

**From:** McCue, Monte W  
**To:** [Wilson, Patrick](#)  
**Cc:** [Zabaneh, Mahfouz](#); [Provins, James R](#)  
**Subject:** TCE Ambient Air Concentrations Associated with EWT - Parker, AZ  
**Date:** Tuesday, October 21, 2014 3:14:07 PM  
**Attachments:** [CPF memo addressing TCE per EPA Reg 9 request Oct 2014.pdf](#)

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Patrick

The attachment contains a memo from Sarah Foster of CPF Associates regarding questions you had on TCE ambient air concentrations associated with the Evoqua facility in Parker, AZ.

Please let me know if you have any questions regarding the memo or require further information.

Thanks.

**Monte McCue**

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*Scientific Research and Consulting*

**MEMO**

**To: M. McCue, Evoqua Water Technologies LLC**  
**From: S. Foster, CPF Associates, Inc.**  
**Date: October 21, 2014**  
**Re: Trichloroethylene (TCE) Ambient Air Concentrations Associated with  
the Evoqua Water Technologies Carbon Reactivation Facility, Parker, AZ**

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**INTRODUCTION**

This memo provides information regarding trichloroethylene (TCE) ambient air concentrations in response to a request from U.S. Environmental Protection Agency (USEPA) Region 9 related to the Evoqua Water Technologies carbon reactivation plant outside of Parker, Arizona.

**BACKGROUND**

A comprehensive human health and ecological risk assessment was completed in March 2008 for Evoqua's carbon reactivation plant as part of the facility's permitting activities under the Resource Conservation and Recovery Act (RCRA). The carbon reactivation plant is located within the Colorado River Indian Tribes (CRIT) Reservation, in an industrial park owned by CRIT outside of the Town of Parker, Arizona. The facility reactivates spent carbon which has been previously used to remove pollutants from water and air. The spent carbon is reactivated by heating it to very high temperatures under controlled conditions in a carbon reactivation furnace. The newly reactivated carbon is then reused as an activated carbon product.

The risk assessment for this project is provided in three documents: 1) *Draft Risk Assessment for the Siemens Water Technologies Corp. Carbon Reactivation Facility in Parker, Arizona* (July 30, 2007); 2) *Response To USEPA Region IX Comments on the Draft Siemens Water Technologies Corp. Carbon Regeneration Facility Risk Assessment* (March 13, 2008); and 3) *Executive Summary* (March 13, 2008).

In April 2012, a revised RCRA permit application was submitted to USEPA Region 9, with the risk assessment documents from 2007 and 2008 included in an appendix to the application. In May 2014, USEPA Region 9 provided comments on the permit application, including several related to the risk assessment. These comments were addressed in a July 18, 2014 memo entitled *Response to USEPA Risk Assessment Comments on the April 2012 Permit Application for the Evoqua Water Technologies Carbon Reactivation Facility*.

On October 2, 2014, USEPA Region 9 requested additional information regarding modeled TCE concentrations in ambient air associated with facility operations. The purpose of this memo is to address this additional request.

C P F A S S O C I A T E S , I N C .

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## TRICHLOROETHYLENE AMBIENT AIR CONCENTRATIONS

Ambient air concentrations were calculated in the risk assessment for both furnace stack air emissions and fugitive air emissions from spent carbon unloading. The general methodology, consistent with USEPA-approved risk assessment practice, involves combining TCE emission rates with air dispersion modeling results to calculate ambient air concentrations. Specifically, short-term hourly air concentrations are calculated using maximum emission rates (in units of g/sec) combined with hourly unitized air concentrations (in units of  $\mu\text{g}/\text{m}^3$  per 1 g/sec). Long-term annual average air concentrations are calculated using average emission rates (in units of g/sec) combined with annual unitized air concentrations (in units of  $\mu\text{g}/\text{m}^3$  per 1 g/sec). Additional information about emission rates and the dispersion modeling can be found in the original risk assessment reports (July 2007 and March 2008) as well as the recent response to comments memo (July 2014).

The calculated TCE ambient air concentrations associated with stack and fugitive emissions are listed below, along with related explanatory information (e.g., averaging times, receptor locations).

### Calculated TCE Ambient Air Concentrations Associated with Evoqua Carbon Reactivation Facility

Receptor Location	Ambient Air Concentration ( $\mu\text{g}/\text{m}^3$ ) (averaging time)
<i>Stack Emissions (associated with controlled combustion of spent carbon in facility furnace)</i>	
Maximum stack emissions impact locations for hourly and annual concentrations. There is no residential or commercial land use in the vicinity of the maximum annual impact location.	2.5E-4 (hourly) 4.5E-6 (annual)
Closest developed location beyond property boundary (commercial land use, not residential) with highest modeled impacts.	2.5E-4 (hourly) 7.5E-7 (annual)
Residential areas with highest annual and hourly modeled impacts for stack emissions.	1.1E-4 (hourly) 6.8E-7 (annual)
<i>Fugitive Emissions (associated with spent carbon unloading at the outdoor hopper)</i>	
Maximum fugitive emissions impact locations for hourly and annual concentrations. There is no residential or commercial land use in the vicinity of the maximum impact locations.	1.0E-3 (hourly) 1.0E-9 (annual)
Closest developed location beyond property boundary (commercial land use, not residential) with highest modeled impacts.	4.0E-5 (hourly) 7.9E-12 (annual)
Residential areas with highest annual and hourly modeled impacts for stack emissions.	2.5E-6 (hourly) 1.2E-12 (annual)