APPENDIX I

GROUNDWATER MONITORING LOGS

MWH

Groundwater Sample Record Sheet

Well ID: MW-5

Project: Tyco - Kunkle	Sample Date: 8/12/10
Job No:	Sampled by: DTM
Location: Andrews, IN	
Depth to Water (btoc): 6.23	Well Condition: good-new
Total Well Depth (btoc): 15.55	
Length of Water Column:	
Well Diameter (inches): 2	Weather: 85°, humid, sunny
One Casing Volume:	
Purge Start Time: 0942	
Purge End Time: 1035	Sample Method: peristaltic, low-flow
Purge Flow Rate (ml/min): ~250	
Sample Time: 1036	

Time	Depth to Water (ft. btoc)	Volume Purged (gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Diss. Oxygen (mg/L)	Temperature (deg. C)	ORP (mV)	Color	Odor
0945	6.23	0.10	7.71	1.145	177	2.23	19.80	93	clear	none
0950	6.23	0.50	7.63	1.169	113	1.39	20.08	84	"	"
0955	6.23	0.75	7.60	1.162	98.8	1.25	20.31	81	"	"
1000	6.23	1.00	7.62	1.130	90.6	1.09	20.27	78	"	"
1005	6.23	1.25	7.59	1.044	36.4	0.77	20.16	72	"	"
1010	6.23	1.50	7.61	0.961	10.3	0.51	20.17	66	"	"
1015	6.23	1.75	7.65	0.905	0.0	0.37	20.14	60	"	"
1020	6.23	2.00	7.61	0.879	0.0	0.30	20.03	56	"	"
1025	6.23	2.25	7.62	0.863	0.0	0.27	20.12	51	"	"
1030	6.23	2.50	7.60	0.846	0.0	0.25	20.11	48	"	"
1035	6.23	2.75	7.61	0.840	0.0	0.23	20.09	46	"	"
Sampled @ 1036										

Analyses	No. Bottles	Preservative	Duplicate	MS/MSD	Blank
Total Lead	1	HNO_3			

(1.25" = 0.077; 1.5" = 0.10; 2" = 0.164; 2.5" = 0.24; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88)

NOTES:

MWH

Groundwater Sample Record Sheet

Well ID: MW-6

Project: Tyco - Kunkle	Sample Date: 8/12/10
Job No: 1008961	Sampled by: DTM
Location: Andrews, IN	
Depth to Water (btoc): 6.75	Well Condition: good-new
Total Well Depth (btoc): 15.90	
Length of Water Column:	
Well Diameter (inches): 2	Weather: 90°, humid, sunny
One Casing Volume:	
Purge Start Time: 1047	
Purge End Time:	Sample Method: peristaltic, low-flow
Purge Flow Rate (ml/min): ~350/~450/~300	
Sample Time: 1132	

Time	Depth to Water (ft. btoc)	Volume Purged (gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Diss. Oxygen (mg/L)	Temperature (deg. C)	ORP (mV)	Color	Odor
1051	6.75	0.25	7.76	0.654	103	0.27	19.75	83	clear	none
1055	6.75	0.60	7.69	0.653	77.9	0.13	19.66	76	"	"
1100	6.75	1.00	7.67	0.651	38.9	0.09	19.55	69	"	"
1105	6.75	1.50	7.70	0.650	18.4	0.08	19.62	63	"	"
1110	6.75	1.90	7.65	0.650	7.8	0.06	19.59	59	"	"
1115	6.75	2.35	7.70	0.649	0.0	0.05	19.50	55	"	"
1120	6.75	2.60	7.64	0.647	0.0	0.05	19.72	51	"	"
1125	6.75	2.90	7.70	0.648	0.0	0.05	19.78	47	"	"
1130	6.75	3.20	7.67	0.647	0.0	0.05	19.73	45	"	"
Sampled @ 1132										

Analyses	No. Bottles	Preservative	Duplicate	MS/MSD	Blank
Total Lead	1	HNO_3			

(1.25" = 0.077; 1.5" = 0.10; 2" = 0.164; 2.5" = 0.24; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88)

NOTES:

MWH

Groundwater Sample Record Sheet

Well ID: MW-7

Project: Tyco - Kunkle	Sample Date: 8/12/10
Job No:	Sampled by: DTM
Location: Andrews, IN	
Depth to Water (btoc): 6.61	Well Condition: good - new
Total Well Depth (btoc): 16.27	
Length of Water Column:	
Well Diameter (inches): 2	Weather: 80°, sunny, humid
One Casing Volume:	
Purge Start Time: 0820	
Purge End Time:	Sample Method: peristaltic / low-flow
Purge Flow Rate (ml/min): ~200 / ~300	
Sample Time: 0926	

Time	Depth to Water (ft. btoc)	Volume Purged (gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Diss. Oxygen (mg/L)	Temperature (deg. C)	ORP (mV)	Color	Odor
0825	7.04	0.45	8.01	0.732	79.4	0.29	19.54	161	clear	none
0830	7.07	0.55	7.94	0.732	59.6	0.22	19.72	130	clear	none
0835	7.12	0.75	7.91	0.734	55.5	0.17	19.82	85	"	"
0840	7.16	0.95	7.88	0.734	51.4	0.14	19.98	57	"	"
0845	7.17	1.15	7.79	0.730	72.3	0.12	19.98	37	"	"
0850	7.22	1.40	7.73	0.724	73.1	0.10	19.97	30	"	"
0855	7.25	1.65	7.70	0.719	52.3	0.09	19.94	25	"	"
0900	7.26	1.90	7.64	0.716	42.2	0.08	19.92	18	"	"
0905	7.28	2.15	7.64	0.714	28.7	0.08	20.02	12	"	"
0910	7.31	2.40	7.63	0.715	13.5	0.07	19.87	8	"	"
0915	7.33	2.75	7.63	0.713	11.4	0.08	19.98	4	"	"
0920	7.35	3.00	7.63	0.713	10.7	0.07	19.74	1		
0925	7.37	3.25	7.63	0.713	1.9	0.08	19.86	-1		
Sample @ 0926										

Analyses	No. Bottles	Preservative	Duplicate	MS/MSD	Blank
Total Lead	1	HNO_3			

(1.25" = 0.077; 1.5" = 0.10; 2" = 0.164; 2.5" = 0.24; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88)

NOTES: Marty w/ MidWay 317-319-2827; Purge rate increased to 300 ml/min @ 0846 to pull sediment from annular space near tubing intake

MWH

Groundwater Sample Record Sheet

Well ID: MW-8

Project: Tyco-Kunkle	Sample Date: 8/12/10
Job No: 1008961	Sampled by: DTM
Location: Andrews, IN	
Depth to Water (btoc): 7.35	Well Condition: good
Total Well Depth (btoc): 15.75	
Length of Water Column:	
Well Diameter (inches): 2	Weather: 90°, humid, partly cloudy
One Casing Volume:	
Purge Start Time: 1225	
Purge End Time:	Sample Method: peristaltic - low-flow
Purge Flow Rate (ml/min): ~400 / ~300	
Sample Time: 1312	

Time	Depth to Water (ft. btoc)	Volume Purged (gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Diss. Oxygen (mg/L)	Temperature (deg. C)	ORP (mV)	Color	Odor
1230	7.37	0.35	8.65	0.642	92.6	2.70	17.52	113	clear	none
1235	7.38	0.75	8.37	0.643	66.5	2.47	17.41	113	clear	none
1240	7.38	1.00	8.14	0.642	42.1	2.37	17.76	114	"	"
1245	7.38	1.25	8.01	0.644	32.2	2.34	17.66	115	"	"
1250	7.37	1.50	7.96	0.644	22.0	2.33	17.59	116	"	"
1255	7.37	1.75	7.91	0.643	14.2	2.31	17.36	116	"	"
1300	7.37	2.00	7.92	0.643	8.7	2.30	17.58	116	"	"
1305	7.37	2.25	7.89	0.643	9.6	2.28	17.56	116	"	"
1310	7.37	2.50	7.88	0.643	7.7	2.32	17.45	117		
Sampled @ 1312										

Analyses	No. Bottles	Preservative	Duplicate	MS/MSD	Blank
Total Lead	1	HNO_3			

(1.25" = 0.077; 1.5" = 0.10; 2" = 0.164; 2.5" = 0.24; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88)

NOTES:

MWH

Groundwater Sample Record Sheet

Well ID: MW-9

Project: Tyco - Kunkle	Sample Date: 8/12/10
Job No: 1008961	Sampled by: DTM
Location: Andrews IN	
Depth to Water (btoc): 6.92	Well Condition: good - new
Total Well Depth (btoc): 16.48	
Length of Water Column:	
Well Diameter (inches): 2	Weather: 92°, humid, mostly sunny
One Casing Volume:	
Purge Start Time: 1323	
Purge End Time:	Sample Method: peristaltic / low-flow
Purge Flow Rate (ml/min): ~400 /	
Sample Time: 1417	

Time	Depth to Water (ft. btoc)	Volume Purged (gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Diss. Oxygen (mg/L)	Temperature (deg. C)	ORP (mV)	Color	Odor
1327	6.93	0.20	8.08	0.643	147	3.34	15.32	129	clear	none
1330	6.93	0.30	8.06	0.642	120	3.03	15.17	130	"	"
1335	6.93	0.70	8.03	0.642	90.2	2.94	15.15	131	"	"
1340	6.93	1.10	7.95	0.643	50.1	2.81	15.27	132	"	"
1345	6.94	1.50	7.92	0.642	31.0	2.90	15.25	133	"	"
1350	6.93	1.90	7.91	0.642	25.1	2.86	15.20	134	"	"
1355	6.93	2.25	7.92	0.643	14.3	2.77	15.33	135	"	"
1400	6.93	2.60	7.95	0.642	8.9	2.84	15.07	136	"	"
1405	6.93	3.00	8.02	0.642	6.2	2.77	15.10	137	"	"
1410	6.93	3.35	8.01	0.643	2.7	2.73	15.31	136	"	"
1415	6.93	3.70	8.00	0.643	0.0	2.71	15.39	137	"	"
Sampled @ 1417										

Analyses	No. Bottles	Preservative	Duplicate	MS/MSD	Blank
Total Lead	1	HNO_3			

(1.25" = 0.077; 1.5" = 0.10; 2" = 0.164; 2.5" = 0.24; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88)

NOTES:

MWH

Groundwater Sample Record Sheet

Well ID: MW-10

Project: Tyco-Kunkle	Sample Date: 8/12/10
Job No: 1008961	Sampled by: DTM
Location: Andrews, IN	
Depth to Water (btoc): 4.10	Well Condition: good-new
Total Well Depth (btoc): 14.72	
Length of Water Column:	
Well Diameter (inches): 2	Weather: 93°, humid, sunny
One Casing Volume:	
Purge Start Time: 1430	
Purge End Time:	Sample Method: peristaltic / low-flow
Purge Flow Rate (ml/min): ~400 / ~300	
Sample Time: 1532	

Time	Depth to Water (ft. btoc)	Volume Purged (gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Diss. Oxygen (mg/L)	Temperature (deg. C)	ORP (mV)	Color	Odor
1440	4.11	0.60	8.24	0.599	153	1.25	14.07	143	clear	none
1445	4.12	1.00	8.15	0.598	96.9	1.18	14.16	141	"	"
1450	4.12	1.50	8.13	0.600	71.7	1.20	14.18	140	"	"
1455	4.12	1.90	8.21	0.600	58.9	1.25	14.19	140	"	"
1500	4.12	2.30	8.14	0.600	34.8	1.20	13.91	140	"	"
1505	4.12	2.70	8.10	0.599	21.7	1.20	14.36	139	"	"
1510	4.12	3.00	8.09	0.599	12.2	1.24	14.57	139	"	"
1515	4.12	3.30	8.12	0.601	9.1	1.32	14.34	139	"	"
1520	4.12	3.60	8.14	0.601	4.4	1.28	14.27	140	"	"
1525	4.12	3.90	8.15	0.601	2.3	1.33	14.26	139		
1530	4.12	4.20	8.18	0.601	0.0	1.35	14.11	139		
Sampled @ 1532										

Analyses	No. Bottles	Preservative	Duplicate	MS/MSD	Blank
Total Lead	1	HNO_3			

(1.25" = 0.077; 1.5" = 0.10; 2" = 0.164; 2.5" = 0.24; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88)

NOTES: