

## **Central Helmand Drain Water Tests**

The farmers in both Nad-i-Ali and Marja have been pumping water from the major drains for irrigation for several years, a practice questioned by various foreign irrigation experts over time. On January 8, 2003, R. B. Scott collected samples of drain water in Nad-i-Ali at the point where Main Drains #1 and #2 exit the irrigated area. The samples were delivered to the Colorado State University Soil, Water & Plant Testing Laboratory in Ft. Collins, Colorado on February 27, 2003 for testing. The results of the tests for each sample are attached.

Richard Bonner Scott  
2598 Big Thompson  
Drake CO 80515

Date Received: 02/27/2003  
Date Reported: 03/25/2003

LAB # W1111 .1



COLORADO STATE UNIVERSITY  
Soil, Water & Plant Testing Laboratory  
Room A319, NESB  
Fort Collins, CO 80523-1120  
Phone: 970-491-5061 / Fax: 970-491-2930

Billing: 51319324

IRRIGATION WATER ANALYSIS

"Routine Package"

SOURCE: Afghanistan Drainage Ditch

Deep Drain # 1 I-8-03 Nad-I-All

	Results	Results
Conductivity	959	$\mu\text{mhos/cm}$ (E.C. x 1,000,000)
pH	8.1	

	mg/L	meq/L
Calcium	102.6	5.12
Magnesium	27.5	2.26
Sodium	41.9	1.82
Potassium	0.8	0.02
Carbonate	<0.1	<0.1
Bicarbonate	140.3	2.30
Chloride	25.9	0.73
Sulfate	297	6.18
Nitrate	3.5	0.06
Nitrate-Nitrogen	0.8	0.06
Boron	0.19	
Pounds of Sulfate per acre foot	264	

Pounds of Nitrate per acre foot 2.15

SAR 0.9 Salinity Hazard Medium Sodium Hazard Low

**COMMENTS:** This water is classified as medium salinity hazard irrigation water. It should not cause problems due to salt accumulation in the soil if a moderate amount of leaching occurs and soil drainage is adequate.

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Billing: *SB19324*

LAB # W1112.1

IRRIGATION WATER ANALYSIS

SOURCE: Afghanistan Drainage Ditch

*Deep Drain # 2 I-8-03 Nad-I-Ali*

"Routine Package"

Results	Results
Conductivity	1160 $\mu$ mhos/cm (E.C. x 1,000,000)
pH	7.4

	mg/L	meq/L
Calcium	126.7	6.32
Magnesium	47.2	3.88
Sodium	88.4	3.85
Potassium	2	0.05
Carbonate	<0.1	<0.1
Bicarbonate	189	3.10
Chloride	72.6	2.05
Sulfate	421	8.77
Nitrate	8.3	0.13
Nitrate-Nitrogen	1.9	0.14
Boron	0.34	
Pounds of Sulfate per acre foot	374	

Pounds of Nitrate per acre foot 5.10

SAR 1.7 Salinity Hazard Medium Sodium Hazard Low

**COMMENTS:** This water is classified as medium salinity hazard irrigation water. It should not cause problems due to salt accumulation in the soil if a moderate amount of leaching occurs and soil drainage is adequate.