



**Trinity Consultants** is a leading global environmental consulting firm that brings 50 years of experience providing services and solutions in the EHS Regulatory Compliance, Built Environment, Life Sciences, and Water & Ecology markets. Trinity has the technical expertise, industry depth, and specialized capabilities to help clients achieve their goals across the natural and built environments.

Trinity Consultants is recognized nationally for our skills in helping the ethylene production sector achieve regulatory compliance with complex environmental regulatory requirements while producing the chemicals and additional product lines to serve the marketplace. Trinity has completed hundreds of projects for the chemical manufacturing industry over the past years.

The Ethylene MACT (EMACT) Risk and Technology Review (RTR) is an effort by EPA to evaluate both risk and technology after the application of MACT standards, as required by the Clean Air Act (CAA). EMACT was first promulgated in 2002 and further amended on April 13, 2005 and April 20, 2006 as part of 40 CFR 63, Subpart YY (the "Generic MACT Rule"). Simultaneously, a new Part 63 subpart (Subpart XX) was promulgated pertaining to the ethylene process waste and heat exchange systems.

The CAA Section 112(f)(2) directs EPA to conduct risk assessments on each source category subject to MACT standards (categories with a residual risk greater than one in 1 million), and to determine if additional standards are needed to reduce residual risk. The CAA also requires EPA to review and revise the MACT standards, as necessary, taking into account recent developments in practices, processes, and control technologies.

### EMACT RTR Strategy Considerations

EPA recently issued CAA Section 114 Information Collection Requests (ICR) for both Component I and II of the EMACT RTR, to which affected facilities must respond. Trinity assists facilities in developing an effective response strategy that includes the following elements:

- Providing technical and ethylene-specific guidance over the course of the project
- Leveraging knowledge about EPA's approach to previous MACT RTRs and its effect on sources
- Evaluating emissions data, work practices, and control technology analyses that will be considered by EPA
- Performing air dispersion and risk modeling using EPA's HEM-3 system
- Providing detailed review and comments to EPA



- Preparing critical justification documents to inform EPA's perspectives
- Preparing and negotiating risk assessment protocols and reports

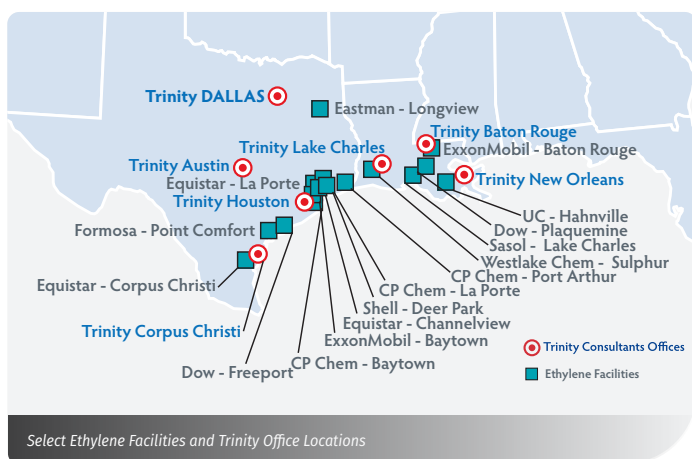
### Trinity's Risk and Technology Strategy



At the industry level, Trinity is committed to keeping members informed about regulatory developments through local public participation events and other outreach.

## Expertise with EPA RTR Requirements

Our team has completed numerous multi-pathway risk assessments for various industries, most recently for the petroleum refining industry, and has prepared reports and presentations on the state of industry risk assessment knowledge for various associations and technical conferences. For the 2015 petroleum refining RTR rule, Trinity assisted with assessing the proposed rule, conducting gap assessments and cost analyses for individual facilities, commenting on the proposed rule, and reviewing EPA risk assessments for individual sites, including identifying errors in the modeling and underlying assumptions, etc. Since finalization of the rule, Trinity has assisted with corporate and site-specific training, strategic planning and gap analyses, and implementation support. Trinity's in-depth knowledge of the Petroleum Refining RTR updates and how they have impacted facility compliance activities is valuable for similar proposed changes for the ERACT RTR.



## Relationship with the Ethylene Industry

Trinity has a long-standing and deep relationship and understanding of the ethylene production industry with specific focus on MACT issues, emissions characterization, dispersion modeling, risk assessments and other environmental topics. Trinity currently supports approximately 50% of sources affected by the ERACT RTR through a network of local offices that are conveniently located to ethylene facilities.

In 2012, Trinity assisted the American Petroleum Institute (API) in assessing the cost impacts of the proposed Uniform Standards (EPA's attempt to develop a consistent set of standards that would apply across the refining and chemical industries). For this effort, Trinity assessed the reasonableness of EPA's estimated cost impacts in the proposed rule, and, where such cost data was not sufficient, gathered data from API members and developed refined cost impacts. This cost data was then used to supplement API comments for the proposed Uniform Standards.

## High Performance Computing (HPC)

Trinity's BREEZE Remote Modeling System (BRMS) executes AERMOD model runs on a massively parallel computer cluster. Model runs on the BRMS are completed in a fraction of the normal execution time (e.g., up to 100 times faster!). This allows Trinity to complete HEM-3 modeling evaluations in minimal time and provide almost real-time feedback on refinements and adjustments to model inputs.

### Benefits of Working with Trinity

- Extensive experience with MACT RTR
- Depth with risk modeling (HEM-3)
- High performance computing (HPC) for Modeling studies
- Established relationships with agency personnel
- Experience with the ethylene industry and proximity to sources

## Why Choose Trinity

Trinity's ethylene team has the critical understanding of the ethylene industry and its emissions, modeling, and risk assessment needed for the RTR. Our expert team has detailed understanding of the HAP emissions and other constituents in the ethylene manufacturing process as well as the ethylene MACT rule and underlying RTR process. We are confident that you will find our team extremely well qualified to assist you.

*ISO 9001:2015 certified at our corporate office in Dallas, Texas*

### CONTACT OUR TEAM!

For more information about how we can help your organization, please contact us.

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