

TABLE 1
SOIL SAMPLE FIELD DATA SUMMARY TABLE
HOUSTON 17-7L, 17-8L O SA FACILITY
WELD COUNTY, COLORADO
KERR-MCGEE OIL AND GAS ONSHORE, LP

Soil Sample Location	Date	Depth (ft. bgs)	PID Reading (ppm)	Visual Observation	Olfactory Observation	Latitude	Longitude	Submitted for Lab Analysis? (Y/N)
ABOVEGROUND STORAGE TANK SAMPLES								
AST-B01@3"	12/17/2021	0.25	1.2	NS	NO	40.22745222	-104.9084250	N
AST-B02@3"	12/17/2021	0.25	1.2	NS	NO	40.22743023	-104.9084213	Y
PRODUCED WATER VESSEL SAMPLES								
PW-B01@5'	12/17/2021	5	189.5	Stain	Odor	40.22745698	-104.9084611	Y
PW-N01@2'	12/17/2021	2	3.0	NS	NO	40.22740598	-104.9084780	N
PW-S01@4'	12/17/2021	4	176.8	Stain	Odor	40.22742815	-104.9084571	Y
PW-E01@4'	12/17/2021	4	2.6	NS	NO	40.22743675	-104.9084988	N
PW-W01@4'	12/17/2021	4	3.2	NS	NO	40.22745343	-104.9084700	N
PW-B02@20'	3/2/2022	20	6.5	NS	NO	40.22745777	-104.9084646	Y
PW-N02@17'	3/2/2022	17	0.0	NS	NO	40.22739000	-104.9084669	Y
PW-S02@17'	3/2/2022	17	0.0	NS	NO	40.22743276	-104.9084341	Y
PW-E02@17'	3/2/2022	17	1.9	NS	NO	40.22741897	-104.9085000	Y
PW-W02@17'	3/2/2022	17	0.0	NS	NO	40.22741888	-104.9084697	Y
PW-B03@25'	4/14/2022	25	57.2	Stain	Odor	40.22741891	-104.9084515	Y
PW-B04@30'	4/14/2022	30	2.8	NS	NO	40.22741891	-104.9084515	N
PW-N03@22.5'	4/20/2022	22.5	882.2	Stain	Odor	40.22742465	-104.9084494	Y
PW-E03@22.5'	4/20/2022	22.5	715.5	Stain	Odor	40.22741889	-104.9084436	Y
PW-E04@22.5'	4/25/2022	22.5	2.6	Stain	NO	40.2274184	-104.9084023	Y
PW-N04@22.5'	5/16/2022	22.5	104.3	Stain	Odor	40.22745591	-104.9084414	Y
PW-N05@22.5'	5/25/2022	22.5	4.7	Stain	NO	40.22746841	-104.9084412	Y
SEPARATOR SAMPLES								
SEP-B01@3"	12/17/2021	0.25	3.1	NS	NO	40.22743773	-104.9086944	Y
SEP-B02@3"	12/17/2021	0.25	124.2	NS	Odor	40.22743935	-104.9086587	Y
SEP-B03@6'	3/2/2022	6	0.0	NS	NO	40.22740772	-104.9086441	Y
SEP-N01@5'	3/2/2022	5	0.0	NS	NO	40.22744391	-104.9086347	Y
SEP-S01@5'	3/2/2022	5	0.0	NS	NO	40.22739500	-104.9086432	Y
SEP-E01@5'	3/2/2022	5	0.0	NS	NO	40.22743958	-104.9086071	Y
SEP-W01@5'	3/2/2022	5	0.0	NS	NO	40.22741119	-104.9086740	Y
FLOWLINE POTHOLE SAMPLES								
FL-B05@3'	12/17/2021	3	29.8	NS	Odor	40.22743838	-104.9086463	N
MISCELLANEOUS SAMPLES								
ECD-B01@6"	12/17/2021	0.5	0.0	NS	NO	40.22739594	-104.9086965	N
DL-B01@1'	12/17/2021	1	0.0	NS	NO	40.22739876	-104.9086763	N
DL-B02@3'	12/17/2021	3	37.3	NS	Odor	40.22743332	-104.9086297	Y
DL-B03@1'	12/17/2021	1	0.0	NS	NO	40.22739517	-104.9084282	N

TABLE 1
SOIL SAMPLE FIELD DATA SUMMARY TABLE
HOUSTON 17-7L, 17-8L O SA FACILITY
WELD COUNTY, COLORADO
KERR-MCGEE OIL AND GAS ONSHORE, LP

Soil Sample Location	Date	Depth (ft. bgs)	PID Reading (ppm)	Visual Observation	Olfactory Observation	Latitude	Longitude	Submitted for Lab Analysis? (Y/N)
BACKGROUND SAMPLES								
PW-BG01@2.5'	12/17/2021	2.5	0.0	NS	NO	40.2273089	-104.9084466	Y
PW-BG01@5'	12/17/2021	5	0.1	NS	NO	40.2273089	-104.9084466	Y
PW-BG02@2.5'	12/17/2021	2.5	0.0	NS	NO	40.22740964	-104.9081542	Y
PW-BG02@5'	12/17/2021	5	0.0	NS	NO	40.22740964	-104.9081542	Y
PW-BG03@2.5'	12/17/2021	2.5	0.1	NS	NO	40.22738614	-104.9087884	Y
PW-BG03@5'	12/17/2021	5	0.0	NS	NO	40.22738614	-104.9087884	Y

Notes:

ft. - feet

bgs - below ground surface

PID - Photoionization detector

ppm - parts per million

NS - No Staining

NO - No Odor

NA - Not Analyzed/Not Applicable

TABLE 2-1
SOIL SAMPLE ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS AND TOTAL PETROLEUM HYDROCARBONS
HOUSTON 17-7L, 17-8L O SA FACILITY
WELD COUNTY, COLORADO
KERR-MCGEE OIL AND GAS ONSHORE, LP

Soil Sample ID	Date	Depth (ft. bgs)	TPH-GRO ⁺ (mg/kg)	TPH-DRO ⁺ (mg/kg)	TPH-RRO ⁺ (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4- Trimethyl benzene (mg/kg)	1,3,5- Trimethyl benzene (mg/kg)	Naphthalene (mg/kg)
Groundwater Protection Values (GPV)			500	500	500	0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038
ABOVEGROUND STORAGE TANK SAMPLES												
AST-B02@3"	12/17/2021	0.25	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	NA	NA	<0.00380
PRODUCED WATER VESSEL SAMPLES												
PW-B01@5'	12/17/2021	5	1890	2370	1030	<0.00200	0.00292	0.0705	0.0218	32.4	7.92	0.945
PW-S01@4'	12/17/2021	4	<0.200	<25.0	116	<0.00200	<0.00200	<0.00200	<0.00200	0.00246	<0.00200	<0.00067
PW-B02@20'	3/2/2022	20	<0.200	<25.0	116	<0.00200	<0.00200	<0.00200	0.0232	0.0172	0.00726	<0.00067
PW-N02@17'	3/2/2022	17	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
PW-S02@17'	3/2/2022	17	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
PW-E02@17'	3/2/2022	17	<0.200	57.9	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
PW-W02@17'	3/2/2022	17	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
PW-B03@25'	4/14/2022	25	NA	NA	NA	NA	NA	NA	NA	<0.00200	NA	NA
PW-N03@22.5'	4/20/2022	22.5	11.8	277	106	NA	NA	NA	NA	0.453	0.28	0.0604
PW-E03@22.5'	4/20/2022	22.5	30.9	91.3	<100	NA	NA	NA	NA	0.867	0.347	0.129
PW-E04@22.5'	4/25/2022	22.5	NA	NA	NA	NA	NA	NA	NA	<0.00200	<0.00200	<0.00067
PW-N04@22.5'	5/16/2022	22.5	2.06	<25.0	<100	NA	NA	NA	NA	0.00692	0.0059	0.00326
PW-N05@22.5'	5/25/2022	22.5	<0.200	<25.0	<100	NA	NA	NA	NA	0.00274	0.00228	0.000501
SEPARATOR SAMPLES												
SEP-B01@3"	12/17/2021	0.25	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
SEP-B02@3"	12/17/2021	0.25	1.28	<25.0	<100	0.0212	0.102	0.0162	0.236	0.0556	0.0254	<0.00380
SEP-B03@6'	3/2/2022	6	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
SEP-N01@5'	3/2/2022	5	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
SEP-S01@5'	3/2/2022	5	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
SEP-E01@5'	3/2/2022	5	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
SEP-W01@5'	3/2/2022	5	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
FLOWLINE SAMPLES												
FL-B05@3'	12/17/2021	3	<0.200	<25.0	<100	0.00380	0.00598	<0.00200	<0.00200	<0.00200	<0.00200	<0.00380
MISCELLANEOUS SAMPLES												
DL-B02@3'	12/17/2021	3	162	306	134	0.188	4.07	0.751	9.06	1.89	0.977	0.0533

TABLE 2-2
SOIL SAMPLE ANALYTICAL RESULTS
POLYCYCLIC AROMATIC HYDROCARBONS
HOUSTON 17-7L, 17-8L O SA FACILITY
WELD COUNTY, COLORADO
KERR-MCGEE OIL GAS ONSHORE, LP

Soil Sample ID	Date	Depth (ft. bgs)	Acenaphthene (mg/Kg)	Anthracene (mg/Kg)	Benzo (a) anthracene (mg/Kg)	Benzo (b) fluoranthene (mg/Kg)	Benzo (k) fluoranthene (mg/Kg)	Benzo (a) pyrene (mg/Kg)	Chrysene (mg/Kg)	Dibenz (a,h) anthracene (mg/Kg)	Fluoranthene (mg/Kg)	Fluorene (mg/Kg)	Indeno (1,2,3-cd) pyrene (mg/Kg)	1-Methyl naphthalene (mg/Kg)	2-Methyl naphthalene (mg/Kg)	Pyrene (mg/Kg)
Groundwater Protection Values (GPV)			0.55	5.8	0.011	0.3	2.9	0.24	9	0.096	8.9	0.54	0.98	0.006	0.019	1.3
ABOVEGROUND STORAGE TANK SAMPLES																
AST-B02@3"	12/17/2021	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRODUCED WATER VESSEL SAMPLES																
PW-B01@5'	12/17/2021	5	0.23	0.0301	0.0681	0.0281	0.00642	0.0313	0.243	0.00903	0.0755	0.768	0.00562	2.99	5.79	0.172
PW-S01@4'	12/17/2021	4	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	0.000297	<0.00067	<0.00067	<0.00067	<0.00067	0.000537	<0.00067	<0.00067	<0.00067
PW-B02@20'	3/2/2022	20	<0.00067	<0.00067	<0.00067	0.000687	<0.00067	0.000506	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	0.0024	0.00157	<0.00067
PW-N02@17'	3/2/2022	17	<0.00067	<0.00067	0.0007	0.00666	0.00219	0.00589	0.00387	0.00288	<0.00067	<0.00067	0.0102	<0.00067	<0.00067	0.000758
PW-S02@17'	3/2/2022	17	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
PW-E02@17'	3/2/2022	17	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
PW-W02@17'	3/2/2022	17	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
PW-B03@25'	4/14/2022	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-N03@22.5'	4/20/2022	22.5	NA	NA	0.0067	NA	NA	NA	NA	NA	NA	0.0437	NA	0.181	0.375	NA
PW-E03@22.5'	4/20/2022	22.5	NA	NA	0.00525	NA	NA	NA	NA	NA	NA	0.086	NA	0.342	0.776	NA
PW-E04@22.5'	4/25/2022	22.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.00067	NA	<0.00067	<0.00067	NA
PW-N04@22.5'	5/16/2022	22.5	NA	NA	0.001	NA	NA	NA	NA	NA	NA	0.00703	NA	0.00757	0.0177	NA
PW-N05@22.5'	5/25/2022	22.5	NA	NA	0.000735	NA	NA	NA	NA	NA	NA	0.00137	NA	0.00418	0.00744	NA
SEPARATOR SAMPLES																
SEP-B01@3"	12/17/2021	0.25	<0.00067	<0.00067	<0.00067	0.000589	0.000263	0.000937	0.000531	<0.00067	<0.00067	<0.00067	0.000991	<0.00067	<0.00067	<0.00067
SEP-B02@3"	12/17/2021	0.25	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	0.000307	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	0.000616	0.00119	<0.00067
SEP-B03@6'	3/2/2022	6	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
SEP-N01@5'	3/2/2022	5	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
SEP-S01@5'	3/2/2022	5	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
SEP-E01@5'	3/2/2022	5	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
SEP-W01@5'	3/2/2022	5	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
FLOWLINE SAMPLES																
FL-B05@3'	12/17/2021	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS SAMPLES																
DL-B02@3'	12/17/2021	3	0.0211	<0.00335	0.0074	<0.00335	<0.00335	0.00145	0.00449	<0.00335	<0.00335	0.036	<0.00335	0.249	0.419	0.0041

**TABLE 2-3
SOIL SAMPLE ANALYTICAL RESULTS
SOIL SUITABILITY FOR RECLAMATION
HOUSTON 17-7L, 17-8L O SA FACILITY
WELD COUNTY, COLORADO
KERR-MCGEE OIL GAS ONSHORE, LP**

Soil Sample ID	Date	Depth (ft. bgs)	EC (mmhos/cm)	SAR	pH	Boron (mg/L)
Groundwater Protection Values (GPV)			4	6	6-8.3	2
ABOVEGROUND STORAGE TANK SAMPLES						
AST-B02@3"	12/17/2021	0.25	NA	NA	NA	NA
PRODUCED WATER VESSEL SAMPLES						
PW-B01@5'	12/17/2021	5	3.23	17.5*	8.30	3.37
PW-S01@4'	12/17/2021	4	NA	NA	NA	NA
PW-B02@20'	3/2/2022	20	NA	NA	NA	NA
PW-N02@17'	3/2/2022	17	NA	NA	NA	NA
PW-S02@17'	3/2/2022	17	NA	NA	NA	NA
PW-E02@17'	3/2/2022	17	NA	NA	NA	NA
PW-W02@17'	3/2/2022	17	NA	NA	NA	NA
PW-B03@25'	4/14/2022	25	NA	NA	NA	NA
PW-N03@22.5'	4/20/2022	22.5	NA	NA	NA	NA
PW-E03@22.5'	4/20/2022	22.5	NA	NA	NA	NA
PW-E04@22.5'	4/25/2022	22.5	NA	NA	NA	NA
PW-N04@22.5'	5/16/2022	22.5	NA	NA	NA	NA
PW-N05@22.5'	5/25/2022	22.5	NA	NA	NA	NA
SEPARATOR SAMPLES						
SEP-B01@3"	12/17/2021	0.25	NA	NA	NA	NA
SEP-B02@3"	12/17/2021	0.25	1.13	0.865	7.73	0.655
SEP-B03@6'	3/2/2022	6	NA	NA	NA	NA
SEP-N01@5'	3/2/2022	5	NA	NA	NA	NA
SEP-S01@5'	3/2/2022	5	NA	NA	NA	NA
SEP-E01@5'	3/2/2022	5	NA	NA	NA	NA
SEP-W01@5'	3/2/2022	5	NA	NA	NA	NA
FLOWLINE SAMPLES						
FL-B05@3'	12/17/2021	3	1.12	1.47	7.92	0.685
MISCELLANEOUS SAMPLES						
DL-B02@3'	12/17/2021	3	3.58	2.24	7.52	0.932
BACKGROUND SAMPLES						
PW-BG01@2.5'	12/17/2021	2.5	32.5	19.3	8.03	1.88
PW-BG01@5'	12/17/2021	5	15.3	16.4	8.04	3.82
PW-BG02@2.5'	12/17/2021	2.5	0.872	10.2	8.71	1.26
PW-BG02@5'	12/17/2021	5	7.99	9.52	7.73	2.64
PW-BG03@2.5'	12/17/2021	2.5	17.0	15.7	7.85	1.52
PW-BG03@5'	12/17/2021	5	16.7	14.1	7.93	1.73

TABLE 2-4
SOIL SAMPLE ANALYTICAL RESULTS
METALS
HOUSTON 17-7L, 17-8L O SA FACILITY
WELD COUNTY, COLORADO
KERR-MCGEE OIL GAS ONSHORE, LP

Soil Sample ID	Date	Depth (ft. bgs)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Groundwater Protection Value (GPV)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
ABOVEGROUND STORAGE TANK SAMPLES												
AST-B02@3"	12/17/2021	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRODUCED WATER VESSEL SAMPLES												
PW-B01@5'	12/17/2021	5	1.41*	76.1	0.0638	<0.5	4.8	5.01	5.96	0.182	0.0241	23.4
PW-S01@4'	12/17/2021	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-B02@20'	3/2/2022	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-N02@17'	3/2/2022	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-S02@17'	3/2/2022	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-E02@17'	3/2/2022	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-W02@17'	3/2/2022	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-B03@25'	4/14/2022	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-N03@22.5'	4/20/2022	22.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-E03@22.5'	4/20/2022	22.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-E04@22.5'	4/25/2022	22.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-N04@22.5'	5/16/2022	22.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-N05@22.5'	5/25/2022	22.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEPARATOR SAMPLES												
SEP-B01@3"	12/17/2021	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEP-B02@3"	12/17/2021	0.25	2.41*	120*	0.175	<0.5	7.21	7.55	9.01	0.188	0.0423	32
SEP-B03@6'	3/2/2022	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEP-N01@5'	3/2/2022	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEP-S01@5'	3/2/2022	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEP-E01@5'	3/2/2022	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEP-W01@5'	3/2/2022	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLOWLINE SAMPLES												
FL-B05@3'	12/17/2021	3	3.24*	124*	0.195 J	<0.488	8.94	9.23	10.8	0.31*	0.0464	38.7
MISCELLANEOUS SAMPLES												
DL-B02@3'	12/17/2021	3	2.45*	82.1*	0.114	<0.5	5.88	6.22	6.92	0.237	0.0364	25.4
BACKGROUND SAMPLES												
PW-BG01@2.5'	12/17/2021	2.5	2.42	112	0.157	<0.5	7.6	6.88	9.08	0.622	0.0403	33.7
PW-BG01@5'	12/17/2021	5	3.14	124	0.156	<0.5	8.26	8.26	9.92	0.532	0.0423	36.9
PW-BG02@2.5'	12/17/2021	2.5	2.92	141	0.109	<0.504	6.71	7.42	8.14	0.319	0.0402	33.8
PW-BG02@5'	12/17/2021	5	3.27	69.6	0.121	<0.5	7.67	8.87	9.42	0.506	0.0379	39
PW-BG03@2.5'	12/17/2021	2.5	3.07	107	0.135	<0.5	7.54	7.91	9.07	0.554	0.0406	34.5
PW-BG03@5'	12/17/2021	5	2.75	88.6	0.14	<0.512	6.99	6.93	8.27	0.489	0.0315	32.5

TABLE 2-5
SOIL SAMPLE ANALYTICAL RESULTS
NOTES
HOUSTON 17-7L, 17-8L O SA FACILITY
WELD COUNTY, COLORADO
KERR-MCGEE OIL AND GAS ONSHORE, LP

Notes:

GPV - Groundwater Protection Values (mg/kg)

TPH - Total Petroleum Hydrocarbons

GRO - Gasoline Range Organics

DRO - Diesel Range Organics

RRO - Residual Range Organics

*Allowable level for TPH is 500 mg/kg for combined GRO, DRO, ORO

* Exceeds Table 915-1 allowable level but below background

EC - Electrical Conductivity

SAR - Sodium Adsorption Ratio

mmhos/cm - millimhos per centimeter

<0.00200 - less than laboratory reporting limit

NA - Not Analyzed/Not Applicable

Bold - exceeds Table 915-1 allowable level and background

J - Estimated value, analytical results is below laboratory quantification limit

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
HOUSTON 17-7L, 17-8L O SA FACILITY
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)	Naphthalene (µg/L)	1,2,4- trimethylbenzene (µg/L)	1,3,5- trimethylbenzene (µg/L)	Total Dissolved Solids (ug/L)	Chloride ion (ug/L)	Sulfate Ion (ug/L)	Depth to Water/ (Product Thickness) (ft bgs)
COGCC Allowable Levels		5	560	700	1400	140	67	67	TBD	250,000	250,000	
GW01	4/21/2022	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	13,600,000	511,000	9,320,000	24.5

Notes: COGCC - Colorado Oil and Gas Conservation Commission

ft bgs - feet below ground surface

NA - not analyzed/not available

BOLD = Analytical result is in exceedance of COGCC Table 915-1 groundwater standards.

µg/L - micrograms per liter

< - less than laboratory reporting limit

Excavation groundwater depth is approximate



January 12, 2022

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

Project Name - KMG - Houston 17-7L, 17-8L O SA Project Number - [none]

Attached are your analytical results for KMG - Houston 17-7L, 17-8L O SA received by Origins Laboratory, Inc. December 17, 2021. This project is associated with Origins project number Y112445-01.

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

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST-B02@1'	Y112445-01	Soil	December 17, 2021 11:32	12/17/2021 17:45
SEP-B01@3"	Y112445-02	Soil	December 17, 2021 11:45	12/17/2021 17:45
SEP-B02@3"	Y112445-03	Soil	December 17, 2021 11:47	12/17/2021 17:45
PW-B01@5'	Y112445-04	Soil	December 17, 2021 13:00	12/17/2021 17:45
PW-S01@4'	Y112445-05	Soil	December 17, 2021 13:04	12/17/2021 17:45
PW-BG01@2.5'	Y112445-06	Soil	December 17, 2021 14:30	12/17/2021 17:45
PW-BG01@5'	Y112445-07	Soil	December 17, 2021 14:31	12/17/2021 17:45
PW-BG02@2.5'	Y112445-08	Soil	December 17, 2021 14:32	12/17/2021 17:45
PW-BG02@5'	Y112445-09	Soil	December 17, 2021 14:33	12/17/2021 17:45
PW-BG03@2.5'	Y112445-10	Soil	December 17, 2021 14:34	12/17/2021 17:45
PW-BG03@5'	Y112445-11	Soil	December 17, 2021 14:35	12/17/2021 17:45
DL-B02@3'	Y112445-12	Soil	December 17, 2021 15:05	12/17/2021 17:45

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

www.originslaboratory.com

V112445

page 2 of 2

ORIGINS
LABORATORY, INC

Client: OX/Tasman
Address: _____
Project Manager: Mike Jahn
Project Name: Houston 17-7L, 17-8L O SA
Project Number: _____
Samples Collected By: SLC
Telephone Number: _____
Email Address: mjahn@tasman-geo.com

PH added to SEPBOLE3 & 3064 per Eric's email on 10/10/11

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative	Matrix	Analysis	Sample Instructions
AST-B02E1	12-17-21	1132	1	X	Soil	Metals Full 915 Pb/Cd/Cr As/Ba/Cu Fe/Mn SAR FIC Other	*Saturated paste ** Hot water
SEP-B01E3		1145	2		Soil		on hold for remaining 915
SEP-B02E3		1147	2		Soil		" " " "
PW-B01E5		1300	2		Soil		" " " "
PW-S01E4		1304	2		Soil		on hold for remaining 915
PW-B01E5		1430	1		Soil		915 tube
PW-B01E5		1431	1		Soil		Full 915 list added
PW-B02E2.5		1432	1		Soil		to Sep-B02E3
PW-B02E5		1433	1		Soil		DL-B02 per Brandon
PW-B03E2.5		1434	1		Soil		email on 10/10/11
Relinquished By: <u>Steve Way</u>	Date: <u>12-17-21</u>	Time: <u>1745</u>	Received By: <u>JH</u>	Date: <u>12/12/11</u>	Time: <u>1745</u>	Turnaround Time: <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard	

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

Date Results Needed

Temp Received: 5.1

Origins Laboratory, Inc.

Jordan A. Merrill

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.

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

[illegible]

Origins Laboratory, Inc.

Men

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Origins Laboratory

Sample Receipt Checklist

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

Origins Work Order: Y112445

Client: Tasman

Client/Project ID: Houston 17-7L, 17-8L

Checklist Completed by: JG

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/Time completed: 12/17/21

Airbill #: N/A

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

☐ Water

☐ Other:

Cooler Number/Temperature: 115.1°C / 1 °C / 1 °C / 1 °C (Describe)

Thermometer ID: T003

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

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

Reviewed by (Project Manager)

Date/Time Reviewed: 12/17/21

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

AST-B02@1'

12/17/2021 11:32:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y112445-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1L1724	12/17/2021	12/18/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl 86.7 % 50-150 " " "

GBTEX+TMBs by 8260D

Naphthalene	ND		0.00380	mg/kg	1	B1L1723	12/17/2021	12/18/2021	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 100 % 70-130 " " "
Surrogate: Toluene-d8 92.8 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-B01@3"

12/17/2021 11:45:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-02 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B1L1724	12/17/2021	12/18/2021	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 83.9 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B1L1723	12/17/2021	12/18/2021	U
Naphthalene	ND	0.00380	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
Surrogate: Toluene-d8 92.8 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-B01@3"

12/17/2021 11:45:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y112445-02 (Soil)

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00033	0.00067	mg/Kg	1	L593737	01/10/2022	01/10/2022	
2-Methylnaphthalene	ND	0.00039	0.00067	"	"	"	"	"	
Acenaphthene	ND	0.0003	0.00067	"	"	"	"	"	
Anthracene	ND	0.00033	0.00067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.00041	0.00067	"	"	"	"	"	
Benzo(a)pyrene	0.000937	0.00024	0.00067	"	"	"	"	"	B
Benzo(b)fluoranthene	0.000589	0.00021	0.00067	"	"	"	"	"	JB
Benzo(k)fluoranthene	0.000263	0.00013	0.00067	"	"	"	"	"	J
Chrysene	0.000531	0.00027	0.00067	"	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.00036	0.00067	"	"	"	"	"	
Fluoranthene	ND	0.00039	0.00067	"	"	"	"	"	
Fluorene	ND	0.00029	0.00067	"	"	"	"	"	
Indeno(1,2,3-cd)pyrene	0.000991	0.00029	0.00067	"	"	"	"	"	B
Naphthalene	ND	0.000467	0.00067	"	"	"	"	"	
Pyrene	ND	0.00059	0.00067	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	72.4 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	67 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	54.8 %	29-110	"	"	"

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-B02@3"

12/17/2021 11:47:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-03 (Soil)

Boron (DTPA Sorbitol)

Boron	0.655	0.198	mg/L	1	B1L2725	12/27/2021	12/28/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B1L1724	12/17/2021	12/18/2021	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	55.7 %	50-150	"	"	"
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.0556	0.00200	mg/kg	1	B1L1723	12/17/2021	12/18/2021	
Naphthalene	ND	0.00380	"	"	"	"	"	U
1,3,5-Trimethylbenzene	0.0254	0.00200	"	"	"	"	"	
Benzene	0.0212	0.00200	"	"	"	"	"	
Ethylbenzene	0.0162	0.00200	"	"	"	"	"	
Toluene	0.102	0.00200	"	"	"	"	"	
Xylenes, total	0.236	0.00200	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.28	0.200	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130	"	"	"
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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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-B02@3"

12/17/2021 11:47:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	---------------------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y112445-03 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	92.1 %	70-130	B1L17 23	12/17/2021	12/18/2021
Surrogate: 4-Bromofluorobenzene	101 %	70-130	"	"	"

Metals by Saturated Paste by EPA 6010

Calcium	6.74	0.499	meq/L	10	[CALC]	12/27/2021	12/28/2021
Magnesium	4.11	0.823	"	"	"	"	"
Sodium	2.01	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	0.000616	0.00033	0.00067	mg/Kg	1	L592332	12/29/2021	12/30/2021	J
2-Methylnaphthalene	0.00119	0.00039	0.00067	"	"	"	"	"	
Acenaphthene	ND	0.0003	0.00067	"	"	"	"	"	
Anthracene	ND	0.00033	0.00067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.00041	0.00067	"	"	"	"	"	
Benzo(a)pyrene	0.000307	0.00024	0.00067	"	"	"	"	"	J
Benzo(b)fluoranthene	ND	0.00021	0.00067	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.00013	0.00067	"	"	"	"	"	
Chrysene	ND	0.00027	0.00067	"	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00036	0.00067	"	"	"	"	"	
Fluoranthene	ND	0.00039	0.00067	"	"	"	"	"	
Fluorene	ND	0.00029	0.00067	"	"	"	"	"	

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-B02@3"

12/17/2021 11:47:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y112445-03 (Soil)

PAH by 8270D SIM

Indeno(1,2,3-cd)pyrene	ND	0.00029	0.00067	mg/Kg	1	L592332	12/29/2021	12/30/2021	
Pyrene	ND	0.00059	0.00067	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	48.6 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	54.7 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	39.9 %		29-110			"	"	"	

pH in Soil by 9045D

pH	7.73			pH Units	1	B1L2708	12/27/2021	12/28/2021	
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SAR by 20B Saturated Paste

SAR	0.865			SAR	1	B1L2704	12/27/2021	12/28/2021	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.13		0.00500	mmhos/cm	1	B1L2706	12/27/2021	12/28/2021	
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Total Metals by 6020B

Arsenic	2.41	0.0855	0.25	mg/Kg	5	L592416	12/30/2021	01/03/2022	
Barium	120	0.042	0.25	"	"	"	"	"	
Cadmium	0.175	0.0259	0.25	"	"	"	"	"	J

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-B02@3"

12/17/2021 11:47:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y112445-03 (Soil)

Total Metals by 6020B

Copper	7.21	0.0806	0.25	mg/Kg	5	L592416	12/30/2021	01/03/2022	
Lead	7.55	0.031	0.25	"	"	"	"	"	
Nickel	9.01	0.0633	0.25	"	"	"	"	"	
Selenium	0.188	0.103	0.25	"	"	"	"	"	J
Silver	0.0423	0.0067	0.25	"	"	"	"	"	J
Zinc	32	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L592834	12/17/2021	01/04/2022	
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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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-B01@5'

12/17/2021 1:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-04 (Soil)

Boron (DTPA Sorbitol)

Boron	3.37	0.201	mg/L	1	B1L2214	12/22/2021	12/23/2021
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	2370	25.0	mg/kg	1	B1L1724	12/17/2021	12/18/2021
Residual Range Organics (C28-C40)	1030	100	"	"	"	"	"

Surrogate: o-Terphenyl	128 %	50-150	"	"	"
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	32.4	0.500	mg/kg	250	B1L1723	12/17/2021	12/20/2021
1,3,5-Trimethylbenzene	7.92	0.0500	"	25	"	"	12/18/2021
Benzene	ND	0.00200	"	1	"	"	12/18/2021 U
Ethylbenzene	0.0705	0.0500	"	25	"	"	12/18/2021
Toluene	0.00292	0.00200	"	1	"	"	12/18/2021
Xylenes, total	0.0218	0.00200	"	"	"	"	"
Gasoline Range Hydrocarbons	1890	50.0	"	250	"	"	12/20/2021

Surrogate: 1,2-Dichloroethane-d4	88.6 %	70-130	"	"	12/18/2021
Surrogate: Toluene-d8	98.2 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	140 %	70-130	"	"	"

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-B01@5'

12/17/2021 1:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-04 (Soil)

Metals by Saturated Paste by EPA 6010

Calcium	2.40	0.499	meq/L	10	[CALC]	12/20/2021	12/21/2021
Magnesium	1.74	0.823	"	"	"	"	"
Sodium	25.2	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	2.99	0.0033	0.0067	mg/Kg	10	L591915	12/28/2021	12/28/2021
2-Methylnaphthalene	5.79	0.0039	0.0067	"	"	"	"	"
Acenaphthene	0.23	0.003	0.0067	"	"	"	"	"
Anthracene	0.0301	0.0033	0.0067	"	"	"	"	"
Benzo(a)anthracene	0.0681	0.0041	0.0067	"	"	"	"	"
Benzo(a)pyrene	0.0313	0.0024	0.0067	"	"	"	"	"
Benzo(b)fluoranthene	0.0281	0.0021	0.0067	"	"	"	"	"
Benzo(k)fluoranthene	0.00642	0.0013	0.0067	"	"	"	"	" J
Chrysene	0.243	0.0027	0.0067	"	"	"	"	"
Dibenz(a,h)anthracene	0.00903	0.0036	0.0067	"	"	"	"	"
Fluoranthene	0.0755	0.0039	0.0067	"	"	"	"	"
Fluorene	0.768	0.0029	0.0067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	0.00562	0.0029	0.0067	"	"	"	"	" J
Naphthalene	0.945	0.00467	0.0067	"	"	"	"	"
Pyrene	0.172	0.0059	0.0067	"	"	"	"	"

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-B01@5'

12/17/2021 1:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y112445-04 (Soil)

PAH by 8270D SIM

Surrogate: 2-Fluorobiphenyl	79.5 %		33-115			L5919 15	12/28/2021	12/28/2021	
Surrogate: 4-Terphenyl-d14	88.5 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	64.4 %		29-110			"	"	"	

pH in Soil by 9045D

pH	8.30			pH Units	1	B1L2022	12/20/2021	12/21/2021	
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SAR by 20B Saturated Paste

SAR	17.5			SAR	1	B1L2014	12/20/2021	12/21/2021	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	3.23		0.00500	mmhos/cm	1	B1L2025	12/20/2021	12/21/2021	
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Total Metals by 6020B

Arsenic	1.41	0.0855	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021	
Barium	76.1	0.042	0.25	"	"	"	"	"	
Cadmium	0.0638	0.0259	0.25	"	"	"	"	"	J
Copper	4.8	0.0806	0.25	"	"	"	"	"	
Lead	5.01	0.031	0.25	"	"	"	"	"	
Nickel	5.96	0.0633	0.25	"	"	"	"	"	
Selenium	0.182	0.103	0.25	"	"	"	"	"	J

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-B01@5'

12/17/2021 1:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y112445-04 (Soil)

Total Metals by 6020B

Silver	0.0241	0.0067	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021	J
Zinc	23.4	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L592039	12/17/2021	12/28/2021	
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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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-S01@4'

12/17/2021 1:04:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-05 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B1L1724	12/17/2021	12/18/2021	U
Residual Range Organics (C28-C40)	116	100	"	"	"	"	"	"

Surrogate: o-Terphenyl 73.0 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.00246	0.00200	mg/kg	1	B1L1723	12/17/2021	12/18/2021	
Naphthalene	ND	0.00380	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.2 % 70-130 " " "
Surrogate: Toluene-d8 92.7 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-S01@4'

12/17/2021 1:04:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y112445-05 (Soil)

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00033	0.00067	mg/Kg	1	L593737	01/10/2022	01/10/2022	
2-Methylnaphthalene	ND	0.00039	0.00067	"	"	"	"	"	
Acenaphthene	ND	0.0003	0.00067	"	"	"	"	"	
Anthracene	ND	0.00033	0.00067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.00041	0.00067	"	"	"	"	"	
Benzo(a)pyrene	0.000297	0.00024	0.00067	"	"	"	"	"	JB
Benzo(b)fluoranthene	ND	0.00021	0.00067	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.00013	0.00067	"	"	"	"	"	
Chrysene	ND	0.00027	0.00067	"	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00036	0.00067	"	"	"	"	"	
Fluoranthene	ND	0.00039	0.00067	"	"	"	"	"	
Fluorene	ND	0.00029	0.00067	"	"	"	"	"	
Indeno(1,2,3-cd)pyrene	0.000537	0.00029	0.00067	"	"	"	"	"	JB
Naphthalene	ND	0.000467	0.00067	"	"	"	"	"	
Pyrene	ND	0.00059	0.00067	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	62.7 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	60.3 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	45.8 %	29-110	"	"	"

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG01@2.5'

12/17/2021 2:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-06 (Soil)

Boron (DTPA Sorbitol)

Boron	1.88	0.200	mg/L	1	B1L2010	12/20/2021	12/21/2021
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Metals by Saturated Paste by EPA 6010

Calcium	23.4	4.99	meq/L	100	[CALC]	12/20/2021	12/21/2021
Magnesium	215	8.23	"	"	"	"	"
Sodium	212	4.35	"	"	"	"	"

pH in Soil by 9045D

pH	8.03	pH Units	1	B1L2022	12/20/2021	12/21/2021
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SAR by 20B Saturated Paste

SAR	19.3	SAR	1	B1L2014	12/20/2021	12/21/2021
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	32.5	0.00500	mmhos/cm	1	B1L2025	12/20/2021	12/21/2021
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Total Metals by 6020B

Arsenic	2.42	0.0855	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021
Barium	112	0.042	0.25	"	"	"	"	"
Cadmium	0.157	0.0259	0.25	"	"	"	"	"
Copper	7.6	0.0806	0.25	"	"	"	"	"

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG01@2.5'

12/17/2021 2:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y112445-06 (Soil)

Total Metals by 6020B

Lead	6.88	0.031	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021	
Nickel	9.08	0.0633	0.25	"	"	"	"	"	
Selenium	0.622	0.103	0.25	"	"	"	"	"	
Silver	0.0403	0.0067	0.25	"	"	"	"	"	J
Zinc	33.7	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L592039	12/17/2021	12/28/2021	
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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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG01@5'

12/17/2021 2:31:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-07 (Soil)

Boron (DTPA Sorbitol)

Boron	3.82	0.201	mg/L	1	B1L2010	12/20/2021	12/21/2021
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Metals by Saturated Paste by EPA 6010

Calcium	21.1	4.99	meq/L	100	[CALC]	12/20/2021	12/21/2021
Magnesium	65.7	8.23	"	"	"	"	"
Sodium	108	4.35	"	"	"	"	"

pH in Soil by 9045D

pH	8.04		pH Units	1	B1L2022	12/20/2021	12/21/2021
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SAR by 20B Saturated Paste

SAR	16.4		SAR	1	B1L2014	12/20/2021	12/21/2021
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	15.3	0.00500	mmhos/cm	1	B1L2025	12/20/2021	12/21/2021
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Total Metals by 6020B

Arsenic	3.14	0.0855	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021
Barium	124	0.042	0.25	"	"	"	"	"
Cadmium	0.156	0.0259	0.25	"	"	"	"	"
Copper	8.26	0.0806	0.25	"	"	"	"	"

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG01@5'

12/17/2021 2:31:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y112445-07 (Soil)

Total Metals by 6020B

Lead	8.26	0.031	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021	
Nickel	9.92	0.0633	0.25	"	"	"	"	"	
Selenium	0.532	0.103	0.25	"	"	"	"	"	
Silver	0.0423	0.0067	0.25	"	"	"	"	"	J
Zinc	36.9	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L592039	12/17/2021	12/28/2021	
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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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG02@2.5'

12/17/2021 2:32:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-08 (Soil)

Boron (DTPA Sorbitol)

Boron	1.26	0.199	mg/L	1	B1L2010	12/20/2021	12/21/2021
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Metals by Saturated Paste by EPA 6010

Calcium	ND	0.499	meq/L	10	[CALC]	12/21/2021	12/22/2021
Magnesium	1.05	0.823	"	"	"	"	"
Sodium	8.27	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.71		pH Units	1	B1L2122	12/21/2021	12/22/2021
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SAR by 20B Saturated Paste

SAR	10.2		SAR	1	B1L2111	12/21/2021	12/22/2021
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.872	0.00500	mmhos/cm	1	B1L2119	12/21/2021	12/22/2021
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Total Metals by 6020B

Arsenic	2.92	0.0855	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021
Barium	141	0.042	0.25	"	"	"	"	"
Cadmium	0.109	0.0259	0.25	"	"	"	"	"
Copper	6.71	0.0806	0.25	"	"	"	"	"

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG02@2.5'

12/17/2021 2:32:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y112445-08 (Soil)

Total Metals by 6020B

Lead	7.42	0.031	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021	
Nickel	8.14	0.0633	0.25	"	"	"	"	"	
Selenium	0.319	0.103	0.25	"	"	"	"	"	
Silver	0.0402	0.0067	0.25	"	"	"	"	"	J
Zinc	33.8	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.245	0.504	mg/Kg	1	L592039	12/17/2021	12/28/2021	
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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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG02@5'

12/17/2021 2:33:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-09 (Soil)

Boron (DTPA Sorbitol)

Boron	2.64	0.203	mg/L	1	B1L2010	12/20/2021	12/21/2021
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Metals by Saturated Paste by EPA 6010

Calcium	23.5	0.499	meq/L	10	[CALC]	12/21/2021	12/22/2021
Magnesium	40.9	0.823	"	"	"	"	"
Sodium	54.0	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	7.73		pH Units	1	B1L2122	12/21/2021	12/22/2021
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SAR by 20B Saturated Paste

SAR	9.52		SAR	1	B1L2111	12/21/2021	12/22/2021
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	7.99	0.00500	mmhos/cm	1	B1L2119	12/21/2021	12/22/2021
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Total Metals by 6020B

Arsenic	3.27	0.0855	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021
Barium	69.6	0.042	0.25	"	"	"	"	"
Cadmium	0.121	0.0259	0.25	"	"	"	"	"
Copper	7.67	0.0806	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG02@5'

12/17/2021 2:33:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y112445-09 (Soil)

Total Metals by 6020B

Lead	8.87	0.031	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021	
Nickel	9.42	0.0633	0.25	"	"	"	"	"	
Selenium	0.506	0.103	0.25	"	"	"	"	"	
Silver	0.0379	0.0067	0.25	"	"	"	"	"	J
Zinc	39	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L592039	12/17/2021	12/28/2021	
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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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG03@2.5'

12/17/2021 2:34:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-10 (Soil)

Boron (DTPA Sorbitol)

Boron	1.52	0.202	mg/L	1	B1L2010	12/20/2021	12/21/2021
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Metals by Saturated Paste by EPA 6010

Calcium	27.6	4.99	meq/L	100	[CALC]	12/21/2021	12/22/2021
Magnesium	124	8.23	"	"	"	"	"
Sodium	137	4.35	"	"	"	"	"

pH in Soil by 9045D

pH	7.85	pH Units	1	B1L2122	12/21/2021	12/22/2021
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SAR by 20B Saturated Paste

SAR	15.7	SAR	1	B1L2111	12/21/2021	12/22/2021
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	17.0	0.00500	mmhos/cm	1	B1L2119	12/21/2021	12/22/2021
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Total Metals by 6020B

Arsenic	3.07	0.0855	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021
Barium	107	0.042	0.25	"	"	"	"	"
Cadmium	0.135	0.0259	0.25	"	"	"	"	"
Copper	7.54	0.0806	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG03@2.5'

12/17/2021 2:34:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y112445-10 (Soil)

Total Metals by 6020B

Lead	7.91	0.031	0.25	mg/Kg	5	L591552	12/22/2021	12/27/2021	
Nickel	9.07	0.0633	0.25	"	"	"	"	"	
Selenium	0.554	0.103	0.25	"	"	"	"	"	
Silver	0.0406	0.0067	0.25	"	"	"	"	"	J
Zinc	34.5	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L592039	12/17/2021	12/28/2021	
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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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG03@5'

12/17/2021 2:35:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-11 (Soil)

Boron (DTPA Sorbitol)

Boron	1.73	0.201	mg/L	1	B1L2010	12/20/2021	12/21/2021
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Metals by Saturated Paste by EPA 6010

Calcium	24.8	4.99	meq/L	100	[CALC]	12/21/2021	12/22/2021
Magnesium	127	8.23	"	"	"	"	"
Sodium	123	4.35	"	"	"	"	"

pH in Soil by 9045D

pH	7.93	pH Units	1	B1L2122	12/21/2021	12/22/2021
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SAR by 20B Saturated Paste

SAR	14.1	SAR	1	B1L2111	12/21/2021	12/22/2021
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	16.7	0.00500	mmhos/cm	1	B1L2119	12/21/2021	12/22/2021
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Total Metals by 6020B

Arsenic	2.75	0.0855	0.25	mg/Kg	5	L591553	12/22/2021	12/27/2021
Barium	88.6	0.042	0.25	"	"	"	"	"
Cadmium	0.14	0.0259	0.25	"	"	"	"	"
Copper	6.99	0.0806	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-BG03@5'

12/17/2021 2:35:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y112445-11 (Soil)

Total Metals by 6020B

Lead	6.93	0.031	0.25	mg/Kg	5	L591553	12/22/2021	12/27/2021	
Nickel	8.27	0.0633	0.25	"	"	"	"	"	
Selenium	0.489	0.103	0.25	"	"	"	"	"	
Silver	0.0315	0.0067	0.25	"	"	"	"	"	J
Zinc	32.5	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.249	0.512	mg/Kg	1	L592039	12/17/2021	12/28/2021	
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Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

DL-B02@3'

12/17/2021 3:05:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-12 (Soil)

Boron (DTPA Sorbitol)

Boron	0.932	0.198	mg/L	1	B1L2725	12/27/2021	12/28/2021
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	306	25.0	mg/kg	1	B1L1724	12/17/2021	12/18/2021
Residual Range Organics (C28-C40)	134	100	"	"	"	"	"

Surrogate: o-Terphenyl	76.2 %	50-150	"	"	"
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	1.89	0.0500	mg/kg	25	B1L1723	12/17/2021	12/18/2021
Naphthalene	0.0533	0.0100	"	1	"	"	12/18/2021
1,3,5-Trimethylbenzene	0.977	0.0500	"	25	"	"	12/18/2021
Benzene	0.188	0.0500	"	"	"	"	"
Ethylbenzene	0.751	0.0500	"	"	"	"	"
Toluene	4.07	0.0500	"	"	"	"	"
Xylenes, total	9.06	0.0500	"	"	"	"	"
Gasoline Range Hydrocarbons	162	5.00	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	86.6 %	70-130	"	"	"
Surrogate: Toluene-d8	98.7 %	70-130	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

DL-B02@3'

12/17/2021 3:05:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y112445-12 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene 103 % 70-130 B1L17 23 12/17/2021 12/18/2021

Metals by Saturated Paste by EPA 6010

Calcium	25.6	0.499	meq/L	10	[CALC]	12/27/2021	12/28/2021
Magnesium	16.0	0.823	"	"	"	"	"
Sodium	10.2	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	0.249	0.00165	0.00335	mg/Kg	5	L592332	12/29/2021	12/30/2021
2-Methylnaphthalene	0.419	0.00195	0.00335	"	"	"	"	"
Acenaphthene	0.0211	0.0015	0.00335	"	"	"	"	"
Anthracene	ND	0.00165	0.00335	"	"	"	"	"
Benzo(a)anthracene	0.0074	0.00205	0.00335	"	"	"	"	"
Benzo(a)pyrene	0.00145	0.0012	0.00335	"	"	"	"	" J
Benzo(b)fluoranthene	ND	0.00105	0.00335	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.00065	0.00335	"	"	"	"	"
Chrysene	0.00449	0.00135	0.00335	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.0018	0.00335	"	"	"	"	"
Fluoranthene	ND	0.00195	0.00335	"	"	"	"	"
Fluorene	0.036	0.00145	0.00335	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.00145	0.00335	"	"	"	"	"

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

DL-B02@3'

12/17/2021 3:05:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y112445-12 (Soil)

PAH by 8270D SIM

Pyrene	0.0041	0.00295	0.00335	mg/Kg	5	L592332	12/29/2021	12/30/2021
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Surrogate: 2-Fluorobiphenyl	59.9 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	73.6 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	45.9 %	29-110	"	"	"

pH in Soil by 9045D

pH	7.52	pH Units	1	B1L2708	12/27/2021	12/28/2021
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SAR by 20B Saturated Paste

SAR	2.24	SAR	1	B1L2704	12/27/2021	12/28/2021
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	3.58	0.00500	mmhos/cm	1	B1L2706	12/27/2021	12/28/2021
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Total Metals by 6020B

Arsenic	2.45	0.0855	0.25	mg/Kg	5	L592416	12/30/2021	01/03/2022
Barium	82.1	0.042	0.25	"	"	"	"	"
Cadmium	0.114	0.0259	0.25	"	"	"	"	"
Copper	5.88	0.0806	0.25	"	"	"	"	"

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

DL-B02@3'

12/17/2021 3:05:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y112445-12 (Soil)

Total Metals by 6020B

Lead	6.22	0.031	0.25	mg/Kg	5	L592416	12/30/2021	01/03/2022	
Nickel	6.92	0.0633	0.25	"	"	"	"	"	
Selenium	0.237	0.103	0.25	"	"	"	"	"	J
Silver	0.0364	0.0067	0.25	"	"	"	"	"	J
Zinc	25.4	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L592834	12/17/2021	01/04/2022	
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Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

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 B1L1723 - EPA 5030 (soil)										
Blank (B1L1723-BLK1)					Prepared: 12/17/2021 Analyzed: 12/18/2021					
1,2,4-Trimethylbenzene	0.00282	0.00200	mg/kg							
Naphthalene	ND	0.0100	"							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		90.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.8	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

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 B1L1723 - EPA 5030 (soil)										
LCS (B1L1723-BS1)					Prepared: 12/17/2021 Analyzed: 12/18/2021					
1,2,4-Trimethylbenzene	0.106	0.00200	mg/kg	0.100		106	70-130			
Naphthalene	0.0983	0.0100	"	0.100		98.3	70-130			
1,3,5-Trimethylbenzene	0.107	0.00200	"	0.100		107	70-130			
Benzene	0.109	0.00200	"	0.100		109	70-130			
Ethylbenzene	0.111	0.00200	"	0.100		111	70-130			
m,p-Xylene	0.222	0.00400	"	0.200		111	70-130			
o-Xylene	0.111	0.00200	"	0.100		111	70-130			
Toluene	0.107	0.00200	"	0.100		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		89.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.4	70-130			

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

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 B1L1723 - EPA 5030 (soil)

Matrix Spike (B1L1723-MS1)		Source: Y112435-01			Prepared: 12/17/2021 Analyzed: 12/18/2021					
1,2,4-Trimethylbenzene	0.0958	0.00200	mg/kg	0.100	0.00854	87.2	70-130			
Naphthalene	0.0842	0.0100	"	0.100	0.00410	80.1	70-130			
1,3,5-Trimethylbenzene	0.0947	0.00200	"	0.100	0.00404	90.7	70-130			
Benzene	0.102	0.00200	"	0.100	0.000880	101	70-130			
Ethylbenzene	0.101	0.00200	"	0.100	0.00182	99.6	70-130			
m,p-Xylene	0.208	0.00400	"	0.200	0.0189	94.6	70-130			
o-Xylene	0.103	0.00200	"	0.100	0.00452	98.2	70-130			
Toluene	0.102	0.00200	"	0.100	0.00562	96.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		90.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

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 B1L1723 - EPA 5030 (soil)										
Matrix Spike Dup (B1L1723-MSD1)					Source: Y112435-01					Prepared: 12/17/2021 Analyzed: 12/18/2021
1,2,4-Trimethylbenzene	0.0909	0.00200	mg/kg	0.100	0.00854	82.3	70-130	5.27	20	
Naphthalene	0.0781	0.0100	"	0.100	0.00410	74.0	70-130	7.57	20	
1,3,5-Trimethylbenzene	0.0885	0.00200	"	0.100	0.00404	84.5	70-130	6.72	20	
Benzene	0.0980	0.00200	"	0.100	0.000880	97.2	70-130	3.65	20	
Ethylbenzene	0.0974	0.00200	"	0.100	0.00182	95.6	70-130	4.02	20	
m,p-Xylene	0.202	0.00400	"	0.200	0.0189	91.8	70-130	2.78	20	
o-Xylene	0.0990	0.00200	"	0.100	0.00452	94.4	70-130	3.71	20	
Toluene	0.0986	0.00200	"	0.100	0.00562	93.0	70-130	3.25	20	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

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 B1L1724 - EPA 3580										
Blank (B1L1724-BLK1)					Prepared: 12/17/2021 Analyzed: 12/18/2021					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	24		"	24.9		95.0	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Extractable Petroleum Hydrocarbons by 8015D - 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 B1L1724 - EPA 3580

LCS (B1L1724-BS1)

Prepared: 12/17/2021 Analyzed: 12/18/2021

Diesel (C10-C28)	571	25.0	mg/kg	500		114	70-130			
Residual Range Organics (C28-C40)	520	100	"	500		104	70-130			
Surrogate: o-Terphenyl	21		"	24.9		83.5	50-150			

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Extractable Petroleum Hydrocarbons by 8015D - 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 B1L1724 - EPA 3580

Matrix Spike (B1L1724-MS1)		Source: Y112441-01			Prepared: 12/17/2021 Analyzed: 12/18/2021					
Diesel (C10-C28)	558	25.0	mg/kg	500	ND	112	70-130			
Residual Range Organics (C28-C40)	496	100	"	500	ND	99.2	70-130			
Surrogate: o-Terphenyl	21		"	24.9		85.2	50-150			

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Tasman Geosciences
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Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Extractable Petroleum Hydrocarbons by 8015D - 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 B1L1724 - EPA 3580

Matrix Spike Dup (B1L1724-MSD1)		Source: Y112441-01			Prepared: 12/17/2021 Analyzed: 12/18/2021					
Diesel (C10-C28)	581	25.0	mg/kg	500	ND	116	70-130	4.18	35	
Residual Range Organics (C28-C40)	528	100	"	500	ND	106	70-130	6.19	35	
Surrogate: o-Terphenyl	23		"	24.9		92.0	50-150			

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Extractable Petroleum Hydrocarbons by 8015D - 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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Saturated Paste - 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 B1L2022 - NO PREP

Duplicate (B1L2022-DUP1)		Source: Y112440-01		Prepared: 12/20/2021 Analyzed: 12/21/2021	
pH	7.66	pH Units	7.76	1.30	

Batch B1L2025 - NO PREP

Blank (B1L2025-BLK1)				Prepared: 12/20/2021 Analyzed: 12/21/2021	
Specific Conductance (EC)	0.00120	0.00500	mmhos/cm		
Duplicate (B1L2025-DUP1)			Source: Y112440-01		Prepared: 12/20/2021 Analyzed: 12/21/2021
Specific Conductance (EC)	0.564	0.00500	mmhos/cm	0.590	4.44

Batch B1L2119 - NO PREP

Blank (B1L2119-BLK1)				Prepared: 12/21/2021 Analyzed: 12/22/2021	
Specific Conductance (EC)	0.000800	0.00500	mmhos/cm		
Duplicate (B1L2119-DUP1)		Source: Y112445-08		Prepared: 12/21/2021 Analyzed: 12/22/2021	
Specific Conductance (EC)	0.847	0.00500	mmhos/cm	0.872	2.93

Batch B1L2122 - NO PREP

Duplicate (B1L2122-DUP1)		Source: Y112445-08		Prepared: 12/21/2021 Analyzed: 12/22/2021	
pH	8.69		pH Units	8.71	0.230

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Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1L2706 - NO PREP										
Blank (B1L2706-BLK1)					Prepared: 12/27/2021 Analyzed: 12/28/2021					
Specific Conductance (EC)	0.000800	0.00500	mmhos/cm							
Duplicate (B1L2706-DUP1)					Source: Y112539-08 Prepared: 12/27/2021 Analyzed: 12/28/2021					
Specific Conductance (EC)	0.185	0.00500	mmhos/cm		0.156			17.5	25	
Batch B1L2708 - NO PREP										
Duplicate (B1L2708-DUP1)					Source: Y112539-08 Prepared: 12/27/2021 Analyzed: 12/28/2021					
pH	6.57		pH Units		6.72			2.26	25	

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Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L591915 - 3550B

MSD (L 87093-MSD-L591915)		Source: 87093			Prepared: 12/28/2021 Analyzed: 12/28/2021					
Acenaphthene	0.142	0.0003	mg/Kg dry	0.165	87093	86	30-130	0.7	30	
Indeno(1,2,3-cd)pyrene	0.171	0.00029	"	0.165	0.000562	104	30-130	1.1	30	
Fluorene	0.145	0.00029	"	0.165	87093	87.8	30-130	0.6	30	
Fluoranthene	0.162	0.00039	"	0.165	0.00108	97.5	30-130	2.5	30	
Dibenz(a,h)anthracene	0.176	0.00036	"	0.165	87093	107	30-130	0.5	30	
Chrysene	0.154	0.00027	"	0.165	0.000316	93.3	30-130	1.9	30	
Benzo(k)fluoranthene	0.151	0.00013	"	0.165	0.000301	91.5	30-130	4	30	
Benzo(b)fluoranthene	0.142	0.00021	"	0.165	0.00066	86	30-130	4.1	30	
Anthracene	0.148	0.00033	"	0.165	87093	89.6	30-130	2.7	30	
2-Methylnaphthalene	0.131	0.00039	"	0.165	87093	79.3	30-130	1.5	30	
1-Methylnaphthalene	0.131	0.00033	"	0.165	87093	79.3	30-130	1.5	30	
Benzo(a)pyrene	0.176	0.00024	"	0.165	0.000778	106	30-130	1.1	30	
Pyrene	0.157	0.00059	"	0.165	0.00109	94.4	30-130	1.9	30	
Benzo(a)anthracene	0.156	0.00041	"	0.165	0.000552	94.5	30-130	0.6	30	
Naphthalene	0.125	0.000467	"	0.165	87093	75.7	30-130	0.7	30	
Surrogate: Nitrobenzene-d5	54.8		"	0.33	161	54.8	29-110			
Surrogate: 4-Terphenyl-d14	74.2		"	0.33	229	74.2	33-122			
Surrogate: 2-Fluorobiphenyl	62.1		"	0.33	181	62.1	33-115			

MS (L 87093-MS-L591915)		Source: 87093			Prepared: 12/28/2021 Analyzed: 12/28/2021					
Dibenz(a,h)anthracene	0.175	0.00036	mg/Kg dry	0.163	87093	107	30-130			
Pyrene	0.154	0.00059	"	0.163	0.00109	93.8	30-130			
Naphthalene	0.126	0.000467	"	0.163	87093	77.3	30-130			
Indeno(1,2,3-cd)pyrene	0.173	0.00029	"	0.163	0.000562	106	30-130			
Fluoranthene	0.158	0.00039	"	0.163	0.00108	96.2	30-130			
Benzo(k)fluoranthene	0.145	0.00013	"	0.163	0.000301	88.9	30-130			
Chrysene	0.151	0.00027	"	0.163	0.000316	92.6	30-130			

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Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L591915 - 3550B

MS (L 87093-MS-L591915)		Source: 87093			Prepared: 12/28/2021 Analyzed: 12/28/2021					
Benzo(a)anthracene	0.155	0.00041	mg/Kg dry	0.163	0.000552	95	30-130			
Fluorene	0.144	0.00029	"	0.163	87093	88.3	30-130			
Benzo(a)pyrene	0.174	0.00024	"	0.163	0.000778	106	30-130			
1-Methylnaphthalene	0.133	0.00033	"	0.163	87093	81.5	30-130			
Anthracene	0.144	0.00033	"	0.163	87093	88.3	30-130			
Acenaphthene	0.141	0.0003	"	0.163	87093	86.5	30-130			
2-Methylnaphthalene	0.133	0.00039	"	0.163	87093	81.5	30-130			
Benzo(b)fluoranthene	0.148	0.00021	"	0.163	0.00066	90.7	30-130			
Surrogate: Nitrobenzene-d5	53.9		"	0.326	161	53.9	29-110			
Surrogate: 4-Terphenyl-d14	73		"	0.326	229	73	33-122			
Surrogate: 2-Fluorobiphenyl	61.3		"	0.326	181	61.3	33-115			

LCS (LCS-L591915)		Prepared: 12/28/2021 Analyzed: 12/28/2021								
Benzo(b)fluoranthene	0.133	0.00021	mg/Kg	0.167		79.6	30-130			
Benzo(k)fluoranthene	0.135	0.00013	"	0.167		80.8	30-130			
Pyrene	0.155	0.00059	"	0.167		92.8	30-130			
Naphthalene	0.129	0.000467	"	0.167		77.2	30-130			
Indeno(1,2,3-cd)pyrene	0.129	0.00029	"	0.167		77.2	30-130			
Fluorene	0.144	0.00029	"	0.167		86.2	30-130			
Fluoranthene	0.161	0.00039	"	0.167		96.4	30-130			
Chrysene	0.154	0.00027	"	0.167		92.2	30-130			
Dibenz(a,h)anthracene	0.131	0.00036	"	0.167		78.4	30-130			
Benzo(a)pyrene	0.182	0.00024	"	0.167		109	30-130			
1-Methylnaphthalene	0.133	0.00033	"	0.167		79.6	30-130			
2-Methylnaphthalene	0.134	0.00039	"	0.167		80.2	30-130			
Acenaphthene	0.142	0.0003	"	0.167		85	30-130			
Anthracene	0.149	0.00033	"	0.167		89.2	30-130			

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Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L591915 - 3550B

LCS (LCS-L591915)

Prepared: 12/28/2021 Analyzed: 12/28/2021

Benzo(a)anthracene	0.158	0.00041	mg/Kg	0.167		94.6	30-130			
Surrogate: Nitrobenzene-d5	59.1		"	0.333		59.1	29-110			
Surrogate: 2-Fluorobiphenyl	69.3		"	0.333		69.3	33-115			
Surrogate: 4-Terphenyl-d14	80.7		"	0.333		80.7	33-122			

LRB (LRB-L591915)

Prepared: 12/28/2021 Analyzed: 12/28/2021

Anthracene	ND	0.00067	mg/Kg				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Naphthalene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Pyrene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00067	"				-			
Benzo(a)pyrene	0.000256	0.00067	"				-			J
Surrogate: Nitrobenzene-d5	57.6		"	0.333		57.6	29-110			
Surrogate: 4-Terphenyl-d14	75.3		"	0.333		75.3	33-122			
Surrogate: 2-Fluorobiphenyl	66.9		"	0.333		66.9	33-115			

Batch L592332 - 3550B

MSD (L 88556-MSD-L592332)

Source: Y112445-03

Prepared: 12/29/2021 Analyzed: 12/30/2021

Origins Laboratory, Inc.

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Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L592332 - 3550B

MSD (L 88556-MSD-L592332)		Source: Y112445-03			Prepared: 12/29/2021 Analyzed: 12/30/2021					
Fluorene	0.0839	0.00029	mg/Kg	0.166	88556	50.5	30-130	5.6	30	
Pyrene	0.0878	0.00059	"	0.166	88556	52.8	30-130	5.9	30	
Indeno(1,2,3-cd)pyrene	0.0749	0.00029	"	0.166	88556	45.1	30-130	21.6	30	
Benzo(a)pyrene	0.1	0.00024	"	0.166	0.000307	60.2	30-130	8.6	30	
Fluoranthene	0.0913	0.00039	"	0.166	88556	55	30-130	5.4	30	
Anthracene	0.0846	0.00033	"	0.166	88556	50.9	30-130	3.3	30	
Acenaphthene	0.0812	0.0003	"	0.166	88556	48.9	30-130	6.4	30	
Benzo(a)anthracene	0.0873	0.00041	"	0.166	88556	52.5	30-130	2.3	30	
1-Methylnaphthalene	0.0783	0.00033	"	0.166	0.000616	47.1	30-130	4.2	30	
Benzo(b)fluoranthene	0.0824	0.00021	"	0.166	88556	49.6	30-130	3.2	30	
Benzo(k)fluoranthene	0.0725	0.00013	"	0.166	88556	43.6	30-130	5.1	30	
Chrysene	0.085	0.00027	"	0.166	88556	51.2	30-130	9.3	30	
Dibenz(a,h)anthracene	0.0818	0.00036	"	0.166	88556	49.2	30-130	24.8	30	
2-Methylnaphthalene	0.0783	0.00039	"	0.166	0.00119	46.4	30-130	6.1	30	
Surrogate: 4-Terphenyl-d14	58.4		"	0.332	181	58.4	33-122			
Surrogate: Nitrobenzene-d5	45.4		"	0.332	132	45.4	29-110			
Surrogate: 2-Fluorobiphenyl	52.1		"	0.332	161	52.1	33-115			

MS (L 88556-MS-L592332)		Source: Y112445-03			Prepared: 12/29/2021 Analyzed: 12/30/2021					
Indeno(1,2,3-cd)pyrene	0.0931	0.00029	mg/Kg	0.167	88556	55.7	30-130			
Dibenz(a,h)anthracene	0.105	0.00036	"	0.167	88556	62.8	30-130			
Fluorene	0.0888	0.00029	"	0.167	88556	53.1	30-130			
Fluoranthene	0.0964	0.00039	"	0.167	88556	57.7	30-130			
Pyrene	0.0932	0.00059	"	0.167	88556	55.8	30-130			
Chrysene	0.0933	0.00027	"	0.167	88556	55.8	30-130			
1-Methylnaphthalene	0.0817	0.00033	"	0.167	0.000616	48.9	30-130			
2-Methylnaphthalene	0.0833	0.00039	"	0.167	0.00119	49.1	30-130			

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Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L592332 - 3550B

MS (L 88556-MS-L592332)		Source: Y112445-03			Prepared: 12/29/2021 Analyzed: 12/30/2021					
Acenaphthene	0.0866	0.0003	mg/Kg	0.167	88556	51.8	30-130			
Anthracene	0.0875	0.00033	"	0.167	88556	52.3	30-130			
Benzo(a)anthracene	0.0894	0.00041	"	0.167	88556	53.5	30-130			
Benzo(a)pyrene	0.109	0.00024	"	0.167	0.000307	65.2	30-130			
Benzo(b)fluoranthene	0.0851	0.00021	"	0.167	88556	50.9	30-130			
Benzo(k)fluoranthene	0.0763	0.00013	"	0.167	88556	45.6	30-130			
Surrogate: Nitrobenzene-d5	43.8		"	0.333	132	43.8	29-110			
Surrogate: 2-Fluorobiphenyl	50.7		"	0.333	161	50.7	33-115			
Surrogate: 4-Terphenyl-d14	58.2		"	0.333	181	58.2	33-122			

LCS (LCS-L592332)		Prepared: 12/29/2021 Analyzed: 12/30/2021								
2-Methylnaphthalene	0.075	0.00039	mg/Kg	0.167		44.9	30-130			
Benzo(k)fluoranthene	0.0894	0.00013	"	0.167		53.5	30-130			
Indeno(1,2,3-cd)pyrene	0.0905	0.00029	"	0.167		54.1	30-130			
Fluorene	0.0817	0.00029	"	0.167		48.9	30-130			
Fluoranthene	0.0898	0.00039	"	0.167		53.7	30-130			
Dibenz(a,h)anthracene	0.0945	0.00036	"	0.167		56.5	30-130			
Chrysene	0.086	0.00027	"	0.167		51.4	30-130			
Benzo(b)fluoranthene	0.0823	0.00021	"	0.167		49.2	30-130			
Pyrene	0.0883	0.00059	"	0.167		52.8	30-130			
Benzo(a)anthracene	0.0897	0.00041	"	0.167		53.7	30-130			
Anthracene	0.085	0.00033	"	0.167		50.8	30-130			
1-Methylnaphthalene	0.0742	0.00033	"	0.167		44.4	30-130			
Acenaphthene	0.0796	0.0003	"	0.167		47.6	30-130			
Benzo(a)pyrene	0.104	0.00024	"	0.167		62.2	30-130			
Surrogate: Nitrobenzene-d5	48.9		"	0.333		48.9	29-110			
Surrogate: 4-Terphenyl-d14	60.6		"	0.333		60.6	33-122			

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Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L592332 - 3550B

LCS (LCS-L592332)

Prepared: 12/29/2021 Analyzed: 12/30/2021

Surrogate: 2-Fluorobiphenyl 54.3 mg/Kg 0.333 54.3 33-115

LRB (LRB-L592332)

Prepared: 12/29/2021 Analyzed: 12/30/2021

1-Methylnaphthalene	ND	0.00067	mg/Kg				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Pyrene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00067	"				-			
Surrogate: 4-Terphenyl-d14	55.8		"	0.333		55.8	33-122			
Surrogate: 2-Fluorobiphenyl	51.6		"	0.333		51.6	33-115			
Surrogate: Nitrobenzene-d5	40.8		"	0.333		40.8	29-110			

Batch L593737 - 3550B

MSD (L 88905-MSD-L593737)

Source: Y112445-02

Prepared: 01/10/2022 Analyzed: 01/10/2022

Fluoranthene	0.136	0.00039	mg/Kg	0.164	<0.000390	82.9	30-130	2.9	30	
Pyrene	0.13	0.00059	"	0.164	<0.000590	79.2	30-130	2.3	30	
Naphthalene	0.133	0.000467	"	0.164	<0.000467	81	30-130	14.5	30	

Origins Laboratory, Inc.

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

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L593737 - 3550B

MSD (L 88905-MSD-L593737)		Source: Y112445-02			Prepared: 01/10/2022 Analyzed: 01/10/2022					
1-Methylnaphthalene	0.142	0.00033	mg/Kg	0.164	<0.000330	86.5	30-130	2.8	30	
Dibenz(a,h)anthracene	0.143	0.00036	"	0.164	<0.000360	87.1	30-130	1.4	30	
Chrysene	0.0661	0.00027	"	0.164	0.000531	40.3	30-130	1.5	30	
Benzo(k)fluoranthene	0.132	0.00013	"	0.164	0.000263	80.4	30-130	2.2	30	
Benzo(b)fluoranthene	0.126	0.00021	"	0.164	0.000589	76.8	30-130	1.6	30	
2-Methylnaphthalene	0.141	0.00039	"	0.164	<0.000390	85.9	30-130	2.8	30	
Acenaphthene	0.13	0.0003	"	0.164	<0.000300	79.2	30-130	3.9	30	
Fluorene	0.127	0.00029	"	0.164	<0.000290	77.4	30-130	3.2	30	
Anthracene	0.131	0.00033	"	0.164	<0.000330	79.8	30-130	2.3	30	
Indeno(1,2,3-cd)pyrene	0.129	0.00029	"	0.164	0.000991	78	30-130	5.5	30	
Benzo(a)pyrene	0.156	0.00024	"	0.164	0.000937	94.5	30-130	6.6	30	
Benzo(a)anthracene	0.134	0.00041	"	0.164	<0.000410	81.7	30-130	0.7	30	
Surrogate: Nitrobenzene-d5	49.2		"	0.329	181	49.2	29-110			
Surrogate: 2-Fluorobiphenyl	59.8		"	0.329	239	59.8	33-115			
Surrogate: 4-Terphenyl-d14	58.3		"	0.329	221	58.3	33-122			

MS (L 88905-MS-L593737)		Source: Y112445-02			Prepared: 01/10/2022 Analyzed: 01/10/2022					
Fluoranthene	0.132	0.00039	mg/Kg	0.166	<0.000390	79.5	30-130			
Dibenz(a,h)anthracene	0.141	0.00036	"	0.166	<0.000360	84.9	30-130			
Fluorene	0.123	0.00029	"	0.166	<0.000290	74	30-130			
Indeno(1,2,3-cd)pyrene	0.122	0.00029	"	0.166	0.000991	72.8	30-130			
Naphthalene	0.115	0.000467	"	0.166	<0.000467	69.2	30-130			
Benzo(a)anthracene	0.133	0.00041	"	0.166	<0.000410	80.1	30-130			
Chrysene	0.0671	0.00027	"	0.166	0.000531	40.4	30-130			
2-Methylnaphthalene	0.137	0.00039	"	0.166	<0.000390	82.5	30-130			
Benzo(b)fluoranthene	0.124	0.00021	"	0.166	0.000589	74.6	30-130			
Benzo(k)fluoranthene	0.129	0.00013	"	0.166	0.000263	77.7	30-130			

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L593737 - 3550B

MS (L 88905-MS-L593737)		Source: Y112445-02			Prepared: 01/10/2022 Analyzed: 01/10/2022					
Acenaphthene	0.125	0.0003	mg/Kg	0.166	<0.000300	75.3	30-130			
Anthracene	0.128	0.00033	"	0.166	<0.000330	77.1	30-130			
Pyrene	0.127	0.00059	"	0.166	<0.000590	76.5	30-130			
Benzo(a)pyrene	0.146	0.00024	"	0.166	0.000937	87.3	30-130			
1-Methylnaphthalene	0.138	0.00033	"	0.166	<0.000330	83.1	30-130			
Surrogate: Nitrobenzene-d5	56.3		"	0.332	181	56.3	29-110			
Surrogate: 2-Fluorobiphenyl	66.8		"	0.332	239	66.8	33-115			
Surrogate: 4-Terphenyl-d14	63.2		"	0.332	221	63.2	33-122			

LCS (LCS-L593737)		Prepared: 01/10/2022 Analyzed: 01/10/2022								
Benzo(k)fluoranthene	0.143	0.00013	mg/Kg	0.167		85.6	30-130			
Anthracene	0.126	0.00033	"	0.167		75.4	30-130			
Benzo(a)anthracene	0.133	0.00041	"	0.167		79.6	30-130			
Acenaphthene	0.124	0.0003	"	0.167		74.2	30-130			
Benzo(a)pyrene	0.155	0.00024	"	0.167		92.8	30-130			
Benzo(b)fluoranthene	0.115	0.00021	"	0.167		68.8	30-130			
Chrysene	0.13	0.00027	"	0.167		77.8	30-130			
Dibenz(a,h)anthracene	0.147	0.00036	"	0.167		88	30-130			
Fluoranthene	0.13	0.00039	"	0.167		77.8	30-130			
Fluorene	0.123	0.00029	"	0.167		73.6	30-130			
Naphthalene	0.114	0.000467	"	0.167		68.2	30-130			
Pyrene	0.125	0.00059	"	0.167		74.8	30-130			
Indeno(1,2,3-cd)pyrene	0.13	0.00029	"	0.167		77.8	30-130			
2-Methylnaphthalene	0.135	0.00039	"	0.167		80.8	30-130			
1-Methylnaphthalene	0.136	0.00033	"	0.167		81.4	30-130			
Surrogate: Nitrobenzene-d5	57.6		"	0.333		57.6	29-110			
Surrogate: 4-Terphenyl-d14	63.9		"	0.333		63.9	33-122			

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L593737 - 3550B										
LCS (LCS-L593737)					Prepared: 01/10/2022 Analyzed: 01/10/2022					
Surrogate: 2-Fluorobiphenyl	67.8		mg/Kg	0.333		67.8	33-115			
LRB (LRB-L593737)					Prepared: 01/10/2022 Analyzed: 01/10/2022					
Benzo(b)fluoranthene	0.000381	0.00067	mg/Kg				-			J
2-Methylnaphthalene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Pyrene	ND	0.00067	"				-			
Benzo(a)pyrene	0.000468	0.00067	"				-			J
Benzo(k)fluoranthene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Dibenz(a,h)anthracene	0.000461	0.00067	"				-			J
Fluoranthene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Indeno(1,2,3-cd)pyrene	0.000585	0.00067	"				-			J
Naphthalene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00067	"				-			
Surrogate: 2-Fluorobiphenyl	119		"	0.333		119	33-115			*
Surrogate: 4-Terphenyl-d14	120		"	0.333		120	33-122			
Surrogate: Nitrobenzene-d5	84.9		"	0.333		84.9	29-110			

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Total Metals by 6020B - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L591552 - 3050B

MSD (L 86141-MSD-L591552)		Source: Y112445-10			Prepared: 12/22/2021 Analyzed: 12/27/2021					
Zinc	55.3	0.534	mg/Kg	23.2	34.5	90	75-125	2.5	80	
Arsenic	4.81	0.0855	"	2.32	3.07	75	75-125	4	80	
Barium	116	0.042	"	4.63	107	194	75-125	15.1	80	*
Cadmium	0.534	0.0259	"	0.463	0.135	115	75-125	4.3	80	
Copper	9.79	0.0806	"	2.32	7.54	97	75-125	6.2	80	
Lead	10.7	0.031	"	2.32	7.91	120	75-125	12.6	80	
Nickel	11.8	0.0633	"	2.32	9.07	118	75-125	6.1	80	
Selenium	3.69	0.103	"	4.63	0.554	68	75-125	5.7	80	*
Silver	0.425	0.0067	"	0.463	0.0406	92	75-125	1.1	80	
MS (L 86141-MS-L591552)		Source: Y112445-10			Prepared: 12/22/2021 Analyzed: 12/27/2021					
Lead	9.43	0.031	mg/Kg	2.5	7.91	61	75-125			*
Nickel	11.1	0.0633	"	2.5	9.07	81	75-125			
Selenium	3.91	0.103	"	5	0.554	67	75-125			*
Silver	0.43	0.0067	"	0.5	0.0406	86	75-125			
Cadmium	0.558	0.0259	"	0.5	0.135	112	75-125			
Zinc	53.9	0.534	"	25	34.5	78	75-125			
Arsenic	4.62	0.0855	"	2.5	3.07	62	75-125			*
Copper	9.2	0.0806	"	2.5	7.54	66	75-125			*
Barium	135	0.042	"	5	107	561	75-125			*
LCS (LCS-L591552)		Prepared: 12/22/2021 Analyzed: 12/27/2021								
Silver	0.471	0.0067	mg/Kg	0.5		94	80-120			
Arsenic	2.27	0.0855	"	2.5		91	80-120			
Cadmium	0.477	0.0259	"	0.5		95	80-120			
Selenium	4.59	0.103	"	5		92	80-120			
Nickel	2.11	0.0633	"	2.5		84	80-120			

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Total Metals by 6020B - Quality Control Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L591552 - 3050B

LCS (LCS-L591552)

Prepared: 12/22/2021 Analyzed: 12/27/2021

Barium	4.84	0.042	mg/Kg	5		97	80-120			
Lead	2.26	0.031	"	2.5		90	80-120			
Copper	2.15	0.0806	"	2.5		86	80-120			
Zinc	22.3	0.534	"	25		89	80-120			

LRB (LRB-L591552)

Prepared: 12/22/2021 Analyzed: 12/27/2021

Nickel	ND	0.25	mg/Kg				-			
Selenium	ND	0.25	"				-			
Lead	ND	0.25	"				-			
Copper	ND	0.25	"				-			
Cadmium	ND	0.25	"				-			
Barium	ND	0.25	"				-			
Arsenic	ND	0.25	"				-			
Zinc	ND	2.5	"				-			
Silver	ND	0.25	"				-			

Batch L591553 - 3050B

MSD (L 86173-MSD-L591553)

Source: 86173

Prepared: 12/22/2021 Analyzed: 12/27/2021

Barium	112	0.042	mg/Kg	4.77	164	NR	75-125	4.3	80	*
Zinc	46.5	0.534	"	23.8	47.6	NR	75-125	13.6	80	*
Silver	0.313	0.0067	"	0.477	0.0515	66	75-125	13.9	80	*
Selenium	2.67	0.103	"	4.77	0.335	49	75-125	12.6	80	*
Copper	8.68	0.0806	"	2.38	11.1	NR	75-125	13.9	80	*
Lead	9.11	0.031	"	2.38	10.7	NR	75-125	16.9	80	*
Arsenic	3.56	0.0855	"	2.38	3.36	8	75-125	13.6	80	*
Nickel	10.1	0.0633	"	2.38	13.4	NR	75-125	14.6	80	*

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Total Metals by 6020B - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L591553 - 3050B										
MSD (L 86173-MSD-L591553)			Source: 86173		Prepared: 12/22/2021 Analyzed: 12/27/2021					
Cadmium	0.425	0.0259	mg/Kg	0.477	0.212	89	75-125	17.5	80	
MS (L 86173-MS-L591553)			Source: 86173		Prepared: 12/22/2021 Analyzed: 12/27/2021					
Zinc	53.3	0.534	mg/Kg	24.1	47.6	24	75-125			*
Silver	0.36	0.0067	"	0.482	0.0515	75	75-125			
Selenium	3.03	0.103	"	4.82	0.335	56	75-125			*
Nickel	11.7	0.0633	"	2.41	13.4	NR	75-125			*
Lead	10.8	0.031	"	2.41	10.7	4	75-125			*
Copper	9.98	0.0806	"	2.41	11.1	NR	75-125			*
Cadmium	0.507	0.0259	"	0.482	0.212	105	75-125			
Barium	117	0.042	"	4.82	164	NR	75-125			*
Arsenic	4.08	0.0855	"	2.41	3.36	30	75-125			*
LCS (LCS-L591553)			Prepared: 12/22/2021 Analyzed: 12/27/2021							
Barium	4.67	0.042	mg/Kg	5		93	80-120			
Selenium	4.5	0.103	"	5		90	80-120			
Zinc	21.4	0.534	"	25		86	80-120			
Nickel	2.03	0.0633	"	2.5		81	80-120			
Lead	2.16	0.031	"	2.5		86	80-120			
Arsenic	2.2	0.0855	"	2.5		88	80-120			
Cadmium	0.431	0.0259	"	0.5		86	80-120			
Silver	0.44	0.0067	"	0.5		88	80-120			
Copper	2.02	0.0806	"	2.5		81	80-120			
LRB (LRB-L591553)			Prepared: 12/22/2021 Analyzed: 12/27/2021							
Barium	ND	0.25	mg/Kg				-			
Cadmium	ND	0.25	"				-			

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Total Metals by 6020B - Quality Control Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L591553 - 3050B

LRB (LRB-L591553)

Prepared: 12/22/2021 Analyzed: 12/27/2021

Copper	ND	0.25	mg/Kg				-			
Lead	ND	0.25	"				-			
Selenium	ND	0.25	"				-			
Silver	ND	0.25	"				-			
Zinc	ND	2.5	"				-			
Arsenic	ND	0.25	"				-			
Nickel	ND	0.25	"				-			

Batch L592416 - 3050B

MSD (L 94088-MSD-L592416)

Source: 94088

Prepared: 12/30/2021 Analyzed: 01/03/2022

Silver	0.435	0.0067	mg/Kg	0.498	0.0546	87	75-125	8.3	80	
Zinc	49.4	0.534	"	24.9	27.7	87	75-125	7.7	80	
Selenium	2.97	0.103	"	4.98	0.117	60	75-125	6.1	80	*
Nickel	8.97	0.0633	"	2.49	6.42	103	75-125	5.9	80	
Lead	9.97	0.031	"	2.49	8.05	77	75-125	5.1	80	
Copper	9.2	0.0806	"	2.49	6.76	98	75-125	3.5	80	
Barium	92.9	0.042	"	4.98	78.6	287	75-125	2.9	80	*
Arsenic	3.08	0.0855	"	2.49	1.51	63	75-125	1.3	80	*
Cadmium	0.519	0.0259	"	0.498	0.116	104	75-125	4.8	80	

MS (L 94088-MS-L592416)

Source: 94088

Prepared: 12/30/2021 Analyzed: 01/03/2022

Lead	10.5	0.031	mg/Kg	2.5	8.05	98	75-125			
Zinc	53.4	0.534	"	25	27.7	103	75-125			
Silver	0.473	0.0067	"	0.499	0.0546	95	75-125			
Arsenic	3.04	0.0855	"	2.5	1.51	61	75-125			*
Nickel	9.52	0.0633	"	2.5	6.42	124	75-125			

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Total Metals by 6020B - Quality Control Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L592416 - 3050B										
MS (L 94088-MS-L592416)			Source: 94088		Prepared: 12/30/2021 Analyzed: 01/03/2022					
Copper	9.53	0.0806	mg/Kg	2.5	6.76	111	75-125			
Cadmium	0.545	0.0259	"	0.499	0.116	109	75-125			
Barium	95.7	0.042	"	4.99	78.6	343	75-125			*
Selenium	3.16	0.103	"	4.99	0.117	63	75-125			*
LCS (LCS-L592416)			Prepared: 12/30/2021 Analyzed: 01/03/2022							
Arsenic	2.06	0.0855	mg/Kg	2.5		82	80-120			
Lead	2.22	0.031	"	2.5		89	80-120			
Barium	4.67	0.042	"	5		93	80-120			
Cadmium	0.429	0.0259	"	0.5		86	80-120			
Copper	2.04	0.0806	"	2.5		82	80-120			
Zinc	21.2	0.534	"	25		85	80-120			
Silver	0.444	0.0067	"	0.5		89	80-120			
Selenium	4.48	0.103	"	5		90	80-120			
Nickel	2.02	0.0633	"	2.5		81	80-120			
LRB (LRB-L592416)			Prepared: 12/30/2021 Analyzed: 01/03/2022							
Zinc	ND	2.5	mg/Kg				-			
Arsenic	ND	0.25	"				-			
Barium	ND	0.25	"				-			
Cadmium	ND	0.25	"				-			
Copper	ND	0.25	"				-			
Lead	ND	0.25	"				-			
Nickel	ND	0.25	"				-			
Selenium	ND	0.25	"				-			
Silver	ND	0.25	"				-			

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Total Metals by 7196A - Quality Control Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L592039 -										
DUP (L 86132-DUP)	Source: 86132				Prepared: Analyzed: 12/28/2021					
Chromium, Hexavalent	ND	0.244	mg/Kg		86132	-		0	20	
MS (L 86132-MS)	Source: 86132				Prepared: Analyzed: 12/28/2021					
Chromium, Hexavalent	5.6	0.244	mg/Kg	7.77	86132	72	75-125			*
Batch L592834 -										
DUP (L 88547-DUP)	Source: 88547				Prepared: Analyzed: 01/04/2022					
Chromium, Hexavalent	ND	1.22	mg/Kg		88547	-		0	20	
MS (L 88547-MS)	Source: 88547				Prepared: Analyzed: 01/04/2022					
Chromium, Hexavalent	7.07	1.22	mg/Kg	7.97	88547	89	75-125			
LCS (LCS)					Prepared: Analyzed: 01/04/2022					
Chromium, Hexavalent	6.51	0.244	mg/Kg	8		81	75-125			
LRB (LRB)					Prepared: Analyzed: 01/04/2022					
Chromium, Hexavalent	ND	0.5	mg/Kg							

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Notes and Definitions

U Sample is Non-Detect.

JB [Undefined]

J Estimated Value. Analyte below reported quantitation limit.

B Analyte detected in associated method blank.

* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Origins Laboratory, Inc.



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

March 10, 2022

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

Project Name - KMG - Houston 17-7L, 17-8L O SA Project Number - [none]

Attached are your analytical results for KMG - Houston 17-7L, 17-8L O SA received by Origins Laboratory, Inc. March 02, 2022. This project is associated with Origins project number Y203070-01.

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



Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PW-B02@20'	Y203070-01	Soil	March 2, 2022 14:00	03/02/2022 17:39
PW-N02@17'	Y203070-02	Soil	March 2, 2022 14:03	03/02/2022 17:39
PW-S02@17'	Y203070-03	Soil	March 2, 2022 14:06	03/02/2022 17:39
PW-E02@17'	Y203070-04	Soil	March 2, 2022 14:09	03/02/2022 17:39
PW-W02@17'	Y203070-05	Soil	March 2, 2022 14:12	03/02/2022 17:39
SEP-B03@6'	Y203070-06	Soil	March 2, 2022 14:15	03/02/2022 17:39
SEP-E01@5'	Y203070-07	Soil	March 2, 2022 14:18	03/02/2022 17:39
SEP-W01@5'	Y203070-08	Soil	March 2, 2022 14:21	03/02/2022 17:39
SEP-N01@5'	Y203070-09	Soil	March 2, 2022 14:24	03/02/2022 17:39
SEP-S01@5'	Y203070-10	Soil	March 2, 2022 14:27	03/02/2022 17:39

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

ORIGINS
LABORATORY, INC

www.originslaboratory.com

7203070

page 1 of 1

Client: Oxy/Tasman
Address: 6855 W 119th Ave
Broomfield CO 80020
Telephone Number: 303-987-1228
Email Address: mjahn@tasman-geo.com

Project Manager: Mike Jahn
Project Name: Houston 17-7L, 17-8L O SA
Project Number: _____
Samples Collected By: Brandon V.

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis				Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summary	Other	GC/MS	IC/MS	Other	
PW-BQ2P20'	3-2-22	1400	2	X					X					X	1
PW-AQ2P17'		1403												X	2
PW-SQ2P17'		1406												X	3
PW-EQ2P17'		1409												X	4
PW-WQ2P17'		1412												X	5
SEP-BQ2P6'		1415													6
SEP-EQ1P5'		1418													7
SEP-WQ1P5'		1421													8
SEP-AQ1P5'		1424													9
SEP-SQ1P5'		1427													10

Relinquished By: Brandon V. Date: 3-2-22 Time: 1739
Relinquished By: _____ Date: _____ Time: _____

Received By: _____ Date: 3/2/22 Time: 1739
Received By: _____ Date: _____ Time: _____

Turnaround Time: Same Day ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☐

Temp Received- 2.5 Date Results Needed

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Origins Laboratory

Sample Receipt Checklist

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

Origins Work Order: Y203070

Client: Tasman

Client Project ID: Houston 17-7L

Checklist Completed by: SG

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

Date/time completed: 3/2/22

Airbill #: N/A

Matrix(s) Received: (Check all that apply): X

Soil/Solid

Water

Other:

Cooler Number/Temperature: 1, 2.5 °C

°C

°C

°C

(Describe)

Thermometer ID: T003

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

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

Reviewed by (Project Manager)

Date/Time Reviewed 3/2/22

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-B02@20'

3/2/2022 2:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y203070-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2C0233	03/02/2022	03/03/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 80.3 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.0172	0.00200	mg/kg	1	B2C0231	03/02/2022	03/03/2022	
1,3,5-Trimethylbenzene	0.00726	0.00200	"	"	"	"	"	
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	0.0232	0.00200	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 86.0 % 70-130 " " "
Surrogate: Toluene-d8 107 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 92.7 % 70-130 " " "

PAH by 8270D-SIM

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-B02@20'

3/2/2022 2:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y203070-01 (Soil)

PAH by 8270D-SIM

1-Methylnaphthalene	0.0024	0.000364	0.00067	mg/Kg	1	L603537	03/08/2022	03/08/2022	
2-Methylnaphthalene	0.00157	0.000645	0.00067	"	"	"	"	"	
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"	
Anthracene	ND	0.000334	0.00067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"	
Benzo(a)pyrene	0.000506	0.000468	0.00067	"	"	"	"	"	J
Benzo(b)fluoranthene	0.000687	0.000585	0.00067	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"	
Chrysene	ND	0.000624	0.00067	"	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"	
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"	
Fluorene	ND	0.000286	0.00067	"	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"	
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"	
Pyrene	ND	0.000643	0.00067	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	53.5 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	59.2 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	52 %	29-110	"	"	"

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-N02@17'

3/2/2022 2:03:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y203070-02 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2C0233	03/02/2022	03/03/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 81.8 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2C0231	03/02/2022	03/03/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 91.0 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 93.0 % 70-130 " " "

PAH by 8270D-SIM

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-N02@17'

3/2/2022 2:03:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y203070-02 (Soil)

PAH by 8270D-SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L603537	03/08/2022	03/08/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	0.0007	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	0.00589	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	0.00666	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	0.00219	0.000437	0.00067	"	"	"	"	"
Chrysene	0.00387	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	0.00288	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"
Fluorene	ND	0.000286	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	0.0102	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	0.000758	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	52.4 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	50.3 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	50 %	29-110	"	"	"

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-S02@17'

3/2/2022 2:06:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y203070-03 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2C0233	03/02/2022	03/03/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 82.1 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2C0231	03/02/2022	03/03/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 88.8 % 70-130 " " "
Surrogate: Toluene-d8 103 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 93.3 % 70-130 " " "

PAH by 8270D-SIM

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-S02@17'

3/2/2022 2:06:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y203070-03 (Soil)

PAH by 8270D-SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L603537	03/08/2022	03/08/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"
Fluorene	ND	0.000286	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	48.9 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	53.2 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	48.9 %	29-110	"	"	"

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-E02@17'

3/2/2022 2:09:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y203070-04 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	57.9	25.0	mg/kg	1	B2C0233	03/02/2022	03/03/2022	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 81.6 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2C0231	03/02/2022	03/03/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 90.6 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 94.6 % 70-130 " " "

PAH by 8270D-SIM

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-E02@17'

3/2/2022 2:09:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y203070-04 (Soil)

PAH by 8270D-SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L603537	03/08/2022	03/08/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"
Fluorene	ND	0.000286	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	41.1 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	44.1 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	39.3 %	29-110	"	"	"

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-W02@17'

3/2/2022 2:12:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y203070-05 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2C0233	03/02/2022	03/03/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 83.1 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2C0231	03/02/2022	03/03/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 89.3 % 70-130 " " "
Surrogate: Toluene-d8 106 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 92.1 % 70-130 " " "

PAH by 8270D-SIM

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PW-W02@17'

3/2/2022 2:12:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y203070-05 (Soil)

PAH by 8270D-SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L603537	03/08/2022	03/08/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"
Fluorene	ND	0.000286	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	45.9 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	49.8 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	44.4 %	29-110	"	"	"

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-B03@6'

3/2/2022 2:15:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y203070-06 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2C0233	03/02/2022	03/03/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 165 % 50-150 " " " S-04

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2C0231	03/02/2022	03/03/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 90.4 % 70-130 " " "

Surrogate: Toluene-d8 105 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 93.3 % 70-130 " " "

PAH by 8270D-SIM

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-B03@6'

3/2/2022 2:15:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y203070-06 (Soil)

PAH by 8270D-SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L603537	03/08/2022	03/08/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"
Fluorene	ND	0.000286	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	47.1 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	50.8 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	46.8 %	29-110	"	"	"

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-E01@5'

3/2/2022 2:18:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y203070-07 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2C0233	03/02/2022	03/03/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 78.9 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2C0231	03/02/2022	03/03/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 90.7 % 70-130 " " "
Surrogate: Toluene-d8 101 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 93.0 % 70-130 " " "

PAH by 8270D-SIM

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-E01@5'

3/2/2022 2:18:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y203070-07 (Soil)

PAH by 8270D-SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L603537	03/08/2022	03/08/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"
Fluorene	ND	0.000286	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	48 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	52.3 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	47.1 %	29-110	"	"	"

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-W01@5'

3/2/2022 2:21:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y203070-08 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2C0233	03/02/2022	03/03/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 84.3 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2C0231	03/02/2022	03/03/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 89.6 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 91.8 % 70-130 " " "

PAH by 8270D-SIM

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-W01@5'

3/2/2022 2:21:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y203070-08 (Soil)

PAH by 8270D-SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L603537	03/08/2022	03/08/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"
Fluorene	ND	0.000286	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	46.7 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	56.3 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	47 %	29-110	"	"	"

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-N01@5'

3/2/2022 2:24:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y203070-09 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2C0233	03/02/2022	03/03/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 82.7 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2C0231	03/02/2022	03/03/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 89.5 % 70-130 " " "
Surrogate: Toluene-d8 109 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 93.0 % 70-130 " " "

PAH by 8270D-SIM

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-N01@5'

3/2/2022 2:24:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y203070-09 (Soil)

PAH by 8270D-SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L603537	03/08/2022	03/08/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"
Fluorene	ND	0.000286	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	38.9 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	47.9 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	38.3 %	29-110	"	"	"

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-S01@5'

3/2/2022 2:27:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y203070-10 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2C0233	03/02/2022	03/03/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 81.2 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2C0231	03/02/2022	03/03/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 91.3 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 91.3 % 70-130 " " "

PAH by 8270D SIM

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

SEP-S01@5'

3/2/2022 2:27:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y203070-10 (Soil)

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L603269	03/07/2022	03/07/2022
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"
Fluorene	ND	0.000286	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.000484	0.00067	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	65.6 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	84.3 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	58.6 %	29-110	"	"	"

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

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 B2C0231 - EPA 5030 (soil)										
Blank (B2C0231-BLK1)					Prepared: 03/02/2022 Analyzed: 03/02/2022					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.0100	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.10		"	0.125		82.5	70-130			
Surrogate: Toluene-d8	0.14		"	0.125		110	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.8	70-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

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 B2C0231 - EPA 5030 (soil)

LCS (B2C0231-BS1)

Prepared: 03/02/2022 Analyzed: 03/02/2022

1,2,4-Trimethylbenzene	0.0901	0.00200	mg/kg	0.100		90.1	70-130			
1,3,5-Trimethylbenzene	0.0910	0.00200	"	0.100		91.0	70-130			
Benzene	0.0768	0.00200	"	0.100		76.8	70-130			
Ethylbenzene	0.0889	0.00200	"	0.100		88.9	70-130			
Naphthalene	0.0883	0.0100	"	0.100		88.3	70-130			
Toluene	0.0828	0.00200	"	0.100		82.8	70-130			
o-Xylene	0.0898	0.00200	"	0.100		89.8	70-130			
m,p-Xylene	0.179	0.00400	"	0.200		89.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.10		"	0.125		83.2	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

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 B2C0231 - EPA 5030 (soil)

Matrix Spike (B2C0231-MS1)		Source: Y203070-01			Prepared: 03/02/2022 Analyzed: 03/02/2022					
1,2,4-Trimethylbenzene	0.132	0.00200	mg/kg	0.100	0.0172	115	70-130			
1,3,5-Trimethylbenzene	0.123	0.00200	"	0.100	0.00726	116	70-130			
Benzene	0.103	0.00200	"	0.100	ND	103	70-130			
Ethylbenzene	0.115	0.00200	"	0.100	ND	115	70-130			
Naphthalene	0.124	0.0100	"	0.100	0.000540	123	70-130			
Toluene	0.105	0.00200	"	0.100	ND	105	70-130			
o-Xylene	0.115	0.00200	"	0.100	ND	115	70-130			
m,p-Xylene	0.249	0.00400	"	0.200	0.0231	113	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.1	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.4	70-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

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 B2C0231 - EPA 5030 (soil)										
Matrix Spike Dup (B2C0231-MSD1)		Source: Y203070-01			Prepared: 03/02/2022 Analyzed: 03/02/2022					
1,2,4-Trimethylbenzene	0.0980	0.00200	mg/kg	0.100	0.0172	80.8	70-130	29.5	20	QR-02
1,3,5-Trimethylbenzene	0.0930	0.00200	"	0.100	0.00726	85.8	70-130	27.7	20	QR-02
Benzene	0.0811	0.00200	"	0.100	ND	81.1	70-130	23.4	20	QR-02
Ethylbenzene	0.0871	0.00200	"	0.100	ND	87.1	70-130	27.5	20	QR-02
Naphthalene	0.0991	0.0100	"	0.100	0.000540	98.5	70-130	22.2	20	QR-02
Toluene	0.0826	0.00200	"	0.100	ND	82.6	70-130	23.4	20	QR-02
o-Xylene	0.0887	0.00200	"	0.100	ND	88.7	70-130	26.0	20	QR-02
m,p-Xylene	0.184	0.00400	"	0.200	0.0231	80.3	70-130	30.4	20	QR-02
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.1	70-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

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 B2C0233 - EPA 3550B										
Blank (B2C0233-BLK1)					Prepared: 03/02/2022 Analyzed: 03/03/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	21		"	24.9		83.4	50-150			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Extractable Petroleum Hydrocarbons by 8015D - 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 B2C0233 - EPA 3550B

LCS (B2C0233-BS1)

Prepared: 03/02/2022 Analyzed: 03/03/2022

Diesel (C10-C28)	998	50.0	mg/kg	1000		99.8	70-130			
Residual Range Organics (C28-C40)	854	200	"	1000		85.4	70-130			
Surrogate: o-Terphenyl	39		"	49.8		78.4	50-150			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Extractable Petroleum Hydrocarbons by 8015D - 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 B2C0233 - EPA 3550B

Matrix Spike (B2C0233-MS1)		Source: Y203070-01			Prepared: 03/02/2022 Analyzed: 03/03/2022					
Diesel (C10-C28)	1010	50.0	mg/kg	1000	ND	101	70-130			
Residual Range Organics (C28-C40)	890	200	"	1000	ND	89.0	70-130			
Surrogate: o-Terphenyl	40		"	49.8		80.8	50-150			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Extractable Petroleum Hydrocarbons by 8015D - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2C0233 - EPA 3550B										
Matrix Spike Dup (B2C0233-MSD1)		Source: Y203070-01			Prepared: 03/02/2022 Analyzed: 03/03/2022					
Diesel (C10-C28)	963	50.0	mg/kg	1000	ND	96.3	70-130	5.01	35	
Residual Range Organics (C28-C40)	912	200	"	1000	ND	91.2	70-130	2.46	35	
Surrogate: o-Terphenyl	48		"	49.8		96.5	50-150			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Extractable Petroleum Hydrocarbons by 8015D - 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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PAH by 8270D SIM - Quality Control

Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L603269 - 3550B

MSD (L 86094-MSD-L603269)		Source: Y203070-10			Prepared: 03/07/2022 Analyzed: 03/07/2022					
Benzo(k)fluoranthene	0.107	0.000437	mg/Kg	0.164	<0.000437	65.2	30-130	7.1	30	
Indeno(1,2,3-cd)pyrene	0.084	0.000627	"	0.164	<0.000627	51.2	30-130	2.5	30	
Naphthalene	0.0956	0.000484	"	0.164	<0.000484	58.2	30-130	3.8	30	
Fluorene	0.0912	0.000286	"	0.164	<0.000286	55.6	30-130	0.1	30	
Fluoranthene	0.109	0.000394	"	0.164	<0.000394	66.4	30-130	3.7	30	
Dibenz(a,h)anthracene	0.118	0.000614	"	0.164	<0.000614	71.9	30-130	3.4	30	
Chrysene	0.109	0.000624	"	0.164	<0.000624	66.4	30-130	0.9	30	
Benzo(a)pyrene	0.121	0.000468	"	0.164	<0.000468	73.7	30-130	3.3	30	
Anthracene	0.101	0.000334	"	0.164	<0.000334	61.5	30-130	4.7	30	
Acenaphthene	0.0834	0.000304	"	0.164	<0.000304	50.8	30-130	1.4	30	
2-Methylnaphthalene	0.0899	0.000645	"	0.164	<0.000645	54.8	30-130	4.3	30	
1-Methylnaphthalene	0.097	0.000364	"	0.164	<0.000364	59.1	30-130	4.2	30	
Benzo(b)fluoranthene	0.0977	0.000585	"	0.164	<0.000585	59.5	30-130	10.3	30	
Pyrene	0.11	0.000643	"	0.164	<0.000643	67	30-130	4.6	30	
Benzo(a)anthracene	0.106	0.000493	"	0.164	<0.000493	64.6	30-130	1.9	30	
Surrogate: Nitrobenzene-d5	55.9		"	0.329	194	55.9	29-110			
Surrogate: 4-Terphenyl-d14	82		"	0.329	279	82	33-122			
Surrogate: 2-Fluorobiphenyl	66.5		"	0.329	217	66.5	33-115			

MS (L 86094-MS-L603269)		Source: Y203070-10			Prepared: 03/07/2022 Analyzed: 03/07/2022					
Acenaphthene	0.0822	0.000304	mg/Kg	0.166	<0.000304	49.5	30-130			
Pyrene	0.105	0.000643	"	0.166	<0.000643	63.2	30-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L603269 - 3550B

MS (L 86094-MS-L603269)		Source: Y203070-10			Prepared: 03/07/2022 Analyzed: 03/07/2022					
1-Methylnaphthalene	0.093	0.000364	mg/Kg	0.166	<0.000364	56	30-130			
Anthracene	0.0963	0.000334	"	0.166	<0.000334	58	30-130			
Benzo(a)anthracene	0.104	0.000493	"	0.166	<0.000493	62.6	30-130			
Fluorene	0.0911	0.000286	"	0.166	<0.000286	54.8	30-130			
Naphthalene	0.092	0.000484	"	0.166	<0.000484	55.4	30-130			
2-Methylnaphthalene	0.0861	0.000645	"	0.166	<0.000645	51.8	30-130			
Indeno(1,2,3-cd)pyrene	0.0862	0.000627	"	0.166	<0.000627	51.9	30-130			
Benzo(a)pyrene	0.117	0.000468	"	0.166	<0.000468	70.4	30-130			
Fluoranthene	0.105	0.000394	"	0.166	<0.000394	63.2	30-130			
Dibenz(a,h)anthracene	0.114	0.000614	"	0.166	<0.000614	68.6	30-130			
Chrysene	0.108	0.000624	"	0.166	<0.000624	65	30-130			
Benzo(k)fluoranthene	0.0996	0.000437	"	0.166	<0.000437	60	30-130			
Benzo(b)fluoranthene	0.0881	0.000585	"	0.166	<0.000585	53	30-130			
Surrogate: Nitrobenzene-d5	54.9		"	0.331	194	54.9	29-110			
Surrogate: 2-Fluorobiphenyl	61.9		"	0.331	217	61.9	33-115			
Surrogate: 4-Terphenyl-d14	79.7		"	0.331	279	79.7	33-122			

LCS (LCS-L603269)

Prepared: 03/07/2022 Analyzed: 03/07/2022

Benzo(k)fluoranthene	0.103	0.000437	mg/Kg	0.167		61.6	30-130
Dibenz(a,h)anthracene	0.119	0.000614	"	0.167		71.2	30-130
Pyrene	0.115	0.000643	"	0.167		68.8	30-130
Naphthalene	0.103	0.000484	"	0.167		61.6	30-130
Indeno(1,2,3-cd)pyrene	0.0854	0.000627	"	0.167		51.1	30-130
Fluoranthene	0.116	0.000394	"	0.167		69.4	30-130
Chrysene	0.118	0.000624	"	0.167		70.6	30-130
Fluorene	0.101	0.000286	"	0.167		60.4	30-130
Benzo(b)fluoranthene	0.0989	0.000585	"	0.167		59.2	30-130

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L603269 - 3550B

LCS (LCS-L603269)

Prepared: 03/07/2022 Analyzed: 03/07/2022

2-Methylnaphthalene	0.0971	0.000645	mg/Kg	0.167		58.1	30-130			
Acenaphthene	0.0896	0.000304	"	0.167		53.6	30-130			
Anthracene	0.104	0.000334	"	0.167		62.2	30-130			
Benzo(a)anthracene	0.112	0.000493	"	0.167		67	30-130			
Benzo(a)pyrene	0.129	0.000468	"	0.167		77.2	30-130			
1-Methylnaphthalene	0.105	0.000364	"	0.167		62.8	30-130			
Surrogate: Nitrobenzene-d5	61.8		"	0.333		61.8	29-110			
Surrogate: 4-Terphenyl-d14	87		"	0.333		87	33-122			
Surrogate: 2-Fluorobiphenyl	72.3		"	0.333		72.3	33-115			

LRB (LRB-L603269)

Prepared: 03/07/2022 Analyzed: 03/07/2022

Benzo(a)pyrene	ND	0.00067	mg/Kg				-			
2-Methylnaphthalene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Naphthalene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Pyrene	ND	0.00067	"				-			
Surrogate: 2-Fluorobiphenyl	69.6		"	0.333		69.6	33-115			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L603269 - 3550B

LRB (LRB-L603269)

Prepared: 03/07/2022 Analyzed: 03/07/2022

Surrogate: 4-Terphenyl-d14	85.8		mg/Kg	0.333		85.8	33-122			
Surrogate: Nitrobenzene-d5	60.3		"	0.333		60.3	29-110			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D-SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L603537 - 3550B

MSD (L 85855-MSD-L603537)		Source: 85855			Prepared: 03/08/2022 Analyzed: 03/08/2022					
Benzo(a)pyrene	0.124	0.000468	mg/Kg dry	0.164	0.0022	74.2	30-130	7	30	
Anthracene	0.0867	0.000334	"	0.164	0.00496	49.8	30-130	6.2	30	
Acenaphthene	0.0953	0.000304	"	0.164	0.0122	50.6	30-130	15.2	30	
2-Methylnaphthalene	0.138	0.000645	"	0.164	0.0505	53.3	30-130	2.1	30	
Benzo(b)fluoranthene	0.114	0.000585	"	0.164	0.00294	67.7	30-130	1.7	30	
1-Methylnaphthalene	0.169	0.000364	"	0.164	0.0475	74	30-130	8.4	30	
Benzo(a)anthracene	0.118	0.000493	"	0.164	0.00178	70.8	30-130	7.3	30	
Benzo(k)fluoranthene	0.0914	0.000437	"	0.164	0.0013	54.9	30-130	0.8	30	
Pyrene	0.219	0.000643	"	0.164	0.0329	113	30-130	28.5	30	
Naphthalene	0.115	0.000484	"	0.164	0.0178	59.2	30-130	5	30	
Indeno(1,2,3-cd)pyrene	0.128	0.000627	"	0.164	0.00185	76.9	30-130	3.9	30	
Fluorene	0.0986	0.000286	"	0.164	0.0175	49.4	30-130	7.2	30	
Fluoranthene	0.178	0.000394	"	0.164	0.00494	106	30-130	17.9	30	
Dibenz(a,h)anthracene	0.119	0.000614	"	0.164	0.000878	72	30-130	4.2	30	
Chrysene	0.112	0.000624	"	0.164	0.00306	66.4	30-130	1.7	30	
Surrogate: 4-Terphenyl-d14	87.1		"	0.328	244	87.1	33-122			
Surrogate: 2-Fluorobiphenyl	44.5		"	0.328	156	44.5	33-115			
Surrogate: Nitrobenzene-d5	65.8		"	0.328	196	65.8	29-110			

MS (L 85855-MS-L603537)		Source: 85855			Prepared: 03/08/2022 Analyzed: 03/08/2022					
Indeno(1,2,3-cd)pyrene	0.123	0.000627	mg/Kg dry	0.166	0.00185	72.9	30-130			
Benzo(k)fluoranthene	0.0906	0.000437	"	0.166	0.0013	53.7	30-130			
Anthracene	0.0923	0.000334	"	0.166	0.00496	52.6	30-130			
Benzo(a)pyrene	0.133	0.000468	"	0.166	0.0022	78.7	30-130			
Benzo(b)fluoranthene	0.116	0.000585	"	0.166	0.00294	68.1	30-130			
2-Methylnaphthalene	0.141	0.000645	"	0.166	0.0505	54.5	30-130			
Chrysene	0.114	0.000624	"	0.166	0.00306	66.8	30-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D-SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L603537 - 3550B

MS (L 85855-MS-L603537)		Source: 85855			Prepared: 03/08/2022 Analyzed: 03/08/2022					
Dibenz(a,h)anthracene	0.114	0.000614	mg/Kg dry	0.166	0.000878	68.1	30-130			
Fluorene	0.106	0.000286	"	0.166	0.0175	53.3	30-130			
Acenaphthene	0.111	0.000304	"	0.166	0.0122	59.5	30-130			
Naphthalene	0.121	0.000484	"	0.166	0.0178	62.1	30-130			
Pyrene	0.292	0.000643	"	0.166	0.0329	156	30-130			*
Fluoranthene	0.213	0.000394	"	0.166	0.00494	125	30-130			
Benzo(a)anthracene	0.127	0.000493	"	0.166	0.00178	75.4	30-130			
1-Methylnaphthalene	0.184	0.000364	"	0.166	0.0475	82.2	30-130			
Surrogate: 4-Terphenyl-d14	90.6		"	0.332	244	90.6	33-122			
Surrogate: 2-Fluorobiphenyl	40		"	0.332	156	40	33-115			
Surrogate: Nitrobenzene-d5	72.5		"	0.332	196	72.5	29-110			

LCS (LCS-L603537)		Prepared: 03/08/2022 Analyzed: 03/08/2022								
Acenaphthene	0.0994	0.000304	mg/Kg	0.167		59.5	30-130			
1-Methylnaphthalene	0.0944	0.000364	"	0.167		56.5	30-130			
Anthracene	0.106	0.000334	"	0.167		63.4	30-130			
Benzo(a)anthracene	0.106	0.000493	"	0.167		63.4	30-130			
Benzo(a)pyrene	0.111	0.000468	"	0.167		66.4	30-130			
Naphthalene	0.0902	0.000484	"	0.167		54	30-130			
2-Methylnaphthalene	0.0939	0.000645	"	0.167		56.2	30-130			
Pyrene	0.108	0.000643	"	0.167		64.6	30-130			
Benzo(b)fluoranthene	0.121	0.000585	"	0.167		72.4	30-130			
Indeno(1,2,3-cd)pyrene	0.142	0.000627	"	0.167		85	30-130			
Fluorene	0.105	0.000286	"	0.167		62.8	30-130			
Fluoranthene	0.109	0.000394	"	0.167		65.2	30-130			
Dibenz(a,h)anthracene	0.133	0.000614	"	0.167		79.6	30-130			
Chrysene	0.103	0.000624	"	0.167		61.6	30-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

PAH by 8270D-SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L603537 - 3550B

LCS (LCS-L603537)

Prepared: 03/08/2022 Analyzed: 03/08/2022

Benzo(k)fluoranthene	0.104	0.000437	mg/Kg	0.167		62.2	30-130			
Surrogate: Nitrobenzene-d5	58.5		"	0.333		58.5	29-110			
Surrogate: 2-Fluorobiphenyl	56.7		"	0.333		56.7	33-115			
Surrogate: 4-Terphenyl-d14	62.1		"	0.333		62.1	33-122			

LRB (LRB-L603537)

Prepared: 03/08/2022 Analyzed: 03/08/2022

Benzo(k)fluoranthene	ND	0.00067	mg/Kg				-			
Naphthalene	ND	0.00067	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00067	"				-			
Pyrene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	55.5		"	0.333		55.5	29-110			
Surrogate: 4-Terphenyl-d14	58.5		"	0.333		58.5	33-122			
Surrogate: 2-Fluorobiphenyl	55.8		"	0.333		55.8	33-115			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: [none]
Project: KMG - Houston 17-7L, 17-8L O SA

Notes and Definitions

- U Sample is Non-Detect.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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.
- J Estimated Value. Analyte below reported quantitation limit.
- * QC Failure
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- All soil results are reported on a wet weight basis.

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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.



April 15, 2022

WSP USA

Brian Sulzberger

4600 W. 60th Ave.

Arvada

CO 80003

Project Name - KMG - Houston 17-L, 17-8L, OS A TB **Project Number - 31403177.022.46.05**

Attached are your analytical results for KMG - Houston 17-L, 17-8L, OS A TB received by Origins Laboratory, Inc. April 14, 2022. This project is associated with Origins project number Y204303-01.

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

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A TB

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PW-B03@25'	Y204303-01	Soil	April 14, 2022 8:40	04/14/2022 16:50

Origins Laboratory, Inc.



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

WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Brian Sulzberger

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A TB

www.originslaboratory.com

page 1 of 1

1204363

ORIGINS LABORATORY, INC

Client: WSP USA

Address: 4600 W. 60th Ave. Arvada 80003

Project Manager: Brian Sulzberger

Project Name: Houston 17-L, 17-8L, OS A Tank Battery



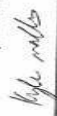

Project Number: 31403177.022.46.05

Samples Collected By: DH

Telephone Number: DH KMG Group

Email Address: DH KMG Group

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative						Matrix				Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #	Other					
PW-803025	4-14-22	0840	2	X					X				X		1	
PW-804030	✓	1050	2	X					X				X		2	held
															3	
															4	
															5	
															6	
															7	
															8	
															9	
															10	
Relinquished By: 	Date: 4-14-22	Time: 1449	Received By: 	Date: 4/14/22	Time: 1449	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>										
Relinquished By: 	Date: 4/14/22	Time: 1650	Received By: 	Date: 4/14/22	Time: 1650											

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.

WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Brian Sulzberger

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A TB

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4204303

Client: WSP

Client Project ID: HOUSTON 17-L, 17-8L

Checklist Completed by: CH

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 4/14/22

Airbill #: NA

Matrix(s) Received: (Check all that apply):

☒ Soil/Solid

☐ Water

☐ Other:

(Describe)

Cooler Number/Temperature: 1119 °C / °C / °C

Thermometer ID: 1004

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

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

Reviewed by (Project Manager)

Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A TB

PW-B03@25'

4/14/2022 8:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y204303-01 (Soil)

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2D1425	JSM	04/14/2022	04/15/2022	U
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Surrogate: 1,2-Dichloroethane-d4

126 %

70-130

"

"

04/14/2022

Surrogate: Toluene-d8

88.7 %

70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

92.5 %

70-130

"

"

"

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A TB

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 B2D1425 - EPA 5030 (soil)										
Blank (B2D1425-BLK1)					Prepared: 04/14/2022 Analyzed: 04/14/2022					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.0100	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		111	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		92.8	70-130			

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.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A TB

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 B2D1425 - EPA 5030 (soil)

LCS (B2D1425-BS1)

Prepared: 04/14/2022 Analyzed: 04/14/2022

1,2,4-Trimethylbenzene	0.0953	0.00200	mg/kg	0.100		95.3	70-130			
1,3,5-Trimethylbenzene	0.0950	0.00200	"	0.100		95.0	70-130			
Benzene	0.111	0.00200	"	0.100		111	70-130			
Ethylbenzene	0.0877	0.00200	"	0.100		87.7	70-130			
Naphthalene	0.101	0.0100	"	0.100		101	70-130			
Toluene	0.0978	0.00200	"	0.100		97.8	70-130			
o-Xylene	0.0934	0.00200	"	0.100		93.4	70-130			
m,p-Xylene	0.180	0.00400	"	0.200		90.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		114	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.8	70-130			

Origins Laboratory, Inc.



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

Jen Pellegrini For Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A TB

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 B2D1425 - EPA 5030 (soil)

Matrix Spike (B2D1425-MS1)		Source: Y204300-01			Prepared: 04/14/2022 Analyzed: 04/14/2022					
1,2,4-Trimethylbenzene	0.0924	0.00200	mg/kg	0.100	ND	92.4	70-130			
1,3,5-Trimethylbenzene	0.0918	0.00200	"	0.100	ND	91.8	70-130			
Benzene	0.109	0.00200	"	0.100	ND	109	70-130			
Ethylbenzene	0.0843	0.00200	"	0.100	ND	84.3	70-130			
Naphthalene	0.108	0.0100	"	0.100	0.00204	106	70-130			
Toluene	0.0961	0.00200	"	0.100	ND	96.1	70-130			
o-Xylene	0.0908	0.00200	"	0.100	ND	90.8	70-130			
m,p-Xylene	0.173	0.00400	"	0.200	ND	86.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		116	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		92.8	70-130			

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.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A TB

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 B2D1425 - EPA 5030 (soil)										
Matrix Spike Dup (B2D1425-MSD1)			Source: Y204300-01		Prepared: 04/14/2022 Analyzed: 04/14/2022					
1,2,4-Trimethylbenzene	0.0885	0.00200	mg/kg	0.100	ND	88.5	70-130	4.31	20	
1,3,5-Trimethylbenzene	0.0874	0.00200	"	0.100	ND	87.4	70-130	4.98	20	
Benzene	0.106	0.00200	"	0.100	ND	106	70-130	2.74	20	
Ethylbenzene	0.0811	0.00200	"	0.100	ND	81.1	70-130	3.94	20	
Naphthalene	0.103	0.0100	"	0.100	0.00204	101	70-130	4.16	20	
Toluene	0.0926	0.00200	"	0.100	ND	92.6	70-130	3.71	20	
o-Xylene	0.0871	0.00200	"	0.100	ND	87.1	70-130	4.09	20	
m,p-Xylene	0.167	0.00400	"	0.200	ND	83.5	70-130	3.69	20	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		115	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		92.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.5	70-130			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A TB

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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



April 27, 2022

WSP USA

Chris Roy

4600 W. 60th Ave.

Arvada

CO

80003

Project Name - KMG - Houston 17-L, 17-8L, OS A Project Number - 31403177.022.46.05

Attached are your analytical results for KMG - Houston 17-L, 17-8L, OS A received by Origins Laboratory, Inc. April 20, 2022. This project is associated with Origins project number Y204444-01.

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

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PW-E03@22.5'	Y204444-01	Soil	April 20, 2022 15:55	04/20/2022 17:41
PW-N03@22.5'	Y204444-02	Soil	April 20, 2022 16:01	04/20/2022 17:41

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.

WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Origins Laboratory

Sample Receipt Checklist

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

Origins Work Order: Y204444

Client: WSP

Client Project ID: Houston 17-L, 17-8L

Checklist Completed by: SG

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 4/20/22

Airbill #: N/A

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

☐ Water

☐ Other:

Cooler Number/Temperature: 115.4 °C

(Describe)

Thermometer ID: T004

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

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

Reviewed by (Project Manager)

Date/Time Reviewed: 4/20/22

Origins Laboratory, Inc.

J. Bynon

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.

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

PW-E03@22.5'
4/20/2022 3:55:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y204444-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	277		25.0	mg/kg	1	B2D2031	04/20/2022	04/21/2022	
Residual Range Organics (C28-C40)	106		100	"	"	"	"	"	

Surrogate: o-Terphenyl	79.8 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.453		0.0500	mg/kg	25	B2D2032	04/20/2022	04/21/2022	
1,3,5-Trimethylbenzene	0.280		0.0500	"	"	"	"	"	
Gasoline Range Hydrocarbons	11.8		0.200	"	1	"	"	04/21/2022	

Surrogate: 1,2-Dichloroethane-d4	101 %		70-130			"	"	04/21/2022	
Surrogate: Toluene-d8	101 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.9 %		70-130			"	"	"	

PAH by 8270D SIM

1-Methylnaphthalene	0.181	0.00364	0.0067	mg/Kg	10	L612438	04/23/2022	04/26/2022	
2-Methylnaphthalene	0.375	0.00645	0.0067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.00493	0.0067	"	"	"	"	"	
Fluorene	0.0437	0.00286	0.0067	"	"	"	"	"	
Naphthalene	0.0604	0.00484	0.0067	"	"	"	"	"	

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

PW-E03@22.5'

4/20/2022 3:55:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y204444-01 (Soil)

PAH by 8270D SIM

Surrogate: 2-Fluorobiphenyl	55.3 %	33-115	L6124 38	04/23/2022	04/26/2022
Surrogate: 4-Terphenyl-d14	64.4 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	56.5 %	29-110	"	"	"

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

PW-N03@22.5'

4/20/2022 4:01:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

Y204444-02 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	91.3		25.0	mg/kg	1	B2D2031	04/20/2022	04/21/2022	
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	78.4 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.867		0.0500	mg/kg	25	B2D2032	04/20/2022	04/21/2022	
1,3,5-Trimethylbenzene	0.347		0.0500	"	"	"	"	"	
Gasoline Range Hydrocarbons	30.9		5.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %		70-130			"	"	"	
Surrogate: Toluene-d8	99.6 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %		70-130			"	"	"	

PAH by 8270D SIM

1-Methylnaphthalene	0.342	0.00182	0.00335	mg/Kg	5	L612438	04/23/2022	04/26/2022	
2-Methylnaphthalene	0.776	0.00323	0.00335	"	"	"	"	"	
Benzo(a)anthracene	0.00525	0.00247	0.00335	"	"	"	"	"	
Fluorene	0.086	0.00143	0.00335	"	"	"	"	"	
Naphthalene	0.129	0.00242	0.00335	"	"	"	"	"	

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

PW-N03@22.5'

4/20/2022 4:01:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y204444-02 (Soil)

PAH by 8270D SIM

Surrogate: 2-Fluorobiphenyl	52.4 %	33-115	L6124 38	04/23/2022	04/26/2022
Surrogate: 4-Terphenyl-d14	61.4 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	54.8 %	29-110	"	"	"

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - 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 B2D2031 - EPA 3550B

Blank (B2D2031-BLK1)

Prepared: 04/20/2022 Analyzed: 04/20/2022

Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	22		"	24.9		90.3	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - 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 B2D2031 - EPA 3550B

LCS (B2D2031-BS1)

Prepared: 04/20/2022 Analyzed: 04/20/2022

Diesel (C10-C28)	920	50.0	mg/kg	1000		92.0	70-130			
Residual Range Organics (C28-C40)	790	200	"	1000		79.0	70-130			
Surrogate: o-Terphenyl	47		"	49.8		93.8	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - 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 B2D2031 - EPA 3550B

Matrix Spike (B2D2031-MS1)		Source: Y204441-01			Prepared: 04/20/2022 Analyzed: 04/20/2022					
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	70-130			
Residual Range Organics (C28-C40)	965	200	"	1000	ND	96.5	70-130			
Surrogate: o-Terphenyl	50		"	49.8		101	50-150			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - 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 B2D2031 - EPA 3550B

Matrix Spike Dup (B2D2031-MSD1)		Source: Y204441-01			Prepared: 04/20/2022 Analyzed: 04/20/2022					
Diesel (C10-C28)	812	50.0	mg/kg	1000	ND	81.2	70-130	22.5	35	
Residual Range Organics (C28-C40)	744	200	"	1000	ND	74.4	70-130	25.9	35	
Surrogate: o-Terphenyl	40		"	49.8		80.2	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2D2032 - EPA 5030 (soil)										
Blank (B2D2032-BLK1)					Prepared: 04/20/2022 Analyzed: 04/20/2022					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.0100	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.1	70-130			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 B2D2032 - EPA 5030 (soil)

LCS (B2D2032-BS1)

Prepared: 04/20/2022 Analyzed: 04/20/2022

1,2,4-Trimethylbenzene	0.0830	0.00200	mg/kg	0.100		83.0	70-130			
1,3,5-Trimethylbenzene	0.0843	0.00200	"	0.100		84.3	70-130			
Benzene	0.0867	0.00200	"	0.100		86.7	70-130			
Ethylbenzene	0.0975	0.00200	"	0.100		97.5	70-130			
Naphthalene	0.0929	0.0100	"	0.100		92.9	70-130			
Toluene	0.0897	0.00200	"	0.100		89.7	70-130			
o-Xylene	0.0930	0.00200	"	0.100		93.0	70-130			
m,p-Xylene	0.193	0.00400	"	0.200		96.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		112	70-130			

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.

Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 B2D2032 - EPA 5030 (soil)

Matrix Spike (B2D2032-MS1)		Source: Y204441-01			Prepared: 04/20/2022 Analyzed: 04/20/2022					
1,2,4-Trimethylbenzene	0.0815	0.00200	mg/kg	0.100	ND	81.5	70-130			
1,3,5-Trimethylbenzene	0.0802	0.00200	"	0.100	ND	80.2	70-130			
Benzene	0.0891	0.00200	"	0.100	ND	89.1	70-130			
Ethylbenzene	0.0864	0.00200	"	0.100	ND	86.4	70-130			
Naphthalene	0.0832	0.0100	"	0.100	ND	83.2	70-130			
Toluene	0.0850	0.00200	"	0.100	ND	85.0	70-130			
o-Xylene	0.0858	0.00200	"	0.100	ND	85.8	70-130			
m,p-Xylene	0.172	0.00400	"	0.200	ND	86.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		107	70-130			

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.

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

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 B2D2032 - EPA 5030 (soil)										
Matrix Spike Dup (B2D2032-MSD1)		Source: Y204441-01			Prepared: 04/20/2022 Analyzed: 04/20/2022					
1,2,4-Trimethylbenzene	0.0853	0.00200	mg/kg	0.100	ND	85.3	70-130	4.63	20	
1,3,5-Trimethylbenzene	0.0841	0.00200	"	0.100	ND	84.1	70-130	4.67	20	
Benzene	0.0927	0.00200	"	0.100	ND	92.7	70-130	3.96	20	
Ethylbenzene	0.0901	0.00200	"	0.100	ND	90.1	70-130	4.17	20	
Naphthalene	0.0849	0.0100	"	0.100	ND	84.9	70-130	2.00	20	
Toluene	0.0891	0.00200	"	0.100	ND	89.1	70-130	4.67	20	
o-Xylene	0.0890	0.00200	"	0.100	ND	89.0	70-130	3.62	20	
m,p-Xylene	0.181	0.00400	"	0.200	ND	90.4	70-130	4.79	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		108	70-130			

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.

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

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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PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L612438 - 3550B

MSD (L 90828-MSD-L612438)		Source: Y204444-01			Prepared: 04/23/2022 Analyzed: 04/26/2022					
Benzo(a)anthracene	0.1	0.00493	mg/Kg	0.163	<0.00493	61.3	30-130	1.4	30	
Naphthalene	0.16	0.00484	"	0.163	0.0604	61.1	30-130	1.8	30	
Fluorene	0.144	0.00286	"	0.163	0.0437	61.5	30-130	1.3	30	
2-Methylnaphthalene	0.566	0.00645	"	0.163	0.375	117	30-130	2.6	30	
1-Methylnaphthalene	0.328	0.00364	"	0.163	0.181	90.1	30-130	3.7	30	
Surrogate: Nitrobenzene-d5	57.6		"	0.326	187	57.6	29-110			
Surrogate: 4-Terphenyl-d14	69.3		"	0.326	213	69.3	33-122			
Surrogate: 2-Fluorobiphenyl	58.2		"	0.326	183	58.2	33-115			
MS (L 90828-MS-L612438)		Source: Y204444-01			Prepared: 04/23/2022 Analyzed: 04/26/2022					
Naphthalene	0.163	0.00484	mg/Kg	0.164	0.0604	62.5	30-130			
Fluorene	0.146	0.00286	"	0.164	0.0437	62.3	30-130			
2-Methylnaphthalene	0.551	0.00645	"	0.164	0.375	107	30-130			
1-Methylnaphthalene	0.316	0.00364	"	0.164	0.181	82.3	30-130			
Benzo(a)anthracene	0.0986	0.00493	"	0.164	<0.00493	60.1	30-130			
Surrogate: 2-Fluorobiphenyl	54.1		"	0.329	183	54.1	33-115			
Surrogate: Nitrobenzene-d5	55		"	0.329	187	55	29-110			
Surrogate: 4-Terphenyl-d14	65.3		"	0.329	213	65.3	33-122			
LCS (LCS-L612438)		Prepared: 04/23/2022 Analyzed: 04/26/2022								
Fluorene	0.0923	0.000286	mg/Kg	0.167		55.2	30-130			
Naphthalene	0.0873	0.000484	"	0.167		52.2	30-130			

Origins Laboratory, Inc.



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WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L612438 - 3550B

LCS (LCS-L612438)

Prepared: 04/23/2022 Analyzed: 04/26/2022

Benzo(a)anthracene	0.101	0.000493	mg/Kg	0.167		60.4	30-130			
2-Methylnaphthalene	0.0841	0.000645	"	0.167		50.3	30-130			
1-Methylnaphthalene	0.0871	0.000364	"	0.167		52.1	30-130			
Surrogate: 4-Terphenyl-d14	71.1		"	0.333		71.1	33-122			
Surrogate: 2-Fluorobiphenyl	53.7		"	0.333		53.7	33-115			
Surrogate: Nitrobenzene-d5	62.1		"	0.333		62.1	29-110			

LRB (LRB-L612438)

Prepared: 04/23/2022 Analyzed: 04/26/2022

1-Methylnaphthalene	ND	0.00067	mg/Kg				-			
2-Methylnaphthalene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Naphthalene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	63.6		"	0.333		63.6	29-110			
Surrogate: 2-Fluorobiphenyl	53.1		"	0.333		53.1	33-115			
Surrogate: 4-Terphenyl-d14	72		"	0.333		72	33-122			

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.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 on a wet weight basis.

Origins Laboratory, Inc.



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

Jordan A. Bynon, Project Manager



April 27, 2022

WSP USA

Chris Roy

4600 W. 60th Ave.

Arvada

CO 80003

Project Name - KMG - Houston 17-L, 17-8L, OS A Project Number - 31403177.022.46.05

Attached are your analytical results for KMG - Houston 17-L, 17-8L, OS A received by Origins Laboratory, Inc. April 21, 2022. This project is associated with Origins project number Y204492-01.

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

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	Y204492-01	Water	April 21, 2022 8:29	04/21/2022 17:10

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.

Page 3 of 12

WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y204492

Client: WSP

Client Project ID: Houston 17-7L, 17-8L

Checklist Completed by: JG

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

Date/time completed: 4/21/22

Airbill #: N/A

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

Cooler Number/Temperature: 1, 5.8 °C 1 °C 1 °C (Describe) °C

Thermometer ID: T004

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

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

Reviewed by (Project Manager) JG

Date/Time Reviewed 4/21/22

Origins Laboratory, Inc.

J. Bynon

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.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

GW01

4/21/2022 8:29:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

Y204492-01 (Water)

Anions by IC 300.0

Chloride	511	31.2	mg/L	125	B2D2120	AHK	04/21/2022	04/22/2022	
Sulfate	9320	125	"	501	"	AHK	"	04/22/2022	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B2D2026	ZZZ	04/21/2022	04/21/2022	U
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	ZZZ	"	"	U
Benzene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Naphthalene	ND	2.00	"	"	"	ZZZ	"	"	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4

103 %

70-130

"

"

"

Surrogate: Toluene-d8

96.9 %

70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

97.2 %

70-130

"

"

"

Total Dissolved Solids by 2540C

Total Dissolved Solids	13600	5.00	mg/L	1	B2D2126	TSH	04/21/2022	04/22/2022	
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Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 B2D2026 - EPA 5030B (Water)

Blank (B2D2026-BLK1)

Prepared: 04/20/2022 Analyzed: 04/21/2022

1,2,4-Trimethylbenzene	ND	2.00	ug/L							U
1,3,5-Trimethylbenzene	ND	2.00	"							U
Benzene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Naphthalene	ND	2.00	"							U
Toluene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	69		"	62.5		110	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.4	70-130			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 B2D2026 - EPA 5030B (Water)

LCS (B2D2026-BS1)

Prepared: 04/20/2022 Analyzed: 04/21/2022

1,2,4-Trimethylbenzene	48.0	2.00	ug/L	50.0		95.9	70-130			
1,3,5-Trimethylbenzene	46.0	2.00	"	50.0		92.0	70-130			
Benzene	46.0	1.00	"	50.0		91.9	70-130			
Ethylbenzene	45.2	1.00	"	50.0		90.4	70-130			
m,p-Xylene	94.9	2.00	"	100		94.9	70-130			
Naphthalene	50.0	2.00	"	50.0		100	70-130			
o-Xylene	48.0	1.00	"	50.0		96.0	70-130			
Toluene	45.4	1.00	"	50.0		90.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.9	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.7	70-130			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 B2D2026 - EPA 5030B (Water)

Matrix Spike (B2D2026-MS1)		Source: Y204400-01			Prepared: 04/20/2022 Analyzed: 04/21/2022					
1,2,4-Trimethylbenzene	55.7	2.00	ug/L	50.0	ND	111	70-130			
1,3,5-Trimethylbenzene	56.2	2.00	"	50.0	ND	112	70-130			
Benzene	53.6	1.00	"	50.0	ND	107	70-130			
Ethylbenzene	56.1	1.00	"	50.0	ND	112	70-130			
m,p-Xylene	116	2.00	"	100	ND	116	70-130			
Naphthalene	45.7	2.00	"	50.0	ND	91.4	70-130			
o-Xylene	55.4	1.00	"	50.0	ND	111	70-130			
Toluene	54.3	1.00	"	50.0	ND	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.9	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.8	70-130			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 B2D2026 - EPA 5030B (Water)

Matrix Spike Dup (B2D2026-MSD1)		Source: Y204400-01			Prepared: 04/20/2022 Analyzed: 04/21/2022					
1,2,4-Trimethylbenzene	54.4	2.00	ug/L	50.0	ND	109	70-130	2.25	20	
1,3,5-Trimethylbenzene	53.9	2.00	"	50.0	ND	108	70-130	4.14	20	
Benzene	51.2	1.00	"	50.0	ND	102	70-130	4.62	20	
Ethylbenzene	52.9	1.00	"	50.0	ND	106	70-130	5.80	20	
m,p-Xylene	110	2.00	"	100	ND	110	70-130	5.51	20	
Naphthalene	49.2	2.00	"	50.0	ND	98.4	70-130	7.33	20	
o-Xylene	54.5	1.00	"	50.0	ND	109	70-130	1.67	20	
Toluene	51.1	1.00	"	50.0	ND	102	70-130	6.09	20	
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.6	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.3	70-130			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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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Classical Chemistry Parameters - 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 B2D2120 - Filter .45um non acidified

Blank (B2D2120-BLK1)

Prepared: 04/21/2022 Analyzed: 04/22/2022

Chloride	ND	0.250	mg/L
Sulfate	ND	0.250	"

LCS (B2D2120-BS1)

Prepared: 04/21/2022 Analyzed: 04/22/2022

Chloride	3.94	0.250	mg/L	4.00	98.4	90-110
Sulfate	3.85	0.250	"	4.00	96.2	90-110

Matrix Spike (B2D2120-MS1)

Source: Y204384-06

Prepared: 04/21/2022 Analyzed: 04/22/2022

Chloride	807	mg/L	500	310	99.4	90-110
Sulfate	2810	"	500	2350	92.7	90-110

Matrix Spike Dup (B2D2120-MSD1)

Source: Y204384-06

Prepared: 04/21/2022 Analyzed: 04/22/2022

Chloride	802	mg/L	500	310	98.3	90-110	0.638	5
Sulfate	2800	"	500	2350	90.0	90-110	0.482	5

Batch B2D2126 - NO PREP

Blank (B2D2126-BLK1)

Prepared: 04/21/2022 Analyzed: 04/22/2022

Total Dissolved Solids	ND	5.00	mg/L
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LCS (B2D2126-BS1)

Prepared: 04/21/2022 Analyzed: 04/22/2022

Total Dissolved Solids	1000	5.00	mg/L	1000	100	90-110
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Duplicate (B2D2126-DUP1)

Source: Y204492-01

Prepared: 04/21/2022 Analyzed: 04/22/2022

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.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Classical Chemistry Parameters - 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 B2D2126 - NO PREP

Total Dissolved Solids	13300	5.00	mg/L		13600			2.53	10	
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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.

Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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



May 04, 2022

WSP USA

Chris Roy

4600 W. 60th Ave.

Arvada

CO

80003

Project Name - KMG - Houston 17-L, 17-8L, OS A Project Number - 31403177.022.46.05

Attached are your analytical results for KMG - Houston 17-L, 17-8L, OS A received by Origins Laboratory, Inc. April 25, 2022. This project is associated with Origins project number Y204561-01.

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

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PW-E04@22.5'	Y204561-01	Soil	April 25, 2022 10:50	04/25/2022 16:40

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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

Sample Receipt Checklist

Origins Work Order: Y204561 Client: WSP
Client Project ID: Houston 17-L, 17-8L OS A

Checklist Completed by: SG Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
Date/time completed: 4/25/22 Airbill #: N/A

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

Cooler Number/Temperature: 1 / 7.6 °C 1 °C 1 °C 1 °C
Thermometer ID: T004

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

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

Reviewed by (Project Manager) [Signature] Date/Time Reviewed 4/25/22

Origins Laboratory, Inc.

[Signature]

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WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

PW-E04@22.5'

4/25/2022 10:50:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y204561-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B2D2512	04/25/2022	04/26/2022	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl 78.1 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B2D2521	04/25/2022	04/26/2022	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 114 % 70-130 " " "
Surrogate: Toluene-d8 94.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.2 % 70-130 " " "

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.000364	0.00067	mg/Kg	1	L613210	05/02/2022	05/02/2022	
2-Methylnaphthalene	ND	0.000645	0.00067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"	
Fluorene	ND	0.000286	0.00067	"	"	"	"	"	

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

PW-E04@22.5'

4/25/2022 10:50:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y204561-01 (Soil)

PAH by 8270D SIM

Naphthalene	ND	0.000484	0.00067	mg/Kg	1	L613210	05/02/2022	05/02/2022
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Surrogate: 2-Fluorobiphenyl	48.8 %		33-115			"	"	"
Surrogate: 4-Terphenyl-d14	67 %		33-122			"	"	"
Surrogate: Nitrobenzene-d5	58.5 %		29-110			"	"	"

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2D2512 - EPA 3580										
Blank (B2D2512-BLK1)					Prepared: 04/25/2022 Analyzed: 04/25/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	23		"	24.9		94.0	50-150			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - 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 B2D2512 - EPA 3580

LCS (B2D2512-BS1)

Prepared: 04/25/2022 Analyzed: 04/25/2022

Diesel (C10-C28)	852	50.0	mg/kg	1000		85.2	70-130			
Residual Range Organics (C28-C40)	798	200	"	1000		79.8	70-130			
Surrogate: o-Terphenyl	40		"	49.8		81.2	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - 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 B2D2512 - EPA 3580

Matrix Spike (B2D2512-MS1)		Source: Y204263-01			Prepared: 04/25/2022 Analyzed: 04/25/2022					
Diesel (C10-C28)	827	50.0	mg/kg	1000	ND	82.7	70-130			
Residual Range Organics (C28-C40)	808	200	"	1000	ND	80.8	70-130			
Surrogate: o-Terphenyl	39		"	49.8		78.2	50-150			

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Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - 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 B2D2512 - EPA 3580

Matrix Spike Dup (B2D2512-MSD1)		Source: Y204263-01			Prepared: 04/25/2022 Analyzed: 04/25/2022					
Diesel (C10-C28)	844	50.0	mg/kg	1000	ND	84.4	70-130	2.02	35	
Residual Range Organics (C28-C40)	797	200	"	1000	ND	79.7	70-130	1.27	35	
Surrogate: o-Terphenyl	40		"	49.8		81.2	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA
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Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2D2521 - EPA 5030 (soil)										
Blank (B2D2521-BLK1)					Prepared: 04/25/2022 Analyzed: 04/25/2022					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.0100	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.5	70-130			

Origins Laboratory, Inc.



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4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 B2D2521 - EPA 5030 (soil)

LCS (B2D2521-BS1)

Prepared: 04/25/2022 Analyzed: 04/25/2022

1,2,4-Trimethylbenzene	0.0974	0.00200	mg/kg	0.100		97.4	70-130			
1,3,5-Trimethylbenzene	0.107	0.00200	"	0.100		107	70-130			
Benzene	0.114	0.00200	"	0.100		114	70-130			
Ethylbenzene	0.110	0.00200	"	0.100		110	70-130			
Naphthalene	0.0929	0.0100	"	0.100		92.9	70-130			
Toluene	0.0957	0.00200	"	0.100		95.7	70-130			
o-Xylene	0.0982	0.00200	"	0.100		98.2	70-130			
m,p-Xylene	0.204	0.00400	"	0.200		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

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 B2D2521 - EPA 5030 (soil)										
Matrix Spike (B2D2521-MS1)		Source: Y204555-01			Prepared: 04/25/2022 Analyzed: 04/25/2022					
1,2,4-Trimethylbenzene	0.160	0.00200	mg/kg	0.100	ND	160	70-130			QM-07
1,3,5-Trimethylbenzene	0.144	0.00200	"	0.100	ND	144	70-130			QM-07
Benzene	0.122	0.00200	"	0.100	ND	122	70-130			
Ethylbenzene	0.122	0.00200	"	0.100	ND	122	70-130			
Naphthalene	0.0792	0.0100	"	0.100	ND	79.2	70-130			
Toluene	0.132	0.00200	"	0.100	ND	132	70-130			QM-07
o-Xylene	0.159	0.00200	"	0.100	ND	159	70-130			QM-07
m,p-Xylene	0.449	0.00400	"	0.200	ND	224	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		109	70-130			

Origins Laboratory, Inc.



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Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 B2D2521 - EPA 5030 (soil)										
Matrix Spike Dup (B2D2521-MSD1)			Source: Y204555-01		Prepared: 04/25/2022 Analyzed: 04/25/2022					
1,2,4-Trimethylbenzene	0.140	0.00200	mg/kg	0.100	ND	140	70-130	13.6	20	QM-07
1,3,5-Trimethylbenzene	0.127	0.00200	"	0.100	ND	127	70-130	12.6	20	
Benzene	0.118	0.00200	"	0.100	ND	118	70-130	3.08	20	
Ethylbenzene	0.111	0.00200	"	0.100	ND	111	70-130	9.18	20	
Naphthalene	0.0747	0.0100	"	0.100	ND	74.7	70-130	5.85	20	
Toluene	0.123	0.00200	"	0.100	ND	123	70-130	6.42	20	
o-Xylene	0.142	0.00200	"	0.100	ND	142	70-130	11.3	20	QM-07
m,p-Xylene	0.383	0.00400	"	0.200	ND	191	70-130	15.9	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		107	70-130			

Origins Laboratory, Inc.



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WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

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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PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L613210 - 3550B

MSD (L 90503-MSD-L613210)		Source: 90503			Prepared: 05/02/2022 Analyzed: 05/02/2022					
Benzo(a)anthracene	0.105	0.000493	mg/Kg	0.164	<0.000493	64	30-130	5.5	30	
Naphthalene	0.0874	0.000484	"	0.164	<0.000484	53.2	30-130	0	30	
Fluorene	0.0974	0.000286	"	0.164	<0.000286	59.3	30-130	0.2	30	
2-Methylnaphthalene	0.0851	0.000645	"	0.164	<0.000645	51.8	30-130	0.4	30	
1-Methylnaphthalene	0.0847	0.000364	"	0.164	<0.000364	51.6	30-130	2.2	30	
Surrogate: Nitrobenzene-d5	59.2		"	0.329	195	59.2	29-110			
Surrogate: 4-Terphenyl-d14	68.3		"	0.329	223	68.3	33-122			
Surrogate: 2-Fluorobiphenyl	52.2		"	0.329	168	52.2	33-115			
MS (L 90503-MS-L613210)		Source: 90503			Prepared: 05/02/2022 Analyzed: 05/02/2022					
Naphthalene	0.0874	0.000484	mg/Kg	0.167	<0.000484	52.3	30-130			
Fluorene	0.0972	0.000286	"	0.167	<0.000286	58.2	30-130			
2-Methylnaphthalene	0.0847	0.000645	"	0.167	<0.000645	50.7	30-130			
1-Methylnaphthalene	0.0866	0.000364	"	0.167	<0.000364	51.8	30-130			
Benzo(a)anthracene	0.111	0.000493	"	0.167	<0.000493	66.4	30-130			
Surrogate: 2-Fluorobiphenyl	50.1		"	0.333	168	50.1	33-115			
Surrogate: Nitrobenzene-d5	56.4		"	0.333	195	56.4	29-110			
Surrogate: 4-Terphenyl-d14	67.8		"	0.333	223	67.8	33-122			
LCS (LCS-L613210)		Prepared: 05/02/2022 Analyzed: 05/02/2022								
Fluorene	0.0879	0.000286	mg/Kg	0.167		52.6	30-130			
Naphthalene	0.0814	0.000484	"	0.167		48.7	30-130			

Origins Laboratory, Inc.



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WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L613210 - 3550B										
LCS (LCS-L613210)					Prepared: 05/02/2022 Analyzed: 05/02/2022					
Benzo(a)anthracene	0.0939	0.000493	mg/Kg	0.167		56.2	30-130			
2-Methylnaphthalene	0.0779	0.000645	"	0.167		46.6	30-130			
1-Methylnaphthalene	0.081	0.000364	"	0.167		48.5	30-130			
Surrogate: 4-Terphenyl-d14	64.5		"	0.333		64.5	33-122			
Surrogate: 2-Fluorobiphenyl	50.4		"	0.333		50.4	33-115			
Surrogate: Nitrobenzene-d5	57		"	0.333		57	29-110			
LRB (LRB-L613210)					Prepared: 05/02/2022 Analyzed: 05/02/2022					
1-Methylnaphthalene	ND	0.00067	mg/Kg				-			
2-Methylnaphthalene	ND	0.00067	"				-			
Benzo(a)anthracene	0.00086	0.00067	"				-			*
Fluorene	ND	0.00067	"				-			
Naphthalene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	62.1		"	0.333		62.1	29-110			
Surrogate: 2-Fluorobiphenyl	53.4		"	0.333		53.4	33-115			
Surrogate: 4-Terphenyl-d14	67.8		"	0.333		67.8	33-122			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Notes and Definitions

U Sample is Non-Detect.

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

* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Origins Laboratory, Inc.



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

Jordan A. Bynon, Project Manager



May 23, 2022

WSP USA

Chris Roy

4600 W. 60th Ave.

Arvada

CO

80003

Project Name - KMG - Houston 17-L, 17-8L, OS A Project Number - 31403177.022.46.05

Attached are your analytical results for KMG - Houston 17-L, 17-8L, OS A received by Origins Laboratory, Inc. May 16, 2022. This project is associated with Origins project number Y205403-01.

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

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PW-N04@22.5	Y205403-01	Soil	May 16, 2022 13:55	05/16/2022 15:25

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.

WSP USA

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Arvada

CO

80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 4205405

Client: WSP

Client Project ID: Houston 17-L, 17-8L
OS A

Checklist Completed by: SH

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 5/10/12

Airbill #: NA

Matrix(s) Received: (Check all that apply): 1 Soil/Solid

Water

Other:

(Describe)

Cooler Number/Temperature: 1 94 °C / °C / °C / °C

Thermometer ID: 1004

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

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

Reviewed by (Project Manager)

Date/Time Reviewed

Origins Laboratory, Inc.

J. Bynon

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.

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

PW-N04@22.5
5/16/2022 1:55:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y205403-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B2E1623	05/16/2022	05/16/2022	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	77.2 %	50-150	"	"	"
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.00692	0.00200	mg/kg	1	B2E1626	05/16/2022	05/17/2022
1,3,5-Trimethylbenzene	0.00590	0.00200	"	"	"	"	"
Gasoline Range Hydrocarbons	2.06	0.200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	129 %	70-130	"	"	"
Surrogate: Toluene-d8	93.1 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	104 %	70-130	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	0.00757	0.000364	0.00067	mg/Kg	1	L616936	05/18/2022	05/19/2022
2-Methylnaphthalene	0.0177	0.000645	0.00067	"	"	"	"	"
Benzo(a)anthracene	0.001	0.000493	0.00067	"	"	"	"	"
Fluorene	0.00703	0.000286	0.00067	"	"	"	"	"
Naphthalene	0.00326	0.000484	0.00067	"	"	"	"	"

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

PW-N04@22.5

5/16/2022 1:55:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y205403-01 (Soil)

PAH by 8270D SIM

Surrogate: 2-Fluorobiphenyl	54.7 %	33-115	L6169 36	05/18/2022	05/19/2022
Surrogate: 4-Terphenyl-d14	70.5 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	55.6 %	29-110	"	"	"

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1623 - EPA 3580										
Blank (B2E1623-BLK1)					Prepared: 05/16/2022 Analyzed: 05/16/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	24		"	24.9		98.2	50-150			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - 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 B2E1623 - EPA 3580

LCS (B2E1623-BS1)

Prepared: 05/16/2022 Analyzed: 05/16/2022

Diesel (C10-C28)	1030	50.0	mg/kg	1000		103	70-130			
Residual Range Organics (C28-C40)	963	200	"	1000		96.3	70-130			
Surrogate: o-Terphenyl	50		"	49.8		99.7	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - 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 B2E1623 - EPA 3580

Matrix Spike (B2E1623-MS1)		Source: Y205402-01			Prepared: 05/16/2022 Analyzed: 05/16/2022					
Diesel (C10-C28)	1010	50.0	mg/kg	1000	ND	101	70-130			
Residual Range Organics (C28-C40)	992	200	"	1000	ND	99.2	70-130			
Surrogate: o-Terphenyl	47		"	49.8		95.0	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - 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 B2E1623 - EPA 3580

Matrix Spike Dup (B2E1623-MSD1)		Source: Y205402-01			Prepared: 05/16/2022 Analyzed: 05/16/2022					
Diesel (C10-C28)	977	50.0	mg/kg	1000	ND	97.7	70-130	3.24	35	
Residual Range Organics (C28-C40)	1040	200	"	1000	ND	104	70-130	5.17	35	
Surrogate: o-Terphenyl	45		"	49.8		90.4	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2E1626 - EPA 5030 (soil)										
Blank (B2E1626-BLK1)					Prepared: 05/16/2022 Analyzed: 05/16/2022					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.0100	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.8	70-130			

Origins Laboratory, Inc.



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WSP USA
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Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

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 B2E1626 - EPA 5030 (soil)										
LCS (B2E1626-BS1)					Prepared: 05/16/2022 Analyzed: 05/16/2022					
1,2,4-Trimethylbenzene	0.103	0.00200	mg/kg	0.100		103	70-130			
1,3,5-Trimethylbenzene	0.103	0.00200	"	0.100		103	70-130			
Benzene	0.103	0.00200	"	0.100		103	70-130			
Ethylbenzene	0.0986	0.00200	"	0.100		98.6	70-130			
Naphthalene	0.103	0.0100	"	0.100		103	70-130			
Toluene	0.0998	0.00200	"	0.100		99.8	70-130			
o-Xylene	0.0991	0.00200	"	0.100		99.1	70-130			
m,p-Xylene	0.208	0.00400	"	0.200		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		108	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

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.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 B2E1626 - EPA 5030 (soil)

Matrix Spike (B2E1626-MS1)		Source: Y205402-01			Prepared: 05/16/2022 Analyzed: 05/16/2022					
1,2,4-Trimethylbenzene	0.0969	0.00200	mg/kg	0.100	ND	96.9	70-130			
1,3,5-Trimethylbenzene	0.0971	0.00200	"	0.100	ND	97.1	70-130			
Benzene	0.0978	0.00200	"	0.100	ND	97.8	70-130			
Ethylbenzene	0.0944	0.00200	"	0.100	ND	94.4	70-130			
Naphthalene	0.0951	0.0100	"	0.100	0.000640	94.5	70-130			
Toluene	0.0955	0.00200	"	0.100	ND	95.5	70-130			
o-Xylene	0.0936	0.00200	"	0.100	ND	93.6	70-130			
m,p-Xylene	0.198	0.00400	"	0.200	ND	99.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.9	70-130			

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.

Jordan A. Bynon, Project Manager

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

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 B2E1626 - EPA 5030 (soil)										
Matrix Spike Dup (B2E1626-MSD1)			Source: Y205402-01		Prepared: 05/16/2022 Analyzed: 05/16/2022					
1,2,4-Trimethylbenzene	0.0997	0.00200	mg/kg	0.100	ND	99.7	70-130	2.89	20	
1,3,5-Trimethylbenzene	0.0988	0.00200	"	0.100	ND	98.8	70-130	1.73	20	
Benzene	0.0998	0.00200	"	0.100	ND	99.8	70-130	2.04	20	
Ethylbenzene	0.0964	0.00200	"	0.100	ND	96.4	70-130	2.10	20	
Naphthalene	0.0997	0.0100	"	0.100	0.000640	99.0	70-130	4.70	20	
Toluene	0.0960	0.00200	"	0.100	ND	96.0	70-130	0.459	20	
o-Xylene	0.0961	0.00200	"	0.100	ND	96.1	70-130	2.64	20	
m,p-Xylene	0.202	0.00400	"	0.200	ND	101	70-130	1.99	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.8	70-130			

Origins Laboratory, Inc.



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WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

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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PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L616936 - 3550B

MSD (L 93334-MSD-L616936)		Source: 93334			Prepared: 05/18/2022 Analyzed: 05/19/2022					
Benzo(a)anthracene	0.117	0.000493	mg/Kg	0.166	<0.000493	70.4	30-130	6.1	30	
Naphthalene	0.0874	0.000484	"	0.166	<0.000484	52.6	30-130	6.6	30	
Fluorene	0.104	0.000286	"	0.166	<0.000286	62.6	30-130	1.9	30	
2-Methylnaphthalene	0.097	0.000645	"	0.166	<0.000645	58.4	30-130	5.1	30	
1-Methylnaphthalene	0.0846	0.000364	"	0.166	<0.000364	50.9	30-130	2.7	30	
Surrogate: Nitrobenzene-d5	59.6		"	0.332	211	59.6	29-110			
Surrogate: 4-Terphenyl-d14	74		"	0.332	238	74	33-122			
Surrogate: 2-Fluorobiphenyl	55.1		"	0.332	200	55.1	33-115			
MS (L 93334-MS-L616936)		Source: 93334			Prepared: 05/18/2022 Analyzed: 05/19/2022					
Naphthalene	0.0818	0.000484	mg/Kg	0.163	<0.000484	50.1	30-130			
Fluorene	0.102	0.000286	"	0.163	<0.000286	62.5	30-130			
2-Methylnaphthalene	0.0921	0.000645	"	0.163	<0.000645	56.5	30-130			
1-Methylnaphthalene	0.087	0.000364	"	0.163	<0.000364	53.3	30-130			
Benzo(a)anthracene	0.11	0.000493	"	0.163	<0.000493	67.4	30-130			
Surrogate: 2-Fluorobiphenyl	49.3		"	0.326	200	49.3	33-115			
Surrogate: Nitrobenzene-d5	53		"	0.326	211	53	29-110			
Surrogate: 4-Terphenyl-d14	71.7		"	0.326	238	71.7	33-122			
LCS (LCS-L616936)					Prepared: 05/18/2022 Analyzed: 05/19/2022					
Fluorene	0.125	0.000286	mg/Kg	0.167		74.8	30-130			
Naphthalene	0.101	0.000484	"	0.167		60.4	30-130			

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.

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Chris Roy
Project Number: 31403177.022.46.05
Project: KMG - Houston 17-L, 17-8L, OS A

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L616936 - 3550B

LCS (LCS-L616936)

Prepared: 05/18/2022 Analyzed: 05/19/2022

Benzo(a)anthracene	0.148	0.000493	mg/Kg	0.167		88.6	30-130			
2-Methylnaphthalene	0.114	0.000645	"	0.167		68.2	30-130			
1-Methylnaphthalene	0.105	0.000364	"	0.167		62.8	30-130			
Surrogate: 4-Terphenyl-d14	84		"	0.333		84	33-122			
Surrogate: 2-Fluorobiphenyl	68.4		"	0.333		68.4	33-115			
Surrogate: Nitrobenzene-d5	68.4		"	0.333		68.4	29-110			

LRB (LRB-L616936)

Prepared: 05/18/2022 Analyzed: 05/19/2022

1-Methylnaphthalene	ND	0.00067	mg/Kg				-			
2-Methylnaphthalene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Naphthalene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	54		"	0.333		54	29-110			
Surrogate: 2-Fluorobiphenyl	54.3		"	0.333		54.3	33-115			
Surrogate: 4-Terphenyl-d14	63.9		"	0.333		63.9	33-122			

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.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Chris Roy

Project Number: 31403177.022.46.05

Project: KMG - Houston 17-L, 17-8L, OS A

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 on a wet weight basis.

Origins Laboratory, Inc.



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



June 02, 2022

WSP USA

Rob Rebel

4600 W. 60th Ave.

Arvada

CO

80003

Project Name - KMG - Houston 17-76, 17-8L OSA Project Number - 314033177.022.46

Attached are your analytical results for KMG - Houston 17-76, 17-8L OSA received by Origins Laboratory, Inc. May 25, 2022. This project is associated with Origins project number Y205649-01.

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

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PW-N05@22.5'	Y205649-01	Soil	May 25, 2022 14:25	05/25/2022 16:10

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

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page 1 of 1

ORIGINS
LABORATORY, INC

Client: WSP USA

Address:

Telephone Number:

Email Address: KMG Team

Project Manager: Rob Rebel

Project Name: Houston 17-76, 17-8L OSA

Project Number: 314033177.022.46

Samples Collected By: Glen Thompson

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis			Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa	Other	1 methyl naphthalene	2 methyl naphthalene	
9N-105-22 S ¹	5-25-22	1425	2	X					X			X	X	1
														2
														3
														4
														5
														6
														7
														8
														9
														10

Relinquished By:

Relinquished By:

Date: 5-25-22

Date: 5/25/22

Time: 1610

Time: 1610

Received By:

Received By:

Turnaround Time: Same Day ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☐

Temp Received: 9.3

Date Results Needed:

Origins Laboratory, Inc.

J. Bynon

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WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 4205469

Client: WSP

Client Project ID: HOUSTON 17-76 17 8L OSA

Checklist Completed by: AKH

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 5/25/22

Airbill #: AA

Matrix(s) Received: (Check all that apply): 1 Soil/Solid Water Other:

Cooler Number/Temperature: 1 19.3 °C °C °C (Describe) °C

Thermometer ID: W24

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

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

Reviewed by (Project Manager) Kenny

Date/Time Reviewed 5/25/22

Origins Laboratory, Inc.

J. Bynon

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WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Rob Rebel
Project Number: 314033177.022.46
Project: KMG - Houston 17-76, 17-8L OSA

PW-N05@22.5'
5/25/2022 2:25:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y205649-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2E2523	05/25/2022	05/26/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 104 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.00274	0.00200	mg/kg	1	B2E2522	05/25/2022	05/26/2022	
1,3,5-Trimethylbenzene	0.00228	0.00200	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 108 % 70-130 " " "
Surrogate: Toluene-d8 100 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

PAH by 8270D SIM

1-Methylnaphthalene	0.00418	0.000364	0.00067	mg/Kg	1	L618759	05/31/2022	05/31/2022	
2-Methylnaphthalene	0.00744	0.000645	0.00067	"	"	"	"	"	
Benzo(a)anthracene	0.000735	0.000493	0.00067	"	"	"	"	"	
Fluorene	0.00137	0.000286	0.00067	"	"	"	"	"	
Naphthalene	0.000501	0.000484	0.00067	"	"	"	"	"	J

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

PW-N05@22.5'

5/25/2022 2:25:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y205649-01 (Soil)

PAH by 8270D SIM

Surrogate: 2-Fluorobiphenyl	67.2 %	33-115	L6187 59	05/31/2022	05/31/2022
Surrogate: 4-Terphenyl-d14	96.7 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	60.2 %	29-110	"	"	"

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WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Rob Rebel
Project Number: 314033177.022.46
Project: KMG - Houston 17-76, 17-8L OSA

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 B2E2522 - EPA 5030 (soil)										
Blank (B2E2522-BLK1)					Prepared: 05/25/2022 Analyzed: 05/25/2022					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.0100	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.6	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.2	70-130			

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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

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 B2E2522 - EPA 5030 (soil)

LCS (B2E2522-BS1)

Prepared: 05/25/2022 Analyzed: 05/25/2022

1,2,4-Trimethylbenzene	0.103	0.00200	mg/kg	0.100		103	70-130			
1,3,5-Trimethylbenzene	0.102	0.00200	"	0.100		102	70-130			
Benzene	0.0950	0.00200	"	0.100		95.0	70-130			
Ethylbenzene	0.105	0.00200	"	0.100		105	70-130			
Naphthalene	0.104	0.0100	"	0.100		104	70-130			
Toluene	0.101	0.00200	"	0.100		101	70-130			
o-Xylene	0.103	0.00200	"	0.100		103	70-130			
m,p-Xylene	0.210	0.00400	"	0.200		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		105	70-130			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

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 B2E2522 - EPA 5030 (soil)

Matrix Spike (B2E2522-MS1)		Source: Y205643-21			Prepared: 05/25/2022 Analyzed: 05/25/2022					
1,2,4-Trimethylbenzene	0.0831	0.00200	mg/kg	0.100	ND	83.1	70-130			
1,3,5-Trimethylbenzene	0.0818	0.00200	"	0.100	ND	81.8	70-130			
Benzene	0.0830	0.00200	"	0.100	ND	83.0	70-130			
Ethylbenzene	0.0843	0.00200	"	0.100	ND	84.3	70-130			
Naphthalene	0.102	0.0100	"	0.100	0.00152	101	70-130			
Toluene	0.0826	0.00200	"	0.100	ND	82.6	70-130			
o-Xylene	0.0835	0.00200	"	0.100	ND	83.5	70-130			
m,p-Xylene	0.167	0.00400	"	0.200	ND	83.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		107	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

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 B2E2522 - EPA 5030 (soil)

Matrix Spike Dup (B2E2522-MSD1)		Source: Y205643-21			Prepared: 05/25/2022 Analyzed: 05/25/2022					
1,2,4-Trimethylbenzene	0.0815	0.00200	mg/kg	0.100	ND	81.5	70-130	1.95	20	
1,3,5-Trimethylbenzene	0.0794	0.00200	"	0.100	ND	79.4	70-130	2.93	20	
Benzene	0.0794	0.00200	"	0.100	ND	79.4	70-130	4.48	20	
Ethylbenzene	0.0805	0.00200	"	0.100	ND	80.5	70-130	4.51	20	
Naphthalene	0.100	0.0100	"	0.100	0.00152	98.6	70-130	2.23	20	
Toluene	0.0798	0.00200	"	0.100	ND	79.8	70-130	3.47	20	
o-Xylene	0.0803	0.00200	"	0.100	ND	80.3	70-130	3.86	20	
m,p-Xylene	0.160	0.00400	"	0.200	ND	80.1	70-130	3.86	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		108	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

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 B2E2523 - EPA 3550B

Blank (B2E2523-BLK1)

Prepared: 05/25/2022 Analyzed: 05/25/2022

Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	19		"	24.9		76.0	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Rob Rebel
Project Number: 314033177.022.46
Project: KMG - Houston 17-76, 17-8L OSA

Extractable Petroleum Hydrocarbons by 8015D - 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 B2E2523 - EPA 3550B

LCS (B2E2523-BS1)

Prepared: 05/25/2022 Analyzed: 05/25/2022

Diesel (C10-C28)	833	50.0	mg/kg	1000		83.3	70-130			
Residual Range Organics (C28-C40)	810	200	"	1000		81.0	70-130			
Surrogate: o-Terphenyl	38		"	49.8		77.1	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Rob Rebel
Project Number: 314033177.022.46
Project: KMG - Houston 17-76, 17-8L OSA

Extractable Petroleum Hydrocarbons by 8015D - 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 B2E2523 - EPA 3550B

Matrix Spike (B2E2523-MS1)		Source: Y205643-02			Prepared: 05/25/2022 Analyzed: 05/25/2022					
Diesel (C10-C28)	820	50.0	mg/kg	1000	ND	82.0	70-130			
Residual Range Organics (C28-C40)	817	200	"	1000	ND	81.7	70-130			QM-07
Surrogate: o-Terphenyl	36		"	49.8		73.1	50-150			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

Extractable Petroleum Hydrocarbons by 8015D - 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 B2E2523 - EPA 3550B

Matrix Spike Dup (B2E2523-MSD1)		Source: Y205643-02			Prepared: 05/25/2022 Analyzed: 05/25/2022					
Diesel (C10-C28)	793	50.0	mg/kg	1000	ND	79.3	70-130	3.32	35	
Residual Range Organics (C28-C40)	799	200	"	1000	ND	79.9	70-130	2.31	35	QM-07
Surrogate: o-Terphenyl	41		"	49.8		83.3	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

Extractable Petroleum Hydrocarbons by 8015D - 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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PAH by 8270D SIM - Quality Control

Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L618759 - 3550B

MSD (L 98233-MSD-L618759)		Source: 98233			Prepared: 05/31/2022 Analyzed: 05/31/2022					
Benzo(a)anthracene	0.116	0.000493	mg/Kg	0.163	<0.000493	71.1	30-130	5.8	30	
Naphthalene	0.092	0.000484	"	0.163	<0.000484	56.4	30-130	7.1	30	
Fluorene	0.112	0.000286	"	0.163	<0.000286	68.7	30-130	6	30	
2-Methylnaphthalene	0.0937	0.000645	"	0.163	<0.000645	57.4	30-130	9.4	30	
1-Methylnaphthalene	0.0943	0.000364	"	0.163	<0.000364	57.8	30-130	8.8	30	
Surrogate: Nitrobenzene-d5	55		"	0.327	202	55	29-110			
Surrogate: 4-Terphenyl-d14	95.1		"	0.327	331	95.1	33-122			
Surrogate: 2-Fluorobiphenyl	61.4		"	0.327	232	61.4	33-115			
MS (L 98233-MS-L618759)		Source: 98233			Prepared: 05/31/2022 Analyzed: 05/31/2022					
Naphthalene	0.0988	0.000484	mg/Kg	0.166	<0.000484	59.5	30-130			
Fluorene	0.119	0.000286	"	0.166	<0.000286	71.6	30-130			
2-Methylnaphthalene	0.103	0.000645	"	0.166	<0.000645	62	30-130			
1-Methylnaphthalene	0.103	0.000364	"	0.166	<0.000364	62	30-130			
Benzo(a)anthracene	0.123	0.000493	"	0.166	<0.000493	74	30-130			
Surrogate: 2-Fluorobiphenyl	70.9		"	0.331	232	70.9	33-115			
Surrogate: Nitrobenzene-d5	60.7		"	0.331	202	60.7	29-110			
Surrogate: 4-Terphenyl-d14	101		"	0.331	331	101	33-122			
LCS (LCS-L618759)		Prepared: 05/31/2022 Analyzed: 05/31/2022								
Fluorene	0.116	0.000286	mg/Kg	0.167		69.4	30-130			
Naphthalene	0.0942	0.000484	"	0.167		56.4	30-130			

Origins Laboratory, Inc.



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WSP USA
4600 W. 60th Ave.
Arvada CO 80003

Rob Rebel
Project Number: 314033177.022.46
Project: KMG - Houston 17-76, 17-8L OSA

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L618759 - 3550B

LCS (LCS-L618759)

Prepared: 05/31/2022 Analyzed: 05/31/2022

Benzo(a)anthracene	0.12	0.000493	mg/Kg	0.167		71.8	30-130			
2-Methylnaphthalene	0.0971	0.000645	"	0.167		58.1	30-130			
1-Methylnaphthalene	0.0975	0.000364	"	0.167		58.3	30-130			
Surrogate: 4-Terphenyl-d14	118		"	0.333		118	33-122			
Surrogate: 2-Fluorobiphenyl	80.1		"	0.333		80.1	33-115			
Surrogate: Nitrobenzene-d5	65.1		"	0.333		65.1	29-110			

LRB (LRB-L618759)

Prepared: 05/31/2022 Analyzed: 05/31/2022

1-Methylnaphthalene	ND	0.00067	mg/Kg				-			
2-Methylnaphthalene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Naphthalene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	60.3		"	0.333		60.3	29-110			
Surrogate: 2-Fluorobiphenyl	68.4		"	0.333		68.4	33-115			
Surrogate: 4-Terphenyl-d14	91.5		"	0.333		91.5	33-122			

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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.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Rob Rebel

Project Number: 314033177.022.46

Project: KMG - Houston 17-76, 17-8L OSA

Notes and Definitions

U Sample is Non-Detect.

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

J Estimated Value. Analyte below reported quantitation limit.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

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Jordan A. Bynon, Project Manager