Ektimo

DRAFT REPORT R011332

Air Quality Assessment of Various Emissions from a Particle Board Manufacturing Plant - Proposed WESP system upgrade

D&R Henderson Pty Ltd (Monsbent), Benalla

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1 EXECUTIVE SUMMARY

1.1 *Background*

D&R Henderson Pty Ltd, trading as Monsbent, operate a particle board manufacturing plant located at 42 Benalla-Yarrawonga Road, Benalla, Victoria. This plant is operated subject to EPA Licence 9379. The current emissions from the Jet Dryer exhaust stack (DP4) and from the Drum Dryer exhaust stack (DP17) are proposed to be ducted through a new single discharge point via Wet Electro-Static Precipitator (WESP) system. The WESP will abate the current emissions of formaldehyde, particulate, and of odorous volatile organic compounds (VOCs) from the combined process gas streams. Ektimo was engaged by Monsbent to conduct an air quality assessment of these abated emissions to inform an application to amend the current EPA licence. Two WESP designs are currently being considered by Monsbent and therefore the estimated emissions from both are assessed here.

1.2 *Project Overview*

The substances from the proposed WESP stack to be discharged to atmosphere comprise:

- Oxides of nitrogen (NOX) assessed as nitrogen dioxide (NO_2).
- Carbon monoxide (CO).
- Particulate matter assessed as the subset components that are Total Suspended Particulate (TSP) at smaller than 50 micron, and particulate matter smaller than 10 or 2.5 micron (PM10 or PM2.5). This is also emitted from the existing Pressline 3 cyclone (DP21). No fugitive emissions from the site are included in this assessment. Fugitive particulate emissions from the site are to be abated using an Environment Improvement Program which is documented separately to this assessment.
- Formaldehyde, with other notable emissions from the roof vents over Presslines 1, 2 and 3 (DPs 14 and 18); with lesser emissions from the Resin Plant.
- Volatile Organic Compounds which predominantly comprise pinenes and limonene from the timber resin, which are assessed for their equivalent potential for odour dis-amenity.

The flash dryer exhaust stack (DP16) is no longer operable.

Ektimo conducted annual emission testing of the various licensed emissions to air in 2021. These tested emission rates have been used to inform this assessment, with the summated emissions of NO_2 and CO from DP17 and DP21 discharged from the single WESP stack. The emissions of particulate matter and of formaldehyde were assessed at the maximum in-stack discharge concentrations as per vendor guarantees for each of the two WESP designs. The common emissions from the three sets of main press vents, from the Pressline 3 Cyclone and from the resin plant were also included.

All substances were assessed as being emitted continuously from the site, i.e., 24 hours per day, 365 days per year. The approved AERMOD dispersion model was used in accordance with EPA guidance, in conjunction with 5 years of hourly meteorological data including three years available from an on-site surface weather station and two from a prognostic meteorological model, to predict peak ground level concentrations. These peak predictions for each criteria pollutant were assessed for compliance against applicable Environment Reference Standards, toxic substances were assessed against both design ground level concentration, as detailed in State Environment Protection Policy for Air Quality Management (which has been superseded), and air quality assessment criteria in new EPA guidance expected to be released by the end of 2021.

Section 2 details the assessment methodology inclusive of relevant regulatory policy, the derived emission inventory for all significant pollutants, the receiving environment, baseline air quality, meteorological data and modelling. The peak predicted ground level concentrations are compared with their corresponding design criteria with the results detailed in **Section 3**. A risk treatment plan is detailed in **Section 4**.

1.3 *Outcome and Concluding Comments*

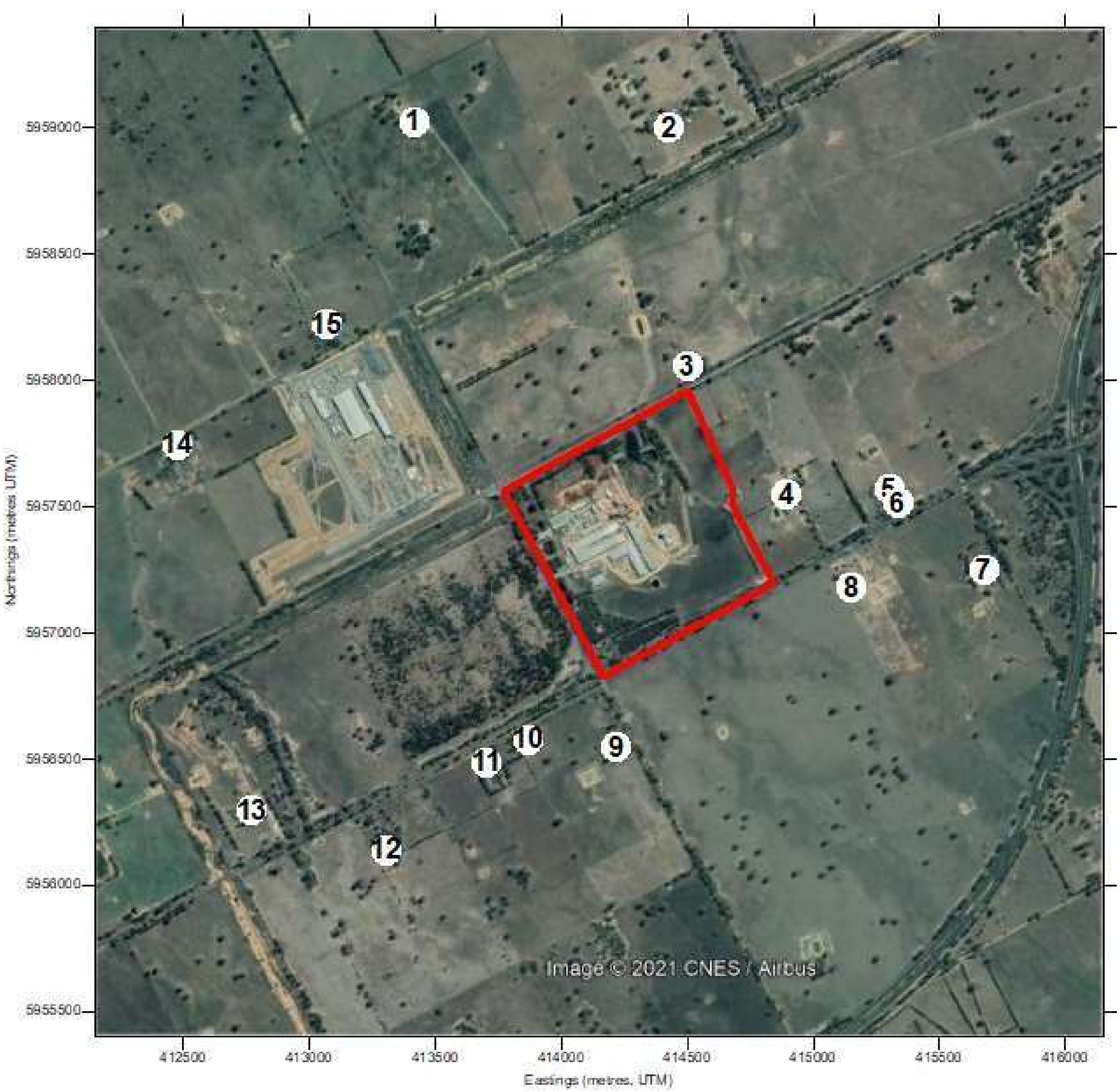
Peak predicted ground level concentrations of formaldehyde at the nearest relevant sensitive receivers from all sources combined did not exceed either the old SEPP-AQM design ground level concentration criteria or the proposed air quality assessment criteria inclusive of either WESP design at maximum in-stack concentrations. The peak predictions at relevant sensitive receiver locations as the result of the elevated emission plume from either WESP system in isolation represented less than one-third of those peak predictions with all sources contributing. The wake effected emission plumes from the existing pressline roof vents disperse downwind near to ground level and are the predominant contributor to peak formaldehyde concentrations at and beyond the site boundary.

Compliance with the design criterion for TSP, PM10, PM2.5, CO and for NO_2 was readily predicted inclusive of representative background levels at and beyond the site boundary or at the nearest rural residences.

Peak predicted ground level odour from the equivalent odour emissions resulting from the maximum in-stack VOC concentration guaranteed by the vendor are well below a perceptible intensity at and beyond the site boundary. Thus, the Environment Reference Standard requiring *an air environment that is free from offensive odours from commercial, industrial, trade and domestic activities* is predicted to be satisfied with regard to the incremental emissions from the WESP.

Ongoing compliance with the air quality assessment criteria in the receiving environment is based on a range of management measures as per **Table 18**, vendor design guarantees, the recent emission testing of those emission substances not abated by the WESP and of other sources at the site, as well as the proposed ongoing performance measurements detailed in **Section 4.4**. *The risk treatment specific to the operation of the WESP is to be supplemented by a site-wide Environmental Improvement Plan (documented separately) detailing the management of the other process point source emissions as well as the fugitive wood-fibre and dust emissions.* Based on these controls being effectively and consistently implemented the residual risk of the air quality assessment criteria being exceeded for any assessed substance at and beyond the site boundary or at the nearest receivers was determined to be **Low**.

This report has been prepared for Monsbent and should be read in conjunction with the scope and limitations as detailed in **Section 5**.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2 ASSESSMENT METHOD

The assessment of the various emissions to air requires the following key steps:

1. Air Quality Assessment Criteria (AQAC).
2. Emissions inventory.
3. Receiving Environment.
4. Background air quality.
5. Meteorological data.
6. Model selection and configuration.
7. Assessment with AQAC's.

These are each addressed sequentially in the sections below.

2.1 *Air Quality Assessment Criteria (AQAC)*

The Environment Protection Amendment Act of 2017 has come into effect as of 1st July 2021, although subordinate guidelines and policy for all the substances discharged to air have not yet been finalised and are currently in draft form at the date if this assessment.

The air quality assessment criteria (AQAC) for the airshed pollutants NO_2, CO, PM10 and PM2.5 have been defined as Environment Reference Standards within the Environment Protection Amendment Act.

However, there is no finalised guidance for some toxic substances (e.g., formaldehyde). In the absence of this finalised guidance, the former *State Environment Protection Policy for Air Quality Management, 2001* (SEPP-AQM) has been considered in this assessment, although this has been superseded. Schedule A of the SEPP-AQM defines design ground level concentrations (now referred to as AQACs) for classified indicator pollutants that must not be exceeded inclusive of representative existing background concentrations. The SEPP-AQM design criteria for toxic substances are to be replaced by the AQAC as detailed within the draft EPA *Guideline for assessing and minimising air pollution in Victoria, EPA Pub 1961, May 2021* which is expected to be introduced by the end of 2021.

AQAC for peak predicted ground level concentrations are specified to protect public health and amenity, or other environmental factors if they are more sensitive than human health, such as certain types of vegetation. The adopted ground level concentration criteria for the pollutants emitted from the plant are summarised in **Table 1** below. Peak model predictions, at the 99.9th percentile, are compared with the AQAC for substances with assessment averaging periods of 1 hour or less. For those substances with assessment averaging periods of more than 1 hour, the maximum predictions are adopted. Using 5 years of hourly meteorological data separately, the highest predictions for all 5 years are adopted for the comparison with the AQAC. The locations at which the peak predictions are determined is based on the receiving environment, and this is discussed in **Section 2.3**.

The odour potential of the predominant volatile organic compounds are also considered, with an equivalent odour emission conservatively assessed to the perception threshold concentration of 1 Odour Unit expressed as a 3-minute average.

Table 1: Air Quality Assessment Criteria

Substance	Classification	Criteria	Averaging Period	Policy
Formaldehyde	Class 2	40 µg/m^3	3 minute	Former SEPP-AQM design criterion
	Highly Hazardous Pollutant	100 µg/m^3	30 minute	Proposed Air Quality Assessment Criteria
		49 µg/m^3	24 hour	
		9.8 µg/m^3	annual	
Nitrogen Dioxide	Criteria Pollutant	226 µg/m^3	1 hour	Environment Protection Amendment Act, Environmental Reference Standard
		56 µg/m^3	Annual	
Carbon Monoxide		10.4 mg/m^3	8 hour	
PM10		50 µg/m^3	24 hour	
		20 µg/m^3	annual	
PM2.5		25 µg/m^3	24 hour	
		8 µg/m^3	annual	
Total Suspended Particulate	Unclassified, amenity impact	330 µg/m^3	3 minutes	Former SEPP-AQM design criterion
Odour	Amenity impact	An air environment that is free from offensive odours from commercial, industrial, trade and domestic activities		Environment Protection Amendment Act, Environmental Reference Standard

Note: Gas volume at 25°C.

2.2 *Emissions Inventory*

For this assessment, the plant has been assumed to operate continuously for 24 hours per day, 365 days per year. Building wake effects have been included for the assessment of the emissions from the various stacks, based on plans as provided by Monsbent. See **Figure 2.**

Two emission scenarios are considered, that with the Supplier 1 WESP design or that with the Supplier 2 WESP design. Note that NO_2 and CO from the drum dryer and jet dryer are not abated and the WESP emissions are the sum of those tested from the Drum Dryer (DP17) and the Jet Dryer (DP4). These combustion gases are added to by the emissions from a gas-fired heat plant attached to the WESP which will inject hot air into the flue gas stream so as to maintain the temperature above the moisture saturation temperature and avoid condensate forming on the electrostatic precipitator plates. The VOC, particulate and formaldehyde emissions are based on each vendor guarantee maximum in-stack concentrations multiplied by the combined flow rate as tested from DPs 17 and 4, corrected for discharge temperature and moisture.

2.2.1 Supplier 1 WESP

The geometry and discharge conditions of the Supplier 1 WESP are detailed in **Table 3**. The estimated substance emission rates for the Supplier 1 WESP are detailed in **Table 4.** These include the addition of combustion gas emissions from the attached heat plant.

Table 3: Geometry and discharge conditions of proposed Supplier 1 WESP including the contribution from the heat plant.

Source	Coordinates (metres, UTM Zone 55H)		Stack Height	Internal Diameter at exit	Discharge Temp.	Moisture Content	Oxygen Content	Volumetric Flow Rate	Volumetric Flow Rate	Volumetric Flow Rate	Discharge Velocity
	Eastings	Northing	metres	metres	(°C)	(%)	(%)	(m3/min) Dry, STP	(m3/min) Dry, 25°C	(m3/min) Actual	(m/sec)
WESP	414249	5957481	45	3.00	65	21%	20%	2,250	2,456	3,370	7.9
Heat Plant Contribution						-	-	100	-	124	0.3
Total								***2,350***		***3,494***	***≥8***

Notes:
Flows based on sum of Jet Dryer and Drum Dryer flows as detailed in Ektimo test Report R011053 for 2021 Annual Emission Testing
Flows corrected to dry STP, added, then adjusted for moisture and temperature based on vendor data.
Heat plant contribution to maintain flow temperature above moisture saturation temperature to avoid condensation on the ESP plates.

Table 4: In-stack concentrations and mass emission rates for each substance discharged from the proposed Supplier 1 WESP including the contribution from the heat plant.

Source	Total VOC		Formaldehyde		Carbon Monoxide		Nitrogen Oxides		Total Particulate		Derived from PSA					
	Average Conc.	Average Mass Rate	Average Conc.	Average Mass Rate	Average Conc.	Average Mass Rate	Average Conc.	Average Mass Rate	Average Conc.	Average Mass Rate	TSP (<50 um)		PM10		PM2.5	
	mg/Nm³ dry 25°C	g/min	mg/Nm³ dry 25°C	g/min	mg/Nm³ dry STP	g/min	mg/Nm³ dry STP	g/min	mg/Nm³ dry 25°C	g/min	%TPM	g/min	%TPM	g/min	%TPM	g/min
WESP	120	295	5	12	0.36	49	1.9	259	15	37	69%	25	24%	8.8	5%	1.8
Heat Plant Contribution	-	-	-	-	1849	185	300	30	-	-	-	-	-	-	-	-
Total						***234***		***289***								

Notes:
Mass rates for NO2 and for CO are based on the sum of Jet Dryer and Drum Dryer mass rates as detailed in Ektimo test Report R011053 for 2021 Annual Emission Testing
Mass rates for total VOC, formaldehyde and for total particulate matter based on vendor provided maximum in-stack concentration at exit at NTP.

2.2.2 Supplier 2 WESP

The geometry and discharge conditions of the Supplier 2 WESP are detailed in **Table 5**. The estimated substance emission rates for the Supplier 1 WESP are detailed in **Table 6.** These include the addition of combustion gas emissions from the attached heat plant.

Table 5: Geometry and discharge conditions of proposed Supplier 2 WESP including the contribution from the heat plant.

Source	Coordinates (metres, UTM Zone 55H)		Stack Height	Internal Diameter at exit	Discharge Temp.	Moisture Content	Oxygen Content	Volumetric Flow Rate	Volumetric Flow Rate	Volumetric Flow Rate	Discharge Velocity
	Eastings	Northing	metres	metres	(°C)	(%)	(%)	(m3/min) Dry, STP	(m3/min) Dry, 25°C	(m3/min) Actual	(m/sec)
WESP	414249	5957481	40	2.00	65	21%	20%	2,250	2,456	3,370	17.9
Heat Plant Contribution						-	-	100	-	124	0.7
Total								***2,350***		***3,494***	***~18***

Notes:
Flows based on sum of Jet Dryer and Drum Dryer flows as detailed in Ektimo test Report R011053 for 2021 Annual Emission Testing
Flows corrected to dry STP, added, then adjusted for moisture and temperature based on vendor data.
Heat plant contribution to maintain flow temperature above moisture saturation temperature to avoid condensation on the ESP plates.

Table 6: In-stack concentrations and mass emission rates for each substance discharged from the proposed Supplier 2 WESP including the contribution from the heat plant.

Source	Total VOC		Formaldehyde		Carbon Monoxide		Nitrogen Oxides		Total Particulate		Derived from PSA					
	Average Conc.	Average Mass Rate	Average Conc.	Average Mass Rate	Average Conc.	Average Mass Rate	Average Conc.	Average Mass Rate	Average Conc.	Average Mass Rate	TSP (<50 um)		PM10		PM2.5	
	mg/Nm³ dry 25°C	g/min	mg/Nm³ dry 25°C	g/min	mg/Nm³ dry STP	g/min	mg/Nm³ dry STP	g/min	mg/Nm³ dry 25°C	g/min	%TPM	g/min	%TPM	g/min	%TPM	g/min
WESP	100	246	15	37	0.36	49	1.9	259	30	74	69%	51	24%	17.7	5%	3.7
Heat Plant Contribution	-	-	-	-	1,849	185	300	30	-	-	-	-	-	-	-	-
Total						***234***		***289***								

Notes:
Mass rates for NO2 and for CO are based on the sum of Jet Dryer and Drum Dryer mass rates as detailed in Ektimo test Report R011053 for 2021 Annual Emission Testing
Mass rates for total VOC, formaldehyde and for total particulate matter based on vendor provided maximum in-stack concentration at exit at NTP.

2.2.3 Comparison with previous emissions

The current emissions from the Jet Dryer (DP4) and from the Drum Dryer (DP17), which are to be ducted to the WESP are detailed in **Table 7** based on the annual testing over the previous 3 years.

Based on guaranteed maximum in-stack concentrations, for the Supplier 1 WESP there is an estimated reduction in maximum tested formaldehyde and TPM over previous 3 years by up to 88% and 95%, respectively. For the Supplier 2 WESP there is an estimated reduction by up to 62% and 91%, respectively.

The maximum in-stack concentration of VOC of 100 mg/Nm3 for the Supplier 1 and 120 mg/Nm3 (each at 25°C) based on the respective vendor guarantee indicates a higher mass rate of total VOC at design flow rate than that tested over the previous 3 years. Hence, there is potentially no reduction in maximum tested VOC mass emission rates levels, although the discharge height and resultant plume rise will be notably higher and less wake-effected by surrounding structures compared to the current separate sources, resulting in greater separation from ground and better dilution.

Table 7: Current emission rates as tested from the Jet Dryer and Drum Dryer as tested in 2021.

Source	Total VOC						Formaldehyde						Total Particulate Matter					
	2019		2020		2021		2019		2020		2021		2019		2020		2021	
	mg/Nm3	g/min	mg/Nm3	g/min	mg/Nm3	g/min	mg/Nm3	g/min	mg/Nm3	g/min	mg/Nm3	g/min	mg/Nm3	g/min	mg/Nm3	g/min	mg/Nm3	g/min
DP4 Jet Dryer	110	84	140	100	44	44	39	29	41	29	0.82	0.82	290	220	750	540	560	560
DP17 Drum Dryer	51	43	94	96	0.55	0.67	83	69	25	26	3.4	4.2	310	260	250	250	140	170
Total	-	**127**	-	**196**	-	**45**	-	**98**	-	**55**	-	**5**	-	**480**	-	**790**	-	**730**

Note:
Ektimo Report R007112 for 2019 Annual Emission Testing
Ektimo Report R008993ra2 for 2020 Annual Emission Testing
Ektimo Report R011053 for 2021 Annual Emission Testing

2.2.4 Equivalent odour emissions

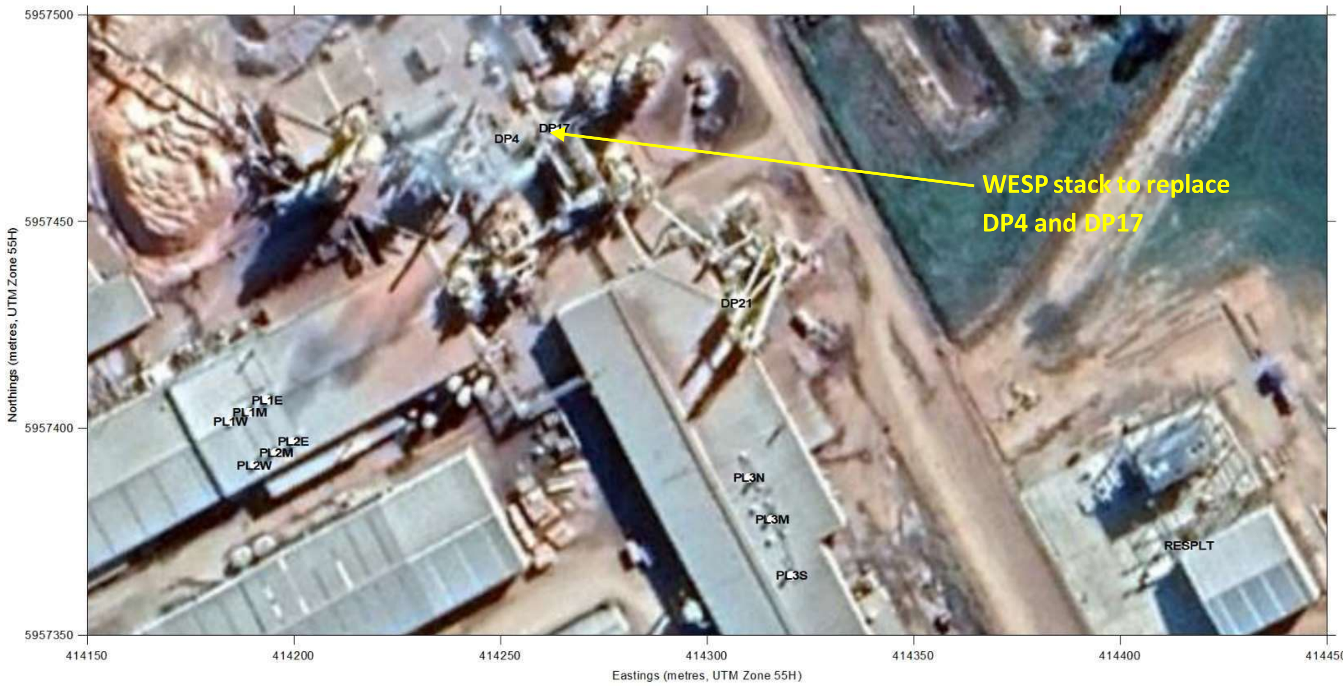
Based on the maximum in-stack concentration of VOCs for each WESP design and assuming that 100% of these are the detected chemical species (i.e., either 100% pinenes, limonene, acetone, etc), the maximum in-stack concentration of odour was estimated as 900 OU for the Supplier 2 WESP, or as 1100 OU for the Supplier 1 WESP. With reference to **Table 8**, this was conservatively based on the most odorous detected constituent, alpha-pinene, being at 100% of the VOC emissions. The dilution to ground level for the 40 or 45 metre stack height options would be >1000 for any meteorological conditions; however, the derived maximum odour emission rate will be subject to assessment for peak predicted odours at the nearest sensitive receiver rural dwellings.

Table 8: Odour thresholds and maximum potential in-stack odour concentration for detected volatile organic compound substances with low odour thresholds.

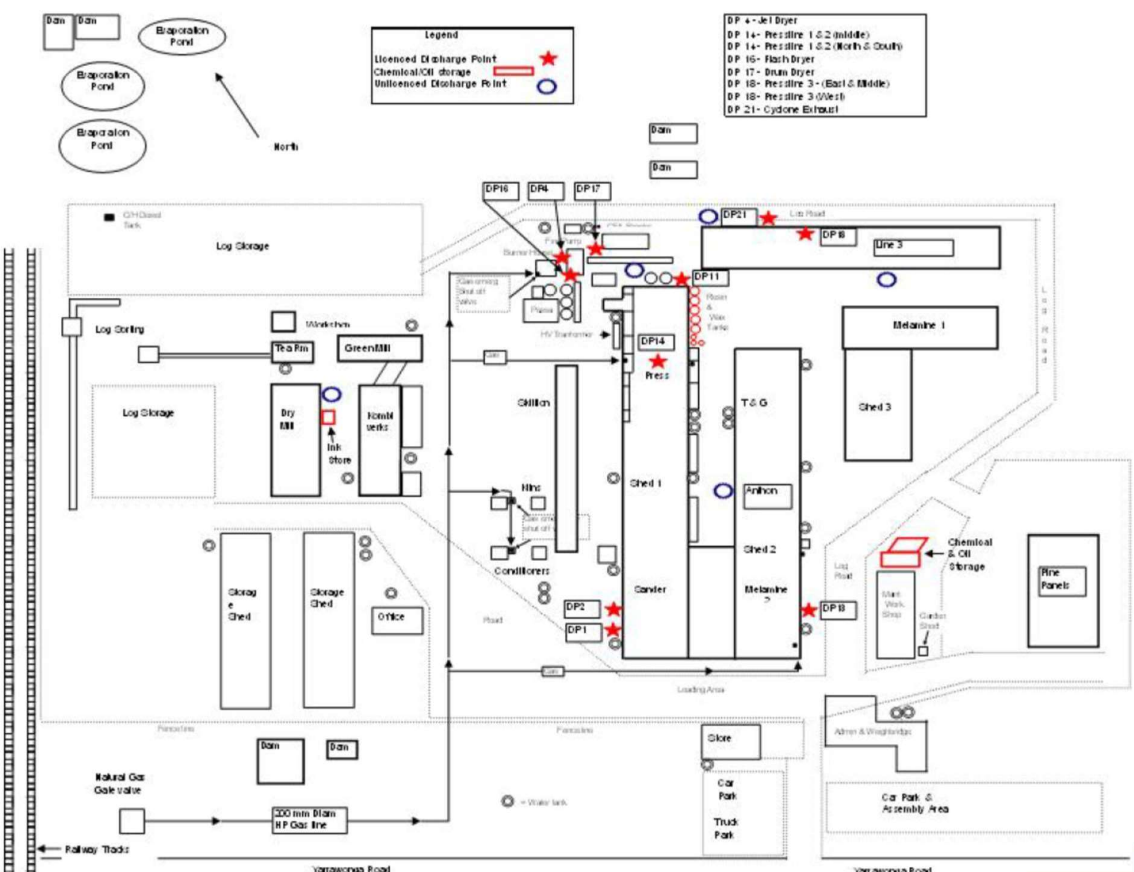
Tested Substance	Odour Threshold Concentration (ppm, v/v)	MWT (g/mol)	Odour Threshold Concentration (mg/Nm3), 0°C, 1atm	Supplier 2 WESP		Supplier 1 WESP	
				Chemical Odour at 100 mg/Nm3 (OU)	Maximum Odour Emission Rate at assessed normal flow rate (OUV/min)	Chemical Odour at 120 mg/Nm3 (OU)	Maximum Odour Emission Rate at assessed normal flow rate (OUV/min)
alpha-pinene	0.018	136	0.10	1000	2400000	1200	2900000
beta-pinene	0.033	136	0.18	540		650	
D-Limonene	0.038	136	0.21	470		570	
Acetone	42	58	100	1		1	

Nagata, Y. 2003 Measurement of odour threshold by triangle odor bag method. International Odor Conference, Tokyo, organised by Japanese Ministry of Environment, 30 October 2003. Available at http://www.env.go.jp/en/air/odor_measure/index.html. As cited in: Review of odour character and thresholds Science Report: SC030170/SR2, Environment Agency, UK, 2007

Figure 2: Aerial image of the location of the site licenced discharge points with assessed emissions and the plan as detailed in EPA Licence 9379.



PL1 W, M, E - DP14 Pressline 1 West, Middle and East
PL2 W, M, E - DP14 Pressline 2 West, Middle and East
PL3 N, M, S - DP18 Pressline 3 North, Middle and South
DP21 - Pressline 3 Cyclone
RESPLT - Resin Plant
DP4 - Jet Dryer Exhaust Stack
DP17 - Drum Dryer Exhaust Stack



2.2.5 Other emission sources

Other vent stack sources at the site discharging substances common to that also discharged from the proposed WESP stack are the: three sets of pressline vents (comprising DPs 14 and 18); the resin plant; and the Pressline 3 Cyclone (DP21). **Table 9** summarizes the geometries and discharge conditions from each of these sources. **Table 10** summarises the tested emission rates for each relevant substance. These emissions have all been assumed to discharge continuously, 24 hours per day, 365 days per year for this assessment.

Table 9: Geometries and tested discharge conditions for vent stacks discharging substances common to that also discharged from the proposed WESP.

Source	Coordinates metres, UTM Zone 55H		Stack Height	Internal Diameter at exit	Discharge Velocity	Discharge Temp.	Volumetric Flow Rate	Moisture Content	Volumetric Flow Rate
	Eastings	Northing	metres	metres	m/sec	°C	m3/min Dry, STP	%	m3/min Actual
DP14 - Pressline 1 (Middle)	414189	5957404	16	0.79	19	23	490	1.7	490
DP14 - Pressline 1 (East)	414193	5957407	16	0.79	17	23	440	1.7	490
DP14 - Pressline 1 (West)	414185	5957402	16	0.79	18	21	480	1.9	530
DP14 - Pressline 2 (Middle)	414196	5957394	16	0.79	1.5	17	42	0.76	45
DP14 - Pressline 2 (East)	414200	5957397	16	0.79	16	24	420	1.7	470
DP14 - Pressline 2 (West)	414190	5957391	16	0.79	12	20	320	1.4	350
DP18 - Pressline 3 (Middle)	414316	5957378	16	1.07	17	20	860	1	940
DP18 - Pressline 3 (North)	414310	5957388	16	1.07	19	24	940	0.77	1,000
DP18 - Pressline 3 (South)	414320	5957364	16	1.07	15	22	730	0.9	800
Resin Plant	414417	5957372	8	0.165	1	17	<2	1.3	<2
DP21 - Pressline 3 Cyclone	414307	5957430	9.8	0.7	14	23	290	2.1	320

Table 10: Tested emissions from other vent stacks for substances common to that also discharged from the proposed WESP.

Source	Formaldehyde		Total Particulate Matter		Derived from PSA					
	Average Conc.	Average Mass Rate	Average Conc.	Average Mass Rate	TSP (<50 um)		PM10		PM2.5	
	mg/Nm^3 dry STP	g/min	mg/Nm^3 dry STP	g/min	%TPM	g/min	%TPM	g/min	%TPM	g/min
DP14 - Pressline 1 (Middle)	5.0	2.4	-	-	-	-	-	-	-	-
DP14 - Pressline 1 (East)	4.9	2.2	-	-	-	-	-	-	-	-
DP14 - Pressline 1 (West)	6.7	3.2	-	-	-	-	-	-	-	-
DP14 - Pressline 2 (Middle)	4.3	0.18	-	-	-	-	-	-	-	-
DP14 - Pressline 2 (East)	8	3.3	-	-	-	-	-	-	-	-
DP14 - Pressline 2 (West)	2.6	0.84	-	-	-	-	-	-	-	-
DP18 - Pressline 3 (Middle)	3.7	3.2	-	-	-	-	-	-	-	-
DP18 - Pressline 3 (North)	3.3	3.1	-	-	-	-	-	-	-	-
DP18 - Pressline 3 (South)	1.8	1.3	-	-	-	-	-	-	-	-
Resin Plant	69	<0.1	-	-	-	-	-	-	-	-
DP21 - Pressline 3 Cyclone	-	-	260	76	54%	41	9.3%	7.1	2.1%	1.60

Notes:
DP14, DP18 and DP21 emissions from Ektimo Report R011053 for 2021 Annual Emission Testing
Resin Plant Emissions from Ektimo Report R007112-1 , 2019

2.3 *Receiving Environment*

The plant is located within a broad acre agricultural region, 4 km east of Benalla, illustrated in **Figure 1**.

The site is surrounded by isolated rural dwelling on farm lots which represent the nearest sensitive receivers for toxic substance with air quality assessment criteria with an assessment averaging time of >1 hour. These are number in **Figure 1**. The potential for odour dis-amenity is also assessed at these locations.

The site has public access roadways beyond the northern, western and southern boundaries. The nearest industry is a newly developed pre-caste concrete manufacturing facility beyond the western boundary, and an industrial estate on the eastern fringe of Benalla. These would represent sensitive receiver locations for toxic substance with air quality assessment criteria with an assessment averaging time of 1 hour or less. Any such substances are effectively assessed at and beyond the site boundary indicated in **Figure 1**.

The terrain in the area is predominantly flat and the elevated WESP stack emission plume will be visible to the surrounding receivers. Visible dust dis-amenity may be assessed as totally suspended particulate (TSP) at and beyond the site boundary.

2.4 *Background Air Quality*

No formal ambient air monitoring has been conducted in Benalla for an extended period. Where no site-specific data is available then Schedule C, Part B of the SEPP-AQM requires that the 70th percentile of representative ambient air concentrations monitored in the region be adopted as a fixed background concentration.

As a representative regional city, Ektimo note that EPA Victoria conducted air monitoring in Ballarat from August 2005 to August 2006 (see EPA Publication 1111) and in Shepparton from December 2003 to December 2004 (see EPA Publication 992). The following determination for a representative fixed background concentration for relevant pollutant species are made:

- For PM10, an average of 18 μg/m^3 was recorded as a 24-hour average in Shepparton, and a maximum value of 55 μg/m^3. A 70th percentile concentration of 36 μg/m^3 has been conservatively adopted for use as a constant background for this assessment, viz. a 24-hour average assessment criteria of 50 μg/m^3. The fixed background for TSP has been estimated at twice that of PM10[1] for comparison with the 3-minute average design criterion of 330 μg/m^3. The fixed background for PM2.5 has been conservatively estimated at one-half of PM10 for comparison with the 24-hour average design criterion of 25 μg/m^3.
- For NO_2, an average recording of 5 ppm and a maximum of 1-hour 47 ppm was recorded in Ballarat. A 70th percentile 1-hour concentration of 25 ppm (51 μg/m^3) has been adopted for use as a constant background for this assessment, viz. an air quality assessment criteria of 246 μg/m^3. An annual average of 10 μg/m^3 has been adopted viz. an air quality assessment criteria of 56 μg/m^3).
- For CO, a maximum recorded 8-hour average of 3 ppm (3.75 mg/m^3) was recorded in Ballarat, viz an air quality assessment criterion of 10.4 mg/m^3.

No background concentration has been assumed for formaldehyde.

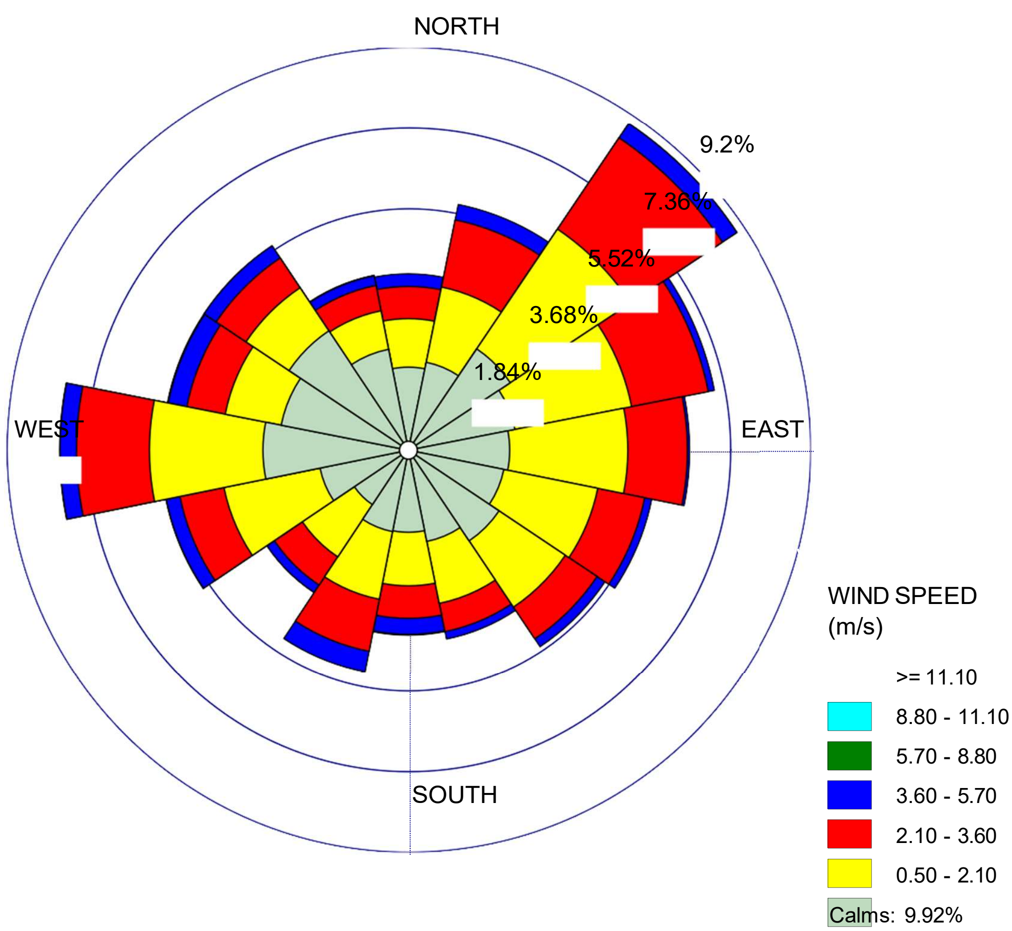
[1] Gupta, Partha Kumar, *Relationship between total suspended particulates and particulate matter of 10 microns*, Master of Engineering (Hons.) thesis, Department of Civil and Mining Engineering, University of Wollongong, 1996. http://ro.uow.edu.au/theses/2433

2.5 *Meteorological data*

Annual datasets of hourly varying meteorological data for five recent years were synthesised based on (i) three calendar years of hourly average data from an onsite weather station; and (ii) two years if synoptic weather data recorded in the region by the Bureau of Meteorology and adjusted to the site location using the approved TAPM prognostic meteorological model developed by CSIRO. The data synthesis was conducted by pDs Consulting in accordance with EPA guidance[2]. Note **Appendix Section 6** for a summary report on the compilation of this data.

A wind rose illustrating the average of the five annual wind distribution is illustrated in **Figure 3**. Wind directions are predominantly from the west or north-east, with lower frequency winds from the north and from the south. Breezes are more common from the north-east and west during spring and summer. As autumn turns to winter, the proportion from the north-east and east decreases and that from the west increases. As spring turns to summer the proportion of winds from the west decreases and that from the north-east increases. Light winds are common with an average wind speed of 2.4 m/sec or 9 km/hour.

Figure 3: Distribution of wind speed and direction as determine for the site, 2016-2020.



[2] Construction of Input Meteorological Data Files for EPA Victoria's Regulatory Air Pollution Model AERMOD, EPA draft Guideline, June 2014.

2.6 *Model selection and configuration.*

AERMOD is currently the EPA approved dispersion model for air quality assessments subject to limitations around geophysical location and source geometry[3]. AERMOD is a steady state plume model that incorporates the latest science and is maintained by the USEPA.

For the emissions from the tall predominantly wake-free WESP stack and the emissions from the other shorter wake-affected stacks over flat regional terrain the peak predicted ground level concentrations will occur within and in the local area surrounding the site. These conditions are within the capability of steady state plume models and so the AERMOD model is appropriate for this assessment in combination with the available site-specific meteorological data.

AERMOD has been configured in accordance with the EPA Guidance as appropriate for this assessment. Key points are as follows:

- The terrain in the region of the site is predominantly flat and therefore the influences of terrain in the model have been assumed to be insignificant.
- The PRIME building wake model has been adopted to characterise the initial dispersion of the emission plumes, informed by the Building Profile Input Procedure characterisation of the geometry of the local built forms. The latter were determined from site plans provided by Monsbent, site inspection, recent aerial imagery of the site and measurements provided by Monsbent.
- Pre-processed site representative hourly meteorological data configured specifically to the geophysical conditions at the site for the individual years 2016-2020. This was based on three years surface meteorological data as recorded onsite and provided by Monsbent, and two years derived from the application of the TAPM prognostic meteorological model, noting that the nearest BoM weather stations were too distant to be representative of the Monsbent location. Note **Section 2.5**.
- Rural dispersion was adopted in accordance with EPA guidance.
- A receptor grid resolution of 50 m was adopted with a 4 km extent.
- Representative 70th percentile background concentrations of relevant pollutants were added to peak predicted ground level concentrations after the modelling (see **Section 2.4**).
- The modelling for particulate emissions assumed no mass depletion of the dispersed plume.
- 3-minute average concentrations were obtained from the predicted 1-hour averages by multiplying the predicted hourly values by 1.8, i.e., $C_{3min} = C_{60min} \times (60/3)^{0.2}$, as per guidance. 30-minute average concentrations were calculated using this method.
- Contours over an aerial map of the local region of the highest predicted ground level concentrations for each substance for each year were used to assess compliance with the AQAC.
- Peak predicted and annual average concentrations for all substances were tabled at each sensitive receiver to assess compliance with relevant air quality assessment criteria.

Further information on the AERMOD configuration is provided in the attached example input file in **Appendix Section 7**. All files can be provided in electronic form upon request for peer review.

[3] Draft EPA Guidance notes for using the regulatory air pollution model AERMOD in Victoria, publication 1551, July 2014

3 ASSESSMENT RESULTS

3.1 *Formaldehyde*

3.1.1 Supplier 1 WESP emissions

Table 11 summarises the peak predictions of formaldehyde from the facility with the Supplier 1 WESP design implemented. The peak predictions for the combined emissions from the plant were all predicted to be compliant with the adopted air quality assessment criteria. The incremental impact from the WESP stack emissions in isolation represented at most 3% of any assessment criteria. The emissions from the existing main press vents represented the bulk of the predicted impact at and beyond the site boundary. **Table 12** details the peak predictions at the nearest rural dwellings with that from all emissions being 23% of any assessment criterion, with up to 3% of this from the WESP. At and beyond the site boundary the peak predictions represented up to 85% of any criterion. Hence the cumulative impact of the abated emissions from the WESP and the tested emissions from the other sources are compliant with the AQAC.

Table 11: Peak Predictions of formaldehyde with Supplier 1 WESP emissions.

Averaging Time	Air Quality Assessment Criterion	Assessment	Highest Predictions (µg/m³) from 5 separate years of meteorology		Compliant?
			Supplier 1 WESP only	All sources	
3 minute	40	At and beyond site boundary at the 99.9th percentile	1	34	Yes
30 minute	100	At and beyond site boundary at the 99.9th percentile	1	21	Yes
24 hour	49	Highest prediction at the nearest rural residences	<1	3	Yes
Annual	9.8	Nearest rural residences	<0.1	0.6	Yes

Table 12: Peak Predictions of formaldehyde (µg/m³) with Supplier 1 WESP emissions at the site boundary and at the nearest rural dwelling sensitive receivers.

Formaldehyde emissions with Supplier 1 WESP

All sources

Sensitive Receiver	3 min average, 99.9th percentile						30 min average, 99.9th percentile						Maximum 24 hour average						Annual average					
	2016	2017	2018	2019	2020	Max.	2016	2017	2018	2019	2020	Max	2016	2017	2018	2019	2020	Max.	2016	2017	2018	2019	2020	Max
1	2	2	2	2	2	2	1	1	1	1	1	1	1	1	0	0	1	1	0.1	0.1	0.1	0.1	0.1	0.1
2	2	2	2	2	2	2	2	2	1	1	1	2	1	1	0	0	1	1	0.1	0.1	0.1	0.1	0.1	0.1
3	7	7	7	6	7	7	4	4	4	4	4	4	2	2	1	1	2	2	0.3	0.3	0.4	0.3	0.3	0.4
4	9	9	9	7	9	9	6	6	6	5	6	6	3	3	2	2	3	3	0.3	0.4	0.6	0.5	0.5	0.6
5	4	5	5	4	5	5	3	3	3	2	3	3	1	1	1	1	2	2	0.2	0.2	0.3	0.2	0.2	0.3
6	4	4	4	4	4	4	3	3	3	2	3	3	1	1	1	1	2	2	0.2	0.2	0.3	0.2	0.2	0.3
7	3	3	4	3	3	4	2	2	2	2	2	2	1	1	1	1	1	1	0.1	0.1	0.2	0.2	0.1	0.2
8	5	5	5	5	5	5	3	3	3	3	3	3	2	2	1	1	1	2	0.2	0.2	0.4	0.3	0.3	0.4
9	6	6	6	6	6	6	4	4	4	4	4	4	1	1	1	1	2	2	0.2	0.1	0.4	0.3	0.3	0.4
10	5	5	6	5	6	6	3	3	4	3	4	4	1	1	1	1	1	1	0.2	0.1	0.4	0.3	0.3	0.4
11	4	4	5	4	5	5	3	3	3	3	3	3	1	1	1	1	1	1	0.1	0.1	0.4	0.3	0.2	0.4
12	3	3	3	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	0.1	0.1	0.2	0.2	0.1	0.2
13	2	2	3	2	2	3	1	1	2	2	2	2	1	0	0	1	1	1	0.1	0.1	0.1	0.2	0.1	0.2
14	2	2	3	2	2	3	1	2	2	2	1	2	1	1	0	0	1	1	0.1	0.1	0.1	0.1	0.1	0.1
15	3	3	3	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	0.1	0.1	0.2	0.2	0.1	0.2
Site Bdy	23	23	34	30	30	34	14	15	21	20	19	21	7	7	7	7	7	7	1.1	1.2	2.0	2.1	1.7	2.1

WESP emissions only

Sensitive Receiver	3 min average, 99.9th percentile						30 min average, 99.9th percentile						Maximum 24 hour average						Annual average					
	2016	2017	2018	2019	2020	Max	2016	2017	2018	2019	2020	Max	2016	2017	2018	2019	2020	Max	2016	2017	2018	2019	2020	Max
1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
2	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
3	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
4	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
5	1	1	1	1	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
6	1	1	1	1	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
7	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
8	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
9	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
10	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
11	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
12	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
13	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
14	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
15	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Site Bdy	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0

Figures 3, 4, 5 and 6 illustrate contours of peak predicted ground level concentrations of formaldehyde for the combined emissions from the plant for assessment averaging periods of 3 minute, 30 minutes, 24 hours and annual average, respectively. Note that the peak impact from the WESP emission plume for averaging periods of 1 hour or less is distant from the stack as the plume travels above ground before dispersing to ground level, i.e, the predictions increase with distance and then decrease from about 10 stack heights from the source under light to moderate winds speeds.

Figure 3

Supplier 1 WESP with other sources of formaldehyde
99.9th pecentile 3-minute average far each assessed year.
Design crlter tan = 40 ug/m3.
Contours 5 ug/m3 (white), 10 ug/m3 (green), 20 ug/m3 (yellow), and6 ug/m3 (red).

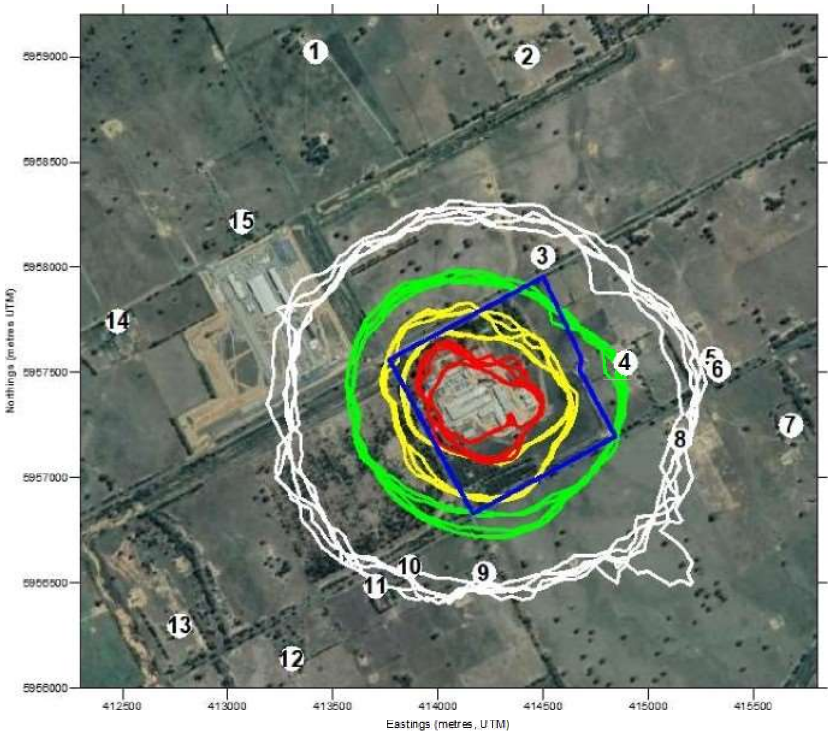


Figure 4

Supplier 1 WESP with other sources of formaldehyde
99.9th pecentile 30-minute average for each assessed year.
Design criterion = 100 ucy m3.
Contours 5 ug/m3 (white}. 10 ug/m3 (green), 25 ug/m3 (yellow), and 100 ug/m3 (red)

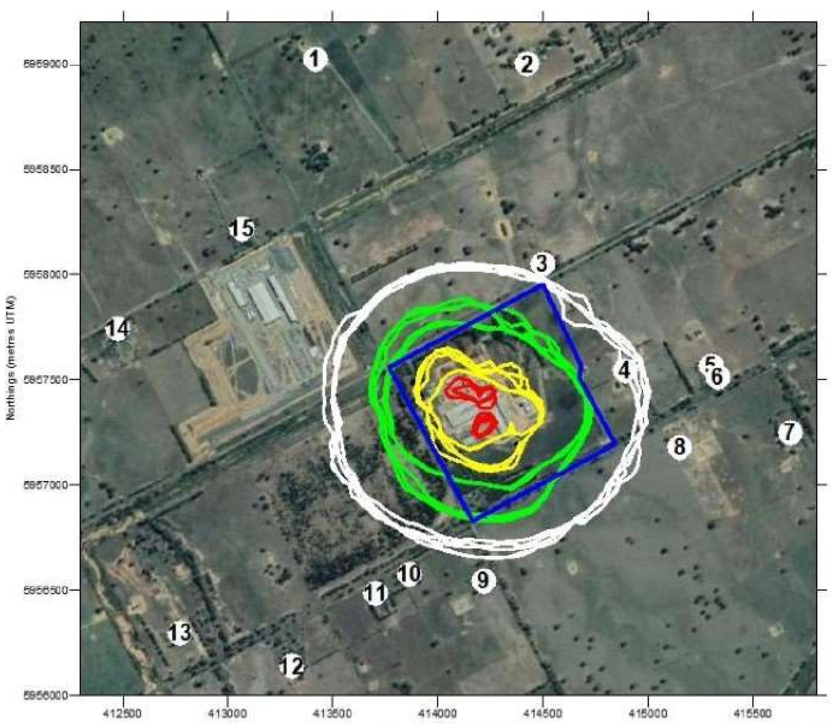


Figure 5

Supplier 1 WESP with other sources of formaldehyde
Maximum predicted 24 hour average for each assessed year.
Design criterion - 49 ug/m3.
Contours 1 ug/m3 (white), 5 ug/m3 (green), and 10 ug/m3 (yellow).

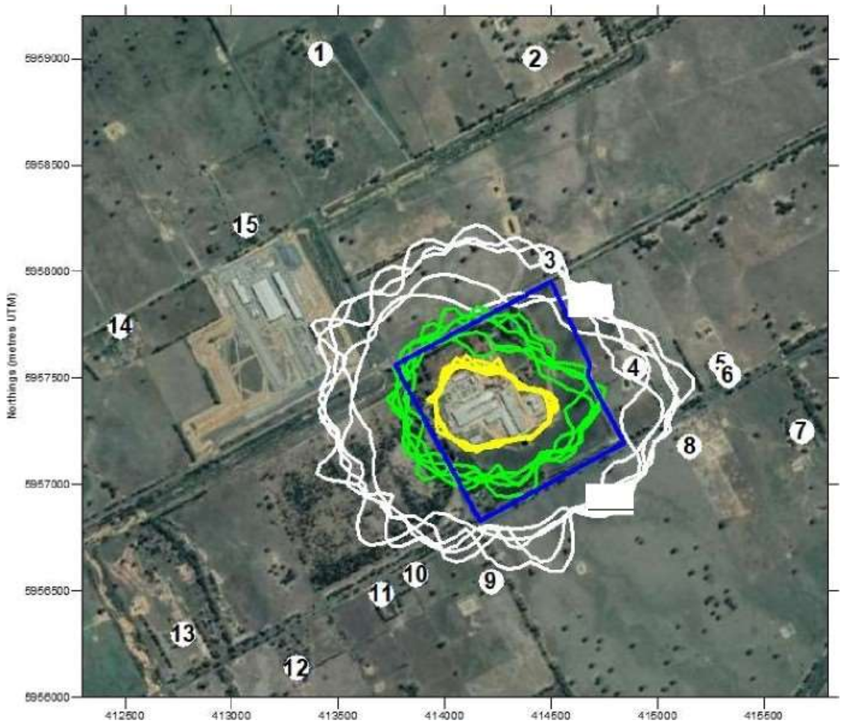
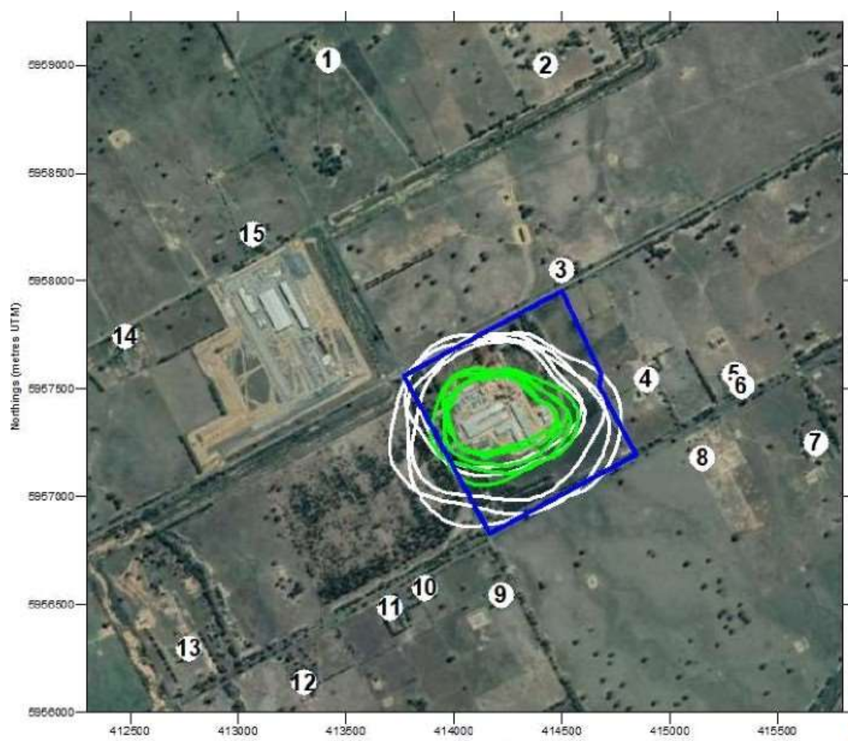


Figure 6

Supplier 1 WESP with other sources of
formaldehyde Annual average for each
assessed year.
Design criterion = 9.8 ug/m3.
Contours 1 ug/m3 (white) and 2 ug/m3 (green)



Ektimo

3.1.2 Supplier 2 WESP emissions

Table 13 summarises the peak predictions of formaldehyde from the facility with the Supplier 2 WESP design implemented. The peak predictions for the combined emissions from the plant were all predicted to be compliant with the adopted air quality assessment criteria. The incremental impact from the WESP stack emissions in isolation represented at most 10% of any assessment criteria. The emissions from the existing main press vents represented the bulk of the predicted impact at and beyond the site boundary. **Table 14** details the peak predictions at the nearest rural dwellings with the peak prediction at the nearest rural dwelling for all emissions being 23% of any assessment criterion, with up to 8% of this from the WESP. At and beyond the site boundary the peak predictions represented up to 90% of any criterion. Hence the cumulative impact of the abated emissions from the WESP and the tested emissions from the other sources are compliant with the AQAC.

Table 13: Peak Predictions of formaldehyde with Supplier 2 WESP emissions

Averaging Time	Air Quality Assessment Criterion	Assessment	Highest Predictions (µg/m³) from 5 separate years of meteorology		Compliant?
			Supplier 2 WESP only	All sources	
3 minute	40	At and beyond site boundary at the 99.9th percentile	4	36	Yes
30 minute	100	At and beyond site boundary at the 99.9th percentile	3	23	Yes
24 hour	49	Highest prediction at the nearest rural residences	1	3	Yes
Annual	9.8	Nearest rural residences	0.1	0.7	Yes

Table 14: Peak Predictions of formaldehyde (µg/m³) for with Supplier 2 WESP emissions at the site boundary and at the nearest rural dwelling sensitive receivers.

Formaldehyde emissions with Supplier 2 WESP

All sources

Sensitive Receiver	3 min average, 99.9th percentile						30 min average, 99.9th percentile						Maximum 24 hour average						Annual average					
	2016	2017	2018	2019	2020	Max.	2016	2017	2018	2019	2020	Max.	2016	2017	2018	2019	2020	Max.	2016	2017	2018	2019	2020	Max.
1	3	3	3	3	3	3	2	2	2	2	2	2	1	1	0	1	1	1	0.1	0.1	0.1	0.1	0.1	0.1
2	3	3	3	3	3	3	2	2	2	2	2	2	1	1	0	0	1	1	0.1	0.1	0.1	0.1	0.1	0.1
3	7	7	7	7	7	7	4	4	4	4	4	4	2	3	1	1	2	3	0.3	0.4	0.4	0.4	0.3	0.4
4	9	9	9	7	9	9	6	6	6	5	6	6	3	3	3	2	3	3	0.4	0.4	0.7	0.5	0.6	0.7
5	5	5	5	4	5	5	3	3	3	3	3	3	1	1	1	1	2	2	0.2	0.2	0.4	0.3	0.3	0.4
6	5	5	5	4	5	5	3	3	3	3	3	3	1	1	1	1	2	2	0.2	0.2	0.4	0.3	0.3	0.4
7	4	4	4	4	4	4	2	2	3	2	3	3	1	1	1	1	1	1	0.1	0.1	0.3	0.2	0.2	0.3
8	6	5	6	5	6	6	4	3	4	3	4	4	2	2	1	1	2	2	0.2	0.2	0.4	0.4	0.3	0.4
9	6	6	6	6	6	6	4	4	4	4	4	4	1	2	1	1	2	2	0.2	0.2	0.4	0.4	0.3	0.4
10	6	6	6	6	6	6	4	4	4	4	4	4	1	2	2	1	2	2	0.2	0.2	0.5	0.4	0.3	0.5
11	5	5	5	5	5	5	3	3	3	3	3	3	1	1	1	1	2	2	0.2	0.1	0.4	0.3	0.3	0.4
12	4	4	4	4	4	4	2	2	3	2	2	3	1	1	1	1	1	1	0.1	0.1	0.3	0.2	0.2	0.3
13	3	3	4	3	3	4	2	2	3	2	2	3	1	1	1	1	1	1	0.1	0.1	0.2	0.2	0.2	0.2
14	3	3	4	3	3	4	2	2	2	2	2	2	1	1	1	1	1	1	0.1	0.2	0.2	0.2	0.1	0.2
15	4	4	4	4	3	4	2	2	3	2	2	3	1	1	1	1	1	1	0.1	0.1	0.2	0.2	0.1	0.2
Site Bdy	23	23	36	32	30	36	14	15	23	20	19	23	7	8	7	8	8	8	1.1	1.3	2.0	2.3	1.7	2.3

WESP emissions only

Sensitive Receiver	3 min average, 99.9th percentile						30 min average, 99.9th percentile						Maximum 24 hour average						Annual average					
	2016	2017	2018	2019	2020	Max.	2016	2017	2018	2019	2020	Max.	2016	2017	2018	2019	2020	Max.	2016	2017	2018	2019	2020	Max.
1	2	2	2	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
2	2	2	2	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
3	3	3	3	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	0.1	0.1	0.1	0.0	0.0	0.1
4	2	3	2	3	3	3	2	2	2	2	2	2	1	1	0	0	1	1	0.1	0.1	0.1	0.1	0.1	0.1
5	2	2	2	3	2	3	1	1	1	2	2	2	1	0	0	0	0	1	0.0	0.0	0.1	0.1	0.1	0.1
6	2	2	2	2	2	2	1	1	1	2	1	2	0	0	0	0	1	1	0.0	0.0	0.1	0.1	0.1	0.1
7	2	2	2	2	2	2	1	1	1	1	1	1	0	0	0	0	1	1	0.0	0.0	0.1	0.1	0.1	0.1
8	2	2	2	2	2	2	1	1	1	1	1	1	1	1	0	0	1	1	0.0	0.0	0.1	0.1	0.1	0.1
9	2	2	2	2	2	2	1	1	1	1	1	1	0	1	0	0	0	1	0.0	0.0	0.0	0.0	0.0	0.0
10	2	2	2	1	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0.0	0.0	0.1	0.0	0.0	0.1
11	2	2	2	1	2	2	2	1	1	1	1	2	0	0	0	0	1	1	0.0	0.0	0.1	0.0	0.1	0.1
12	2	2	2	2	2	2	1	1	1	1	1	1	0	0	0	0	1	1	0.0	0.0	0.1	0.1	0.1	0.1
13	2	2	2	2	2	2	1	1	2	1	1	2	0	0	0	0	0	0	0.0	0.0	0.1	0.1	0.1	0.1
14	2	2	2	2	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0.0	0.1	0.0	0.1	0.0	0.1
15	2	2	2	2	2	2	1	1	1	1	1	1	1	0	0	0	0	1	0.0	0.0	0.0	0.0	0.0	0.0
Site Bdy	4	4	4	4	4	4	3	3	3	3	2	3	1	1	1	1	1	1	0.1	0.1	0.1	0.1	0.1	0.1

Figures 7, 8, 9 and 10 illustrate contours of peak predicted ground level concentrations of formaldehyde for the combined emissions from the plant for assessment averaging periods of 3 minute, 30 minutes, 24 hours and annual average, respectively. Note that the peak impact from the WESP emission plume for averaging periods of 1 hour or less is distant from the stack as the plume travels above ground before dispersing to ground level, i.e, the predictions increase with distance and then decrease from about 10 stack heights from the source under light to moderate winds speeds.

Figure 7

Supplier 2 WESP with other sources of formaldehyde
99.9th pecentile 3-min ute average for each assessed year.
Design criterion - 40 ug/m3.
Contours 5 ug/m3 (white), 10 ug/m3 (green), 20 ug/m3 (yellaw). and 40 ug/m3 (red).

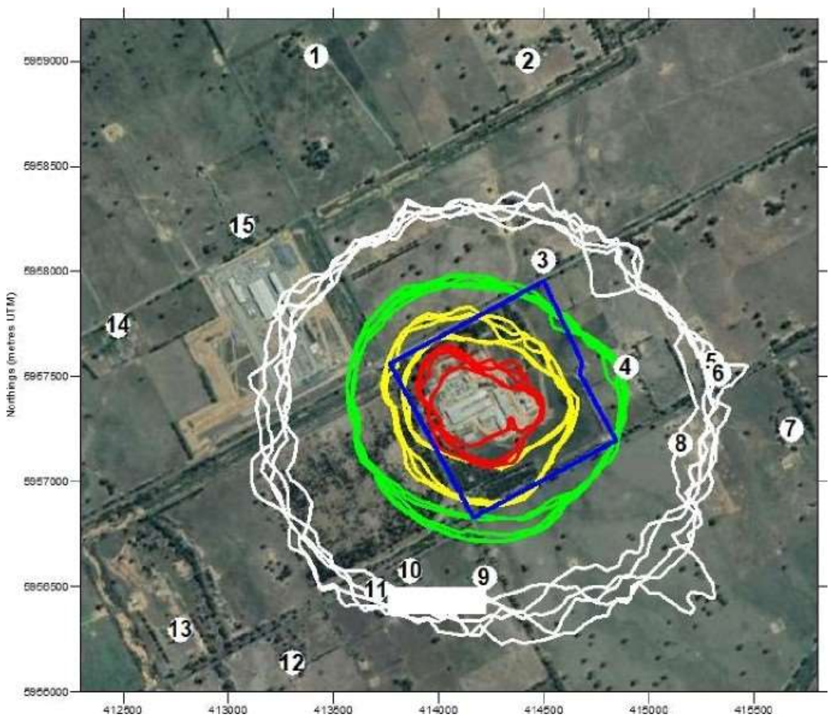


Figure 8

Supplier 2 WESP with other sources of formaldehyde
99.9th pecentile 30-minute average for each assessed year.
Design criterion = 100 ug/m3.
Contours 5 ug/m3 (white), 10 ug/m3 (green), 25 ug/m3 (yellow), and 100 ug/m3 (red).

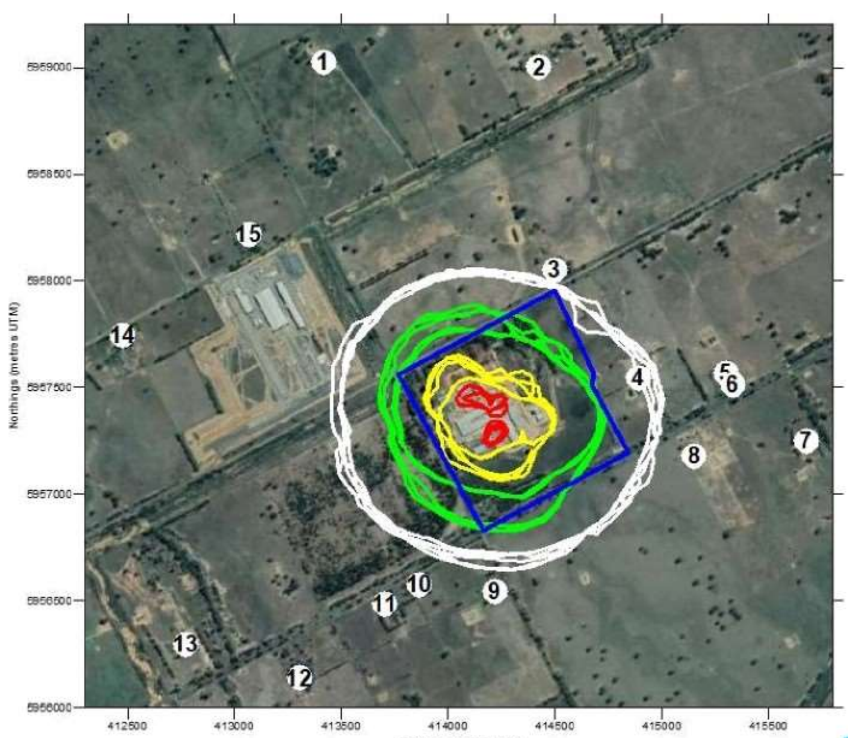


Figure 9

Supplier 2 WESP with other sources of formaldehyde
Maximum predicted 24 hour average for each assessed year.
Design criterion = 49 ug/m3.
Contours 1 ug/m3 (white), 5 ug/m3 {green), and 10 ug/m3 (yellow).

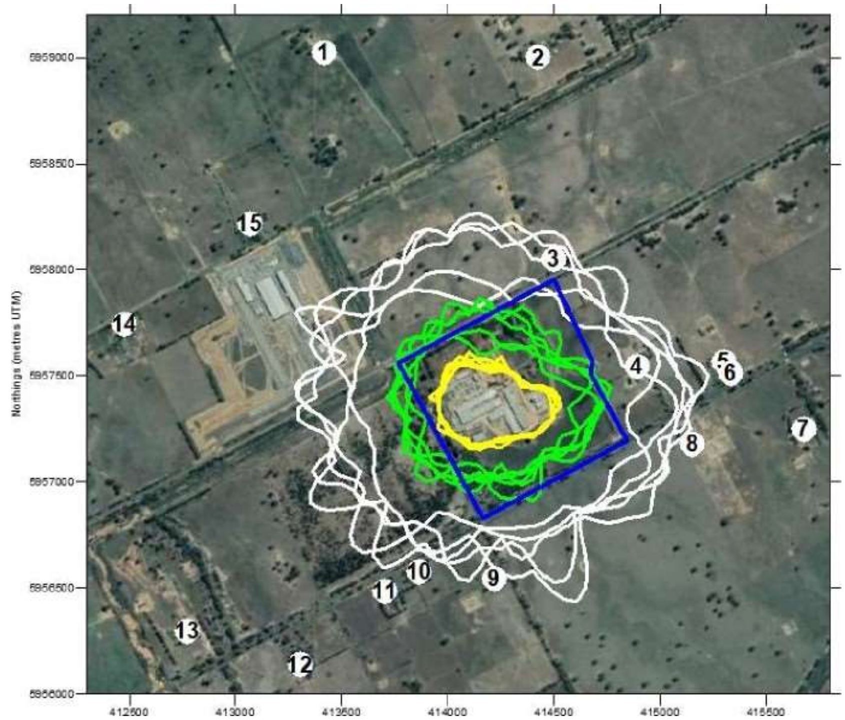
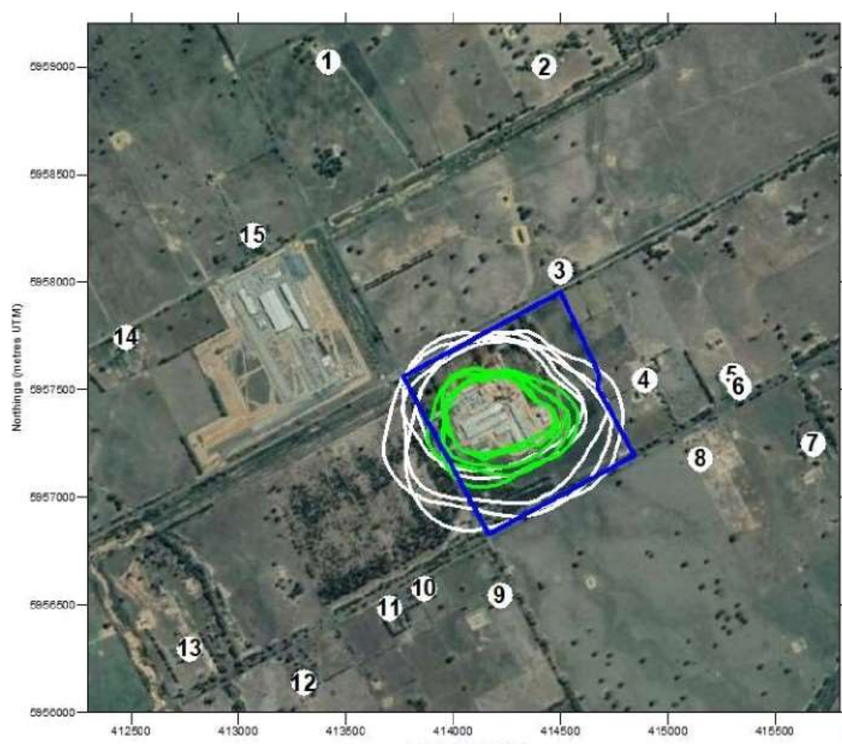


Figure 10

Supplier 2 WESP with other sources of
formaldehyde Annual average for each assessed
year.
Design criterion = 9.8 ug/m3.
Contours 1 ug/m3 (white) and 2 ug/m3 (green)



3.2 *Oxides of Nitrogen as 100% Nitrogen Dioxide*

A screening assessment was conducted based on 100% of the discharged NO_X emissions being NO_2 equivalent. From **Section 2.4**, the 70th percentile 1-hour average background concentration adopted for this assessment is 51 µg/m^3 and the annual average is 10 µg/m^3. Note that the peak impact from the WESP emission plume for averaging periods of 1 hour or less is distant from the stack as the plume travels above ground before dispersing to ground level, i.e, the predictions increase with distance and then decrease from about 10 stack heights from the source under light to moderate winds speeds

3.2.1 Supplier 1 WESP emissions

Table 15 details the peak hourly average concentrations of NO_2 with the Supplier 1 WESP at the site boundary and beyond to the nearest rural dwellings. The peak hourly average prediction was 18 µg/m^3 at the site boundary, or 69 µg/m^3 with background, which is ***readily compliant*** with the air quality assessment criteria of 226 µg/m^3. The peak increment represents only 8% of the criteria. **Figure 11** illustrates contours of peak hourly predicted ground level concentrations of NO_2, excluding background, around the site. The highest annual average increment at the nearest rural dwellings was 0.6 µg/m^3 with respect to the assessment criterion of 56 µg/m^3.

3.2.2 Supplier 2 WESP emissions

Table 15 also details the peak hourly average concentrations of NO_2 with the Supplier 2 WESP at the site boundary and beyond to the nearest rural dwellings. The peak hourly average prediction was 19 µg/m^3 at the site boundary, or 70 µg/m^3 with background, which is ***readily compliant*** with the air quality assessment criteria of 226 µg/m^3. The peak increment represents only 8% of the criteria. **Figure 12** illustrates contours of peak hourly predicted ground level concentrations of NO_2, excluding background, around the site. The highest annual average increment at the nearest rural dwellings was 0.6 µg/m^3 with respect to the assessment criterion of 56 µg/m^3.

Table 15: Peak predicted and annual average incremental NO_2 concentrations at the site boundary and at each nearby rural dwelling sensitive receiver, excluding background concentration.

Sensitive Receiver	99.9th percentile, 1 hour average (µg/m3) Criterion = 226 µg/m3					Annual Average (µg/m3) Criterion = 56 µg/m3					Sensitive Receiver	99.9th percentile, 1 hour average (µg/m3) Criterion = 226 µg/m3					Annual Average (µg/m3) Criterion = 56 µg/m3				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Supplier 1 WESP plus other sources											Supplier 2 WESP plus other sources										
1	8	7	7	8	8	0.3	0.3	0.2	0.3	0.2	1	8	7	8	8	8	0.3	0.3	0.2	0.3	0.3
2	9	7	8	6	8	0.3	0.3	0.2	0.2	0.2	2	9	7	8	7	8	0.3	0.3	0.2	0.2	0.2
3	11	11	12	11	11	0.5	0.5	0.4	0.3	0.3	3	11	12	12	11	11	0.5	0.5	0.5	0.3	0.3
4	11	11	11	11	11	0.5	0.5	0.6	0.5	0.6	4	11	11	11	11	11	0.5	0.5	0.6	0.5	0.6
5	9	8	10	11	10	0.4	0.3	0.5	0.4	0.5	5	10	8	10	11	10	0.4	0.3	0.6	0.5	0.5
6	10	9	9	11	9	0.4	0.3	0.5	0.4	0.5	6	10	9	9	11	10	0.4	0.3	0.6	0.5	0.5
7	9	9	8	8	10	0.3	0.3	0.5	0.5	0.4	7	9	9	9	8	10	0.3	0.3	0.6	0.5	0.5
8	8	8	7	7	9	0.4	0.3	0.4	0.4	0.4	8	9	8	7	7	9	0.4	0.3	0.5	0.5	0.5
9	9	8	7	6	9	0.3	0.2	0.3	0.2	0.3	9	9	8	7	7	9	0.3	0.2	0.3	0.3	0.3
10	10	7	8	6	7	0.4	0.3	0.5	0.3	0.3	10	10	7	8	6	7	0.4	0.3	0.6	0.3	0.4
11	10	9	9	6	9	0.4	0.3	0.5	0.3	0.4	11	10	8	9	6	9	0.4	0.3	0.6	0.3	0.4
12	9	8	8	8	9	0.3	0.2	0.5	0.4	0.4	12	10	8	10	8	9	0.3	0.3	0.6	0.5	0.4
13	8	7	8	7	8	0.3	0.3	0.5	0.5	0.5	13	8	7	11	8	8	0.3	0.3	0.6	0.6	0.5
14	8	8	8	7	7	0.4	0.4	0.3	0.4	0.2	14	8	8	10	8	8	0.4	0.4	0.4	0.5	0.3
15	8	7	9	7	8	0.3	0.2	0.3	0.3	0.2	15	9	7	10	7	8	0.3	0.3	0.4	0.4	0.2
Site Bdy	17	18	18	18	17	0.7	0.9	0.8	0.9	0.8	Site Bdy	18	18	18	19	18	0.8	1.0	0.9	0.9	0.9
Maximum	17	18	18	18	17	0.7	0.9	0.8	0.9	0.8	Maximum	18	18	18	19	18	0.8	1.0	0.9	0.9	0.9

Figure 11

Supplier 1 WESP with other sources of NOX as 100% NO2
99.9th pecentile 1-hour average for each assessed year, excluding background
Design criterion - 226 ug/m3
Contours: 9 ug/m3 (yellow) and 16 ug'm3 (black)

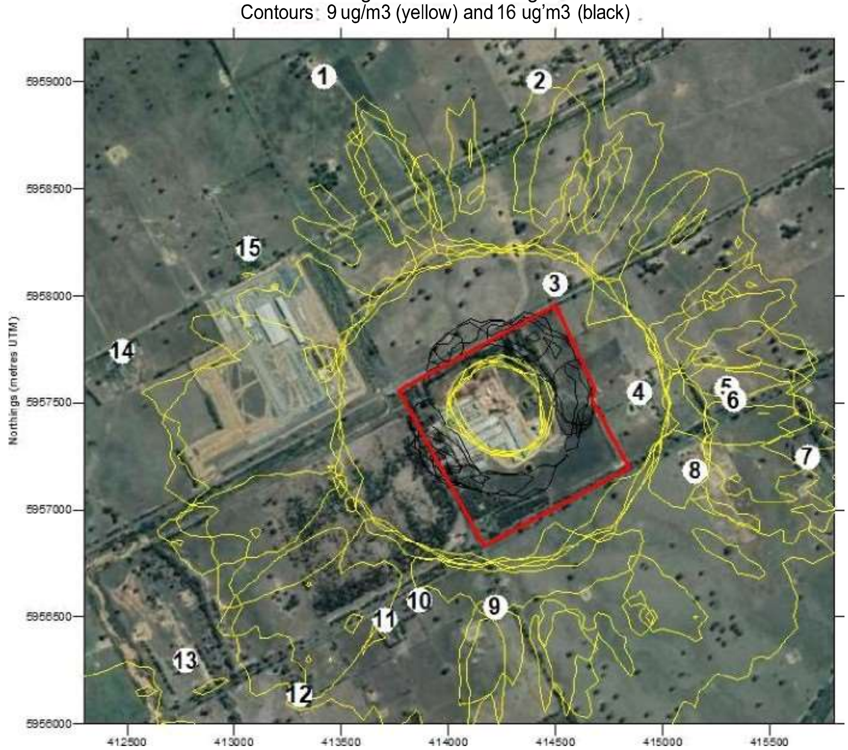
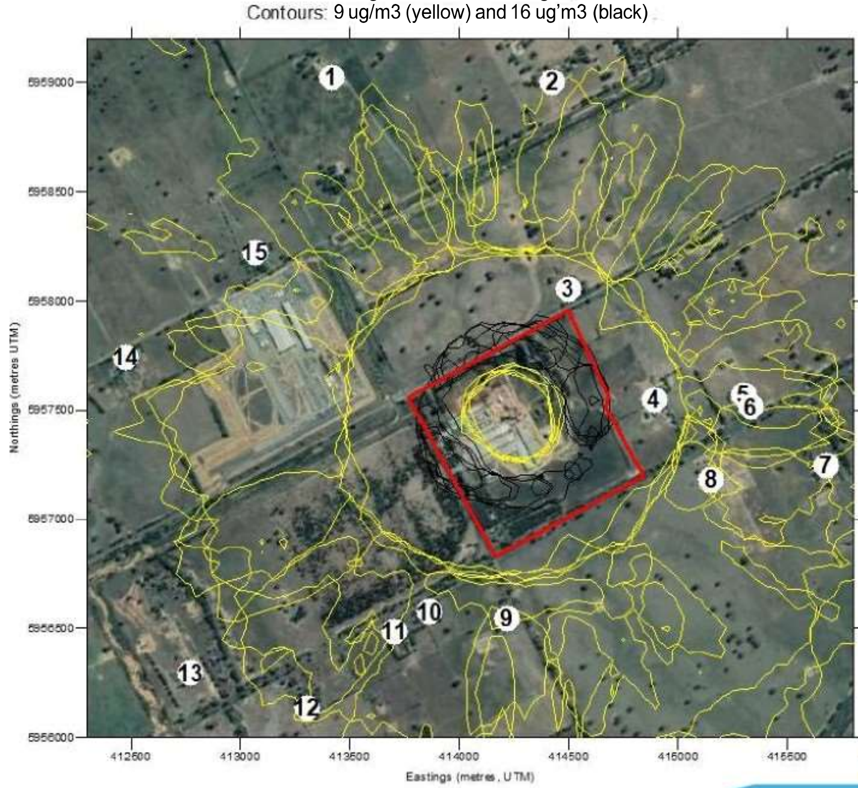


Figure 12

Supplier 2 WESP with other sources of NOX as 100% NO2
99.9th pecentile 1-hour average for each assessed year, excluding background
Design criterion = 226 ug/m3
Contours: 9 ug/m3 (yellow) and 16 ug'm3 (black)



3.3 *Carbon Monoxide*

From **Section 2.4**, the 8-hour average background concentration adopted for this assessment is 3.75 mg/m^3.

3.3.1 Supplier 1 WESP emissions

Table 15 details the peak 8-hour average concentrations of CO with the Supplier 1 WESP at the nearest rural dwellings. The peak prediction was 0.008 mg/m^3 which is not notably different to the adopted background and insignificant compared to the AQAC of 10.4 mg/m^3.

3.3.2 Supplier 2 WESP emissions

Table 15 details the peak 8-hour average concentrations of CO with the Supplier 2 WESP at the nearest rural dwellings, which were not different to those with the Supplier 1 WESP. The peak prediction was 0.008 mg/m^3 which is not notably different to the adopted background and insignificant compared to the AQAC of 10.4 mg/m^3.

Table 15: Peak predicted incremental CO concentrations at each nearby rural dwelling sensitive receiver, excluding background concentration, with each WESP design.

Sensitive Receiver	Maximum predicted 8 hour average (mg/m3) Criterion = 10.4 mg/m3					Sensitive Receiver	Maximum predicted 8 hour average (mg/m3) Criterion = 10.4 mg/m3				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Supplier 1 WESP plus other sources						Supplier 2 WESP plus other sources					
1	0.005	0.004	0.001	0.004	0.004	1	0.005	0.004	0.002	0.004	0.004
2	0.006	0.003	0.003	0.002	0.003	2	0.006	0.003	0.003	0.003	0.003
3	0.008	0.007	0.008	0.006	0.008	3	0.008	0.007	0.008	0.007	0.008
4	0.007	0.008	0.006	0.006	0.008	4	0.008	0.008	0.006	0.006	0.008
5	0.005	0.005	0.005	0.004	0.005	5	0.005	0.005	0.005	0.005	0.006
6	0.005	0.005	0.004	0.004	0.006	6	0.005	0.006	0.004	0.005	0.006
7	0.005	0.005	0.003	0.004	0.007	7	0.005	0.005	0.004	0.004	0.006
8	0.006	0.005	0.004	0.005	0.006	8	0.006	0.005	0.004	0.005	0.006
9	0.004	0.006	0.003	0.002	0.006	9	0.004	0.005	0.004	0.002	0.006
10	0.006	0.004	0.004	0.003	0.004	10	0.006	0.004	0.004	0.003	0.004
11	0.007	0.006	0.003	0.003	0.005	11	0.007	0.006	0.003	0.003	0.005
12	0.006	0.005	0.003	0.003	0.006	12	0.006	0.005	0.004	0.003	0.006
13	0.005	0.005	0.003	0.004	0.006	13	0.005	0.005	0.004	0.004	0.006
14	0.005	0.005	0.003	0.003	0.005	14	0.005	0.005	0.004	0.004	0.005
15	0.005	0.004	0.003	0.002	0.004	15	0.005	0.004	0.003	0.003	0.004
Maximum	0.008	0.008	0.008	0.006	0.008	Maximum	0.008	0.008	0.008	0.007	0.008

3.4 *Particles smaller than 2.5 micron aerodynamic equivalent (PM2.5)*

From **Section 2.4**, the 70th percentile 24-hour average background concentration adopted for this assessment is 18 µg/m³.

3.4.1 Supplier 1 WESP emissions

Table 16 details the maximum predicted daily average ground level concentrations of PM2.5 at the nearest sensitive receiver rural dwellings indicated in **Figure 1,** excluding background. The highest predicted increment was 0.4 µg/m³, or less than 2% of the assessment criterion. The highest annual average increment at these rural dwellings for all assessment years was 0.1 µg/m³, or <1% of the assessment criterion. Hence the emissions are ***readily compliant*** with the AQAC.

3.4.2 Supplier 2 WESP emissions

Table 16 also details the maximum predicted daily average ground level concentrations of PM2.5 at the nearest sensitive receiver rural dwellings indicated in **Figure 1,** excluding background. This was not notably different to that predicted for the Supplier 1 WESP design. The highest predicted increment was 0.4 µg/m³, or less than 2% of the assessment criterion. The highest annual average increment at these rural dwellings for all assessment years was 0.1 µg/m³, or <1% of the assessment criterion. Hence the emissions are ***readily compliant*** with the AQAC.

Table 16: Highest predicted 24-hour average and annual average PM2.5 ground level concentrations at each nearby sensitive receiver, excluding background concentration.

Sensitive Receiver	Maximum predicted 24 hour average (µg/m3) Criterion = 25 µg/m3					Annual average (µg/m3) Criterion = 8 µg/m3				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Supplier 1 WESP plus other sources										
1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
3	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0
4	0.4	0.4	0.3	0.2	0.4	0.0	0.0	0.1	0.1	0.1
5	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
6	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
7	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
8	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
9	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
11	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
12	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Maximum	0.4	0.4	0.3	0.2	0.4	0.0	0.0	0.1	0.1	0.1
Supplier 2 WESP plus other sources										
1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
3	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0
4	0.4	0.4	0.3	0.2	0.4	0.0	0.1	0.1	0.1	0.1
5	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0
6	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0
7	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
8	0.1	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0
9	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
10	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
11	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
12	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
13	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
14	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
15	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Maximum	0.4	0.4	0.3	0.2	0.4	0.0	0.1	0.1	0.1	0.1

3.5 *Particles smaller than 10 micron aerodynamic equivalent (PM10)*

From **Section 2.4**, the 70th percentile 24-hour average background concentration adopted for this assessment is 36 µg/m³.

3.5.1 Supplier 1 WESP emissions

Table 17 details the maximum predicted daily average ground level concentrations of PM2.5 at the nearest sensitive receiver rural dwellings indicated in **Figure 1,** excluding background. The highest predicted increment was 1.6 µg/m³, or 3% of the assessment criterion. The highest annual average increment at these rural dwellings for all assessment years was 0.4 µg/m³, or <2% of the assessment criterion. Hence the emissions are ***readily compliant*** with the AQAC.

3.5.2 Supplier 2 WESP emissions

Table 17 also details the maximum predicted daily average ground level concentrations of PM2.5 at the nearest sensitive receiver rural dwellings indicated in **Figure 1,** excluding background. This was not notably different to that predicted for the Supplier 1 WESP design. The highest predicted increment was 1.7 µg/m³, or 3% of the assessment criterion. The highest annual average increment at these rural dwellings for all assessment years was 0.4 µg/m³, or <2% of the assessment criterion. Hence the emissions are ***readily compliant*** with the AQAC.

Table 17: Highest predicted 24-hour average and annual average PM10 ground level concentrations at each nearby sensitive receiver, excluding background concentration.

Sensitive Receiver	Maximum predicted 24 hour average (µg/m3) Criterion = 50 µg/m3					Annual average (µg/m3) Criterion = 20 µg/m3				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Supplier 1 WESP plus other sources										
1	0.2	0.2	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0
2	0.3	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0
3	0.9	1.0	0.5	0.5	0.8	0.1	0.2	0.2	0.2	0.2
4	1.6	1.6	1.5	0.9	1.6	0.2	0.2	0.4	0.3	0.3
5	0.5	0.5	0.4	0.4	0.6	0.1	0.1	0.1	0.1	0.1
6	0.5	0.5	0.3	0.4	0.6	0.1	0.1	0.1	0.1	0.1
7	0.3	0.4	0.2	0.3	0.3	0.0	0.0	0.1	0.1	0.1
8	0.6	0.7	0.4	0.5	0.6	0.1	0.1	0.2	0.1	0.1
9	0.6	0.6	0.4	0.4	0.6	0.1	0.1	0.2	0.1	0.1
10	0.4	0.5	0.5	0.3	0.5	0.1	0.1	0.2	0.1	0.1
11	0.3	0.4	0.4	0.4	0.5	0.1	0.0	0.1	0.1	0.1
12	0.2	0.2	0.2	0.3	0.3	0.0	0.0	0.1	0.1	0.1
13	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.0
14	0.2	0.2	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0
15	0.3	0.3	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.0
Maximum	1.6	1.6	1.5	0.9	1.6	0.2	0.2	0.4	0.3	0.3
Supplier 2 WESP plus other sources										
1	0.3	0.3	0.2	0.2	0.3	0.0	0.0	0.0	0.1	0.0
2	0.4	0.3	0.2	0.1	0.3	0.0	0.0	0.1	0.0	0.0
3	1.0	1.1	0.6	0.6	0.8	0.2	0.2	0.2	0.2	0.2
4	1.6	1.6	1.5	1.0	1.7	0.2	0.2	0.4	0.3	0.3
5	0.6	0.6	0.4	0.4	0.7	0.1	0.1	0.2	0.1	0.1
6	0.6	0.6	0.4	0.5	0.7	0.1	0.1	0.1	0.1	0.1
7	0.4	0.5	0.3	0.4	0.5	0.1	0.1	0.1	0.1	0.1
8	0.7	0.7	0.5	0.5	0.7	0.1	0.1	0.2	0.2	0.1
9	0.7	0.8	0.4	0.4	0.6	0.1	0.1	0.2	0.1	0.1
10	0.5	0.6	0.6	0.3	0.6	0.1	0.1	0.2	0.1	0.1
11	0.4	0.5	0.4	0.4	0.6	0.1	0.1	0.1	0.1	0.1
12	0.3	0.3	0.3	0.3	0.4	0.0	0.0	0.1	0.1	0.1
13	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.1	0.1	0.1
14	0.3	0.3	0.3	0.2	0.3	0.0	0.1	0.1	0.1	0.0
15	0.4	0.4	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1
Maximum	1.6	1.6	1.5	1.0	1.7	0.2	0.2	0.4	0.3	0.3

3.6 *Total Suspended Particulate (PM50)*

From **Section 2.4**, the 70th percentile 24-hour average background concentration adopted for this assessment is 72 µg/m³.

3.6.1 Supplier 1 WESP emissions

Table 17 details the peak predicted 3-minute average ground level concentrations of TSP at the site boundary as well as at the nearest sensitive receiver rural dwellings indicated in **Figure 1,** excluding background. The highest predicted increment was 140 µg/m³ for a total of 212 µg/m³ compared to the assessment criterion of 330 µg/m³. The highest predicted increment at any rural dwelling was 15% of the assessment criterion. Hence the emissions are ***readily compliant*** with the AQAC.

3.6.2 Supplier 2 WESP emissions

Table 17 details the peak predicted 3-minute average ground level concentrations of TSP at the site boundary as well as at the nearest sensitive receiver rural dwellings indicated in **Figure 1,** excluding background. This was not notably different to that for the Supplier 1 WESP design. The highest predicted increment was 130 µg/m³ for a total of 202 µg/m³ compared to the assessment criterion of 330 µg/m³. The highest predicted increment at any rural dwelling was 15% of the assessment criterion. Hence the emissions are ***readily compliant*** with the AQAC.

Table 17: Highest predicted 3-minute average TSP ground level concentrations at the site boundary and at each nearby sensitive receiver, excluding background concentration, for each WESP design.

Sensitive Receiver	99.9th percentile 3-minute average (µg/m3) Criterion = 330 µg/m3					Sensitive Receiver	99.9th percentile 3-minute average (µg/m3) Criterion = 330 µg/m3				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Supplier 1 WESP plus other sources						Supplier 2 WESP plus other sources					
1	4	4	4	4	4	1	5	5	5	5	5
2	5	5	4	4	5	2	6	6	5	5	6
3	19	21	19	17	17	3	19	21	19	17	17
4	29	30	48	40	35	4	29	30	48	40	35
5	9	10	12	7	10	5	10	10	12	8	10
6	9	9	11	8	10	6	9	9	12	8	10
7	6	6	10	8	6	7	7	7	10	9	7
8	13	12	13	11	12	8	13	12	13	11	13
9	15	14	12	10	13	9	15	15	12	10	13
10	11	11	13	10	13	10	12	11	13	11	13
11	8	8	9	8	9	11	9	8	10	8	10
12	5	5	8	6	5	12	6	6	8	6	6
13	4	4	8	6	5	13	5	5	9	6	5
14	4	5	5	4	5	14	5	6	6	5	5
15	5	6	5	5	5	15	6	6	6	6	6
Site Bdy	70	70	140	120	120	Site Bdy	70	70	130	120	120
Maximum	70	70	140	120	120	Maximum	70	70	130	120	120

3.7 *Odour*

3.7.1 Supplier 1 WESP emissions

Table 17 details the peak predicted 3-minute average ground level odour concentrations at the site boundary as well as at the nearest sensitive receiver rural dwellings indicated in **Figure 1** as the result of the equivalent odour emissions from the Supplier 1 WESP design, which were based on the maximum in-stack VOC and the odour threshold concentration of the most odorous substance detected during testing, alpha-pinene. The highest predicted odour concentration was 0.4 OU compared to the assessment criterion of 1OU, typically applied in residential areas. This indicates that the environment reference standard requiring an *air environment that is free from offensive odours from commercial, industrial, trade and domestic activities* will be met for the odorous VOC emissions from this stack, abated by the WESP design.

3.7.2 Supplier 2 WESP emissions

Table 17 also details the peak predicted 3-minute average ground level odour concentrations as the result of the equivalent odour emissions from the Supplier 2 WESP design. The highest predicted odour concentration was 0.3 OU, which again indicates that the environment reference standard will be met for the odorous VOC emissions from this stack, abated by the WESP design.

Table 16: Highest predicted 3-minute average ground level odour concentrations at the site boundary and at each nearby sensitive receiver for the equivalent odour emissions from each WESP design.

Sensitive Receiver	99.9th percentile 3-minute average (OU) Criterion = 1 OU					Sensitive Receiver	99.9th percentile 3-minute average (OU) Criterion = 1 OU				
	2016	2017	2018	2019	2020		2016	2017	2018	2019	2020
Supplier 1 WESP						Supplier 2 WESP					
1	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1
2	0.2	0.1	0.1	0.1	0.1	2	0.1	0.1	0.1	0.1	0.1
3	0.2	0.2	0.2	0.2	0.2	3	0.2	0.2	0.2	0.2	0.2
4	0.2	0.2	0.2	0.2	0.2	4	0.2	0.2	0.2	0.2	0.2
5	0.2	0.1	0.2	0.2	0.2	5	0.1	0.1	0.1	0.2	0.2
6	0.2	0.2	0.2	0.2	0.2	6	0.1	0.1	0.1	0.2	0.1
7	0.2	0.2	0.1	0.1	0.2	7	0.1	0.1	0.1	0.1	0.1
8	0.1	0.1	0.1	0.1	0.2	8	0.1	0.1	0.1	0.1	0.1
9	0.2	0.1	0.1	0.1	0.2	9	0.1	0.1	0.1	0.1	0.1
10	0.2	0.1	0.1	0.1	0.1	10	0.1	0.1	0.1	0.1	0.1
11	0.2	0.2	0.2	0.1	0.2	11	0.2	0.1	0.1	0.1	0.1
12	0.2	0.1	0.1	0.1	0.2	12	0.1	0.1	0.1	0.1	0.1
13	0.1	0.1	0.2	0.1	0.1	13	0.1	0.1	0.2	0.1	0.1
14	0.1	0.1	0.1	0.1	0.1	14	0.1	0.1	0.2	0.1	0.1
15	0.1	0.1	0.2	0.1	0.1	15	0.1	0.1	0.1	0.1	0.1
Site Bdy	0.3	0.4	0.4	0.4	0.3	Site Bdy	0.3	0.3	0.3	0.3	0.3
Maximum	0.3	0.4	0.4	0.4	0.3	Maximum	0.3	0.3	0.3	0.3	0.3

4 RISK TREATMENT PLAN

With the promulgation of the Environmental Protection Amendment Act from July 1st Monsbent will have a General Environment Duty to minimise the risk of causing harm to either human health or amenity, or to the environment, due to activities within their site so far as is reasonably practicable. The emissions of the various assessed substances from the proposed WESP stack (as an increment over the impact of the other common sources at the site) represents a risk of causing harm to sensitive receivers and locations beyond the site boundary, and therefore will require active management to reduce these emissions to the design levels.

The risk treatment plan for the operations of the WESP has been based upon the requirements of the EPA guidance *Assessing and controlling risk - a guide for business* (Pub. 1695.1) where applicable.

This risk treatment specific to the operation of the WESP is to be supplemented by the site-wide Environmental Improvement Plan (documented separately) detailing the management of the other process point source emissions as well as the fugitive wood-fibre and dust emissions.

4.1 *Key Sensitive Receptors*

Note the description of the receiving environment in **Section 2.3**, and **Figure 1**.

4.2 *Risk Events*

The consequence and likelihood of each risk event and the determined risk rating has been derived using the risk metric detailed within Figure 2 of EPA Pub. 1695.1. This is reproduced in **Figure 13** below.

Table 17 details the derived risk register for the WESP emissions detailing risk events and the assessed **inherent** risk to nearest sensitive receivers for each before the application of effective and consistently adopted emission controls. This was informed by previous annual and adhoc testing of the emissions from the Jet Dryer (DP) and the Drum Dryer (DP) which are to be ducted to the WESP system for abatement and the expected duration of the occurrence of a risk event (e.g. voltage drop across the electrostatic precipitator plates or inadequate wet scrubbing) before the process was halted. The highest determined **inherent** risk was **Medium** which is acceptable if controls are in place.

4.3 *Controls to Address Hazards*

Based on the estimated emissions for each substance, inclusive of the emission abatement controls within the WESP, compliance was readily predicted with the assessment criteria. **Table 18** details the individual emissions management controls for the WESP that are to be consistently and effectively implemented for each activity to reduce the highest determine **inherent** risk to the nearest sensitive receivers of **Medium** to a maximum determined **residual** risk of **Low** as detailed in **Table 17**.

Permanent or long-term serious environmental harm / life threatening or long-term harm to health and wellbeing.	Consequence	Severe	Medium	High	High	Extreme	Extreme
Serious environment harm / high-level harm to health and wellbeing.		Major	Medium	Medium	High	High	Extreme
Medium level of harm to health and wellbeing or the environment over an extended period of time.		Moderate	Low	Medium	Medium	High	High
Low environmental impact / low potential for health and wellbeing impacts.		Minor	Low	Low	Medium	Medium	High
No or minimal environmental impact, or no health and wellbeing impacts.		Low	Low	Low	Low	Medium	Medium
			Rare	Unlikely	Possible	Likely	Certain
			Likelihood				
			Could happen but probably never will	Not likely to happen in normal circumst-ances	May happen at some time	Expected to happen at some time	Expected to happen regularly under normal circumst-ances

Description of risk ratings

Risk level	Description
Extreme	Totally unacceptable level of risk. Stop work and/or take action immediately.
High	Unacceptable level of risk. Controls must be put in place to reduce to lower levels.
Medium	Can be acceptable if controls are in place. Attempt to reduce to *low*.
Low	Acceptable level or risk. Attempt to eliminate risk but higher risk levels take priority.

Table 17: Risk Register

#	Details of Risk Event	Risk assessment before including risk controls – project inherent risk			Risk assessment after including risk controls – project residual risk		
		Likelihood	Consequence	Risk Rating	Likelihood	Consequence	Risk Rating
1	Failure of electrostatic precipitator with prolonged increase in particulate emissions before process shutdown leading to exceedance of air quality criteria.	Unlikely	Moderate	Medium	Rare	Moderate	Low
2	Failure of wet scrubbing with prolonged increase in VOC and formaldehyde emissions before process shutdown leading to exceedance of air quality criteria or odour dis-amenity.	Unlikely	Moderate	Medium	Rare	Moderate	Low
3	Flow rates increasing or decreasing out of specification range leading to prolonged increase in emissions leading to exceedance of air quality criteria or odour dis-amenity.	Possible	Minor	Medium	Unlikely	Minor	Low
4	Upstream concentrations of pollutant substances increasing beyond WESP abatement specifications leading to prolonged increase in emissions before process shutdown and therefore an exceedance of air quality criteria or odour dis-amenity.	Possible	Minor	Medium	Unlikely	Minor	Low

Table 18: Controls to be adopted to manage risk events

#	Details of controls being used	Risk Events
1	Daily turnover of scrubber liquor with fresh water at a turnover volume depending on the desired formaldehyde levels to be determined during the commissioning process.	2
2	Continuously monitor Drum Dryer, Jet Dryer and WESP flue gas temperature with alarm thresholds for review and process shutdown based on vendor advice.	1,2
3	Continuously monitor scrubbing water flow rates with alarm thresholds for review and process shutdown based on vendor advice.	2
4	Continuously monitor voltage and current of electrostatic plates with alarm thresholds for review and process shutdown based on vendor advice.	1
5	Continuously monitor recirculation water with alarm thresholds for review and process shutdown based on vendor advice and commissioning outcomes, e.g. water pH, temperature, total dissolved solids, etc.	2
6	Continuously monitor gas temperatures and flow rates with alarm thresholds for review and process shutdown based on vendor advice.	3
7	The WESP will be programmed with an automatic daily cleaning cycle.	1,2
8	The Jet Dryer and Drum Dryer operation will be interlocked to the WESP to prevent the dryers running without emission control (except for commissioning, trouble-shooting and emergency situations).	4
9	The Jet and Drum Dryer exhausts have in-line dust probes which are monitored by the Pressline operators. These will indicate abnormal levels of particulates exiting the dryers, which will trigger adjustments or shutdown, as appropriate to keep the inlet concentration of particulates to the WESP to within specification.	4
10	Annual maintenance shut scheduled in conjunction with manufacturer's recommendations. No maintenance on emission control equipment to be carried out during production.	1,2,3

4.4 *Performance Measurement*

Monsbent propose the following ongoing performance measurement of the WESP system management practices at the site:

- The assessed emission substances from the WESP stack will be tested to current EPA sampling guidelines at the commission stage to validate that these are not notably more than that assessed for compliance with relevant air quality assessment criteria.
- Routinely scheduled review meetings to minimise unplanned maintenance hours.
- Annual emission testing of the discharged assessed substances from the WESP stack to current EPA sampling guidelines post commission to validate management practices and monitoring controls.
- Annual auditing for compliance, processing, capital upgrade and management systems.
- Other measures as detailed within the site-wide Environmental Improvement Plan (documented separately) detailing the management of the other process point source emissions as well as the fugitive wood-fibre and dust emissions

5 LIMITATIONS

This report represents the results of an air dispersion modelling impact assessment for the purposes of this commission. The data and assessment outcomes provided herein relate only to the project and structures described herein and must be reviewed by a competent engineer/scientist before being used for any other purpose. Ektimo accept no responsibility for other use of the data and assessment outcomes.

Where monitoring results, physical measurements and tests, data collection and similar work have been performed and recorded by others the data is included and used in the form provided by others. The responsibility for the accuracy of such data remains with the issuing authority, not with Ektimo.

An understanding of a site's air quality impact depends on the integration of many pieces of information, some regional, some site specific, some structure specific and some experienced based. Hence this report should not be altered, amended, or abbreviated, issued in part, or issued incomplete in any way without prior checking and approval by Ektimo. Ektimo accepts no responsibility for any circumstances which arise from the issue of the report which has been modified in any way as outlined above.

AERMOD ready Meteorological data files for

Benalla - VIC

This file was exclusively compiled for **EKTIMO** By pDs Consultancy.

pDs Consultancy
@1999-2021

INTRODUCTION

New generation regulatory model AERMOD requires hourly averaged meteorological data from a single site that is preferably within the model domain ('on-site' or site-specific data). However, data from the nearest 'off-site' meteorological station can be used when on-site data are not available, and the off-site data are representative of the area of concern (i.e. the meteorological parameters as well as surface characteristics characterise the transport and dispersion conditions of the location in question).

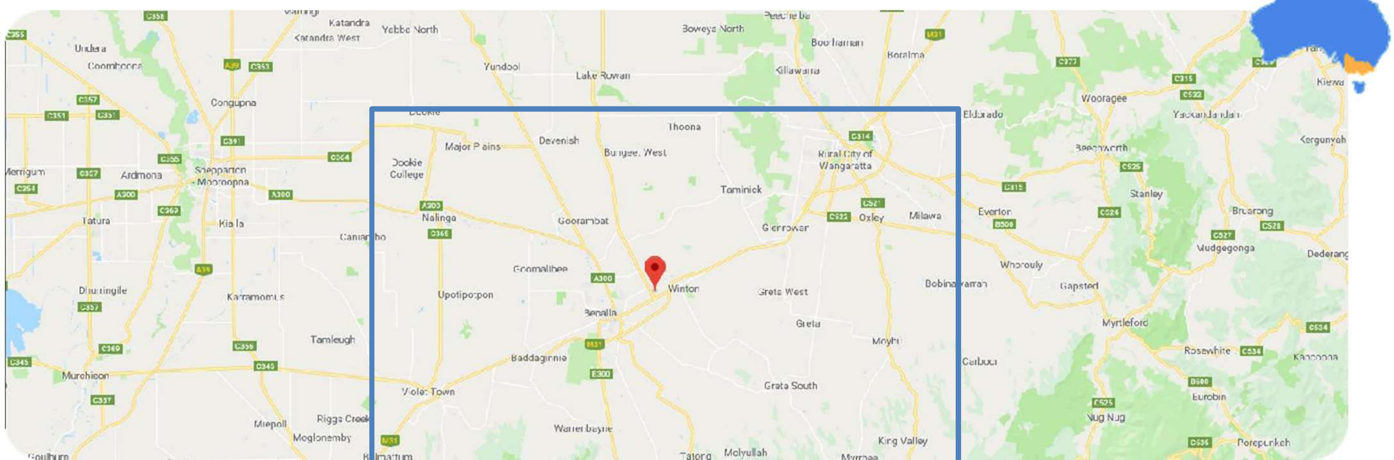
It is also preferable that:

- The compilation of the input meteorological data file is done in accordance with 'best practice', with procedures and algorithms recommended or set by environment regulators/US & VIC EPA.

pDs Consultancy has been engaged by **EKTIMO** to compile an 'AERMOD-ready' meteorological files for an application site in **Benalla** in Victoria.

This input meteorological data files have been compiled basically following the EPA, Victoria's draft guidelines: "Construction of input meteorological data files for EPA Victoria's regulatory air pollution model (AERMOD) (Publication No.1550)".

LOCATION OF THE APPLICATION SITE: BENALLA, VIC



Application site has got its own AWS

Data Processing

Input Information

Data Used for the compilation

Meteorological Data

1. Mandatory Data (On-Site data)
   i. 10m Wind Direction and Speed
   ii. Ambient Temperature (Screen Level)

2. Supplementary data (On-Site Data)

   I. Surface Pressure
   II. Relative Humidity
   III. Rainfall Rate
   IV. Net Radiation from TAPM simulation

3. Upper air Data (TAPM Simulated)

DATA SOURCE

- Davis Vantage VUE weather station for 2 types of data
- Period: 1 Jan 2018 to 31 Dec 2020 (3 Years)
- TAPM simulated data: CSIRO
- Period :1 Jan 2016 to 31 Dec 2017 (2 Years)

QA/QC ON RAW DATA

I. Hourly winds both direction and speed and temperature examined for gaps and wind stalls
   - Suspected wind stalls (both wind direction and speed) removed and filled appropriately preserving the temporal consistency.

II. Small gaps filled with pervious or following hour records

III. Days with big gaps removed. When it's affecting the data recovery, the big gaps filled with TAPM data for the year 2020 to maintain 90% data recovery.

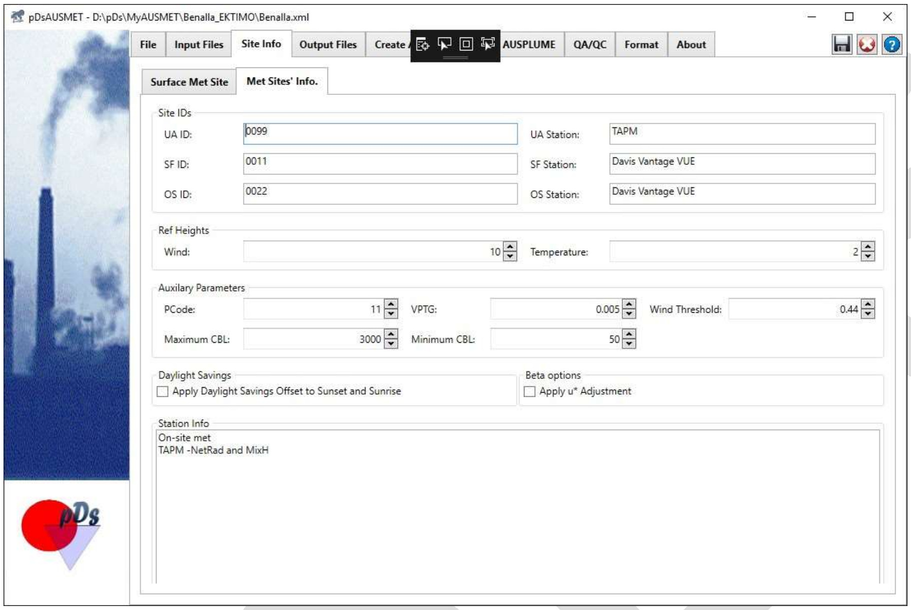
IV. Wind direction was recorded with 22.5-degree resolution. It was randomised around +/- 11.5 degrees.

V. Parameters QA/QCed based on extreme values

TAPM was run in the following manner

- in 4 nested grids, inner most grid with 1 KM resolution.
- with high resolution topography (9 second DEM).
- Verifying vegetation and soil type match with interested area.

METSITE INFORMATION



DATA COVERAGE:

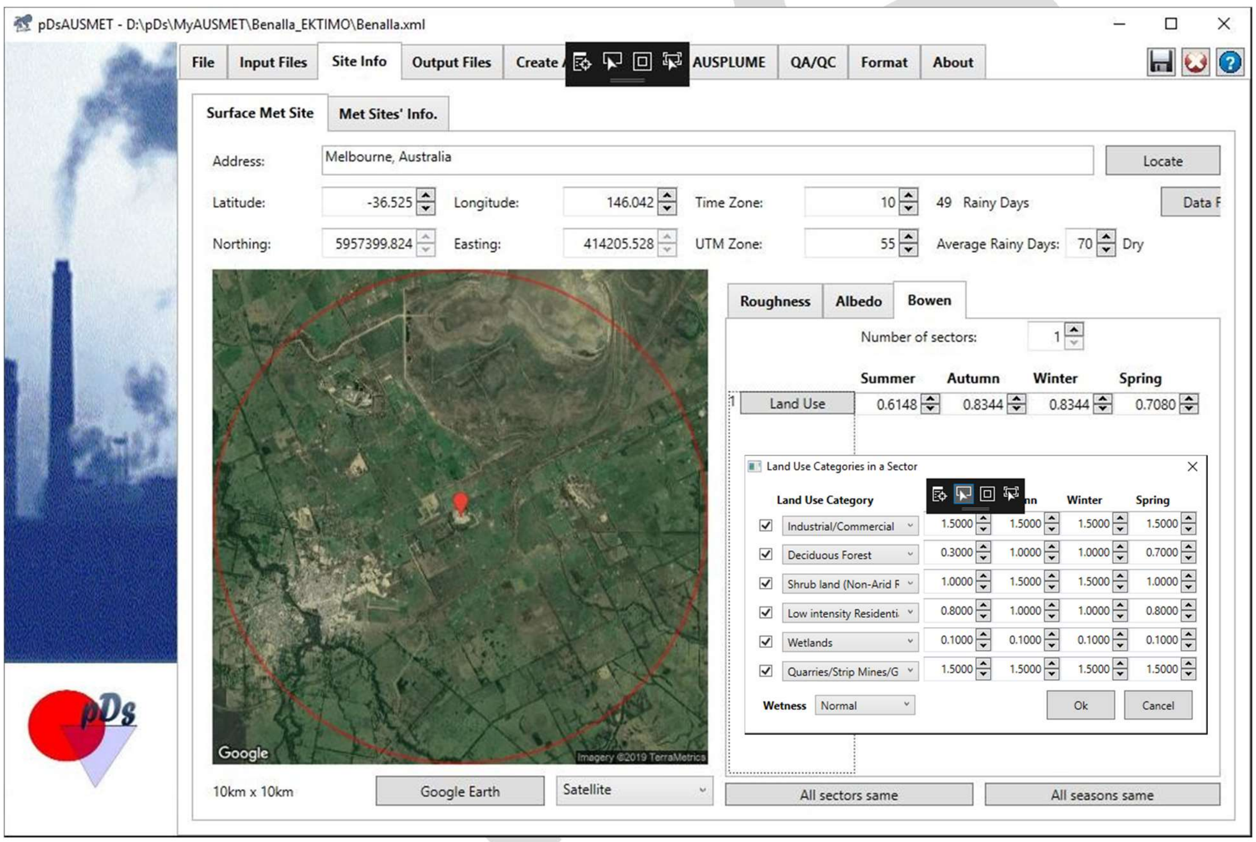
Season					
Year	2016	2017	2018	2019	2020
Summer	100	100	100	97	100
Autumn	100	100	100	97	100
Winter	100	100	100	98	100
Spring	100	100	93	100	100
Annual	100	100	98	98.6	100

Annual and Seasonal data coverage are meeting regulatory requirement (90% or better).

DETERMINATION OF SURFACE CHARACTERISTICS

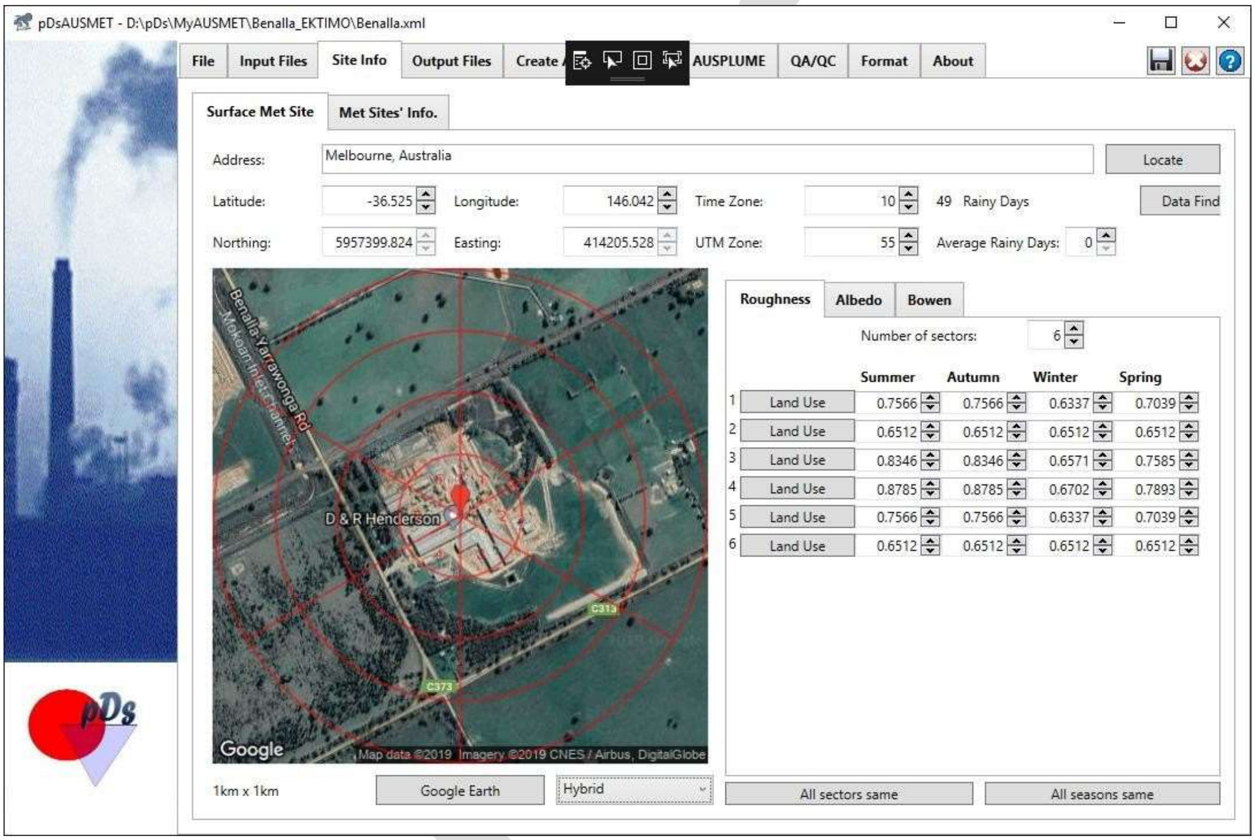
All available surface maps including google maps examined to determine correct land use categories within 10 Km by 10 KM area centering the application site. The year 2016 found to be wet and 2019 found to be dry.

Albedo and **Bowen ratio** were determined using land use categories shown;



SURFACE ROUGHNESS

Sector dependent surface roughness was determined considering 07 sectors. Roughness of each sector was assigned carefully examining land use distribution in 250m arc segments.



The following parameters were determined/computed following EPA, VIC and US EPA guidelines.

Sensible Heat flux –Calculated based on cloud observations

I. Friction Velocity (U*)
II. Monin-Obukhov Length (L)
III. Height of the Stable Boundary Layer(SBL)
IV. Vertical Velocity Scale (W*)
V. Height of the Convective Boundary Layer (CBL)

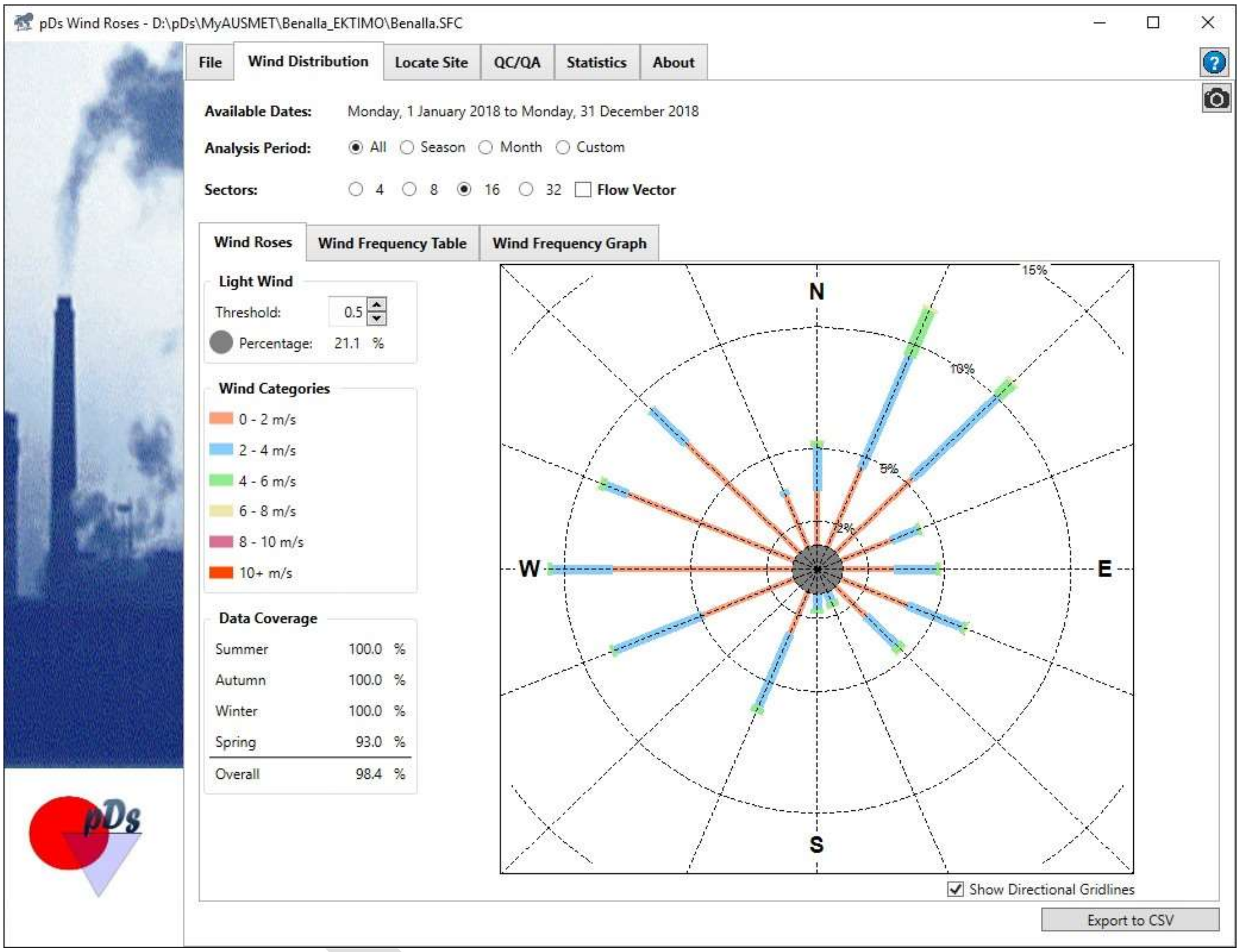
Mixing height (Convective)-CBL

DEFINITION:

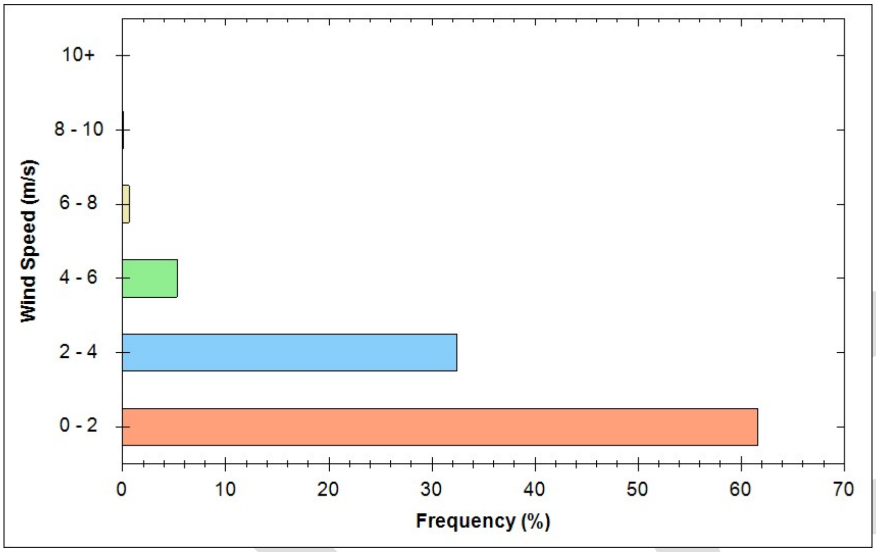
The convective mixing height, the depth of the surface mixed layer is the height of the atmosphere above the ground, which is well mixed due either to mechanical turbulence or convective turbulence. This height was taken from the TAPM simulation done for site in question.

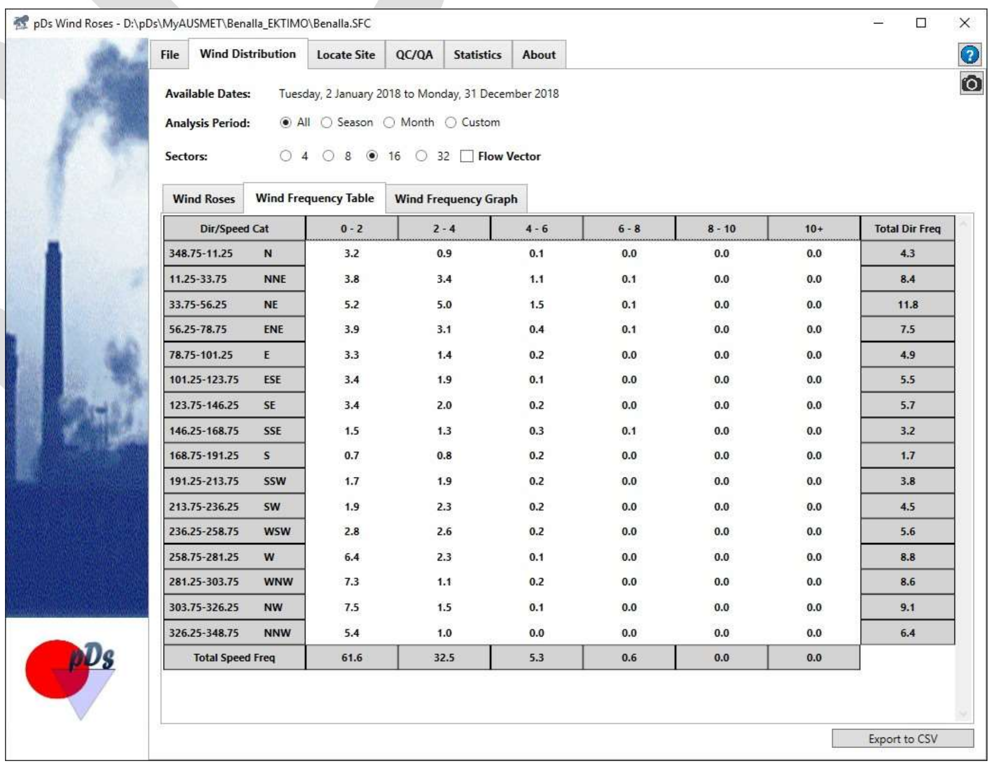
DATA ANALYSIS

ANNUAL WINDROSES FOR BENALLA-2018



ANNUAL FREQUENCY OF WIND SPEED

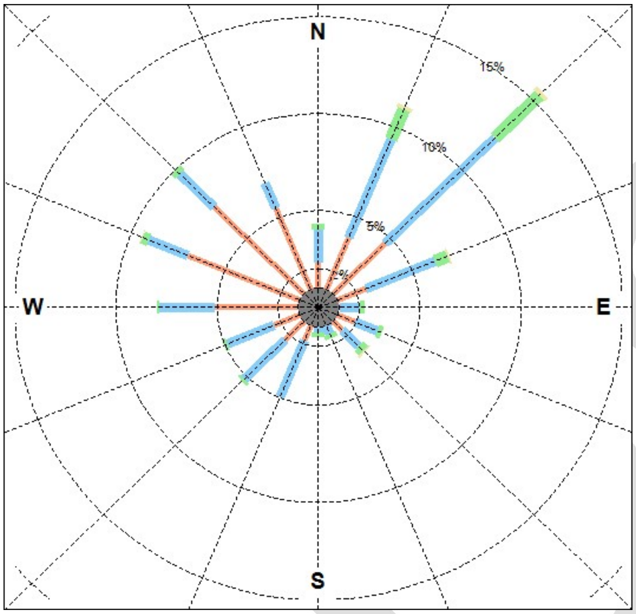


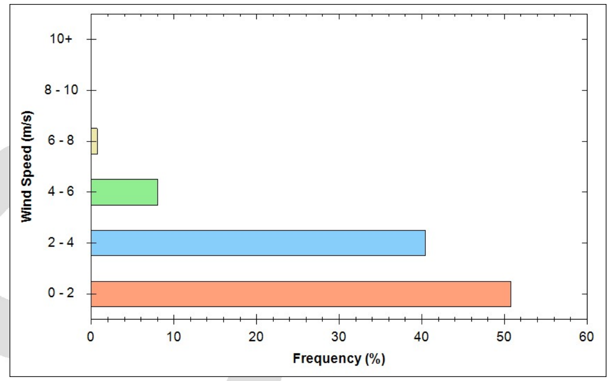


Dir/Speed Cat		0 - 2	2 - 4	4 - 6	6 - 8	8 - 10	10+	Total Dir Freq
348.75-11.25	N	3.2	0.9	0.1	0.0	0.0	0.0	4.3
11.25-33.75	NNE	3.8	3.4	1.1	0.1	0.0	0.0	8.4
33.75-56.25	NE	5.2	5.0	1.5	0.1	0.0	0.0	11.8
56.25-78.75	ENE	3.9	3.1	0.4	0.1	0.0	0.0	7.5
78.75-101.25	E	3.3	1.4	0.2	0.0	0.0	0.0	4.9
101.25-123.75	ESE	3.4	1.9	0.1	0.0	0.0	0.0	5.5
123.75-146.25	SE	3.4	2.0	0.2	0.0	0.0	0.0	5.7
146.25-168.75	SSE	1.5	1.3	0.3	0.1	0.0	0.0	3.2
168.75-191.25	S	0.7	0.8	0.2	0.0	0.0	0.0	1.7
191.25-213.75	SSW	1.7	1.9	0.2	0.0	0.0	0.0	3.8
213.75-236.25	SW	1.9	2.3	0.2	0.0	0.0	0.0	4.5
236.25-258.75	WSW	2.8	2.6	0.2	0.0	0.0	0.0	5.6
258.75-281.25	W	6.4	2.3	0.1	0.0	0.0	0.0	8.8
281.25-303.75	WNW	7.3	1.1	0.2	0.0	0.0	0.0	8.6
303.75-326.25	NW	7.5	1.5	0.1	0.0	0.0	0.0	9.1
326.25-348.75	NNW	5.4	1.0	0.0	0.0	0.0	0.0	6.4
Total Speed Freq		61.6	32.5	5.3	0.6	0.0	0.0	

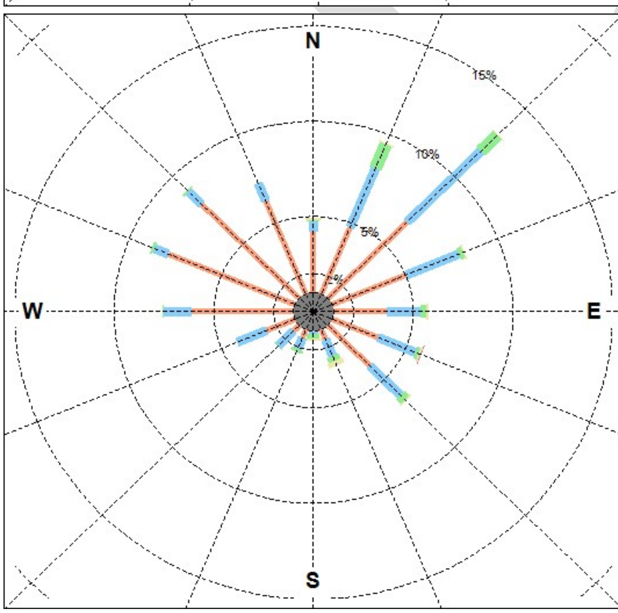
Seasonal Wind Roses for 2018

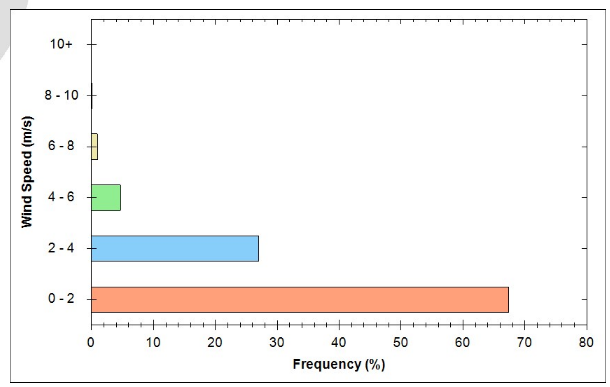
Summer



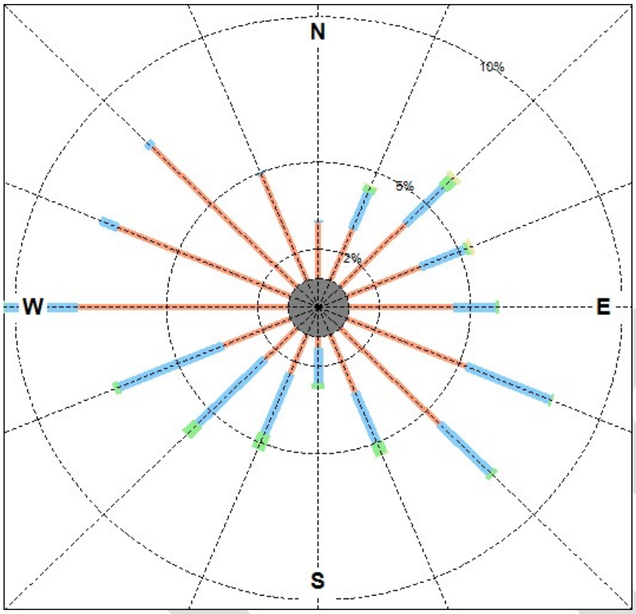


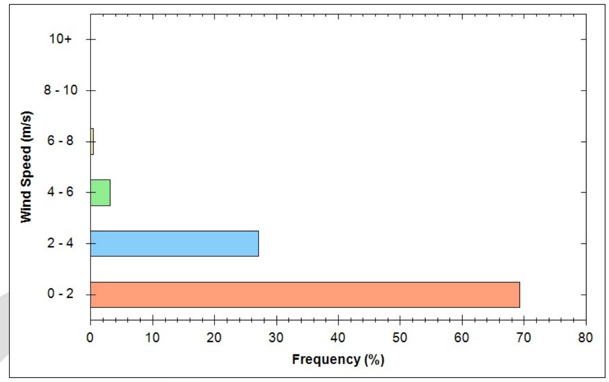
Autumn



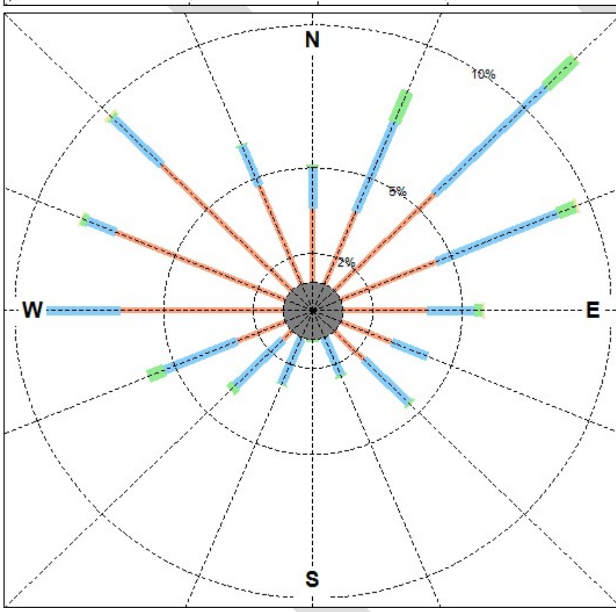


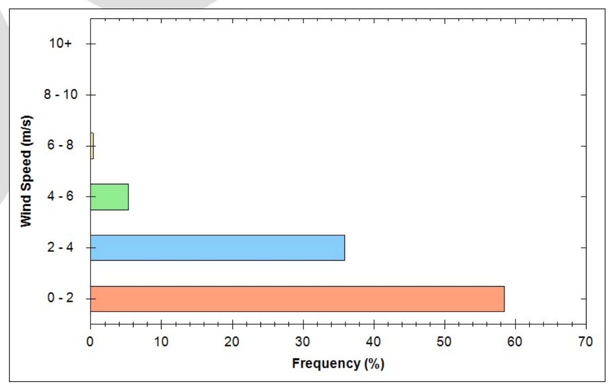
Winter





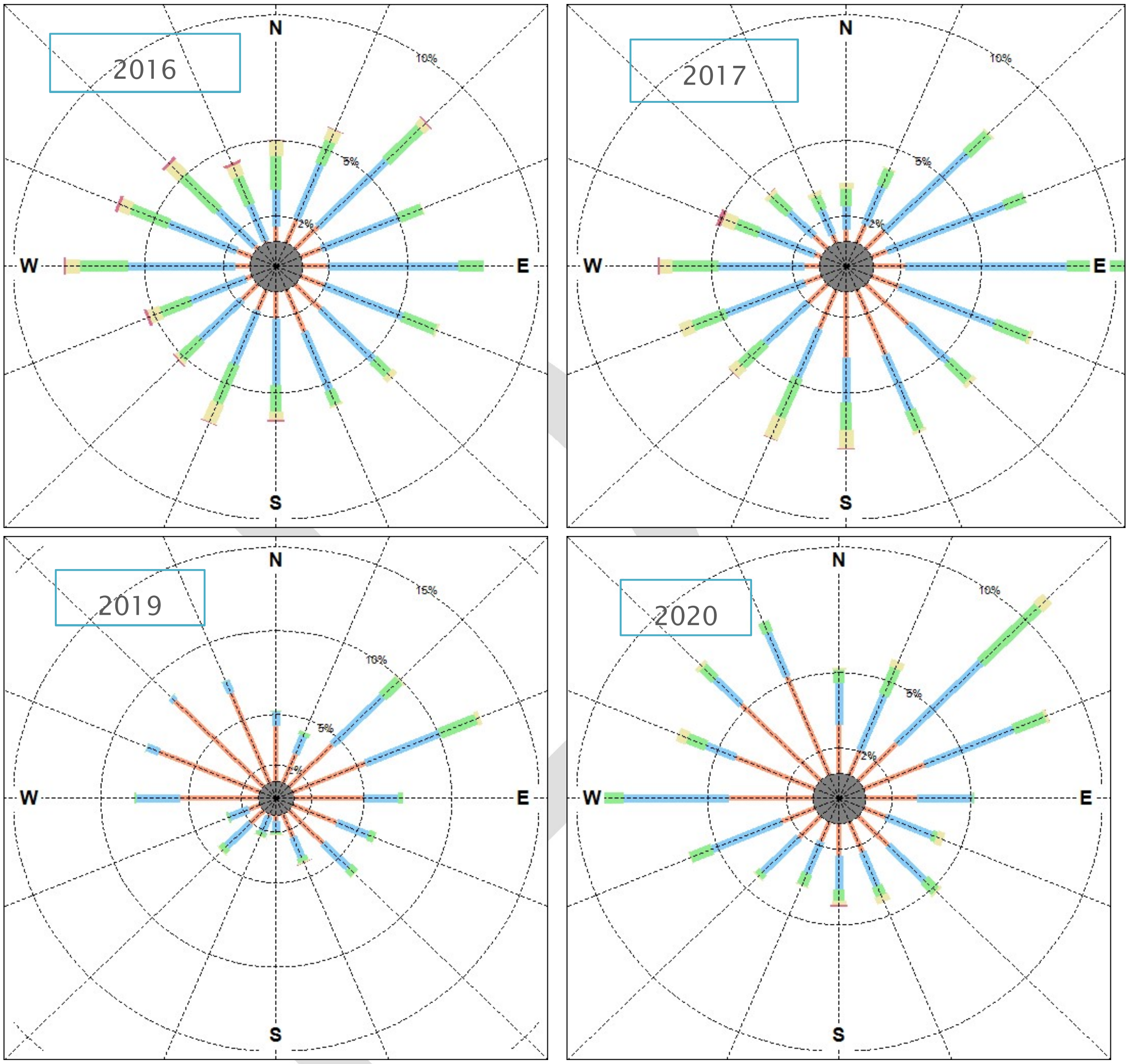
Spring





Seasonal variations are clearly depicted.

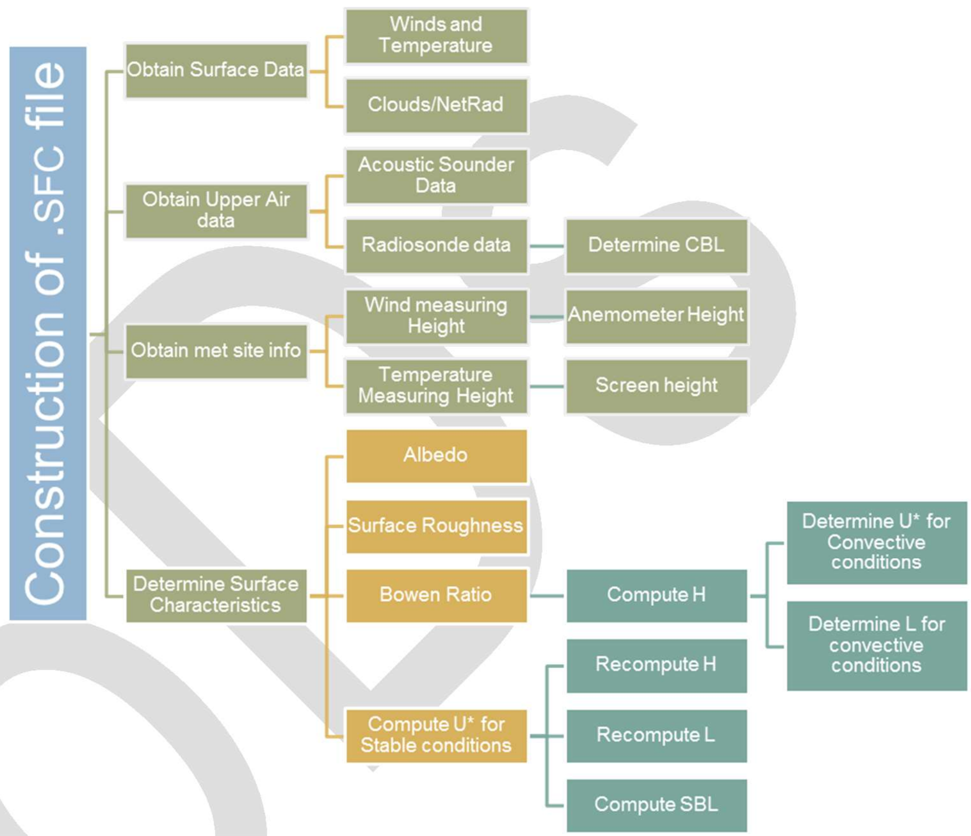
ANNUAL WINDROSES FOR BENALLA FOR OTHER YEARS

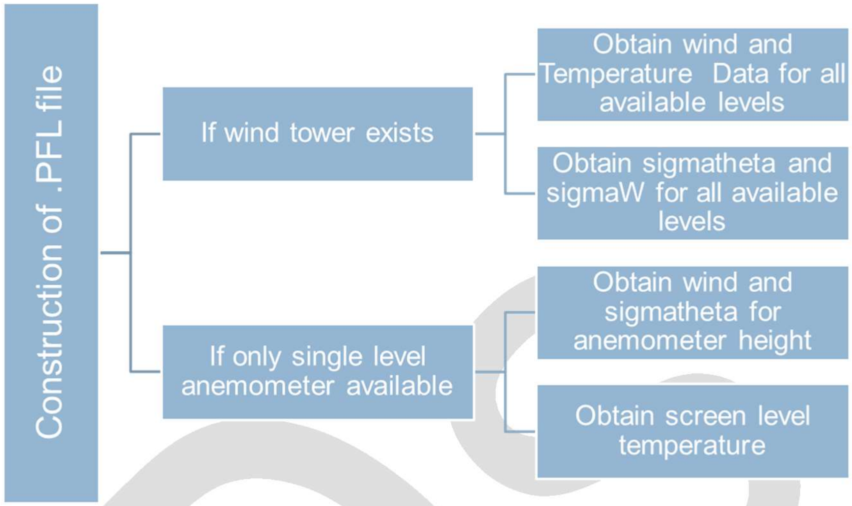


Metfiles for the years 2016 and 2017 were done based only on TAPM simulated data. The years 2018, 2019 and 2020 done compositing measured data.

Appendix

FLOW CHARTS - CONSTRUCTION PROCEDURE




Construction of .PFL file
If wind tower exists
Obtain wind and Temperature Data for all available levels
Obtain sigmatheta and sigmaW for all available levels
If only single level anemometer available
Obtain wind and sigmatheta for anemometer height
Obtain screen level temperature

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USEPA, Office of Air Quality Planning and Standards, AERSURFACE User's Guide, Research Triangle Park, North Carolina, EPA 454/B-08-001

USEPA, Office of Air Quality Planning and Standards, User's Guide for the AERMOD Meteorological Processor (AERMET) and Addendum, Research Triangle Park, North Carolina, EPA 454/B-03-002.

DISCLAIMER

Compilation of input meteorological data files for AERMOD was done under the supervision of qualified and experienced meteorologists. Although all due care has been taken, we cannot give any warranty, nor accept any liability (except that required by law) in relation to the information given, its completeness or its applicability to a particular problem. These data and other material are supplied on the condition that you agree to indemnify us and hold us harmless from and against all liability, losses, claims, proceedings, damages, costs and expenses, directly or indirectly relating to, or arising from the use of or reliance on the data and material which we have supplied.

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7 APPENDIX – Example AERMOD Input Configuration File

All modelling files may be provided for peer review upon request.

```
CO STARTING
   TITLEONE Monsbent - formaldehyde, Supplier 1 WESP with other sources based on 2021 Annual
   Testing TITLETWO Flat terrain. PRIME building wake algorithm initial dispersion
   MODELOPT CONC FLAT NOCHKD
   AVERTIME 1 24 PERIOD
   POLLUTID formladehyde
   RUNORNOT  RUN
   ERRORFIL ERRORS.OUT
CO FINISHED

SO STARTING
   ELEVUNIT METERS
   LOCATION WESP   POINT  414249 5957481 0
   LOCATION PL1M   POINT  414189 5957404 0
   LOCATION PL1E   POINT  414193 5957407 0
   LOCATION PL1W   POINT  414185 5957402 0
   LOCATION PL2M   POINT  414196 5957394 0
   LOCATION PL2E   POINT  414200 5957397 0
   LOCATION PL2W   POINT  414190 5957391 0
   LOCATION PL3M   POINT  414316 5957378 0
   LOCATION PL3N   POINT  414310 5957388 0
   LOCATION PL3S   POINT  414320 5957364 0
   LOCATION RESPLT POINT  414417 5957372 0
   LOCATION DP21   POINT  414307 5957430 0

** Point Source       QS       HS     TS  VS    DS
** Parameters:        ------   -----  --- ---   ----
   SRCPARAM WESP      0.20     45.    338  8    3.0
   SRCPARAM PL1M      0.04     16.    296 19    0.79
   SRCPARAM PL1E      0.0367   16.    296 17    0.79
   SRCPARAM PL1W      0.0533   16.    294 18    0.79
   SRCPARAM PL2M      0.003    16.    290  1.5 0.79
   SRCPARAM PL2E      0.055    16.    297 16    0.79
   SRCPARAM PL2W      0.014    16.    293 12    0.79
   SRCPARAM PL3M      0.0533   16.    293 17    1.07
   SRCPARAM PL3N      0.0517   16.    297 19    1.07
   SRCPARAM PL3S      0.0217   16.    295 15    1.07
   SRCPARAM RESPLT    0.0017   8.     290  1    0.165
   SRCPARAM DP21      0.        9.8   296 14    0.7

SO BUILDHGT WESP       25.00    25.00    25.00    25.00    25.00    25.00
SO BUILDHGT WESP       25.00    25.00    25.00    25.00    25.00    25.00
SO BUILDHGT WESP       25.00    25.00    25.00    25.00    25.00    25.00
SO BUILDHGT WESP       25.00    25.00    25.00    25.00    25.00    25.00
SO BUILDHGT WESP       25.00    25.00    25.00    25.00    25.00    25.00
SO BUILDHGT WESP       25.00    25.00    25.00    25.00    25.00    25.00
SO BUILDWID WESP        9.12     9.88    10.50    10.50    10.50    10.00
SO BUILDWID WESP        9.50     8.50     7.00     8.00     9.00    10.00
SO BUILDWID WESP       10.50    10.75    10.50    10.00     9.00     8.00
SO BUILDWID WESP        9.12    10.00    10.50    10.75    10.50    10.00
SO BUILDWID WESP        9.50     8.50     7.00     8.50     9.50    10.00
SO BUILDWID WESP       10.50    10.50    10.50    10.00     9.00     8.00
SO BUILDLEN WESP        8.00     9.50    10.00    10.50    10.75    10.50
SO BUILDLEN WESP        9.75     9.12     8.00     9.06    10.00    10.50
SO BUILDLEN WESP       10.75    10.50    10.00     9.50     8.00     7.00
SO BUILDLEN WESP        8.50     9.00    10.00    10.50    10.75    10.50
SO BUILDLEN WESP       10.00     9.12     8.00     9.06     9.88    10.25
SO BUILDLEN WESP       10.50    10.50    10.00     9.50     8.50     7.00
SO XBADJ    WESP       -4.00    -5.00    -5.50    -5.50    -5.50    -5.25
SO XBADJ    WESP       -4.75    -4.62    -4.00    -4.56    -5.12    -5.50
SO XBADJ    WESP       -5.50    -5.50    -5.00    -4.50    -4.00    -3.50
SO XBADJ    WESP       -4.00    -4.50    -5.00    -5.00    -5.50    -5.25
SO XBADJ    WESP       -5.00    -4.62    -4.00    -4.56    -5.00    -5.25
SO XBADJ    WESP       -5.25    -5.50    -5.00    -4.50    -4.00    -3.50
SO YBADJ    WESP       -0.06     0.06     0.00     0.00    -0.25     0.00
SO YBADJ    WESP       -0.25     0.25     0.00     0.00     0.00     0.00
SO YBADJ    WESP       -0.25    -0.12     0.00     0.00     0.00     0.00
SO YBADJ    WESP        0.00     0.00     0.25    -0.12     0.25     0.00
SO YBADJ    WESP       -0.25    -0.25     0.00     0.25     0.25     0.00
SO YBADJ    WESP       -0.25    -0.25     0.00     0.00     0.00     0.00


SO BUILDHGT PL1M        9.50     9.50     9.50     9.50     9.50     9.50
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SO BUILDHGT PL1M        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1M        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1M        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1M        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1M        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDWID PL1M      211.94   198.00   178.00   152.50   122.50    89.00
SO BUILDWID PL1M      113.00    41.00    55.00    67.00    77.50    85.00
SO BUILDWID PL1M       91.00    93.00   225.50   223.75   220.38   219.50
SO BUILDWID PL1M      211.94   197.88   178.00   152.50   122.50    89.00
SO BUILDWID PL1M      113.00    41.00   177.50   202.50   221.00   232.50
SO BUILDWID PL1M      237.50   235.00   225.25   223.75   220.38   219.47
SO BUILDLEN PL1M      202.00   221.00   232.50   237.00   235.00   225.50
SO BUILDLEN PL1M      223.50    91.25    87.31    80.75    71.75    60.50
SO BUILDLEN PL1M       47.25    33.00    89.00   113.00   147.50   177.50
SO BUILDLEN PL1M      202.50   220.50   232.50   237.50   234.75   225.50
SO BUILDLEN PL1M      223.50    91.25   219.47   211.94   198.00   178.00
SO BUILDLEN PL1M      152.50   122.50    89.00   113.00   147.50   177.50
SO XBADJ    PL1M     -153.50  -167.00  -174.50  -177.00  -174.50  -166.25
SO XBADJ    PL1M     -164.00  -109.38  -109.53  -106.44  -100.12   -90.75
SO XBADJ    PL1M      -78.50   -63.50   -20.50   -23.50   -33.00   -41.50
SO XBADJ    PL1M      -48.00   -53.50   -58.00   -60.00   -60.75   -59.25
SO XBADJ    PL1M      -59.50    18.12   -68.09   -73.88   -77.50   -78.75
SO XBADJ    PL1M      -77.50   -74.00   -68.50   -89.50  -114.50  -136.50
SO YBADJ    PL1M       32.03    21.50    10.25    -1.25   -12.75   -24.00
SO YBADJ    PL1M      -33.00    17.00     6.00    -5.50   -17.25   -28.00
SO YBADJ    PL1M      -38.00   -46.75   -53.50   -52.12   -49.94   -41.62
SO YBADJ    PL1M      -32.09   -21.44   -10.00     1.00    12.75    23.50
SO YBADJ    PL1M       33.00   -17.00    47.25    52.75    56.50    58.25
SO YBADJ    PL1M       58.25    56.75    53.62    52.12    49.94    41.64


SO BUILDHGT PL1E        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1E        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1E        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1E        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1E        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1E        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDWID PL1E      211.94   198.00   178.00   152.50   122.50    89.00
SO BUILDWID PL1E      113.00    41.00    55.00    67.00    77.50    85.00
SO BUILDWID PL1E       91.00   235.00   225.50   223.75   220.38   219.50
SO BUILDWID PL1E      211.94   197.88   178.00   152.50   122.50    89.00
SO BUILDWID PL1E      113.00   147.50   177.50   202.50   221.00   232.50
SO BUILDWID PL1E      237.50   235.00   225.25   223.75   220.38   219.47
SO BUILDLEN PL1E      202.00   221.00   232.50   237.00   235.00   225.50
SO BUILDLEN PL1E      223.50    91.25    87.31    80.75    71.75    60.50
SO BUILDLEN PL1E       47.25   122.50    89.00   113.00   147.50   177.50
SO BUILDLEN PL1E      202.50   220.50   232.50   237.50   234.75   225.50
SO BUILDLEN PL1E      223.50   220.38   219.47   211.94   198.00   178.00
SO BUILDLEN PL1E      152.50   122.50    89.00   113.00   147.50   177.50
SO XBADJ    PL1E     -157.50  -171.00  -179.00  -182.00  -179.50  -171.25
SO XBADJ    PL1E     -168.75  -113.88  -113.53  -109.88  -102.88   -92.75
SO XBADJ    PL1E      -79.50   -48.50   -20.00   -22.00   -31.00   -38.50
SO XBADJ    PL1E      -44.50   -49.50   -53.50   -55.00   -55.75   -54.25
SO XBADJ    PL1E      -54.75   -55.88   -64.09   -70.50   -74.75   -76.75
SO XBADJ    PL1E      -76.25   -74.00   -69.00   -90.50  -116.50  -139.50
SO YBADJ    PL1E       35.47    24.25    12.25    -0.25   -12.25   -24.50
SO YBADJ    PL1E      -34.50    15.00     3.00    -9.50   -21.25   -32.50
SO YBADJ    PL1E      -42.50   -62.00   -58.50   -56.88   -54.44   -45.62
SO YBADJ    PL1E      -35.53   -24.19   -12.00     0.00    12.25    24.00
SO YBADJ    PL1E       34.50    43.25    50.25    56.25    60.50    63.25
SO YBADJ    PL1E       63.25    61.50    58.62    57.12    54.44    45.64


SO BUILDHGT PL1W        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1W        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1W        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1W        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1W        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDHGT PL1W        9.50     9.50     9.50     9.50     9.50     9.50
SO BUILDWID PL1W      211.94   198.00   178.00   152.50   122.50    89.00
SO BUILDWID PL1W      113.00    41.00    55.00    67.00    77.50    85.00
SO BUILDWID PL1W       91.00    93.00    92.75   223.75   220.38   219.50
SO BUILDWID PL1W      211.94   197.88   178.00   152.50   122.50    89.00
SO BUILDWID PL1W      113.00    41.00    55.00   202.50   221.00   232.50
SO BUILDWID PL1W      237.50   235.00   225.25   223.75   220.38   219.47
SO BUILDLEN PL1W      202.00   221.00   232.50   237.00   235.00   225.50
SO BUILDLEN PL1W      223.50    91.25    87.31    80.75    71.75    60.50
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SO BUILDLEN PL1W       47.25   33.00   17.50  113.00  147.50  177.50
SO BUILDLEN PL1W      202.50  220.50  232.50  237.50  234.75  225.50
SO BUILDLEN PL1W      223.50   91.25   87.31  211.94  198.00  178.00
SO BUILDLEN PL1W      152.50  122.50   89.00  113.00  147.50  177.50
SO XBADJ    PL1W     -151.00 -164.00 -171.00 -173.00 -170.25 -161.75
SO XBADJ    PL1W     -159.50 -105.12 -105.53 -102.88  -97.12  -88.25
SO XBADJ    PL1W      -76.75  -62.50  -47.50  -24.00  -34.50  -43.50
SO XBADJ    PL1W      -51.00  -57.00  -62.00  -64.00  -65.00  -63.75
SO XBADJ    PL1W      -64.00   13.75   18.22  -77.50  -80.62  -81.25
SO XBADJ    PL1W      -79.25  -75.00  -68.50  -89.00 -113.00 -134.50
SO YBADJ    PL1W       28.41   18.50    7.75   -3.00  -13.75  -24.00
SO YBADJ    PL1W      -32.50   18.50    8.00   -3.00  -13.75  -24.50
SO YBADJ    PL1W      -33.50  -42.50  -49.62  -47.88  -45.69  -37.62
SO YBADJ    PL1W      -28.47  -18.44   -7.75    2.75   13.75   24.00
SO YBADJ    PL1W       32.50  -18.50   -8.00   50.25   53.00   54.75
SO YBADJ    PL1W       54.25   52.25   49.12   47.88   45.69   37.64


SO BUILDHGT PL2M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDWID PL2M      211.94  198.00  178.00  152.50  122.50   89.00
SO BUILDWID PL2M      113.00  147.50   55.00   67.00   77.50   85.00
SO BUILDWID PL2M       91.00   93.00  225.50  223.75  220.38  219.50
SO BUILDWID PL2M      211.94  197.88  178.00  152.50  122.50   89.00
SO BUILDWID PL2M      113.00  147.50  177.50  202.50  221.00  232.50
SO BUILDWID PL2M      237.50  235.00  225.25  223.75  220.38  219.47
SO BUILDLEN PL2M      202.00  221.00  232.50  237.00  235.00  225.50
SO BUILDLEN PL2M      223.50  220.38   87.31   80.75   71.75   60.50
SO BUILDLEN PL2M       47.25   33.00   89.00  113.00  147.50  177.50
SO BUILDLEN PL2M      202.50  220.50  232.50  237.50  234.75  225.50
SO BUILDLEN PL2M      223.50  220.38  219.47  211.94  198.00  178.00
SO BUILDLEN PL2M      152.50  122.50   89.00  113.00  147.50  177.50
SO XBADJ    PL2M     -145.00 -160.00 -169.50 -174.00 -173.50 -167.25
SO XBADJ    PL2M     -167.00 -165.25 -116.53 -115.12 -110.12 -101.75
SO XBADJ    PL2M      -90.25  -76.00  -33.00  -35.50  -44.00  -51.50
SO XBADJ    PL2M      -57.00  -60.50  -63.50  -63.00  -61.75  -58.25
SO XBADJ    PL2M      -56.50  -55.12  -61.09  -65.25  -67.50  -67.75
SO XBADJ    PL2M      -65.75  -62.00  -56.00  -77.50 -103.50 -126.50
SO YBADJ    PL2M       40.66   31.50   21.50   10.50   -0.75  -11.50
SO YBADJ    PL2M      -21.00  -29.75   16.00    3.00  -10.25  -23.00
SO YBADJ    PL2M      -34.50  -45.75  -54.50  -55.38  -55.06  -48.62
SO YBADJ    PL2M      -40.72  -31.44  -21.25  -10.75    0.25   11.50
SO YBADJ    PL2M       21.00   29.75   37.25   44.25   49.50   53.25
SO YBADJ    PL2M       55.25   55.50   54.62   55.38   55.19   48.64


SO BUILDHGT PL2E        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2E        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2E        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2E        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2E        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2E        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDWID PL2E      211.94  198.00  178.00  152.50  122.50   89.00
SO BUILDWID PL2E      113.00  147.50   55.00   67.00   77.50   85.00
SO BUILDWID PL2E       91.00   93.00  225.50  223.75  220.38  219.50
SO BUILDWID PL2E      211.94  197.88  178.00  152.50  122.50   89.00
SO BUILDWID PL2E      113.00  147.50  177.50  202.50  221.00  232.50
SO BUILDWID PL2E      237.50  235.00  225.25  223.75  220.38  219.47
SO BUILDLEN PL2E      202.00  221.00  232.50  237.00  235.00  225.50
SO BUILDLEN PL2E      223.50  220.38   87.31   80.75   71.75   60.50
SO BUILDLEN PL2E       47.25   33.00   89.00  113.00  147.50  177.50
SO BUILDLEN PL2E      202.50  220.50  232.50  237.50  234.75  225.50
SO BUILDLEN PL2E      223.50  220.38  219.47  211.94  198.00  178.00
SO BUILDLEN PL2E      152.50  122.50   89.00  113.00  147.50  177.50
SO XBADJ    PL2E     -148.50 -164.00 -174.00 -178.50 -178.50 -172.25
SO XBADJ    PL2E     -171.75 -169.75 -120.53 -118.50 -112.88 -103.75
SO XBADJ    PL2E      -91.25  -76.00  -32.00  -34.00  -42.00  -48.50
SO XBADJ    PL2E      -53.00  -56.50  -58.50  -58.50  -56.75  -53.25
SO XBADJ    PL2E      -51.50  -50.62  -57.09  -61.81  -64.75  -65.75
SO XBADJ    PL2E      -64.50  -61.50  -57.00  -79.00 -105.50 -129.50
SO YBADJ    PL2E       44.09   34.25   23.25   11.50   -0.25  -12.50
SO YBADJ    PL2E      -22.50  -32.25   13.00   -0.50  -14.25  -27.50
SO YBADJ    PL2E      -39.50  -50.75  -59.50  -60.12  -59.56  -52.62
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SO YBADJ     PL2E      -44.16  -34.19  -23.25  -11.75    0.25   12.00
SO YBADJ     PL2E       22.50   32.25   40.25   47.75   53.50   57.75
SO YBADJ     PL2E       59.75   60.50   59.62   60.12   59.56   52.64


SO BUILDHGT PL2W        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2W        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2W        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2W        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2W        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL2W        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDWID PL2W      211.94  198.00  178.00  152.50  122.50   89.00
SO BUILDWID PL2W      113.00  147.50   55.00   67.00   77.50   85.00
SO BUILDWID PL2W       91.00   93.00   92.75  223.75  220.38  219.50
SO BUILDWID PL2W      211.94  197.88  178.00  152.50  122.50   89.00
SO BUILDWID PL2W      113.00  147.50  177.50  202.50  221.00  232.50
SO BUILDWID PL2W      237.50  235.00  225.25  223.75  220.38  219.47
SO BUILDLEN PL2W      202.00  221.00  232.50  237.00  235.00  225.50
SO BUILDLEN PL2W      223.50  220.38   87.31   80.75   71.75   60.50
SO BUILDLEN PL2W       47.25   33.00   17.50  113.00  147.50  177.50
SO BUILDLEN PL2W      202.50  220.50  232.50  237.50  234.75  225.50
SO BUILDLEN PL2W      223.50  220.38  219.47  211.94  198.00  178.00
SO BUILDLEN PL2W      152.50  122.50   89.00  113.00  147.50  177.50
SO XBADJ     PL2W    -141.00 -155.00 -164.00 -167.50 -167.00 -160.75
SO XBADJ     PL2W    -160.50 -158.88 -110.53 -109.69 -105.50  -98.00
SO XBADJ     PL2W     -87.50  -74.50  -59.50  -36.00  -46.00  -54.50
SO XBADJ     PL2W     -61.00  -65.50  -69.00  -69.50  -68.25  -64.75
SO XBADJ     PL2W     -63.00  -61.62  -67.09  -70.62  -72.12  -71.50
SO XBADJ     PL2W     -68.25  -63.50  -56.50  -76.50 -101.50 -123.50
SO YBADJ     PL2W      35.28   27.00   17.75    7.75   -2.25  -12.00
SO YBADJ     PL2W     -20.50  -28.25   19.00    7.00   -5.25  -17.00
SO YBADJ     PL2W     -28.50  -39.25  -48.38  -48.62  -48.69  -42.62
SO YBADJ     PL2W     -35.34  -26.81  -17.50   -8.00    1.75   12.00
SO YBADJ     PL2W      20.50   28.25   34.25   40.25   44.50   47.75
SO YBADJ     PL2W      48.75   49.00   47.88   48.62   48.69   42.64


SO BUILDHGT PL3M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3M        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDWID PL3M      151.88  168.88  169.25  164.75  154.50  140.50
SO BUILDWID PL3M      209.00  207.00  199.50  186.00  166.00  141.50
SO BUILDWID PL3M      113.00   80.25   45.50   60.50   94.12  124.88
SO BUILDWID PL3M      151.81  174.12  191.25  202.50  207.50  206.00
SO BUILDWID PL3M      208.50  207.50  199.50  185.50  166.00  141.50
SO BUILDWID PL3M      112.50   80.25   45.75   60.50   94.12  124.91
SO BUILDLEN PL3M      185.50  114.00  103.00  105.00  104.75  101.00
SO BUILDLEN PL3M       60.50   94.12  124.88  151.88  174.12  191.25
SO BUILDLEN PL3M      202.50  207.50  206.50  208.50  207.50  199.50
SO BUILDLEN PL3M      185.50  166.00  141.50  113.00   80.25   45.50
SO BUILDLEN PL3M       60.75   94.25  124.91  151.88  174.25  191.25
SO BUILDLEN PL3M      202.50  207.50  206.00  209.00  207.50  199.50
SO XBADJ     PL3M    -122.00 -147.00 -140.00 -145.50 -147.25 -144.25
SO XBADJ     PL3M     -33.00  -43.50  -52.81  -60.50  -66.25  -70.25
SO XBADJ     PL3M     -71.75  -71.00  -68.50  -69.50  -70.00  -67.50
SO XBADJ     PL3M     -63.00  -56.50  -49.00  -40.00  -29.50  -17.75
SO XBADJ     PL3M     -27.50  -50.62  -72.06  -91.44 -108.00 -121.25
SO XBADJ     PL3M    -130.75 -136.50 -138.00 -139.50 -137.50 -132.50
SO YBADJ     PL3M     -15.56   10.19  -10.12  -30.12  -49.25  -67.25
SO YBADJ     PL3M     -35.00  -34.00  -32.25  -29.50  -26.50  -21.75
SO YBADJ     PL3M     -16.50  -11.12   -5.00   -2.75    3.44    9.62
SO YBADJ     PL3M      15.47   20.94   25.88   29.50   32.75   34.50
SO YBADJ     PL3M      34.75   34.25   32.25   29.75   26.00   21.25
SO YBADJ     PL3M      16.25   10.88    5.12    2.75   -3.44   -9.61


SO BUILDHGT PL3N        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3N        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3N        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3N        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3N        9.50   22.50   22.50    9.50    9.50    9.50
SO BUILDHGT PL3N        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDWID PL3N      151.88  168.88  169.25  164.75  154.50  206.00
SO BUILDWID PL3N      209.00  207.00  199.50  186.00  166.00  141.50
```

```
SO BUILDWID PL3N       113.00   80.25   45.50   60.50   94.12  124.88
SO BUILDWID PL3N       151.81  174.12  191.25  202.50  207.50  206.00
SO BUILDWID PL3N       208.50   16.50   19.00  185.50  166.00  141.50
SO BUILDWID PL3N       112.50   80.25   45.75   60.50   94.12  124.91
SO BUILDLEN PL3N       185.50  114.00  103.00  105.00  104.75   45.50
SO BUILDLEN PL3N        60.50   94.12  124.88  151.88  174.12  191.25
SO BUILDLEN PL3N       202.50  207.50  206.50  208.50  207.50  199.50
SO BUILDLEN PL3N       185.50  166.00  141.50  113.00   80.25   45.50
SO BUILDLEN PL3N        60.75   21.88   22.12  151.88  174.25  191.25
SO BUILDLEN PL3N       202.50  207.50  206.00  209.00  207.50  199.50
SO XBADJ    PL3N      -131.00 -154.50 -146.00 -149.50 -149.25  -27.50
SO XBADJ    PL3N       -30.75  -39.38  -46.81  -52.81  -57.25  -60.00
SO XBADJ    PL3N       -60.75  -59.50  -57.00  -58.00  -59.00  -57.50
SO XBADJ    PL3N       -54.00  -49.50  -43.50  -36.00  -27.50  -18.00
SO XBADJ    PL3N       -29.75 -114.00 -114.75  -99.06 -117.12 -131.50
SO XBADJ    PL3N      -141.75 -148.00 -149.50 -151.00 -148.50 -142.50
SO YBADJ    PL3N       -23.19    1.19  -20.38  -41.12  -60.75  -46.50
SO YBADJ    PL3N       -46.50  -45.00  -42.25  -38.50  -33.50  -27.25
SO YBADJ    PL3N       -20.50  -12.88   -4.75   -0.50    7.69   15.62
SO YBADJ    PL3N        23.09   29.94   35.88   40.50   44.25   46.00
SO YBADJ    PL3N        46.25   12.75   -5.50   38.75   33.50   27.25
SO YBADJ    PL3N        20.25   12.62    4.88    0.50   -7.56  -15.61


SO BUILDHGT PL3S         9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3S         9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3S         9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3S         9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3S         9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT PL3S         9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDWID PL3S       151.88  168.88  169.25  164.75  154.50  140.50
SO BUILDWID PL3S       139.00  139.00  199.50  186.00  166.00  141.50
SO BUILDWID PL3S       113.00   80.25   45.50   60.50   94.12  124.88
SO BUILDWID PL3S       151.81  174.12  191.25  202.50  207.50  206.00
SO BUILDWID PL3S       208.50  138.50  199.50  185.50  166.00  141.50
SO BUILDWID PL3S       112.50   80.25   45.75   60.50   94.12  124.91
SO BUILDLEN PL3S       185.50  114.00  103.00  105.00  104.75  101.00
SO BUILDLEN PL3S       118.25  137.62  124.88  151.88  174.12  191.25
SO BUILDLEN PL3S       202.50  207.50  206.50  208.50  207.50  199.50
SO BUILDLEN PL3S       185.50  166.00  141.50  113.00   80.25   45.50
SO BUILDLEN PL3S        60.75  137.62  124.91  151.88  174.25  191.25
SO BUILDLEN PL3S       202.50  207.50  206.00  209.00  207.50  199.50
SO XBADJ    PL3S      -109.00 -135.50 -130.00 -137.50 -141.25 -140.75
SO XBADJ    PL3S      -140.25 -137.12  -56.81  -66.88  -74.75  -80.75
SO XBADJ    PL3S       -83.75  -84.00  -82.50  -84.00  -84.50  -81.50
SO XBADJ    PL3S       -76.00  -68.50  -59.50  -48.00  -35.25  -21.25
SO XBADJ    PL3S       -28.50   -0.62  -68.06  -85.06  -99.50 -110.75
SO XBADJ    PL3S      -118.75 -123.50 -123.50 -125.00 -123.00 -118.50
SO YBADJ    PL3S        -9.19   18.81    0.38  -18.12  -35.75  -52.75
SO YBADJ    PL3S       -62.00  -69.00  -18.25  -16.50  -14.50  -11.75
SO YBADJ    PL3S        -8.50   -5.12   -1.25   -1.75    1.94    5.62
SO YBADJ    PL3S         9.09   12.31   15.38   17.50   19.25   20.50
SO YBADJ    PL3S        20.25   69.25   18.25   16.75   14.00   11.25
SO YBADJ    PL3S         8.25    4.88    1.62    1.75   -1.94   -5.61


SO BUILDHGT RESPLT      22.50   22.50   22.50   22.50   10.50   10.50
SO BUILDHGT RESPLT      10.50   10.50   10.50   22.50   22.50   22.50
SO BUILDHGT RESPLT      22.50   22.50   22.50   22.50   22.50   22.50
SO BUILDHGT RESPLT      22.50   22.50   22.50   22.50   10.50   10.50
SO BUILDHGT RESPLT      10.50   10.50   10.50   22.50   22.50   22.50
SO BUILDHGT RESPLT      22.50   22.50   22.50   22.50   22.50   22.50
SO BUILDWID RESPLT      21.69   20.62   19.00   16.50   31.50   28.00
SO BUILDWID RESPLT      30.00   34.00   36.50   21.50   22.50   23.50
SO BUILDWID RESPLT      23.50   23.00   21.75   21.00   21.88   22.12
SO BUILDWID RESPLT      21.69   20.62   18.75   16.75   31.50   28.00
SO BUILDWID RESPLT      30.00   34.00   36.50   21.00   22.50   23.50
SO BUILDWID RESPLT      23.50   22.75   21.75   21.00   21.88   22.12
SO BUILDLEN RESPLT      21.00   23.00   23.50   24.00   32.75   28.50
SO BUILDLEN RESPLT      29.00   32.62   35.16   21.69   20.62   18.75
SO BUILDLEN RESPLT      16.75   13.50   11.00   13.00   16.50   19.00
SO BUILDLEN RESPLT      21.50   23.00   23.50   23.50   32.75   28.75
SO BUILDLEN RESPLT      29.00   32.62   35.16   21.69   20.62   18.75
SO BUILDLEN RESPLT      16.50   13.50   11.00   13.50   16.50   19.00
SO XBADJ    RESPLT      10.00    7.50    5.00    2.50  -10.25   -5.75
SO XBADJ    RESPLT      -3.50   -3.25   -2.84  -17.94  -21.00  -23.25
SO XBADJ    RESPLT     -25.00  -25.50  -26.00  -27.50  -30.00  -31.00
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SO XBADJ    RESPLT    -31.00  -30.50  -29.00  -26.00  -22.50  -23.00
SO XBADJ    RESPLT    -25.50  -29.50  -32.31   -3.81    0.25    4.25
SO XBADJ    RESPLT      8.25   12.00   15.00   14.50   13.50   11.50
SO YBADJ    RESPLT      6.97   10.56   13.75   16.50  -15.75  -14.50
SO YBADJ    RESPLT    -12.00   -9.50   -7.25   20.25   19.25   16.75
SO YBADJ    RESPLT     14.25   11.25    8.12    4.25    0.56   -3.31
SO YBADJ    RESPLT     -7.03  -10.56  -13.62  -16.62   16.25   14.50
SO YBADJ    RESPLT     12.00    9.50    7.25  -20.50  -18.75  -17.25
SO YBADJ    RESPLT    -14.75  -11.62   -8.12   -4.25   -0.56    3.31


SO BUILDHGT DP21        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT DP21        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT DP21        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT DP21        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDHGT DP21        9.50    9.50    9.50   22.50   22.50   22.50
SO BUILDHGT DP21        9.50    9.50    9.50    9.50    9.50    9.50
SO BUILDWID DP21      151.88  174.25  191.25  202.50  207.50  206.00
SO BUILDWID DP21      209.00  207.00  199.50  186.00  166.00  141.50
SO BUILDWID DP21      113.00   80.25   45.50   60.50   94.12  124.88
SO BUILDWID DP21      151.81  174.12  191.25  202.50  207.50  206.00
SO BUILDWID DP21      208.50  207.50  199.50   21.00   22.50   23.50
SO BUILDWID DP21      112.50   80.25   45.75   60.50   94.12  124.91
SO BUILDLEN DP21      185.50  166.00  141.50  112.50   80.50   45.50
SO BUILDLEN DP21       60.50   94.12  124.88  151.88  174.12  191.25
SO BUILDLEN DP21      202.50  207.50  206.50  208.50  207.50  199.50
SO BUILDLEN DP21      185.50  166.00  141.50  113.00   80.25   45.50
SO BUILDLEN DP21       60.75   94.25  124.91   21.69   20.62   18.75
SO BUILDLEN DP21      202.50  207.50  206.00  209.00  207.50  199.50
SO XBADJ    DP21     -172.00 -155.00 -133.00 -106.50  -77.75  -46.00
SO XBADJ    DP21      -42.50  -43.75  -43.81  -42.62  -40.00  -36.50
SO XBADJ    DP21      -31.25  -25.00  -19.00  -17.50  -17.00  -15.50
SO XBADJ    DP21      -13.00  -11.00   -8.50   -6.00   -2.75    0.50
SO XBADJ    DP21      -18.25  -50.50  -81.06 -122.19 -123.00 -120.00
SO XBADJ    DP21     -171.00 -182.00 -187.50 -191.50 -190.50 -184.50
SO YBADJ    DP21      -33.44  -47.12  -59.38  -70.00  -78.25  -84.50
SO YBADJ    DP21      -87.00  -87.00  -84.25  -79.50  -72.00  -62.25
SO YBADJ    DP21      -50.50  -37.62  -23.00  -12.00    3.31   18.62
SO YBADJ    DP21       33.34   47.19   59.62   70.00   78.25   84.00
SO YBADJ    DP21       86.75   87.25   84.25   17.50   -1.75  -22.25
SO YBADJ    DP21       50.25   37.38   23.38   12.00   -3.31  -18.61

SO SRCGROUP ALL
SO FINISHED

RE STARTING
RE GRIDCART CAR1 STA
                XYINC 412150 81 50. 5955400. 81 50.
RE GRIDCART CAR1 END
RE DISCCART 413415 5959025
RE DISCCART 414426 5959000
RE DISCCART 414499 5958053
RE DISCCART 414892 5957547
RE DISCCART 415299 5957567
RE DISCCART 415334 5957513
RE DISCCART 415677 5957248
RE DISCCART 415152 5957179
RE DISCCART 414220 5956546
RE DISCCART 413866 5956576
RE DISCCART 413704 5956487
RE DISCCART 413302 5956139
RE DISCCART 412772 5956296
RE DISCCART 412477 5957744
RE DISCCART 413066 5958220
RE FINISHED

ME STARTING
   SURFFILE "benalla2016.sfc"
   PROFFILE "benalla2016.pfl"
   SURFDATA 00011  2016  Benalla
   UAIRDATA  00099  2016  TAPM
   SITEDATA  00022  2016  Benalla
   PROFBASE  0 METERS
ME FINISHED

OU STARTING
   RECTABLE  ALLAVE  1ST 9TH
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   MAXTABLE  ALLAVE 200
   PLOTFILE 1 ALL  9TH    2016-formladehyde-Supplier 1-1HR-9TH.PLT
   PLOTFILE 24 ALL 1ST    2016-formladehyde-Supplier 1-24HR-1ST.PLT
   PLOTFILE  PERIOD ALL   2016-formaldehyde-Supplier 1-annual.plt
   MAXIFILE  1 ALL 22.222 2016-formaldehyde-Supplier 1-3min-40-
   ugm3.LST
   RANKFILE  1 200        2016-formaldehyde-Supplier 1-1hr.TXT
   RANKFILE 24 200        2016-formaldehyde-Supplier 1-
   24hr.TXT SUMMFILE      2016-formaldehyde-Supplier 1.SUM
OU FINISHED
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