

A photograph of a large industrial building with blue corrugated metal siding and a grey lower section. A white banner with the AkzoNobel logo is mounted on the blue section. The building is set against a clear blue sky. In the foreground, there is a paved area with yellow diagonal stripes and yellow safety railings. A utility pole is visible on the left side of the frame.

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**Community Forum
July 15th, 2021**

Agenda

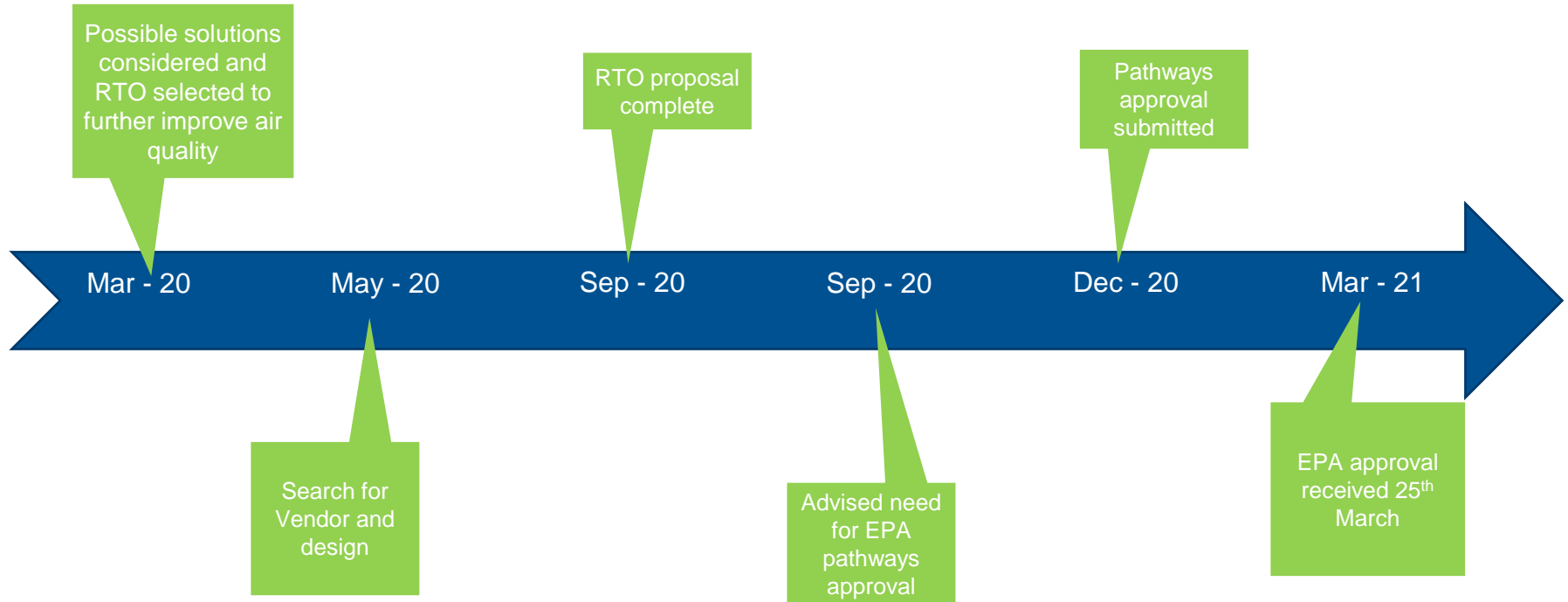
Odour Update

Air Monitoring Results

Noise Update

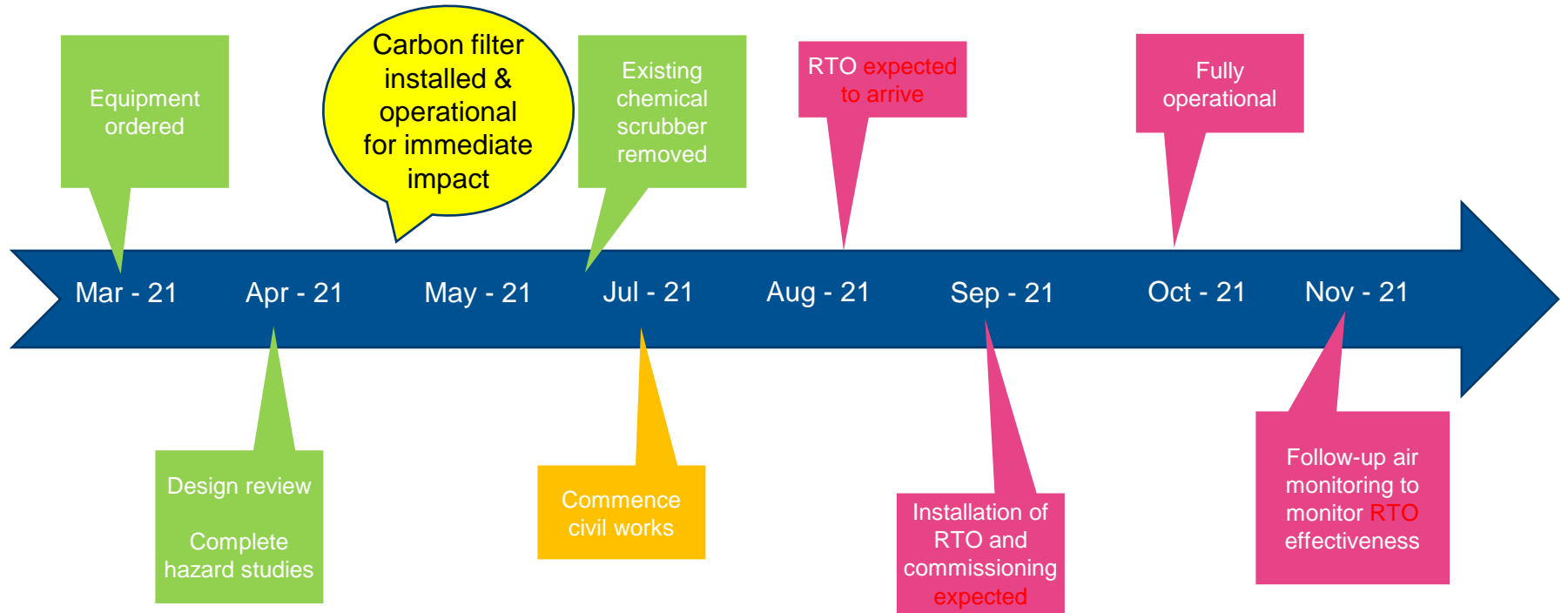
Questions

Regenerative Thermal Oxidiser (RTO) Update AkzoNobel



Regenerative Thermal Oxidiser (RTO) Update

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Tentative timelines

Carbon Filter

What does it do?



Activated Carbon Filtration – Akzo Nobel Resin Plant Application?

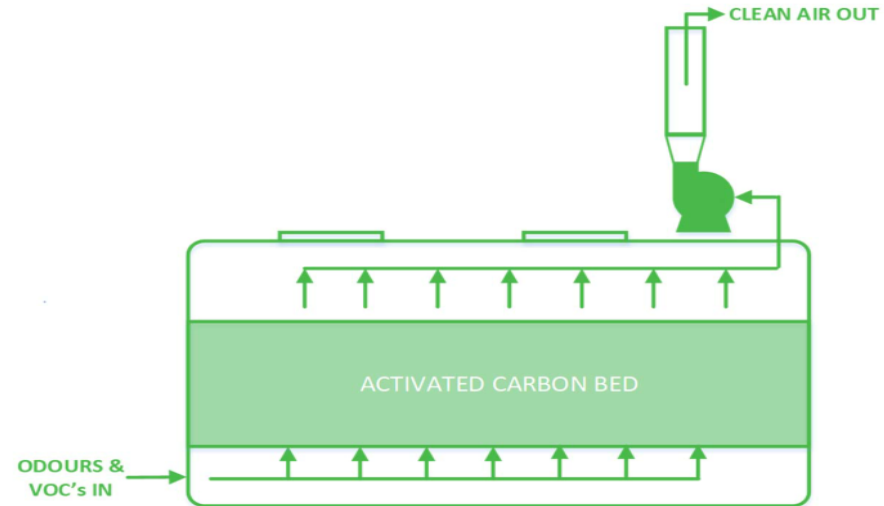
The activated carbon filter is a converted 20ft container designed to treat 8,000m³/hr.

The container has a false floor that forms a plenum for the Solvent and VOC laden air to enter.

The carbon bed is 1,000mm deep, consisting of 4mm pelletized cola based non-impregnated carbon. The EBRT is >6.2 seconds at full design flow.

The fan on top of the container maintains a slight vacuum to ensure no fugitive emissions can escape.

The air is ducted into the container, passing through the carbon before exiting the container and discharging to atmosphere via the stack approximately 6m above ground level.



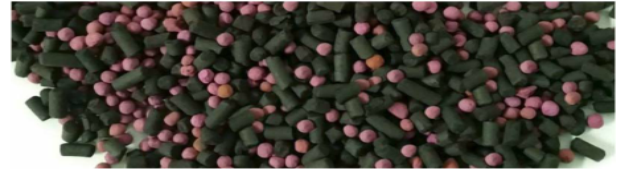
Activated Carbon Filtration – What is it?

Activated carbon, also called activated charcoal or active carbon, is a processed form of carbon that works by adsorbing odours, VOC's, toxins and organics in the air. Activated Carbon has been used effectively for gas phase treatment of odours and VOC's for over 50 years.

Activated carbon can be made from many different materials and take many forms. The most common base materials for gas phase air treatment are:

- Bituminous – Coal based with good hardness and an even spread of micro, meso and macro pore sizes.
- Coconut Shell – coconut based with high hardness and greater proportion of smaller (micro) pores.
- Lignite – Wood and Pete based having a softer structure with a greater proportion of larger (Macro) pores.

Activated carbon can be formed into extruded pellets, granules or powder. It can also be impregnated with chemicals to enhance adsorption or blended with other activated materials (such as Activated Alumina) to target specific gases.



Activated Carbon Filtration – Akzo Nobel Resin Plant Application?

The activated carbon filter is designed as a back-up to the main treatment technology, a Regenerative Thermal Oxidiser (RTO).

In the event of a plant outage the activated carbon filter can be switched on to provide treatment of the resin plant air.

The carbon filter was installed and is operating whilst the RTO is being constructed.

The carbon filter provides effective treatment for the life of the media. If breakthrough occurs the media must be replaced.

Activated carbon filters are cost prohibitive to operate as a primary treatment technology for VOC's due to the potential early saturation of the media.

Spent Activated Carbon must be disposed of at the end of life.



Activated Carbon Filtration – Akzo Nobel Resin Plant Application?

Inlet and outlet sampling points allow for regular monitoring and testing of the influent and exhaust gas to ensure that treatment is effective.

A local pressure gauge monitors the differential pressure across the media to ensure correct operation.

A Variable Speed Drive controls the fan to ensure that the correct volume of air is being drawn from the plant.

- The installation of the main header duct, a correctly sized fan and the activated carbon filter has resulted in the elimination of fugitive emissions around the resin plant and overall better fume extractions from all sources.
- The net result of this installation is a positive outcome for both the operators and neighboring receptors.



Actions we are taking-Summary

- ↯ Chemical scrubber decommissioned
- ↯ Removal of redundant equipment – Complete
- ↯ Ongoing air monitoring at boundary (8 sample points)
- ↯ VoC suppression options being trialed – Trial unsuccessful
- ↯ RTO on track for October
- ↯ Reports of ‘burning – acrid smell’ – source unknown
- ↯ Installation of a carbon filter – Complete
 - Monitoring of Carbon Filter Effectiveness (July)

Air Monitoring Update

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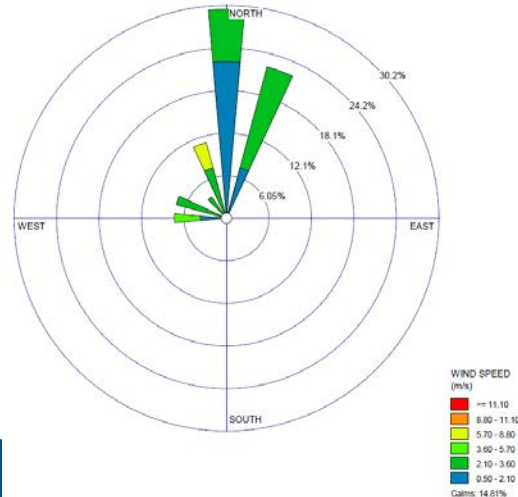
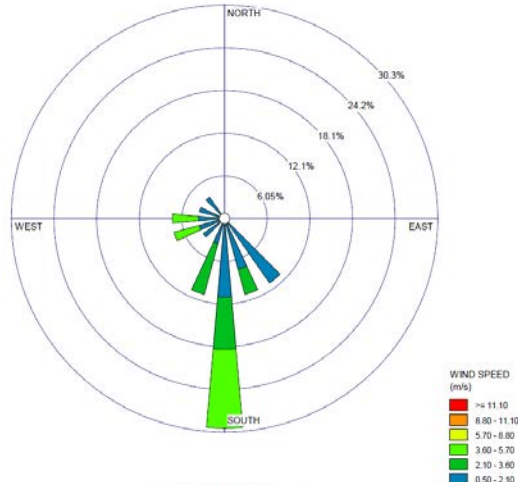
Fence line air quality monitoring for VOCs



- ❑ Monitoring undertaken by Golder Associates' NATA-accredited air quality team
- ❑ 8 fence line monitoring locations
- ❑ 24-hr hour monitoring, every 6 days (1-in-6 day) from March to October
- ❑ VOC compounds:
 - ❑ Toluene
 - ❑ Ethylbenzene
 - ❑ Total xylenes

04 May 2021

- Winds directly from the south at 2.0 m/s
- Ethylbenzene ($15 \mu\text{g}/\text{m}^3$) and total xylene ($110 \mu\text{g}/\text{m}^3$) detections at north location only
- No detections at any other locations



10 May 2021

- Winds directly from the north at 1.9 m/s
- Ethylbenzene ($16 \text{ mg}/\text{m}^3$) and total xylene ($140 \mu\text{g}/\text{m}^3$) detections at South location only
- No detections at any other locations

- Since March 2021, detections of ethylbenzene and total xylenes are well below the new 24-hour “Air Quality Assessment Criteria” of $21,712 \mu\text{g}/\text{m}^3$ and $8,685 \mu\text{g}/\text{m}^3$.**

Noise Review

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Noise Review

- ↗ Night-time operation of milling equipment ceased in Dec 2020 in order to comply with allowable noise limits
- ↗ Study found that we are compliant at sensitive periods based on indicative night-time results.
- ↗ Onsite 24hr noise monitoring for 4-week period completed in March.
- ↗ Noise model of the site was developed which will assist in the selection of noise treatment options.



↗ Focused Improvement

- Time switches installed to all dust collectors to switch off pulsing units from 7.00am – 7.00pm
- Upgrade to powder mill motor delayed until August
- All new equipment to be assessed for noise impact
- Other smaller treatments to reduce the cumulative noise impact are being undertaken.
- Comments have been received regarding forklift noise. Lower frequency beepers and other methods are being explored.
- Suggestion to build a wall to prevent noise is being considered. Engineering specifications and council approval need to be considered.

Questions