

**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)	
<b>COGCC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>			
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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**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)	
<b>COGCC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>			
	3/19/2019	<b>105</b>	<4.00	249	580	10.65	86.98	
	6/11/2019	<b>60.5</b>	<4.00	75.5	244	9.58	88.05	
	9/5/2019	<b>21.3</b>	<1.00	44.4	57.7	11.26	86.37	
	12/10/2019	<b>86.7</b>	<4.00	204	40.7	9.97	87.66	
MW02	3/24/2011	<b>200</b>	<1.0	25	4.1	8.10	89.40	
	6/9/2011	<b>23</b>	<1.0	2.9	<1.0	8.47	89.03	
	9/2/2011	<b>69</b>	<1.0	4.2	<1.0	10.03	87.47	
	12/2/2011	<b>170</b>	<1.0	29	<1.0	9.92	87.58	
	3/6/2012	<b>29</b>	<1.0	5.4	210	10.65	86.85	
	6/19/2012	<b>15</b>	<1.0	19	1.5	9.76	87.74	
	9/26/2012	<b>5.4</b>	<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	<b>24</b>	<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	



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**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)	
<b>COGCC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>			
	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	
	3/19/2019	<1.00	<1.00	<1.00	<1.00	10.58	86.96	
	6/11/2019	<1.00	<1.00	<1.00	<1.00	9.50	88.04	
	9/5/2019	<1.00	<1.00	<1.00	<1.00	11.15	86.39	
	12/10/2019	<1.00	<1.00	<1.00	<1.00	9.78	87.76	
MW03	3/24/2011	<b>4900</b>	<1.0	<b>780</b>	<b>8700</b>	7.08	NA	
	6/9/2011	<b>240</b>	<1.0	82	710	7.28	NA	
	9/2/2011	<b>7900</b>	<1.0	230	<b>3100</b>	9.27	NA	
	12/2/2011	<b>4900</b>	<1.0	670	<b>7300</b>	8.86	NA	
	3/6/2012	<b>5900</b>	<1.0	630	<b>8500</b>	9.45	NA	
	6/19/2012	<b>3700</b>	<1.0	570	<b>7700</b>	8.52	NA	
	9/26/2012	<b>3900</b>	<1.0	480	<b>5700</b>	12.38	NA	
	12/21/2012	<b>2600</b>	<1.0	250	<b>2600</b>	9.68	NA	
	3/29/2013	<b>380</b>	<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	<b>2900</b>	<1.0	510	<b>5200</b>	9.57	86.82	
	12/11/2013	<b>1470</b>	<10.0	324	<b>2620</b>	8.97	87.42	
	12/17/2013	Surveyed - Not Sampled					8.83	87.58
	3/11/2014	<b>2320</b>	<10.0	490	<b>2590</b>	9.24	87.15	
	6/6/2014	<b>1700</b>	<50.0	314	<b>2010</b>	5.16	91.25	
	9/22/2014	<b>1480</b>	<10.0	347	<b>1870</b>	NM	NA	
	12/2/2014	<b>1950</b>	<10.0	474	<b>1710</b>	7.34	89.07	
	3/16/2015	<b>331</b>	<20.0	29.4	158	7.87	88.54	
	6/16/2015	<b>931</b>	<10.0	99.1	364	10.15	86.26	
	9/10/2015	<b>1740</b>	<1.0	107	321	10.07	86.34	
	12/17/2015	<b>112</b>	<10.0	31.1	78.1	4.31	92.10	
	3/30/2016	<b>176</b>	<1.0	42.2	109	5.99	90.42	
	6/6/2016	<b>512</b>	<1.00	234	588	9.43	86.98	
	9/8/2016	<b>572</b>	<1.00	136	500	10.49	85.92	
	12/5/2016	<b>1,370</b>	<4.00	67.6	152	6.16	90.25	
	3/2/2017	<b>148</b>	<10.0	78.6	69.2	PVC Blocked	NA	
	6/16/2017	<b>108</b>	<4.00	11.8	34.8	PVC Blocked	NA	



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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)	
<b>COGCC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>			
	9/5/2017	<b>194</b>	<1.00	14.1	51.7	PVC Blocked	NA	
	12/8/2017	<b>124</b>	<1.00	4.71	15.1	PVC Blocked	NA	
	3/2/2018	<b>306</b>	<1.00	7.25	23.6	PVC Blocked	NA	
	6/4/2018	<b>49.8</b>	<4.00	<4.00	<4.00	PVC Blocked	NA	
	9/5/2018	<b>7.84</b>	<4.00	<4.00	<4.00	PVC Blocked	NA	
	12/14/2018	<b>15.7</b>	<1.00	2.07	14.9	PVC Blocked	NA	
	3/19/2019	<b>59.6</b>	<4.00	58.4	236	PVC Blocked	NA	
	6/11/2019	<b>23.0</b>	<1.00	7.97	33.7	PVC Blocked	NA	
	9/5/2019	<b>11.8</b>	<1.00	6.16	30.5	PVC Blocked	NA	
	12/10/2019	<b>14.2</b>	<1.00	3.47	22.0	PVC Blocked	NA	
MW04	3/24/2011	<b>15</b>	<1.0	160	<b>2600</b>	7.41	89.07	
	6/9/2011	<b>17</b>	<1.0	25	260	7.58	88.90	
	9/2/2011	<b>46</b>	<1.0	92	650	9.45	87.03	
	12/2/2011	<b>110</b>	<1.0	260	<b>2900</b>	9.32	87.16	
	3/6/2012	<b>110</b>	<1.0	120	410	9.78	86.70	
	6/19/2012	<b>400</b>	<1.0	450	<b>2200</b>	8.82	87.66	
	9/26/2012	<b>150</b>	<1.0	100	220	12.65	83.83	
	12/21/2012	<b>7.5</b>	<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	<b>29</b>	<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	



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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)	
<b>COGCC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>			
	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	
	3/19/2019	<1.00	<1.00	1.05	6.28	10.37	86.77	
	6/11/2019	<1.00	<1.00	<1.00	<1.00	8.92	88.22	
	9/5/2019	1.21	<1.00	1.32	4.86	11.25	85.89	
	12/10/2019	<1.00	<1.00	1.84	<1.00	9.46	87.68	
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	
	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	



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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)
COGCC Allowable Levels		5	560	700	1400		
	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
	3/19/2019	<1.00	<1.00	<1.00	<1.00	10.57	86.73
	6/11/2019	<1.00	<1.00	<1.00	<1.00	8.93	88.37
	9/5/2019	<1.00	<1.00	<1.00	<1.00	11.44	85.86
	12/10/2019	<1.00	<1.00	<1.00	<1.00	9.98	87.32
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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	<b>31</b>	<1.0	18	120	8.96	86.82
	12/2/2011	<b>15</b>	<1.0	42	270	8.69	87.09
	3/6/2012	<b>320</b>	<1.0	25	310	9.08	86.70
	6/19/2012	<b>350</b>	<1.0	37	870	8.21	87.57
	9/26/2012	<b>190</b>	<1.0	54	410	12.03	83.75
	12/21/2012	<b>11</b>	<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
	9/10/2013	<b>34</b>	<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	<b>42.9</b>	<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	<b>619</b>	<1.0	46.3	192	NM	NA
	12/2/2014	<b>1440</b>	<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	<b>2580</b>	<4.0	19.5	34.0	8.65	87.14
	9/10/2015	<b>1370</b>	<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



**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)	
<b>COGCC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>			
	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	
	3/19/2019	<1.00	<1.00	<1.00	<1.00	9.03	86.76	
	6/11/2019	<1.00	<1.00	<1.00	<1.00	7.21	88.58	
	9/5/2019	1.09	<1.00	<1.00	<1.00	9.92	85.87	
	12/10/2019	<1.00	<1.00	<1.00	<1.00	8.74	87.05	
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	
	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	



**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)	
COGCC Allowable Levels		5	560	700	1400			
	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	
	3/19/2019	<1.00	<1.00	<1.00	<1.00	10.76	85.04	
	6/11/2019	<1.00	<1.00	<1.00	<1.00	9.45	86.35	
	9/5/2019	<1.00	<1.00	<1.00	<1.00	11.37	84.43	
	12/10/2019	<1.00	<1.00	<1.00	<1.00	10.05	85.75	
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	
	6/16/2015	<1.0	<1.0	<1.0	<1.0	9.54	86.16	



**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)
<b>COGCC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>		
	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
	3/19/2019	<1.00	<1.00	<1.00	<1.00	10.14	85.56
	6/11/2019	<1.00	<1.00	<1.00	<1.00	8.90	86.80
	9/5/2019	<1.00	<1.00	<1.00	<1.00	10.71	84.99
	12/10/2019	<1.00	<1.00	<1.00	<1.00	9.46	86.24
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	<b>14</b>	<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



**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)	
COGCC Allowable Levels		5	560	700	1400			
	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	
	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	<b>5.92</b>	<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	
	3/19/2019	<1.00	<1.00	<1.00	<1.00	9.94	85.68	
	6/11/2019	<1.00	<1.00	<1.00	<1.00	8.62	87.00	
	9/5/2019	<1.00	<1.00	<1.00	<1.00	10.55	85.07	
	12/10/2019	<1.00	<1.00	<1.00	<1.00	9.28	86.34	
<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	
	3/19/2019	<1.00	<1.00	<1.00	<1.00	9.06	86.77	



**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)
<b>COGCC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>		
	6/11/2019	<1.00	<1.00	<1.00	<1.00	7.35	88.48
	9/5/2019	<1.00	<1.00	<1.00	<1.00	9.79	86.04
	12/10/2019	<1.00	<1.00	<1.00	<1.00	8.74	87.09
MW11	9/10/2015	<b>90.9</b>	<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
	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	<b>128</b>	<1.00	<1.00	<1.00	10.26	85.27
	12/5/2016	<b>6.02</b>	<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
	3/19/2019	<1.00	<1.00	<1.00	<1.00	10.21	85.73
	6/11/2019	<1.00	<1.00	<1.00	<1.00	8.87	87.07
	9/5/2019	<1.00	<1.00	<1.00	<1.00	10.81	85.13
	12/10/2019	<1.00	<1.00	<1.00	<1.00	9.62	86.32
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



**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)
<b>COGCC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>		
	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
	3/19/2019	<1.00	<1.00	<1.00	<1.00	10.06	86.00
	6/11/2019	<1.00	<1.00	<1.00	<1.00	8.82	87.24
	9/5/2019	<1.00	<1.00	<1.00	<1.00	10.71	85.35
	12/10/2019	<1.00	<1.00	<1.00	<1.00	9.54	86.52
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
	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
	3/19/2019	<1.00	<1.00	<1.00	<1.00	6.00	85.14
	6/11/2019	<1.00	<1.00	<1.00	<1.00	5.31	85.83
	9/5/2019	<1.00	<1.00	<1.00	<1.00	6.49	84.65
	12/10/2019	<1.00	<1.00	<1.00	<1.00	5.25	85.89

Notes: COGCC - Colorado Oil and Gas Conservation Commission

µg/L - micrograms per liter

ft bgs - feet below ground surface

< - less than laboratory reporting limit

NA - not analyzed/not available

Excavation groundwater depth is approximate

NM - not measured

**BOLD** = Analytical result is in exceedance of COGCC Table 910-1 groundwater standards.

  = Active remediation implementation period



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

<b>Well Name</b>	<b>Date</b>	<b>Benzene (µg/L)</b>	<b>Toluene (µg/L)</b>	<b>Ethylbenzene (µg/L)</b>	<b>Total Xylenes (µg/L)</b>
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
	3/19/2019	<1.00	<1.00	<1.00	<1.00
	6/11/2019	<1.00	<1.00	<1.00	<1.00
	9/5/2019	Dry - Not Sampled			
12/10/2019	<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			



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

<b>Well Name</b>	<b>Date</b>	<b>Benzene (µg/L)</b>	<b>Toluene (µg/L)</b>	<b>Ethylbenzene (µg/L)</b>	<b>Total Xylenes (µg/L)</b>
	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
	3/19/2019	<1.00	<1.00	<1.00	<1.00
	6/11/2019	<1.00	<1.00	<1.00	<1.00
	9/5/2019	Dry - Not Sampled			
	12/10/2019	<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



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

<b>Well Name</b>	<b>Date</b>	<b>Benzene (µg/L)</b>	<b>Toluene (µg/L)</b>	<b>Ethylbenzene (µg/L)</b>	<b>Total Xylenes (µg/L)</b>
	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
	3/19/2019	<1.00	<1.00	<1.00	<1.00
	6/11/2019	<1.00	<1.00	<1.00	<1.00
	9/5/2019	Dry - Not Sampled			
	12/10/2019	<1.00	<1.00	<1.00	<1.00
<hr/>					
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
	3/19/2019	<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**

<b>Well Name</b>	<b>Date</b>	<b>Benzene (µg/L)</b>	<b>Toluene (µg/L)</b>	<b>Ethylbenzene (µg/L)</b>	<b>Total Xylenes (µg/L)</b>
	6/11/2019	<1.00	<1.00	<1.00	<1.00
	9/5/2019	Dry - Not Sampled			
	12/10/2019	<1.00	<1.00	<1.00	<1.00

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



March 25, 2019

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. March 19, 2019. This project is associated with Origins project number Y903247-01.

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	Y903247-01	Water	March 19, 2019 13:15	03/19/2019 17:25
MW02	Y903247-02	Water	March 19, 2019 13:20	03/19/2019 17:25
MW03R	Y903247-03	Water	March 19, 2019 13:25	03/19/2019 17:25
MW04	Y903247-04	Water	March 19, 2019 13:30	03/19/2019 17:25
MW05	Y903247-05	Water	March 19, 2019 13:35	03/19/2019 17:25
MW06	Y903247-06	Water	March 19, 2019 13:40	03/19/2019 17:25
MW07	Y903247-07	Water	March 19, 2019 13:45	03/19/2019 17:25
MW08	Y903247-08	Water	March 19, 2019 13:50	03/19/2019 17:25
MW09	Y903247-09	Water	March 19, 2019 13:55	03/19/2019 17:25
MW10	Y903247-10	Water	March 19, 2019 14:00	03/19/2019 17:25
MW11R	Y903247-11	Water	March 19, 2019 14:05	03/19/2019 17:25
MW12R	Y903247-12	Water	March 19, 2019 14:10	03/19/2019 17:25
MW13	Y903247-13	Water	March 19, 2019 14:15	03/19/2019 17:25
SW01	Y903247-14	Water	March 19, 2019 14:20	03/19/2019 17:25

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
SW02	Y903247-15	Water	March 19, 2019 14:25	03/19/2019 17:25
SW03	Y903247-16	Water	March 19, 2019 14:30	03/19/2019 17:25
SW04	Y903247-17	Water	March 19, 2019 14:35	03/19/2019 17:25

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, INC

1903247

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	MM01	Water	3-19-19	1315	GT	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
02-001	MM02	Water		1320		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
03-001	MM03R	Water		1325		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
04-001	MM04	Water		1330		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
05-001	MM05	Water		1335		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
06-001	MM06	Water		1340		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
07-001	MM07	Water		1345		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
08-001	MM08	Water		1350		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
09-001	MM09	Water		1355		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
10-001	MM10	Water		1400		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
11-001	MM11R	Water		1405		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C

Relinquished By: Date / Time: 3/19/19  
 Relinquished By: Date / Time: 3/19/19 1725  
 Temperature on Receipt: 4.3  
 Turn Around Time:  72-hr  Standard  
 24-hr  48-hr

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, INC

1903207

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

12-001	MW12R	Water	3-19-19	1410	6F	12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
13-001	MW13	Water		1415		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
14-001	SW01	Water		1420		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
15-001	SW02	Water		1425		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
16-001	SW03	Water		1430		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C
17-001	SW04	Water		1435		12_40mL Amber VOA Vial - HCL	3	BTEX by EPA 8260C

Relinquished By: Date / Time: 3/19/19 1725

Received By: \_\_\_\_\_ Date / Time: \_\_\_\_\_

Temperature on Receipt: 4.3

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

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: Y903247

Client: LTE

Client Project ID: KMG - Dubach 16-4 Thesing

Checklist Completed by: JG

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

Date/time completed: 3/20/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.3 °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 <sup>(1)?</sup>	<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 <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) present and filled out completely <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)?</sup>	<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 <sup>(1)?</sup> (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

<sup>(1)</sup>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 3/21/19

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**

**3/19/2019 1:15:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-01 (Water)**

**BTEX by EPA 8260C**

Benzene	105	4.00	ug/L	4	B9C2201	KDK	03/22/2019	03/22/2019	
Toluene	ND	4.00	"	"	"	KDK	"	"	U
Ethylbenzene	249	4.00	"	"	"	KDK	"	"	
Xylenes, total	580	4.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	97.0 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	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**

**3/19/2019 1:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-02 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	99.7 %	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

**MW03R**

**3/19/2019 1:25:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-03 (Water)**

**BTEX by EPA 8260C**

Benzene	59.6	4.00	ug/L	4	B9C2201	KDK	03/22/2019	03/22/2019	
Toluene	ND	4.00	"	"	"	KDK	"	"	U
Ethylbenzene	58.4	4.00	"	"	"	KDK	"	"	
Xylenes, total	236	4.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	99.0 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	99.9 %	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**

**3/19/2019 1:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-04 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	<b>1.05</b>	1.00	"	"	"	KDK	"	"	
Xylenes, total	<b>6.28</b>	1.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	98.3 %	84-121			"	"	"		
Surrogate: Toluene-d8	99.6 %	85-115			"	"	"		
Surrogate: 4-Bromofluorobenzene	99.9 %	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

**MW05**

**3/19/2019 1:35:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-05 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	100 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %	84-114			"	"	"	"	

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

**MW06**

**3/19/2019 1:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-06 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	101 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.3 %	84-114			"	"	"	"	

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

**MW07**

**3/19/2019 1:45:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-07 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	99.3 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	99.5 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.4 %	84-114			"	"	"	"	

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**MW08**

**3/19/2019 1:50:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-08 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	99.0 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.1 %	84-114			"	"	"	"	

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

**MW09**

**3/19/2019 1:55:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-09 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	99.6 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.4 %	84-114			"	"	"	"	

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

**MW10**

**3/19/2019 2:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-10 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	98.9 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	"	

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**MW11R**

**3/19/2019 2:05:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-11 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	100 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	"	

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

**MW12R**

**3/19/2019 2:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-12 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	100 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.6 %	84-114			"	"	"	"	

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

**MW13**

**3/19/2019 2:15:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-13 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	101 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	"	

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Brian Sulzberger  
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 Project: KMG - Dubach 16-4, Thesing 9-4

**SW01**

**3/19/2019 2:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-14 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	101 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	"	

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

**SW02**

**3/19/2019 2:25:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-15 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	101 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.5 %	84-114			"	"	"	"	

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 Arvada CO 80003

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

**SW03**

**3/19/2019 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-16 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	101 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.2 %	84-114			"	"	"	"	

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

**SW04**

**3/19/2019 2:35:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903247-17 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B9C2201	KDK	03/22/2019	03/22/2019	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	100 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	"	

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 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 B9C2201 - EPA 5030B (Water)**

**Blank (B9C2201-BLK1)**

Prepared: 03/22/2019 Analyzed: 03/22/2019

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	62		"	62.5		99.1	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.0	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.9	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 B9C2201 - EPA 5030B (Water)**

**LCS (B9C2201-BS1)**

Prepared: 03/22/2019 Analyzed: 03/22/2019

Benzene	47.0	1.00	ug/L	50.0		94.0	73.3-129			
Toluene	47.1	1.00	"	50.0		94.2	76.2-123			
Ethylbenzene	47.4	1.00	"	50.0		94.9	73.6-130			
m,p-Xylene	94.3	2.00	"	100		94.3	76.1-126			
o-Xylene	48.6	1.00	"	50.0		97.2	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.6	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.7	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.6	84-114			

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 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 B9C2201 - EPA 5030B (Water)**

<b>Matrix Spike (B9C2201-MS1)</b>	<b>Source: Y903247-02</b>			<b>Prepared: 03/22/2019 Analyzed: 03/22/2019</b>						
Benzene	43.6	1.00	ug/L	50.0	ND	87.2	74-130			
Toluene	44.7	1.00	"	50.0	ND	89.3	73-131			
Ethylbenzene	45.0	1.00	"	50.0	ND	90.1	76-132			
m,p-Xylene	90.2	2.00	"	100	0.190	90.0	69-139			
o-Xylene	46.2	1.00	"	50.0	ND	92.5	74-131			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.5	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.6	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.5	84-114			

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LT Environmental, Inc.  
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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 B9C2201 - EPA 5030B (Water)**

<b>Matrix Spike Dup (B9C2201-MSD1)</b>	<b>Source: Y903247-02</b>			<b>Prepared: 03/22/2019 Analyzed: 03/22/2019</b>						
Benzene	48.1	1.00	ug/L	50.0	ND	96.2	74-130	9.77	20	
Toluene	48.7	1.00	"	50.0	ND	97.3	73-131	8.57	20	
Ethylbenzene	50.7	1.00	"	50.0	ND	101	76-132	11.8	20	
m,p-Xylene	101	2.00	"	100	0.190	100	69-139	10.9	20	
o-Xylene	51.4	1.00	"	50.0	ND	103	74-131	10.5	20	
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.4	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.5	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	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

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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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June 14, 2019

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 11, 2019. This project is associated with Origins project number Y906212-01.

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	Y906212-01	Water	June 11, 2019 12:11	06/11/2019 15:28
MW02	Y906212-02	Water	June 11, 2019 12:19	06/11/2019 15:28
MW03R	Y906212-03	Water	June 11, 2019 12:26	06/11/2019 15:28
MW04	Y906212-04	Water	June 11, 2019 12:34	06/11/2019 15:28
MW05	Y906212-05	Water	June 11, 2019 12:43	06/11/2019 15:28
MW06	Y906212-06	Water	June 11, 2019 12:51	06/11/2019 15:28
MW07	Y906212-07	Water	June 11, 2019 13:00	06/11/2019 15:28
MW08	Y906212-08	Water	June 11, 2019 13:09	06/11/2019 15:28
MW09	Y906212-09	Water	June 11, 2019 13:17	06/11/2019 15:28
MW10	Y906212-10	Water	June 11, 2019 13:24	06/11/2019 15:28
MW11R	Y906212-11	Water	June 11, 2019 13:33	06/11/2019 15:28
MW12R	Y906212-12	Water	June 11, 2019 13:40	06/11/2019 15:28
MW13	Y906212-13	Water	June 11, 2019 13:48	06/11/2019 15:28
SW01	Y906212-14	Water	June 11, 2019 13:56	06/11/2019 15:28

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

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW02	Y906212-15	Water	June 11, 2019 14:07	06/11/2019 15:28
SW03	Y906212-16	Water	June 11, 2019 14:20	06/11/2019 15:28
SW04	Y906212-17	Water	June 11, 2019 14:31	06/11/2019 15:28

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



4000212

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	Analysis
01-001	MM01	Water	06/11/19	1211	TC	40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C
02-001	MM02	Water		1219		40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C
03-001	MM03R	Water		1226		40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C
04-001	MM04	Water		1234		40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C
05-001	MM05	Water		1243		40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C
06-001	MM06	Water		1251		40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C
07-001	MM07	Water		1300		40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C
08-001	MM08	Water		1309		40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C
09-001	MM09	Water		1317		40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C
10-001	MM10	Water		1324		40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C
11-001	MM11R	Water		1333		40mL Amber VOA Vial - HC	3	BTEX by EPA 8250C

Relinquished By: [Signature] Date / Time: 06/11/19 1528  
 Relinquished By: [Signature] Date / Time: 06/11/19 1528  
 Received By: [Signature] Date / Time: 06/11/19 1528  
 Temperature on Receipt: 10.1  
 Turn Around Time:  24-hr  48-hr  Standard

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

Y900212

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

12-001	MW12R	Water	06/11/19	1340	TC	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
13-001	MW13	Water		1348		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
14-001	SW01	Water		1356		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
15-001	SW02	Water		1407		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
16-001	SW03	Water		1420		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
17-001	SW04	Water		1431		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C

Temperature on Receipt: 10.1

Turn Around Time:  72-hr  Standard  48-hr

Relinquished By: *[Signature]* Date / Time: 6/11/19 1528

Received By: \_\_\_\_\_ Date / Time: \_\_\_\_\_

Relinquished By: *[Signature]* Date / Time: 06/11/19 1538

Received By: \_\_\_\_\_ Date / Time: \_\_\_\_\_

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

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

**Sample Receipt Checklist**

Origins Work Order: 1906212

Client: LTE

Client Project ID: KMG-Dubach 16-4

Checklist Completed by: JG

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

Date/time completed: 6/11/19

Airbill #: NA

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

Cooler Number/Temperature: 1 / 10.1 °C / °C / °C / °C (Describe)

Thermometer ID: TO03

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)?</sup>		<input checked="" type="checkbox"/>		<u>Sampled same day</u>
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 <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)?</sup>		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked <sup>(1)?</sup> (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>			<u>HCL</u>
Additional Comments (if any):				

<sup>(1)</sup>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]

6/13/19  
 Date/Time Reviewed

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**

**6/11/2019 12:11:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-01 (Water)**

**BTEX by EPA 8260D**

Benzene	60.5	4.00	ug/L	4	B9F1209	JTD	06/12/2019	06/12/2019	
Toluene	ND	4.00	"	"	"	JTD	"	"	U
Ethylbenzene	75.5	4.00	"	"	"	JTD	"	"	
Xylenes, total	244	4.00	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	"	

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**

**6/11/2019 12:19:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-02 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 4600 West 60th Avenue  
 Arvada CO 80003

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

**MW03R**

**6/11/2019 12:26:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-03 (Water)**

**BTEX by EPA 8260D**

Benzene	23.0	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	7.97	1.00	"	"	"	JTD	"	"	
Xylenes, total	33.7	1.00	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Arvada CO 80003

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

**MW04**

**6/11/2019 12:34:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-04 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
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 Arvada CO 80003

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

**MW05**

**6/11/2019 12:43:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-05 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	104 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Arvada CO 80003

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

**MW06**

**6/11/2019 12:51:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-06 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
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 Arvada CO 80003

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

**MW07**

**6/11/2019 1:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-07 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

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**

**6/11/2019 1:09:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-08 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 4600 West 60th Avenue  
 Arvada CO 80003

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

**MW09**

**6/11/2019 1:17:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-09 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	104 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %	70-130			"	"	"	"	

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**  
**6/11/2019 1:24:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-10 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	106 %	70-130			"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	

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

**MW11R**

**6/11/2019 1:33:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-11 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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4600 West 60th Avenue  
Arvada CO 80003

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

**MW12R**

**6/11/2019 1:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-12 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	104 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

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 4600 West 60th Avenue  
 Arvada CO 80003

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

**MW13**

**6/11/2019 1:48:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-13 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	106 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	"	

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

**SW01**

**6/11/2019 1:56:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-14 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

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

**SW02**

**6/11/2019 2:07:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-15 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	"	

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

**SW03**

**6/11/2019 2:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-16 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	106 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	"	

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

**SW04**

**6/11/2019 2:31:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y906212-17 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9F1209	JTD	06/12/2019	06/12/2019	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	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	"	

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 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 8260D - 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 B9F1209 - EPA 5030B (Water)**

**Blank (B9F1209-BLK1)**

Prepared: 06/12/2019 Analyzed: 06/12/2019

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		103	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.5	70-130			

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Brian Sulzberger  
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 Project: KMG - Dubach 16-4, Thesing 9-4

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9F1209 - EPA 5030B (Water)**

**Blank (B9F1209-BLK2)**

Prepared: 06/12/2019 Analyzed: 06/12/2019

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		103	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9F1209 - EPA 5030B (Water)**

**LCS (B9F1209-BS1)**

Prepared: 06/12/2019 Analyzed: 06/12/2019

Benzene	48.3	1.00	ug/L	50.0		96.7	70-130			
Toluene	50.0	1.00	"	50.0		99.9	70-130			
Ethylbenzene	52.8	1.00	"	50.0		106	70-130			
m,p-Xylene	103	2.00	"	100		103	70-130			
o-Xylene	50.7	1.00	"	50.0		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.4	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9F1209 - EPA 5030B (Water)**

**LCS (B9F1209-BS2)**

Prepared: 06/12/2019 Analyzed: 06/12/2019

Benzene	50.2	1.00	ug/L	50.0		100	70-130			
Toluene	51.7	1.00	"	50.0		103	70-130			
Ethylbenzene	52.6	1.00	"	50.0		105	70-130			
m,p-Xylene	102	2.00	"	100		102	70-130			
o-Xylene	50.3	1.00	"	50.0		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.4	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		105	70-130			

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

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9F1209 - EPA 5030B (Water)**

Matrix Spike (B9F1209-MS1)	Source: Y906207-01			Prepared: 06/12/2019 Analyzed: 06/12/2019						
Benzene	35.0	1.00	ug/L	50.0	ND	69.9	70-130			QM-07
Toluene	36.1	1.00	"	50.0	ND	72.3	70-130			
Ethylbenzene	40.4	1.00	"	50.0	0.060	80.8	70-130			
m,p-Xylene	78.5	2.00	"	100	ND	78.5	70-130			
o-Xylene	38.7	1.00	"	50.0	ND	77.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		105	70-130			
Surrogate: Toluene-d8	60		"	62.5		95.9	70-130			
Surrogate: 4-Bromofluorobenzene	78		"	62.5		124	70-130			

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

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9F1209 - EPA 5030B (Water)**

<b>Matrix Spike (B9F1209-MS2)</b>	<b>Source: Y906207-02</b>			<b>Prepared: 06/12/2019 Analyzed: 06/12/2019</b>						
Benzene	84.1	1.00	ug/L	50.0	20.1	128	70-130			
Toluene	386	1.00	"	50.0	247	277	70-130			QM-07
Ethylbenzene	95.4	1.00	"	50.0	41.7	108	70-130			
m,p-Xylene	697	2.00	"	100	603	93.5	70-130			
o-Xylene	253	1.00	"	50.0	180	146	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9F1209 - EPA 5030B (Water)**

Matrix Spike Dup (B9F1209-MSD1)	Source: Y906207-01			Prepared: 06/12/2019 Analyzed: 06/12/2019						
Benzene	50.8	1.00	ug/L	50.0	ND	102	70-130	36.9	20	QR-03
Toluene	53.0	1.00	"	50.0	ND	106	70-130	37.9	20	QR-02
Ethylbenzene	55.5	1.00	"	50.0	0.060	111	70-130	31.4	20	QR-02
m,p-Xylene	107	2.00	"	100	ND	107	70-130	30.3	20	QR-02
o-Xylene	53.0	1.00	"	50.0	ND	106	70-130	31.3	20	QR-02
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.4	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9F1209 - EPA 5030B (Water)**

Matrix Spike Dup (B9F1209-MSD2)	Source: Y906207-02			Prepared: 06/12/2019 Analyzed: 06/12/2019						
Benzene	84.6	1.00	ug/L	50.0	20.1	129	70-130	0.617	20	
Toluene	422	1.00	"	50.0	247	350	70-130	9.01	20	QM-07
Ethylbenzene	105	1.00	"	50.0	41.7	127	70-130	9.55	20	
m,p-Xylene	777	2.00	"	100	603	174	70-130	10.9	20	QM-4X
o-Xylene	291	1.00	"	50.0	180	222	70-130	13.9	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.5	70-130			
Surrogate: Toluene-d8	66		"	62.5		106	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	70-130			

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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.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

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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September 10, 2019

**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 06, 2019. This project is associated with Origins project number Y909086-01.

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	Y909086-01	Water	September 5, 2019 11:00	09/06/2019 07:45
MW02	Y909086-02	Water	September 5, 2019 11:08	09/06/2019 07:45
MW03R	Y909086-03	Water	September 5, 2019 11:16	09/06/2019 07:45
MW04	Y909086-04	Water	September 5, 2019 11:24	09/06/2019 07:45
MW05	Y909086-05	Water	September 5, 2019 11:32	09/06/2019 07:45
MW06	Y909086-06	Water	September 5, 2019 11:40	09/06/2019 07:45
MW07	Y909086-07	Water	September 5, 2019 11:48	09/06/2019 07:45
MW08	Y909086-08	Water	September 5, 2019 11:56	09/06/2019 07:45
MW09	Y909086-09	Water	September 5, 2019 12:04	09/06/2019 07:45
MW10	Y909086-10	Water	September 5, 2019 12:12	09/06/2019 07:45
MW11R	Y909086-11	Water	September 5, 2019 12:20	09/06/2019 07:45
MW12R	Y909086-12	Water	September 5, 2019 12:28	09/06/2019 07:45
MW13	Y909086-13	Water	September 5, 2019 12:36	09/06/2019 07:45

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



7109086

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	9-5-19	1100	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
02-001	MW02	Water	9-5-19	1108	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
03-001	MW03R	Water	9-5-19	1116	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
04-001	MW04	Water	9-5-19	1124	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
05-001	MW05	Water	9-5-19	1132	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
06-001	MW06	Water	9-5-19	1140	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
07-001	MW07	Water	9-5-19	1146	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
08-001	MW08	Water	9-5-19	1156	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
09-001	MW09	Water	9-5-19	1204	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
10-001	MW10	Water	9-5-19	1212	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
11-001	MW11R	Water	9-5-19	1220	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C

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

Requisitioned By: \_\_\_\_\_ Date / Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date / Time: \_\_\_\_\_

Requisitioned By: *[Signature]* Date / Time: 9-6-19 07:40  
 Received By: *[Signature]* Date / Time: 9/6/19 7:45

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

7991086

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

	Date	Time	Sampled by			
12-001	12-01	12:28	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
13-001	13-01	13:36	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
14-001	14-01	14:36	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
15-001	15-01	15:36	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
16-001	16-01	16:36	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
17-001	17-01	17:36	JBT	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C

Didn't sample, no surface water

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

Relinquished By \_\_\_\_\_ Date / Time \_\_\_\_\_  
 Received By \_\_\_\_\_ Date / Time \_\_\_\_\_

Relinquished By *[Signature]* Date / Time 9.6.19 07:40  
 Received By *[Signature]* Date / Time 9.6.19 7:45

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

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

**Sample Receipt Checklist**

Origins Work Order: Y909086

Client: LTE

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

Checklist Completed by: JG

Shipped Via: HD

Date/time completed: 9/6/2019

(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A

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

Cooler Number/Temperature: 1 / 1.3 °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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 <sup>(1)</sup> ? (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>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 9/9/19

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

**MW01**

**9/5/2019 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-01 (Water)**

**BTEX by EPA 8260D**

Benzene	21.3	1.00	ug/L	1	B910605	KDK	09/06/2019	09/07/2019	
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	44.4	1.00	"	"	"	KDK	"	"	
Xylenes, total	57.7	1.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.1 %	70-130			"	"	"	"	

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**

**9/5/2019 11:08:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-02 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B910605	KDK	09/06/2019	09/07/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	"	

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**

**9/5/2019 11:16:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-03 (Water)**

**BTEX by EPA 8260D**

Benzene	11.8	1.00	ug/L	1	B910605	KDK	09/06/2019	09/07/2019	
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	6.16	1.00	"	"	"	KDK	"	"	
Xylenes, total	30.5	1.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	"	

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**

**9/5/2019 11:24:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-04 (Water)**

**BTEX by EPA 8260D**

Benzene	1.21	1.00	ug/L	1	B910605	KDK	09/06/2019	09/07/2019	
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	1.32	1.00	"	"	"	KDK	"	"	
Xylenes, total	4.86	1.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.7 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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LT Environmental, Inc.  
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 Arvada CO 80003

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

**MW05**

**9/5/2019 11:32:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-05 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B910605	KDK	09/06/2019	09/07/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	"	

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 Arvada CO 80003

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

**MW06**

**9/5/2019 11:40:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-06 (Water)**

**BTEX by EPA 8260D**

Benzene	1.09	1.00	ug/L	1	B910901	KDK	09/09/2019	09/09/2019	
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	75.4 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	95.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	82.8 %	70-130			"	"	"	"	

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**

**9/5/2019 11:48:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-07 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B910901	KDK	09/09/2019	09/09/2019	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	76.8 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	83.5 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

Brian Sulzberger  
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 Project: KMG - Dubach 16-4, Thesing 9-4

**MW08**

**9/5/2019 11:56:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-08 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B910901	KDK	09/09/2019	09/09/2019	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	74.2 %	70-130				"	"	"	
Surrogate: Toluene-d8	94.8 %	70-130				"	"	"	
Surrogate: 4-Bromofluorobenzene	82.3 %	70-130				"	"	"	

Origins Laboratory, Inc.



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 Arvada CO 80003

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

**MW09**

**9/5/2019 12:04:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-09 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B910901	KDK	09/09/2019	09/09/2019	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	76.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.3 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	83.2 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

**MW10**  
**9/5/2019 12:12:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-10 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B910901	KDK	09/09/2019	09/09/2019	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	74.7 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.3 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	84.5 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Arvada CO 80003

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

**MW11R**

**9/5/2019 12:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-11 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B910901	KDK	09/09/2019	09/09/2019	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	73.0 %	70-130				"	"	"	
Surrogate: Toluene-d8	95.7 %	70-130				"	"	"	
Surrogate: 4-Bromofluorobenzene	82.1 %	70-130				"	"	"	

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LT Environmental, Inc.  
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 Arvada CO 80003

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

**MW12R**

**9/5/2019 12:28:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-12 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B910901	KDK	09/09/2019	09/09/2019	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	73.9 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	82.4 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Arvada CO 80003

Brian Sulzberger  
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 Project: KMG - Dubach 16-4, Thesing 9-4

**MW13**

**9/5/2019 12:36:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y909086-13 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B910901	KDK	09/09/2019	09/09/2019	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	75.0 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.3 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	82.5 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 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 8260D - 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 B910605 - EPA 5030B (Water)**

**Blank (B910605-BLK1)**

Prepared: 09/06/2019 Analyzed: 09/06/2019

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		103	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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 8260D - 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 B9I0605 - EPA 5030B (Water)**

**LCS (B9I0605-BS1)**

Prepared: 09/06/2019 Analyzed: 09/06/2019

Benzene	48.1	1.00	ug/L	50.0		96.2	70-130			
Toluene	48.8	1.00	"	50.0		97.7	70-130			
Ethylbenzene	47.6	1.00	"	50.0		95.2	70-130			
m,p-Xylene	96.7	2.00	"	100		96.7	70-130			
o-Xylene	49.1	1.00	"	50.0		98.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.9	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		100	70-130			

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 8260D - 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 B910605 - EPA 5030B (Water)**

<b>Matrix Spike (B910605-MS1)</b>	<b>Source: Y909075-01</b>			<b>Prepared: 09/06/2019 Analyzed: 09/06/2019</b>						
Benzene	49.3	1.00	ug/L	50.0	ND	98.7	70-130			
Toluene	50.3	1.00	"	50.0	ND	101	70-130			
Ethylbenzene	49.3	1.00	"	50.0	0.080	98.4	70-130			
m,p-Xylene	100	2.00	"	100	0.240	100	70-130			
o-Xylene	51.1	1.00	"	50.0	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.0	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	70-130			

Origins Laboratory, Inc.



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Brian Sulzberger  
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 Project: KMG - Dubach 16-4, Thesing 9-4

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B910605 - EPA 5030B (Water)**

Matrix Spike Dup (B910605-MSD1)	Source: Y909075-01			Prepared: 09/06/2019 Analyzed: 09/06/2019						
Benzene	48.5	1.00	ug/L	50.0	ND	97.0	70-130	1.70	20	
Toluene	50.1	1.00	"	50.0	ND	100	70-130	0.458	20	
Ethylbenzene	49.2	1.00	"	50.0	0.080	98.2	70-130	0.203	20	
m,p-Xylene	100	2.00	"	100	0.240	99.8	70-130	0.200	20	
o-Xylene	50.7	1.00	"	50.0	ND	101	70-130	0.904	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.9	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.1	70-130			

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 8260D - 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 B910901 - EPA 5030B (Water)**

**Blank (B910901-BLK1)**

Prepared: 09/09/2019 Analyzed: 09/09/2019

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	47		"	62.5	75.9		70-130			
Surrogate: Toluene-d8	60		"	62.5	95.8		70-130			
Surrogate: 4-Bromofluorobenzene	52		"	62.5	83.4		70-130			

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 8260D - 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 B9I0901 - EPA 5030B (Water)**

**LCS (B9I0901-BS1)**

Prepared: 09/09/2019 Analyzed: 09/09/2019

Benzene	46.0	1.00	ug/L	50.0		91.9	70-130			
Toluene	51.8	1.00	"	50.0		104	70-130			
Ethylbenzene	44.1	1.00	"	50.0		88.2	70-130			
m,p-Xylene	88.5	2.00	"	100		88.5	70-130			
o-Xylene	42.7	1.00	"	50.0		85.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	45		"	62.5		71.4	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.9	70-130			
Surrogate: 4-Bromofluorobenzene	54		"	62.5		85.7	70-130			

Origins Laboratory, Inc.



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 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 8260D - 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 B910901 - EPA 5030B (Water)**

<b>Matrix Spike (B910901-MS1)</b>	<b>Source: Y909086-13</b>			<b>Prepared: 09/09/2019 Analyzed: 09/09/2019</b>						
Benzene	46.6	1.00	ug/L	50.0	ND	93.2	70-130			
Toluene	52.5	1.00	"	50.0	ND	105	70-130			
Ethylbenzene	44.1	1.00	"	50.0	0.070	88.1	70-130			
m,p-Xylene	87.5	2.00	"	100	ND	87.5	70-130			
o-Xylene	43.0	1.00	"	50.0	ND	85.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	44		"	62.5		71.0	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	53		"	62.5		84.7	70-130			

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LT Environmental, Inc.  
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 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 8260D - Quality Control**  
**Origins Laboratory, Inc.**

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

**Batch B910901 - EPA 5030B (Water)**

Matrix Spike Dup (B910901-MSD1)	Source: Y909086-13			Prepared: 09/09/2019 Analyzed: 09/09/2019						
Benzene	49.6	1.00	ug/L	50.0	ND	99.1	70-130	6.22	20	
Toluene	54.9	1.00	"	50.0	ND	110	70-130	4.53	20	
Ethylbenzene	47.0	1.00	"	50.0	0.070	93.9	70-130	6.39	20	
m,p-Xylene	93.2	2.00	"	100	ND	93.2	70-130	6.27	20	
o-Xylene	45.9	1.00	"	50.0	ND	91.7	70-130	6.51	20	
Surrogate: 1,2-Dichloroethane-d4	44		"	62.5		70.5	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.3	70-130			
Surrogate: 4-Bromofluorobenzene	54		"	62.5		86.9	70-130			

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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

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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.

Origins Laboratory, Inc.



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---

Jen Pellegrini For Noelle Doyle Mathis, President



December 16, 2019

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 10, 2019. This project is associated with Origins project number Y912149-01.

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	Y912149-01	Water	December 10, 2019 12:00	12/10/2019 16:10
MW02	Y912149-02	Water	December 10, 2019 12:10	12/10/2019 16:10
MW03R	Y912149-03	Water	December 10, 2019 12:18	12/10/2019 16:10
MW04	Y912149-04	Water	December 10, 2019 12:25	12/10/2019 16:10
MW05	Y912149-05	Water	December 10, 2019 12:34	12/10/2019 16:10
MW06	Y912149-06	Water	December 10, 2019 12:42	12/10/2019 16:10
MW07	Y912149-07	Water	December 10, 2019 12:50	12/10/2019 16:10
MW08	Y912149-08	Water	December 10, 2019 12:58	12/10/2019 16:10
MW09	Y912149-09	Water	December 10, 2019 13:06	12/10/2019 16:10
MW10	Y912149-10	Water	December 10, 2019 13:15	12/10/2019 16:10
MW11R	Y912149-11	Water	December 10, 2019 13:22	12/10/2019 16:10
MW12R	Y912149-12	Water	December 10, 2019 13:30	12/10/2019 16:10
MW13	Y912149-13	Water	December 10, 2019 13:40	12/10/2019 16:10
SW01	Y912149-14	Water	December 10, 2019 13:48	12/10/2019 16:10

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

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW02	Y912149-15	Water	December 10, 2019 13:56	12/10/2019 16:10
SW03	Y912149-16	Water	December 10, 2019 14:02	12/10/2019 16:10
SW04	Y912149-17	Water	December 10, 2019 14:10	12/10/2019 16:10

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, INC

1902149

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	12-10-19	1200	R5	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
02-001	MW02	Water		1210		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
03-001	MW03R	Water		1218		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
04-001	MW04	Water		1225		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
05-001	MW05	Water		1234		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
06-001	MW06	Water		1242		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
07-001	MW07	Water		1250		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
08-001	MW08	Water		1258		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
09-001	MW09	Water		1306		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
10-001	MW10	Water		1315		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
11-001	MW11R	Water		1322		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C

Temperature on Receipt: 4.1  
 Turn Around Time:  
 Same Day:  72-hr:   
 24-hr:  Standard:   
 48-hr:

Relinquished By: \_\_\_\_\_ Date / Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date / Time: \_\_\_\_\_

Relinquished By: *Brian Sulzberger* Date / Time: 12-10-19 1606  
 Received By: *[Signature]* Date / Time: 12-10-19 1610

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

4912149

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

12-001	MM12R	Water	12-10-19	1330	RS	40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
13-001	MM13	Water		1340		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
14-001	SW01	Water		1348		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C
15-001	SW02	Water		1356		40mL Amber VOA Vial - HC	2	BTEX by EPA 8260C
16-001	SW03	Water		1402		40mL Amber VOA Vial - HC	2	BTEX by EPA 8260C
17-001	SW04	Water		1410		40mL Amber VOA Vial - HC	3	BTEX by EPA 8260C

Temperature on Receipt: 4.1  
 Turn Around Time:  Same Day  72-hr  Standard  24-hr  48-hr

Relinquished By: [Signature] Date / Time: 12-10-19 1608  
 Received By: [Signature] Date / Time: 12-10-19 1610

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

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

**Sample Receipt Checklist**

Origins Work Order: 491249

Client: LT Environmental

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

Checklist Completed by: JBE

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

Date/time completed: 12-10-19 @ 16:26

Airbill #: \_\_\_\_\_

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

Cooler Number/Temperature: 1 / 4.1 °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 <sup>(1)?</sup>	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact <sup>(1)?</sup>	X			
Was adequate sample volume provided <sup>(1)?</sup>	X			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)?</sup>		X		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)?</sup>	X			
Does the COC agree with the number and type of sample bottles received <sup>(1)?</sup>	X			
Do the sample IDs on the bottle labels match the COC <sup>(1)?</sup>	X			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)?</sup>	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>		X		
Are samples preserved that require preservation and was it checked <sup>(1)?</sup> (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with Na <sub>2</sub> SO <sub>2</sub> +NaOH, ZnAc+NaOH)	X			
Additional Comments (if any):				

<sup>(1)</sup> 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 12/12/19

Origins Laboratory, Inc.

[Signature: Jen 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**

**12/10/2019 12:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-01 (Water)**

**BTEX by EPA 8260D**

Benzene	86.7	4.00	ug/L	4	B9L1105	ZZZ	12/11/2019	12/12/2019	
Toluene	ND	4.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	204	4.00	"	"	"	ZZZ	"	"	
Xylenes, total	40.7	4.00	"	"	"	ZZZ	"	"	

Surrogate: 1,2-Dichloroethane-d4	113 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	87.8 %	70-130			"	"	"	"	

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**

**12/10/2019 12:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-02 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	ZZZ	12/11/2019	12/12/2019	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	116 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.3 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	88.6 %	70-130			"	"	"	"	

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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**

**12/10/2019 12:18:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-03 (Water)**

**BTEX by EPA 8260D**

Benzene	14.2	1.00	ug/L	1	B9L1105	ZZZ	12/11/2019	12/12/2019	
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	3.47	1.00	"	"	"	ZZZ	"	"	
Xylenes, total	22.0	1.00	"	"	"	ZZZ	"	"	

Surrogate: 1,2-Dichloroethane-d4	117 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.3 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	89.3 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Arvada CO 80003

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

**MW04**

**12/10/2019 12:25:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-04 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	ZZZ	12/11/2019	12/12/2019	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	<b>1.84</b>	1.00	"	"	"	ZZZ	"	"	
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	117 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.4 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	89.2 %	70-130			"	"	"	

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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**

**12/10/2019 12:34:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-05 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	ZZZ	12/11/2019	12/12/2019	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	116 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	88.8 %	70-130			"	"	"	"	

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**MW06**

**12/10/2019 12:42:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-06 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	ZZZ	12/11/2019	12/12/2019	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	117 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	104 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	88.1 %	70-130			"	"	"	"	

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**MW07**

**12/10/2019 12:50:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-07 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	ZZZ	12/11/2019	12/12/2019	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	117 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	105 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	89.5 %	70-130			"	"	"	"	

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**MW08**

**12/10/2019 12:58:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-08 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	KDK	12/11/2019	12/12/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.2 %	70-130			"	"	"	"	

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

**MW09**

**12/10/2019 1:06:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-09 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	KDK	12/11/2019	12/12/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.0 %	70-130			"	"	"	"	

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

**MW10**  
**12/10/2019 1:15:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-10 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	KDK	12/11/2019	12/12/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.0 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.9 %	70-130			"	"	"	"	

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

**MW11R**

**12/10/2019 1:22:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-11 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	KDK	12/11/2019	12/12/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.5 %	70-130			"	"	"	"	

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**MW12R**

**12/10/2019 1:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-12 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	KDK	12/11/2019	12/12/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.6 %	70-130			"	"	"	"	

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

**MW13**

**12/10/2019 1:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-13 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	KDK	12/11/2019	12/12/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %	70-130			"	"	"	"	

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

**SW01**

**12/10/2019 1:48:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-14 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	KDK	12/11/2019	12/12/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	"	

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

**SW02**

**12/10/2019 1:56:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-15 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	KDK	12/11/2019	12/13/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %	70-130			"	"	"	"	

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 Arvada CO 80003

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

**SW03**

**12/10/2019 2:02:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-16 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	KDK	12/11/2019	12/13/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.0 %	70-130			"	"	"	"	

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

**SW04**

**12/10/2019 2:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y912149-17 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9L1105	KDK	12/11/2019	12/13/2019	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 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.9 %	70-130			"	"	"	"	

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Brian Sulzberger  
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 Project: KMG - Dubach 16-4, Thesing 9-4

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9L1105 - EPA 5030B (Water)**

**Blank (B9L1105-BLK1)**

Prepared: 12/11/2019 Analyzed: 12/12/2019

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	74		"	62.5	118		70-130			
Surrogate: Toluene-d8	62		"	62.5	98.5		70-130			
Surrogate: 4-Bromofluorobenzene	56		"	62.5	89.4		70-130			

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 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 8260D - 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 B9L1105 - EPA 5030B (Water)**

**LCS (B9L1105-BS1)**

Prepared: 12/11/2019 Analyzed: 12/12/2019

Benzene	48.7	1.00	ug/L	50.0		97.5	70-130			
Toluene	48.1	1.00	"	50.0		96.2	70-130			
Ethylbenzene	48.7	1.00	"	50.0		97.4	70-130			
m,p-Xylene	102	2.00	"	100		102	70-130			
o-Xylene	56.1	1.00	"	50.0		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	79		"	62.5		127	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	53		"	62.5		85.1	70-130			

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

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9L1105 - EPA 5030B (Water)**

<b>Matrix Spike (B9L1105-MS1)</b>	<b>Source: Y912149-02</b>			<b>Prepared: 12/11/2019 Analyzed: 12/12/2019</b>						
Benzene	41.5	1.00	ug/L	50.0	ND	83.0	70-130			
Toluene	40.8	1.00	"	50.0	ND	81.5	70-130			
Ethylbenzene	41.6	1.00	"	50.0	ND	83.2	70-130			
m,p-Xylene	86.9	2.00	"	100	ND	86.9	70-130			
o-Xylene	46.8	1.00	"	50.0	ND	93.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	77		"	62.5		123	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	55		"	62.5		88.3	70-130			

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

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9L1105 - EPA 5030B (Water)**

Matrix Spike Dup (B9L1105-MSD1)	Source: Y912149-02			Prepared: 12/11/2019 Analyzed: 12/12/2019						
Benzene	52.5	1.00	ug/L	50.0	ND	105	70-130	23.3	20	QR-02
Toluene	50.7	1.00	"	50.0	ND	101	70-130	21.7	20	QR-02
Ethylbenzene	53.1	1.00	"	50.0	ND	106	70-130	24.3	20	QR-02
m,p-Xylene	111	2.00	"	100	ND	111	70-130	24.6	20	QR-02
o-Xylene	59.5	1.00	"	50.0	ND	119	70-130	23.9	20	QR-02
Surrogate: 1,2-Dichloroethane-d4	77		"	62.5		123	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	53		"	62.5		85.1	70-130			

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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.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

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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