



State of Ohio Environmental Protection Agency

**Southeast District Office**

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June 8, 2009

**PIKE COUNTY  
PARKER HANNIFIN  
RCRA  
OHD046426409**

Mr. Rick Taylor  
Parker Hannifin Corporation  
6035 Parkland Boulevard  
Cleveland, OH 44124-4141

Dear Mr. Taylor:

Ohio EPA has completed a review of the 2008 Annual (Ground Water Monitoring Data for 3rd and 4th Quarters, 2007) Corrective Action Monitoring Program Report for the Parker Hannifin Corporation ("PHC") Waverly Facility in Pike County, Ohio. The report was prepared by Advanced GeoServices Corp. (AGC) of West Chester, PA and was received by the Ohio Environmental Protection Agency (Ohio EPA) on March 2, 2009. The 2008 Annual Report contains information on Site History, Ground Water Monitoring Activities, Monitoring Data & Results, Corrective Action Activities and Conclusions & Recommendations.

PHC is required to submit semi-annual reports to Ohio EPA as per OAC 3745-54-100(G). As per the revised Corrective Action Monitoring Plan (CAMP) for the PHC site (August 2006), the ground water sampling consists of the analytical results for fifteen VOCs and two metal site specific parameters at each of PHC's thirty-nine monitoring wells and two surface water locations. PHC is currently responsible for fulfilling the terms of a Director's Final Findings and Orders (DFFOs), dated December 27, 2000. With respect to ground water monitoring, the site is controlled by its CAMP and the Corrective Action rules found in OAC 3745-54-90 through 3745-54-100.

The 2008 Annual Report discusses a number of new and old issues for the period July through December, 2008. Among the noteworthy are:

- The surface water elevations are now measured using a monitoring well as a reference point (instead of the surface water staff gauges). Up gradient and down gradient water elevations now appear accurate.
- In August 2008, the ground water treatment system was manually shut down due to a damaged section of the effluent pipe, which partially blocked the flow of treated ground water to the discharge point at Crooked Creek. The damaged section was replaced and the effluent line cleaned. The system resumed operation on September 5, 2008.
- On December 9, 2008, ground water extraction pump RW-4 failed. It remained out of service for the rest of the calendar year. Repair and maintenance on the ground water pumping wells was scheduled in the first quarter of 2009. (Although this is not reflected in the annual report, the repairs were completed in the first quarter of 2009).

- Ground water conditions in the plume management area have not changed appreciably from past reports. Most up gradient groundwater is captured by the recovery wells while some appear to pass the recovery wells and continue on towards Pee Pee Creek, as evidenced by VOC detections at MW-16 and MW-20. Based on recent modeling efforts by AECOM, the detections in MW-16 and MW-20 appear to be the result of sampling a stagnant VOC plume in the shallow aquifer zone between the recovery wells and Pee Pee Creek.
- Ohio EPA & AGC completed a Tier 1 Data validation review for each quarterly sampling event. No major deviations from sampling and lab protocol were noted. The percent completeness for the 3<sup>rd</sup> and 4<sup>th</sup> Quarters of 2008 was 100% (AGC confirmation).

As a sign of effective plume capture, Ohio EPA has anticipated significant decreases in ground water VOC content down gradient of the new recovery well extraction system since 2007. The key down gradient wells capable of measuring the system's effectiveness are MW-16S and MW-20S. The results have been mixed. While the sampling results for MW-16 have shown a sustained declining trend since 2007, this has not been the case for MW-20S, which maintains a sustained, high VOC content. In 2008, three-dimensional groundwater modeling of the site by AECOM determined that MW-16S and MW-20S are monitoring a segment of the VOC plume which previously escaped PHC's remedial control, but now remains essentially stagnant between Pee Pee Creek and PHC's line of recovery wells. Ohio EPA is in dialogue with PHC about how to effectively monitor the performance of their pump and treat system given that these two key down gradient monitoring wells are located within the stagnant zone of the plume (and will continue to detect VOCs for the foreseeable future). AECOM & PHC will be submitting a capture zone analysis report to Ohio EPA sometime in June, 2009 which may help determine an effective monitoring strategy for the future.

Based on Ohio EPA's review, we found the following chronic violation of Ohio's hazardous waste laws and the DFF&Os. In order to correct this violation, you must do the following and send me the following **within 30 days** of the date of this letter.

- (1) **OAC Rule 3745-54-100(E)(1),(E)(2) and (E)(3) and section V. 2. of the December 27, 2000 Director's Final Findings and Orders (DFFOs):** (E)1) The owner or operator must conduct a corrective action program to remove, or treat in place, any hazardous constituents in groundwater that exceed specified concentration limits between the compliance point under rule 3745-54-95 of the Administrative Code and the down gradient property boundary; (E)(2) The owner or operator must conduct a corrective action program to remove or treat in place any hazardous constituents under rule 3745-54-93 of the Administrative Code that exceed concentration limits in ground water beyond the facility boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the director that, despite the owner's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. The owner/operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. (E)(3) Corrective action measures must be initiated and completed within a reasonable period of time.

(E)(1) PHC has failed to control and capture the release of VOC-laden ground water between its compliance point and the facility boundary with Pee Pee Creek; (E)(2) PHC has failed to control and capture the release of VOC-laden ground water beyond the facility boundary. (E)(3) PHC has failed to initiate and complete its corrective actions within the plume management area within a reasonable period of time.

This violation is under review by Ohio EPA in light of recent groundwater modeling work conducted by AECOM & PHC. PHC and Ohio EPA are currently discussing ways in which PHC's recovery well system can be monitored effectively to abate this violation. However, note that these violations will remain outstanding until the corrective measures have brought on-site ground water contamination under full hydraulic control.

### GENERAL COMMENTS

- (a) With respect to PHC's request to reduce the frequency of dissolved chromium sampling at wells MW-1, MW-2, MW-4, MW-7, MW-8S, MW-12R and MW-17, and for surface water sample locations SW-UP and SW-DOWN from quarterly to annually: Ohio EPA agrees that the data now supports a reduction in sampling frequency as per the language (and intent of the language) contained in PHC's Post-Closure Plan and Corrective Action Monitoring Plan (Revision 3.0, August 2006). Ohio EPA considers an approvable sampling frequency change to be a reduction from quarterly to semi-annually for these sampling points. An additional reduction from semi-annually to annually may be approvable in several years if no violations to the ground water protection standards are recorded. Chromium may not be eliminated from the sampling parameter list and therefore must be sampled at all applicable wells at least annually.

Please submit any requested information no later than 30 days from the date of this letter. Should you have any questions, please feel free to call me at 740-380-5293 or Mr. Steve Saines at 740-380-5445.

Sincerely,



Donna Goodman  
District Representative  
Division of Hazardous Waste Management

DG/mlm

cc: Martha Connell, Parker Hannifin Corporation  
Steve Saines, DDAGW/SEDO