

Duncan Ranch 11-89-36 #3-4
API #05-081-07799
Cuttings Analyses
July 6, 2016

Parameter	ACZ Results Cuttings 1	ACZ Results Cuttings 2	Table 910-1 Limit
Organic Compounds in Soil			
TPH-Diesel Range Organics - C10 to C28	1,790 mg/Kg	1,620 mg/Kg	500 mg/Kg
Benzene	0.001 mg/Kg	<0.001 mg/Kg	0.17 mg/Kg
Toluene	0.006 mg/Kg	0.003 mg/Kg	85 mg/Kg
Ethylbenzene	0.002 mg/Kg	<0.001 mg/Kg	100 mg/Kg
Xylenes (total) – (mp + o)	0.031 mg/Kg	0.014 mg/Kg	175 mg/Kg
Acenaphthene	<0.5 mg/Kg	---	1,000 mg/Kg
Anthracene	<0.5 mg/Kg	---	1,000 mg/Kg
Benz(a)anthracene	<0.5 mg/Kg	---	0.22 mg/Kg
Benzo(b)fluoranthene	<0.5 mg/Kg	---	0.22 mg/Kg
Benzo(k)fluoranthene	<0.5 mg/Kg	---	2.2 mg/Kg
Benzo(k)pyrene	<0.5 mg/Kg	---	0.022 mg/Kg
Chrysene	<0.5 mg/Kg	---	22 mg/Kg
Dibenzo(a,h)anthracene	<0.5 mg/Kg	---	0.022 mg/Kg
Fluoranthene	<0.5 mg/Kg	---	1,000 mg/Kg
Fluorene	0.7 mg/Kg	---	1,000 mg/Kg
Indeno(1,2,3,c,d)pyrene	<0.5 mg/Kg	---	0.22 mg/Kg
Naphthalene	0.5 mg/Kg	---	23 mg/Kg
Pyrene	<0.5 mg/Kg	---	1,000 mg/Kg
Inorganics in Soils			
Electrical conductivity (EC)	11.8	---	<4mmhos/cm
Sodium Adsorption Ratio (SAR)	5.2	---	<12
pH	7.9	---	6-9
Metals in Soils			
Arsenic	2.3 mg/Kg	---	0.39 mg/Kg
Barium (LDNR True Total Barium)	7,750 mg/Kg	---	15,000 mg/Kg
Boron (Hot Water Soluble)	<1 mg/Kg	---	2 mg/Kg
Cadmium	<0.5 mg/Kg	---	70 mg/Kg
Chromium (III)	8 mg/Kg	---	120,000 mg/Kg
Chromium (VI)	<1 mg/Kg	---	23 mg/Kg
Copper	20 mg/Kg	---	3,100 mg/Kg
Lead (inorganic)	8 mg/Kg	---	400 mg/Kg
Mercury	0.0382 mg/Kg	---	23 mg/Kg
Nickel (soluble salts)	9.2 mg/Kg	---	1,600 mg/Kg
Selenium	<5 mg/Kg	---	390 mg/Kg
Silver	<1 mg/Kg	---	390 mg/Kg
Zinc	25 mg/Kg	---	23,000 mg/Kg
Liquid Hydrocarbons in Soils			
Liquid hydrocarbons including condensate and oil	None detected visually	None detected visually	Below detection level

<value>: above COGCC Table 910-1 limit