

Table 1
Soil Sampling Results
COGCC Form 27 Sampling and Mapping
Red Mesa 12 Well Plugging Project
Colorado Oil and Gas Conservation Commission

Parameter	Ferguson No. 2	Ferguson No. 2	Ferguson No. 2	Ferguson No. 2	Ferguson No. 2	COGCC Table 915-1 Standard	Units
	(OWP) F-12 SS01	(OWP) F-12 SS02	(OWP) F-12 SS03	(OWP) F-12 SS04	(OWP) F-12 SS05		
	6/17/2021	6/17/2021	6/17/2021	6/17/2021	6/17/2021		
Sample Location	Wellhead	Pumping Unit	Flowline	Flowline	Flowline	NA	NA
Latitude/Longitude	37.066757/-108.130372	37.066804/-108.130344	37.066757/-108.130292	37.0669/-108.130298	37.066975/-108.130335	NA	NA
Depth	6.0	0-0.5	3.0	2.5	3.0	NA	feet bgs
PID	23.8	2.8	44.6	5.7	3.6	NA	ppm
Conductivity	1.550	0.554	1.430	2.210	1.630	<4	mmhos/cm
pH	8.20	7.79	7.52	7.18	7.48	6-8.3	pH units
SAR	1.70	0.90	1.99	2.33	1.90	<6	no units
Calcium	188	68.7	104	209	158	NA	mg/L
Magnesium	43.1	13.7	45.6	74.2	41.5	NA	mg/L
Sodium	99.4	31.3	96.9	154	104	NA	mg/L
Arsenic	3.48	2.69	2.90	2.44	2.82	0.68	mg/kg
Barium	280	426	394	298	205	15,000	mg/kg
Cadmium	<5.00	<5.00	<5.00	<5.00	<5.00	71	mg/kg
Total Chromium	11.1	5.86	12.2	10.9	11.1	NA	mg/kg
Copper	24.7	19.0	15.1	18.0	15.5	3,100	mg/kg
Lead	23.2	23.8	<10.0	<10.0	<10.0	400	mg/kg
Nickel	9.96	<5.00	11.3	9.99	9.80	1,500	mg/kg
Selenium	<20.0	<20.0	<20.0	<20.0	<20.0	390	mg/kg
Silver	<1.00	<1.00	<1.00	<1.00	<1.00	390	mg/kg
Zinc	163	33.1	31.2	27.0	28.4	23,000	mg/kg
Boron	<1.20	<1.20	<1.20	1.42	<1.20	2	mg/L
TPH (GRO)	<10.0	<10.0	<10.0	<10.0	<10.0	NA	mg/kg
TPH (DRO)	409	65.2	<10.0	122	<10.0	NA	mg/kg
TPH (EXT DRO)	314	20.7	<10.0	30.8	<10.0	NA	mg/kg
Total TPH	723	85.9	<30.0	152.8	<30.0	500	mg/kg
Benzene	<0.0250	<0.0250	<0.0250	<0.0250	0.0252	1.2	mg/kg
Toluene	<0.0250	<0.0250	<0.0250	<0.0250	0.0974	490	mg/kg
Ethylbenzene	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	5.8	mg/kg
Total Xylenes	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	58	mg/kg
1,3,5-trimethylbenzene	0.0922	<0.0250	<0.0250	<0.0250	<0.0250	27	mg/kg
1,2,4-trimethylbenzene	0.0404	<0.0250	<0.0250	<0.0250	<0.0250	30	mg/kg
Naphthalene	0.0517	<0.0250	<0.0250	0.0668	<0.0250	2	mg/kg
2-methylnaphthalene	0.052	<0.023	<0.023	0.160	<0.023	24	mg/kg
1-methylnaphthalene	0.046	<0.016	<0.016	0.141	<0.016	18	mg/kg
Acenaphthene	<0.024	<0.024	<0.024	<0.024	<0.024	360	mg/kg
Fluorene	0.048	<0.014	<0.014	0.057	<0.014	240	mg/kg
Anthracene	0.033**	<0.017	<0.017	<0.017	<0.017	1,800	mg/kg
Fluoranthene	<0.019	<0.019	<0.019	<0.019	<0.019	240	mg/kg
Pyrene	<0.013	<0.013	<0.013	<0.013	<0.013	180	mg/kg
Benzo(a)anthracene	<0.023	<0.023	<0.023	<0.019	<0.023	1.1	mg/kg
Chrysene	<0.017	<0.017	<0.017	0.039**	<0.017	110	mg/kg
Benzo(b)fluoranthene	<0.019	<0.019	<0.019	<0.019	<0.019	1.1	mg/kg
Benzo(k)fluoranthene	<0.016	<0.016	<0.016	<0.016	<0.016	11	mg/kg
Benzo(a)pyrene	<0.018	<0.018	<0.018	<0.018	<0.018	0.11	mg/kg
Indeno(1,2,3-cd)pyrene	<0.017	<0.017	<0.017	<0.017	<0.017	1.1	mg/kg
Dibenz(a,h)anthracene	<0.019	<0.019	<0.019	<0.019	<0.019	0.11	mg/kg

Notes:

PID - Photoionization Detector
SAR - Sodium Adsorption Ratio
BTEX - Benzene, Toluene, Ethylbenzene, & Total Xylenes
TPH - Total Petroleum Hydrocarbons
GRO - Gasoline Range Organics
DRO - Diesel Range Organics
EXT - Extended
NA - Not Applicable
ppm - parts per million

bgs - below ground surface
mmhos/cm - millios per centimeter
mg/L - milligrams per liter
mg/kg - milligrams per kilogram
COGCC - Colorado Oil & Gas Conservation Commission

* - Laboratory detection limit exceeds COGCC Standard
** - Value detected below the reporting limit; result is an estimate.
Bold values exceed COGCC Standard
Values reported below the laboratory detection limit are considered zero in Total TPH calculations.

Table 1
Soil Sampling Results
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Red Mesa 12 Well Plugging Project
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Parameter	Ferguson No. 2	Ferguson No. 2	Ferguson No. 2	Background (Ferguson	COGCC Table 915-1 Standard	Units
	(OWP) F-12 SS06	(OWP) F-12 SS07	(OWP) F-12 SS08	No. 2 (OWP) F-12 SS09)		
	6/17/2021	6/17/2021	6/17/2021	6/17/2021		
Sample Location	Meter House	Flowline	AST	Background	NA	NA
Latitude/Longitude	37.066832/-108.130226	37.06685/-108.130341	37.06704/-108.130204	37.066988/-108.129035	NA	NA
Depth	3.5	3.0	0-0.5	0-0.67	NA	feet bgs
PID	0.4	1,825	1,477	3.8	NA	ppm
Conductivity	0.688	0.909	0.641	0.257	<4	mmhos/cm
pH	7.51	7.53	7.35	6.41	6-8.3	pH units
SAR	1.24	1.47	0.52	0.35	<6	no units
Calcium	66.0	90.0	83.1	34.3	NA	mg/L
Magnesium	20.9	26.9	14.7	8.66	NA	mg/L
Sodium	45.0	61.8	19.4	8.79	NA	mg/L
Arsenic	2.47	2.71	7.27	2.52	0.68	mg/kg
Barium	288	190	176	149	15,000	mg/kg
Cadmium	<5.00	<5.00	<5.00	<5.00	71	mg/kg
Total Chromium	10.4	10.4	11.9	11.2	NA	mg/kg
Copper	13.6	13.9	38.7	15.7	3,100	mg/kg
Lead	<10.0	<10.0	<10.0	<10.0	400	mg/kg
Nickel	9.33	9.60	8.62	8.95	1,500	mg/kg
Selenium	<20.0	<20.0	<20.0	<20.0	390	mg/kg
Silver	<1.00	<1.00	<1.00	<1.00	390	mg/kg
Zinc	25.8	28.1	34.9	29.8	23,000	mg/kg
Boron	<1.20	<1.20	<1.20	<1.20	2	mg/L
TPH (GRO)	<10.0	20,300	8,090	<10.0	NA	mg/kg
TPH (DRO)	<10.0	59,900	35,400	<10.0	NA	mg/kg
TPH (EXT DRO)	<10.0	9,450	5,430	<10.0	NA	mg/kg
Total TPH	<30.0	89,650	48,920	<30.0	500	mg/kg
Benzene	<0.0250	6.18	16.1	0.0661	1.2	mg/kg
Toluene	0.0590	86.4	93.5	0.689	490	mg/kg
Ethylbenzene	<0.0250	41.3	29.1	0.0954	5.8	mg/kg
Total Xylenes	<0.0750	329	203	0.259	58	mg/kg
1,3,5-trimethylbenzene	<0.0250	59.8	26.8	<0.0250	27	mg/kg
1,2,4-trimethylbenzene	<0.0250	190	86.2	0.0307	30	mg/kg
Naphthalene	<0.0250	44.4	21.5	<0.0250	2	mg/kg
2-methylnaphthalene	<0.023	104	48.8	<0.023	24	mg/kg
1-methylnaphthalene	<0.016	79.4	37.9	<0.016	18	mg/kg
Acenaphthene	<0.024	<2.35	<1.18	<0.024	360	mg/kg
Fluorene	<0.014	10.5	5.23	<0.014	240	mg/kg
Anthracene	<0.017	<1.72	<0.858	<0.017	1,800	mg/kg
Fluoranthene	<0.019	<1.85	<0.926	<0.019	240	mg/kg
Pyrene	<0.013	<1.32	<0.658	<0.013	180	mg/kg
Benzo(a)anthracene	<0.023	<2.30*	<1.15*	<0.023	1.1	mg/kg
Chrysene	<0.017	5.42	<0.860	<0.017	110	mg/kg
Benzo(b)fluoranthene	<0.019	<1.92*	<0.958	<0.019	1.1	mg/kg
Benzo(k)fluoranthene	<0.016	<1.57	<0.786	<0.016	11	mg/kg
Benzo(a)pyrene	<0.018	<1.82*	<0.908*	<0.018	0.11	mg/kg
Indeno(1,2,3-cd)pyrene	<0.017	<1.68*	<0.840	<0.017	1.1	mg/kg
Dibenz(a,h)anthracene	<0.019	<1.86*	<0.928*	<0.019	0.11	mg/kg

Notes:

PID - Photoionization Detector
SAR - Sodium Adsorption Ratio
BTEX - Benzene, Toluene, Ethylbenzene, & Total Xylenes
TPH - Total Petroleum Hydrocarbons
GRO - Gasoline Range Organics
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