

**Soil Sampling Results**  
**Tiffany Gathering**  
**BP America Production Company**

Parameter	SS01 4/8/2020 Point of release	SS02 4/8/2020 Flow path within field	SS03 4/8/2020 Flow path within wetland area	SS04 4/8/2020 Background	SS05 4/24/2020 Upgradient within wetland	SS06 4/24/2020 Wetland area downgradient of flow path	SS07 4/24/2020 Point of release excavation	COGCC Table 910	Units
Depth	0-8	0-8	0-8	0-8	0-8	0-8	66-74	NA	inches bgs
Field, PID	0.8	1.4	1.3	2.2	2.1	6.4	0.0	NA	ppm
Conductivity	3.130	2.960	<b>12.800</b>	0.475	1.960	1.390	-	<4 or 2x BG	mmhos/cm
pH	7.85	6.93	7.58	7.36	<b>4.70</b>	6.85	-	6-9	pH units
SAR	<b>20.4</b>	8.24	<b>50.9</b>	0.21	1.20	1.15	1.01	<12	no units
Calcium	60.2	166	194	70.0	306	197	48.5	NA	mg/L
Magnesium	7.83	23.3	40.9	9.91	46.6	26.8	10.6	NA	mg/L
Sodium	634	428	2,990	7.06	85.2	65.0	29.7	NA	mg/L
Arsenic	<b>2.05</b>	<b>4.47</b>	<b>3.78</b>	<b>21.2</b>	<b>2.74</b>	<b>7.86</b>	<b>1.54</b>	0.39	mg/kg
Barium	536	445	443	277	-	-	-	15,000	mg/kg
Cadmium	<5.00	<5.00	<5.00	<5.00	-	-	-	70	mg/kg
Total Chromium	14.4	12.3	9.59	6.48	-	-	-	23 or 120,000*	mg/kg
Copper	17.2	13.9	12.4	12.5	-	-	-	3,100	mg/kg
Lead	15.5	12.6	10.2	13.3	-	-	-	400	mg/kg
Nickel	15.6	12.4	9.12	12.0	-	-	-	1,600	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	59.1	53.6	58.3	60.0	-	-	-	23,000	mg/kg
Mercury	<0.0491	<0.0496	<0.0791	0.145	-	-	-	23	mg/kg
Boron	1.83	1.28	<b>5.94</b>	<1.20	<1.20	<1.20	-	2	mg/L
Benzene	<0.050	-	<0.050	-	-	-	-	0.17	mg/kg
Toluene	0.088	-	<0.050	-	-	-	-	85	mg/kg
Ethylbenzene	<0.050	-	<0.050	-	-	-	-	100	mg/kg
Total Xylenes	<0.150	-	<0.150	-	-	-	-	175	mg/kg
Total BTEX	<0.300	-	<0.300	-	-	-	-	NA	mg/kg
TPH (GRO)	<10.0	-	<10.0	-	-	-	-	NA	mg/kg
TPH (DRO)	<10.0	-	<10.0	-	-	-	-	NA	mg/kg
TPH (EXT DRO)	<10.0	-	<10.0	-	-	-	-	NA	mg/kg
Total TPH	<30.0	-	<30.0	-	-	-	-	500	mg/kg
Naphthalene	<0.040	-	<0.040	-	-	-	-	23	mg/kg
Acenaphthene	<0.040	-	<0.040	-	-	-	-	1,000	mg/kg
Fluorene	<0.040	-	<0.040	-	-	-	-	1,000	mg/kg
Anthracene	<0.040	-	<0.040	-	-	-	-	1,000	mg/kg
Fluoranthene	<0.040	-	<0.040	-	-	-	-	1,000	mg/kg
Pyrene	<0.040	-	<0.040	-	-	-	-	1,000	mg/kg
Benzo(a)anthracene	<0.040	-	<0.040	-	-	-	-	0.22	mg/kg
Chrysene	<0.040	-	<0.040	-	-	-	-	22	mg/kg
Benzo(b)fluoranthene	<0.040	-	<0.040	-	-	-	-	0.22	mg/kg
Benzo(k)fluoranthene	<0.040	-	<0.040	-	-	-	-	2.2	mg/kg
Benzo(a)pyrene	<0.040	-	<0.040	-	-	-	-	0.022	mg/kg
Indeno(1,2,3-cd)pyrene	<0.040	-	<0.040	-	-	-	-	0.22	mg/kg
Dibenzo(a,h)anthracene	<0.040	-	<0.040	-	-	-	-	0.022	mg/kg

**Notes:** SS04 and SS05 collected as background samples.

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

BG - Background

bgs - below ground surface

ppm - parts per million

mmhos/cm - millihos per centimeter

mg/L - milligrams per liter

mg/kg - milligrams per kilogram

"-" - Indicates no data

\* - Chromium (VI) standard is 23 mg/kg and  
chromium (III) standard is 120,000 mg/kg.

COGCC - Colorado Oil & Gas Conservation Commission

**Bold** values exceed COGCC Table 910 Standard