

Emission Monitoring

Ongoing emission monitoring will be conducted on a risk-based approach following an initial representative sample of all emission points.

Monitoring methodology:

There are 6 emission points covering 3 different procedures.

1. Vehicle offload
2. Batch Processing
3. Transfer to storage following process

An initial representative sample of emissions from all 3 procedures will be undertaken to establish a baseline and to ensure emission within acceptable tolerances.

1. Vehicle Offload

- Temperature: Ambient Temperature
- Flow: Related to vehicle offload volume
- Flammables: N/A
- Other hazards: N/A

2. Batch Processing

- Temperature: Elevated Temperature (80°C)
- Flow: Related to thermal activity and physical mixing
- Flammables: N/A
- Other hazards: Process Chemical (Sulphuric Acid Based)

3. Transfer to storage

- Temperature: Elevated Temperature up to 70°C
- Flow: Related to volume transferred
- Flammables: N/A
- Other hazards: N/A

Assessment Procedure:

1.

Total VOCs
Velocity & Volumetric Flow

MCERTS Standard
Reference Methods
EN 12619
EN ISO 16911

Monitoring Timeframe: 30-60 mins during vehicle offloading.

Assessment of testing scope: Lubricating oils at ambient temperatures, no solvents, low flash materials not accepted, hydrocarbon based materials. Analysis of benzene content determined by oil analysis.

2.

Total VOCs
SO₂
Velocity & Volumetric Flow

MCERTS Standard
Reference Methods
EN 12619
EN 14791
EN ISO 16911

Monitoring Timeframe: up to 36 hours monitoring entire batch process

Assessment of testing scope: Lubricating oils at ambient temperatures, no solvents, low flash materials not accepted, hydrocarbon based materials. Analysis of benzene content determined by oil analysis.

Addition of sulphuric acid based additive at 0.4% of total volume. Sulphur Dioxide determined as primary additional emission risk factor.

3.

Total VOCs
Velocity & Volumetric Flow

MCERTS Standard
Reference Methods
EN 12619
EN ISO 16911

Monitoring Timeframe: 30-60 mins during material transfer

Assessment of testing scope: Lubricating oils at ambient temperatures, no solvents, low flash materials not accepted, hydrocarbon based materials. Analysis of benzene content determined by oil analysis.

*The anticipated flows may be below, the limit of detection of the standard due to vents being predominantly displaced air.

Results Assessment:

1.

Volumetric based sample to be used to extrapolate emission per hour result to 24hr period result based on typical vehicle offloading and volume throughput.

2.

Due to changing nature of the process, sample monitoring to take place over entire process period. Expectations are for peak emission during mixing (3 hrs) and then minimal for the following 30 hrs. Emission per batch to be extrapolated to determine annual average.

3.

Volumetric based sample to be used to extrapolate emission per hours based on typical vehicle offloading and volume throughput.

Ongoing Frequency of Monitoring:

Following representative sampling and base line determination. Subject to baseline results.

At 6 monthly intervals 1 procedure will be sample to ensure output does materially differ from original baseline.

Monitoring is to be conducted on a 6 monthly basis. This aligns with the minimum requirements defined within the BAT AEL of the Bref (https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/JRC113018_WT_Bref.pdf)

M1 Stack sampling requirements assessment:

Spot sampling / infrequent sampling required.

Sample locations at height of 4m.

Sample locations within isolated area of bund away from operational activity.

On site access to scissor lift, tower scaffold, FLT man lift, flight stairs for work at height access during sampling. Permanent access to sampling point not required.