




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 9

75 Hawthorne Street
San Francisco, CA 94105-3901

MEMORANDUM

SUBJECT: Ecological risk assessment status
Seimens Water Technologies Corporation Carbon Reactivation
Facility Parker, AZ facility EPA ID No. AZD 982 441 263
RCRA Part B permit application

FROM: John Beach 

TO: John Moody
EPA Project Manager

DATE: December 23, 2008

This memorandum summarizes the status of the ecological risk assessment activities for the subject permit application. The Resource Conservation and Recovery Act (RCRA), as implemented in 40 CFR §270.10, requires that RCRA Part B permits for the operation of treatment, storage and disposal facilities be protective of human health and the environment.

Seimens submitted a human health and ecological risk assessment dated July 30, 2007 in support of their Part B permit application. Mary Blevins reviewed that document and submitted her comments to Seimens on December 7, 2007 (attached). Seimens submitted a response to those comments on March 13, 2008.

On April 3, 2008 Mary Blevins sent an e-mail to Cheryl Nelson, the EPA project manager, stating that she had reviewed Seimens' response to comments and found no significant ecological concerns. Mary concluded that, based on the risk metrics used to evaluate the potential for adverse ecological effects and the very low values of those metrics, operation of the facility under the proposed permit conditions was protective of the environment.

Based on my review of Mary Blevins' correspondence and the documents submitted by Seimens, I conclude that the ecological risk assessment provides an adequate basis for EPA to conclude that the permit, as proposed, is protective of the environment.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

December 7, 2007

MEMORANDUM

TO: Mary Blevins, Project Manager, WST-4

FROM: Mary Blevins, Environmental Scientist/Ecological Risk Assessor,
WST-4

SUBJECT: Review of *"Draft Risk Assessment for the Siemens Water Technologies Corporation Carbon Reactivation Facility, Parker, Arizona"*, prepared by CPF Associates, Inc., July 30, 2007

EPA has completed its review of the ecological risk assessment portion of the subject document, which was submitted to EPA Region 9 as part of Siemens' Resource Conservation and Recovery Act (RCRA) Part B Permit Application. Risk assessment is a tool consisting of a series of scientific studies designed to conservatively evaluate the likelihood and magnitude of adverse human and ecological impacts from exposures to chemical releases.

The Siemens Water Technologies Corporation (Siemens) operates a carbon reactivation facility on lands owned by the Colorado River Indian Tribes near Parker, Arizona. Facility operations revolve around the reactivation of spent or chemically-contaminated carbon with thermal energy generated from an on-site carbon reactivation furnace. Newly reactivated carbon is a product that can be reused for the removal of toxic contaminants from various environmental media or waste streams. The Siemens Parker facility is currently regulated as an interim status facility under RCRA regulations. Siemens is seeking a RCRA permit for the treatment, storage and disposal of RCRA-regulated hazardous waste.

EPA's Office of Solid Waste has developed a comprehensive set of guidelines and strategies to evaluate putative human and ecological impacts associated with combustion facilities that manage hazardous wastes. These

guidelines are primarily captured in the August 1999 EPA document titled "*Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*" and September 2005 document titled "*Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities*". Other EPA guidance documents used to support the evaluation of putative ecological impacts in this risk assessment include "*Guidelines for Ecological Risk Assessment*" (USEPA 1998) and "*Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments*" (USEPA 1997).

The combustion risk assessment guidance documents contain overarching risk assessment strategies and procedures that support assessment of potential human health and ecological impacts from routine operation and fugitive releases from industrial treatment units designed to manage, treat or destroy hazardous wastes. EPA has incorporated the results from this level of analyses to establish facility-specific, operational permit conditions which are sufficiently conservative to protect public and ecological health. Should Siemens' Part B Permit Application be deemed "technically complete", the hazardous waste treatment unit's operational parameters and standardized procedures, which were optimized in the comprehensive performance test (CPT or trial burn), would then be used to establish unit-specific and risk-based permit conditions designed to ensure protection of human and ecological health.

The 2003 risk assessment work plan identified conservative assumptions for evaluating putative risk from stack emissions to ecological receptors within the Siemens Parker facility area. The ecological risk assessment evaluated potential impacts to wildlife that may be of greatest risk based on habitat use, exposure potential, ecological significance, and population status. For this ecological risk assessment, the habitat types evaluated were representative of the environmental setting around the facility and included creosote bush scrub, agricultural areas, riparian corridors and backwaters, the Colorado River, and the Main Drain. Species selected for evaluation included aquatic life, plants, badger, Gambel's quail, great horned owl, burrowing owl, southwestern willow flycatcher, double-crested cormorant, Yuma clapper rail and mule deer. For Federally listed species, such as the Yuma clapper rail, assessment endpoints were protective at the individual level as opposed to population level.

In general, this review finds that the methods and strategies used to quantify the likelihood and magnitude of environmental impacts from Siemens' releases are consistent with the recommended procedures and strategies articulated in EPA's guidance reference. The methods which were used are largely consistent with the 2003 Agency-approved risk assessment work plan. The results of the evaluation of putative ecological risk from facility operations to ecological receptors were below ecotoxicologically based levels and below a conservative target level of Hazard Quotient = 0.25. This target level was chosen to be consistent with other combustion risk assessments conducted in Region 9

and to be protective of endangered and threatened species that must be evaluated at the individual level versus population level. As ecotoxicologically based levels were not available for desert tortoise, the evaluation of ecological risk to this species consisted of a qualitative discussion of factors relevant to the health of the desert tortoise and qualitative discussion of results from the evaluation of stack emissions on plants that might be consumed by this herbivorous species. The results of the evaluation of stack emissions on plants were below conservative target levels.