



Memorandum, September 8, 2011

To: Tom Barnes, ESA

From: David P. Groeneveld, Ph.D.

RE: Results from Soil Samples Acquired from Cadiz Playa

Attached are the results for two soil samples obtained from Cadiz Playa. The purpose for this sampling was to determine the chemistry of this playa in comparison to the Bristol Playa and with relationship to the potential for Cadiz Playa to become a dust source if the water table were to decline. Sample 1 was taken near the north end of the Tetra Chemical workings and Sample 2 was taken from the region of the south end of these workings.

The results show a playa soil that is dominated by sodium calcium cations and chloride ions. Sulfate is present at higher concentrations than at the Bristol Playa. Carbonate and bicarbonate are present at very low concentrations. The relative concentration and species of salts confirms that dust releases such as occur at Owens Lake will not occur from Cadiz Playa.

As described in other reporting, dust that arises from either Bristol or Cadiz is due to the energy imparted by saltating sand grains and this process will not be affected if depth to water changes within the region.



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Date: September 8, 2011

Submitted by: HydroBio

Report To: Scott Murray

Report #: 6641368

Date Received: September 1, 2011

**SOIL ANALYSIS**

Sender ID	Lab ID	Ca %	Na %	SO <sub>4</sub> %	Cl %	Carbonate %	Bicarbonate %
Cadiz 1	950	0.77	8.38	1.25	3.27	0.044	0.39
Cadiz 2	951	1.16	4.34	1.00	1.09	ND	0.017

\* Sample dissolved in DI water on a 5:1 ratio and analyzed on ICP.

\*\*Probe analysis

\*\*\*Methods of Analysis for Soils, Plants and Waters. Chapman and Pratt, 1961. p22.

ND means None Detected