Munibung Hill. The top of the cell/ hill, whilst reduced in area, will be used for recreational purposes.

Additionally, as part of the future development of the site, the new internal roads will be landscaped with street trees, which will assist in blending the surrounding road network with the landscaped cell.

4.2 Visual Sensitivity

Visual sensitivity is a measure of the level of concern attached by a user group to a change in the existing landscape. It is largely determined by visibility and the distance from viewing areas, but is also influenced by the pre-development disposition of the viewing to development of that type.

The visual importance of Munibung Hill is well established, but for over 100 years, the views of the PCCS and IFL sites have been representative of heavy industrial buildings, equipment and associated activities.

The transformation of the site by demolition of buildings and equipment, remediation of the site, and the revegetation of the site and slopes of Munibung Hill will be a major change to the local perception of this former heavy industrialised and polluted site to a regenerated site suitable for residential and mix-use purposes.

The raising of the top of the cell by a further 4.15m (from the approved RL 38.0 to RL 42.15) will not have a significant visual impact as the increased height will be battered back from its surrounding roads. Additionally, the vastness of the site and its backdrop

of the linear ridges of Munibung Hill enable the landscaped cell to be visually integrated into its surrounding environment.

4.3 Assessment of Visual Impact

The integrated PCCS and IFL containment cell (the 2012 MOD D Approval) was approved under a Section 75W of the EP&A Act.

The locations as shown on Photos 1, 2, 3 and 4 are representative of viewpoints which is available to the community. Photos 5 and 6 are views of the landscaped cell structure from within the site. The corresponding montages of these photos illustrate the impact of a 4.15m rise to the approved containment cell. Site landscape with vegetation on the slopes and top of cell will soften the visual impact of the cell from immediate and surrounding locations.

Whilst acknowledging that the approved and increased height proposed to the cell will result in a major change to the topography of the PCCS-IFL sites, the tapering of the cell structure with battered slopes will soften the impact of the height of the cell from key vantage points within and external of the site.

The visual impact of the cell increasing by up to 4.15m in height will be relatedly insignificant due to the mitigation measures outlined of battering and landscaping of the cell. The visual impact of the additional 4.15m will not be significant from viewpoints external to and within the site.

Views of the cell from long and medium distance views illustrate the cell blending into the backdrop of surrounding hills, with increase in height visually unperceivable over time when the landscape is established. Intermediate views of the cell from within the site of its increase in height are of low visual impact.

Aerial views of the site and containment cell erected up to RL 42.15, and landscaped, indicate the landscaped cell of increased height does not have a significant overall visual impact on the site and its surrounding environs.