DUSTWATCH CC
Company Registration Number : 2008/134744/23
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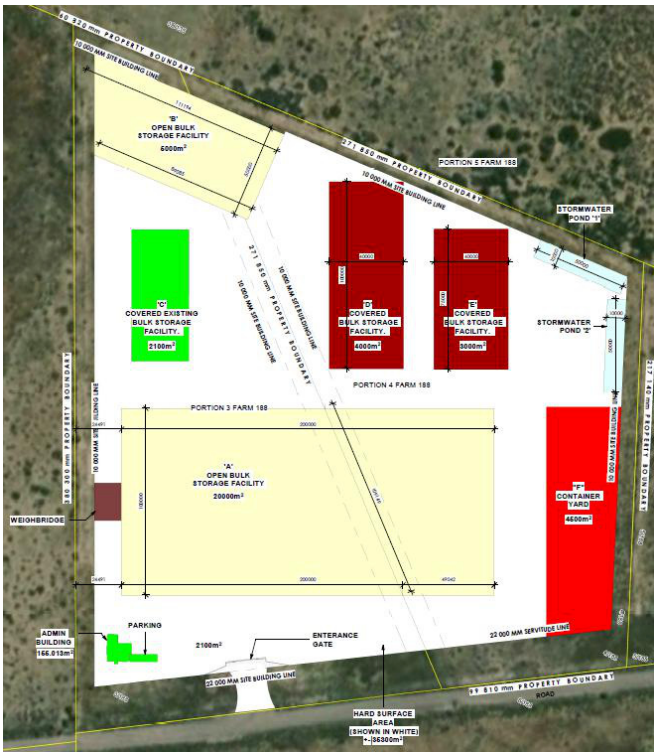

DUST MANAGEMENT PLAN FOR DRY BULK SALDANHA TERMINAL

This is an operational phase dust management plan for Dry Bulk Saldanha Terminal, in terms of the National Dust Control Regulation of 2013. PORTION 3&4 OF THE FARM 188 LANGEBERG (VREDENBURG)

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DUST MANAGEMENT PLAN FOR THE OPERATIONAL PHASE OF DRY BULK SALDANHA TERMINAL.

1. INTRODUCTION

This is an operation phase dust management plan (after the construction for the expansion is complete), in terms of the National Dust Control Regulations of 2013.

2. OBJECTIVES

The Company operates on the site and stores material in bulk for customers.

A dust management plan is only as good as its implementation and the Company is responsible to ensure the plan is implemented so that the dust levels can be controlled.

The Company intends to institute the contents of this plan and in so doing, to achieve the objectives required.

The objective is to control the fallout dust levels so that they are below the respective action levels by daily Dust Management Plan supervision and implementation.

The Dust Management Plan will be kept as simple as possible initially and then as activity increases and the fallout dust levels indicate increasing fallout dust levels, the Dust Management Plan can be upgraded.

3. NATIONAL ENVIRONMENTAL AIR QUALITY ACT

To comply with the National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004), as it pertains to monitoring fallout dust levels and management thereof, including the Dust Control Regulations GNR 827 of 2013. A sampling system will be installed and managed based on these Dust Control Regulation requirements.

4. RESPONSIBILITIES

To generate and then abide by a Dust Management Plan.

4.1. Monitoring

To engage the services of a reputable Fallout Dust Monitoring Company to perform the services of monitoring the levels of fallout dust at locations specified in this document. This service provider must further provide monthly reports to the Company with historical data to track all trends and also to note compliance with the levels as detailed in the National Dust Control Regulations of the National Environmental Management Air Quality Act, 2004 (Act No.39 of 2004).

4.2. Legal Responsibilities

To ensure that the level of fallout dust is below 600mg/m^2/day over a 30-day average for the areas defined as residential, and to ensure that the level of fallout dust is below 1200 mg/m^2/day over a 30-day average for the areas defined as non-residential (As per the local municipality definitions). The National dust control regulations apply.

To ensure that the contractors on the site are aware of and work towards achieving the fallout dust levels that will make the site compliant. Contractual clauses will be included in the agreements with the contractors to motivate contractors to be diligent with regard to the dust control measures they use on the site. It may be useful for the contractors to generate their own internal dust management plan to the Company so that the Company can hold the contractors accountable for their own individual dust monitoring plans. The Company is ultimately responsible for exceedances and the West Coast District Municipality (WCDM) will hold the Company responsible for dust exceedances and non-conformances to their Dust Management Plan.

5. SOURCES OF DUST

Currently the site activity is generating low levels of dust as the material being stored contains minimal fine particulate. The fallout dust levels are compliant.

It is important for each source to be identified so that customised dust control measures can be applied to each specific source.

Dust sources are predominantly going to be related to vehicle movement on the site.

6. SITE PLAN

The operational site plan will be as in the figure below. The site is classified as non-residential according to the definitions provided in the National Dust Control

Regulations.

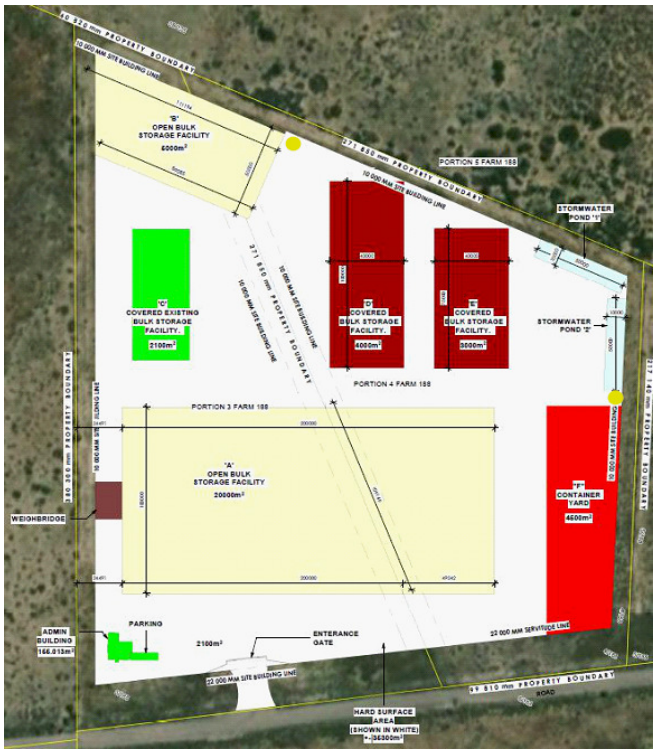


Figure 1: Proposed locations (Yellow circles) of the fallout dust monitoring units.

The land uses and extent (approximate values) of the site are summarised as follows:

BULK STORAGE FACILITY (COVERED)

- STORAGE AREA "C": 2100m²
- STORAGE AREA "D": 4000m²
- STORAGE AREA "E": 3000m²

BULK STORAGE FACILITY (OPEN)

- STORAGE AREA "A": 20000m²
- STORAGE AREA "B": 5000m²

CONTAINER YARD

- STORAGE AREA "F": 5000.00m²

REMAINING YARD AREA (HARD SURFACE) :35300.00m²

The Appendix shows a larger image of the site plan in detail.

7. DAILY DUST MANAGEMENT

The months that are the most likely to yield elevated fallout dust results are from 1 October to 31 March each year, and it is during these months that the diligent implementation of this plan will be required so that the fallout dust levels do not exceed the non-residential action level of 1200mg/m^2/day.

Using the MeteoGram (See Appendix) or similar information providing a weather forecast, the precipitation and wind speed, including wind gusts can be predicted.

An initial starting point for the dust management plan is a wind speed limit of **60**km/hour during the months 1 October to 31 March, and no movement of vehicles and other dust generating activities will be done till the wind speed drops to below **60**km/hour. If this limit of **60**km/hour is found to be too high, then it can be decreased till the fallout dust levels are below the required non-residential action level. If the predicted wind speed is above **60**km/hour for any given hour of a day, then this can be included in the planning for the day or the week. The type of material being excavated or worked with will also impact the wind speed limit and this will be determined by the fallout dust monitoring units as well as visual observations of the dust being generated. As a starting point for gusts, a limit of **70**km/h for wind gusts will be used, only during the months 1 October to 31 March 2020. Dry weeks during the months 1 April to 30 September with high wind speeds may also be a concern, and the Dust Management Plan can be adjusted to incorporate control measures for these situations if required or recommended by the WCDM.

The weather for the site will be determined using the information provided by www.meteoblue.com which will also be used to provide the weather information for the monthly fallout dust monitoring reports, and any other reports requiring weather data.

- Note that both wind speed and wind gust speed are important, and these should both be used to assist in controlling the dust as per the requirements of the Dust Management Plan.

- 1 October to 31 March are the months with the highest wind speed and the lowest rainfall. These months are the most likely months to exceed the respective action levels and it will be important to maintain the dust control measures diligently in these months.

- The prevailing wind direction from 1 October to 31 March is from the South and the South South East. During the months from 1 April till 30 September, the wind direction is split between the North West and South East directions as the

rain comes and goes. The directions are predominantly from the North West, and North North West, South, and South South East directions.

The fallout dust monitoring programme will be used to determine if additional actions are required to control the fallout dust levels from the site. If the results at one of the units exceed the applicable non-residential action level over a 30-day period, then additional dust control measures will be implemented, and the dust management plan upgraded to prevent future exceedances. If the dust levels are below the applicable action level, then it is in an indication that the current dust control measures are adequate for the site and that the dust management plan is being implemented successfully.

The triggers below will be used to prompt action and implementation of the Dust Management Plan.

1. Visual: If visible dust is noted on site from any activity
2. Weather forecast: If dry conditions and strong winds are forecasted
3. Dust Monitoring: If any of the dust buckets are non-compliant as per the definitions of the Dust Control Regulations.

A 20km/h speed limit is to be enforced on site at all times for all vehicles. Any entrance areas must be reinforced to prevent heavy trucks from damaging the road and generating excessive dust. Uphill ramps should be limited in gradient as much as possible.

Loading and offloading dusty material should only be done if the wind is not excessive. Wind speeds to be below **60**km/hour or as per the wind speed limit decided on in future upgrades of this Dust Management Plan.

7.1. Site Dust

Roadways will be planned and demarcated for the site so that trucks and light vehicles only travel on these roads. Road surfaces will be maintained, and adequate drainage provided from the road.

Sprinklers should be used to wet down open areas, roads and stockpiles that are identified as a source of dust.

The use of a watering truck is optional, as the sprinklers, if working reliably will be sufficient.

The use of Eco Dust 200 D as a Ligno Sulphate (lignosulfonates) that assists in coalescing and stabilisation of dust surfaces can be used for the treatment of the gravel roadways, open areas, and stockpiles if required. This will decrease the amount of watering required, especially for large unused open areas.

Open exposed areas can also be treated either with once off treatments or treatments every three months with Eco Dust 200D.

Vegetation removal for the site will be planned to minimise the length of time that land is open and exposed as a dust source.

Any large open areas that become exposed and are identified as a dust source will be cordoned off to prevent vehicles and other activities from disturbing the area. If no vegetation is growing, and the areas is identified as a dust source, then a once off treatment of Eco Dust 200D can be applied to stabilise the area.

Sprinklers are being used on the site and the network of sprinklers will be expanded to cover those areas of the site that are identified as dust sources. The Company is mindful of the scarcity of water of a potable nature and the use of treated water or on-site water may be able to be used for this purpose, with the appropriate permissions from the authorities.

A checklist will be kept of the watering activities as proof that they are being done and to quantify the amount of potable and other water used per month for this purpose. The check list will also confirm that the sprinklers are being adequately maintained so that they remain effective.

The use of compressed air to clean dust from building surfaces, roadways or people is not allowed for any reason.

7.2. Product stockpiles

The site currently stores Garnet and Ilmenite. The products being stored on the site contain a very low fine dust component and the height of these stockpiles must be no higher than 8m, provided they are not determined to be a source of dust, either visually or by the fallout dust monitoring programme. If other materials are stored in the future that do have a high fine dust component then additional dust control measures will be required, and the plan updated to manage them.

7.3. Off-site sources of dust

The gravel road to the south of the site is a potential source of dust and many vehicles from different companies use this road. The Company will apply dust control measures to the roadway for the section of the road directly to the south of their site to assist with the control measures on this road and to minimise dust levels on the site. Other companies in the area should also do the same. Dust control measures include slowing down vehicles and maintaining the road surface adequately. The use of sprinklers is also an option for this road.

8. MONITORING

Monitoring of the fallout dust levels is used by the WCDM and other interested parties, to determine if the Dust Management Plan is being implemented effectively. If the monitoring levels are below the applicable action levels, then the Dust Management Plan is considered to be working well. If the levels increase to above the applicable action levels, then the Dust Management Plan needs to be upgraded to provide additional controls for the dust sources responsible for the elevated dust levels.

8.1. Appointment of a Company to Perform Fallout Monitoring

In terms of the Quality Act, 2004 (Act No.39 of 2004) the Company is required to implement a fallout dust monitoring program. DustWatch cc has be contracted to perform these services.

8.2. Dust Management Plan Implementation

The Company is required to perform daily inspections and if necessary, cease operations if conditions are such that it warrants such action. The Company must appoint a dedicated staff member, or an employee of the environmental consulting company for this, but responsibility will be vested with the Company operations manager or director.

8.3. Plan for Monitoring Stations

Currently there is one monitoring station on the site, and as mentioned the fallout dust levels re expected to be low due to the nature of the material being stored on the site. The plan is to install a second unit in December 2020.

Considering the prevailing wind during the months at risk of elevated fallout dust levels, 1 October to 31 March, and taking the dust sensitive areas into account, two fallout dust monitoring locations are recommended. The site has only one dust sensitive area (Transnet) to the East of the site and this is not in the prevailing wind directions for the year. The non-residential action level will be applicable to each of these units.

The appendix contains the proposed locations of the **two** fallout monitoring stations. This is shown below as well for information purposes. The monitors are as per the ASTM D1739 (1970) standard as required by the Dust Control Regulations.

Figure 2: Proposed locations (Yellow circles) of the fallout dust monitoring units and an image of the recommended unit.

If requested by the WCDM additional units can be added.

9. REPORTING

Reporting of the fallout dust levels monthly to the Company will be required. The Company will then be responsible to report to the WCDM.

9.1. Fallout Dust Reporting

These reports will be received monthly in arrears after completion of the month (21-day turnaround time from bucket changing to reporting). A copy of the report will be filed in the Company's Dust File and copies will be distributed to the interested parties. If requested, a copy will be emailed to any Air Quality Officer that requests it.

These reports must be made available for both internal and external audit purposes. Compliance to the Dust Control Regulations of 2013 is achieved if regular reporting is done, and if the dust management plan is maintained and implemented adequately as determined by the air quality officer.

10. MONTHLY WATERING SHEET

The weekly watering sheet must be placed in the Dust File after completion of the calendar month. The sheet will indicate when area watering has taken place on specific days and at what time. This record will include stockpile watering.

If any application of a binding agent is used, then this can also be noted on the watering sheet.

The watering sheet must include the following information for each day:

- the volume of water used by any sprinkler system
- volume of water used, (If a watering truck is being used)
- volume of dust control additive used (If a watering truck is being used)
- the number of vehicle watering trips per day (If a watering truck is being used).

11. COMPLAINTS REGISTER

In terms of the Dust Control Regulations, a complaints register must be kept for any complaints received from any persons whatsoever. The complaint procedure also needs to be communicated to the surrounding interested parties so that the procedure can be followed when required by those wanting to raise a complaint.

Copies of any notices received from the WCDM in respect of non-compliance must be pasted in said register.

A note must be made in the register as to the detailed corrective action taken when each complaint is received.

The Company will take all complaints seriously and address them timeously so as to assist the WCDM.

Requests by the community or persons to receive copies of the fallout dust monitoring reports will be directed to the West Coast District Municipality (WCDM), as all reports will be made available to the WCDM, on request.

DustWatch cc is available to assist with communication at community forum and public participation meetings if required.

12. NON-COMPLIANCE

Non-compliance to the legislated fallout levels will typically be indicated on the monthly fallout dust reports. Where a month exceeds the fallout levels this will be investigated, and a record must be kept of the corrective measures taken to alleviate the problem. These measures must be filed in the Dust File and the Dust

Management Plan updated so that the measures can be actioned as part of the future daily procedures.

13. SEVERE WEATHER EVENTS AND WEATHER FORECASTING

Severe weather events that can typically create extreme dust conditions must be identified timeously through the constant monitoring of 5-day weather forecasting sites such as www.meteoblue.com and pre-emptive actions must be planned to negate the adverse effects of such conditions.

14. PLANNING AND CO-ORDINATION MEETINGS

These will be called should they be required, and all interested and affected parties and role players notified accordingly.

14.1. Planning and Co-Ordination Meetings

Meetings will be held between the Company and the contractor representatives, and any other interested parties. Minutes must be kept of said meetings and the objective of the meetings is to discuss co-operation in respect of joint dust control measures as well as potential compliance issues and the actions to be taken in this regard. DustWatch cc can be approached for input if required.

14.2. Meeting with Neighbours

If meetings with neighbouring companies or other persons are proposed, then minutes of these meetings must be kept in the Dust File. The purpose of these meetings would be to keep track of their concerns and also to advise them as to the monitoring outcomes, including any actions taken to control the fallout dust levels.

15. SIGNATURES

The Company agrees to this Dust Management Plan

Signatures and responsible persons (names and contact numbers) are shown below.

A minimum of two signatures are required. One representing the ownership of the Company, and the other as the Company representative that is on site each day as the project manager or in a similar role. Additional signatures from other contractor interested parties could be added if decided by the Company.

Ultimate responsibility is on the Owners and Managers. The person responsible for the checking of day to day dust generating activities must also be listed as one of the signatories, along with the owners.

PLACE:

DATE:

Person 1 Tel:
Title:

Signature:

Person 1 Tel:
Title:

Signature:

Person 1 Tel:
Title:

Signature

Person 1 Tel:
Title:

Signature

Person 1 Tel:
Title:

Signature

Person 1 Tel:
Title:

Signature

Reviewed by

Chris. Loans 082 875 0209 (www.dustwatch.com)

Updated 09-Nov-20

Doc Number: 1120091747

16. Appendix: Additional Information pertaining to the Location.

PORTION 3&4 OF THE FARM 188 LANGEBERG AREA CALCULATIONS:

The land uses and extent (approximate values)

of the site are summarised as follows:

BULK STORAGE FACILITY (COVERED)

• STORAGE AREA "C" :2100.00m²

• STORAGE AREA "D" :4000.00m²

• STORAGE AREA "E" :3000.00m²

BULK STORAGE FACILITY (OPEN)

• STORAGE AREA "A" :20000.00m²

• STORAGE AREA "B" :5000.00m²

CONTAINER YARD

• STORAGE AREA "F" :5000.00m²

REMAINING YARD AREA (HARD SURFACE) :35300.00m²

The PDF file can be downloaded to view this in higher definition.

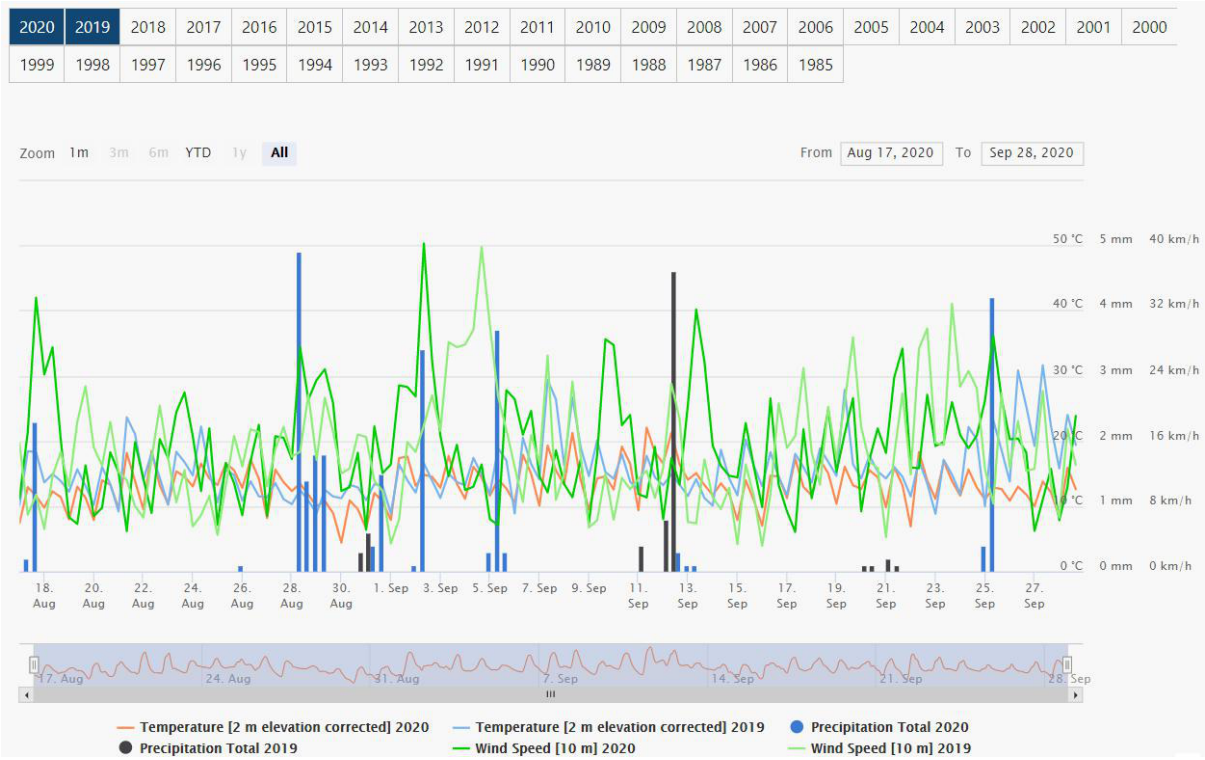
17. Appendix: Weather and Weather options

- This is taken from this site www.meteoblue.com.
- An example of the information that will be available from www.meteoblue.com is shown below.
- A MeteoGram is also available from MeteoBlue and this is an excellent tool for predicting the weather five days in advance. This can assist with the planning of certain activities to be done on the days when the wind speed is low or on the day, or after the day of precipitation.
- WindGuru is also a good option for predicting and checking windspeeds.
- Note that both wind speed and wind gust speed are important, and these should both be used to assist in controlling the dust as per the requirements of the Dust Management Plan.
- 1 October to 31 March are the months with the highest wind speed and the lowest rainfall. These months are the most likely months to exceed the respective action levels and it will be important to maintain the dust control measures diligently in these months.
- The prevailing wind direction from 1 October to 31 March is from the South and the South South East. During the months from 1 April till 30 September, the wind direction is split between the North West and South East directions as the rain comes and goes. The directions are predominantly from the North West, and North North West, South, and South South East directions.

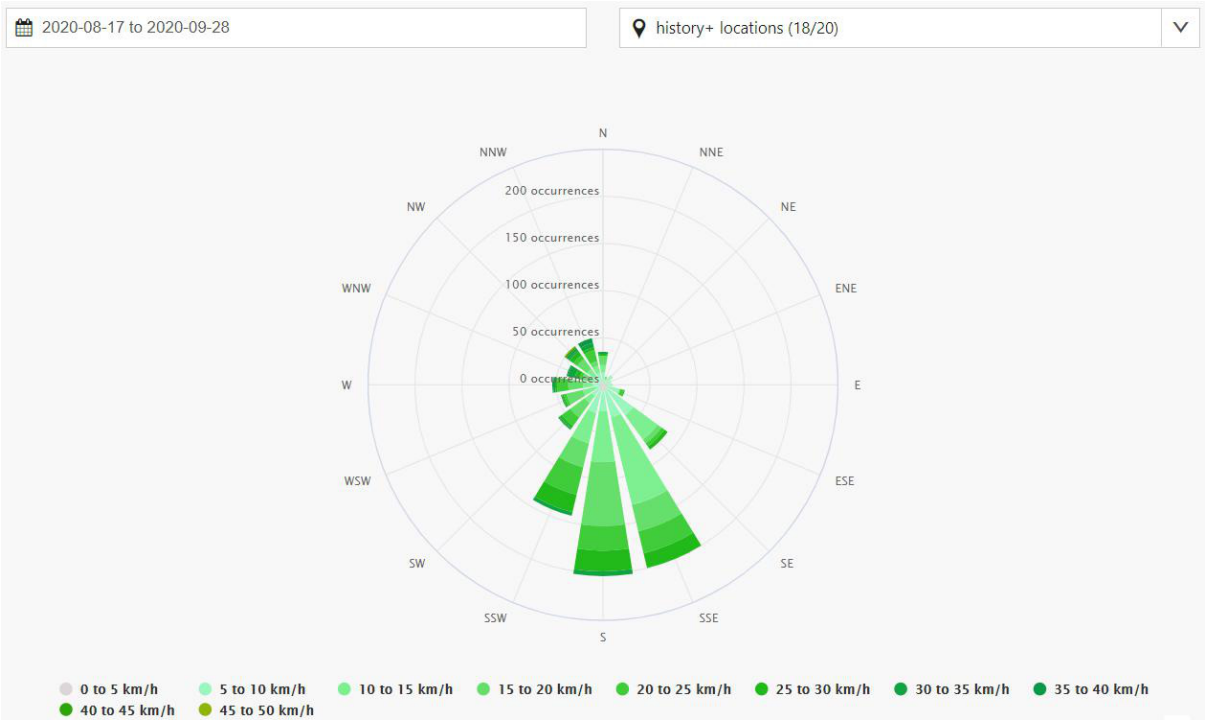
17.1. Example of the Weather Information that is being Provided with the Monthly Fallout Dust Monitoring Reports.

Appendix: Meteoblue.com Weather Information - Weather – Saldanha
Western Cape, South Africa, 32.97°S 18°E (Saldanha - Geoname)
Below is the data for this period 17 August to 28 September 2020. This is the Period for this report. (2020-08-17 to 2020-09-28)

Year comparison – Temperature – Total Precipitation – Wind Speed @ 10m

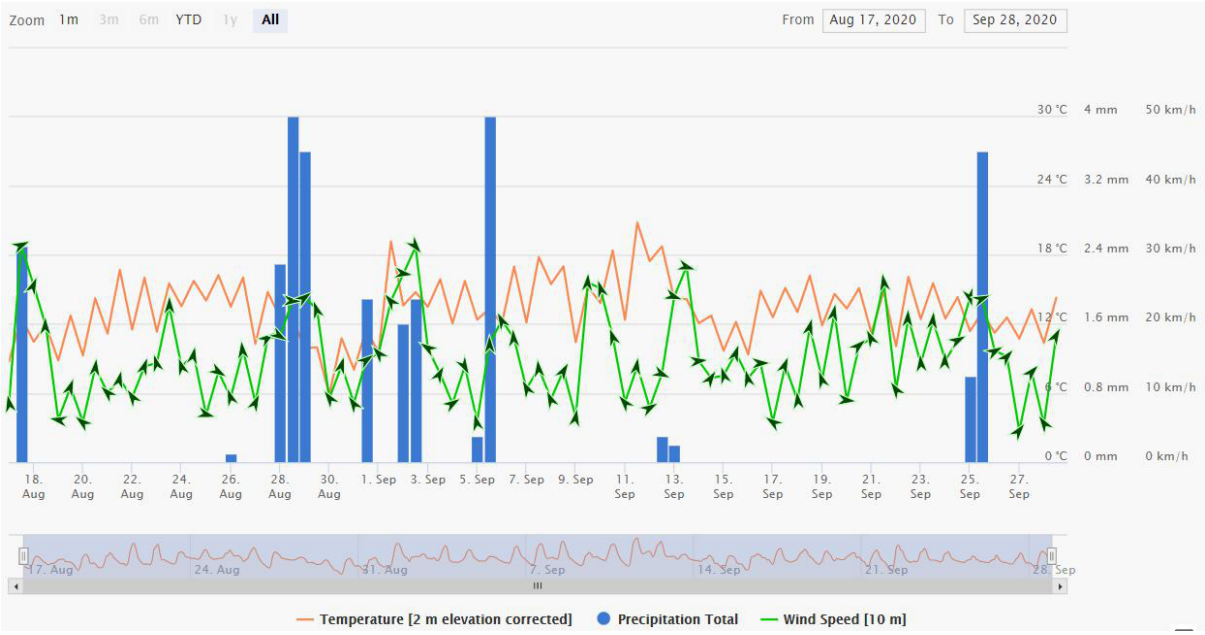


Wind Rose for the period: 17 August to 28 September 2020

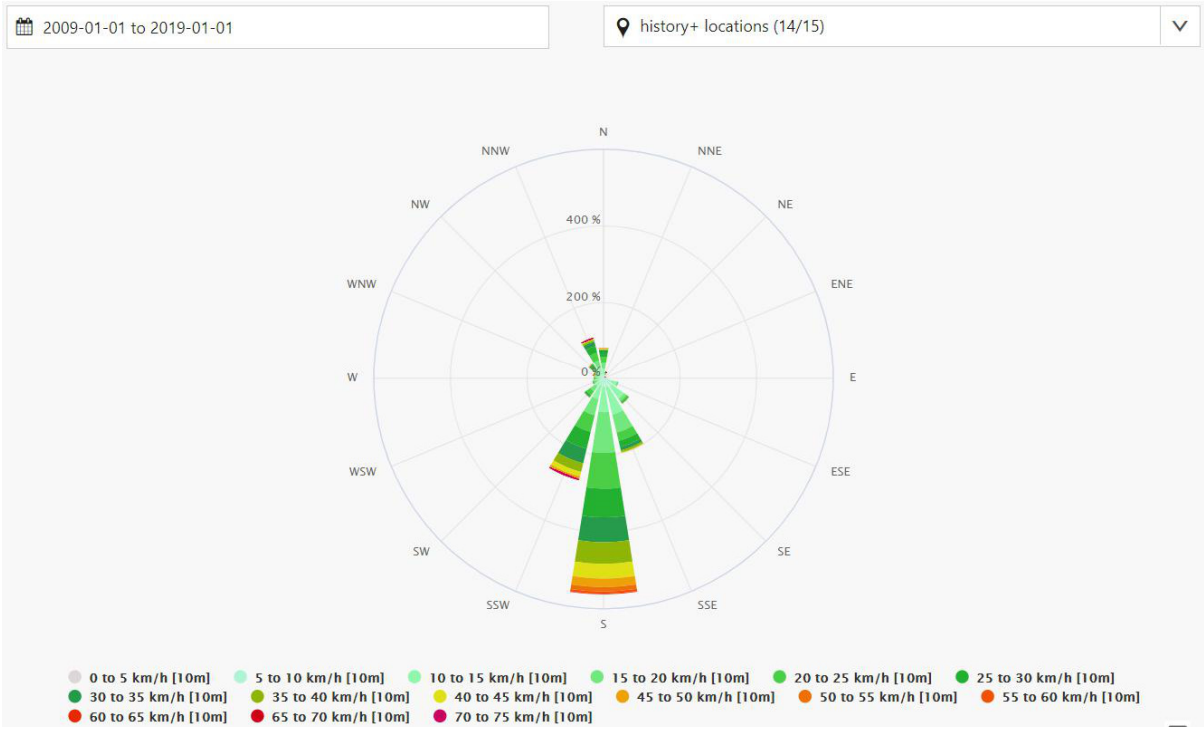


Data Download (Click here to download this data from Dropbox – The hourly wind speed and direction data is available)

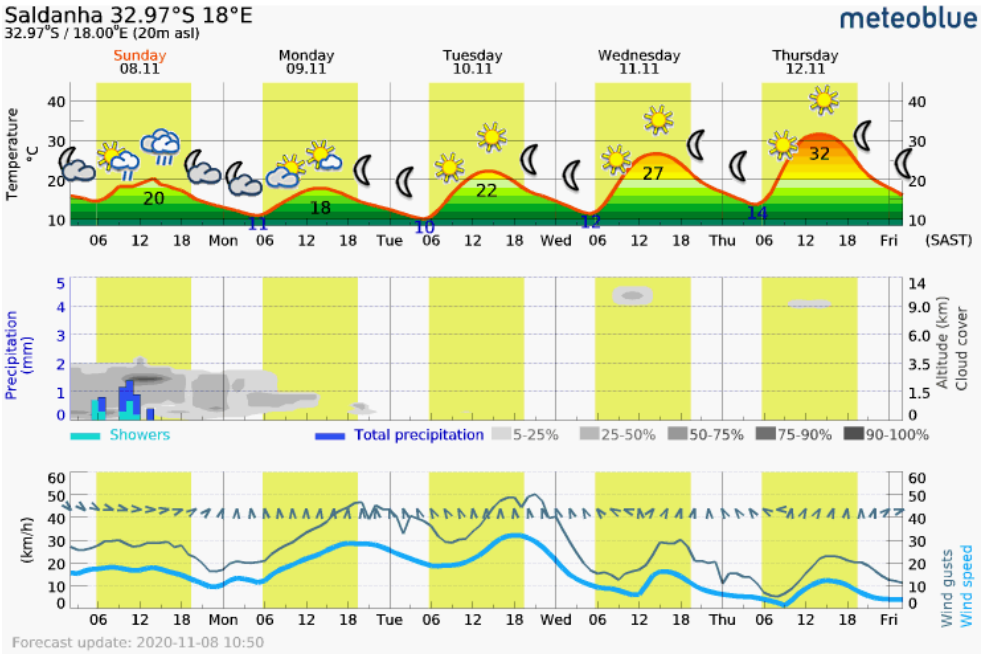
Temperature – Total Precipitation – Wind Speed @ 10m



Historical Wind Rose – 10 Year Average - 2009-01-01 to 2019-01-01 – Saldanha



17.2. Meteogram Example – 5 Day Weather Forecast Information for Wind Speed And Wind Gusts.



Our 5-day meteogram for Saldanha 32.97°S 18°E offers all weather information in 3 simple graphs:

- Temperature chart with weather pictograms. The time from sunrise to sunset is indicated in light yellow.
- Clouds in different altitudes: from few clouds (light grey) to overcast (dark grey). Dark blue bars show hourly precipitation and light blue showers. An asterisk indicates snow fall.
- Forecasts for wind speeds are blue and for gusts are green. The arrowheads point in the same direction as the wind.

18. Appendix – Ligno Sulphate Information – Chryso Eco Dust 200D

DustWatch can provide quotations for this product if required and provide advice on optimized application for different area requirements. **Gravel Roads, Haul Roads, Unpaved open areas, Stockpiles** and **Berms**. On site advice is available for site specific requirements and optimization. The application spreadsheet is available here if required.

Revision number: 1
Date: 2017/06/07

Technical data sheet

CHRYSO® Eco Dust 200D (CPT)

High range dust suppressant.

Description

CHRYSO° Eco Dust 200D is an emulsified dust lubrication system that aids in the coalescing, stabilisation and suppression of rising dust particles and spores, preventing them from becoming air-borne.

Advantages

- Easy application and safe to use
- Helps with compliance to safety, environmental, health and occupational regulations
- Safety - Increased road visibility, increased grip
- Creates a dust free environment, complete dust suppression
- Less fuel usage
- Reduced road and vehicle maintenance
- Reduced man hours
- UV resistance
- Cuts down water usage
- Eliminate grading and watering
- Savings compared to traditional paving and tar roads
- VOC free

Application guidelines

Use

- Unpaved roads (gravel, farm, quarry roads)
- Road stabilization (gravel airstrips)
- Mine and industrial dust suppression (stock pile, mine dumps)

Directions

- For surface suppression
  - Apply to the surface by a water/tank truck with a rear mounted distribution bar that spreads the liquid evenly over the surface.

Physical and chemical properties

- Physical state (@25°C): Liquid
- Colour: Brown
- Specific gravity (@25°C): 1.095 (±0.02)
- pH: 5.00 (±0.01)
- Cl Ion content: ≤0.01%
- Na_2O equivalent: ≤1%

- **CHRYSO° Eco Dust 200D:** 10 – 15% mixture by volume of water
- Maintenance of 2.5% to 5% mixture, depending on surface condition
- Coverage
  - Coverage depends on the method of application

Maintenance

- Factors that will influence the intervals between maintenance applications and life time of the surface include:
  - Quality of the base material
  - Climate conditions
  - Volumes and type of traffic

Storage

- If in the original sealed packaging at room temperature, **CHRYSO°Eco Dust 200D** has a shelf life of up to 12 months from the date of manufacturing.
- Should the product freeze, it will recover its properties after thawing and agitating.
- Avoid storing **CHRYSO°Eco Dust 200D** in direct sunlight.
- Avoid all contact with water (especially rain water).

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