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An Industry Leader Since 1972

The chemical and refining industries today face ever-changing and complex air quality requirements.

To help our clients meet these challenges, CleanAir engineers and scientists apply decades of experience to improve plant operation and assure compliance with MACT, NESHAP, NSPS and consent decree requirements.

Since its inception in 1972, CleanAir has been an industry leader with special focus and expertise in large, complex, and technically challenging projects. Today, CleanAir is a multidivisional company providing products and services for Air Quality Management and Thermal Performance worldwide.

CleanAir is able to deliver high value solutions to our clients due to the extraordinary breadth of services we provide – field measurement for air quality and thermal performance, laboratory analysis, regulatory and process consulting, equipment sales and rental, custom equipment design and fabrication, and investigative research.

CleanAir® ENGINEERING

Fluidized Catalytic Cracker (FCC) Services

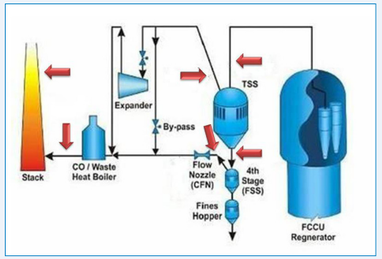
CleanAir® ENGINEERING

Accurate, Reliable FCCU Testing

Cat crackers present a challenging testing environment. High temperature and high pressure make testing difficult and dangerous. CleanAir has developed custom equipment and specialized processes for obtaining accurate reliable data from FCCUs. For example, CleanAir's port adapter/ sampling system connects directly to the test port and allows for sampling equipment to be inserted into the duct while the unit is on-line. The compression fitting provides a gas-tight seal and prevents the probe from being ejected. With this system, CleanAir has successfully sampled locations in excess of 32psi and1,300°F. The generalized process diagram shown (Figure 1) indicates points in the FCCU exhaust where pressure readings and particulate samples may be collected.

Safety

CleanAir's number one priority on every project is the safety of the test crew, plant personnel and operating equipment. Due to the challenges of FCCU testing, Clean Air has designed specialized equipment and procedures that ensure both safe and reliable testing.



PROCESS EXPERTISE

Fluid Catalytic Cracking Units (FCCU)

- *Sulfur Recovery Units*
- *Process Heaters*
- *Industrial and CO Boilers*
- *Thermal Oxidizers*
- *Incineration*
- *Gas Turbines and IC Engines*
- *Air Pollution Control Equipment*
- *SCR/SNCR Optimization*
- *Waste Gas Flaring*
- *Cooling Towers*
- *Coating Lines*
- *Vapor Recovery Units*
- *High Pressure and Temperature Sources*

EXTENSIVE EXPERTISE

- *Process Optimization*
- *Particulate (PM10, PM2.5, Condensables and Aerosols)*
- *Particle Size Distribution and Resistivity*
- *NOx, VOC, HRVOC, NH3 and HCl*
- *SO2, SO3, TRS*
- *Volatile/Semi-volatile Organics*
- *Dioxin/Furans/PAH*
- *Multi-metals*
- *Hazardous Air Pollutants (HAPs)*
- *Continuous Particulate Monitoring*
- *RCRA Trial Burns and Plans – Flare Performance*
- *Destruction and Removal Efficiency (DRE) and Capture Efficiency (CE)*
- *On-site FTIR and Gas Chromatography*
- *Flow Studies*
- *Air Quality Consulting and Permitting*
- *Continuous Emissions Monitoring Systems (CEMS)*
- *Greenhouse Gas (GHG)*

Resourceful and Innovative

While PM10/2.5 tests seem fairly run-of-the-mill, they can be challenging on an FCCU, particularly regarding the condensable fraction. After performing hundreds of these tests over many years, CleanAir has developed refined sampling and analytical techniques to ensure reliable and consistent results.

Accurate flow measurement is key to ensuring accurate mass emissions from your FCCU. CleanAir routinely performs 3D flow measurements (EPA Method 2F) for more accurate flow determination. Using Method 2F eliminates biased flow measurements*, which can result in as much as a 5-10% reduction in your particulate mass emission rate. All of our 3D probes are wind tunnel calibrated before each use in our in-house wind tunnel.

CleanAir's Particle Characterization Lab provides our clients with more than just the mass of collected particulate. We can provide fractional removal efficiencies from control devices, particle resistivity, morphology and other particle characteristics.

Obtaining accurate particle size data from wet stacks is a real challenge. CleanAir uses an innovative, proven technology to obtain reliable particle size data on wet stacks.

*compared to EPA Method 2.

You can't control what you don't measure.