

TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
DUBACH 16-4, THESING 9-4
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)	
GW01	2/10/2011	4800	2100	850	12000	7	NA	
MW01	3/24/2011	<1.0	<1.0	1100	12000	8.22	89.38	
	6/9/2011	3900	2.5	190	6200	8.60	89.00	
	9/2/2011	4500	1.6	180	8400	10.16	87.38	
	12/2/2011	3200	2.8	760	7000	9.98	87.56	
	3/6/2012	2400	1.5	530	5700	10.60	86.94	
	6/19/2012	3600	<1.0	690	8200	9.63	87.91	
	9/26/2012	2200	<1.0	620	5400	13.19	84.35	
	12/21/2012	1800	1.5	660	7200	10.89	86.65	
	3/29/2013	2200	1.5	410	4900	8.80	88.74	
	6/27/2013	1800	1.0	590	5600	10.50	87.04	
	9/10/2013	2600	<1.0	980	6900	10.79	86.75	
	12/11/2013	1260	<200	416	3190	9.77	87.77	
	12/17/2013	Surveyed - Not Sampled					9.88	87.75
	3/11/2014	1870	<10.0	908	2560	10.20	87.34	
	6/6/2014	1370	<20.0	779	5540	6.19	91.44	
	9/22/2014	1270	<20.0	812	3920	NM	NA	
	12/2/2014	1030	<5.0	954	4160	8.26	89.37	
	3/16/2015	668	<20.0	601	2520	8.95	88.68	
	6/16/2015	735	<20.0	790	4140	10.07	87.56	
	9/10/2015	66.6	<4.0	109	298	10.95	86.68	
	12/17/2015	815	<4.0	643	2060	6.05	91.58	
	3/30/2016	63.9	<1.0	74.0	183	7.72	89.91	
	6/6/2016	556	1.31	762	1,670	10.28	87.35	
	9/8/2016	582	<1.00	1,000	2,480	11.28	86.35	
	12/5/2016	281	<4.00	821	1,650	9.00	88.63	
	3/2/2017	421	<20.0	466	773	10.71	86.92	
	6/16/2017	262	<4.00	253	550	9.25	88.38	
	9/5/2017	DTW - Not Sampled					10.83	86.80
	9/12/2017	223	<4.00	349	920	10.93	86.70	
	12/8/2017	108	<4.00	152	839	12.04	85.59	
	3/2/2018	86.0	<4.00	177	927	10.62	87.01	
	6/4/2018	66.6	<4.00	172	760	9.41	88.22	
	9/5/2018	79.1	<4.00	166	813	10.40	87.23	
	12/14/2018	168	<4.00	393	1,290	8.03	89.60	



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Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)	
MW02	3/24/2011	200	<1.0	25	4.1	8.10	89.40	
	6/9/2011	23	<1.0	2.9	<1.0	8.47	89.03	
	9/2/2011	69	<1.0	4.2	<1.0	10.03	87.47	
	12/2/2011	170	<1.0	29	<1.0	9.92	87.58	
	3/6/2012	29	<1.0	5.4	210	10.65	86.85	
	6/19/2012	15	<1.0	19	1.5	9.76	87.74	
	9/26/2012	5.4	<1.0	2.1	<1.0	13.20	84.30	
	12/21/2012	4.6	<1.0	<1.0	<1.0	10.75	86.75	
	3/29/2013	24	<1.0	<1.0	<1.0	8.50	89.00	
	6/27/2013	<1.0	<1.0	<1.0	<1.0	10.35	87.15	
	9/10/2013	3.2	<1.0	2.0	2.6	10.77	86.73	
	12/11/2013	<1.0	<1.0	<1.0	<1.0	9.65	87.85	
	12/17/2013	Surveyed - Not Sampled					9.73	87.81
	3/11/2014	<1.0	<1.0	<1.0	<1.0	10.09	87.41	
	6/6/2014	<1.0	<1.0	<1.0	<1.0	5.98	91.56	
	9/22/2014	<1.0	<1.0	<1.0	<1.0	NM	NA	
	12/2/2014	<1.0	<1.0	<1.0	<1.0	8.04	89.50	
	3/16/2015	<1.0	<1.0	<1.0	<1.0	8.80	88.74	
	6/16/2015	<1.0	<1.0	<1.0	<1.0	9.85	87.69	
	9/10/2015	<1.0	<1.0	<1.0	<1.0	10.75	86.79	
	12/17/2015	<1.0	<1.0	<1.0	<1.0	5.93	91.61	
	3/30/2016	<1.0	<1.0	<1.0	<1.0	7.62	89.92	
	6/6/2016	<1.00	<1.00	<1.00	<1.00	10.16	87.38	
	9/8/2016	<1.00	<1.00	<1.00	<1.00	11.18	86.36	
	12/5/2016	<1.00	<1.00	<1.00	<1.00	9.14	88.40	
	3/2/2017	<1.00	<1.00	<1.00	<1.00	10.59	86.95	
	6/16/2017	<1.00	<1.00	<1.00	<1.00	9.00	88.54	
	9/5/2017	<1.00	<1.00	<1.00	<1.00	10.74	86.80	
	12/8/2017	<1.00	<1.00	<1.00	<1.00	11.88	85.66	
	3/2/2018	<1.00	<1.00	<1.00	<1.00	10.55	86.99	
6/4/2018	<1.00	<1.00	<1.00	<1.00	9.35	88.19		
9/5/2018	<1.00	<1.00	<1.00	<1.00	10.34	87.20		
12/14/2018	<1.00	<1.00	<1.00	<1.00	7.79	89.75		
MW03	3/24/2011	4900	<1.0	780	8700	7.08	NA	
	6/9/2011	240	<1.0	82	710	7.28	NA	
	9/2/2011	7900	<1.0	230	3100	9.27	NA	



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	12/2/2011	4900	<1.0	670	7300	8.86	NA	
	3/6/2012	5900	<1.0	630	8500	9.45	NA	
	6/19/2012	3700	<1.0	570	7700	8.52	NA	
	9/26/2012	3900	<1.0	480	5700	12.38	NA	
	12/21/2012	2600	<1.0	250	2600	9.68	NA	
	3/29/2013	380	<1.0	18	440	8.13	NA	
	6/27/2013	Damaged - Not Sampled					Damaged	NA
	MW03 destroyed as of 6/27/2013							
MW03R	9/10/2013	2900	<1.0	510	5200	9.57	86.82	
	12/11/2013	1470	<10.0	324	2620	8.97	87.42	
	12/17/2013	Surveyed - Not Sampled					8.83	87.58
	3/11/2014	2320	<10.0	490	2590	9.24	87.15	
	6/6/2014	1700	<50.0	314	2010	5.16	91.25	
	9/22/2014	1480	<10.0	347	1870	NM	NA	
	12/2/2014	1950	<10.0	474	1710	7.34	89.07	
	3/16/2015	331	<20.0	29.4	158	7.87	88.54	
	6/16/2015	931	<10.0	99.1	364	10.15	86.26	
	9/10/2015	1740	<1.0	107	321	10.07	86.34	
	12/17/2015	112	<10.0	31.1	78.1	4.31	92.10	
	3/30/2016	176	<1.0	42.2	109	5.99	90.42	
	6/6/2016	512	<1.00	234	588	9.43	86.98	
	9/8/2016	572	<1.00	136	500	10.49	85.92	
	12/5/2016	1,370	<4.00	67.6	152	6.16	90.25	
	3/2/2017	148	<10.0	78.6	69.2	PVC Blocked	NA	
	6/16/2017	108	<4.00	11.8	34.8	PVC Blocked	NA	
	9/5/2017	194	<1.00	14.1	51.7	PVC Blocked	NA	
	12/8/2017	124	<1.00	4.71	15.1	PVC Blocked	NA	
	3/2/2018	306	<1.00	7.25	23.6	PVC Blocked	NA	
	6/4/2018	49.8	<4.00	<4.00	<4.00	PVC Blocked	NA	
	9/5/2018	7.84	<4.00	<4.00	<4.00	PVC Blocked	NA	
	12/14/2018	15.7	<1.00	2.07	14.9	PVC Blocked	NA	
MW04	3/24/2011	15	<1.0	160	2600	7.41	89.07	
	6/9/2011	17	<1.0	25	260	7.58	88.90	
	9/2/2011	46	<1.0	92	650	9.45	87.03	
	12/2/2011	110	<1.0	260	2900	9.32	87.16	



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	3/6/2012	110	<1.0	120	410	9.78	86.70
	6/19/2012	400	<1.0	450	2200	8.82	87.66
	9/26/2012	150	<1.0	100	220	12.65	83.83
	12/21/2012	7.5	<1.0	11	12	9.90	86.58
	3/29/2013	<1.0	<1.0	<1.0	10	8.24	88.24
	6/27/2013	2.6	<1.0	9.7	30	9.85	86.63
	9/10/2013	29	<1.0	98	250	9.71	86.77
	12/11/2013	2.0	<1.0	77.4	206	8.99	87.49
	12/17/2013	Surveyed - Not Sampled				9.50	87.64
	3/11/2014	4.1	<1.0	111	181	9.25	87.23
	6/6/2014	<1.0	<1.0	60.1	158	5.54	91.60
	9/22/2014	4.3	<1.0	172	413	NM	NA
	12/2/2014	4.3	<2.0	55.5	112	8.31	88.83
	3/16/2015	<1.0	<1.0	21.8	35.8	8.57	88.57
	6/16/2015	<4.0	<4.0	20.4	34.5	9.80	87.34
	9/10/2015	2.1	<1.0	83.8	122	10.69	86.45
	12/17/2015	<1.0	<1.0	1.8	3.8	4.95	92.19
	3/30/2016	<1.0	<1.0	5.3	8.3	6.70	90.44
	6/6/2016	<1.00	<1.00	4.12	8.89	10.14	87.00
	9/8/2016	<1.00	<1.00	3.27	7.52	11.23	85.91
	12/5/2016	<1.00	<1.00	2.25	21.8	6.82	90.32
	3/2/2017	<1.00	<1.00	<1.00	<1.00	10.58	86.56
	6/16/2017	<1.00	<1.00	<1.00	<1.00	8.30	88.84
	9/5/2017	<1.00	<1.00	<1.00	<1.00	10.74	86.40
	12/8/2017	<1.00	<1.00	<1.00	<1.00	11.86	85.28
	3/2/2018	<1.00	<1.00	<1.00	<1.00	10.40	86.74
	6/4/2018	<1.00	<1.00	<1.00	<1.00	8.77	88.37
	9/5/2018	<1.00	<1.00	<1.00	<1.00	9.77	87.37
	12/14/2018	<1.00	<1.00	<1.00	<1.00	7.03	90.11
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MW05	3/24/2011	<1.0	<1.0	<1.0	3.3	7.99	89.12
	6/9/2011	<1.0	<1.0	<1.0	<1.0	8.19	88.92
	9/2/2011	<1.0	<1.0	<1.0	<1.0	10.14	86.97
	12/2/2011	<1.0	<1.0	<1.0	<1.0	9.91	87.20
	3/6/2012	<1.0	<1.0	<1.0	<1.0	10.43	86.68
	6/19/2012	<1.0	<1.0	<1.0	2.0	9.50	87.61
	9/26/2012	<1.0	<1.0	<1.0	<1.0	13.50	83.61



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Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	12/21/2012	<1.0	<1.0	<1.0	<1.0	10.45	86.66
	3/29/2013	<1.0	<1.0	<1.0	<1.0	8.77	88.34
	6/27/2013	<1.0	<1.0	<1.0	<1.0	10.45	86.66
	9/10/2013	<1.0	<1.0	<1.0	<1.0	10.33	86.78
	12/11/2013	<1.0	<1.0	<1.0	<1.0	9.60	87.51
	12/17/2013	Surveyed - Not Sampled				9.64	87.66
	3/11/2014	<1.0	<1.0	<1.0	<1.0	9.88	87.23
	6/6/2014	<1.0	<1.0	<1.0	<1.0	5.81	91.49
	9/22/2014	<1.0	<1.0	<1.0	<1.0	NM	NA
	12/2/2014	<1.0	<1.0	<1.0	<1.0	8.12	89.18
	3/16/2015	<1.0	<1.0	<1.0	<1.0	8.72	88.58
	6/16/2015	<1.0	<1.0	<1.0	<1.0	9.98	87.32
	9/10/2015	<1.0	<1.0	<1.0	<1.0	10.84	86.46
	12/17/2015	<1.0	<1.0	<1.0	<1.0	5.13	92.17
	3/30/2016	<1.0	<1.0	<1.0	<1.0	6.86	90.44
	6/6/2016	<1.00	<1.00	<1.00	<1.00	9.75	87.55
	9/8/2016	<1.00	<1.00	<1.00	<1.00	11.39	85.91
	12/5/2016	<1.00	<1.00	<1.00	<1.00	7.10	90.20
	3/2/2017	<1.00	<1.00	<1.00	<1.00	10.71	86.59
	6/16/2017	<1.00	<1.00	<1.00	<1.00	8.50	88.80
	9/5/2017	<1.00	<1.00	<1.00	<1.00	10.89	86.41
	12/8/2017	<1.00	<1.00	<1.00	<1.00	12.25	85.05
	3/2/2018	<1.00	<1.00	<1.00	<1.00	10.61	86.69
	6/4/2018	<1.00	<1.00	<1.00	<1.00	9.01	88.29
	9/5/2018	<1.00	<1.00	<1.00	6.58	10.01	87.29
	12/14/2018	<1.00	<1.00	<1.00	<1.00	7.15	90.15
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MW06	3/24/2011	1.4	<1.0	25	310	7.19	88.59
	6/9/2011	<1.0	<1.0	1.3	9.6	6.89	88.89
	9/2/2011	31	<1.0	18	120	8.96	86.82
	12/2/2011	15	<1.0	42	270	8.69	87.09
	3/6/2012	320	<1.0	25	310	9.08	86.70
	6/19/2012	350	<1.0	37	870	8.21	87.57
	9/26/2012	190	<1.0	54	410	12.03	83.75
	12/21/2012	11	<1.0	45	150	9.50	86.28
	3/29/2013	<1.0	<1.0	<1.0	<1.0	8.80	87.70
	6/27/2013	4.7	<1.0	19	68	9.21	86.57



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	9/10/2013	34	<1.0	29	130	8.88	86.90	
	12/11/2013	1.4	<1.0	11.6	41.1	8.49	87.29	
	12/17/2013	Surveyed - Not Sampled					8.21	87.58
	3/11/2014	42.9	<1.0	32.7	137	8.66	87.12	
	6/6/2014	<1.0	<1.0	<1.0	<1.0	4.27	91.52	
	9/22/2014	619	<1.0	46.3	192	NM	NA	
	12/2/2014	1440	<2.0	54.8	153	6.38	89.41	
	3/16/2015	<1.0	<1.0	<1.0	4.1	7.67	88.12	
	6/16/2015	2580	<4.0	19.5	34.0	8.65	87.14	
	9/10/2015	1370	<20.0	42.6	<20.0	9.53	86.26	
	12/17/2015	1.5	<1.0	<1.0	<1.0	3.50	92.29	
	3/30/2016	17.5	<1.0	<1.0	<1.0	5.19	90.60	
	6/6/2016	1,130	<1.00	38.5	5.34	8.90	86.89	
	9/8/2016	795	<1.00	7.00	133	9.82	85.97	
	12/5/2016	<4.00	<4.00	<4.00	<4.00	4.79	91.00	
	3/2/2017	63.1	<10.0	<10.0	<10.0	9.25	86.54	
	6/16/2017	8.22	<1.00	<1.00	<1.00	6.84	88.95	
	9/5/2017	8.34	<1.00	<1.00	<1.00	9.37	86.42	
	12/8/2017	9.97	<1.00	<1.00	<1.00	10.48	85.31	
	3/2/2018	2.31	<1.00	<1.00	<1.00	9.10	86.69	
	6/4/2018	3.19	<1.00	<1.00	<1.00	7.36	88.43	
	9/5/2018	<1.00	<1.00	<1.00	<1.00	8.36	87.43	
	12/14/2018	<1.00	<1.00	<1.00	<1.00	5.60	90.19	
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MW07	7/27/2011	<1.0	<1.0	<1.0	<1.0	7.88	87.72	
	9/2/2011	<1.0	<1.0	<1.0	2.4	9.60	85.90	
	12/2/2011	<1.0	<1.0	<1.0	<1.0	9.63	85.87	
	3/6/2012	<1.0	<1.0	<1.0	<1.0	10.01	85.49	
	6/19/2012	<1.0	<1.0	<1.0	<1.0	9.06	86.44	
	9/26/2012	<1.0	<1.0	<1.0	<1.0	12.58	82.92	
	12/21/2012	<1.0	<1.0	<1.0	<1.0	9.90	85.60	
	3/29/2013	<1.0	<1.0	<1.0	<1.0	8.00	87.50	
	6/27/2013	<1.0	<1.0	<1.0	<1.0	10.01	85.49	
	9/10/2013	<1.0	<1.0	<1.0	<1.0	9.84	85.66	
	12/11/2013	<1.0	<1.0	<1.0	<1.0	9.31	86.19	
	12/17/2013	Surveyed - Not Sampled					9.26	86.34
	3/11/2014	<1.0	<1.0	<1.0	<1.0	9.44	86.06	



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	6/6/2014	<1.0	<1.0	<1.0	<1.0	4.63	90.97
	9/22/2014	<1.0	<1.0	<1.0	<1.0	NM	NA
	12/2/2014	<1.0	<1.0	<1.0	<1.0	7.13	88.47
	3/16/2015	<1.0	<1.0	<1.0	<1.0	7.91	87.69
	6/16/2015	<4.0	<4.0	<4.0	<4.0	9.43	86.17
	9/10/2015	<1.0	<1.0	<1.0	<1.0	10.05	85.55
	12/17/2015	<1.0	<1.0	<1.0	<1.0	4.75	90.85
	3/30/2016	<1.0	<1.0	<1.0	<1.0	6.34	89.26
	6/6/2016	<1.00	<1.00	<1.00	<1.00	9.77	85.83
	9/8/2016	<1.00	<1.00	<1.00	<1.00	11.10	84.50
	12/5/2016	<1.00	<1.00	<1.00	<1.00	7.73	87.87
	3/2/2017	<1.00	<1.00	<1.00	<1.00	11.04	84.76
	6/16/2017	<1.00	<1.00	<1.00	<1.00	8.96	86.84
	9/5/2017	<1.00	<1.00	<1.00	<1.00	10.96	84.84
	12/8/2017	<1.00	<1.00	<1.00	<1.00	11.32	84.48
	3/2/2018	<1.00	<1.00	<1.00	<1.00	10.78	85.02
	6/4/2018	<1.00	<1.00	<1.00	<1.00	9.43	86.37
	9/5/2018	<1.00	<1.00	<1.00	<1.00	10.44	85.36
	12/14/2018	<1.00	<1.00	<1.00	<1.00	7.51	88.29
<hr/>							
MW08	7/27/2011	<1.0	<1.0	<1.0	<1.0	7.89	87.70
	9/2/2011	<1.0	<1.0	<1.0	<1.0	9.75	85.79
	12/2/2011	<1.0	<1.0	<1.0	<1.0	9.62	85.86
	3/6/2012	<1.0	<1.0	<1.0	<1.0	10.00	85.48
	6/19/2012	<1.0	<1.0	<1.0	<1.0	9.05	86.43
	9/26/2012	<1.0	<1.0	<1.0	<1.0	12.51	82.97
	12/21/2012	<1.0	<1.0	<1.0	<1.0	10.00	85.48
	3/29/2013	<1.0	<1.0	<1.0	<1.0	7.99	87.49
	6/27/2013	<1.0	<1.0	<1.0	<1.0	10.14	85.34
	9/10/2013	<1.0	<1.0	<1.0	<1.0	9.84	85.64
	12/11/2013	<1.0	<1.0	<1.0	<1.0	9.32	86.16
	12/17/2013	Surveyed - Not Sampled				9.40	86.30
	3/11/2014	<1.0	<1.0	<1.0	<1.0	9.44	86.04
	6/6/2014	<1.0	<1.0	<1.0	<1.0	5.21	90.49
	9/22/2014	<1.0	<1.0	<1.0	<1.0	NM	NA
	12/2/2014	<1.0	<1.0	<1.0	<1.0	7.31	88.39
	3/16/2015	<1.0	<1.0	<1.0	<1.0	8.09	87.61



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
DUBACH 16-4, THESING 9-4
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	6/16/2015	<1.0	<1.0	<1.0	<1.0	9.54	86.16
	9/10/2015	<1.0	<1.0	<1.0	<1.0	10.24	85.46
	12/17/2015	<1.0	<1.0	<1.0	<1.0	4.87	90.83
	3/30/2016	<1.0	<1.0	<1.0	<1.0	6.44	89.26
	6/6/2016	<1.00	<1.00	<1.00	<1.00	9.86	85.84
	9/8/2016	<1.00	<1.00	<1.00	<1.00	10.70	85.00
	12/5/2016	<1.00	<1.00	<1.00	<1.00	7.31	88.39
	3/2/2017	<1.00	<1.00	<1.00	<1.00	10.41	85.29
	6/16/2017	<1.00	<1.00	<1.00	<1.00	8.35	87.35
	9/5/2017	<1.00	<1.00	<1.00	<1.00	10.35	85.35
	12/8/2017	<1.00	<1.00	<1.00	<1.00	11.48	84.22
	3/2/2018	<1.00	<1.00	<1.00	<1.00	10.16	85.54
	6/4/2018	<1.00	<1.00	<1.00	<1.00	8.77	86.93
	9/5/2018	<1.00	<1.00	<1.00	<1.00	9.76	85.94
	12/14/2018	<1.00	<1.00	<1.00	<1.00	6.95	88.75
<hr/>							
MW09	7/27/2011	<1.0	<1.0	<1.0	<1.0	7.83	87.77
	9/2/2011	<1.0	<1.0	<1.0	<1.0	9.69	85.85
	12/2/2011	<1.0	<1.0	<1.0	<1.0	9.58	85.96
	3/6/2012	<1.0	<1.0	<1.0	<1.0	9.95	85.59
	6/19/2012	<1.0	<1.0	<1.0	<1.0	9.03	86.51
	9/26/2012	14	<1.0	<1.0	<1.0	12.45	83.09
	12/21/2012	<1.0	<1.0	<1.0	<1.0	10.07	85.47
	3/29/2013	<1.0	<1.0	<1.0	<1.0	8.14	87.40
	6/27/2013	<1.0	<1.0	<1.0	<1.0	10.05	85.49
	9/10/2013	<1.0	<1.0	<1.0	<1.0	9.79	85.75
	12/11/2013	<1.0	<1.0	<1.0	<1.0	9.33	86.21
	12/17/2013	Surveyed - Not Sampled				9.25	86.37
	3/11/2014	<1.0	<1.0	<1.0	<1.0	9.44	86.10
	6/6/2014	<1.0	<1.0	<1.0	<1.0	5.13	90.49
	9/22/2014	<1.0	<1.0	<1.0	<1.0	NM	NA
	12/2/2014	<1.0	<1.0	<1.0	<1.0	7.16	88.46
	3/16/2015	<1.0	<1.0	<1.0	<1.0	8.02	87.60
	6/16/2015	<1.0	<1.0	<1.0	<1.0	9.40	86.22
	9/10/2015	<1.0	<1.0	<1.0	<1.0	10.13	85.49



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
DUBACH 16-4, THESING 9-4
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	12/17/2015	<1.0	<1.0	<1.0	<1.0	4.67	90.95
	3/30/2016	<1.0	<1.0	<1.0	<1.0	6.26	89.36
	6/6/2016	<1.00	<1.00	<1.00	<1.00	9.69	85.93
	9/8/2016	5.92	<1.00	<1.00	<1.00	10.57	85.05
	12/5/2016	<1.00	<1.00	<1.00	<1.00	7.12	88.50
	3/2/2017	<1.00	<1.00	<1.00	<1.00	10.23	85.39
	6/16/2017	<1.00	<1.00	<1.00	<1.00	8.12	87.50
	9/5/2017	<1.00	<1.00	<1.00	<1.00	10.21	85.41
	12/8/2017	<1.00	<1.00	<1.00	<1.00	11.33	84.29
	3/2/2018	<1.00	<1.00	<1.00	<1.00	9.99	85.63
	6/4/2018	<1.00	<1.00	<1.00	<1.00	8.60	87.02
	9/5/2018	<1.00	<1.00	<1.00	<1.00	9.59	86.03
	12/14/2018	<1.00	<1.00	<1.00	<1.00	6.77	88.85
<hr/>							
MW10	9/10/2015	<1.0	<1.0	<1.0	<1.0	12.43	86.38
	12/17/2015	<1.0	<1.0	<1.0	<1.0	6.61	92.20
	3/8/2016	Surveyed - Not Sampled				8.75	87.10
	3/30/2016	<1.0	<1.0	<1.0	<1.0	5.31	90.54
	6/6/2016	<1.00	<1.00	<1.00	<1.00	8.87	86.98
	9/8/2016	<1.00	<1.00	<1.00	<1.00	9.76	86.09
	12/5/2016	<1.00	<1.00	<1.00	<1.00	4.98	90.85
	3/2/2017	<1.00	<1.00	<1.00	<1.00	9.26	86.57
	6/16/2017	<1.00	<1.00	<1.00	<1.00	6.90	88.93
	9/5/2017	<1.00	<1.00	<1.00	<1.00	9.39	86.44
	12/8/2017	<1.00	<1.00	<1.00	<1.00	10.60	85.23
	3/2/2018	<1.00	<1.00	<1.00	<1.00	9.13	86.70
	6/4/2018	<1.00	<1.00	<1.00	<1.00	7.46	88.37
	9/5/2018	<1.00	<1.00	<1.00	<1.00	8.47	87.36
	12/14/2018	<1.00	<1.00	<1.00	<1.00	5.71	90.12
<hr/>							
MW11	9/10/2015	90.9	<1.0	<1.0	<1.0	9.73	85.64
	12/17/2015	Frozen - Not Sampled				Frozen	NA
	12/31/2015	<1.0	<1.0	<1.0	<1.0	4.19	91.18
	3/8/2016	Surveyed - Not Sampled				9.07	86.46



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
DUBACH 16-4, THESING 9-4
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	3/30/2016	1.0	<1.0	<1.0	<1.0	5.87	89.66
	6/6/2016	3.55	<1.00	<1.00	<1.00	9.41	86.12
	9/8/2016	128	<1.00	<1.00	<1.00	10.26	85.27
	12/5/2016	6.02	<1.00	<1.00	<1.00	6.97	89.08
	3/2/2017	<4.00	<4.00	<4.00	<4.00	10.46	85.59
	6/16/2017	<1.00	<1.00	<1.00	<1.00	8.23	87.82
	9/5/2017	<1.00	<1.00	<1.00	<1.00	10.45	85.60
	12/8/2017	<1.00	<1.00	<1.00	<1.00	11.76	84.29
	3/2/2018	<1.00	<1.00	<1.00	<1.00	NM	NA
	MW11 destroyed as of 6/4/2018						
MW11R	12/14/2018	<1.00	<1.00	<1.00	<1.00	7.01	88.93
MW12	9/10/2015	3.6	<1.0	<1.0	<1.0	9.73	85.75
	12/17/2015	Frozen - Not Sampled				Frozen	NA
	12/31/2015	<1.0	<1.0	<1.0	<1.0	4.22	91.26
	3/8/2016	Surveyed - Not Sampled				9.25	86.50
	3/30/2016	<1.0	<1.0	<1.0	<1.0	6.00	89.75
	6/6/2016	<4.00	<4.00	<4.00	<4.00	9.54	86.21
	9/8/2016	<1.00	<1.00	<1.00	<1.00	10.38	85.37
	12/5/2016	<1.00	<1.00	<1.00	<1.00	6.73	89.21
	3/2/2017	<1.00	<1.00	<1.00	<1.00	10.23	85.71
	6/16/2017	<1.00	<1.00	<1.00	<1.00	8.04	87.90
	9/5/2017	<1.00	<1.00	<1.00	<1.00	10.22	85.72
	12/8/2017	<1.00	<1.00	<1.00	<1.00	11.47	84.47
	3/2/2018	<1.00	<1.00	<1.00	<1.00	10.00	85.94
	MW12 destroyed as of 6/4/2018						
MW12R	12/14/2018	<1.00	<1.00	<1.00	<1.00	6.84	89.22
MW13	6/27/2017	<1.00	<1.00	<1.00	<1.00	NM	NA
	9/5/2017	<1.00	<1.00	<1.00	<1.00	6.35	84.79
	12/8/2017	<1.00	<1.00	<1.00	<1.00	7.52	83.62
	3/2/2018	<1.00	<1.00	<1.00	<1.00	6.09	85.05
	6/4/2018	<1.00	<1.00	<1.00	<1.00	4.73	86.41



TABLE 1
GROUNDWATER ANALYTICAL AND FIELD RESULTS
DUBACH 16-4, THESING 9-4
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
	9/5/2018	<1.00	<1.00	<1.00	<1.00	5.76	85.38
	12/14/2018	<1.00	<1.00	<1.00	<1.00	3.52	87.62
COGCC Allowable Level		5	1,000	700	1,400		

Notes: COGCC - Colorado Oil and Gas Conservation Commission

Elev. - elevation

ft bgs - feet below ground surface

GW - groundwater

NA - not analyzed/not available

NM - not measured

µg/L - micrograms per liter

< - less than laboratory reporting limit

Bold indicates result exceeds allowable level

Excavation groundwater depth is approximate



TABLE 2
SURFACE WATER ANALYTICAL RESULTS
DUBACH 16-4, THESING 9-4
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SW01	03/06/2012	Dry - Not Sampled			
	06/19/2012	Dry - Not Sampled			
	09/26/2012	Dry - Not Sampled			
	12/21/2012	Dry - Not Sampled			
	03/29/2013	<1.0	<1.0	<1.0	<1.0
	06/27/2013	Dry - Not Sampled			
	09/10/2013	Dry - Not Sampled			
	12/11/2013	Dry - Not Sampled			
	03/11/2014	Dry - Not Sampled			
	06/06/2014	Dry - Not Sampled			
	09/21/2014	Dry - Not Sampled			
	12/02/2014	Dry - Not Sampled			
	03/16/2015	<1.0	<1.0	<1.0	<1.0
	06/16/2015	<1.0	<1.0	<1.0	<1.0
	12/17/2015	<1.0	<1.0	<1.0	<1.0
	03/30/2016	<1.0	<1.0	<1.0	<1.0
	6/6/2016	<1.00	<1.00	<1.00	<1.00
	9/8/2016	Dry - Not Sampled			
	12/5/2016	<1.00	<1.00	<1.00	<1.00
	3/2/2017	<1.00	<1.00	<1.00	<1.00
	6/16/2017	<1.00	<1.00	<1.00	<1.00
	9/5/2017	<1.00	<1.00	<1.00	<1.00
	12/8/2017	Frozen - Not Sampled			
	3/2/2018	<1.00	<1.00	<1.00	<1.00
	6/4/2018	<1.00	<1.00	<1.00	<1.00
	9/5/2018	<1.00	<1.00	<1.00	<1.00
	12/14/2018	<1.00	<1.00	<1.00	<1.00
	SW02	03/06/2012	Dry - Not Sampled		
06/19/2012		Dry - Not Sampled			
09/26/2012		Dry - Not Sampled			
12/21/2012		Dry - Not Sampled			
03/29/2013		<1.0	<1.0	<1.0	<1.0
06/27/2013		Dry - Not Sampled			
09/10/2013		Dry - Not Sampled			
12/11/2013		Dry - Not Sampled			
03/11/2014		Dry - Not Sampled			



TABLE 2
SURFACE WATER ANALYTICAL RESULTS
DUBACH 16-4, THESING 9-4
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
	06/06/2014	Dry - Not Sampled			
	09/21/2014	Dry - Not Sampled			
	12/02/2014	Dry - Not Sampled			
	03/16/2015	<1.0	<1.0	<1.0	<1.0
	06/16/2015	<1.0	<1.0	<1.0	<1.0
	12/17/2015	<1.0	<1.0	<1.0	<1.0
	03/30/2016	<1.0	<1.0	<1.0	<1.0
	6/6/2016	<1.00	<1.00	<1.00	<1.00
	9/8/2016	Dry - Not Sampled			
	12/5/2016	<1.00	<1.00	<1.00	<1.00
	3/2/2017	<1.00	<1.00	<1.00	<1.00
	6/16/2017	<1.00	<1.00	<1.00	<1.00
	9/5/2017	<1.00	<1.00	<1.00	<1.00
	12/8/2017	Frozen - Not Sampled			
	3/2/2018	<1.00	<1.00	<1.00	<1.00
	6/4/2018	<1.00	<1.00	<1.00	<1.00
	9/5/2018	<1.00	<1.00	<1.00	<1.00
	12/14/2018	<1.00	<1.00	<1.00	<1.00
<hr/>					
SW03	03/11/2014	Dry - Not Sampled			
	06/06/2014	Dry - Not Sampled			
	09/21/2014	Dry - Not Sampled			
	12/02/2014	Dry - Not Sampled			
	03/16/2015	<1.0	<1.0	<1.0	<1.0
	06/16/2015	<1.0	<1.0	<1.0	<1.0
	12/17/2015	<1.0	<1.0	<1.0	<1.0
	03/30/2016	<1.0	<1.0	<1.0	<1.0
	6/6/2016	<1.00	<1.00	<1.00	<1.00
	9/8/2016	Dry - Not Sampled			
	12/5/2016	<1.00	<1.00	<1.00	<1.00
	3/2/2017	<1.00	<1.00	<1.00	<1.00
	6/16/2017	<1.00	<1.00	<1.00	<1.00
	9/5/2017	<1.00	<1.00	<1.00	<1.00
	12/8/2017	Frozen - Not Sampled			
	3/2/2018	<1.00	<1.00	<1.00	<1.00
	6/4/2018	<1.00	<1.00	<1.00	<1.00
	9/5/2018	<1.00	<1.00	<1.00	<1.00
	12/14/2018	<1.00	<1.00	<1.00	<1.00



TABLE 2
SURFACE WATER ANALYTICAL RESULTS
DUBACH 16-4, THESING 9-4
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SW04	03/11/2014	Dry - Not Sampled			
	06/06/2014	Dry - Not Sampled			
	09/21/2014	Dry - Not Sampled			
	12/02/2014	Dry - Not Sampled			
	03/16/2015	<1.0	<1.0	<1.0	<1.0
	06/16/2015	<1.0	<1.0	<1.0	<1.0
	12/17/2015	<1.0	<1.0	<1.0	<1.0
	03/30/2016	<1.0	<1.0	<1.0	<1.0
	6/6/2016	<1.00	<1.00	<1.00	<1.00
	9/8/2016	Dry - Not Sampled			
	12/5/2016	<1.00	<1.00	<1.00	<1.00
	3/2/2017	<1.00	<1.00	<1.00	<1.00
	6/16/2017	<1.00	<1.00	<1.00	<1.00
	9/5/2017	<1.00	<1.00	<1.00	<1.00
	12/8/2017	Frozen - Not Sampled			
	3/2/2018	<1.00	<1.00	<1.00	<1.00
	6/4/2018	<1.00	<1.00	<1.00	<1.00
	9/5/2018	<1.00	<1.00	<1.00	<1.00
	12/14/2018	<1.00	<1.00	<1.00	<1.00

Notes: µg/L - micrograms per liter
 < - less than laboratory reporting limit



June 11, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Dubach 16-4, Thesing 9-4 Project Number - 014211027/WO #881192

Attached are your analytical results for KMG - Dubach 16-4, Thesing 9-4 received by Origins Laboratory, Inc. June 04, 2018. This project is associated with Origins project number Y806034-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	Y806034-01	Water	June 4, 2018 12:30	06/04/2018 15:30
MW02	Y806034-02	Water	June 4, 2018 12:40	06/04/2018 15:30
MW03R	Y806034-03	Water	June 4, 2018 12:50	06/04/2018 15:30
MW04	Y806034-04	Water	June 4, 2018 13:00	06/04/2018 15:30
MW05	Y806034-05	Water	June 4, 2018 13:10	06/04/2018 15:30
MW06	Y806034-06	Water	June 4, 2018 13:20	06/04/2018 15:30
MW07	Y806034-07	Water	June 4, 2018 13:30	06/04/2018 15:30
MW08	Y806034-08	Water	June 4, 2018 13:40	06/04/2018 15:30
MW09	Y806034-09	Water	June 4, 2018 13:50	06/04/2018 15:30
MW10	Y806034-10	Water	June 4, 2018 14:00	06/04/2018 15:30
MW13	Y806034-11	Water	June 4, 2018 14:10	06/04/2018 15:30
SW01	Y806034-12	Water	June 4, 2018 14:20	06/04/2018 15:30
SW02	Y806034-13	Water	June 4, 2018 14:30	06/04/2018 15:30
SW03	Y806034-14	Water	June 4, 2018 14:40	06/04/2018 15:30

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW04	Y806034-15	Water	June 4, 2018 14:50	06/04/2018 15:30

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

ORIGINS
 LABORATORY, INC

Y806034

1725 Elk Place, Denver, CO 80211
 Laboratory # - 303.433.1322

Client: LT Environmental, Inc. Project Manager: Brian Sulzberger
 Project: KMG - Dubach 16-4, Thesing 9-4 Project Number: 014211027/WO #88119262

Number	Sample Identification	Matrix	Sample Date	Sample Time	Sampled By	Container	Qty	Analyses
01-001	MMW01	Water	6-4-18	1230	SB	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
02-001	MMW02	Water		1210		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
03-001	MMW03	Water		1250		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
04-001	MMW04	Water		1300		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
05-001	MMW05	Water		1310		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
06-001	MMW06	Water		1320		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
07-001	MMW07	Water		1330		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
08-001	MMW08	Water		1340		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
09-001	MMW09	Water		1350		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
10-001	MMW10	Water		1400		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
11-001	MMW11	Water				40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C

Temperature on Receipt: 3.8
 Turn Around Time: 72-hr Standard 24-hr 48-hr

Relinquished By: Date / Time: 6/4/18 15:30
 Received By: Date / Time: 6/4/18 15:30

Relinquished By: Date / Time: 6/4/18 1530
 Received By: Date / Time: 6/4/18 1530

Origins Laboratory, Inc.

Jefe Pellegrini

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003


Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4


ORIGINS
 LABORATORY, INC

4806034

1725 Elk Place, Denver, CO 80211
 Laboratory # - 303.433.1322

12-001	MM12	Water			40mL Amber VOA Vial - HC	3	BTEX by EPA - 8260C
13-001	MM13	Water	6-4-18	1410	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
14-001	SW01	Water		1420	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
15-001	SW02	Water		1430	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
16-001	SW03	Water		1440	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
17-001	SW04	Water		1450	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C

Retrieved By:  Date / Time: 6/19/18 15:30
 Received By: _____ Date / Time: _____

Retrieved By:  Date / Time: 6/14/18 15:30
 Received By: _____ Date / Time: _____

Temperature on Receipt: 38
 Turn Around Time: 72-hr Standard
 Same Day: 24-hr 48-hr

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Origins Laboratory

F-012207-01-R1
 Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y806034

Client: LTE

Client Project ID: KMG-Dubach 16-4 Thesing 9-4

Checklist Completed by: JE

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 6/4/2018 1545

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____
(Describe)

Cooler Number/Temperature: 1 / 3.8 °C / _____ °C / _____ °C / _____ °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by: [Signature] (Project Manager)

Date/Time Reviewed: 6/5/18

Origins Laboratory, Inc.

Jefe Pellegrini

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW01
6/4/2018 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-01 (Water)

BTEX by EPA 8260C

Benzene	66.6	4.00	ug/L	4	B8F0701	06/07/2018	06/07/2018	
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	172	4.00	"	"	"	"	"	
Xylenes, total	760	4.00	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	104 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW02
6/4/2018 12:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/07/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	106 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

MW03R
6/4/2018 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-03 (Water)

BTEX by EPA 8260C

Benzene	49.8	4.00	ug/L	4	B8F0701	06/07/2018	06/07/2018	
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	ND	4.00	"	"	"	"	"	U
Xylenes, total	ND	4.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	84-121			"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW04
6/4/2018 1:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/07/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW05
6/4/2018 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/07/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	106 %	84-121			"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW06
6/4/2018 1:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-06 (Water)

BTEX by EPA 8260C

Benzene	3.19	1.00	ug/L	1	B8F0701	06/07/2018	06/07/2018	
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	107 %	84-121			"	"	"	
Surrogate: Toluene-d8	104 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	114 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW07
6/4/2018 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/07/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	109 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

MW08
6/4/2018 1:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-08 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/07/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	108 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW09
6/4/2018 1:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-09 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/07/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	108 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW10
6/4/2018 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-10 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/07/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	109 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW13
6/4/2018 2:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-11 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/07/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	109 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW01
6/4/2018 2:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-12 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/08/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	113 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW02
6/4/2018 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-13 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/08/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	108 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	84-114			"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW03
6/4/2018 2:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-14 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/08/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	108 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	84-114			"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW04
6/4/2018 2:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y806034-15 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8F0701	06/07/2018	06/08/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	107 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	84-114			"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8F0701 - EPA 5030B (Water)

Blank (B8F0701-BLK1)

Prepared: 06/07/2018 Analyzed: 06/07/2018

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5	104		84-121			
Surrogate: Toluene-d8	62		"	62.5	99.1		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.8		84-114			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8F0701 - EPA 5030B (Water)

LCS (B8F0701-BS1)

Prepared: 06/07/2018 Analyzed: 06/07/2018

Benzene	57.1	1.00	ug/L	50.0		114	73.3-129			
Toluene	58.8	1.00	"	50.0		118	76.2-123			
Ethylbenzene	59.2	1.00	"	50.0		118	73.6-130			
m,p-Xylene	118	2.00	"	100		118	76.1-126			
o-Xylene	58.8	1.00	"	50.0		118	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.3	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.9	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B8F0701 - EPA 5030B (Water)

Matrix Spike (B8F0701-MS1)	Source: Y806034-04			Prepared: 06/07/2018 Analyzed: 06/07/2018						
Benzene	52.5	1.00	ug/L	50.0	ND	105	74-130			
Toluene	52.2	1.00	"	50.0	ND	104	73-131			
Ethylbenzene	52.0	1.00	"	50.0	ND	104	76-132			
m,p-Xylene	105	2.00	"	100	ND	105	69-139			
o-Xylene	52.5	1.00	"	50.0	ND	105	74-131			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.7	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.7	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B8F0701 - EPA 5030B (Water)

Matrix Spike Dup (B8F0701-MSD1)	Source: Y806034-04			Prepared: 06/07/2018 Analyzed: 06/07/2018						
Benzene	45.3	1.00	ug/L	50.0	ND	90.6	74-130	14.6	20	
Toluene	45.6	1.00	"	50.0	ND	91.1	73-131	13.7	20	
Ethylbenzene	45.7	1.00	"	50.0	ND	91.3	76-132	13.0	20	
m,p-Xylene	91.4	2.00	"	100	ND	91.4	69-139	13.8	20	
o-Xylene	45.6	1.00	"	50.0	ND	91.2	74-131	14.1	20	
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.4	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.7	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



September 12, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Dubach 16-4, Thesing 9-4 Project Number - 014211027/WO #881192

Attached are your analytical results for KMG - Dubach 16-4, Thesing 9-4 received by Origins Laboratory, Inc. September 05, 2018. This project is associated with Origins project number Y809035-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	Y809035-01	Water	September 5, 2018 12:00	09/05/2018 17:50
MW02	Y809035-02	Water	September 5, 2018 12:10	09/05/2018 17:50
MW03R	Y809035-03	Water	September 5, 2018 12:20	09/05/2018 17:50
MW04	Y809035-04	Water	September 5, 2018 12:30	09/05/2018 17:50
MW05	Y809035-05	Water	September 5, 2018 12:40	09/05/2018 17:50
MW06	Y809035-06	Water	September 5, 2018 12:50	09/05/2018 17:50
MW07	Y809035-07	Water	September 5, 2018 13:00	09/05/2018 17:50
MW08	Y809035-08	Water	September 5, 2018 13:10	09/05/2018 17:50
MW09	Y809035-09	Water	September 5, 2018 13:20	09/05/2018 17:50
MW10	Y809035-10	Water	September 5, 2018 13:30	09/05/2018 17:50
MW13	Y809035-11	Water	September 5, 2018 13:40	09/05/2018 17:50
SW01	Y809035-12	Water	September 5, 2018 13:50	09/05/2018 17:50
SW02	Y809035-13	Water	September 5, 2018 14:00	09/05/2018 17:50
SW03	Y809035-14	Water	September 5, 2018 14:10	09/05/2018 17:50

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW04	Y809035-15	Water	September 5, 2018 14:20	09/05/2018 17:50

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

1 of 2



Y809035

1725 Elk Place, Denver, CO 80211
 Laboratory # - 303.433.1322

Client: LT Environmental, Inc. Project Manager: Brian Sulzberger
 Project: KMG - Dubach 16-4, Thesing 9-4 Project Number: 014211027/WO #88119262

Number	Sample Identification	Matrix	Sample Date	Sample Time	Sampled By	Container	Qty	Analyses
01-001	MW01	Water	9/5/16	12:00	BS	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
02-001	MW02	Water		12:10		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
03-001	MW03R	Water		12:20		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
04-001	MW04	Water		12:30		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
05-001	MW05	Water		12:40		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
06-001	MW06	Water		12:50		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
07-001	MW07	Water		13:00		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
08-001	MW08	Water		13:10		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
09-001	MW09	Water		13:20		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
10-001	MW10	Water		13:30		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
11-001	MW13	Water		13:40		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C

Relinquished By: [Signature] Date / Time: 9/5/16 17:50
 Relinquished By: [Signature] Date / Time: 9-5-16 17:50
 Received By: [Signature] Date / Time: [Blank]
 Received By: [Signature] Date / Time: [Blank]

Temperature on Receipt: 5.9
 Turn Around Time: 72-hr Standard 24-hr 48-hr

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4


2 of 2


Y809035

014211027

1725 Elk Place, Denver, CO 80211
 Laboratory # - 303.433.1322

12-001	SW01	Water	9/5/10	1350	JK	12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
13-001	SW02	Water		1400		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
14-001	SW03	Water		1410		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
15-001	SW04	Water		1420		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C

Relinquished By:  Date / Time: 9/5/10 1750

Received By:  Date / Time: 9-5-10 1750

Temperature on Receipt: 5.9
 Turn Around Time: 72-hr Standard
 Same Day: 24-hr 48-hr

Relinquished By: _____ Date / Time: _____
 Received By: _____ Date / Time: _____

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Origins Laboratory

F-012207-01-R1
 Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y809035

Client: LTE

Client Project ID: KMG - Dubach 16-4, Thesing 9-4

Checklist Completed by: JG

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 9/6/2018

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other:

Cooler Number/Temperature: 1 / 5.9 °C / / / °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ^{(1)?}	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ^{(1)?}	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ^{(1)?}	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ^{(1)?}		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ^{(1)?}	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ^{(1)?}	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ^{(1)?}	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ^{(1)?}	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ^{(1)?} (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCl, H ₂ SO ₄) / (pH >10 for samples preserved with Na ₂ SO ₂ -NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) JG

Date/Time Reviewed 9/7/18

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW01

9/5/2018 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-01 (Water)

BTEX by EPA 8260C

Benzene	79.1	4.00	ug/L	4	B810603	JTD	09/06/2018	09/06/2018	
Toluene	ND	4.00	"	"	"	JTD	"	"	U
Ethylbenzene	166	4.00	"	"	"	JTD	"	"	
Xylenes, total	813	4.00	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW02

9/5/2018 12:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/06/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	104 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW03R

9/5/2018 12:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-03 (Water)

BTEX by EPA 8260C

Benzene	7.84	4.00	ug/L	4	B810603	JTD	09/06/2018	09/06/2018	
Toluene	ND	4.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	4.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	4.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	105 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

MW04

9/5/2018 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/06/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.6 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.9 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW05

9/5/2018 12:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/06/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	6.58	1.00	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"		
Surrogate: Toluene-d8	102 %	85-115			"	"	"		
Surrogate: 4-Bromofluorobenzene	96.9 %	84-114			"	"	"		

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW06

9/5/2018 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/06/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	94.0 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW07

9/5/2018 1:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/06/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.0 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	107 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.8 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW08

9/5/2018 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-08 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/06/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.4 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	104 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.5 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW09

9/5/2018 1:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-09 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/06/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	93.8 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW10

9/5/2018 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-10 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/07/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.2 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	93.0 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW13

9/5/2018 1:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-11 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/07/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.4 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.2 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW01

9/5/2018 1:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-12 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/07/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.9 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	96.1 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW02

9/5/2018 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-13 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/07/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.0 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW03

9/5/2018 2:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-14 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/07/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW04

9/5/2018 2:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y809035-15 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B810603	JTD	09/06/2018	09/07/2018	U
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.7 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	104 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B810603 - EPA 5030B (Water)

Blank (B810603-BLK1)

Prepared: 09/06/2018 Analyzed: 09/06/2018

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	69		"	62.5		111	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.8	84-114			

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B810603 - EPA 5030B (Water)

LCS (B810603-BS1)

Prepared: 09/06/2018 Analyzed: 09/06/2018

Benzene	56.5	1.00	ug/L	50.0		113	73.3-129			
Toluene	54.7	1.00	"	50.0		109	76.2-123			
Ethylbenzene	55.6	1.00	"	50.0		111	73.6-130			
m,p-Xylene	114	2.00	"	100		114	76.1-126			
o-Xylene	55.0	1.00	"	50.0		110	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		106	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	69		"	62.5		111	84-114			

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B810603 - EPA 5030B (Water)

Matrix Spike (B810603-MS1)	Source: Y809033-01			Prepared: 09/06/2018 Analyzed: 09/06/2018						
Benzene	55.6	1.00	ug/L	50.0	ND	111	74-130			
Toluene	56.5	1.00	"	50.0	ND	113	73-131			
Ethylbenzene	56.8	1.00	"	50.0	0.100	113	76-132			
m,p-Xylene	116	2.00	"	100	ND	116	69-139			
o-Xylene	56.5	1.00	"	50.0	ND	113	74-131			
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		105	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B810603 - EPA 5030B (Water)

Matrix Spike Dup (B810603-MSD1)	Source: Y809033-01			Prepared: 09/06/2018 Analyzed: 09/06/2018						
Benzene	58.1	1.00	ug/L	50.0	ND	116	74-130	4.31	20	
Toluene	58.5	1.00	"	50.0	ND	117	73-131	3.49	20	
Ethylbenzene	58.2	1.00	"	50.0	0.100	116	76-132	2.42	20	
m,p-Xylene	118	2.00	"	100	ND	118	69-139	1.84	20	
o-Xylene	57.9	1.00	"	50.0	ND	116	74-131	2.40	20	
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		110	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		103	84-114			

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President



December 21, 2018

LT Environmental, Inc.

Brian Sulzberger

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Dubach 16-4, Thesing 9-4 Project Number - 014211027/WO #881192

Attached are your analytical results for KMG - Dubach 16-4, Thesing 9-4 received by Origins Laboratory, Inc. December 17, 2018. This project is associated with Origins project number Y812250-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	Y812250-01	Water	December 14, 2018 13:00	12/17/2018 09:30
MW02	Y812250-02	Water	December 14, 2018 13:05	12/17/2018 09:30
MW03R	Y812250-03	Water	December 14, 2018 13:10	12/17/2018 09:30
MW04	Y812250-04	Water	December 14, 2018 13:15	12/17/2018 09:30
MW05	Y812250-05	Water	December 14, 2018 13:20	12/17/2018 09:30
MW06	Y812250-06	Water	December 14, 2018 13:25	12/17/2018 09:30
MW07	Y812250-07	Water	December 14, 2018 13:30	12/17/2018 09:30
MW08	Y812250-08	Water	December 14, 2018 13:35	12/17/2018 09:30
MW09	Y812250-09	Water	December 14, 2018 13:40	12/17/2018 09:30
MW10	Y812250-10	Water	December 14, 2018 13:45	12/17/2018 09:30
MW13	Y812250-11	Water	December 14, 2018 14:00	12/17/2018 09:30
SW01	Y812250-12	Water	December 14, 2018 14:05	12/17/2018 09:30
SW02	Y812250-13	Water	December 14, 2018 14:10	12/17/2018 09:30
SW03	Y812250-14	Water	December 14, 2018 14:15	12/17/2018 09:30

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Sulzberger
Project Number: 014211027/WO #88119262
Project: KMG - Dubach 16-4, Thesing 9-4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW04	Y812250-15	Water	December 14, 2018 14:20	12/17/2018 09:30
MW11R	Y812250-16	Water	December 14, 2018 13:50	12/17/2018 09:30
MW12R	Y812250-17	Water	December 14, 2018 13:55	12/17/2018 09:30

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

ORIGINS
 LABORATORY, INC

1912250

1725 Elk Place, Denver, CO 80211
 Laboratory # - 303.433.1322

Client: LT Environmental, Inc. Project Manager: Brian Sulzberger
 Project: KMG - Dubach 16-4, Thesing 9-4 Project Number: 014211027/WO #88119262

Number	Sample Identification	Matrix	Sample Date	Sample Time	Sampled By	Container	Qty	Analyses
01-001	MW01	Water	12-14-18	1300	DT	12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
02-001	MW02	Water		1305		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
03-001	MW03R	Water		1310		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
04-001	MW04	Water		1315		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
05-001	MW05	Water		1320		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
06-001	MW06	Water		1325		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
07-001	MW07	Water		1330		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
08-001	MW08	Water		1335		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
09-001	MW09	Water		1340		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
10-001	MW10	Water		1345		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C
11-001	MW13	Water		1400		12_40mL Amber VOA Via - HCL	3	BTEX by EPA 8260C

Temperature on Receipt:
 Turn Around Time:
 Same Day: 72-hr
 24-hr Standard
 48-hr

Relinquished By: [Signature]
 Date/Time: 12/17/18 9:30
 Received By: [Signature]
 Date/Time: 12/17/18 9:30

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

ORIGINS
 LABORATORY, INC


YB12250


212

1725 Elk Place, Denver, CO 80211
 Laboratory # - 303.433.1322

12-001	SW01	Water	12-11-18	1405	DT/RT	12_40mL Amber VOA Vial - HCL	3	ETEX by EPA 8260C
13-001	SW02	Water		1416		12_40mL Amber VOA Vial - HCL	3	ETEX by EPA 8260C
14-001	SW03	Water		1415		12_40mL Amber VOA Vial - HCL	3	ETEX by EPA 8260C
15-001	SW04	Water		1400		12_40mL Amber VOA Vial - HCL	3	ETEX by EPA 8260C

MW11R Water
 MW12R Water

Relinquished By:  Date / Time: 12/17/18 930

Received By:  Date / Time: 12/17/18 930

Temperature on Receipt: 21°

Turn Around Time: 72-hr Standard

Same Day: 24-hr 48-hr

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Origins Laboratory

F-012207-01-R1
 Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: ✓ 1812250

Client: LTE

Client Project ID: KMG - Dubach, 16-4, Thesing 9-

Checklist Completed by: JG

Shipped Via: HD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 12/17/2018

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____

Cooler Number/Temperature: 1 3.1 °C _____ °C _____ °C _____ °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with Na ₂ SO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 12/18/18

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW01

12/14/2018 1:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-01 (Water)

BTEX by EPA 8260C

Benzene	168	4.00	ug/L	4	B8L1901	KDK	12/19/2018	12/20/2018	
Toluene	ND	4.00	"	"	"	KDK	"	"	U
Ethylbenzene	393	4.00	"	"	"	KDK	"	"	
Xylenes, total	1290	4.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	98.7 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.4 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW02

12/14/2018 1:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	97.3 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.1 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW03R

12/14/2018 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-03 (Water)

BTEX by EPA 8260C

Benzene	15.7	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	2.07	1.00	"	"	"	KDK	"	"	
Xylenes, total	14.9	1.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	99.8 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	99.6 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.1 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW04

12/14/2018 1:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	96.5 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW05

12/14/2018 1:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	98.5 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.7 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW06

12/14/2018 1:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	95.1 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.9 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW07

12/14/2018 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	96.9 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW08

12/14/2018 1:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-08 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	98.8 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.9 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW09

12/14/2018 1:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-09 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	97.5 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW10

12/14/2018 1:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-10 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	96.4 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.6 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW13

12/14/2018 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-11 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	99.6 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW01

12/14/2018 2:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-12 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	99.1 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.9 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW02

12/14/2018 2:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-13 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	97.1 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW03

12/14/2018 2:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-14 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	97.1 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

SW04

12/14/2018 2:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-15 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.2 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW11R

12/14/2018 1:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-16 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	99.6 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

MW12R

12/14/2018 1:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y812250-17 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8L1901	KDK	12/19/2018	12/20/2018	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L1901 - EPA 5030B (Water)

Blank (B8L1901-BLK1)

Prepared: 12/19/2018 Analyzed: 12/19/2018

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		102	84-121			
Surrogate: Toluene-d8	61		"	62.5		98.4	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.0	84-114			

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

Brian Sulzberger
 Project Number: 014211027/WO #88119262
 Project: KMG - Dubach 16-4, Thesing 9-4

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L1901 - EPA 5030B (Water)

Blank (B8L1901-BLK2)

Prepared: 12/19/2018 Analyzed: 12/19/2018

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5	103		84-121			
Surrogate: Toluene-d8	60		"	62.5	96.7		85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5	101		84-114			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L1901 - EPA 5030B (Water)

LCS (B8L1901-BS1)

Prepared: 12/19/2018 Analyzed: 12/19/2018

Benzene	52.8	1.00	ug/L	50.0		106	73.3-129			
Toluene	50.9	1.00	"	50.0		102	76.2-123			
Ethylbenzene	51.2	1.00	"	50.0		102	73.6-130			
m,p-Xylene	101	2.00	"	100		101	76.1-126			
o-Xylene	49.7	1.00	"	50.0		99.5	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.5	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.3	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	84-114			

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Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L1901 - EPA 5030B (Water)

LCS (B8L1901-BS2)

Prepared: 12/19/2018 Analyzed: 12/19/2018

Benzene	45.3	1.00	ug/L	50.0		90.6	73.3-129			
Toluene	43.8	1.00	"	50.0		87.6	76.2-123			
Ethylbenzene	43.0	1.00	"	50.0		86.0	73.6-130			
m,p-Xylene	86.0	2.00	"	100		86.0	76.1-126			
o-Xylene	44.0	1.00	"	50.0		87.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		95.6	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.0	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	84-114			

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Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L1901 - EPA 5030B (Water)

Matrix Spike (B8L1901-MS1)	Source: Y812221-03			Prepared: 12/19/2018 Analyzed: 12/19/2018						
Benzene	52.7	1.00	ug/L	50.0	0.500	104	74-130			
Toluene	51.6	1.00	"	50.0	0.900	102	73-131			
Ethylbenzene	51.8	1.00	"	50.0	0.310	103	76-132			
m,p-Xylene	103	2.00	"	100	ND	103	69-139			
o-Xylene	50.0	1.00	"	50.0	0.450	99.2	74-131			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.3	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.5	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.8	84-114			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L1901 - EPA 5030B (Water)

Matrix Spike (B8L1901-MS2)	Source: Y812221-04			Prepared: 12/19/2018 Analyzed: 12/19/2018						
Benzene	48.6	1.00	ug/L	50.0	0.220	96.8	74-130			
Toluene	47.4	1.00	"	50.0	0.290	94.2	73-131			
Ethylbenzene	47.2	1.00	"	50.0	ND	94.5	76-132			
m,p-Xylene	93.2	2.00	"	100	1.61	91.6	69-139			
o-Xylene	46.1	1.00	"	50.0	ND	92.2	74-131			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.5	84-121			
Surrogate: Toluene-d8	61		"	62.5		98.0	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L1901 - EPA 5030B (Water)

Matrix Spike Dup (B8L1901-MSD1)	Source: Y812221-03			Prepared: 12/19/2018 Analyzed: 12/19/2018						
Benzene	52.6	1.00	ug/L	50.0	0.500	104	74-130	0.228	20	
Toluene	50.1	1.00	"	50.0	0.900	98.4	73-131	3.09	20	
Ethylbenzene	51.1	1.00	"	50.0	0.310	102	76-132	1.38	20	
m,p-Xylene	101	2.00	"	100	ND	101	69-139	2.04	20	
o-Xylene	49.4	1.00	"	50.0	0.450	98.0	74-131	1.17	20	
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.7	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.7	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.8	84-114			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L1901 - EPA 5030B (Water)

Matrix Spike Dup (B8L1901-MSD2)	Source: Y812221-04			Prepared: 12/19/2018 Analyzed: 12/19/2018						
Benzene	48.8	1.00	ug/L	50.0	0.220	97.2	74-130	0.410	20	
Toluene	47.2	1.00	"	50.0	0.290	93.8	73-131	0.423	20	
Ethylbenzene	47.7	1.00	"	50.0	ND	95.4	76-132	0.990	20	
m,p-Xylene	94.5	2.00	"	100	1.61	92.9	69-139	1.38	20	
o-Xylene	46.7	1.00	"	50.0	ND	93.3	74-131	1.16	20	
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.2	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.3	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.7	84-114			

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Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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Jen Pellegrini For Noelle Doyle Mathis, President