



KPRG and Associates, Inc.

ADDITIONAL MONITORING DATA SUBMITTAL

October 13, 2014

Mr. Binyoti F. Amungwafor
Program Manager, Remediation and Redevelopment
Wisconsin Department of Natural Resources
2300 N. Dr. Martin Luther King, Jr., Drive
Milwaukee, WI 53212-0436

VIA FEDERAL EXPRESS

KPRG Project No. 15807.4

Re: Additional Monitoring Data Submittal
K&W Manufacturing
8619 W. Lynx Avenue, Milwaukee, WI
BRRTS #02-41-279720, FID #241813770

Dear Mr. Amungwafor:

KPRG and Associates, Inc. (KPRG), on behalf of K&W Manufacturing, is submitting this additional groundwater monitoring data in response to the second Wisconsin Department of Natural Resources (WDNR) Case Closure denial letter dated September 30, 2013. The Case Closure denial had two items that needed to be addressed. The first item was a request for additional groundwater monitoring at an abbreviated number of wells and the second item was a request for continuous groundwater monitoring until the contaminant plume is stable and documentation supporting that the plume is stable. The abbreviated list of wells is as follows: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-9, and PZ-2.

KPRG has enclosed the data from the four (4) additional quarters of groundwater samples that were collected beginning in December 2013 and completed in August 2014. The same sampling procedures were followed as in previous rounds of sampling. All samples were analyzed for volatile organic compounds (VOCs). The samples were shipped on ice under a completed chain-of-custody to Pace Analytical for analysis.

Table 1 summarizes the data from the last four rounds of sampling along with all historical data. A review of the data indicates that the enhanced reductive dechlorination (ERD) injection that was performed in December 2011 is still continuing to actively spur natural reductive dechlorination of PCE. Wells MW-9, MW-1, MW-2 and MW-6, which are all within the former source area on K&W property, continue to have PCE at non-detected levels in the last round of sampling. The primary PCE breakdown products of trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) continue to increase and/or have stabilized and in the case of TCE, the concentrations have decreased as breakdown continues. Well MW-5 has displayed a decrease in PCE with the last three rounds of sampling showing a concentration below non-

detected levels. However, increases in breakdown products, mainly DCE and VC, within this area document that natural degradation of the PCE is also actively occurring at that location. Well MW-4, which is located within the adjoining Kraussel Tool facility, has shown a dramatic decrease in PCE concentrations along with an increase in DCE and VC, which again, demonstrates that the ERD injection has been effective at spurring the natural reductive dechlorination of the PCE.

Included in Attachment 1 are time versus concentration curves for PCE, TCE, DCE, and VC as well as the abbreviated list of monitoring wells. The curves demonstrate that the reductive dechlorination of PCE and its breakdown products are occurring and that the impact plume is beginning to stabilize.

The attached information is provided for your review and as a discussion item prior to our meeting to discuss this project and how we will be able to achieve closure. For your convenience we have included a copy of the reference closure letter in Attachment 2.

We look forward to continue working cooperatively with the WDNR in achieving closure for this site. If there are any questions, please contact me at 262-781-0475.

Sincerely,
KPRG and Associates, Inc.



Richard R. Gnat, P.G.
Principal

cc: Mr. Greg Krieger, Owner

Attachments

TABLE

Table 1 (cont'd). Groundwater Monitoring Analytical Results for Detected VOCs - K&W Manufacturing, Milwaukee, WI

SAMPLE ID PARAMETER DATE	WDNR NR 140 Standards		MW-9															MW-10												
	PAL	ES	10/09/09	01/14/10	12/22/10*	04/06/11	06/30/11	01/16/12	04/12/12	08/02/12	10/31/12	03/27/13	07/31/13	12/12/13	02/18/14	05/19/14	08/23/14	10/08/09	01/13/10	12/22/10*	04/06/11	06/30/11	01/16/12	04/12/12	08/02/12	10/31/12	03/27/13	07/30/13	12/11/13	02/18/14
VOCs																														
cis-1,2-Dichloroethene	7.0	70	33,700	40,800	<1,680	12,600	32,700	76,600	135,000	49,500	21,900	200,000	28,300	28,100	6,970	7,020	9,790	5.0	10.4	14.3	10.3	13.3	10.7	9.0	9.3	12.5	9.7	12.3	NA	NA
trans-1,2-Dichloroethene	20	100	<890	<1110	<1,780	317	612	1,130	2,160	1,700	4,220	15,300	2,580	2,440	820 J	661 J	841 J	<0.89	<0.89	1.1	<0.89	0.90 J	<0.89	<0.89	0.94 J	0.92 J	<0.89	1.0 J	NA	NA
Tetrachloroethene	0.5	5.0	165,000	139,000	<900	17,000	16,800	1,350	<900	<112	<450	1,210 J	<944	<944	<500	<500	5.6	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.47	NA	NA
Trichloroethene	0.5	5.0	2,080	2,470	<950	2,770	13,500	1,200	<950	<120	<450	<950	<858	<728	<728	<331	<331	0.74 J	0.72 J	1.1	1.1	1.3	1.0	0.80 J	0.96 J	1.4	1.2	1.7	NA	NA
Vinyl Chloride	0.02	0.2	1,140	1,730	<350	302	437	257 J	1,620 J	65,900	70,100	43,300	95,600	130,000	128,000	165,000	138,000	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	NA	NA
FIELD PARAMETERS																														
Dissolved Oxygen (mg/L)	NE	NE	2.90	1.72	NM	NM	0.46	0.13	0.06	0.19	0.13	0.42	0.13	0.14	0.18	0.36		3.47	0.38	0.52	0.42	0.52	1.43	0.67	2.80	0.80	1.26	0.61	NA	NA
Oxidation-Reduction Potential (mV)	NE	NE	108	132	NM	NM	-35.9	-89.1	-79.3	-44.2	-34.4	-137.9	-77.7	-135	-65.2	-46.9		90.3	126	-7.7	42.3	2.73	47.5	122.9	115.2	131.4	-160	-15.3	NA	NA

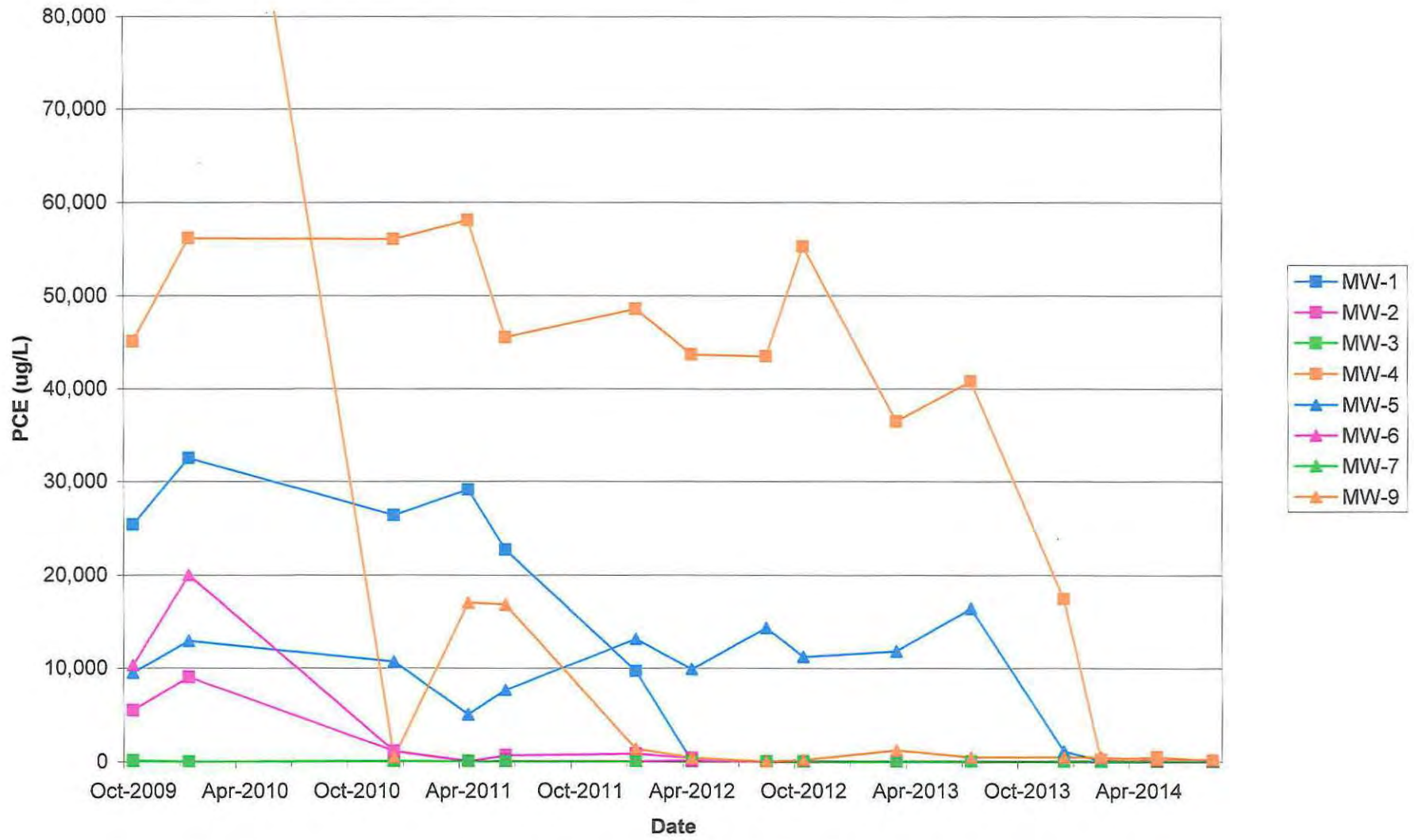
SAMPLE ID PARAMETER DATE	WDNR NR 140 Standards		MW-11												MW-12																
	PAL	ES	10/08/09	01/13/10	12/22/10*	04/06/11	06/30/11	01/16/12	04/12/12	08/02/12	10/31/12	03/27/13	07/30/13	12/11/13	02/18/14	10/08/09	01/13/10	12/22/10*	04/06/11	06/30/11	01/16/12	04/12/12	08/02/12	10/31/12	03/27/13	07/30/13	12/11/13	02/18/14			
VOCs																															
cis-1,2-Dichloroethene	7.0	70	2.4	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	NS	<0.42	NA	NA	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.42	NA	NA
trans-1,2-Dichloroethene	20	100	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	NS	<0.37	NA	NA	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.37	NA	NA
Tetrachloroethene	0.5	5.0	23.3	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	NS	<0.47	NA	NA	1.6	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.45	<0.47	NA	NA
Trichloroethene	0.5	5.0	2.2	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	NS	<0.43	NA	NA	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.43	NA	NA	
Vinyl Chloride	0.02	0.2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	NS	<0.18	NA	NA	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	NA	NA
FIELD PARAMETERS																															
Dissolved Oxygen (mg/L)	NE	NE	2.19	0.33	0.65	0.48	0.44	0.96	1.11	1.66	0.61	NS	2.36	NA	NA	3.36	0.68	0.61	0.43	1.91	4.25	0.37	3.24	0.55	1.45	0.65	NA	NA			
Oxidation-Reduction Potential (mV)	NE	NE	87.9	167	-15.9	59.5	7.83	18.9	174.7	164.4	63.3	NS	-27.3	NA	NA	71.9	115	-15.5	64.9	3.53	50.1	91.2	81.7	109.1	-158	-16.7	NA	NA			

SAMPLE ID PARAMETER DATE	WDNR NR 140 Standards		MW-13									PZ-2																	
	PAL	ES	06/30/11	01/14/12	04/12/12	08/02/12	10/31/12	03/27/13	07/30/13	12/11/13	02/18/14	10/08/09	01/13/10	12/22/10*	04/06/11	06/30/11	01/16/12	04/12/12	08/02/12	10/31/12	03/27/13	07/30/13	12/12/13	02/18/14	05/19/14	08/23/14			
VOCs																													
cis-1,2-Dichloroethene	7.0	70	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.42	NA	NA	NS-D	NS-D	<0.83	2.3	<0.83	1.3	19.0	17.8	18.7	4.1	26.3	9.8	11.3	9.8	269			
trans-1,2-Dichloroethene	20	100	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.37	NA	NA	NS-D	NS-D	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	1.8	<0.37	0.39 J	0.38 J	11.7			
Tetrachloroethene	0.5	5.0	0.61 J	<0.45	<0.45	<0.45	<0.45	<0.45	<0.47	NA	NA	NS-D	NS-D	19.0	52.7	13	6.4	40.0	2.5	2.4	6.0	1.7	1.1	1.2	<0.50	0.81 J			
Trichloroethene	0.5	5.0	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48	<0.43	NA	NA	NS-D	NS-D	1.2	2.5	0.74 J	4.7	3.8	1.3	1.5	1.1	1.6	0.99 J	0.81 J	0.57 J	0.82 J			
Vinyl Chloride	0.02	0.2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	NA	NA	NS-D	NS-D	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	9.4	1.3	2.8	3.6	45			
FIELD PARAMETERS																													
Dissolved Oxygen (mg/L)	NE	NE	4.38	1.44	0.28	1.59	0.52	0.71	0.50	NA	NA	NS-D	NS-D	0.27	0.41	0.82	0.81	0.18	0.66	0.11	2.31	0.29	0.28	0.36	0.12				
Oxidation-Reduction Potential (mV)	NE	NE	23.3	38.8	155.1	50.1	116	-178	-9.7	NA	NA	NS-D	NS-D	-7.4	44.3	-18.4	-91.4	-130.4	-60.6	-27.3	-144	-103.6	-79.4	-34.4	-80.6				

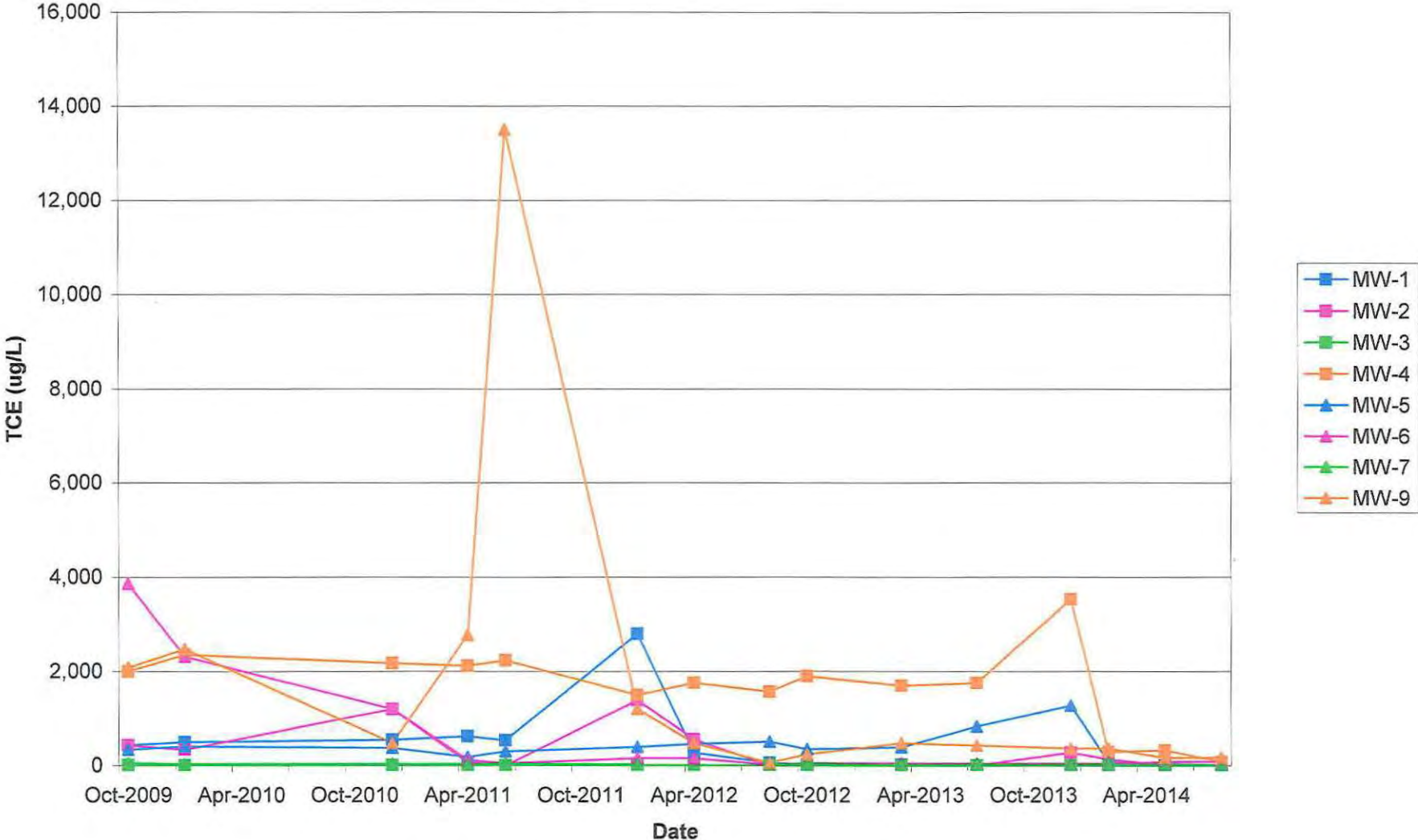
Note - All values in ug/L, unless otherwise noted
 PAL - Preventive Action Limit
 ES - Enforcement Standard
 NA - Not Analyzed
 NE - Not Established
 NS - Not Sampled
 NS-D - Not Sampled - Dry
 NM - Not Measured
 * - Samples collected after chemical injection
 ** - Samples collected after bio injection
 #/etc - Exceeds Preventive Action Limit
 Bold - Exceeds Enforcement Standard
 J - Analyte detected between limit of detection and limit of quantification.
 The result is qualified due to the uncertainty of analyte concentrations within this range.

ATTACHMENT 1
Time vs. Concentration Curves

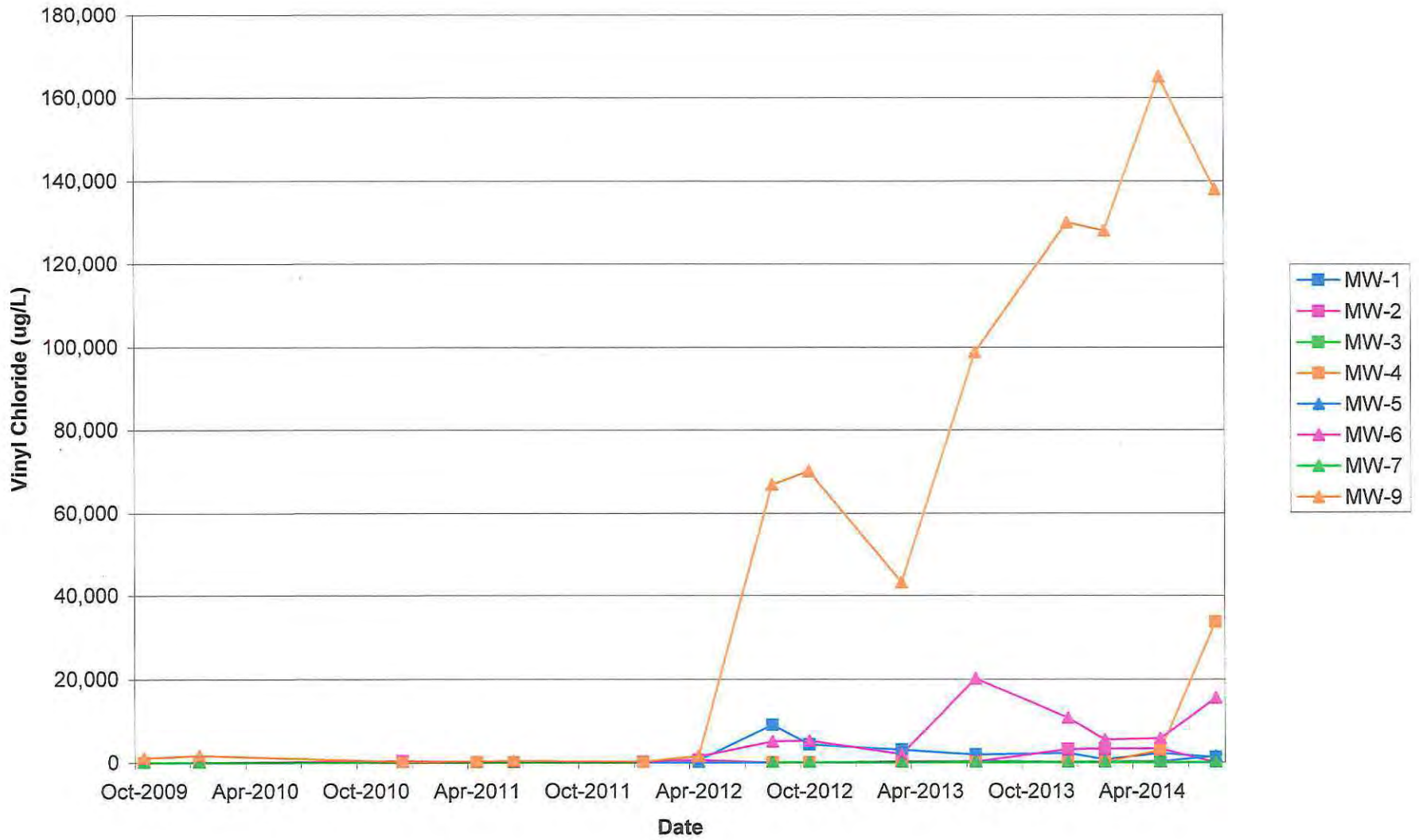
K&W Manufacturing - PCE vs Time



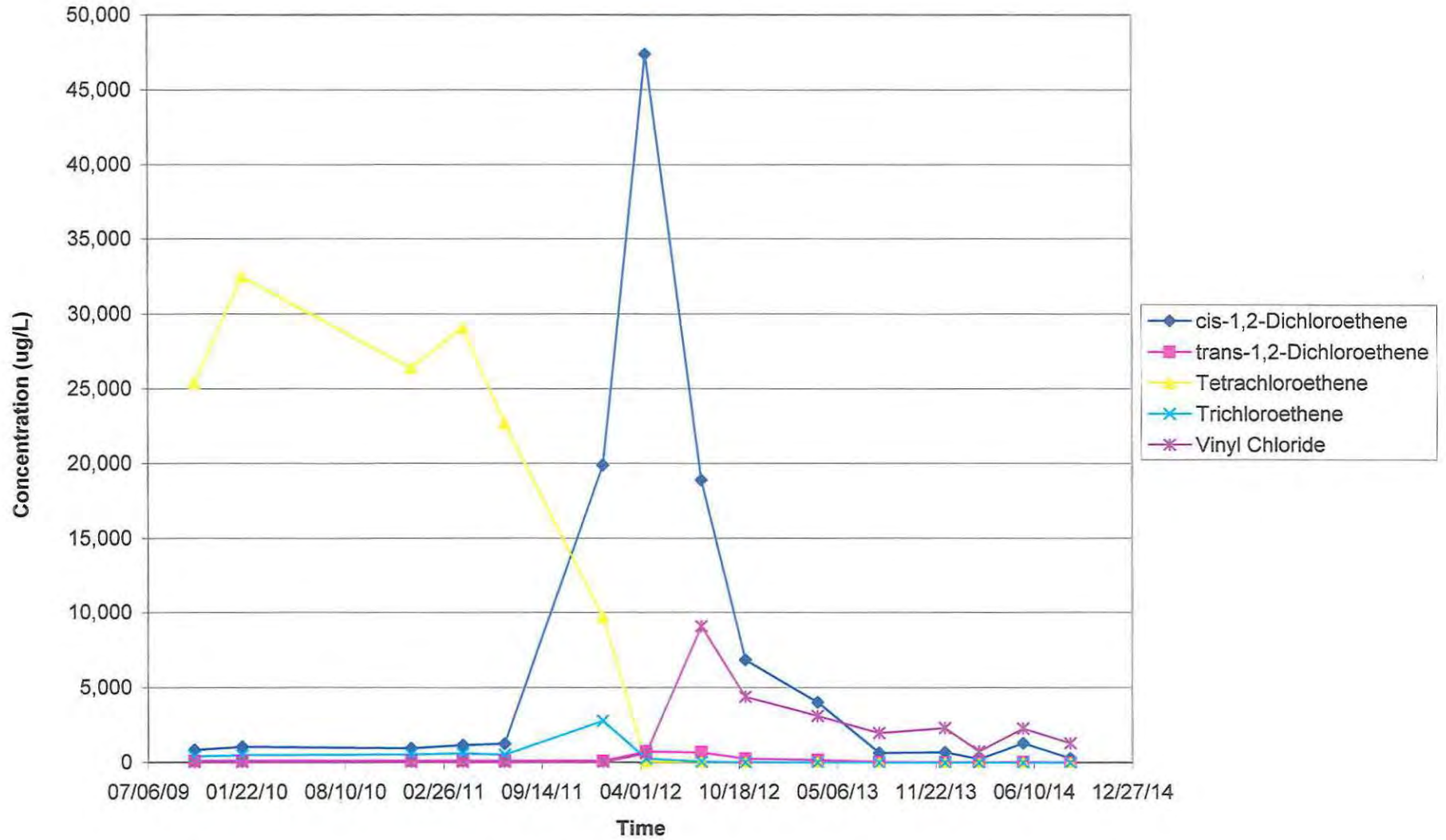
K&W Manufacturing - TCE vs Time



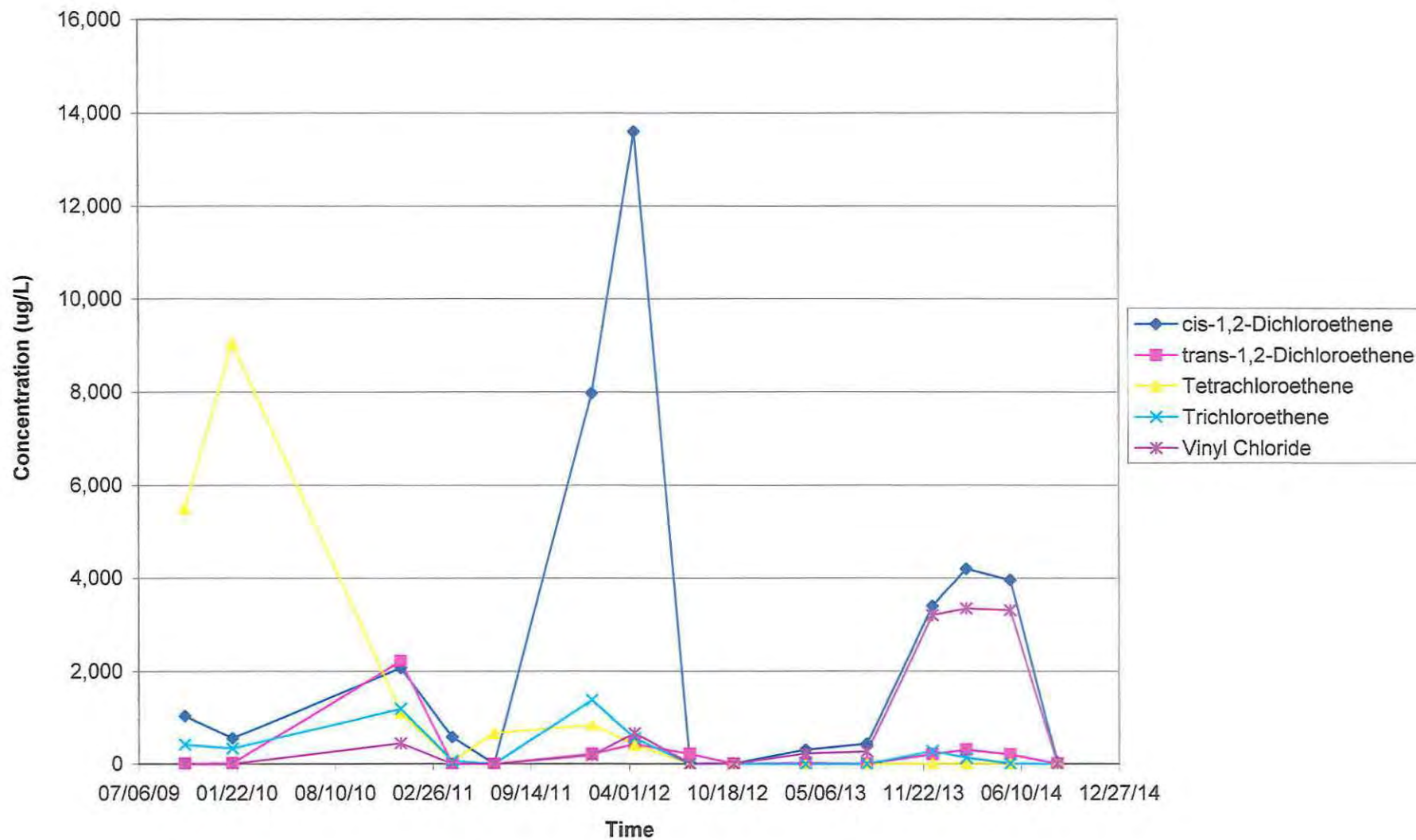
K&W Manufacturing - Vinyl Chloride vs Time



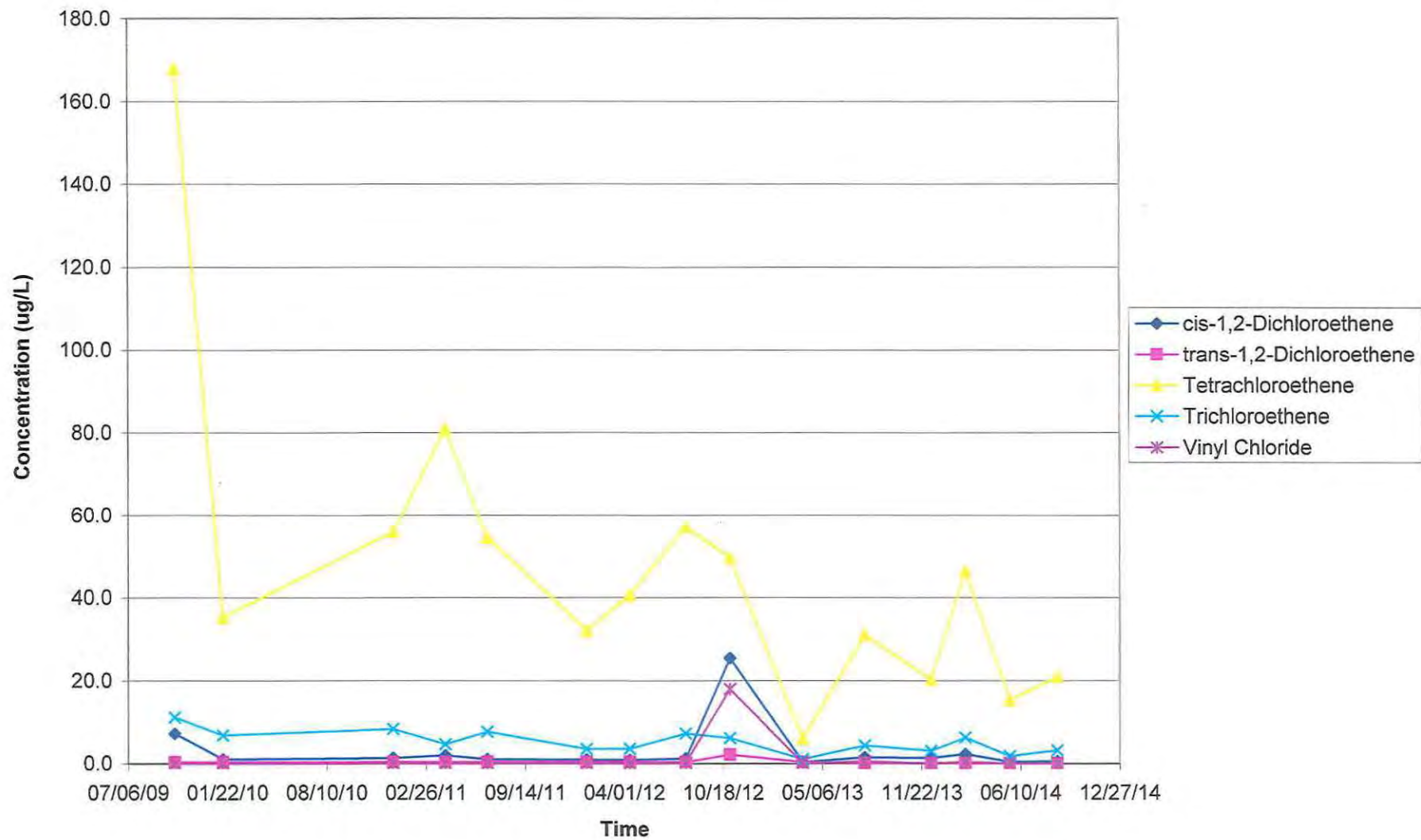
K&W Manufacturing - Time vs. Concentration MW-1



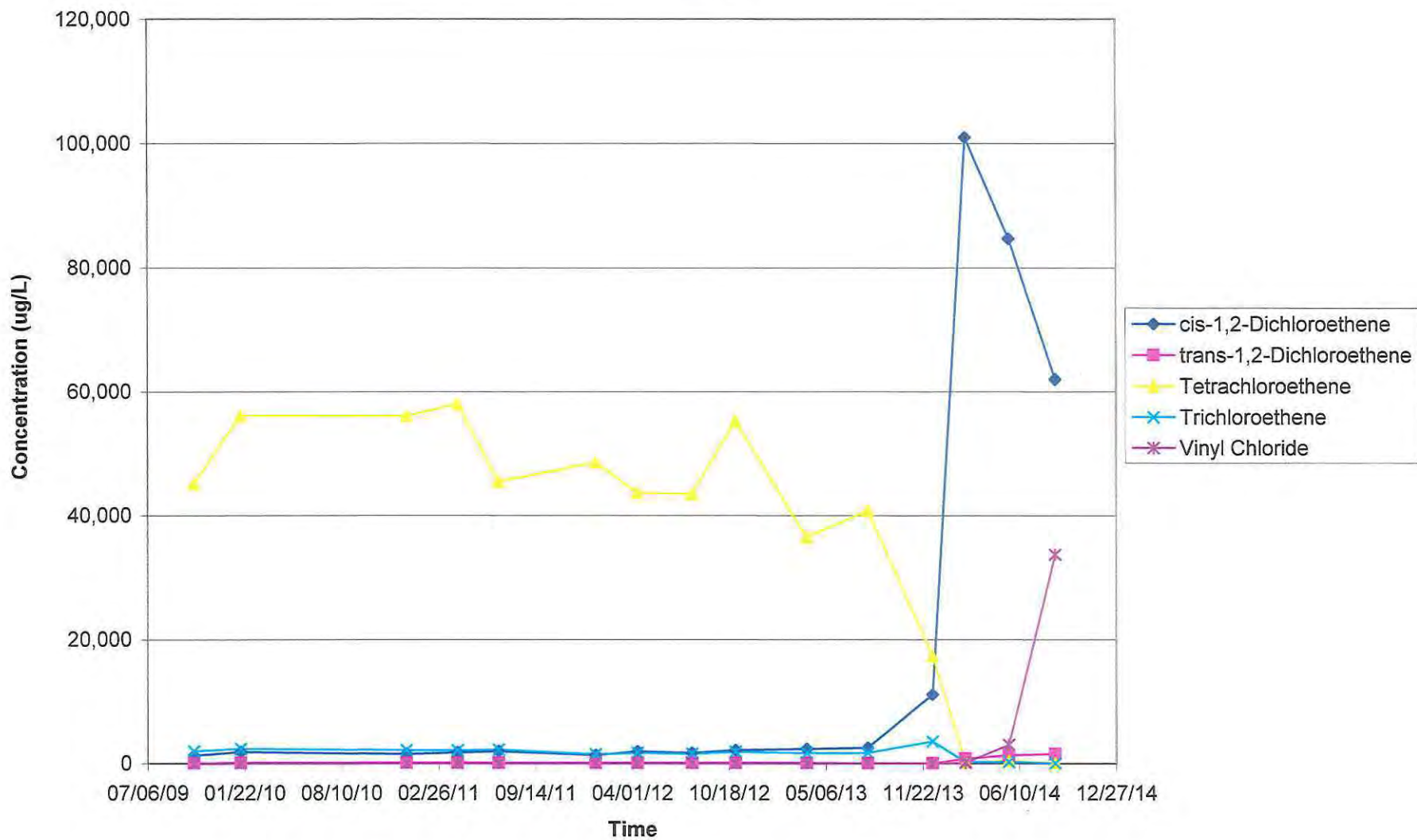
K&W Manufacturing - Time vs. Concentration MW-2



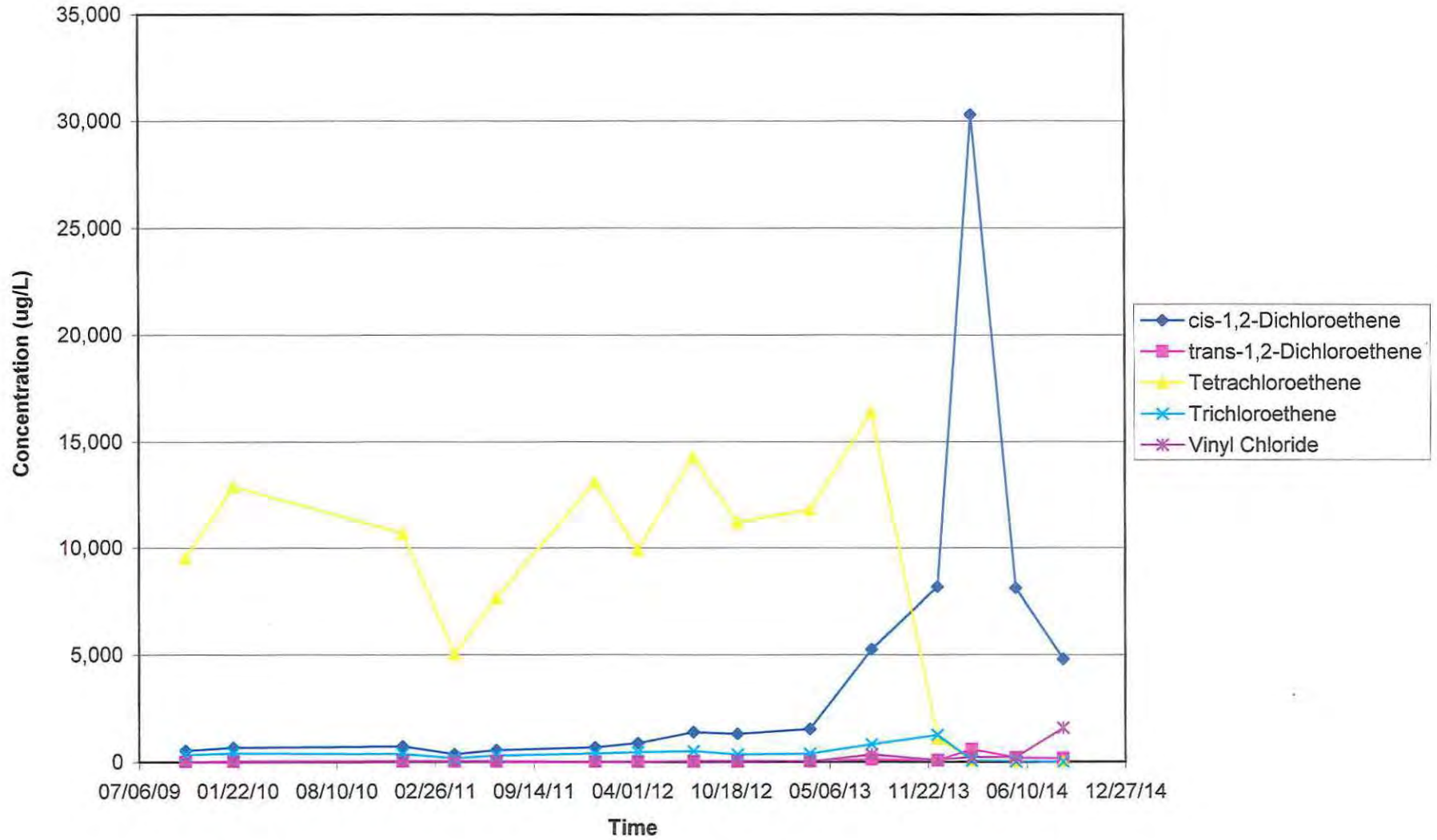
K&W Manufacturing - Time vs. Concentration
MW-3



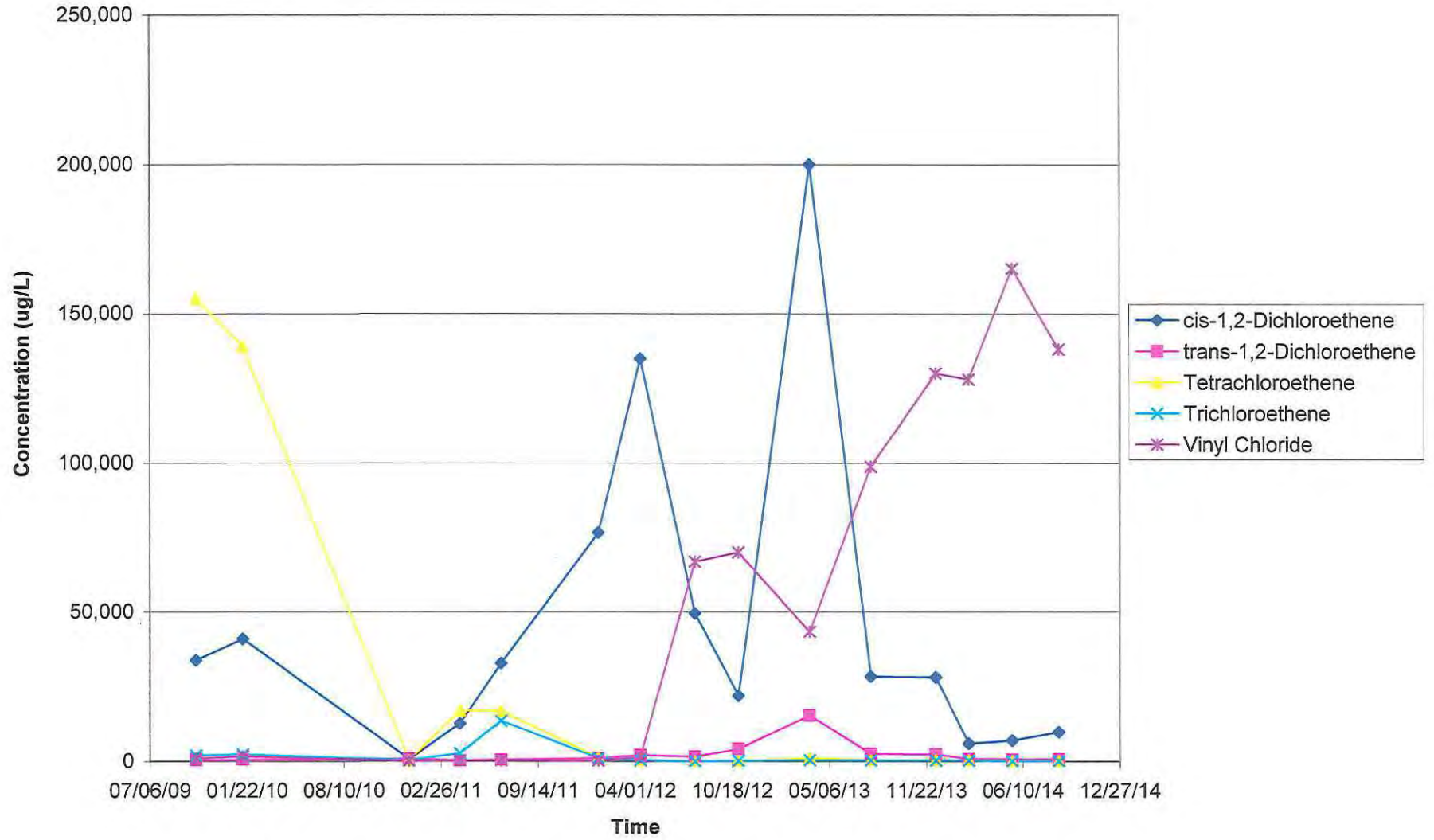
K&W Manufacturing - Time vs. Concentration MW-4



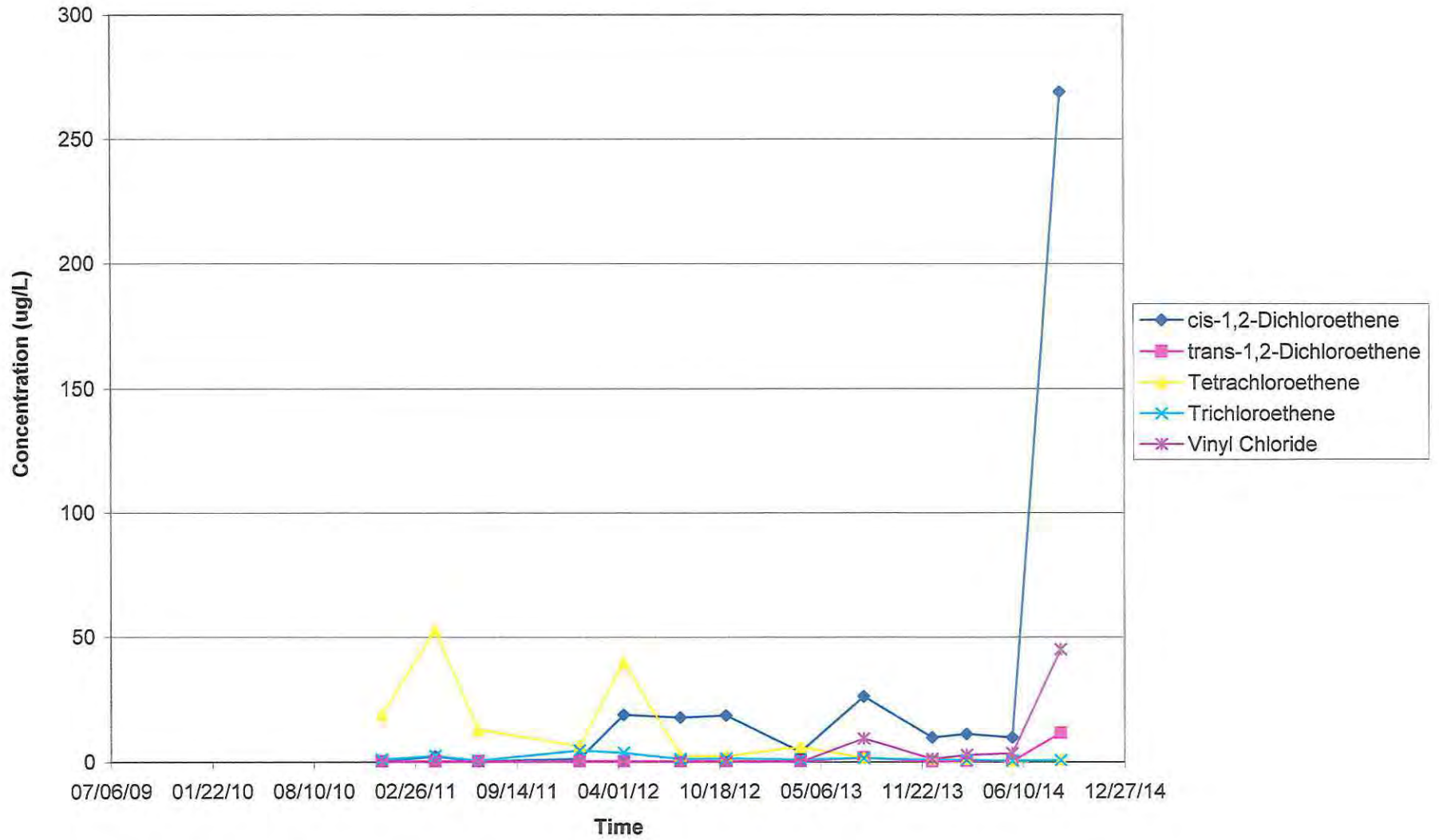
K&W Manufacturing - Time vs. Concentration MW-5



K&W Manufacturing - Time vs. Concentration
MW-9



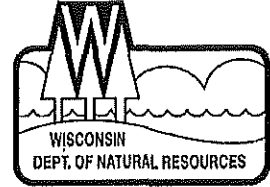
K&W Manufacturing - Time vs. Concentration PZ-2



ATTACHMENT 2
WDNR Closure Denial Letter

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee WI 53212-3128

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711



September 30, 2013.

Mr. Gregory Krieger
8619 W. Lynx Avenue
Milwaukee, WI 53225

Subject: Case Closure Denial for K & W. Manufacturing, 8619 W. Lynx Avenue, Milwaukee, WI
WDNR BRRt's Activity #, 02-41-279720, FID # 241813770

Dear Mr. Krieger:

On September 20, 2013 the Southeast Regional Closure Committee reviewed your request for closure of the case described above. The Southeast Regional Closure Committee reviews environmental remediation cases for compliance with state rules and statutes to maintain consistency in the closure of these cases. After a careful review of your closure request which included a letter and associated attachments to the case denial letter of February 14, 2013 dated March 26 2013 and the additional groundwater monitoring data in response to the February 14, 2013 case closure denial dated August 14, 2013 which your consultant submitted on your behalf, the closure committee proceeded as follows.

The committee accepted the responses of the March 26, 2013 closure denial. The committee further took time to interpret the additional groundwater monitoring data dated August 14, 2013 in relation to the enhanced reductive dechlorination (ERD) that was implemented in December 2011. The committee admits that the ERD appears to be working based on the plan that was implemented by your consultant, KPRG when compared to other sites. It is always a matter of time for the contaminant plume to stabilize and your site is not an exception or out of the ordinary to show such contaminant trend increases.

In particular, the committee noted a significant contaminant concentration increases in: Cis 1, 2-Dichloroethene at MW-2, 4, 5, 6 and MW-7; tetrachloroethene at MW4, MW-5, and MW-7; trichloroethene at MW-5, MW-7 and vinyl chloride at MW-5, MW-7 and PZ-2. While in general there can always be a sort of rebound in the contaminant concentrations after any given treatment such as the ERD, the department believes that contaminant concentrations at this site are far from indicating a rebounding effects as contaminant concentrations are in the thousands during the 07/30//2013 sampling event when compared to the 03/27/2013. The committee felt the case was not just ripe for closure.

The committee recommends doing the following to achieve closure in the future:

1. Reducing sampling to monitoring wells that are showing a continuous increase in contaminant concentrations during the last sampling event (07/30/2013).
2. Continuously monitoring until the contaminant plume is stable and your consultant should try to do this by submitting contaminant concentration graphs over time and linear regression plots of the site data.

We appreciate your efforts to restore the environment at this site. If you have any questions regarding this letter, please contact me at 41-263-8607.

Sincerely,

Binyoti F. Amungwafor
Hydrogeologist.

CC: Mr. Richard R. Gnat, KPRG and Associates, Inc.
Case File.