Greater Shepparton City Council

North East Precinct Structure Plan

Buffer Constraint and Odour Impact Assessment

June 2017

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1. Introduction

1.1 Background

Greater Shepparton City Council (GSCC) and the Victorian Planning Authority (VPA) are in the process of preparing a precinct structure plan (PSP) for the Shepparton North East area. The PSP includes approximately 177 hectares of land located approximately three kilometres north-east of the Shepparton CBD. It is understood that the PSP will provide the long-term vision for the future planning and development of Shepparton region. The plan will provide a broad framework that will coordinate development and assist in the transition of the area from its current rural land use to an expanded urban area for Shepparton.

It is envisaged that the PSP will support a population of approximately 3,400 residents (approximately 1300 lots).

GSCC required an adverse amenity assessment to support the proposed PSP. In particular, at the SE margin of the PSP there is an industrial zone and two premises have been identified as generating a buffer that intrudes onto the PSP. The premises identified in the PSP (Plan 3 – Land Use Budget) are a Petroleum Storage facility (operated by Caltex) and a Bitumen Batching Plant (operated by Downer). The corresponding buffer distances shown on the plan are 300 m and 500 m respectively. These are sourced to the table in Clause 52.10 of the planning scheme, and are therefore threshold distances, which are used to determine whether an intended industry at a proposed site has sufficient separation from sensitive land uses. In this case, however it is the inverse situation where the industries are present and it is the proposed siting of residences that may intrude onto the Environment Protection Authority (EPA) separation distance for these industries.

In addition, GSCC required dispersion modelling to show the potential odour impact that the asphalt plant would have on the PSP.

1.2 Purpose of this report

The purpose of this report is to detail the findings of GHD's buffer and odour assessment to address the project requirements described in Section 1.1.

GHD undertook the following in the preparation of this report:

Buffer Constraint assessment

1. Site inspection and identification of industrial premises attracting a buffer
2. Determination of the default buffers from EPA Guidelines
3. Use of Shepparton Airport meteorological data to determine directional buffer for asphalt plant using AERMOD
4. De-rating default buffer to allow for throughput
5. Forming a directional buffer to account for local meteorology

Odour impact assessment

1. Site inspection and receipt of further documentation from GSCC.
2. Identified current legislative requirements relating to environmental odour, including EPA and the Planning Scheme.
3. Assessment of odour complaint history held by GSC or EPA
4. Conducted a perimeter survey under light stable winds to determine fugitive odour emissions from asphalt plant
5. Use of AERMET to process Shepparton Airport meteorological data to format for AERMOD
6. Compiled source Odour Emission Rate (OER) inventory for asphalt plant
7. Use of AERMOD to predict peak off-site odour impact from asphalt plant operations
8. Recommend potential mitigation measures/landuse changes in the PSP if the odour modelling shows off-site impact onto the residential component in the PSP

1.3 Assumptions

The following assumptions and exclusions have been made in the preparation of this report:

- Site specific odour sampling was not undertaken. The odour emission rate data used was based on measurements from similar facilities for which odour emission rates are known.
- That the odour dispersion modelling of ‘normal operations’ was based on an annual throughput 55,000 tonnes of asphalt through the Downer facility which was based on information provided by the site manager. We also note that the facility is capable of processing more than it currently does, and as GHD understands, there are few regulatory obstacles preventing Downer from increasing the throughput of this facility beyond what it currently averages, and possibly beyond the 104,000 tpa ‘worst case scenario’ modelled in this report.

1.4 Limitations

This report has been prepared by GHD for Greater Shepparton City Council and may only be used and relied on by Greater Shepparton City Council for the purpose agreed between GHD and the Greater Shepparton City Council as set out in section 1 of this report.

GHD otherwise disclaims responsibility to any person other than Greater Shepparton City Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section 1.3 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has not been involved in the preparation of the Precinct Structure Plan and has had no contribution to, or review of the Precinct Structure Plan other than in the Odour Assessment. GHD shall not be liable to any person for any error in, omission from, or false or misleading statement in, any other part of the Precinct Structure Plan.

2. Site information

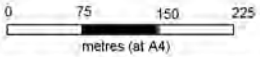
Initial inspection from Google Maps identified two industrial premises with the potential to pose a constraint on the PSP by virtue of the buffer they attract, namely: (i) the Asphalt plant at Apollo Drive and (ii) the petroleum storage facility at McGill Street.

GHD undertook a site inspection of the Downer asphalt plant and the Tasco Petroleum storage facility. **Error! Reference source not found.** summarises the information collected during the site visits.

Table 1 Facility Information

	Downer Asphalt Plant	Tasco Petroleum storage facility
Address	29-31 Apollo Drive Shepparton	17-29 McGill St Shepparton
Site Representative	Rick Cruff (Surfacing Manager)	Peter Trevaskis
Activity	Hot asphalt batching plant	Underground petroleum storage
Capacity	100 t/hour 55,000 tpa (normal operations) 104,0000 tpa (worst case scenario)	8 x 114,000L tanks
Hours of operation	24 hours	24 hours
Other information		Caltex-owned aboveground petroleum storage tanks on the site next door have been decommissioned.

The locations of the relevant sites are shown in Figure 1.



Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid Of Australia, Zone 55

LEGEND

Site Boundary	Red outline
PSP Zone	Blue dotted fill

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Site Map

Figure 1

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2.1 Site inspection results

GHD air quality scientists conducted a site inspection of the two facilities and made the following observations:

2.1.1 Downer Asphalt Plant

- Visited the site on Friday February 17th (approximately 2.20 pm)
- Met with Surfacing Manager Rick Cruff and obtained information regarding the current and historical operations of the facility
- Observed the facility from the north west (Apollo Drive) and the south east (railway)
- Observed that the facility did not appear to be operating at the time
- Detected faint petroleum-type odour for a brief period on the railway track side of the facility

2.1.2 Tasco Petroleum Storage Facility

- Visited the site on Friday 17 February (approximately 3.00 pm)
- Requested to speak with Peter Trevaskis but were informed he was unavailable to meet at that time
- Agreed to contact Peter via phone in the following week to obtain information regarding the operations at the site
- Observed no visible storage tanks
- Observed no detectable odour

3. Buffer Distance Guidelines

Buffer (or separation) distances are used in Victoria as a device to minimise impact at off-site sensitive land uses in the event of a process upset or malfunction. Sensitive land uses are defined in the guideline as; Any land uses which require a particular focus on protecting the beneficial uses of the air environment relating to human health and wellbeing, local amenity and aesthetic enjoyment, for example residential premises, child care centres, pre-schools, primary schools, education centres or informal outdoor recreation sites.

Two classes of buffer/separation distance guidelines are relevant in the context of planning in Victoria, namely Threshold Distances as specified in Planning Schemes and Buffer Distances as specified by EPA.

3.1 Threshold distances

Where there is an industrial use **proposed** on a land parcel, then the provisions of Clause 52.10[1] in the State section of the planning scheme apply. In effect, if the industry is specified in the Table to the Clause, then the corresponding threshold distance to the nearest Residential Zone, Business 5 Zone, Capital City Zone or Docklands Zone must be met, otherwise a planning permit must be sought. However as the facilities in question are already in existence, the EPA separation distances apply.

3.2 EPA separation distance

In the case of an **existing** industrial use, EPA recommends separation distances should be considered when preparing a planning scheme, planning scheme amendment or planning permit application. As in this case both industries precede the PSP, the EPA buffer distance guidelines[2], published by EPA are the relevant distance to apply.

3.2.1 Downer Asphalt Plant

As can be seen in Figure 1, the Downer Asphalt plant currently has an available buffer of approximately 400 m, to existing sensitive land uses with the nearest sensitive receptor being a residential zone to the north west of the site.

The available buffer to the PSP southern boundary is less at ~ 200 m (see Figure 1).

The EPA guidelines recommend a separation distance of 500 m for asphalt plants which have a capacity greater than 100 tonnes per week. This measurement is taken from the 'activity boundary' as opposed to the site boundary so as to include any internal buffer distance the site affords. As the exact site layout and operations are not known, GHD has taken the envelope of odour sources to be the asphalt load out bay for the purpose of this assessment.

The Downer facility produces approximately 1,150 tonnes per week but has the capacity to process up to 2000 tonnes[3] – it attracts a default 500 m separation distance (see Page 9 of EPA publication 1518). The approximate extension of the default buffer is shown as a white circle in Figure 2. It shows a substantial constraint into the southeast margin of the PSP of up to 300 m.

Default separation distance for Downer Asphalt Plant- 500 m

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[1] Victorian Planning Provisions, Clause 52.10 "Uses with Adverse Amenity Potential"

[2] EPA 2013. "Recommended separation distances for industrial residual air emissions", Pubn. 1518 March 2013.

[3] Email from Rick Cruff dated 22/3/2017

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid Of Australia, Zone 55

N W E S

LEGEND

Site Boundary

PSP Zone

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Downner Asphalt facility
500 m default buffer

Figure 2

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3.2.2 Tasco Petroleum Storage Facility

EPA guideline 1518 prescribes two separation distances for “storage of petroleum and hydrocarbon products” – dependent on the type of tank venting used. These are:

- 100 m for tanks exceeding 2000 tonnes with a floating roof
- 250 m for tanks exceeding 2000 tonnes with a fixed roof

These tank types refer to above-ground storage tanks only. No minimum separation distance is provided for below-ground storage tanks as they operate in a similar manner to the under-ground storage tanks at petrol stations. These employ a vapour recovery (VR) system that significantly limits the emissions of volatile organic compounds (VOCs) that result from unloading petrol from a road tanker into petrol service station storage tanks. When petrol is transferred from a delivery tanker to an underground storage tank, vapour in the tank headspace is displaced in the process. VR systems return the displaced vapour back into the delivery tanker by means of vapour-tight connection line. For this reason, GHD considered that the Tasco facility does not attract a required separation distance.

Default separation distance for Tasco Petroleum Storage facility - none

As the Tasco Petroleum facility does not pose a buffer constraint on the PSP, the Level 1 and 2 Buffer assessments have been conducted for the Downer plant only.

3.3 Site-specific variation to default separation distance

The EPA allows for site-specific variation to the default buffer distance for a given industry and provides six factors in Table 4 of the Guidelines. The relevant factors are considered below in the context of the asphalt plant.

- Plant equipment and operation – The plant has a high standard of emission control technology, however the plant is still subject to the possibility of upset conditions should there be equipment failure.
- Size of the plant – The capacity of the Downer plant is 2000 tonnes per week, which is considerably smaller than many other facilities in Victoria. It is therefore possible to de-rate the buffer on the basis of throughput.
- Topography or meteorology – This has been assessed below to establish the directions of good and poor dispersion.

From the above, it is likely that meteorology and plant size may be factors based on which adjusted site-specific buffer could be calculated.

4. De-rated buffer – effect of throughput

The default buffers are normally set for the larger examples of each industry, so that where there is a large variation in industry throughput (as is the case for asphalt batching), the default value can be de-rated to allow for this. The logic is that where a given premises has a throughput much lower than the larger examples of that industry, then either: (i) the size of an upset (and consequential impact) will be smaller, or (for a modular process unit) the likelihood that a process upset will occur is reduced. Hence, for a given degree of protection from off-site impact, the buffer can be reduced. GHD has developed a method[4] to de-rate the default buffer based on a measure of throughput, which has been applied for the Downer asphalt facility.

Note that the same method was adopted by EPA in the guideline for wastewater treatment plants and is adopted via the Victoria Broiler Code for meat chicken production.

A larger example of an asphalt plant in Victoria compared to Downer at Shepparton is taken as the Alex Fraser facility at Dandenong, Melbourne. This facility produces approximately 250,000 tonnes per annum, larger than both the normal operations at Downer at Shepparton (1,100 tpw x 50 weeks = 55,000 tpa) and the worst case scenario of 104,000 tpa.

Then adopting the de-rating formula, namely:

$$D = D_{default}\left[\frac{T}{T_{max}}\right]^{0.56} \qquad \text{Equation 1}$$

Where: D is the de-rated buffer distance in metres, T is the throughput of Downer's operations and T_{max} is the throughput of Alex Fraser at Dandenong

Then setting $D_{default}$ = 500 m ('Asphalt batching' in EPA publication 1518)

And using these throughput numbers (for normal and worst case scenarios) in the equation:

Gives

$$D = 500 * \left[\frac{55{,}000}{250{,}000}\right]^{0.56} \quad \text{and} \quad D = 500 * \left[\frac{104{,}000}{250{,}000}\right]^{0.56}$$

D = 214 m (normal operations) D = 305 m (worst case scenario)

When applied to the perimeter of the 'activity area'[5], the 214 m de-rated buffer for normal operations does not extend to the PSP boundary to the north of the site (see Figure 3). Hence the 214 m de-rated buffer does not impose any constraint on the siting of sensitive land uses in the PSP.

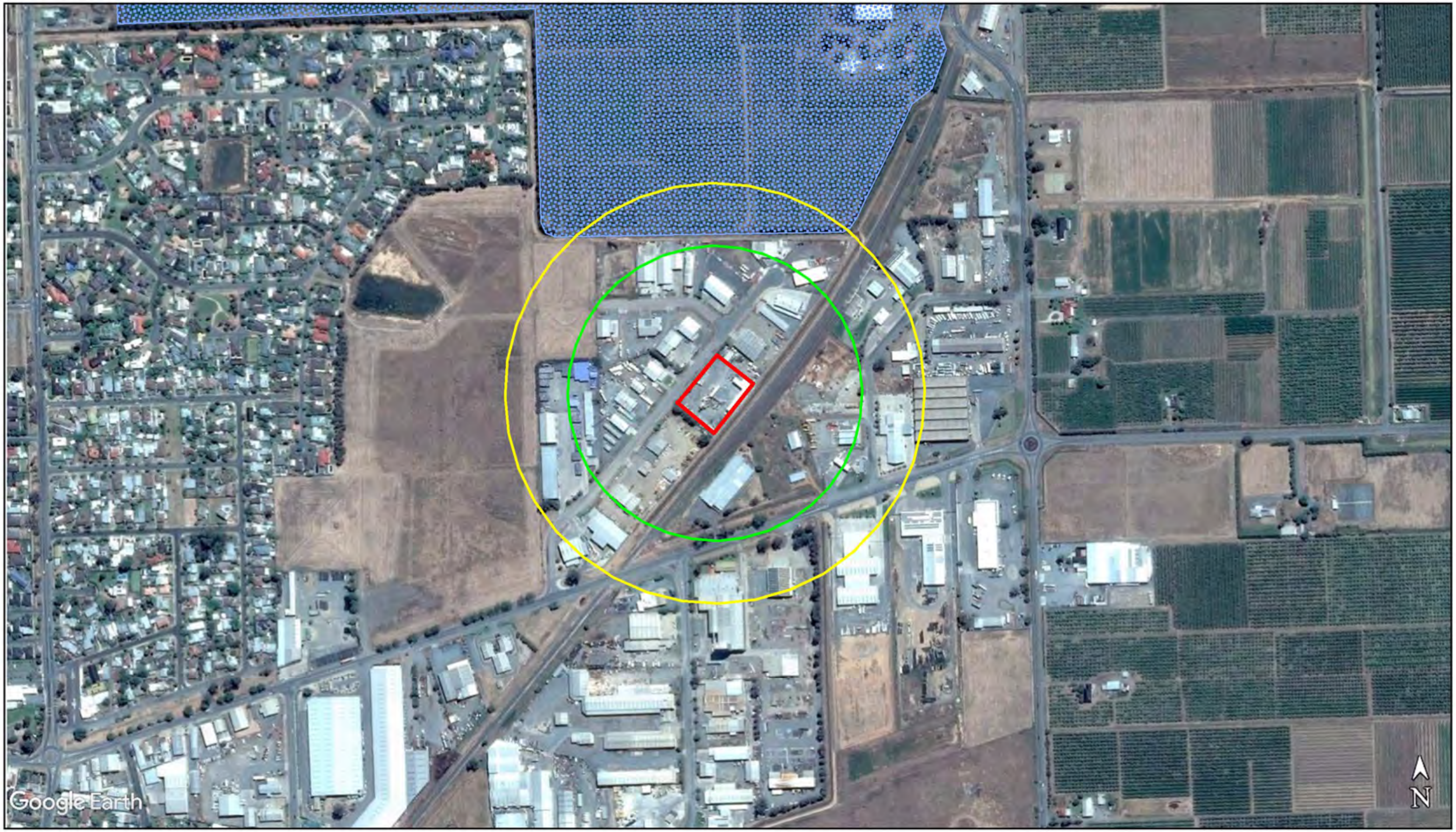
[4] Clarey P, Pollock T 'Integrating Separation Distances with Dispersion Modelling' Enviro 04, 28 March – 1 April, darling harbour, Sydney.

[5] Taken as the load out bay- the major source of odour, see section 7.1.

However, the 305 m de-rated buffer for worst case scenario does extend approximately 70 m into the southern portion of the PSP. This worst case buffer therefore has the potential to constrain a small portion of land within the southern area of the PSP.

Local meteorology will also play a factor in modifying the buffer. This is addressed in section 6.

The approximate extension of the de-rated buffers (without local meteorology included) are shown in Figure 3 below.



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metres (at A4)

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid Of Australia, Zone 55

N W E S

LEGEND

- Site Boundary
- PSP Zone
- 214 m derated buffer (normal operations)
- 305 m derated buffer (worst case scenario)

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Derated buffers

Figure 3

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5. Local meteorology

Local climatic conditions largely determines the pattern of off-site odour impact. The features of particular interest are: (i) the prevailing wind directions and (ii) the relative incidence of more stable light wind conditions. These conditions give rise to poor dispersion and upset/malfunction emissions released at these times may impact to a greater distance. The nearest meteorological data available is from a Bureau of Meteorology weather station at Shepparton Airport (approximately 7.6 km to the south west of the site). Data from the year 2008 was used.

An annual wind rose has been generated from the Shepparton Airport meteorological file. This is shown as Figure 4. The prevailing southerly winds are evident and are due to the predominance of winds from this direction during the cooler months (April to September). Given that the nearest sensitive receptors are to the south of the site, the large buffer distance available at the site is important due to the risk of the winds carrying odour towards sensitive receptors.

Emissions from stack sources such as the one in this facility are typically associated with moderate wind speeds (2-4 m/s, shown in yellow in) Given that these winds are predominantly from the south and south west for the site, it would be expected that the dispersion model would follow a similar pattern.

5.1 Pattern of winds

The annual and seasonal wind roses for the Shepparton Airport weather station show the following features:

- The annual wind roses show a high incidence of southerly winds
- Annual average wind speed is 4.32 m/s
- There is a significant incidence of westerly winds in winter
- The incidence of southerly winds is highest in summer reflecting the sea breeze
- Easterly winds are rare in all seasons

Figure 4 Annual wind rose (average wind speed 4.32 m/s)

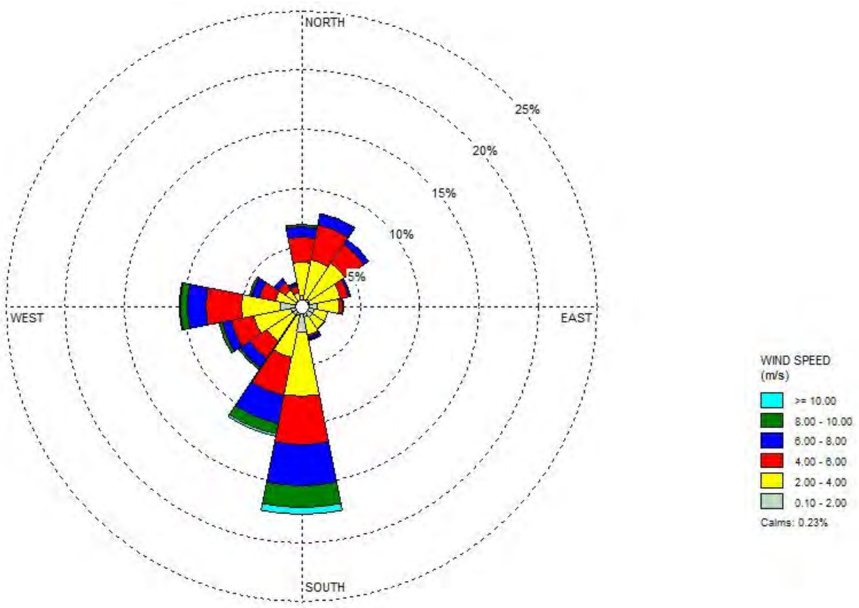
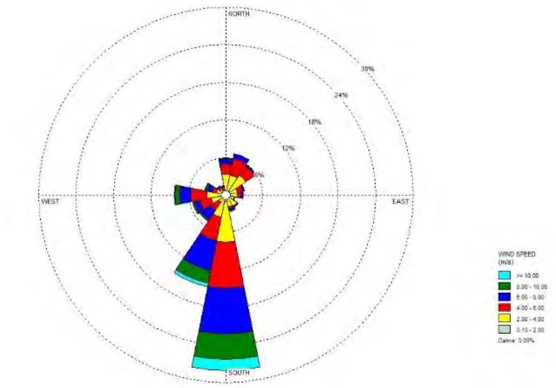
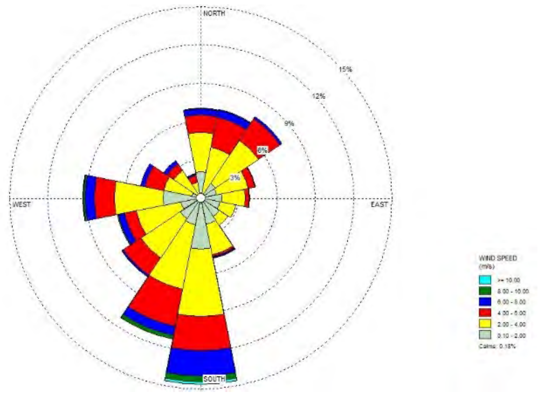


Figure 5 Seasonal wind roses for Shepparton Airport (2008)

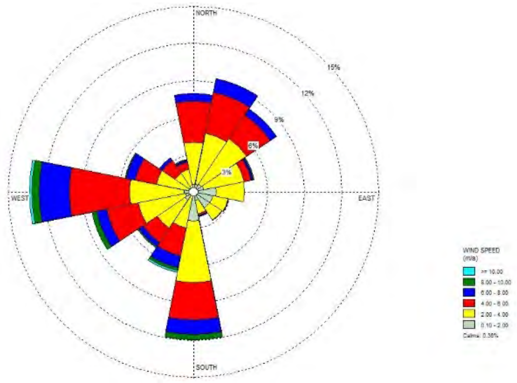
Summer (average speed = 5.1 m/s)



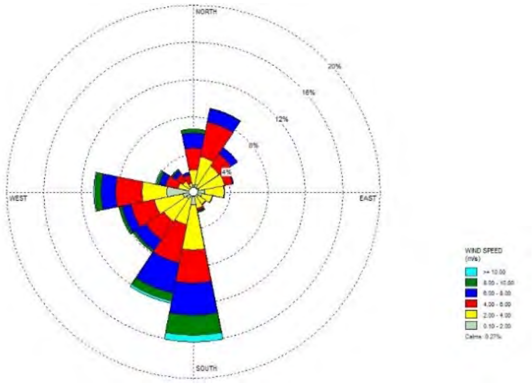
Autumn (average speed = 3.33 m/s)



Winter (average speed = 4.1 m/s)



Spring (average speed = 4.76 m/s)



6. Directional buffer

Where site-representative meteorological data is available, the directions of good and poor dispersion can be identified. Further, if the 12-month dataset is configured for dispersion modelling (deriving atmospheric stability category and mixing height), then dispersion modelling using AERMOD can be conducted using a nominal source emission rate (odour or dust) to assess the directional change of the separation distance from the default value. In the directions of poor dispersion, the buffer is extended, while in the direction of good dispersion the buffer can be retracted.

The buffer so formed is to have the same enclosed area as the default radial buffer and is termed a directional buffer. A directional buffer has the advantage that the protection afforded by its separation is independent of the direction from the source.

The methodology to develop the directional buffer was developed by GHD and was presented at a conference in 2004[6]. The results of the directional buffer assessment for the Downer Asphalt plant at Shepparton are provided below.

6.1 Application to Downer Asphalt Facility

Two directional buffers were modelled for the Downer Asphalt facility using the Shepparton Airport 2008 meteorological dataset. 99.5% contour that gave approximately the same enclosed area as a 214 m radius circle (normal operations) and a 305 m radius circle (worst case scenario). The directional buffers are shown in Figure 6. . The directional buffers show a poor dispersion lobe to the south west, and thus the contour extends furthest in this direction. The directional buffer also retracts in the north easterly direction, indicating good dispersion. This is likely due to directional changes in roughness height due to changes in the surrounding land use - to the north east of the site there is primarily flat, agricultural land, in contrast to the industrial land to the southwest. This discrepancy in surrounding land use results in poorer dispersion under light north easterly winds and better dispersion under light south westerly winds.

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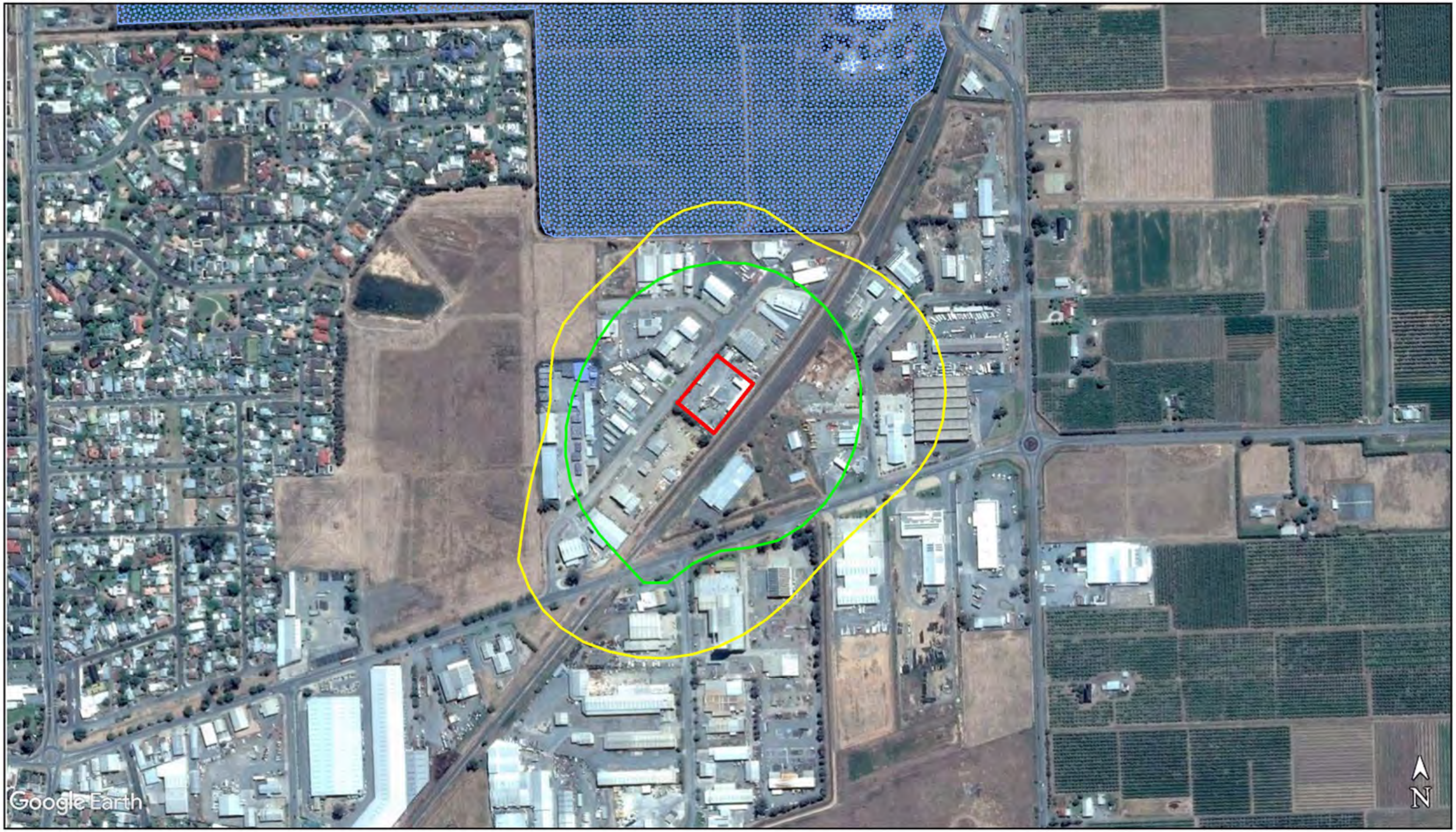
[6] Clarey P, Pollock T "Integrating Separation Distances with Dispersion Modelling" Enviro 04, 28 March – 1 April 2004, Darling Harbor, Sydney



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Map Projection: Universal Transverse Mercator Horizontal Datum: Geocentric Datum of Australia 1994 Grid: Map Grid Of Australia, Zone 55	

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LEGEND

Site Boundary	214 m directional buffer (normal operations)
PSP Zone	305 m directional buffer (worst case scenario)

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Directional buffers

Figure 6

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6.2 Appropriate buffer distance recommendation for Downer Asphalt Plant

The 500 m default EPA buffer for asphalt plants is inappropriate given the size of the Downer facility. Using EPA's considerations for a site-specific variation, namely throughput and meteorology a more appropriate site-specific buffer is recommended. Given the small throughput of 55,000 tonnes/year, the de-rated buffer of 214 m is more appropriate for the facility compared with much larger reference facilities in Metropolitan Melbourne. However, in order to not pose any future limitation on Downers production the 305 m de-rated buffer could be used.

Figure 6 shows that the de-rated directional 214 m buffer does not encroach onto the existing nearby residences nor the parcel of land to the north (PSP). The worst case scenario 305 m de-rated directional buffer does extend 40 m into the southern portion of the PSP. The 305 m de-rated directional buffer extension into the PSP has reduced by 30 m compared to the de-rated radial 305 m buffer.

The directional buffers are site specific, and account for the surrounding land uses and local climatic conditions which impact dispersion of airborne pollutants (such as odour).

From the above analysis, it is recommended that the 214 m de-rated directional buffer be applied as the minimum appropriate separation distance to the Downer asphalt facility. This recommendation is consistent with the fact that the proposed facility has a low throughput compared to the larger asphalt plants on which the 500 m buffer is based. However, in order to not pose any future limitation on Downers production the 305 m de-rated directional buffer could be used as a maximum buffer, which marginally extends 40 m into a southern portion of the PSP- see Figure 6.

7. Emissions to air

This section identifies the significant odour emission sources from the asphalt plant and provides constituent emission rates for all identified sources for which EPA Victoria have indicated are required to be assessed for previous assessments undertaken by GHD.

7.1 Asphalt Plant Emission Constituents

Under routine operation, asphalt plants emit a range of pollutants to air from a number of sources. Emissions from the Downer plant will potentially include Class 1, 2 and 3 indicators as defined in the State environment protection policy- Air Quality Management (SEPP(AQM)), odour and dust.

Potential pollutants include:

- Odour
- Total suspended particulates (TSP)
- Particulate matter less than 10 um (PM_{10}) and 2.5um ($PM_{2.5}$)
- Volatile Organic Compounds (VOCs)
- Oxides of nitrogen (NO_x)
- Carbon monoxide
- Polycyclic aromatic hydrocarbons (PAHs)

SEPP(AQM) prescribes maximum design criteria for the above constituents. In GHD's experience, odour has been the most difficult indicator to comply with. That is, if the odour criterion can be met, the criteria for the other pollutants will also be met.

7.2 Source information

The sources of emissions from the Downer facility have been identified as:

1. Stack
2. Fugitive emissions (from vehicle loading, tarping etc.)

7.2.1 Stack Emissions

Error! Reference source not found. gives the information about the stack as it was configured in the model.

Table 2 Modelled Discharge Characteristics of Stack

Parameter	Value
Stack type	Baghouse filter
Grid coordinates	Easting: 358838.6 Northing: 5974529
Stack Height (m)	18
Stack Diameter at discharge point (m)	0.99
Exhaust Discharge Velocity (m/s)	22*
Exhaust Discharge Temperature (°C)	110*

*Values for these parameters could not be obtained for the Downer facility and so are based on the figures from Alex Fraser's facility at Dandenong

7.2.2 Fugitive emissions

The two major sources of potential fugitive emissions arise from:

- The loading of warm asphalt from storage bins into awaiting delivery trucks
- The loaded hot mix on trucks prior to being covered with tarpaulin

7.3 Odour emission rate calculation

7.3.1 Stack emission rate

Odour emission factors are not available from either NPI or the US EPA AP-42 references as odour can be very process-specific. Therefore the odour emission rates (OERs) from the baghouse exhaust stack were estimated using information supplied in a Works Approval application for a temporary asphalt plant for the Peninsula Link Project by Boral Resources (Vic) Pty Ltd (Boral, 2010). Appendix B of that Air Quality Assessment Report undertaken by GHD (2010) supplies odour emission testing results for a 200 tonne per hour asphalt plant in Ballarat. The odour emission rate as measured by EML for the Boral asphalt plant in Ballarat was 120,000 OUV/min (Report capacity of 200 tonne per hour). This asphalt plant is considered to be similar to the Downer plant and is therefore a valid source of information for modelling purposes.

Table 3 Relative Throughput and Stack Emission Rate (Asphalt Production Process)

	Boral At Ballarat	Downer at Shepparton
Throughput	200 tonnes/hr	90-100 tonnes /hr
OER	120,000 OUV/min	**60,000 OUV/min***

This figure is based on a scaling down of odour based on the reduced throughput as compared to the Ballarat facility[7].

7.3.2 Fugitive emission rate

Odour concentrations and emission rates emanating from the load-out operation were also based on the studies for the Boral temporary asphalt plant, which were sourced from Boral, sites at Scoresby and Montrose[8]. The odour emission rate data from that study have been applied to the facility at Apollo Drive as the loading procedures are comparable.

Table 4 Relative Throughput and Fugitive Emission Rate (Asphalt Loading and Tarping Process)

Operation	Boral at Scoresby and Montrose*	Downer at Shepparton
Throughput	200 t/hour	**100 t/hour**
Loading (OUv/min)	260,000 (Scoresby)	**130,000**
Tarping (OUv/min)	16,900 (Montrose)	**8,450**

* Figures assume a 30 tonne load onto a 2.4 x 9 m truck tray

[7] Peninsula Link Project by Boral Resources (Vic) Pty Ltd (Boral, 2010).

[8] Peninsula Link Project by Boral Resources (Vic) Pty Ltd (Boral, 2010).

Odour measurements conducted to the AS 4323.1 -1995 standard
'Shell' bitumen was used in production
Tarping OERS are based on 6.5% of loading OER measurements

8. Dispersion modelling

8.1 AERMET

Atmospheric dispersion modelling for regulatory purposes requires a set of meteorological data that is representative of conditions at the site to be put into the modelling software. GHD has used data from the BoM weather station Shepparton Airport. Data from the year 2008 was used as this year is relatively recent, and is generally seen to be representative of average weather, with no unusual weather events. The meteorological parameters provided in the file include:

- Temperature
- Wind Speed
- Wind Direction
- Cloud coverage
- Ceiling height

The AERMOD meteorological processor, AERMET, was used to construct the AERMOD meteorological files based on the BoM data. This was undertaken is strict accordance with EPA publication *Construction of input meteorological data files for EPA Victoria's regulatory air pollution model (AERMOD)* (Publication 1550). AERMET was used in 'on-site' observation mode using the input data detailed above and appropriate land use categorisations for the site.

The Non-Default option of "Adjust Surface Friction Velocity (ADJ_U*)" was applied. This was applied to be consistent with the EPAV approved the use of the LOWWIND3 option in AERMOD to better resolve the dispersion associated with light wind conditions, in line with current US EPA AERMOD usage guidance advice.

8.1.1 Land usage

AERMET required the input of data related to the land surrounding the site, as land uses can have a significant impact on the dispersion of pollutants and surface level. The surrounding land to the site was divided into four sectors for the determination of atmospheric turbulence values in the dispersion modelling and the numbers prescribed in EPA Publication 1550 applied. These are summarised in .

Table 5 Land Use Configuration

Degrees	Season	Albedo	Bowen Ratio	Surface Roughness
0-155	Winter	0.18	1.5	0.3
	Spring	0.18	1	0.3
	Summer	0.18	1	0.3
	Autumn	0.18	1.5	0.3
155-220	Winter	0.18	1.5	0.7
	Spring	0.18	1.5	0.7
	Summer	0.18	1.5	0.7
	Autumn	0.18	1.5	0.7
220-330	Winter	0.18	1	0.3

Degrees	Season	Albedo	Bowen Ratio	Surface Roughness
	Spring	0.10	0.8	0.4
	Summer	0.16	0.8	0.4
	Autumn	0.16	1	0.4
330-0	Winter	0.18	1.5	0.3
	Spring	0.18	1	0.3
	Summer	0.18	1	0.3
	Autumn	0.18	1.5	0.3

8.2 AERMOD

AERMOD is the EPA's approved model for predicting the impacts of emissions to air by industry. GHD has modelled the emissions from this development in accordance with EPA publication 1550 with the following exception:

Requirement	Variation	Justification
5 years of meteorological data	This model has used one year of meteorological data (2008)	Site specific data was used (from the Shepparton Airport BoM station). This is an acceptable alternative as stated on page 3 of publication 1550.

AERMOD is an advanced Gaussian plume model and extends on the Pasquill-Gifford atmospheric stability categorisation by modelling the turbulence using micro-meteorological parameters to calculate the Monin-Obukov length. This provides a continuously varying measure of atmospheric turbulence from one hour to the next – in contrast to the seven Pasquill Gifford categories used in AUSPLUME.

8.3 Model scenarios

The AERMOD model was run twice with the following scenarios:

Table 6 Model Scenarios

Model Run	Name	Weekly throughput	Time	Output
1	Current Average Conditions	1050 t per week	6 weeks night time operation during January and February 3 hours per night, 6 nights a week 3 hours per night	10,800 t
			100 tpa at 1.5 hrs per day for 365 days /year	43,680 t
				54,480 tpa
2	Worst case	2000 t per week	6 weeks night time operation during January and February 3 hours per night, 6 nights a week 3 hours per night	10,800 t

			200 tpa 1.5 hrs per day for 365 days /year	129,200
				104,000 tpa *

*based on capacity of 2000 tonnes per week as stated in email from Rick Cruff dated 22/3/2017

8.4 Model configuration

Key components of the model configuration are listed below and key inputs are provided in Appendix A.

- Ground level concentration were predicted over a 6 km square range Cartesian receptor group centred over the site
- Grid resolution was set at 10 m
- Averaging period was three minutes
- The effects of terrain dispersion were considered negligible
- Default vertical temperature gradients were assumed
- Land use configuration was modelled as prescribed by EPA guideline 1550 as described in table
- Source characterisation load out as a volume source, tarping as an area source and the baghouse as a point source

8.5 Predicted impacts

Dispersion modelling was conducted to predict the maximum ground level concentration resulting from emissions to air from the asphalt plant. The predicted ground level concentrations (GLCs) were assessed against the EPA air quality design criteria prescribed in SEPP (AQM).

The results of the dispersion modelling are graphically shown in Figure 7.

Figure 7 shows that the extent of the one odour unit contour does not exceed 100 m from the load out bay, and is well clear of the southern boundary of the PSP. Therefore there is no predicted odour impact from the asphalt plant operations under normal operations.

Figure 8 shows the impacts of the predicted ‘worst case’ scenario. The impacts are slightly greater than the normal operations, but still not significant in terms of the effects on the PSP. The maximum predicted offsite impact is 3 OU, which extends only slightly beyond the site boundary, predominantly in the south easterly direction. Thus there is no predicted impacts on the PSP under ‘worst case’ scenario operations.

0 25 50
Metres (at A4)

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid Of Australia, Zone XX

O

LEGEND

Site Boundary

PSP Zone

Odour Contour

GHD
CLIENTS | PEOPLE | PERFORMANCE

Greater Shepparton City Council
North East PSP

Job Number	3134896
Revision	A
Date	6-4-2017

Predicted Impacts - Normal

Figure 7

G:\DIR\JOBDIR\WORKSPACENAME.WOR

8/180 Lonsdale St Melbourne VIC 3000 Australia **T** 61 3 8687 8000 **F** 61 3 8687 8111 **E** melmail@ghd.com.au **W** www.ghd.com.au

Data Custodian, Data Set Name/Title, Version/Date. Created by: GIS Operator

0 25 50
Metres (at A4)

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid Of Australia, Zone XX

O

LEGEND

Site Boundary

PSP Zone

Odour Contour

GHD
CLIENTS | PEOPLE | PERFORMANCE

Greater Shepparton City Council
North East PSP

Job Number | 3134896
Revision | A
Date | 6-4-2017

Predicted Impacts - Worst Case

Figure 8

G:\DIR\JOBDIR\WORKSPACENAME.WOR

8/180 Lonsdale St Melbourne VIC 3000 Australia T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com.au W www.ghd.com.au

Data Custodian, Data Set Name/Title, Version/Date. Created by: GIS Operator

9. Complaint history

GHD understands that there have been no odour complaints attributed to their existing facility in recent years which suggests that the mitigation technology in place is of high standard. It is noted that seven to eight years ago some complaints were lodged but at this time a bitumen with a higher sulphur content was being used. Also, the facility has undergone a technology upgrade since then, including an increase in stack height from 12 to 18 m, which would improve dispersion of emitted pollutants.

10. Conclusions and implications

Subject to the limitations detailed in section 1.3, GHD concludes that:

- The Tasco petroleum storage facility has underground tanks and therefore does not have an obligation to meet any buffer distance requirements.
- The relevant guideline for the Downer asphalt facility is EPA guideline 1518. This guideline requires a default 500 m separation distance.
- EPA's considerations for a site-specific variation will apply to the facility, namely meteorology and size of the plant will have the most effect in varying the default buffer resulting in a site-specific buffer.
- The throughput of the asphalt plant is low (55,00 tpa for normal operations) and (104,000 for a worst case scenario) compared to the large asphalt plants in Victoria, thus a de-rated buffer of 214 m for normal operations and a de-rated buffer of 305 m for the worst case scenario is considered appropriate as conservative buffers for the operation.
- GHD recommends that the 214 m de-rated directional buffer (normal operations) be applied as the minimum appropriate separation distance to the Downer asphalt facility. Figure 6 shows that this buffer does not encroach onto any of the nearby residences or land which is being considered for rezoning. However, in order to not pose any future limitation on Downers production the 305 m de-rated directional buffer (worst case scenario) could be used as a maximum buffer which marginally extends 40 m into a southern portion of the PSP- see Figure 6.
- The maximum predicted offsite impact for the asphalt plant is 3 OU for the worst case scenario, which extends only slightly beyond the plants site boundary, predominantly in the south easterly direction. There is no predicted odour impact within the PSP under 'worst case' scenario operations.
- GHD does not consider that an odour ERA to predict the risk of odour impact is required.

In summary, given the processes in place to mitigate odour and dust emissions and the size of the plant, the facility is unlikely to pose any constraints to the amenity of the nearest residential receptors within the area of the PSP.

Appendices

Appendix A – AERMOD Input file

```
**
*****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.2.0
** Lakes Environmental Software Inc.
** Date: 4/04/17
** File: G:\31\34896\Tech\AUSPLUME\Downer Shepparton\Downer Shepparton.ADI
**
*****************************************
**
**
*****************************************
** AERMOD Control Pathway
*****************************************
**
**
CO STARTING
   TITLEONE L:\jobs\3134308\AERMOD\Downer Shepparton\Downer Shepparton.isc
   MODELOPT CONC FLAT BETA LOWWIND3
   AVERTIME 1
   POLLUTID ODOUR
   RUNORNOT RUN
   ERRORFIL "Downer Shepparton.err"
CO FINISHED
**
*****************************************
** AERMOD Source Pathway
*****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION STACK        POINT      358838.600  5974529.000          0.0
** DESCRSRC Main stack
   LOCATION LOADING      VOLUME     358848.000  5974517.000          0.0
   LOCATION TARPING      AREA       358848.200  5974517.700          0.0
** DESCRSRC TARPING
** Source Parameters **
   SRCPARAM STACK           1800.0    18.000   383.150  22.00000     0.990
   SRCPARAM LOADING         3900.0     5.500     2.093     2.750
   SRCPARAM TARPING            6.5     5.500     2.400     9.000     0.000     2.300

** Building Downwash **
   BUILDHGT STACK             0.00      5.50      5.50      5.50      5.50      5.50
   BUILDHGT STACK             5.50      5.50      0.00      0.00      0.00      0.00
   BUILDHGT STACK             0.00      0.00      0.00      0.00      0.00      0.00
   BUILDHGT STACK             0.00      5.50      5.50      5.50      5.50      5.50
   BUILDHGT STACK             5.50      5.50      0.00      0.00      0.00      0.00
   BUILDHGT STACK             0.00      0.00      0.00      0.00      0.00      0.00

   BUILDWID STACK             0.00     14.07     11.25      8.10      4.70      8.10
   BUILDWID STACK            11.26     14.07      0.00      0.00      0.00      0.00
   BUILDWID STACK             0.00      0.00      0.00      0.00      0.00      0.00
   BUILDWID STACK             0.00     14.07     11.25      8.10      4.70      8.10
   BUILDWID STACK            11.26     14.07      0.00      0.00      0.00      0.00
   BUILDWID STACK             0.00      0.00      0.00      0.00      0.00      0.00

   BUILDLEN STACK             0.00     19.67     20.40     20.52     20.00     20.51
   BUILDLEN STACK            20.40     19.67      0.00      0.00      0.00      0.00
   BUILDLEN STACK             0.00      0.00      0.00      0.00      0.00      0.00
   BUILDLEN STACK             0.00     19.67     20.40     20.52     20.00     20.51
   BUILDLEN STACK            20.40     19.67      0.00      0.00      0.00      0.00
   BUILDLEN STACK             0.00      0.00      0.00      0.00      0.00      0.00

   XBADJ    STACK             0.00      6.29      7.16      7.82      8.24      7.59
   XBADJ    STACK             6.72      5.63      0.00      0.00      0.00      0.00
   XBADJ    STACK             0.00      0.00      0.00      0.00      0.00      0.00
   XBADJ    STACK             0.00    -25.96    -27.57    -28.34    -28.24    -28.11
   XBADJ    STACK           -27.12    -25.30      0.00      0.00      0.00      0.00
   XBADJ    STACK             0.00      0.00      0.00      0.00      0.00      0.00

   YBADJ    STACK             0.00     -8.55     -5.62     -2.52      0.66      3.82
   YBADJ    STACK             6.86      9.69      0.00      0.00      0.00      0.00
   YBADJ    STACK             0.00      0.00      0.00      0.00      0.00      0.00
   YBADJ    STACK             0.00      8.55      5.62      2.52     -0.66     -3.82
   YBADJ    STACK            -6.86     -9.69      0.00      0.00      0.00      0.00
   YBADJ    STACK             0.00      0.00      0.00      0.00      0.00      0.00


** Variable Emissions Type: "By Month / Hour / Day (MHRDOW)"
** Variable Emission Scenario: "Scenario 2"
** WeekDays:
** January
   EMISFACT STACK        MHRDOW 1.0 0.0 1.0 0.0 1.0 0.0
```

```
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** February
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** March
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** April
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** May
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** June
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** July
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** August
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** September
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** October
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** November
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** December
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
** January
   EMISFACT STACK        MHRDOW 1.0 0.0 1.0 0.0 1.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** February
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** March
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** April
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** May
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** June
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
```

```
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** July
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** August
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** September
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** October
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** November
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** December
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
** January
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** February
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** March
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** April
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** May
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** June
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** July
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** August
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** September
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** October
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** November
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** December
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT STACK        MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
** January
   EMISFACT LOADING      MHRDOW 1.0 0.0 1.0 0.0 1.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** February
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** March
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** April
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** May
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** June
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** July
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** August
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** September
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** October
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** November
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** December
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
** January
   EMISFACT LOADING      MHRDOW 1.0 0.0 1.0 0.0 1.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** February
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** March
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** April
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   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** May
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** June
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** July
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** August
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** September
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** October
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** November
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** December
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
** January
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** February
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** March
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** April
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** May
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** June
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** July
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** August
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** September
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   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** October
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** November
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** December
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT LOADING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
** January
   EMISFACT TARPING      MHRDOW 1.0 0.0 1.0 0.0 1.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** February
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** March
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** April
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** May
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** June
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** July
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** August
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** September
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** October
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** November
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** December
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
** January
   EMISFACT TARPING      MHRDOW 1.0 0.0 1.0 0.0 1.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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** February
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** March
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** April
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** May
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** June
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** July
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** August
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** September
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** October
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** November
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** December
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 1.0 0.0 0.5 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
** January
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** February
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** March
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** April
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** May
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** June
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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** July
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** August
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** September
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** October
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** November
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** December
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT TARPING      MHRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   CONCUNIT 1 OU/S OU/M**3
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   GRIDCART UCART1 STA
                  XYINC 355113.60 150 50.00 5970804.00 150 50.00
   GRIDCART UCART1 END
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE L:\jobs\3134896\shep_psp.SFC
   PROFFILE L:\jobs\3134896\shep_psp.PFL
   SURFDATA 0 2008 Shepparton_Airport 355830.00 5967504.00
   UAIRDATA 1 2008
   SITEDATA 1 2008
   PROFBASE 0.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 44
   RECTABLE 1 44
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 44 "Downer Shepparton.AD\01H44GALL.PLT" 31
   SUMMFILE "Downer Shepparton.sum"
OU FINISHED
**
****************************************
** Project Parameters
****************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    Geocentric Datum of Australia (1994)
** DTMRGN   Australia
** UNITS    m
** ZONE     -55
** ZONEINX  0
**
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Revision	Author	Reviewer		Approved for Issue		
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