

UNITED STATES GOVERNMENT

# Memorandum

TO : The Files

DATE: April 24, 1973

FROM : Adrian K. Long, Civil Engineer (Field Engineer), BuRec

SUBJECT: Groundwater Conditions under Twenty Seven Acres of Land situated in the Vicinity of the S10.7 Lateral Headworks Structure at Station 10+717 on the Shamalan Canal - Owner: Mohamad Din, Parcel No. 202

On August 31, 1971 construction was started on the Shamalan S10.7 Lateral with the excavation of the Shamalan Canal By-pass channel to facilitate the construction of the check drop and headworks structure located at the Station 10+717 on the Shamalan Canal. This by-pass channel traversed part of the above land on the desert side of the canal which was backfilled upon completion of the headworks structure. This new structure includes a new turnout and replaces the old Basharan Jui which was served by the concrete flume which crosses the Shamalan Canal at Station 10+550. When this new Basharan turnout was put into operation the old Basharan Jui that traversed the desert side of the small triangular piece of land, located upstream from the new S10.7 Lateral, was cut down and the right-of-way for this lateral was smoothed and made part of this triangular piece of ground. The amount of land involved varied from 5 to 7 meters in width and was 195 meters in length and amounts to about 0.6 jiribs which results in an increase in land area.

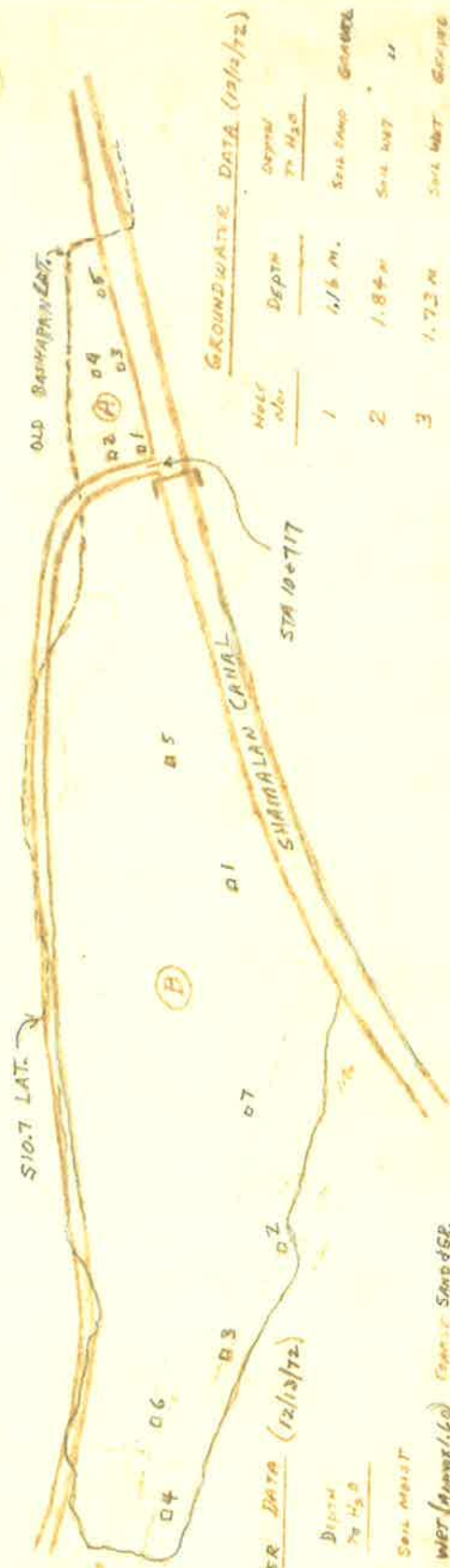
This land was only smoothed and not leveled as may have been assumed by the land owner from the way he tried to irrigate it as one field. This practice resulted in ponded water on part of the land situated adjacent to the Shamalan Canal and caused poor production on the entire piece. The owner of this land thought that the poor yield was caused by high groundwater levels under the land that resulted from the raised water surface elevation in the Shamalan Canal due to the construction of the new headworks structure.

Gravelly subsurface conditions in this area, which were encountered and observed during the construction of the new headworks structure, indicated that drainage problems shouldn't develop in this area provided proper irrigation practices were used. In order to substantiate this assumption a total of 12 auger holes were sunk at various points within the boundaries of the parcel of land in question, 5 of which were in the small triangular piece of land previously mentioned. The two attached sketch maps give the location of the holes together with the depth of the hole and the depth below the ground surface, to the groundwater surface, if any was encountered. The depth of these holes was limited to 1.84 - 1.85 meters, the effective length of the auger used. Note that although the water surface in the Shamalan Canal was approximately 0.50 meters above the ground surface and holes 1, 3 and 5, in the triangular piece were only about 10 - 12 meters from the edge of the water in the canal, there was no groundwater encountered within 1.60 - 1.73 meters





NORTH SHAMALAN AREA - BASHARAN LATERAL SERVICE AREA



GROUNDWATER DATA (12/13/72)

HOSE No.	DEPTH	DEPTH TO H <sub>2</sub> O	SOIL TYPE
1	1.85 m		SAND
2	1.50 m		WET (Approx. 1.0) Coarse SAND
3	1.80 m	1.60	Coarse SAND + FINE GR
4	1.80 m	1.55	" " " "
5	1.85 m		SAND WET
6	1.85 m	1.72	Coarse SAND + FINE GR
7	1.85 m	1.84	" " " "

GROUNDWATER DATA (12/10/72)

HOSE No.	DEPTH	DEPTH TO H <sub>2</sub> O	SOIL TYPE
1	1.15 m		SAND
2	1.84 m		SAND WET
3	1.73 m		SAND WET
4	1.70 m		SOIL WET
5	1.60 m		SAND WET

DWIVER: MAHMOUD BIN  
PARCEL No. 202

A. S. Long 12/10/72

AR Long

12/12/72 9:20 AM TO 10:30 AM

SHAMALAN S10.7 LATERAL

BASHARON LATERAL SEWER AREA

DEPTH TO WATER ON TRIANGULAR PARCEL OF LAND NEAR STA. 01000

S10.7 LAT. AND BETWEEN STA. 10+560 + 10+710 ON THE RIGHT SIDE OF SHAMALAN CANAL.

OWNER: MOHAMAD DIN  
PARCEL No. 202

SCALE: 1" = 20m

HOLE NO.	DEPTH	SPID. COND. OR WATER	REMARKS
HOLE NO. 1	1.16m	DAMP NO WATER	Stopped By Rock
HOLE NO. 2	1.84m	WET NO WATER	Area Sealed.
HOLE NO. 3	1.73m	WET NO WATER	Stopped By Rock
HOLE NO. 4	1.70m	Wet No water	Stopped By Rock
HOLE NO. 5	1.60m	Wet No Water	Stopped By Rock

