



Port Kembla Development DA Modification Summary of Changes



Project Overview



- 4000t/day Soybean Crushing and Biodiesel Refinery in Port Kembla, NSW
- Annual production outputs of:
 - 288ML Soy biodiesel®
 - 815 000mt high-protein soybean meal
 - 22 000mt pharmaceutical grade glycerin
- Tri-modal Port Facility (Vessel, Rail, Truck) to maximize Logistics flexibility
- Initial Soy Bean Supply from United States
- Develop Partnership with Domestic Farmers
- Create Engineering & Construction Jobs for the Local Economy
- Create Long-term Employment of Local Operational Staff

Project History



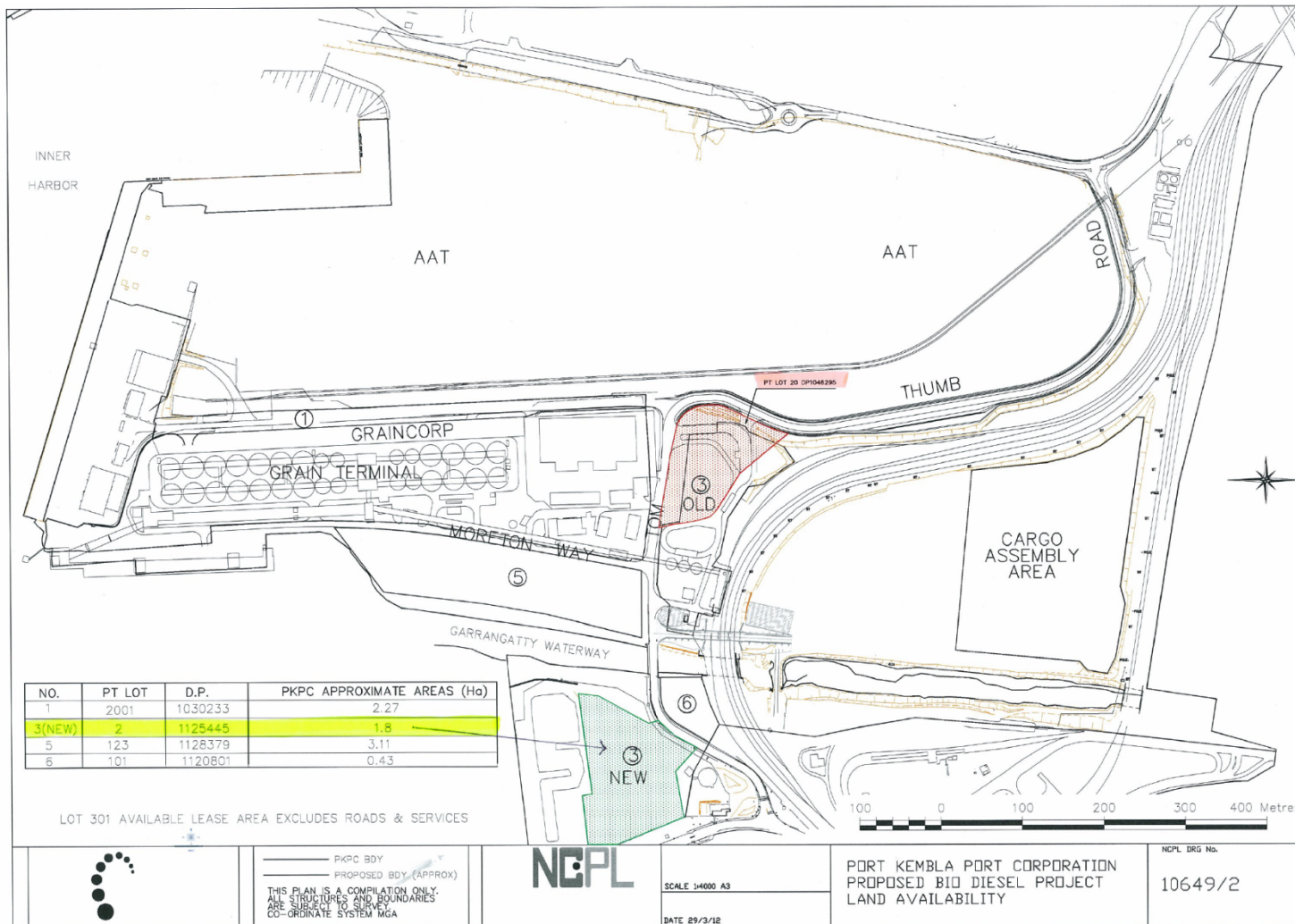
- Project originally approved 5th May 2009 (approval no. 08_0083)
- Project put on hold until Q4 2011
 - GFC
 - Brand and distribution network establishment
- Changes to land allotment and plant layout early 2012
- Department of Planning advised 16th May 2012 that changes to DA could be sought via a Section 75W modification
- Plant layouts have been revised and a detailed assessment of associated environmental impacts has been carried out

Summary of Changes

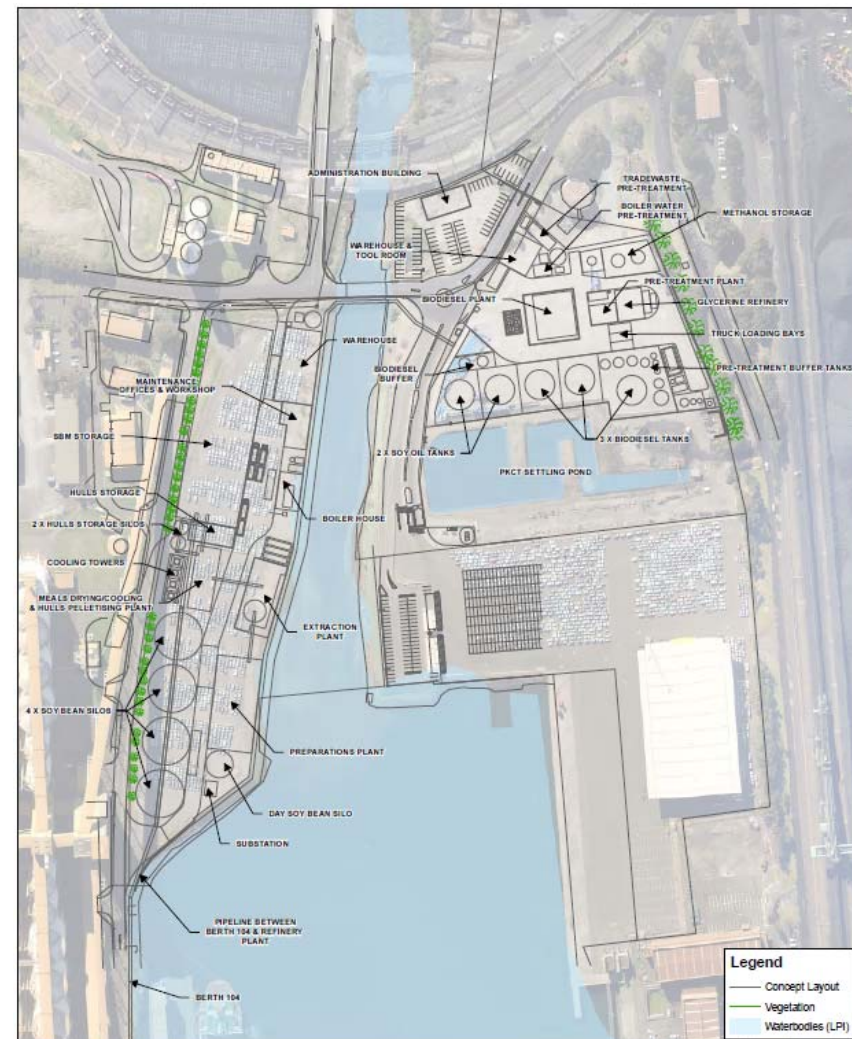
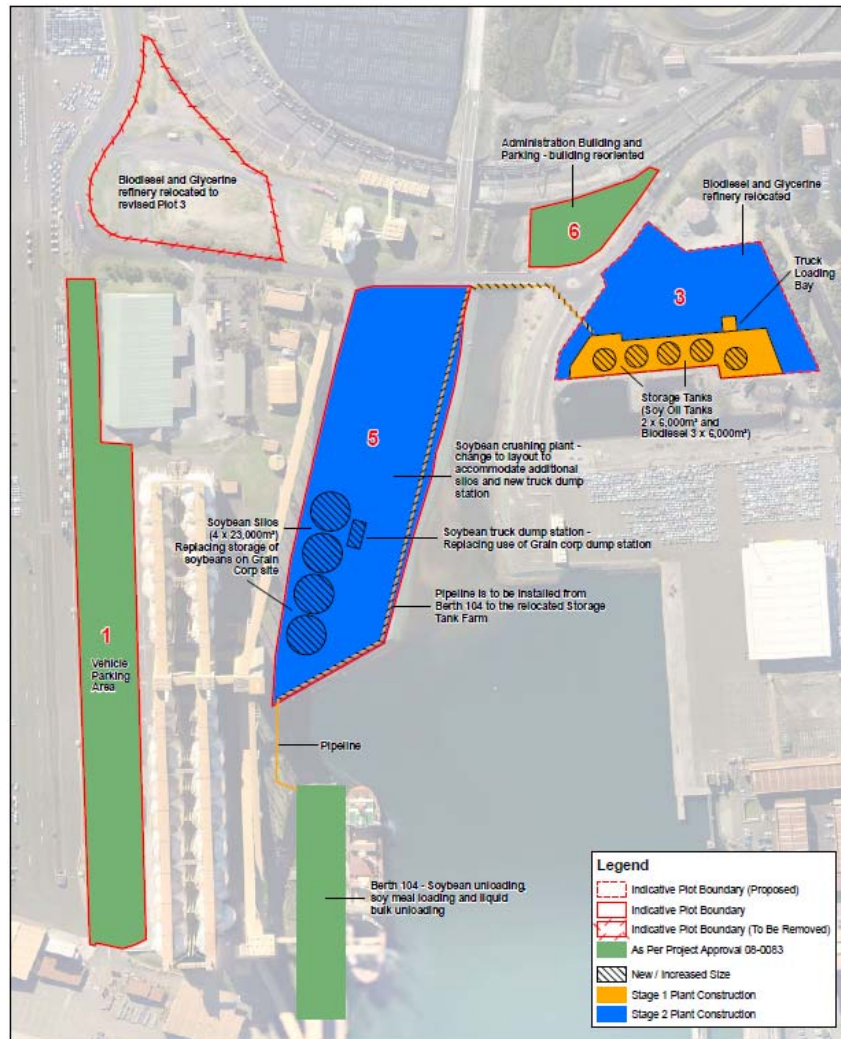


Change No.	Description	Original DA Consent (approval no. 08_0083)	Proposed Change
1	Location and size of Plot 3, Biodiesel plant site	PT lot 20, DP1046295, 1.55 Ha land area	PT lot 2, DP 1125445, 1.8 Ha land area, located approximately 250m east of original Plot 3
2	Additional Bulk Storage Capacity for Biodiesel and Soybean Oil on Plot 3	3 x 5,600m ³ Biodiesel storage tanks located on Plot 3. 1 x 10,800m ³ ML Soybean Oil storage tank located on Plot 5.	3 x 6,000m ³ ML Biodiesel storage tanks located on Plot 3. 2 x 6,000m ³ Soybean Oil storage tanks located on Plot 3.
3	Liquid Bulk Unloading Facility at Berth 104	Ship unloading facilities at Berth 104	Addition of liquid bulk unloading facilities at Berth 104
4	Soybean Storage Silos and Truck Dump Station	Use of GrainCorp's existing facilities; 7 x 10,000t silos, 2 x 5,000t silos and a truck dump station	Construction of 4 x 20,000t soybean silos, truck dump station and associated conveyors on Plot 5.
5	Change in orientation of Administration Building and car parking	Admin building faced East/West, and car park located on Western side of the building	Admin building facing North/South, and car park located on Southern side of the building.
6	Staged Construction of Plant	Plant to be built in a single stage	Plant to be built in two stages; <u>Stage 1</u> : liquid bulk storage and loading facilities <u>Stage 2</u> : Soybean Crushing and Biodiesel Refinery facilities

Change in Location of Biodiesel Refinery



Changes in Plant Layout & Project Stages



Environmental Impact Assessment



- Initial “Gap Analysis” conducted with Cardno to determine environmental impacts and whether further detailed assessment of the impact was required
- Department of Planning reviewed and affirmed proposed assessment regime
- Detailed assessments carried out by relevant experts
 - URS - Soils and Water
 - Dr A. White – Biodiversity (GGBF)
 - Cardno – Air Quality, Hazards and Risks, Visual Amenity
- **Overall, it was found that the environmental impact of all the proposed changes are consistent with the Approved Maunsell-AECOM (2008) Environmental Assessment for the development.**

Initial Gap Analysis Results



Proposed Change		Gap Analysis Results – Detailed Assessment Required (Y/N)						
		Air Quality	Hazards and Risk	Traffic	Biodiversity	Noise	Soils and Water	Visual Amenity
1	Location and size of Plot 3, Biodiesel plant site	Yes	Yes	No	Yes	No	Yes	Yes
2	Additional Bulk Storage Capacity for Biodiesel and Soybean Oil on Plot 3	No	No	No	No	No	No	Yes
3	Liquid Bulk Unloading Facility at Berth 104	No	Yes	No	No	No	No	Yes
4	Soybean Storage Silos and Truck Dump Station	Yes	Yes	No	No	No	No	Yes
5	Change in orientation of Administration Building and car parking	No	No	No	No	No	No	No
6	Staged Construction of Plant	No	No	No	No	No	No	No

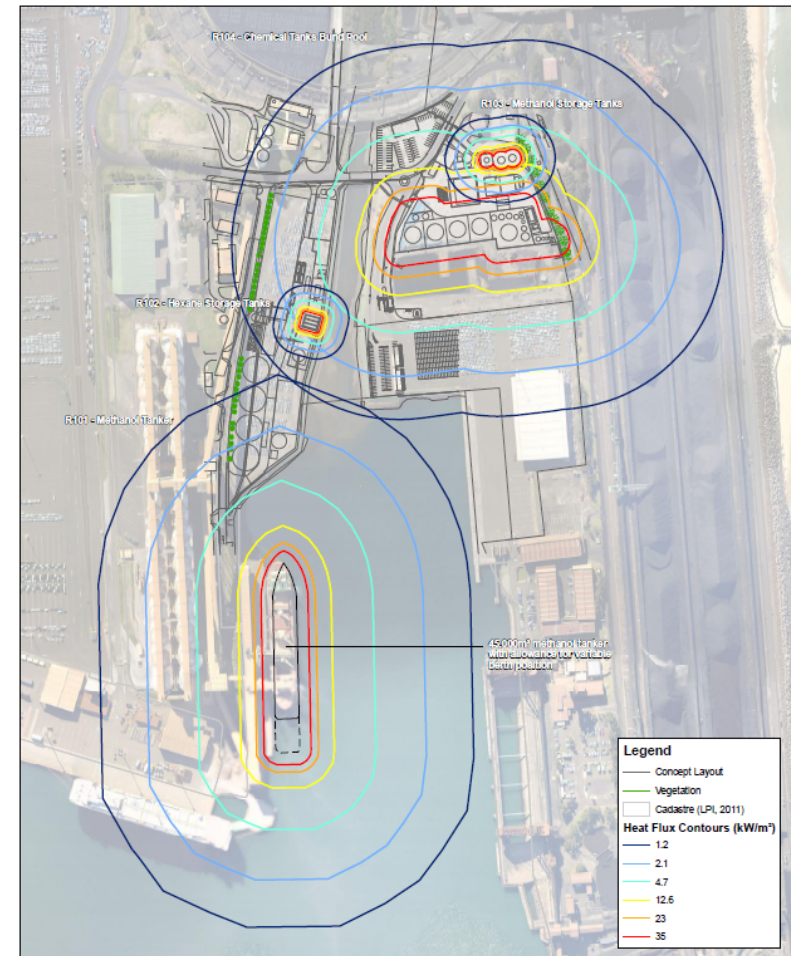
Detailed Assessment – Air Quality



- The process and capacity of the plant remains the same, hence the type and amount of emission generating activities is not considered to increase.
- The addition of the soybean silos and soybean truck dump station on site has the potential for a minor increase in the generation of dust and vehicle emissions. Proposed control measures are:
 - An extensive cleaning program to minimise the build-up of combustible dusts.
 - Dust collection systems at all transfer points including small self-containing dust extraction units.
 - Regular plant inspections.
- Air quality impacts resulting from the proposed changes are considered to be consistent with those detailed in the Approved Maunsell-AECOM (2008) EA.

Detailed Assessment – Hazards and Risks

- The proposed changes are not considered to alter the Preliminary Hazard Analysis (PHA) or the permissibility of the project under the current land use zoning
- The relocation of Plot 3 including the Biodiesel and Glycerine Refinery, shifts the plant further away from sensitive receivers
- Re-modelling of radiant heat impacts based on the new location of the refinery, has shown the risk of radiant heat impacts meet the risk criteria.
- Other risks such as the risk of explosion from soybean dust, flammable liquid storage and tank failures are considered to be mitigated as per the Project Approval.



Detailed Assessment – Biodiversity

- The proposed changes do not impact upon the Green and Golden Bell Frog (GGBF).
- The new Plot 3 is cleared and capped and does not contain any habitat suitable for the GGBF to forage amongst or shelter.
- Due to the impending extent of industrial activity on the site, it would not be in the interests of the conservation of this frog to try to develop habitat for this species on site.
- Both temporary and permanent frog exclusion fences are to be installed around identified areas of potential stray frog movement from neighbouring sites.



Detailed Assessment – Soils and Water



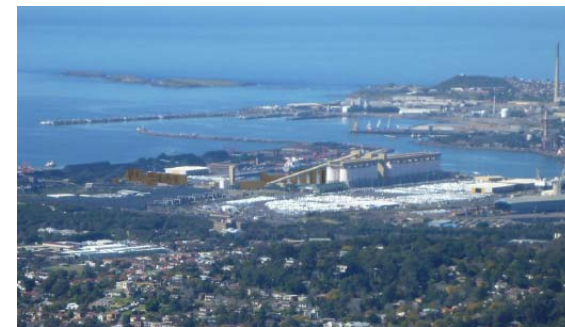
- The nature of the soils on the new Plot 3 are in accordance with the findings of previous investigations
- The site is not considered to be contaminated and considered suitable for the proposed development with respect to potential ground contamination risks.
- No evidence was sighted to indicate that the new Plot 3 has led to contamination of the surrounding water bodies
- The relevant control measures for the management of potential acid sulphate soils are in accordance with those for the original Project Approval



Detailed Assessment – Visual Amenity



- The visual amenity impacts of the proposed modification are considered to be consistent with the Project Approval, as the changes are considered to integrate into the existing industrial setting.
- The proposed structures are similar in bulk and character to the existing industrial and consistent with the character of the port and its heavy industrial operations.
- Landscaping, vegetative screening, non-reflective materials, recessive colours and the minimisation of light spill have been incorporated into the project design to minimise the visual amenity impacts.



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Questions and Feedback



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Meeting with PKPC, AAT & GrainCorp Re: DA Modification

PURPOSE: To inform neighbouring land users of the proposed changes to the Development Application for the PK Soybean Crushing and Biodiesel Refinery

DATE: 27/9/2012

LOCATION: PKPC Training Rooms – Breakwater Room

PRESENT: G. Cornwall (PKPC), T. Rebello (PKPC), S. Sherwood (AAT), M. Jelbart (GrainCorp), E. Dutton (NBL), R. Kempton (NBL)

APOLOGIES: P. Green (PKCT)

DISTRIBUTION: Those in attendance + Department of Planning

MINUTES BY: R. Kempton (NBL)

1.	Discussion / Notes
1.1	Presentation given of proposed changes and associated environmental impact assessments R. Kempton (NBL) gave presentation to the group outlining the following items: - Overview of project scope and history - Outline of the proposed changes - Summary of environmental impact assessment of changes - Results from detailed environmental impact assessments of proposed changes
1.2	Reviewed 3D model of revised plant layout - A 3D model had been prepared of the revised plant layout showing the proposed changes. - A virtual tour of this 3D model was then used to show the proposed changes relative to the surrounding areas.
1.3	Discussion, questions and comments regarding proposed changes M. Jelbart (GrainCorp) asked what the impact of the of the liquid bulk unload facilities would be with regards to the utilisation of Berth 104. E. Dutton (NBL) advised that the liquid bulk unload facilities will be used to bring in biodiesel for distribution during construction of the main production facilities. The associated number of vessel movements at this time would be a fraction of the agreed and approved amount when the main production facilities are in operation. Once the main production facilities are operational, NBL will be producing biodiesel on site and there will no longer be any need to bring in biodiesel for distribution, so there will be no change in the agreed and approved amount of vessel movements when the main production facilities are in operation. G. Cornwall (PKPC) and T. Rebello (PKPC) suggested that during preliminary design work, NBL should investigate the option of locating the liquid bulk unload facilities at Berth 103, as this berth is closer to the Biodiesel site and is less utilised than Berth 104. They also suggested that another potential option to consider would be the use of the existing liquid bulk Berth 201 and extend the existing section of unload piping past Berth 102 through to the Biodiesel site. It was noted that the current design of Berth 201 does not suit smaller ships as would be typically used to bring in the foreseen quantities of biodiesel. - Overall, it was agreed by those present that the proposed changes are acceptable.

Meeting with PKCT Re: DA Modification

PURPOSE: To inform neighbouring land users of the proposed changes to the Development Application for the PK Soybean Crushing and Biodiesel Refinery

DATE: 04/10/2012

LOCATION: PKCT Office – Board Room

PRESENT: P. Green (PKCT), A. Larance (PKCT), R. Kempton (NBL)

APOLOGIES: E. Dutton (NBL)

DISTRIBUTION: Those in attendance + Department of Planning

MINUTES BY: R. Kempton (NBL)

1.	Discussion / Notes
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1.2	Reviewed 3D model of revised plant layout - A 3D model had been prepared of the revised plant layout showing the proposed changes. - A virtual tour of this 3D model was then used to show the proposed changes relative to the surrounding areas.
1.3	Discussion, questions and comments regarding proposed changes - There was a rich discussion regarding the impact of the plant on the adjacent settling pond and the impact on adjacent PKCT facilities and stockpiles. Following the meeting, a series of questions were sent through to NBL on 4/10/2012 regarding the proposed changes, which are outlined below with the corresponding responses <u>PKCT would like NBL to confirm that the proposed works will include appropriately bunding, surface water collection and sediment control measures in place to ensure that no offsite impacts will occur on PKCT lands (during both the construction and operational phases of the project).</u> - Questions 1 & 2 answered together, see below. <u>PKCT has reservations about the potential risks associated with chemical, fuel and other liquid spills on the proposed NBL site, especially considering the close proximity to PKCT's settling lagoon. How is NBL going to ensure that potential offsite impacts affecting PKCT do not eventuate in the near term and additionally as the proposed plant infrastructure ages?</u> - Storm water from the site will be contained and directed to the north of the new Plot 3. Storm water will then pass through an oil/water separator located underground on the Administration site prior to discharge through the existing drain to the Garungaty waterway. Small dedicated oil water separators will also be installed on the bulk

1.	Discussion / Notes
	storage tank bund and the truck loading facility to ensure that storm water pumped out from these areas into the site storm water system contains minimal oil. (Note: this stormwater flow path is the same as the current site arrangement, where stormwater from the new Plot 3 flows into a small onsite detention pond, before then passing via an underground pipe to the site drain on the future Admin building site, which then discharges into the Garungaty waterway). - o The bulk storage tanks and associated bunding will be designed in accordance with AS1940. The compound will be surrounded by an outer concrete bund wall approximately 1500mm in height, and there will be 600mm high concrete wall compound subdivisions between the bulk storage tanks. - o The bulk storage tanks will have an external cladding to ensure that they meet the bund crest locus requirements of AS1940, so that any leakage from the tank is contained within the bund walls. - o The bulk storage tank bunding shall have impervious flooring and sufficient capacity to contain 110% of the largest tank within the bund. - o In accordance with our current DA requirements to ensure the integrity of the bunds are maintained and to prevent and manage spills on site, the following measures will be implemented: ▪ An inventory system to accurately measure and report on production losses ▪ An early warning leak detection and prevention system, certified by a site auditor accredited under the Contaminated Land Management Act, 1997. ▪ A bund, tank and pipeline integrity assessment program ▪ A spill prevention and management system including a spill response and prevention plan, a monitoring program, a site security plan and staff training. - o It is intended to install a retaining wall and associated security fence and frog exclusion fence on the southern boundary adjoining the PKCT settling pond so that the land for Plot 3 is stabilised and secured, as it sits higher than the adjoining PKCT land. - o During the construction phase appropriate erosion and sediment controls will be implemented on site in accordance with the relevant requirements in Landcom's (2004) Managing Urban Stormwater: Soils and Construction manual. We will also have a Construction Environmental Management Plan in place, and will ensure that we capture the hazard of contamination on the PKCT settling pond and implement appropriate controls to prevent and contain any such potential contamination during construction. 3. <u>PKCT need assurance that in the unlikely event of a liquid fuel or chemical storage tank fire, combustibility of PKCT's coal stockpiles or damage to other infrastructure will not be a concern. Can NBL provide a written response in relation to this concern that will provide PKCT with some comfort?</u> - o Revised heat flux diagrams were developed for the new Plot 3 as part of the hazards and risk assessment, focusing on potential fires from the bulk storage of flammable and combustible liquids. (note: the volume of liquid contained in the manufacturing facilities piping and equipment is considered negligible as compared with that in the bulk storage tanks). - o These revised heat flux diagrams have shown that the radiant heat impacts meet the relevant risk criteria – i.e. that the heat flux is such that personnel on neighbouring sites can safely evacuate the area in the event of a fire before there is any risk to personal safety. - o The risks from a fire from the methanol or sodium methylate tanks are mainly contained on Plot 3. The heat flux effects on the neighbouring PKCT water tank and pump house are negligible; the modelled heat flux is a maximum of 4.7kW/m² at the

1.	Discussion / Notes
	edge of the water piping compound and near the edge of the western side of the PKCT access road, which is well below the threshold of 12kW/m^2 at which plastic will melt or vegetation will burn. The heat flux at the PKCT water tank, pump house and the eastern side of the PKCT access road is 1.2kW/m^2 which is equivalent to being out in the hot sun in the middle of summer. - o With regards to the large radiant heat flux radius shown for the biodiesel/soy oil storage tanks, the following items should be considered to put them into perspective ▪ These radiant heat fluxes are worst case – i.e. that the entire contents of one of the bulk tanks has emptied into the bund, and that there is a sustained fire from that large pool of liquid ▪ The risk of a tank fire occurring is suitably low. The relevant risk of a tank failure is $6.6 \times 10^{-6}/\text{yr}$, and the corresponding estimate of the risk of a tank failure and fire is $3 \times 10^{-6}/\text{yr}$ and is below the 50×10^{-6} criteria from HIPAP No. 4. ▪ If, in the unlikely occurrence that a leak was to occur, the bund design incorporates 600mm high compound subdivisions which greatly reduce the potential pool size while the leak is rectified, and thus greatly reduces the potential heat flux radii. ▪ Both soy oil and biodiesel are non-flammable, and have very high flashpoints (biodiesel typically over 130°C, and soy oil over 250°C). This means that it is very difficult to ignite and sustain a fire from a potential spill (these substances will not burn if you place a lit match on a spilled pool of liquid). It is for this reason that these products are allowed to be safely transported through road tunnels etc, where flammable liquids cannot. ▪ In the extreme worst case, as modelled in the radiant heat flux diagrams, the modelled heat flux at the closest PKCT stockpile is below 12.6kW/m^2, the threshold at which plastic will melt or vegetation will burn. ▪ Taking all of this into account, there is a negligible risk of a fire occurring from the bulk biodiesel and soy oil tanks that could have any radiant heat impacts on the PKCT stock piles. The radiant heat diagrams are just an extreme worst case to ensure that safety of personnel is adequate in such rare events. - o The site will have a fire system installed in accordance with the requirements of AS1940 to manage the risk of potential fires from the bulk storage tanks. 4. <u>Concerns relating to air quality were raised from potential fall-out which may impact on the chemistry of PKCT's settling lagoon as well as potential consequences on vehicles. How is NBL going to ensure that potential offsite impacts affecting PKCT do not eventuate?</u> - o Airborne emissions from the neighbouring biodiesel site will be very low for the following reasons: ▪ Chemicals will be stored in sealed tanks ▪ All reactions and processing occurs within sealed vessels and pipework ▪ The majority of process steam is condensed and returned for reuse. The small amount of steam that is not reused is collected as wastewater from the process. There will be some minor steam losses from steam traps. ▪ The cooling towers will be designed according to AS 3666, and as such incorporate drift eliminators that remove process water droplets to 0.002% of the recirculating load. This is equivalent to 7.4mL/s of process water lost from the tower. The plume that you often see from cooling towers is just pure water, that has evaporated and condensed in the colder outside air (i.e. like rain clouds). For reference, the chloride level of the cooling water systems is

1.	Discussion / Notes
	very low – 100ppm. For reference sea water has a chloride content of 35,000ppm. ▪ The plant boilers will be run on natural gas, which burns cleanly and efficiently (as compared with coal or fuel oil). ▪ The bulk storage tanks will incorporate desiccant breathers or nitrogen blanketing, and vapour recovery systems to minimise potential emissions associated with tank breathing and filling. o In accordance with the current DA requirements, NBL will implement an Air Quality Management plan including monitoring and inspections to confirm that emissions comply with manufacturer's guarantees and legislative requirements, and to confirm that all controls are working appropriately and to ensure impacts to the community are minimised. 5. <u>PKCT raised the question as to why NBL are not including train delivery connections in the modified plans, yet to mode of transport is considered across the Approval?</u> o Currently there are a few options being considered for potential rail delivery connections to the revised site layout that will require further engineering investigations during detailed design of the plant to determine their feasibility. In the first few years of plant operation it is foreseen that the majority of soybean supply to the site will be via ship, with a small amount by road. As the domestic soybean market develops, the relevant options for ship and rail transport will be investigated to ensure that truck movements are minimised where possible.