AquAeTer
optimizing
resources | water, air, earth
215 Jamestown Park, Suite 100 ◦ Brentwood, TN 37027 ◦ Phone (615) 373-8532

December 5, 2011 091878

Kerry Mattox
Egyptian Lacquer Manufacturing Company
113 Fort Granger Drive
Franklin, TN 37064

Sent via e-mail to: kerrymat@egyptcoat.com

RE: Biostimulation Activities
Egyptian Lacquer Manufacturing Company
Franklin, Tennessee

Dear Mr. Mattox,

AquAeTer, Inc. (**AquAeTer**) has completed one year of treatment at the Egyptian Lacquer Manufacturing Company (ELMCO) site located at 113 Fort Granger Drive in Franklin, Tennessee. Post-remediation activities include eight quarters of monitoring and demobilizing the site equipment.

REMEDIATION

AquAeTer initiated biostimulant injections in EV-8, EV-10, and RW-1. EV-8 and EV-10 are vapor extraction wells installed near the original pump station location. RW-1 is a well that showed hydraulic connectivity to both the seep at the Harpeth River, HR-2, and the Main Seep on Liberty Creek.

From the initial injections which began in July and August 2010, steady degradation of acetone and toluene were recorded in EV-8 and EV-10. As happened in the bench-scale tests, there was selective degradation of acetone and toluene in EV-8 and EV-10. Previously, toluene was being selectively degraded in EV-10, but the latest round of sampling shows that the mass of both acetone and toluene present in the well has been replenished. EV-8 continues to show degradation of both acetone and toluene. These data are presented in Table 1 and in Figure 1 and Figure 2. Results show that we have reduced the concentrations in the EV-8 well by more than 90% of the baseline concentration and in the EV-10 well area by more than 25% of baseline concentrations. Results in EV-10 have shown lower concentrations during the course of the year. However, there appears to be a remnant product area that continues to feed the EV-10 well. EV-10 appears to be the primary source area remaining and it appears to have a significant storage component. EV-8 on the other hand has been dry at times and does not recharge quickly when it is pumped dry. Both EV-8 and RW-1 have reached low concentrations of both acetone and toluene.

Following the rains in November 2010, both acetone and toluene concentrations increased in both EV-8 and EV-10. This indicates that there are pockets of constituents still in the system that may continue to contribute constituents during periods when rainfall exceeds evapotranspiration (fall, winter and spring periods). Well logs from the initial installations of these wells indicated volatile organic constituents were detected with a photoionization detector (PID) device. The PID indicated high concentrations near ground surface and at the bottom of the well. Soil samples from the bottom of the well boring were submitted for VOC analysis. Based on PID readings in the EV wells, there may continue to be a source during wet periods.

Acetone and toluene showed decreases from the January and August 2011 sampling event in well EV-8. Acetone was preferentially degraded to a greater degree, but toluene was also degraded. Well EV-10 showed a rebound in concentration from the May 2011 sampling event, indicating that there is probably a stored source in the immediate area. Wells EV-8 and EV-10 are believed to be in the area of the original leaks in the system. RW-1 is believed to be hydraulically connected to EV-8 and possibly at times to EV-10. RW-1 showed a large decrease in toluene concentrations which is in line with the substantial decrease in EV-8 in the source area.

Water quality measurements in well EV-6 showed that this well was receiving oxygen from the injections. The gradient between EV-8, RW-1 and EV-6 showed the large demand for oxygen in the immediate area around the original source.

During the course of the treatment period, we showed positive results in both acetone and toluene degradation in the original source area (EV-8 and EV-10). It appears that there is a source area that continues to contribute product to EV-10. This source area may continue to contribute constituents to the immediate groundwater table. It is noted that the leaks in the system were found in 2007 and the system was shutdown in February 2007. The tanks were removed in 2008.

POST REMEDIATION MONITORING

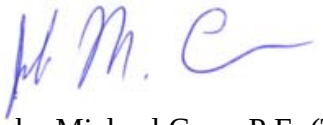
As part of the mediation agreement, the site will be monitored for eight quarters following treatment activities. As discussed with you during our previous meeting, this could be reduced if results show that a rebound has not occurred. As the schedule was part of the mediation agreement, we cannot say that it will change without an agreement between the parties involved in the mediation.

The system can also be dismantled at any time. At your request, the remediation system is being left in place for now. As long as the system remains in place, it can be restarted at any time. We would expect that there would be a lag time from the time the system is restarted until the bacterial population is sufficiently able to resume consumption of the products.

If you should have any questions concerning this invoice, please contact us by telephone at (615) 373-8532, by FAX at (615) 373-8512, or by e-mail at jmcorn@aquaeter.com. We appreciate the opportunity to assist you on this project.

Sincerely,

AquAeTer, Inc.



John Michael Corn, P.E. (TN)
Project Manager

TABLE 1. GROUNDWATER MONITORING RESULTS FOLLOWING BIOSTIMULATION INOCULATIONS

Inoculations beginning in RW-1 on July 31, 2010 and in EV-8 and EV-10 on August 13, 2010

DATE	WELL/ SAMPLE LOCATION	ACETONE 67-64-1 (mg/L)	TOLUENE 108-88-3 (mg/L)	BENZENE 71-43-2 (mg/L)	CIS-1,2-DICHLORO-ETHENE 156-59-2 (mg/L)	ETHYL-BENZENE 100-41-4 (mg/L)	METHYL ETHYL KETONE (MEK) 78-93-3 (mg/L)	METHYL ISOBUTYL KETONE (MIK) 108-10-1 (mg/L)	n-PROPYL-BENZENE 103-65-1 (mg/L)	TETRA-CHLORO-ETHENE (PCE) 127-18-4 (mg/L)	1,2,4-TRIMETHYL BENZENE 95-63-6 (mg/L)
7/30/2010	RW-1	<2.5	22.9	<0.1	<0.1	0.501	<0.5	<0.5	<0.1	<0.1	<0.2
7/30/2010	RW-1 DUP	<2.5	32.6	<0.1	<0.1	0.560	<0.5	<0.5	<0.1	<0.1	<0.2
9/22/2010	RW-1	0.0654	38.9	<0.001	NA	0.800	<0.5	<0.1	0.00572	NA	0.00714
10/28/2010	RW-1	<1	37.7	<0.02	<0.026	0.460	<0.2	<0.2	<0.02	<0.025	<0.027
11/29/2010	RW-1	7.77 (J)	64.1	<0.5	<0.5	0.946	<2.5	<2.5	<0.5	<0.5	<1
12/20/2010	RW-1	< 10	60.7	<0.2	<0.26	1.220	2 (b)	<2 (b)	<0.2	<0.25	<0.27
1/25/2011	RW-1	<10	52.7	<0.2	<0.26	1.590	<2	<2	<0.2	<0.25	<0.27
3/15/2011	RW-1	<10	67	<0.2	<0.26	0.78 (J)	<2	<2	<0.2	<0.25	<0.27
5/25/2011	RW-1	0.1	<0.0002	<0.0002	<0.00026	<0.0002	0.0273	<0.002	<0.0002	<0.00025	<0.00027
8/11/2011	RW-1	<2	11.9	<0.040	<0.052	0.139 (J)	<0.4	<0.4	<0.04	<0.05	<0.054
8/10/2010	EV-10	2,070	342	0.0217	<0.1	0.0662	11.8	5.11	<0.1	<0.1	<0.2
9/20/2010	EV-10	2,090	270	<2.5	<2.5	<2.5	12.1	<13	<2.5	<2.5	<5.0
9/20/2010	EV-10 DUP	2,070	280	<2.5	<2.5	<2.5	11.3	<13	<2.5	<2.5	<5.0
10/28/2010	EV-10	2,770	203	<0.2	<0.26	<0.2	12.3	2.71 (J)	<0.2	<0.25	<0.27
11/29/2010	EV-10	3,470	284	<0.5	<0.5	<0.5	25.8	8.98	<0.5	<0.5	<1
12/20/2010	EV-10	3,410	258	<1	<1.3	<1	19.6 (J,b)	<10 (b)	<1.0	<1.3	<1.4
1/25/2011	EV-10	1,790	47.6	<0.2	<0.26	<0.2	10.5	<2	<0.2	<0.25	<0.27
3/15/2011	EV-10	943	183	<0.4	<0.52	<0.4	<4	<4	<0.4	<0.5	<0.54
3/15/2011	EV-10 DUP	1,160	192	<0.5	<0.65	<0.5	<5	<5	<0.5	<0.63	<0.68
5/25/2011	EV-10	937	172	<2	<2.6	<2	<20	<20	<2	<2.5	<2.7
8/11/2011	EV-10	1,480	239	<0.5	<0.65	<1	11.4 (J)	<10	<1	<1.3	<1.4
8/11/2011	EV-10 DUP	1,480	235	<1	<1.3	<0.5	10.8 (J)	<5	<0.5	<0.63	<0.68

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Inoculations beginning in RW-1 on July 31, 2010 and in EV-8 and EV-10 on August 13, 2010

DATE	WELL/ SAMPLE LOCATION	ACETONE 67-64-1 (mg/L)	TOLUENE 108-88-3 (mg/L)	BENZENE 71-43-2 (mg/L)	CIS-1,2-DICHLORO-ETHENE 156-59-2 (mg/L)	ETHYL-BENZENE 100-41-4 (mg/L)	METHYL ETHYL KETONE (MEK) 78-93-3 (mg/L)	METHYL ISOBUTYL KETONE (MIK) 108-10-1 (mg/L)	n-PROPYL-BENZENE 103-65-1 (mg/L)	TETRA-CHLORO-ETHENE (PCE) 127-18-4 (mg/L)	1,2,4-TRIMETHYL BENZENE 95-63-6 (mg/L)
9/20/2010	EV-8	1,020	72.6	<1.0	<1.0	<1.0	8.2	<5	<1.0	<1.0	<2.0
10/28/2010	EV-8	489	10.6	<0.1	<0.13	<0.1	4.29	<1	<0.1	<0.13	<0.14
10/28/2010	EV-8 DUP	259	5.89	<0.2	<0.26	<0.2	<2	<2	<0.2	<0.25	<0.27
11/29/2010	EV-8	2,520	41.5	<0.5	<0.5	<0.5	25.9	<2.5	<0.5	<0.5	<1
11/29/2010	EV-8 DUP	3,390	45.9	<0.5	<0.5	<0.5	33.3	<2.5	<0.5	<0.5	<1
12/20/2010	EV-8	742	68.6	<0.2	<0.26	<0.2	10.6 (J,b)	<2 (b)	<0.2	<0.25	<0.27
12/20/2010	EV-8 DUP	723	65.6	<0.2	<0.26	<0.2	<2 (b)	<2 (b)	<0.2	<0.25	<0.27
1/25/2011	EV-8	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
3/15/2011	EV-8	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
5/25/2011	EV-8	110	41	<0.4	<0.52	<0.4	<4	<4	<0.4	<0.5	<0.54
5/25/2011	EV-8 DUP	103	39	<0.5	<0.65	<0.5	<5	<5	<0.5	<0.63	<0.68
8/11/2011	EV-8	26.3	4.34	<0.01	<0.013	<0.01	0.262	<0.1	<0.01	<0.013	<0.014
9/20/2010	Trench	<63	149	<2.5	<2.5	<2.5	<13	<13	<2.5	<2.5	<5.0
10/28/2010	Trench	2.45 (J)	132	<0.04	<0.052	0.067 (J)	<0.4	<0.4	<0.04	<0.05	<0.054
11/29/2010	Trench	14.9	194	<0.1	<0.1	0.0919 (J)	0.264 (J)	<0.5	<0.1	<0.1	<0.2
12/20/2010	Trench	< 20	180	<0.4	<0.52	<0.4	<4 (b)	<4 (b)	<0.4	<0.5	<0.54
1/25/2011	Trench	8.550	231	<0.04	<0.052	0.121 (J)	<0.4	<0.4	<0.04	<0.05	<0.054
3/15/2011	Trench	<20	151	<0.4	<0.52	<0.4	<4	<4	<0.4	<0.5	<0.54
5/31/2011	Trench	<6.3	20.5	<0.05	<0.065	<0.05	<0.5	<0.5	<0.05	<0.063	<0.068
8/11/2011	Trench	<20	182	<0.4	<0.52	<0.4	<4	<4	<0.4	<0.5	<0.54

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10/28/2010	Main Seep	<10	104	<0.2	<0.26	<0.2	<2	<2	<0.2	<0.25	<0.27
11/29/2010	Main Seep	19.4	107	<0.1	<0.1	0.0651 (J)	0.419 (J)	<0.5	<0.1	<0.1	<0.2
12/20/2010	Main Seep	< 1	106	<0.02	<0.026	0.046 (J)	<0.2 (b)	<0.2 (b)	<0.02	<0.025	<0.027
1/25/2011	Main Seep	2.79 (J)	154	<0.04	<0.052	0.0853 (J)	<0.4	<0.4	<0.04	<0.05	<0.054
3/15/2011	Main Seep	<20	101	<0.4	<0.52	<0.4	<4	<4	<0.4	<0.5	<0.54
5/25/2011	Main Seep	<20	127	<0.4	<0.52	<0.4	<4	<4	<0.4	<0.5	<0.54
8/11/2011	Main Seep	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
11/29/2010	HR-2	0.674 (J)	3.19	<0.05	<0.05	0.0423 (J)	<0.25	<0.25	<0.05	<0.05	<0.1
8/11/2011	HR-2	<0.01	0.0015	<0.0002	<0.00026	<0.0002	<0.002	<0.002	<0.0002	<0.00025	<0.00027

Note:
1 - xylenes were analyzed as m,p-xylene and o-xylene. The results were added together to provide the total xylene concentration.
NA - Sample was not analyzed for the parameter.
a - Suspected laboratory contaminant
b - CCV outside of control limits; results may be biased low.
Sample on 9/22/2010 for RW-1 collected by TriAD Environmental

TABLE 1. GROUNDWATER MONITORING RESULTS FOLLOWING BIOSTIMULATION INOCULATIONS

Inoculations beginning in RW-1 on July 31, 2010 and in EV-8 and EV-10 on August 13, 2010

DATE	WELL/ SAMPLE LOCATION	1,2,3-TRIMETHYL BENZENE 526-73-8 (mg/L)	1,3,5-TRIMETHYL BENZENE 108-67-8 (mg/L)	XYLENES[1] 1330-20-7 (mg/L)	METHYLENE CHLORIDE 75-09-2 (mg/L)	o-DICHLORO-BENZENE 95-50-1 (mg/L)	METHYL CHLORIDE 74-87-3 (mg/L)
7/30/2010	RW-1	NA	<0.2	2.227	<0.5	-	
7/30/2010	RW-1 DUP	NA	<0.2	2.774	<0.5	-	
9/22/2010	RW-1	NR	0.00659	4.45	NA	NA	NA
10/28/2010	RW-1	NA	<0.021	3.51	<0.2	<0.025	
11/29/2010	RW-1	NA	<1	8.16	<2.5	<0.5	0.786 (J)
12/20/2010	RW-1	NA	<0.21	6.99	<2.0	<0.25	<0.5
1/25/2011	RW-1	NA	<0.21	7.46	<2.0	<0.25	<0.5
3/15/2011	RW-1	NA	<0.21	4.251 (J)	3.74 (J,a)	<0.25	<0.5
5/25/2011	RW-1	NA	<0.00021	<0.00052	<0.002	<0.00025	<0.0005
8/11/2011	RW-1	NA	<0.042	6.39 (J)	<0.4	<0.05	<0.1
8/10/2010	EV-10	NA	<0.2	0.1107	0.409		
9/20/2010	EV-10	NA	<5.0	<7.5	<13	4.4	<5
9/20/2010	EV-10 DUP	NA	<5.0	<7.5	<13	<2.5	<5
10/28/2010	EV-10	NA	<0.21	<0.52	<0.5	<0.25	
11/29/2010	EV-10	NA	<1	<1.5	0.372 (J)	<0.5	<0.372 (J)
12/20/2010	EV-10	NA	<1.1	<2.6	<10	<1.3	<2.5
1/25/2011	EV-10	NA	<0.21	<0.52	<2.0	<0.25	<0.5
3/15/2011	EV-10	NA	<0.42	<1.04	<4	<0.5	<1
3/15/2011	EV-10 DUP	NA	<0.53	<1.3	8.44 (J,a)	<0.63	<1.3
5/25/2011	EV-10	NA	<2.1	<5.2	<20	<2.5	<5
8/11/2011	EV-10	NA	<1.1	<2.6	<10	<1.3	<2.5
8/11/2011	EV-1- DUP	NA	<0.53	<1.3	<5	<0.63	<1.3

TABLE 1. GROUNDWATER MONITORING RESULTS FOLLOWING BIOSTIMULATION INOCULATIONS

Inoculations beginning in RW-1 on July 31, 2010 and in EV-8 and EV-10 on August 13, 2010

DATE	WELL/ SAMPLE LOCATION	1,2,3-TRIMETHYL BENZENE 526-73-8 (mg/L)	1,3,5-TRIMETHYL BENZENE 108-67-8 (mg/L)	XYLENES[1] 1330-20-7 (mg/L)	METHYLENE CHLORIDE 75-09-2 (mg/L)	o-DICHLORO-BENZENE 95-50-1 (mg/L)	METHYL CHLORIDE 74-87-3 (mg/L)
9/20/2010	EV-8	NA	<2.0	<3.0	<5	<1	<2
10/28/2010	EV-8	NA	<0.11	<0.26	<0.25	<0.13	
10/28/2010	EV-8 DUP	NA	<0.22	<0.52	<0.5	<0.25	
11/29/2010	EV-8	NA	<1	<1.5	<2.5	<0.5	<0.571
11/29/2010	EV-8 DUP	NA	<1	<1.5	<2.5	<0.5	<0.672
12/20/2010	EV-8	NA	<0.21	<0.52	<2	<0.25	<0.5
12/20/2010	EV-8 DUP	NA	<0.21	<0.52	<2	<0.25	<0.5
1/25/2011	EV-8	Dry	Dry	Dry	Dry	Dry	Dry
3/15/2011	EV-8	Dry	Dry	Dry	Dry	Dry	Dry
5/25/2011	EV-8	NA	<0.42	<1.04	<4	<0.5	<1
5/25/2011	EV-8 DUP	NA	<0.53	<1.3	<5	<0.63	<1.3
8/11/2011	EV-8	NA	<0.011	<0.026	<0.1	<0.013	<0.025
9/20/2010	Trench	NA	<5.0	<7.5	<13	<2.5	<5
10/28/2010	Trench	NA	<0.042	0.153 (J)	<0.1	<0.05	
11/29/2010	Trench	NA	<0.2	0.3005 (J)	<0.5	<0.1	<0.2
12/20/2010	Trench	NA	<0.42	<1.04	<4	<0.5	<1
1/25/2011	Trench	NA	<0.042	0.3075 (J)	<0.4	<0.05	<0.1
3/15/2011	Trench	NA	<0.42	<1.04	7.68 (J,a)	<0.5	<1
5/31/2011	Trench	NA	<0.053	<0.13	<0.5	<0.063	<0.13
8/11/2011	Trench	NA	<0.42	<1.04	<4	<0.5	<1

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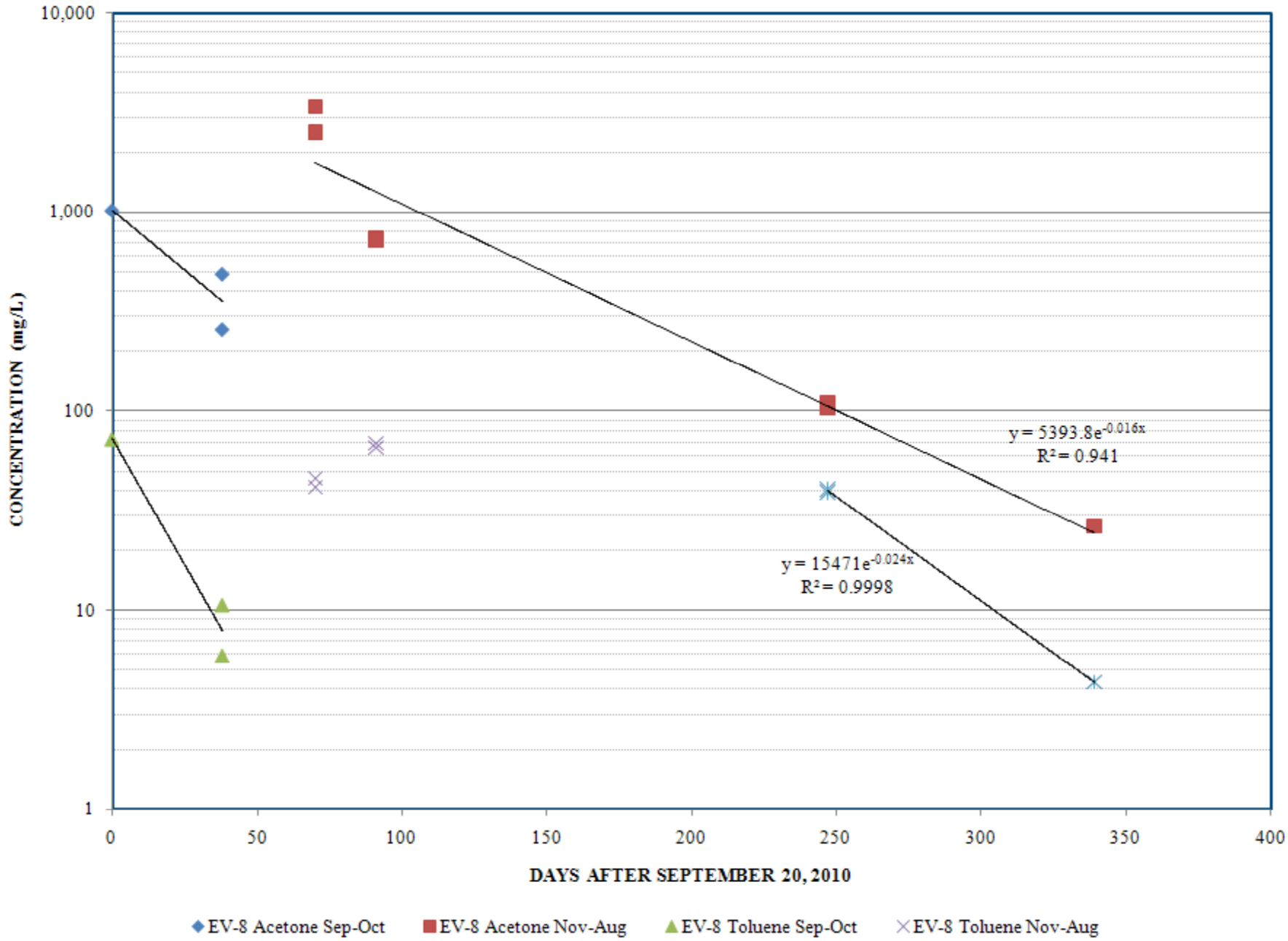
10/28/2010	Main Seep	NA	<0.21	<0.52	<0.5	0.25	
11/29/2010	Main Seep	NA	<0.2	0.2065 (J)	0.205 (a)	<0.1	<0.2
12/20/2010	Main Seep	NA	<0.021	0.1212 (J)	<0.2	<0.025	<0.05
1/25/2011	Main Seep	NA	<0.042	0.156	<0.4	<0.05	<0.1
3/15/2011	Main Seep	NA	<0.42	<1.04	<6.33 (J,a)	<0.5	<1
5/25/2011	Main Seep	NA	<0.42	<1.04	<4	<0.5	<1
8/11/2011	Main Seep	Dry	Dry	Dry	Dry	Dry	Dry
11/29/2010	HR-2	NA	<0.1	0.123 (J)	<0.25	<0.05	<0.1
8/11/2011	HR-2	NA	<0.00021	<0.00052	<0.002	<0.00025	<0.0005

Note: 1 - xylenes were analyzed as m,p-xylene and o-xylene. The results were added together to provide the total xylene concentration.
NA - Sample was not analyzed for the parameter.
a - Suspected laboratory contaminant
b - CCV outside of control limits; results may be biased low.



Note: Well was dry during January 25, 2011 and March 15, 2011 sampling.

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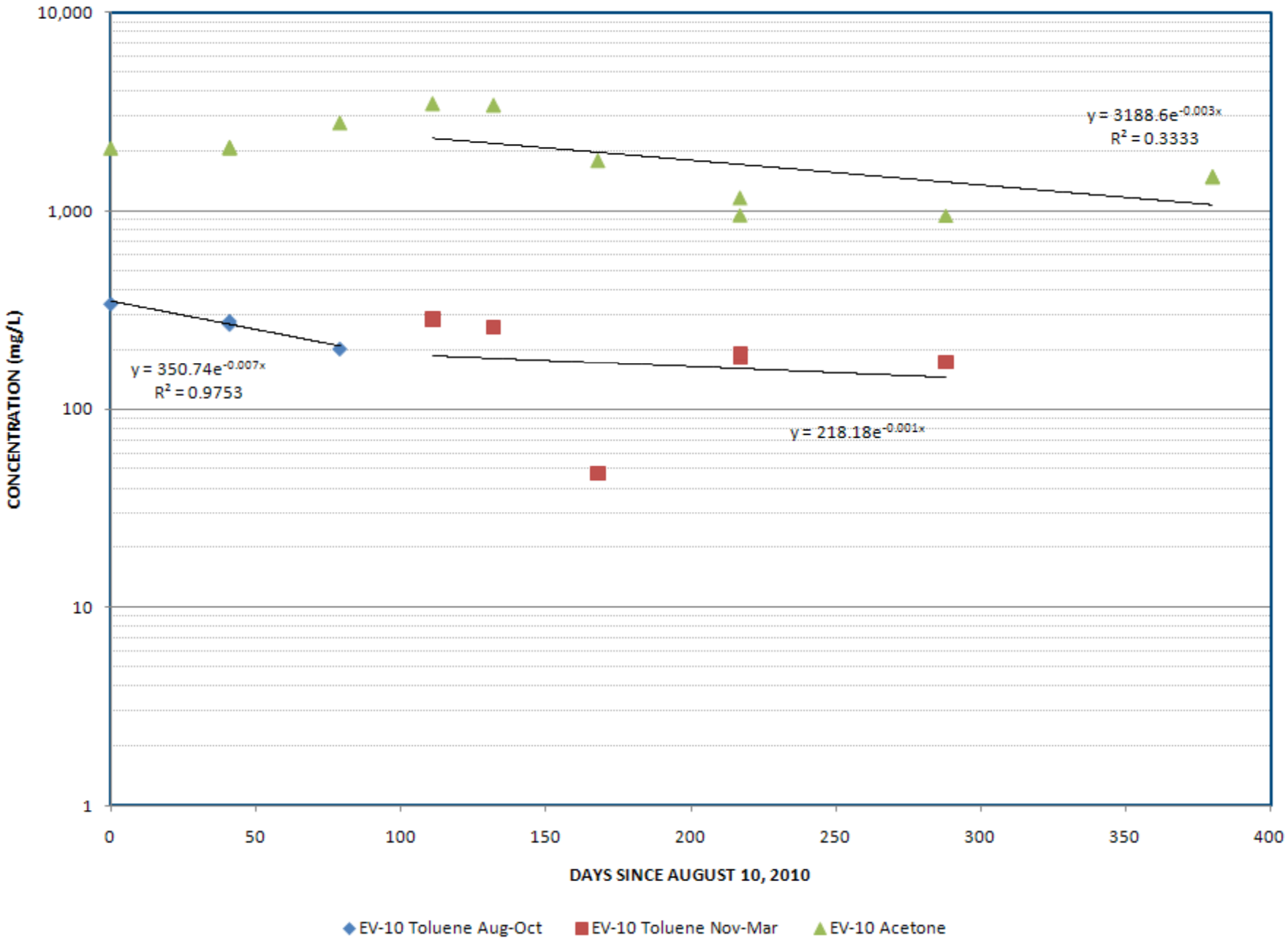
CLIENT: Egyptian Lacquer Manufacturing Company
LOCATION: Franklin, Tennessee
PROJECT/FILE: 091878

FIGURE 1

EV-8 RESULTS



CLIENT: Egyptian Lacquer Manufacturing Company	
LOCATION: Franklin, Tennessee	
PROJECT/FILE: 091878	
optimizing resources | water, air, earth	**FIGURE 2** **EV-10 RESULTS**