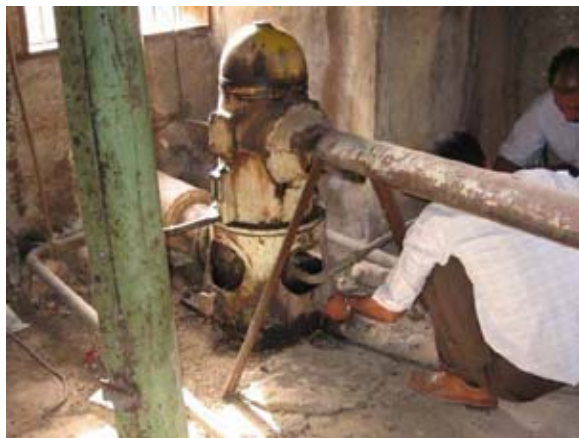


Well Profile	19-17/034
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1 General Information
(The information is according to the survey carried out on 12/06/2007)

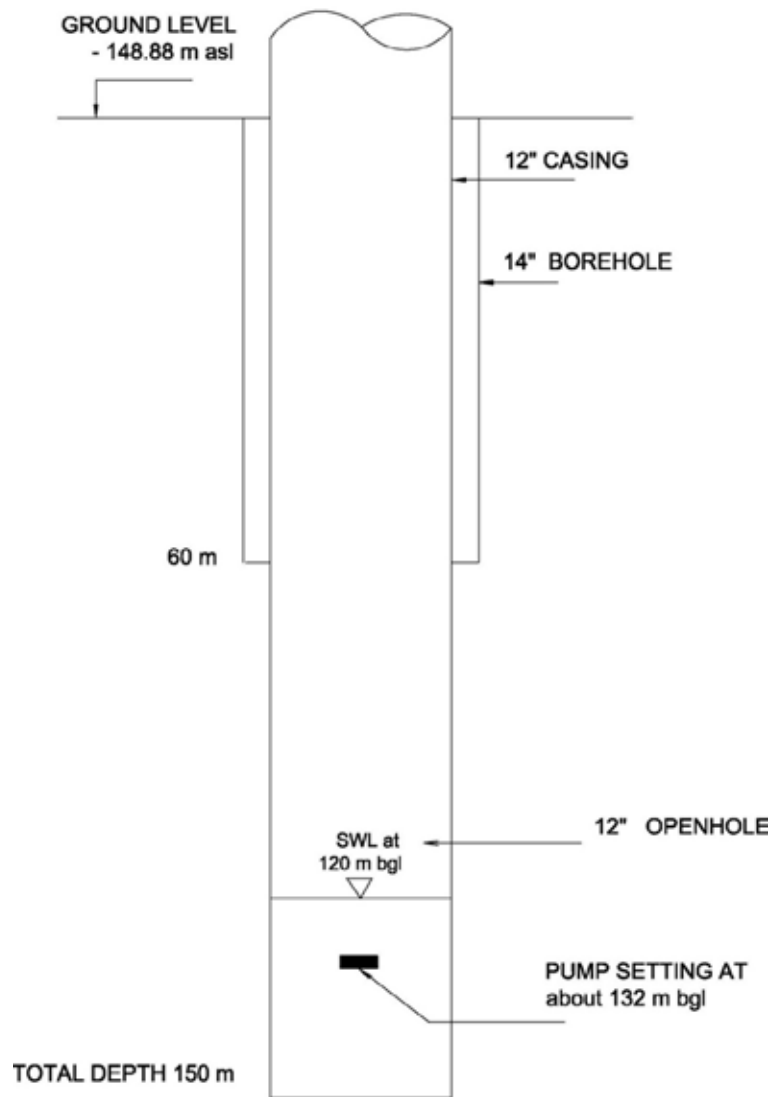
Well Name	Rajeh Shak'ah
Locality Name	Furush Beit Dajan
Well Number	19-17/034
Coordinates	PGE 192740 / PGN 178370 / Z : -148.88 m asl
Date of Survey	12/06/2007
Contact Person/Mobile	Rajeh Shak'ah / 0599 718697
Owner(s)	Rajeh Shak'ah
Status	Pumping
Extraction License	126,000 m ³ /year, (PWA)
Average Abstraction	66,386 m ³ /year (average from 1973 to 2004), (PWA) 103,680 m ³ /year (according to the survey)
Water Usage	Agricultural Use Only
Availability of Electric Grid	YES
Rehabilitation since Drilling	YES, The rising pipes were changed



2 Well Structure

(The information is according to the survey carried out on 12/06/2007)

Drilling Method	Cable Tool (Percussion)
Drilling Year	1962
Total Well Depth	150 m
Drilling Diameter/Length	Ø 14"/150 m
Upper Casing (Blank)	Ø 12" (0-60) m - steel / welded/ blank
Lower Casing (Screen)	Ø 12" (60 – 150)m - open hole
Current needs to maintain	Rising the pump, camera logging and acidization because the well was producing 120 m ³ /hr and now it produces only 60 m ³ /hr.



19-17/034

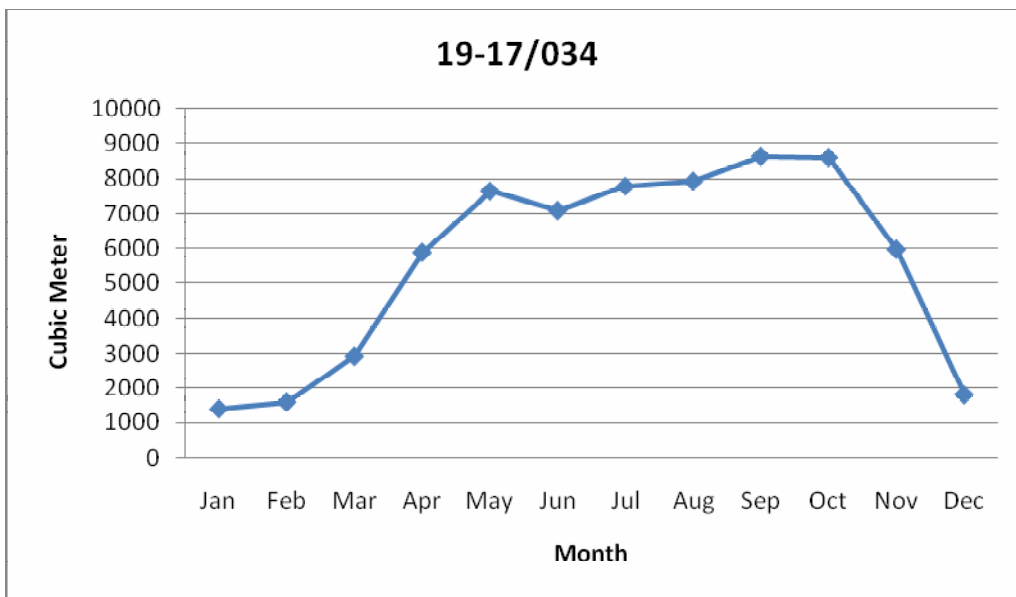
- N.B.** (1) Drawing is not to scale,
 (2) The length of upper and lower casing is unknown,
 (3) Information about cementing/grouting and other construction data are not available,
 (4) Information about well structure is based on the personal contact with the well owner

3 Hydro-geological Condition

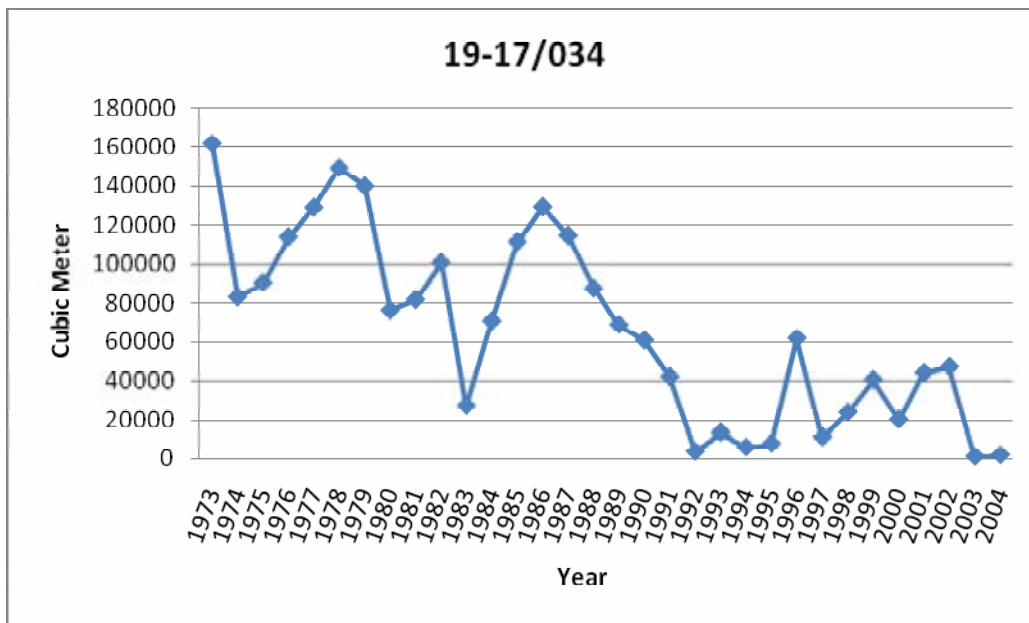
(The information is according to the survey carried out on 12/06/2007)

Tapped Aquifer	Upper Cenomanian (Eastern Basin)
Static Water Level	120 meters below ground level. Estimated according to the well owner, there's no place to measure the water level.
Average Pumping Duration	12 hrs/day - 3 days/week - 12 months/yr.
Estimated Discharge Rate	60 m ³ /hr
Dynamic Water Level	NA, (the team couldn't measure the DWL as there is a PVC pipe fallen in the well and prevent taking the measurements)
Specific Capacity	NA
Current needs to maintain	No Needs

Well Abstraction

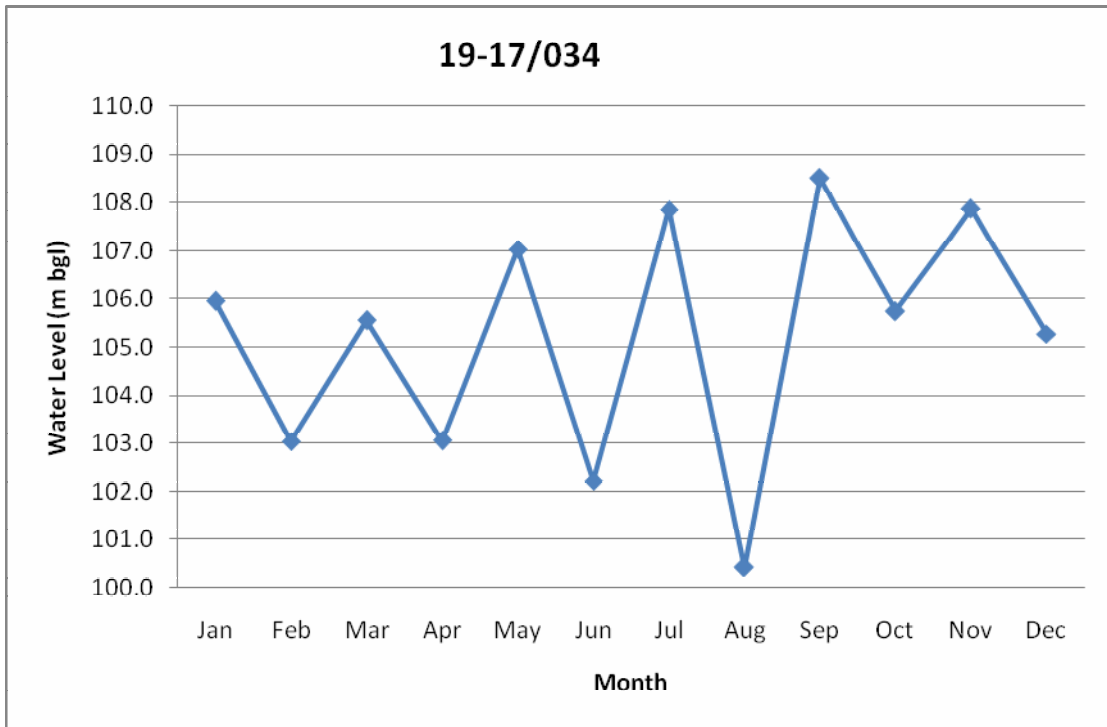


Average Monthly Abstraction (1973-2004), (PWA Database)

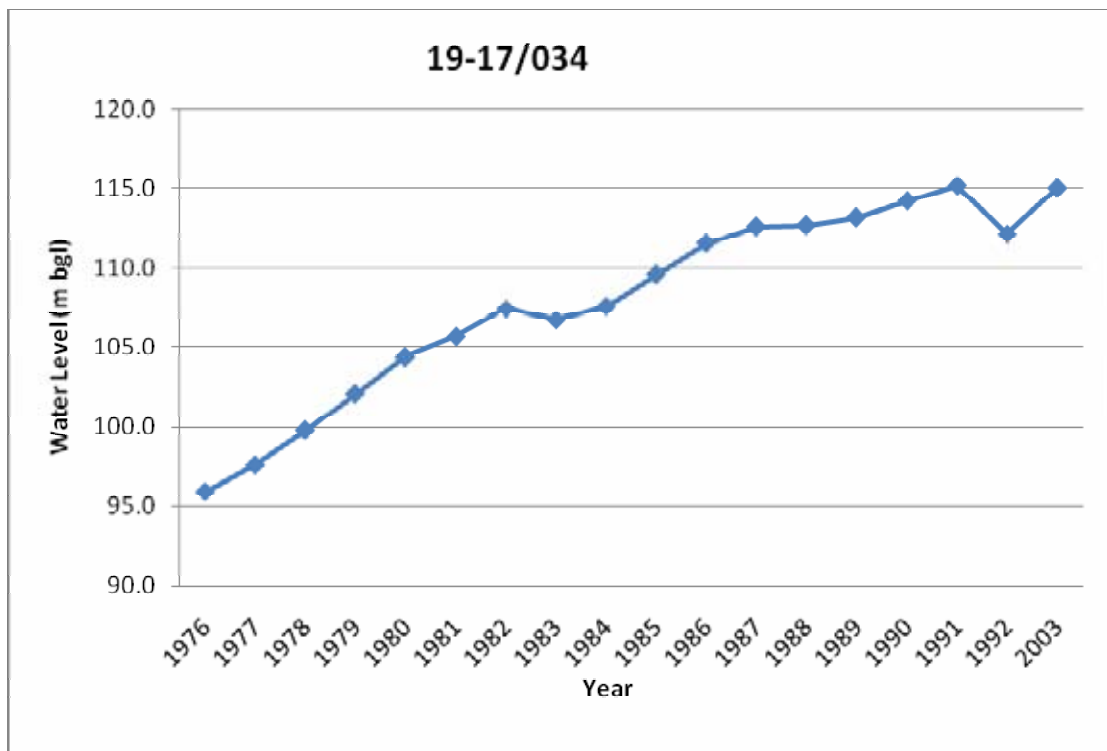


Yearly Abstraction, (PWA Database)

Water Level Fluctuation



Average Monthly Water Level Fluctuation (1976 – 2003), (PWA Database)



Yearly Water Level Fluctuation, (PWA Database)

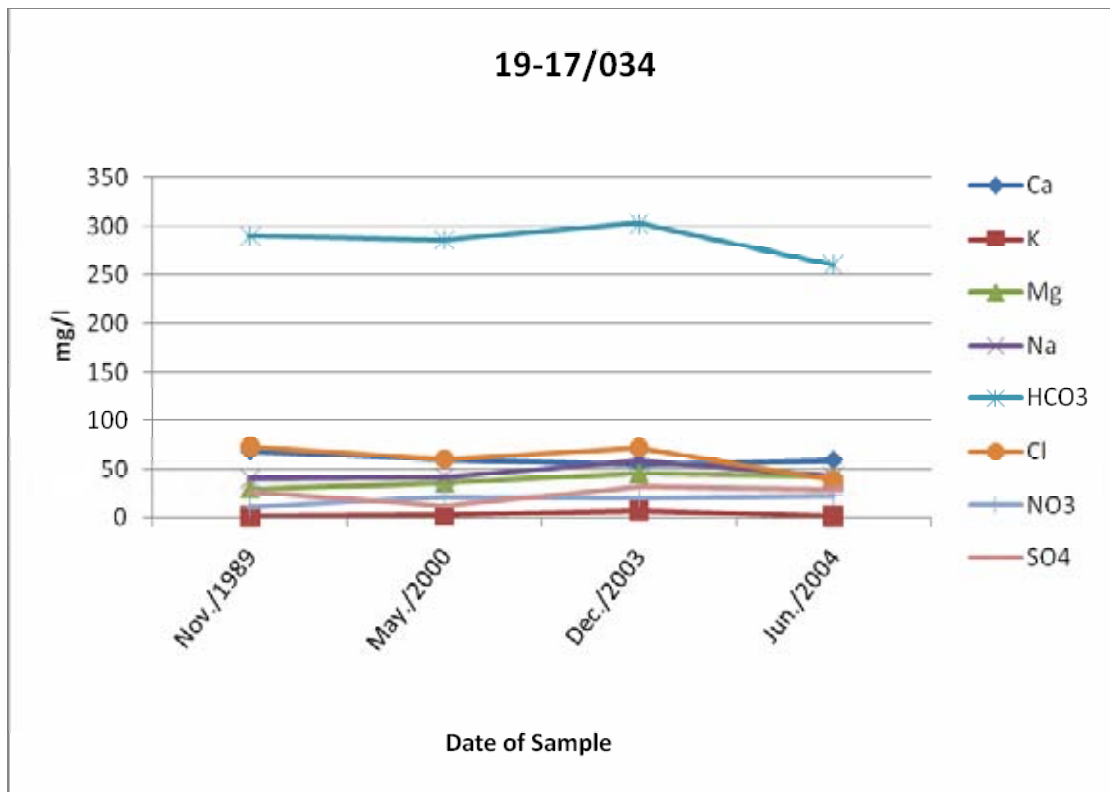
EC: 883 $\mu\text{S}/\text{cm}$

Water Quality

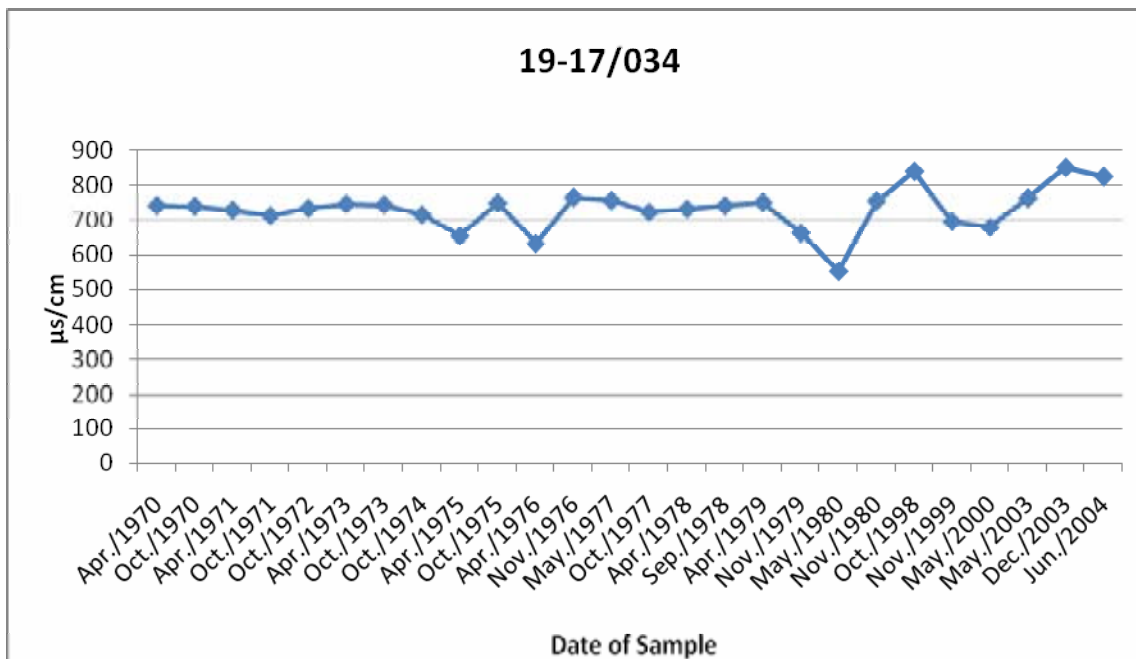
pH: 8.42

Temperature: 23 $^{\circ}\text{C}$

The measurements were taken on 12/06/2006



Major Cations and Anions, (PWA Database)



Electric Conductivity (EC) - $\mu\text{S}/\text{cm}$, (PWA Database)

4 Pumping Unit

(The information is according to the survey carried out on 12/06/2007)

Pump	
Pump type	Mechanical
Date of Installation	1962
Manufacturer	NA
Capacity	120 m ³ /hr
Engine	
Method of Driving Engine	Diesel
Condition	Bad
Horse Power	110 hp
Volt	NA
Speed Rotations	1500 rpm (fixed speed)
Turbine	
Number of Stages	14 stages
Type of Stages	Ø 8" - Closed
Gear Head	
Condition	Fair
Speed Rotations	1500 rpm
Horse Power	110 hp
Others	
Type of Lubrication	Water
Dimension of Shaft	Ø 32 mm / 132 m long
Dimension of Rising Pipes	Ø 6" / 132 m long
Dimension of Discharge Head	NA
Maintenance Record	NA
Control Unit Condition	NA
Water Meter Condition	Good
Pump and Engine House	Fair

5 Piping

Pipe Connection	Agricultural bonds with one reservoir
Leakage	YES
Pipe Condition	Bad
Type	Steel
Diameter	Ø 6" – 500 m length

Well Profile	19-17/047
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1 General Information
(The information is according to the survey carried out on 12/06/2007)

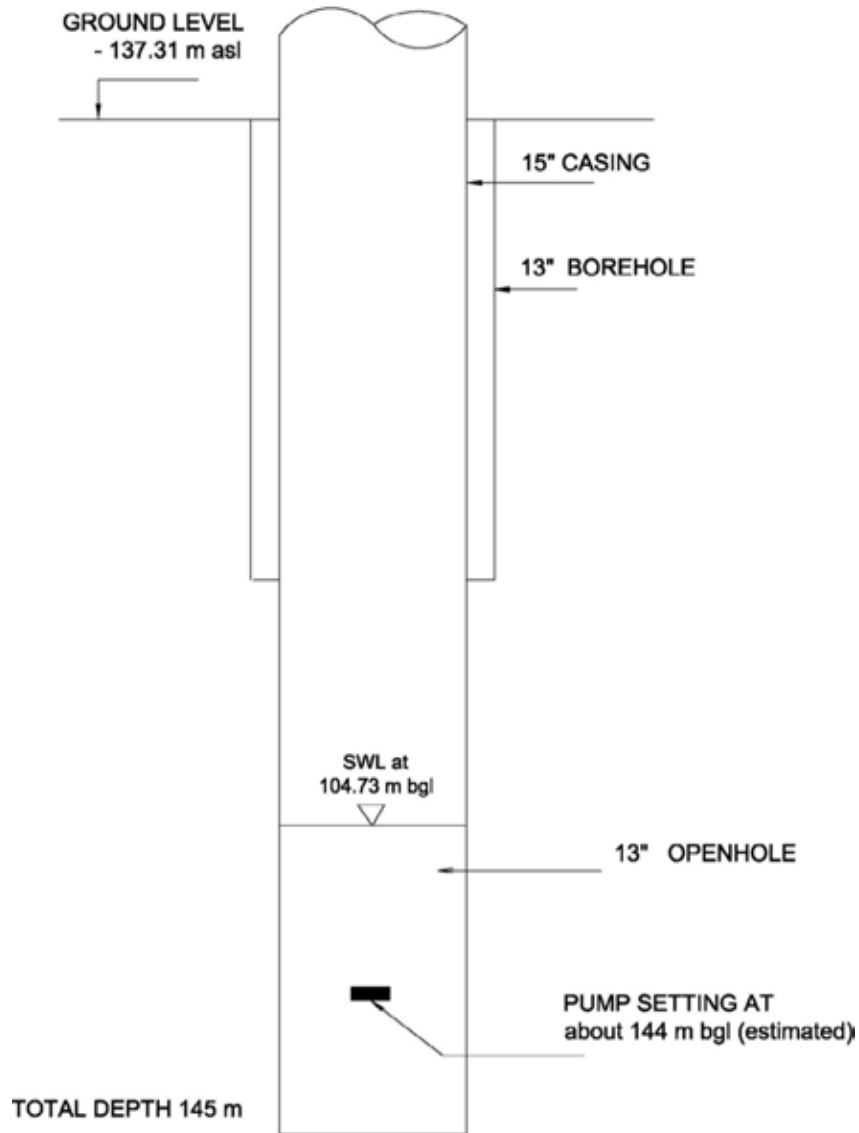
Well Name	Hassan ‘Abed Al Jaleel
Locality Name	Furush Beit Dajan
Well Number	19-17/047
Coordinates	PGE 192410 / PGN 178970 / Z : - 137.31 m asl
Date of Survey	12/06/2007
Status	Pumping
Extraction License	46,000 m ³ /year, (PWA)
Average Abstraction	18,283 m ³ /year (average from 1973 to 2004), (PWA) 115,200 m ³ /year (according to the survey)
Water Usage	Agricultural Use Only (200 dunums)
Availability of Electric Grid	NO
Rehabilitation since Drilling	YES, in 2002, a 3-m rising pipe was added due to the declining of the water level.



2 Well Structure

(The information is according to the survey carried out on 12/06/2007)

Drilling Method	Cable Tool (Percussion)
Drilling Year	1960
Total Well Depth	145 m
Drilling Diameter/Length	Ø 15"/145 m
Upper Casing (Blank)	Ø 13" - steel / welded/ blank
Lower Casing (Screen)	Ø 13" - open hole
Current needs to maintain	Acidization and deepening more than 20 m



19-17/047

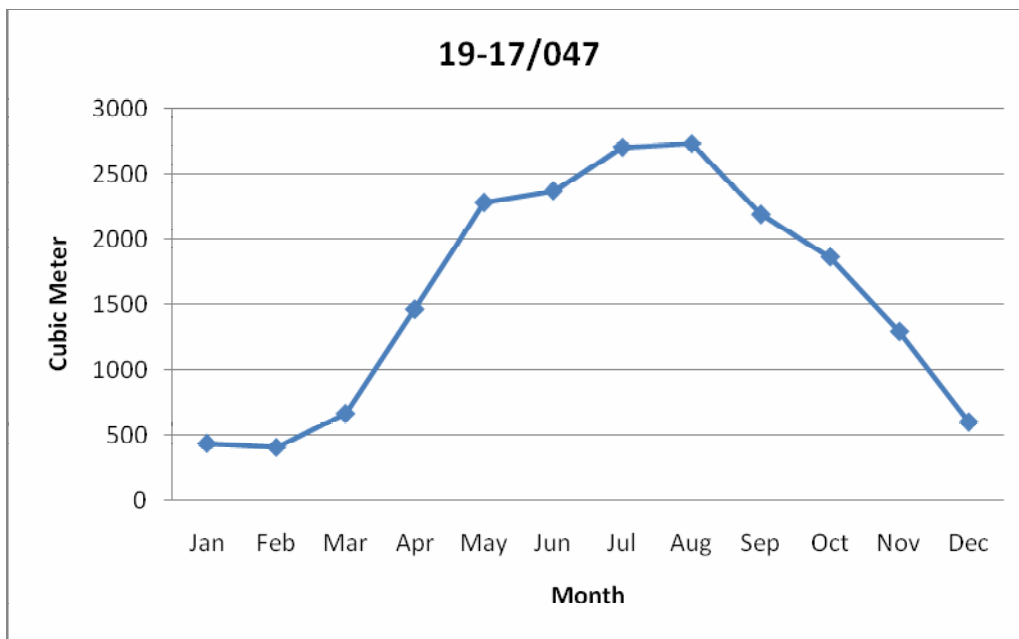
- N.B.**
- (1) Drawing is not to scale,
 - (2) The length of upper and lower casing is unknown,
 - (3) Information about cementing/grouting and other construction data are not available,
 - (4) Information about well structure is based on the personal contact with the well owner

3 Hydro-geological Condition

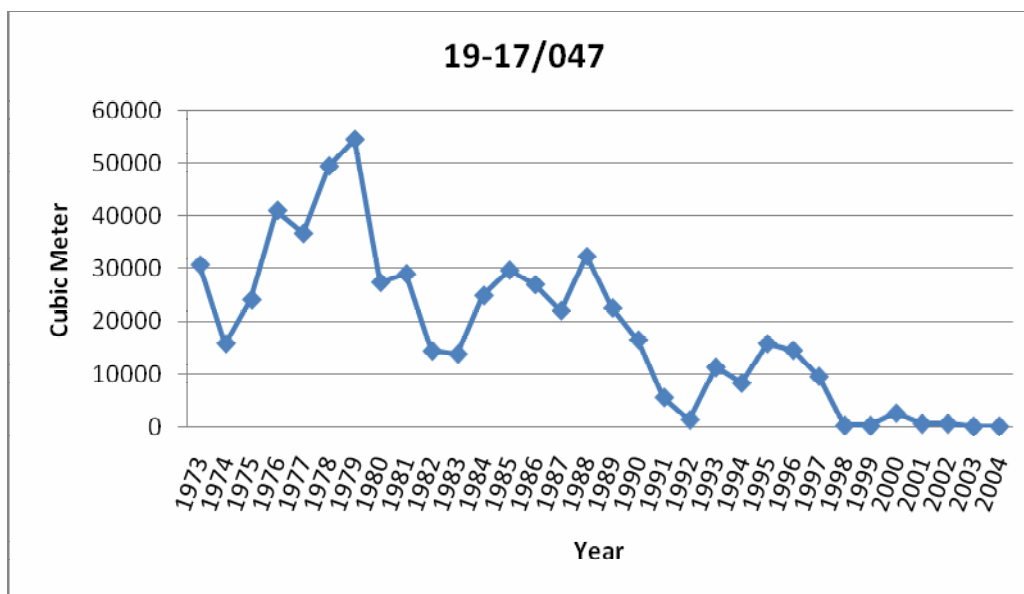
(The information is according to the survey carried out on 12/06/2007)

Tapped Aquifer	Upper Cenomanian (Eastern Basin)
Static Water Level	104.73 meters below ground level (measured)
Average Pumping Duration	12 hrs/day - 5 days/week - 12 months/yr.
Estimated Discharge Rate	40 m ³ /hr
Dynamic Water Level	144 meters below ground level (estimated), it couldn't be measured; the M-scope tape couldn't be lowered more than 121 meters.
Specific Capacity	1 m ³ /hr/m
Current needs to maintain	No needs

Well Abstraction

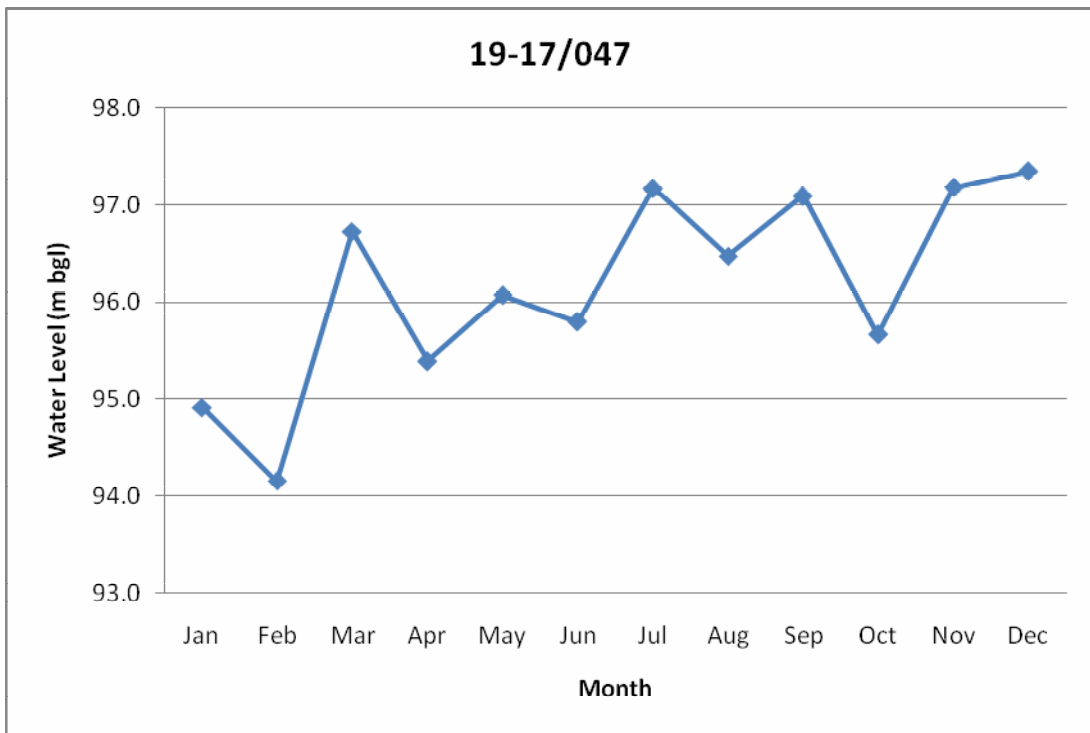


Average Monthly Abstraction (1973-2004), (PWA Database)

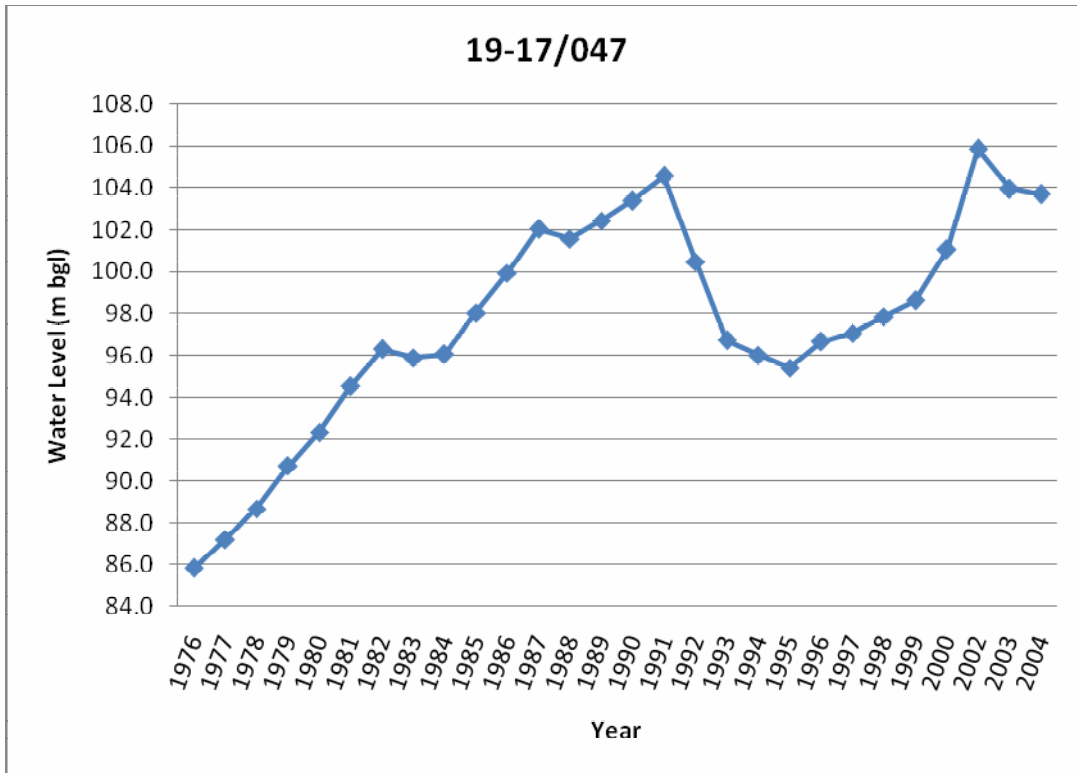


Yearly Abstraction, (PWA Database)

Water Level Fluctuation



Average Monthly Water Level Fluctuation (1976 – 2004), (PWA Database)



Yearly Water Level Fluctuation, (PWA Database)

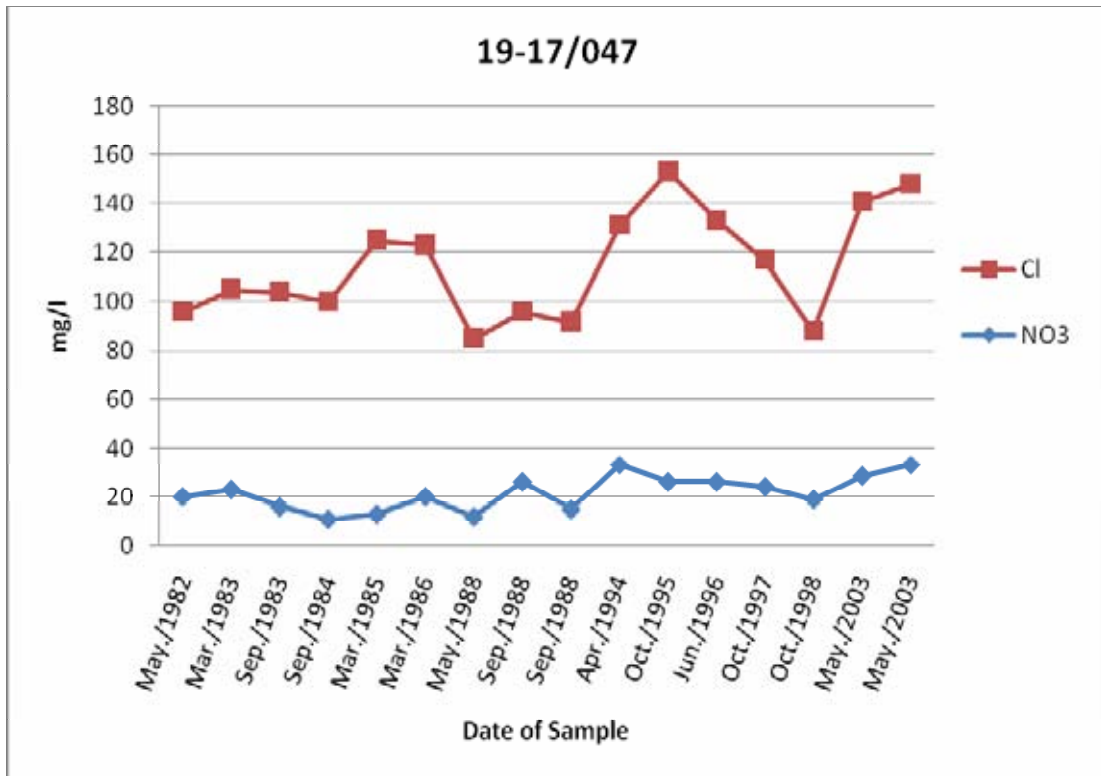
EC: 770 $\mu\text{S}/\text{cm}$

Water Quality

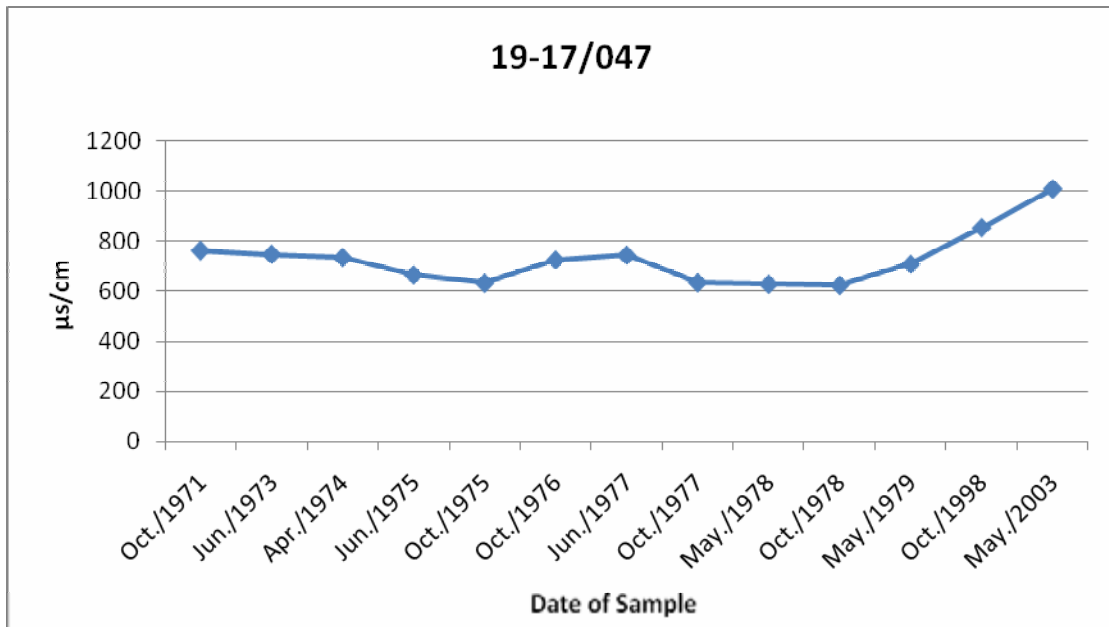
pH: 8.18

Temperature: 25.5 $^{\circ}\text{C}$

The measurements were taken on 12/06/2007



NO₃ and Cl concentrations, (PWA Database)



Electric Conductivity (EC) - $\mu\text{S}/\text{cm}$, (PWA Database)

4 Pumping Unit

(The information is according to the survey carried out on 12/06/2007)

Pump	
Pump type	Mechanical
Date of Installation	1960
Manufacturer	NA
Capacity	45 m ³ /hr
Engine	
Method of Driving Engine	Diesel
Condition	Bad
Horse Power	110 hp
Volt	NA
Speed Rotations	1500 rpm (fixed speed)
Turbine	
Number of Stages	12 stages
Type of Stages	Closed
Gear Head	
Condition	Fair
Speed Rotations	1800 rpm
Horse Power	110 hp
Others	
Type of Lubrication	Water
Dimension of Shaft	Ø 32 mm / 144 m long
Dimension of Rising Pipes	Ø 5" / 144 m long
Dimension of Discharge Head	Ø 8"
Maintenance Record	NO
Control Unit Condition	NA
Water Meter Condition	Fair
Pump and Engine House	Bad

5 Piping

Pipe Connection	Agricultural Network
Leakage	YES
Pipe Condition	Bad
Type	Steel
Diameter	Ø 6" – 600 m length

Well Profile 19-17/054

1 General Information

(The information is according to the survey carried out on 04/06/2007)

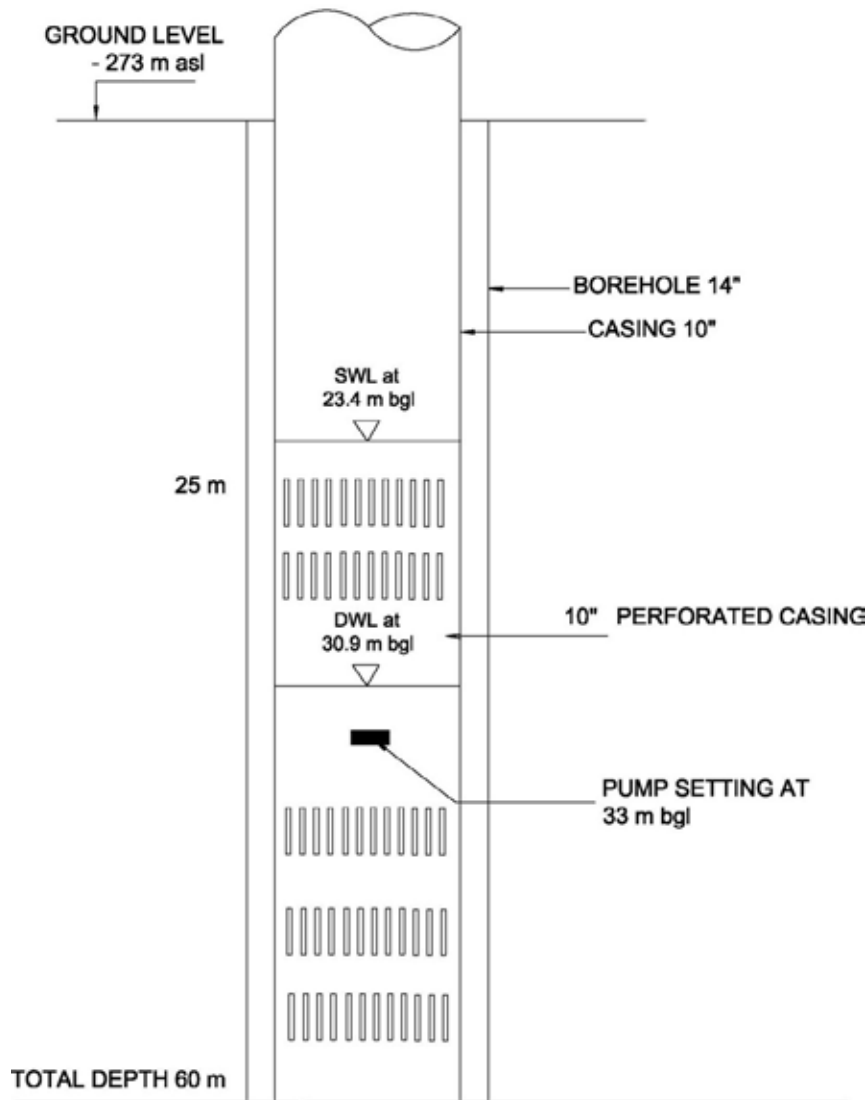
Well Name	Ma'ruf Abu Samrah
Locality Name	Al Jiftlik
Well Number	19-17/054
Coordinates	PGE 197600 / PGN 169150 / Z : -273 m asl
Date of Survey	04/06/2007
Status	Pumping
Extraction License	138,000 m ³ /year, (PWA)
Average Abstraction	64,694 m ³ /year (average from 1974 to 2004), (PWA) 259,200 m ³ /year (according to the survey)
Water Usage	Agricultural Use Only
Availability of Electric Grid	YES
Rehabilitation since Drilling	NO



2 Well Structure

(The information is according to the survey carried out on 04/06/2007)

Drilling Method	Cable Tool (Percussion)
Drilling Year	1962
Total Well Depth	60 m
Drilling Diameter/Length	Ø 14"/ 60 m
Upper Casing (Blank)	Ø 10" (0-25)m - steel / welded/ blank
Lower Casing (Screen)	Ø 10" (25-60)m - steel / welded/ perforated
Current needs to maintain	No Needs



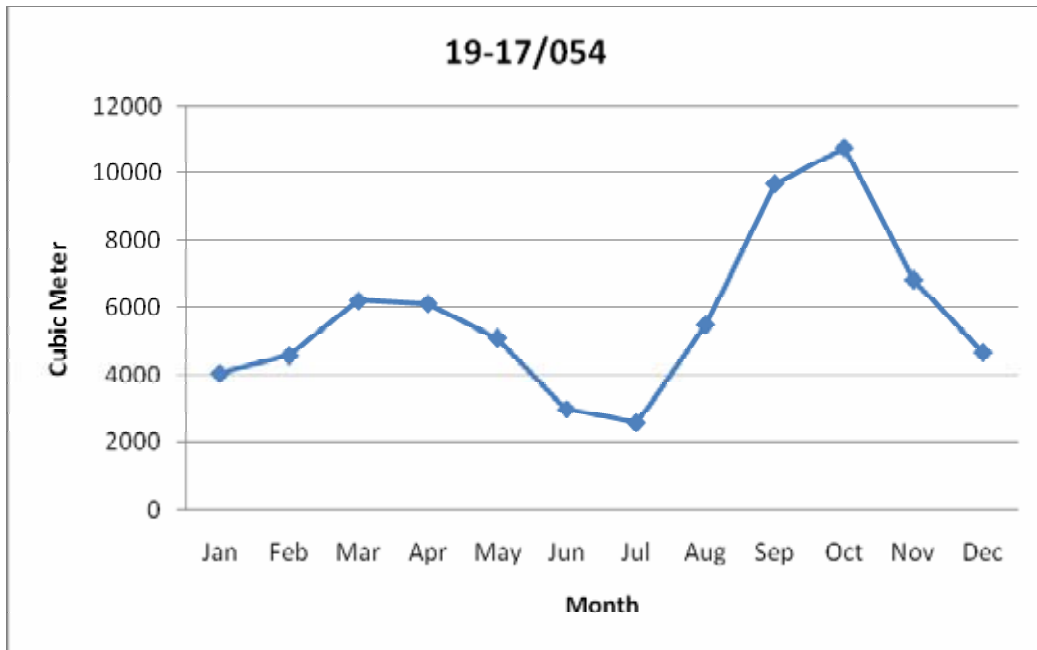
- N.B.** (1) Drawing is not to scale,
 (2) The length of upper and lower casing is unknown,
 (3) Information about cementing/grouting and other construction data are not available,
 (4) Information about well structure is based on the personal contact with the well owner

3 Hydro-geological Condition

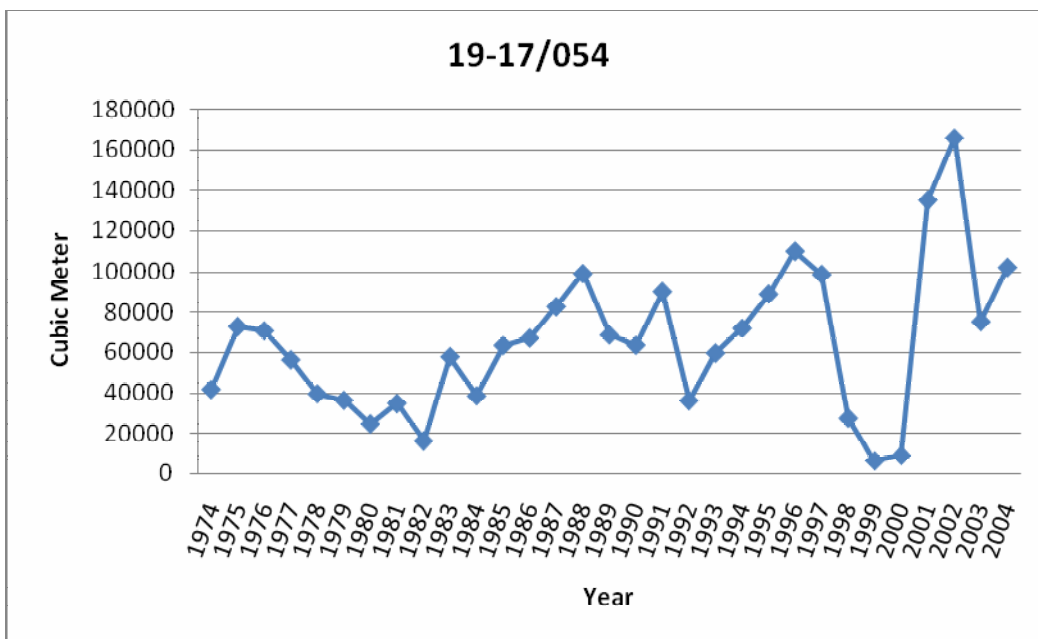
(The information is according to the survey carried out on 04/06/2007)

Tapped Aquifer	Alluvium (Eastern Basin)
Static Water Level	23.40 meters below ground level (measured)
Average Pumping Duration	12 hrs/day - 7 days/week - 10 months/yr.
Estimated Discharge Rate	72 m ³ /hr
Dynamic Water Level	30.9 meters below ground level (measured)
Specific Capacity	11 m ³ /hr/m
Current needs to maintain	No needs

Well Abstraction

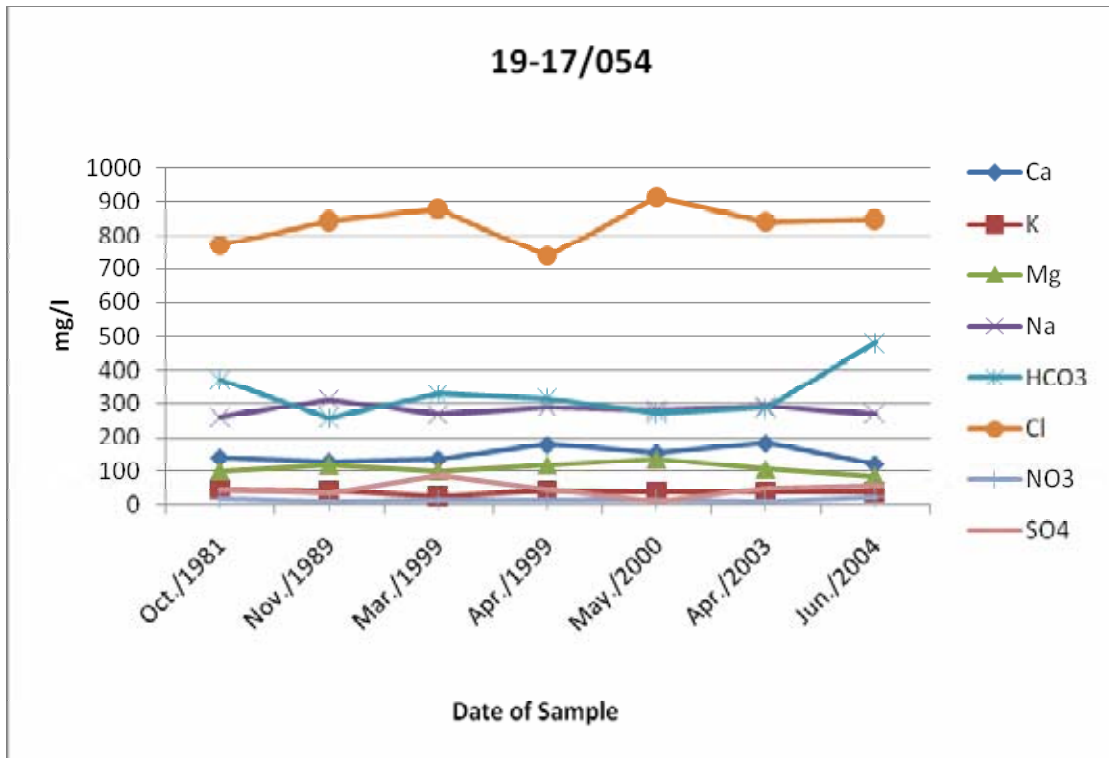


Average Monthly Abstraction (1974 – 2004), (PWA Database)

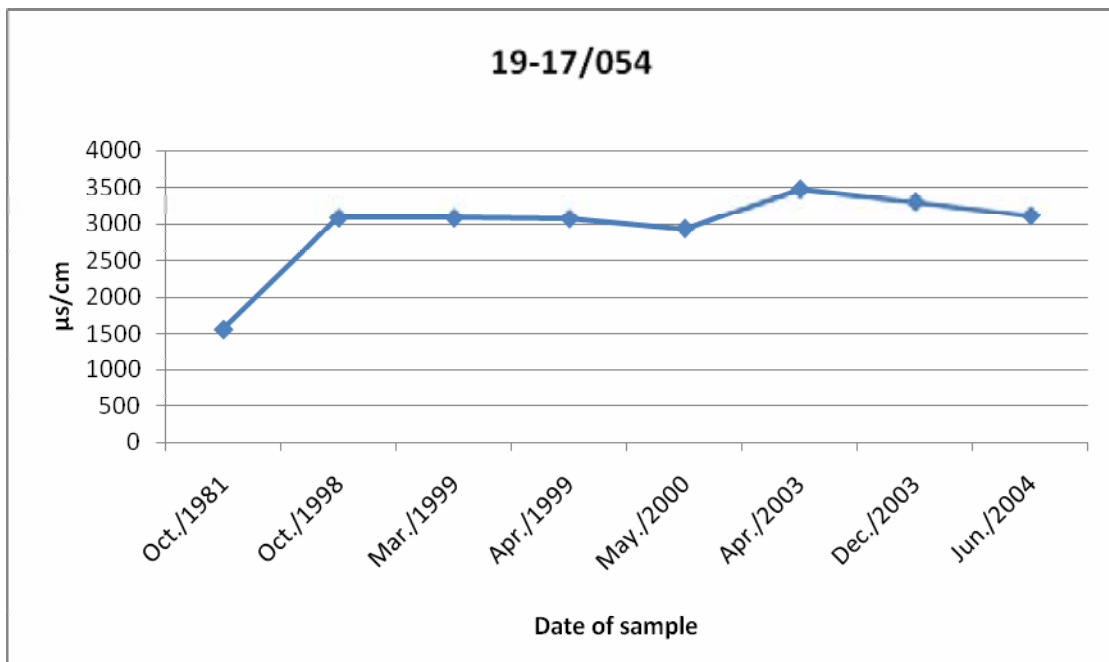


Yearly Abstraction, (PWA Database)

EC: 1790 $\mu\text{S}/\text{cm}$ **Water Quality** pH: 7.3 Temperature: 26.7 $^{\circ}\text{C}$
 The measurements were taken on 04/06/2007



Major Cations and Anions, (PWA Database)



Electric Conductivity (EC) - $\mu\text{S}/\text{cm}$, (PWA Database)

4 Pumping Unit

(The information is according to the survey carried out on 04/06/2007)

Pump	
Pump type	Submersible
Date of Installation	2004
Manufacturer	NA
Capacity	36 m ³ /hr
Engine	
Method of Driving Engine	Electrical
Condition	Fair
Horse Power	10 hp
Volt	NA
Speed Rotations	3000 rpm (fixed speed)
Turbine	
Number of Stages	10 stages
Type of Stages	Closed
Gear Head (There is no gear head)	
Condition	NA
Speed Rotations	NA
Horse Power	NA
Others	
Type of Lubrication	Water
Dimension of Shaft	There is no shaft
Dimension of Rising Pipes	Ø 5" / 33 m length
Dimension of Discharge Head	Ø 8"
Maintenance Record	NO
Control Unit Condition	Bad
Water Meter Condition	Bad
Pump and Engine House	Fair

5 Piping

Pipe Connection	Agricultural Network
Leakage	NO
Pipe Condition	Fair
Type	Steel
Diameter	Ø 6"

Well Profile	19-17/055
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1 General Information

(The information is according to the survey carried out on 04/06/2007)

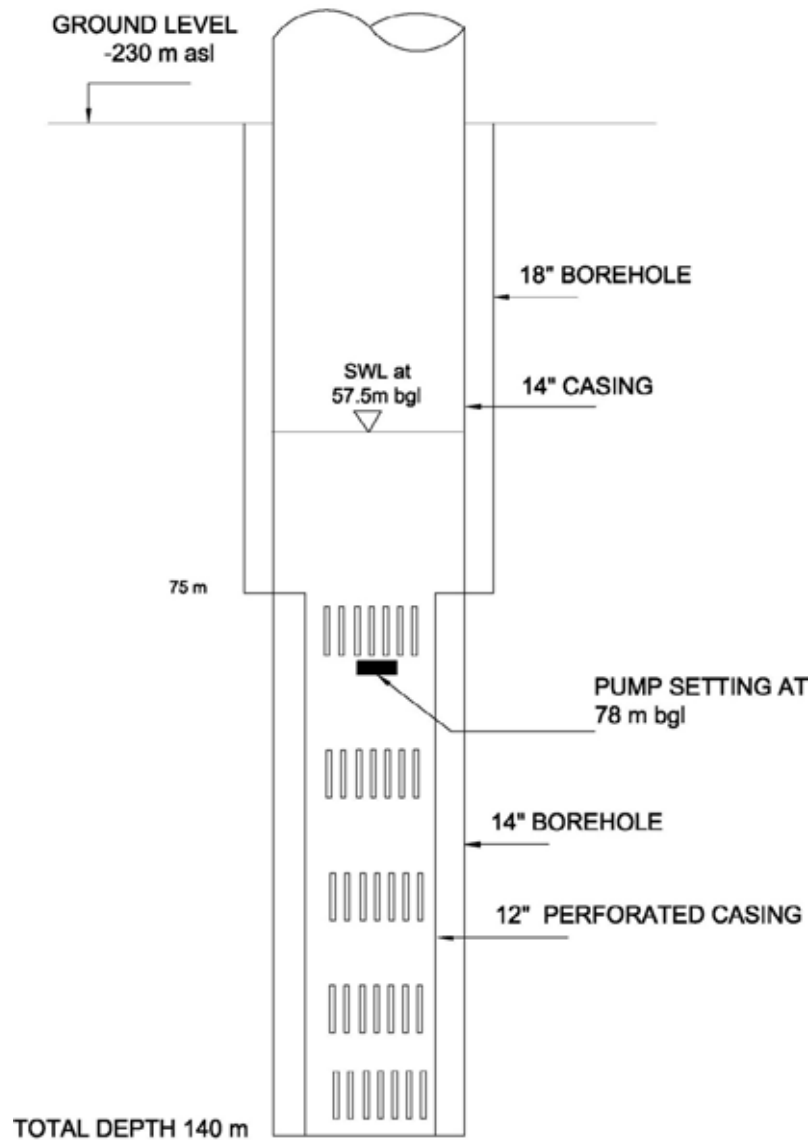
Well Name	Jawad Al Masri
Locality Name	Al Jiftlik
Well Number	19-17/055
Coordinates	PGE 196150 / PGN 173400 / Z: -230 m asl
Date of Survey	04/06/2007
Status	Pumping
Extraction License	300,000 m ³ /year, (PWA)
Average Abstraction	251,487 m ³ /year (average from 1981 to 2003), (PWA) 216,000 m ³ /year (according to the survey)
Water Usage	Agricultural Use Only (800 dunums)
Availability of Electric Grid	NO
Rehabilitation since Drilling	YES, in 2006, general maintenance



2 Well Structure

(The information is according to the survey carried out on 04/06/2007)

Drilling Method	Cable Tool (Percussion)
Drilling Year	1982
Total Well Depth	140 m
Drilling Diameter/Length	Ø 18"/140 m
Upper Casing (Blank)	Ø 14" (0-75)m - steel / welded/ blank
Lower Casing (Screen)	Ø 12" (75-140)m - steel / welded/ perforated
Current needs to maintain	No needs



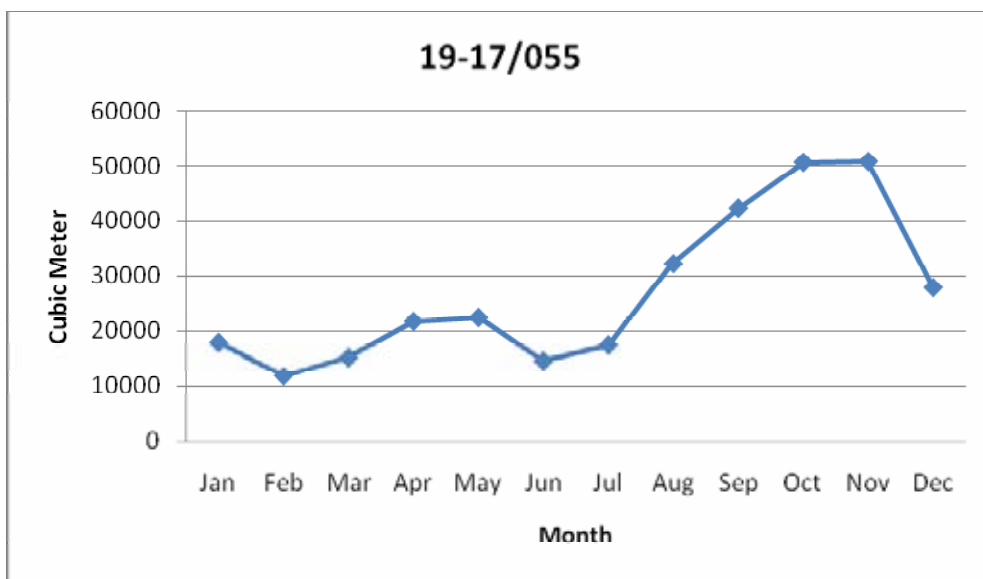
- N.B.** (1) Drawing is not to scale,
 (2) The length of upper and lower casing is unknown,
 (3) Information about cementing/grouting and other construction data are not available,
 (4) Information about well structure is based on the personal contact with the well owner

3 Hydro-geological Condition

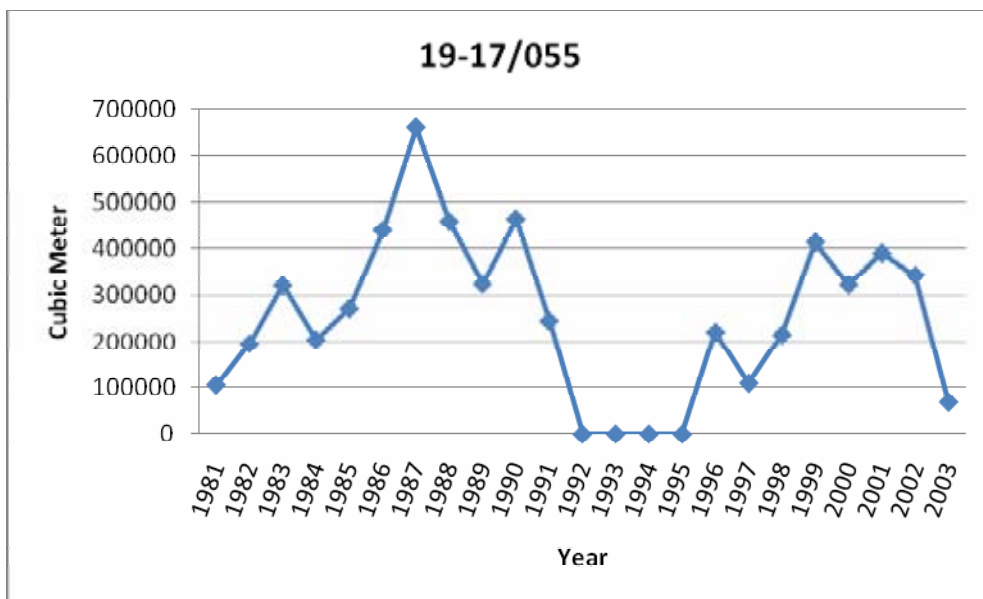
(The information is according to the survey carried out on 04/06/2007)

Tapped Aquifer	Eocene (Eastern Basin)
Static Water Level	57.50 meters below ground level (measured)
Average Pumping Duration	10 hrs/day - 7 days/week - 10 months/yr.
Estimated Discharge Rate	72 m ³ /hr
Dynamic Water Level	NA, as the diesel engine is in a very bad condition and the team was unable to perform the pumping test. Moreover, there was much water leaking from the gear head which prevents taking the DWL.
Specific Capacity	NA
Current needs to maintain	No needs

Well Abstraction

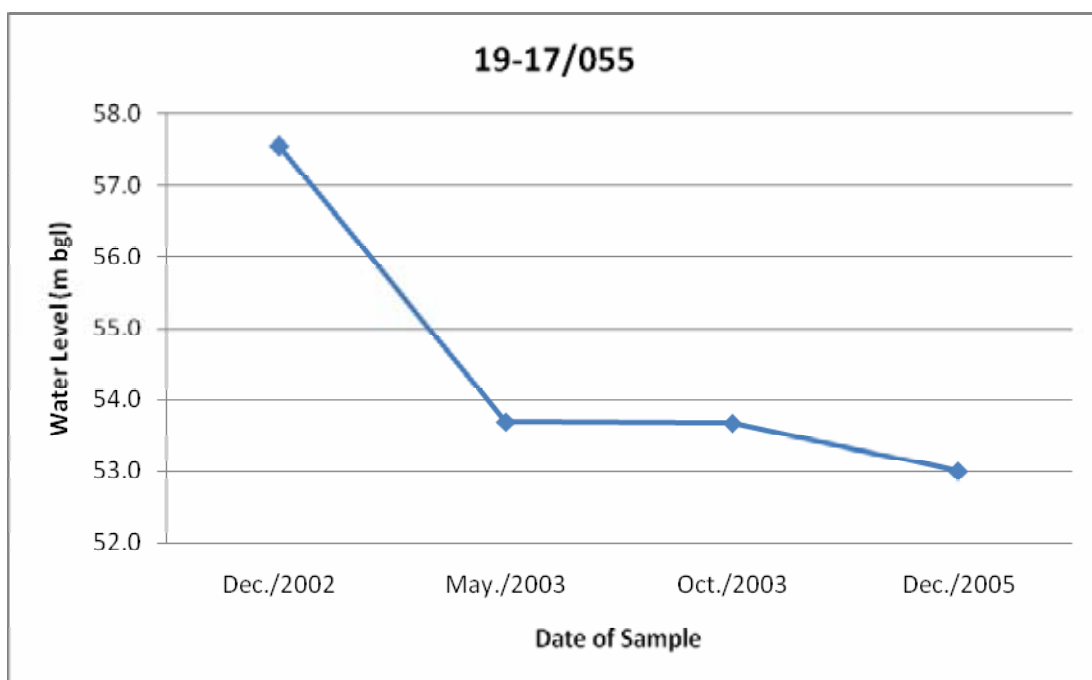


Average Monthly Abstraction (1981 -2003), (PWA Database)

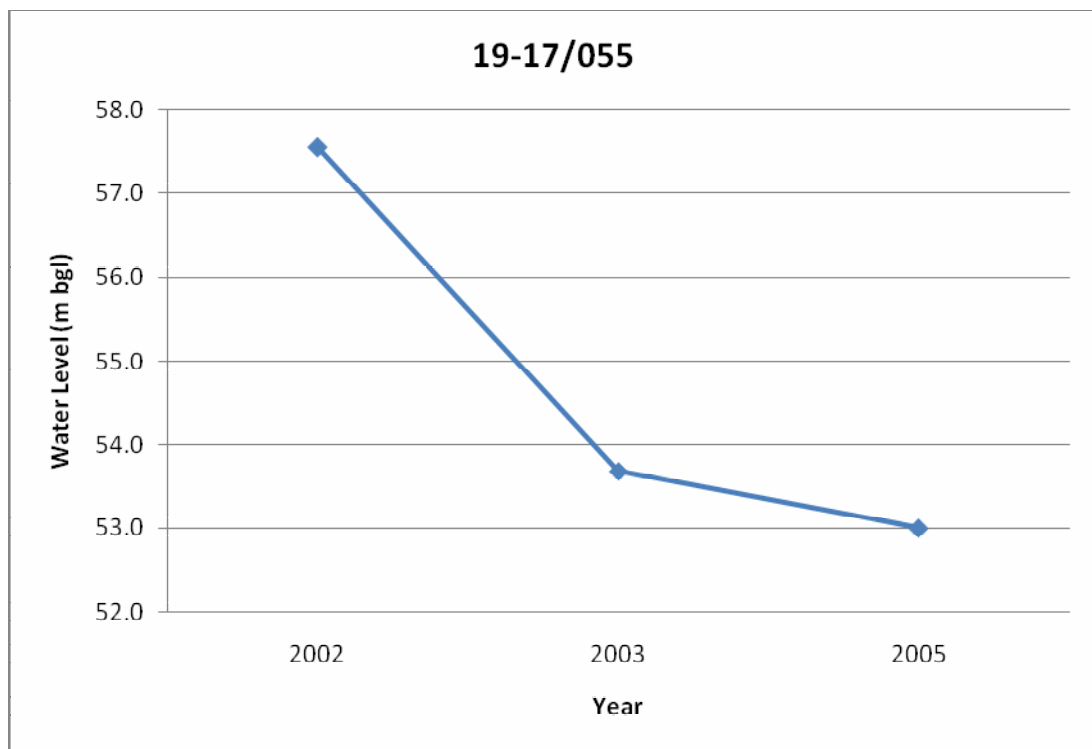


Yearly Abstraction, (PWA Database)

Water Level Fluctuation



Average Monthly Water Level Fluctuation, (PWA Database)



Yearly Water Level Fluctuation, (PWA Database)

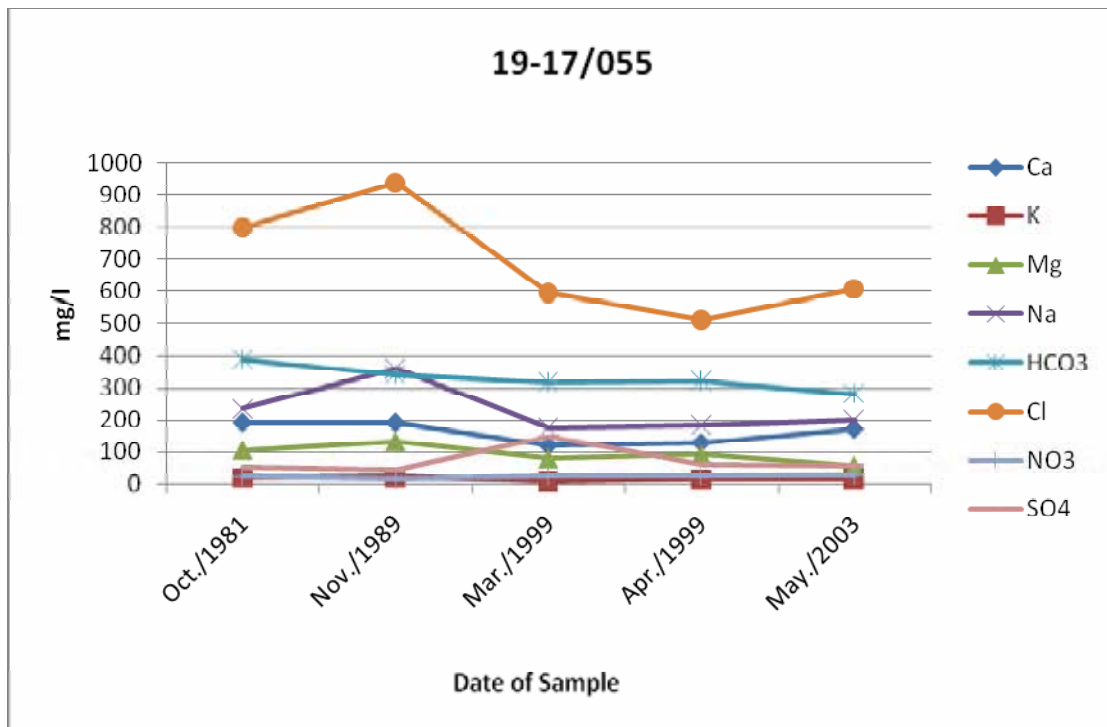
EC: 1770 $\mu\text{S}/\text{cm}$

Water Quality

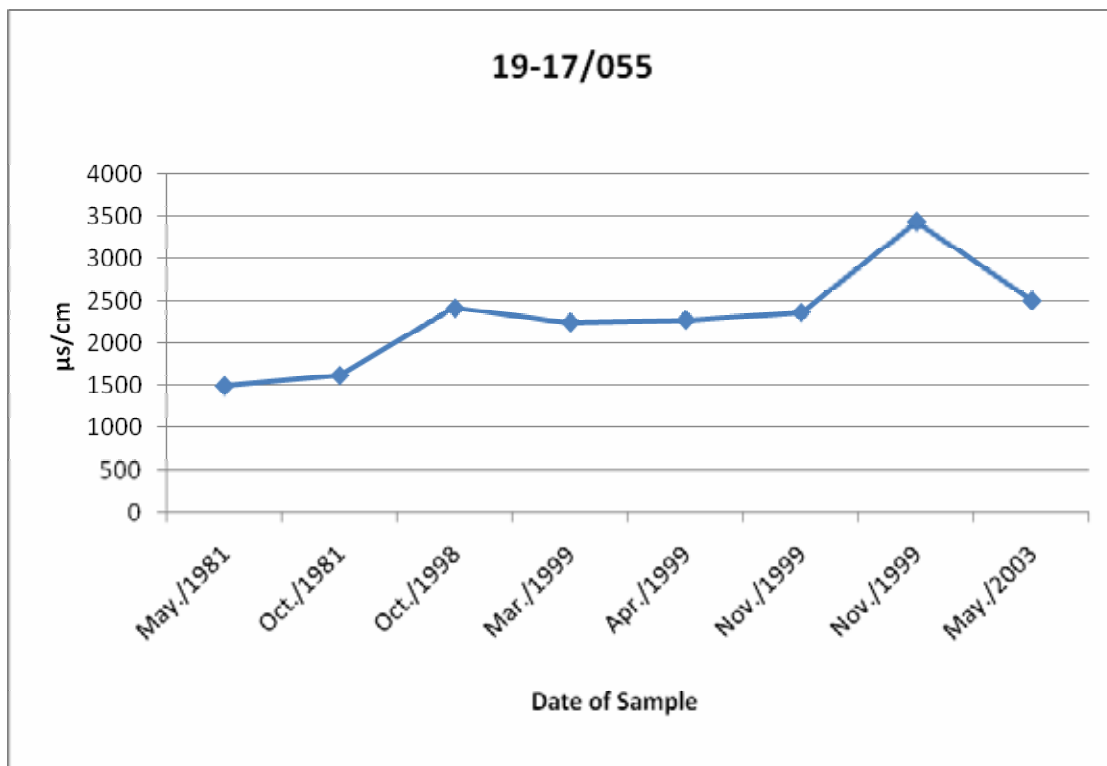
pH: 7.75

Temperature: 27 °C

The measurements were taken on 04/06/2007



Major Cations and Anions, (PWA Database)



Electric Conductivity (EC) - $\mu\text{S}/\text{cm}$, (PWA Database)

4 Pumping Unit

(The information is according to the survey carried out on 04/06/2007)

Pump	
Pump type	Mechanical
Date of Installation	1987
Manufacturer	Israel
Capacity	150 m ³ /hr
Engine	
Method of Driving Engine	Diesel
Condition	Bad
Horse Power	150 hp
Volt	NA
Speed Rotations	1800 rpm
Turbine	
Number of Stages	14 stages
Type of Stages	Closed
Gear Head	
Condition	Fair
Speed Rotations	1800 rpm
Horse Power	70 hp
Others	
Type of Lubrication	Water
Dimension of Shaft	Ø 43 mm / 78 m long
Dimension of Rising Pipes	Ø 8" / 78 m long
Dimension of Discharge Head	Ø 12"
Maintenance Record	NO
Control Unit Condition	There is no control unit
Water Meter Condition	Bad
Pump and Engine House	Fair

5 Piping

Pipe Connection	Agricultural Network and three agricultural bonds
Leakage	YES
Pipe Condition	Bad
Type	Steel and PVC
Diameter	Ø 8"

Well Profile	19-17/056
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1 General Information
(The information is according to the survey carried out on 05/06/2007)

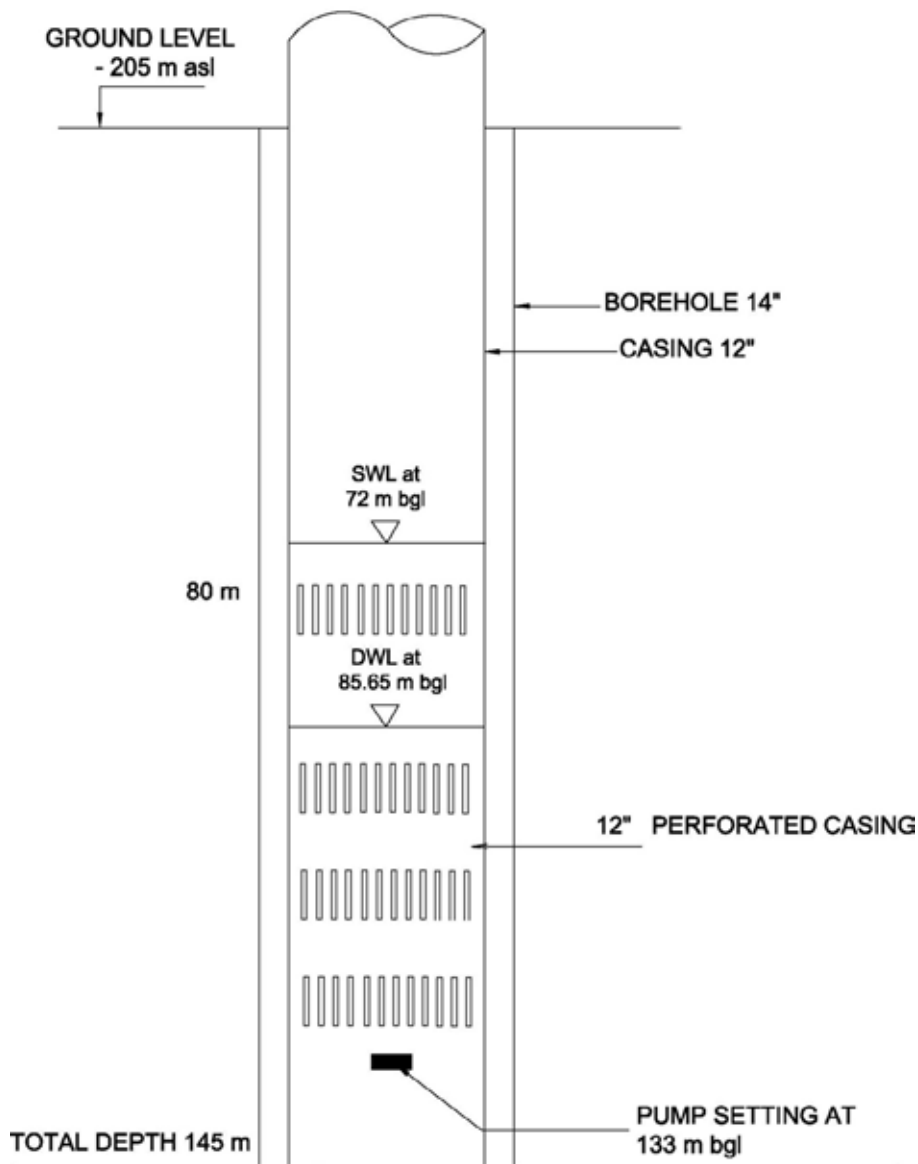
Well Name	Mahmud Damen
Locality Name	Al Jiftlik
Well Number	19-17/056
Coordinates	PGE 194600 / PGN 174100 / Z: - 205 m asl
Date of Survey	05/06/2007
Contact Person(s)/Mobile	Mahmud Damen / 0522 843825 Mustafa 'Abed Al hadi Al Ghazawe / 0522 327378
Owner(s)	Mahmud Damen
Status	Pumping
Extraction License	330,000 m ³ /year, (PWA)
Average Abstraction	235,603 m ³ /year (average from 1986 – 2004), (PWA) 486,000 m ³ /year (according to the survey)
Water Usage	Agricultural Use Only (400 dunums)
Availability of Electric Grid	YES
Rehabilitation since Drilling	YES, in 1986, acidization



2 Well Structure

(The information is according to the survey carried out on 05/06/2007)

Drilling Method	Cable Tool (Percussion)
Drilling Year	1986
Total Well Depth	145 m
Drilling Diameter/Length	Ø 14"/145 m
Upper Casing (Blank)	Ø 12" (0-80)m - steel / welded/ blank
Lower Casing (Screen)	Ø 12" (80-145)m - steel / welded/ perforated
Current needs to maintain	No needs



19-17/056

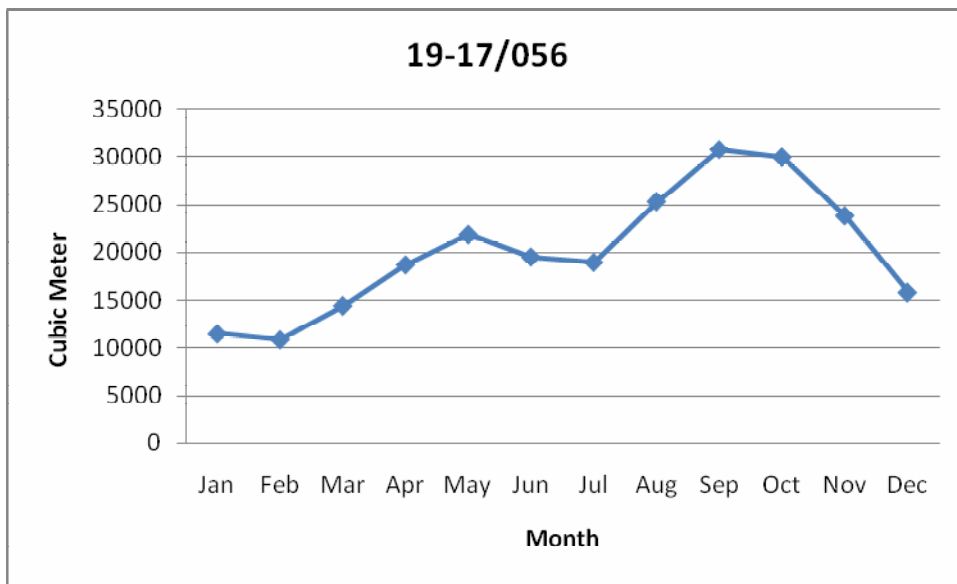
- N.B.** (1) Drawing is not to scale,
 (2) The length of upper and lower casing is unknown,
 (3) Information about cementing/grouting and other construction data are not available,
 (4) Information about well structure is based on the personal contact with the well owner

3 Hydro-geological Condition

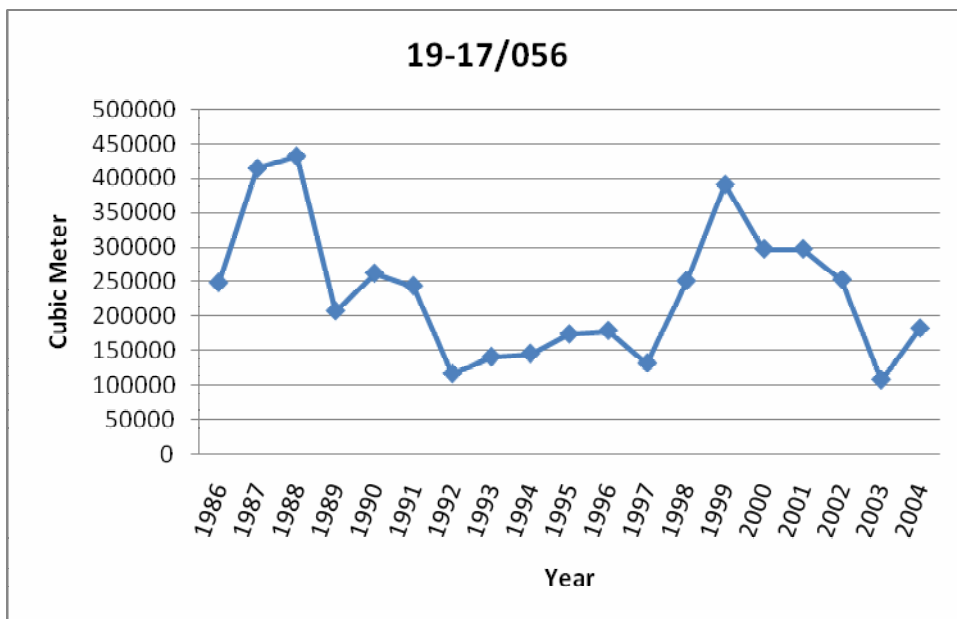
(The information is according to the survey carried out on 05/06/2007)

Tapped Aquifer	Eocene (Eastern Basin)
Static Water Level	72 meters below ground level (measured)
Average Pumping Duration	20 hrs/day - 7 days/week - 9 months/yr.
Estimated Discharge Rate	90 m ³ /hr
Dynamic Water Level	85.65 meters below ground level (measured)
Specific Capacity	6.6 m ³ /hr/m
Current needs to maintain	No needs

Well Abstraction

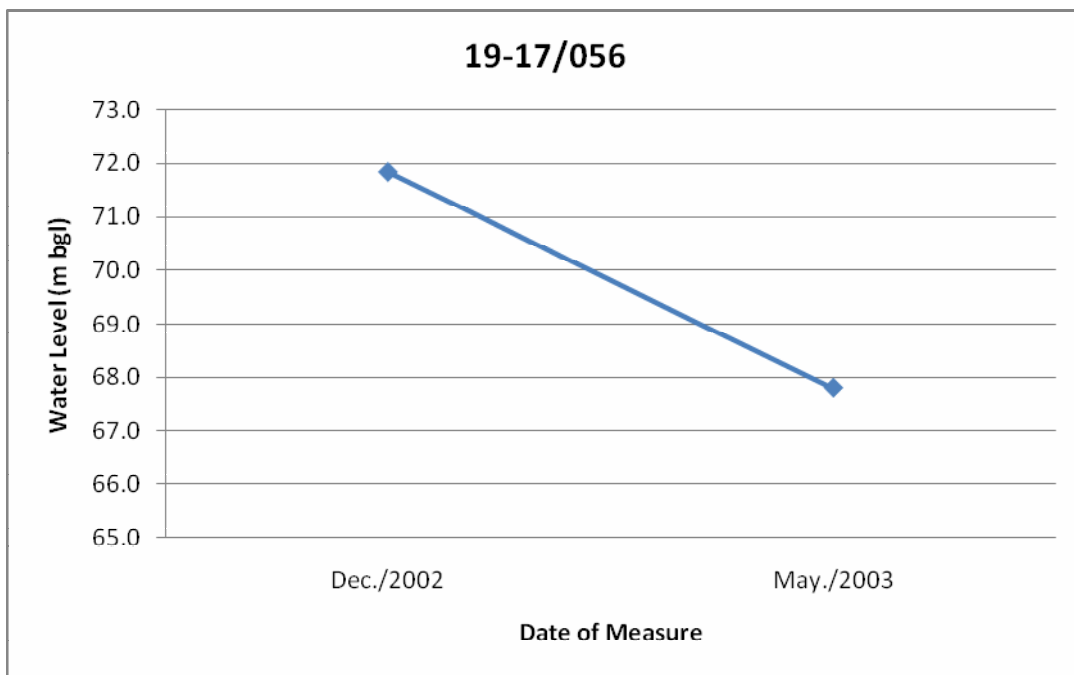


Average Monthly Abstraction (1986 – 2004), (PWA Database)

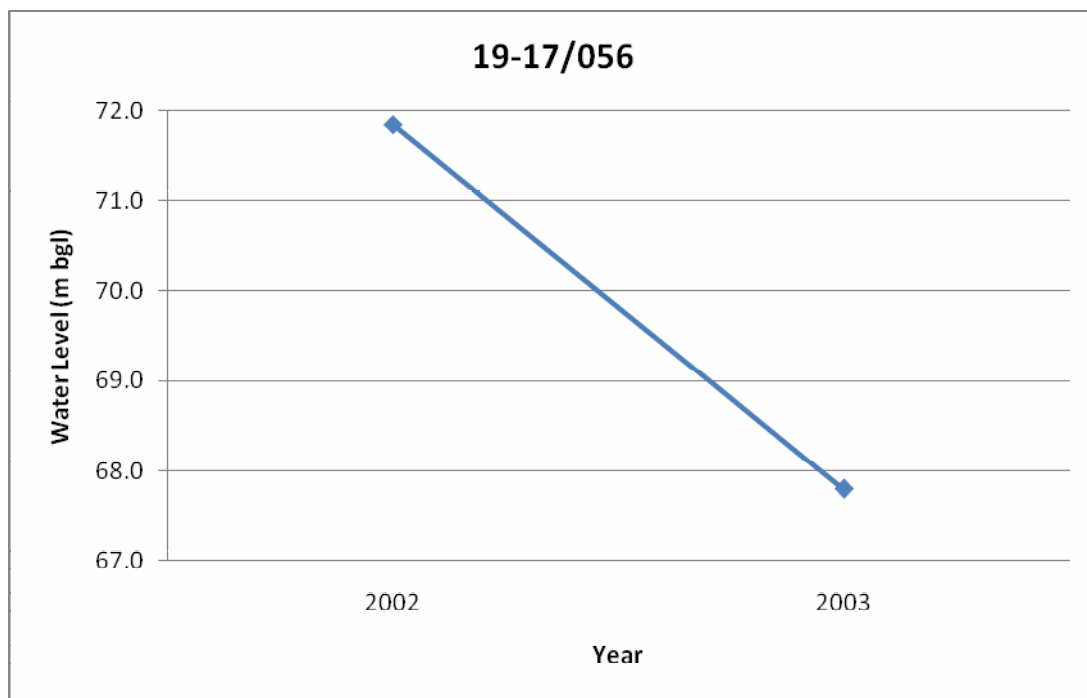


Yearly Abstraction, (PWA Database)

Water Level Fluctuation



Average Monthly Water Level Fluctuation, (PWA Database)



Yearly Water Level Fluctuation, (PWA Database)

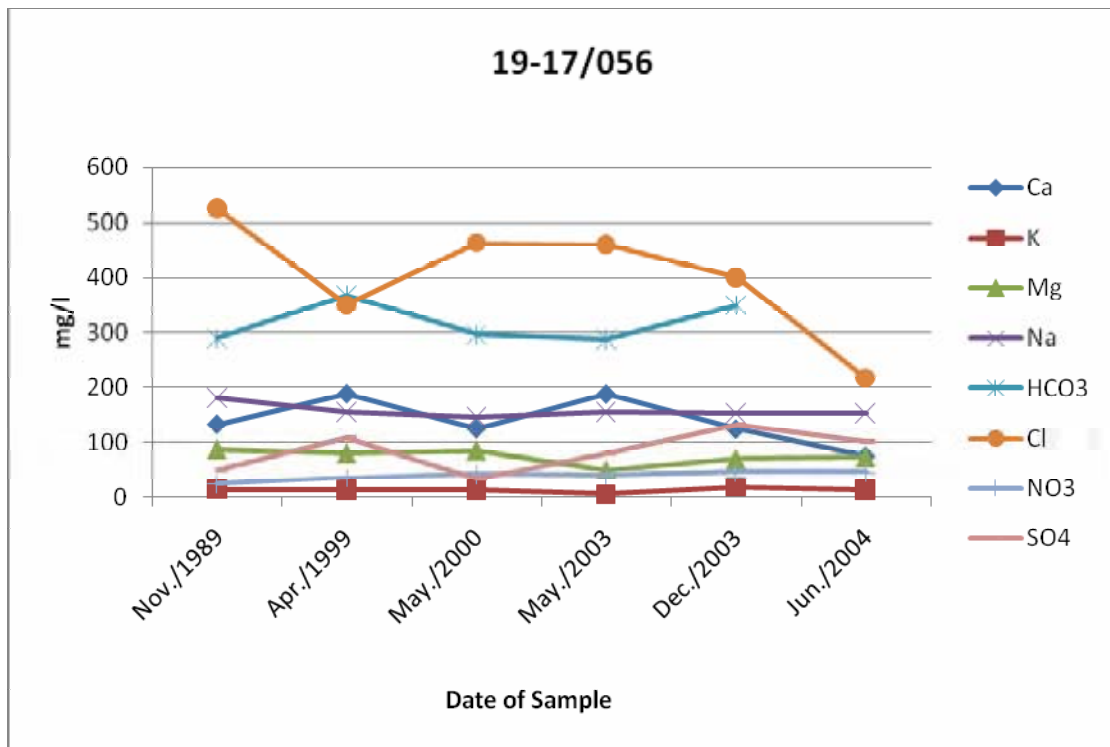
EC: 1289 $\mu\text{S}/\text{cm}$

Water Quality

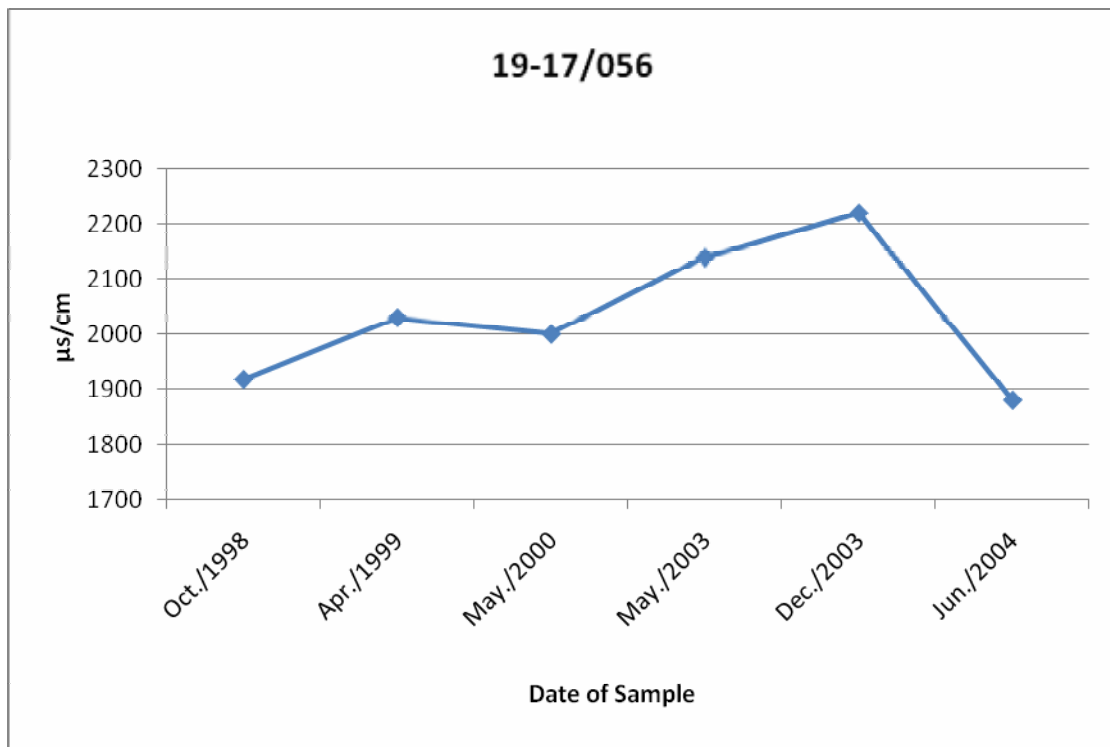
pH: 8.05

Temperature: 28.3 °C

The measurements were taken on 05/06/2007



Major Cations and Anions, (PWA Database)



Electric Conductivity (EC) - $\mu\text{S}/\text{cm}$, (PWA Database)

4 Pumping Unit

(The information is according to the survey carried out on 05/06/2007)

Pump	
Pump type	Mechanical
Date of Installation	1986
Manufacturer	Berlis
Capacity	90 m ³ /hr
Engine	
Method of Driving Engine	Electrical
Condition	Fair
Horse Power	125 hp
Volt	400 volts
Speed Rotations	1500 rpm
Turbine	
Number of Stages	12 stages
Type of Stages	Ø 10" (Closed)
Gear Head (There is leakage from gear head)	
Condition	Bad
Speed Rotations	1760 rpm
Horse Power	110 hp
Others	
Type of Lubrication	Water
Dimension of Shaft	Ø 35 mm / 133 m length
Dimension of Rising Pipes	Ø 6" / 133 m length
Dimension of Discharge Head	Ø 10"
Maintenance Record	NO
Control Unit Condition	Good
Water Meter Condition	Good
Pump and Engine House	Fair

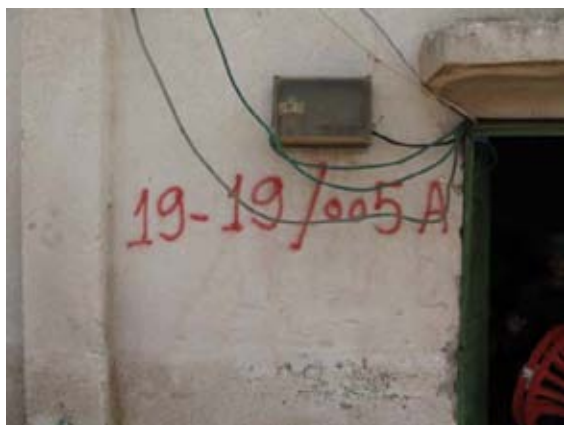
5 Piping

Pipe Connection	Agricultural network and four agricultural bonds (3000 m ³ each)
Leakage	NO
Pipe Condition	Good
Type	Steel
Diameter	Ø 6"

Well Profile	19-19/005A
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1 General Information
(The information is according to the survey carried out on 11/06/2007)

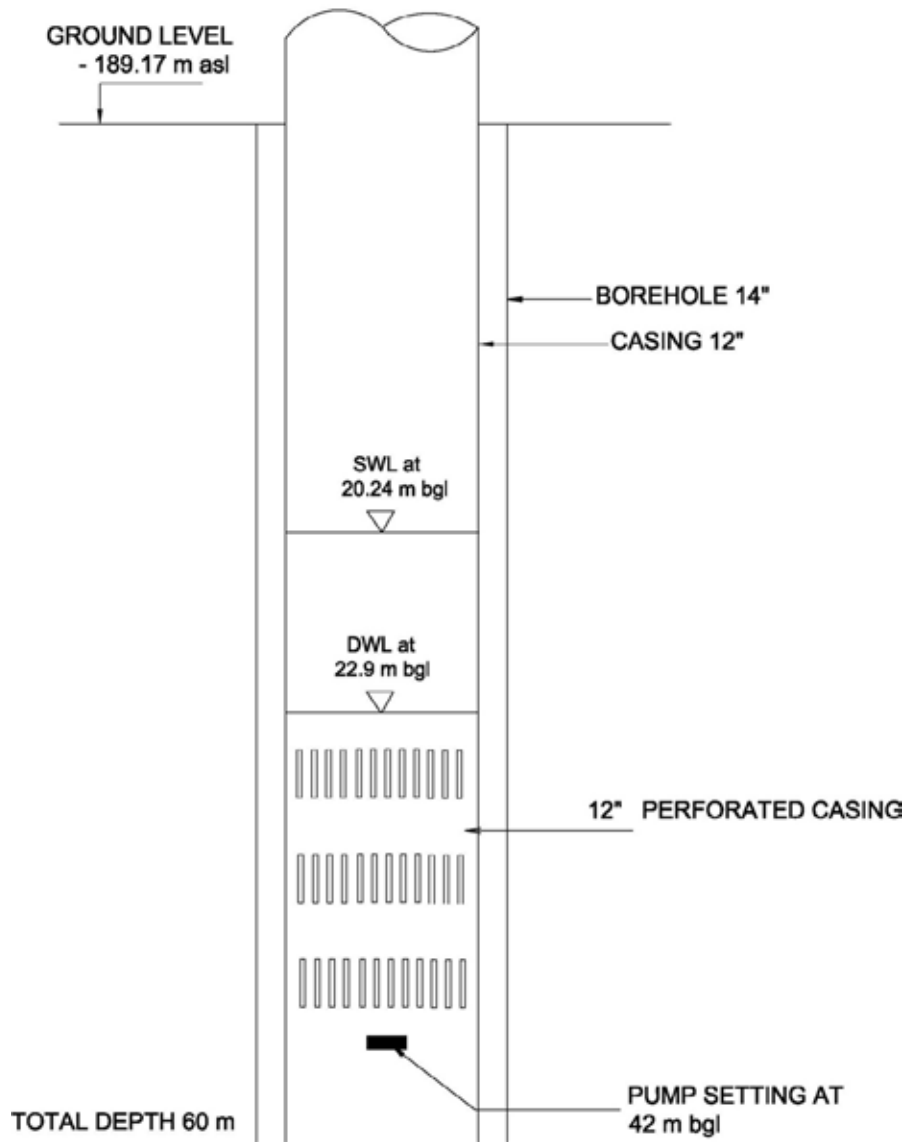
Well Name	Rafeeq Al Zu'bi
Locality Name	Ein Al Bada, Bardala, Tubas
Well Number	19-19/005A
Coordinates	PGE 198930 / PGN 197180 / Z : - 189.17 m asl
Date of Survey	11/06/2007
Status	Pumping
Extraction License	214,200 m ³ /year, (PWA)
Average Abstraction	234,733 m ³ /year (average from 1973 to 2004), (PWA) 253,440 m ³ /year (according to the survey)
Water Usage	Agricultural Use Only (400 dunums)
Availability of Electric Grid	YES
Rehabilitation since Drilling	YES, in 2005, the pump was lifted from the well as it fell in the well as a result of the damage of the pipes.



2 Well Structure

(The information is according to the survey carried out on 11/06/2007)

Drilling Method	Cable Tool (Percussion)
Drilling Year	1950
Total Well Depth	60 m
Drilling Diameter/Length	Ø 14"/60 m
Upper Casing (Blank)	Ø 12" - steel / welded/ blank
Lower Casing (Screen)	Ø 12" - steel / welded/ perforated
Current needs to maintain	No needs



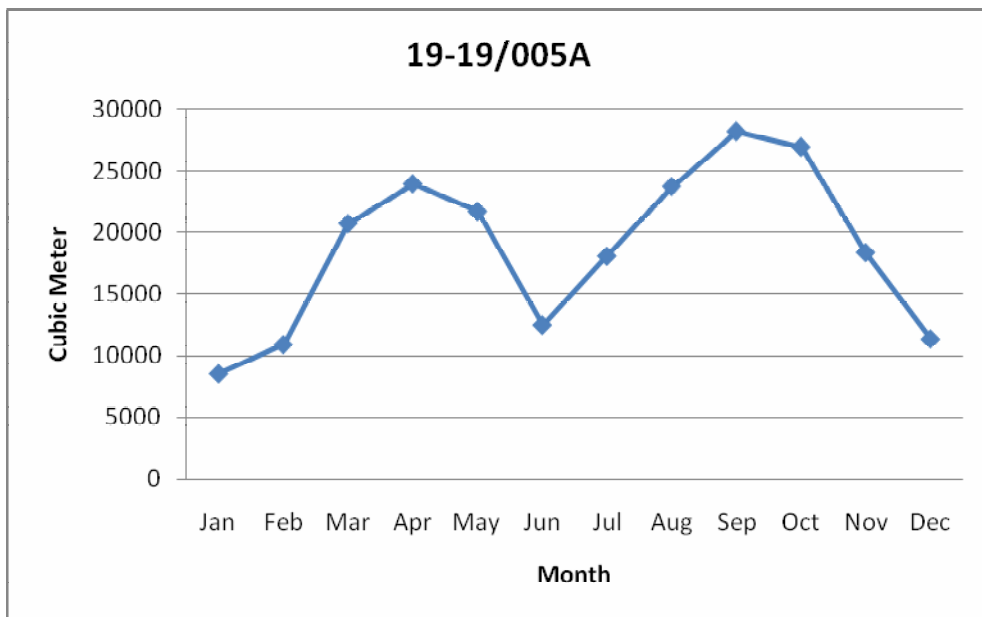
- N.B.** (1) Drawing is not to scale,
 (2) The length of upper and lower casing is unknown,
 (3) Information about cementing/grouting and other construction data are not available,
 (4) Information about well structure is based on the personal contact with the well owner

3 Hydro-geological Condition

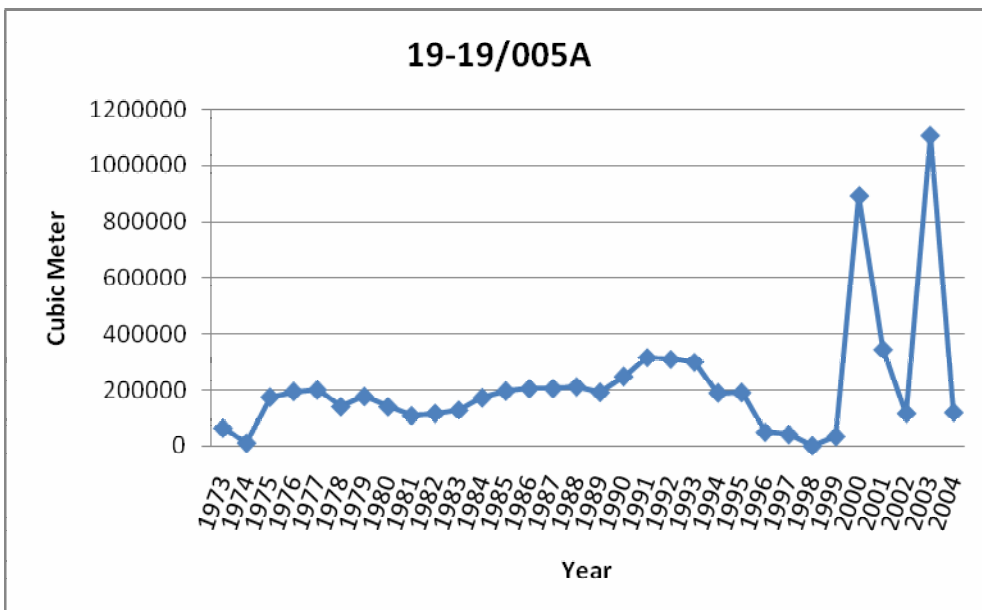
(The information is according to the survey carried out on 11/06/2007)

Tapped Aquifer	Neogene (Eastern Basin)
Static Water Level	20.24 meters below ground level (measured)
Average Pumping Duration	12 hrs/day - 4 days/week - 10 months/yr.
Estimated Discharge Rate	132 m ³ /hr
Dynamic Water Level	22.9 meters below ground level (measured)
Specific Capacity	50 m ³ /hr/m
Current needs to maintain	No needs

Well Abstraction

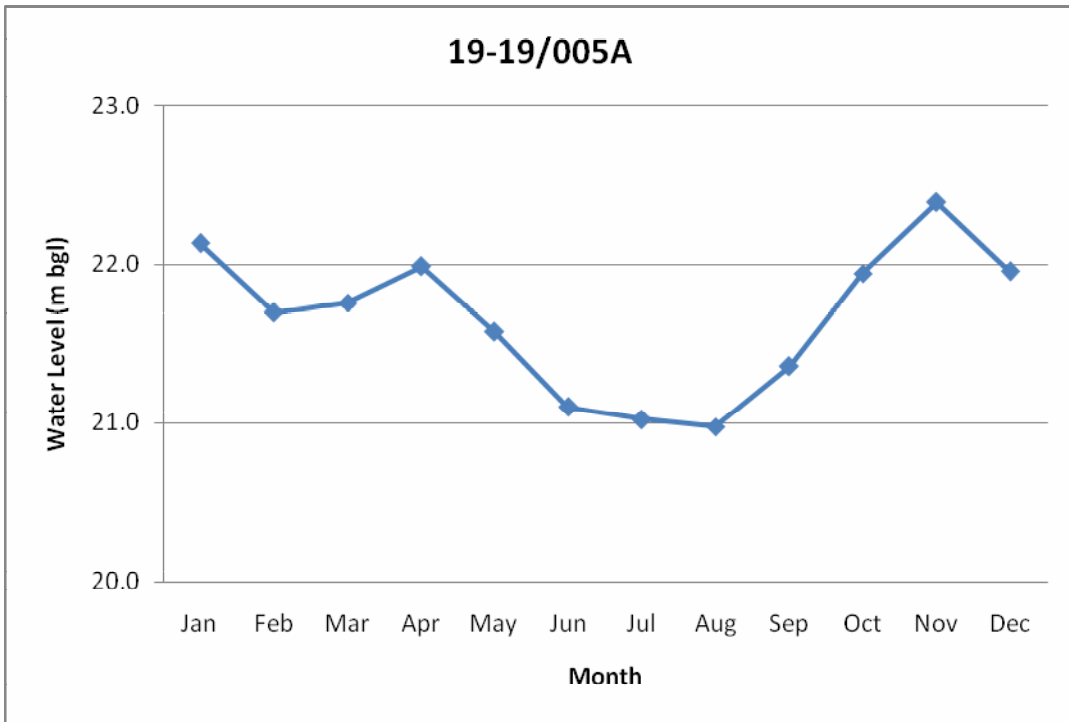


Average Monthly Abstraction (1973 – 2004), (PWA Database)

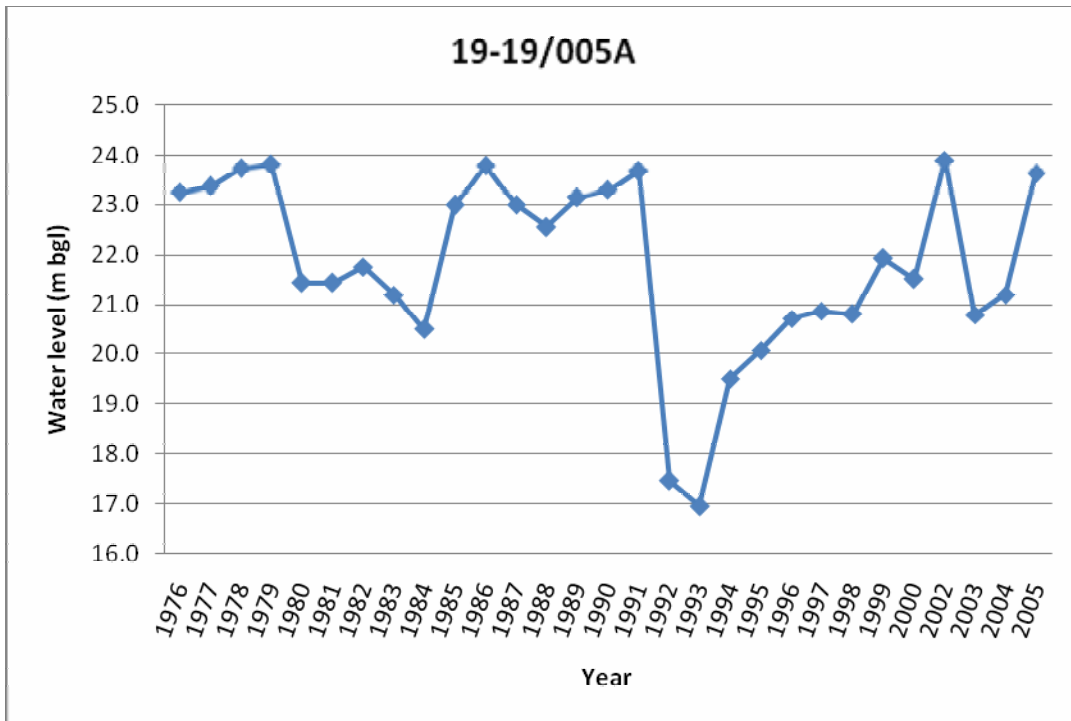


Yearly Abstraction, (PWA Database)

Water Level Fluctuation



Average Monthly Water Level Fluctuation (1976 – 2005), (PWA Database)



Yearly Water Level Fluctuation, (PWA Database)

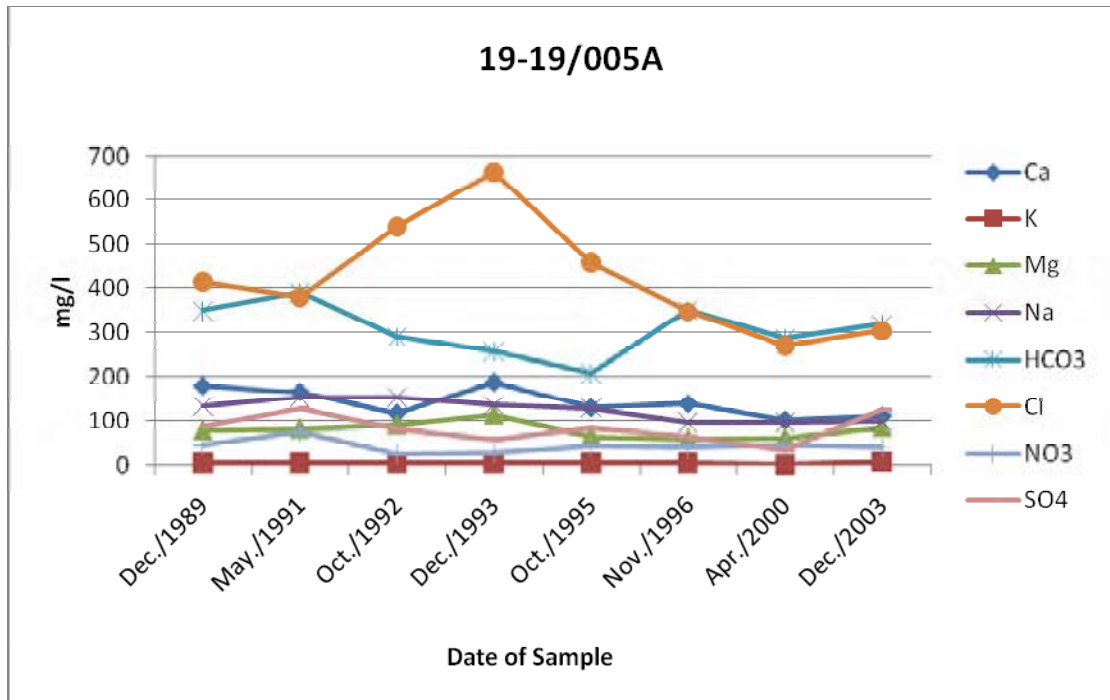
EC: 1641 $\mu\text{S}/\text{cm}$

Water Quality

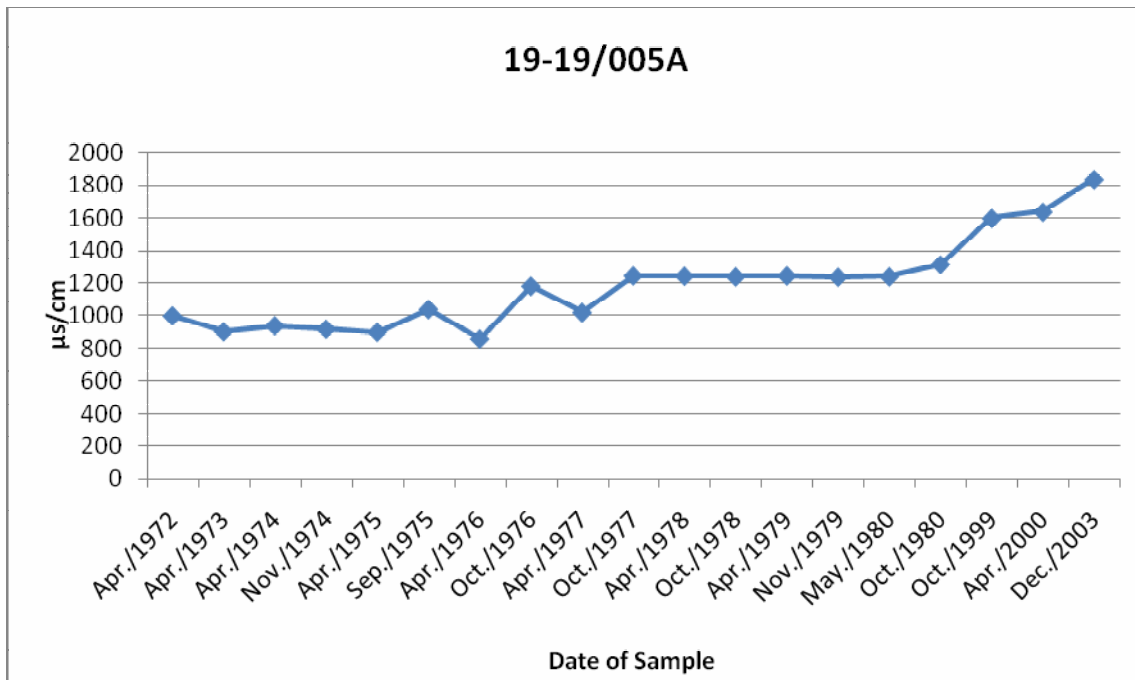
pH: 7.95

Temperature: 25.4 °C

The measurements were taken on 11/06/2007



Major Cations and Anions, (PWA Database)



Electric Conductivity (EC) - $\mu\text{S}/\text{cm}$, (PWA Database)

4 Pumping Units

(The information is according to the survey carried out on 11/06/2007)

Pump	
Pump type	Mechanical
Date of Installation	1950
Manufacturer	NA
Capacity	150 m ³ /hr
Engine	
Method of Driving Engine	Diesel
Condition	NA
Horse Power	200 hp
Volt	NA
Speed Rotations	1500 rpm
Turbine	
Number of Stages	16 stages
Type of Stages	Ø 9" (Closed)
Gear Head	
Condition	Fair
Speed Rotations	NA
Horse Power	110 hp
Others	
Type of Lubrication	Water
Dimension of Shaft	Ø 32 mm / 42 m length
Dimension of Rising Pipes	Ø 6" / 42 m length
Dimension of Discharge Head	Ø 8"
Maintenance Record	NA
Control Unit Condition	Bad
Water Meter Condition	NA
Pump and Engine House	Bad

5 Piping

Pipe Connection	Agricultural network (1500 m long)
Leakage	NO
Pipe Condition	Fair
Type	Steel
Diameter	Ø 5"

Well Profile	19-20/001A
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1 General Information
(The information is according to the survey carried out on 11/06/2007)

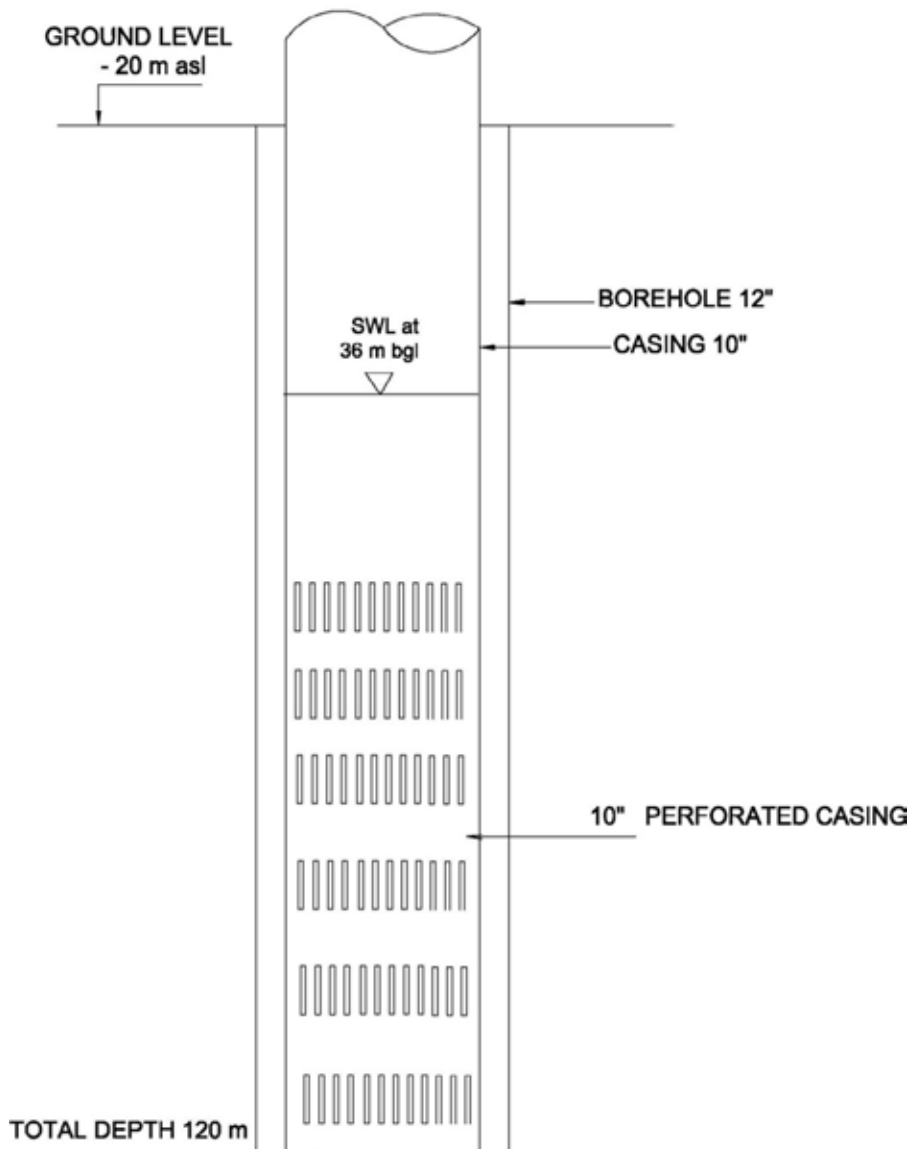
Well Name	Khursheed Mbaslat
Locality Name	Bardala, Tubas
Well Number	19-20/001A
Coordinates	PGE 194350 / PGN 200700 / Z: - 25 m asl
Date of Survey	11/06/2007
Status	Abandoned for 15 years
Extraction License	14,400 m ³ /year
Average Abstraction	1,992 m ³ /year (average for pumping years 1975 - 1981)
Water Usage	Agricultural Use Only
Availability of Electric Grid	NO
Rehabilitation since Drilling	NO



2 Well Structure

(The information is according to the survey carried out on 11/06/2007)

Drilling Method	Cable Tool (Percussion)
Drilling Year	1960
Total Well Depth	120 m
Drilling Diameter/Length	Ø 12"/120 m
Upper Casing (Blank)	Ø 10" - steel / welded/ blank
Lower Casing (Screen)	Ø 10" - steel / welded/ perforated
Current needs to maintain	No needs

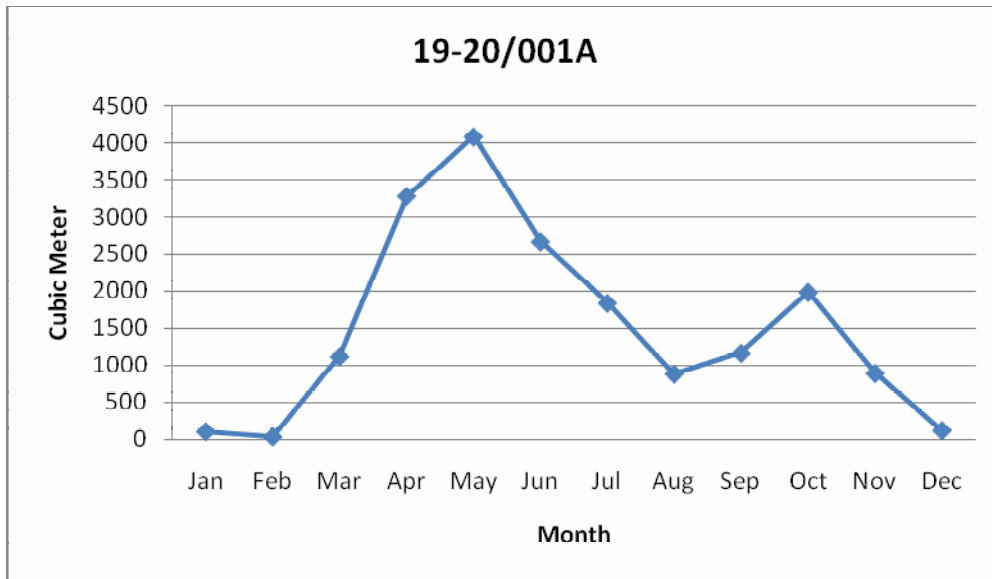


- N.B.** (1) Drawing is not to scale,
 (2) The length of upper and lower casing is unknown,
 (3) Information about cementing/grouting and other construction data are not available,
 (4) Information about well structure is based on the personal contact with the well owner

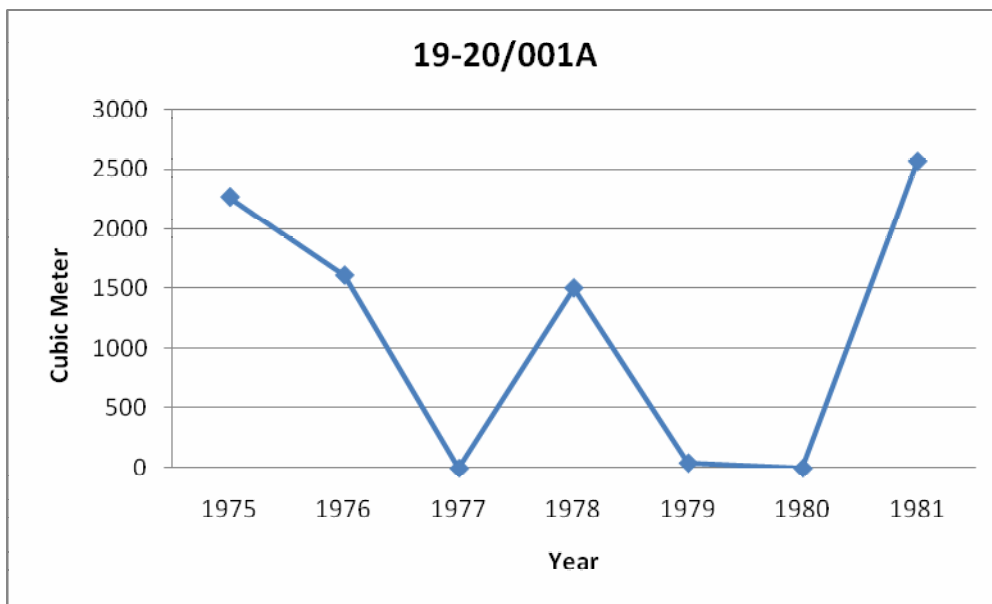
3 Hydro-geological Condition

Tapped Aquifer	Neogene (North Eastern Basin)
Static Water Level	36 meters below ground level (measured)
Average Pumping Duration	12 hrs/day - 7 days/week - 9 months/yr (when it was working)
Estimated Discharge Rate	75 m ³ /hr (when it was working)
Dynamic Water Level	NA
Specific Capacity	NA
Current needs to maintain	No needs

Well Abstraction (When it was working)



Average Monthly Abstraction (1975 – 1981), (PWA Database)



Yearly Abstraction, (PWA Database)

4 Pumping Unit

(The information is according to the survey carried out on 11/06/2007)

Pump	
Pump type	Mechanical
Date of Installation	1960
Manufacturer	NA
Capacity	NA
Engine	
Method of Driving Engine	Diesel
Condition	NA
Horse Power	80 hp
Volt	NA
Speed Rotations	1500 rpm
Turbine	
Number of Stages	10 stages
Type of Stages	Closed
Gear Head	
Condition	There is no gear head
Speed Rotations	
Horse Power	
Others	
Type of Lubrication	Water
Dimension of Shaft	Ø 38 mm
Dimension of Rising Pipes	Ø 5"
Dimension of Discharge Head	Ø 12"
Maintenance Record	NA
Control Unit Condition	NA
Water Meter Condition	NA
Pump and Engine House	Bad

5 Piping

Pipe Connection	Agricultural network
Leakage	YES
Pipe Condition	Bad
Type	NA
Diameter	NA

Well Profile	20-17/019
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1 General Information
(The information is according to the survey carried out on 11/06/2007)

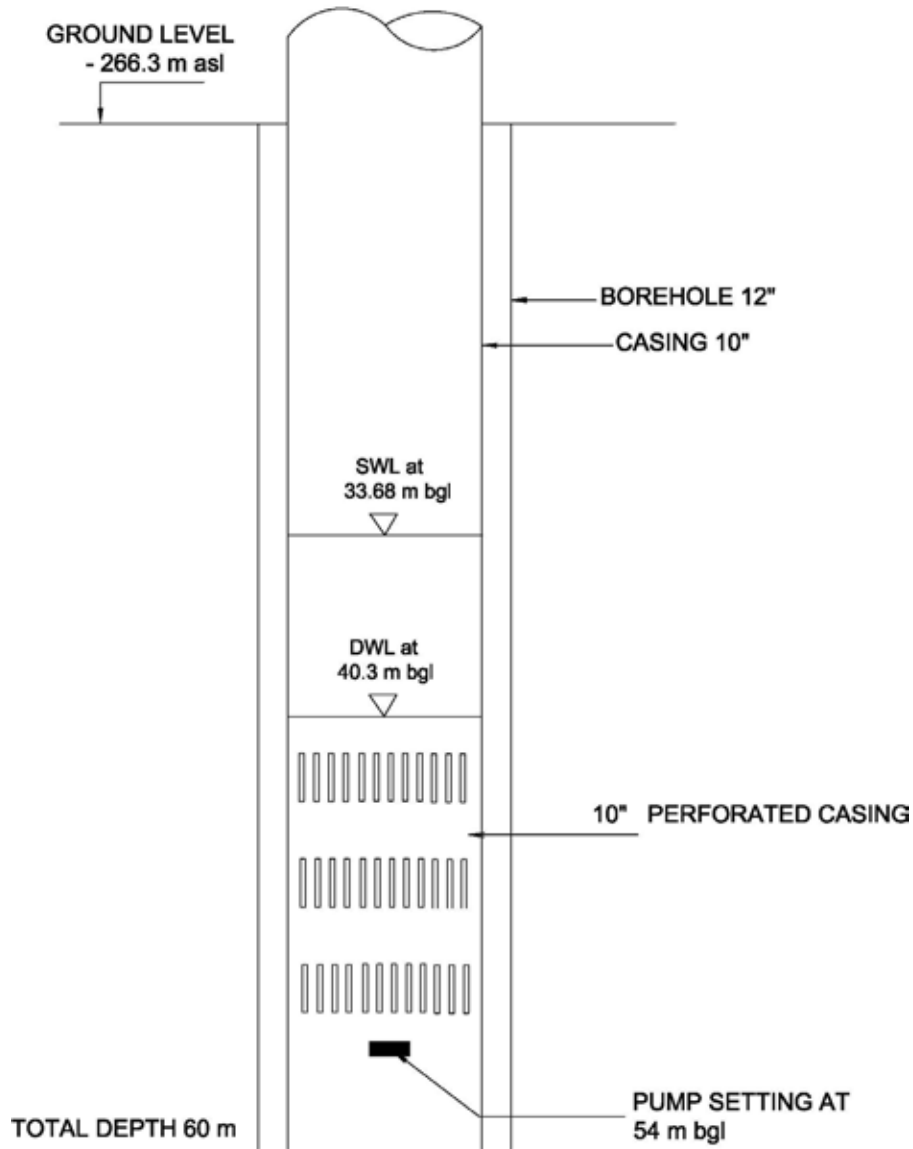
Well Name	Jameel Khamees
Locality Name	Marj Na'ja
Well Number	20-17/019
Coordinates	PGE 200020 / PGN 175150 / Z : -266.3 m asl
Date of Survey	11/06/2007
Status	Pumping
Extraction License	18,000 m ³ /year, (PWA)
Average Abstraction	23,139 m ³ /year (average from 1976 to 2004), (PWA)
Water Usage	Agricultural Use Only
Availability of Electric Grid	YES
Rehabilitation since Drilling	YES, in 2001, replace a vertical pump with submersible pump



2 Well Structure

(The information is according to the survey carried out on 11/06/2007)

Drilling Method	Cable Tool (Percussion)
Drilling Year	1958
Total Well Depth	60 m
Drilling Diameter/Length	Ø 12"/60 m
Upper Casing (Blank)	Ø 10" - steel / welded/ blank
Lower Casing (Screen)	Ø 10" - steel / welded/ perforated
Current needs to maintain	No needs



20-17/019

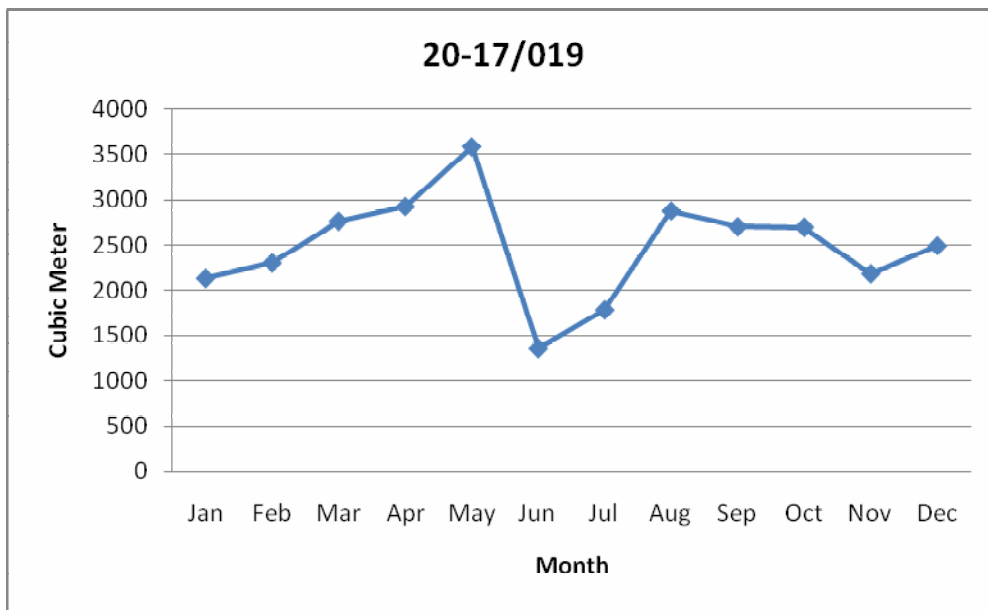
- N.B.**
- (1) Drawing is not to scale,
 - (2) The length of upper and lower casing is unknown,
 - (3) Information about cementing/grouting and other construction data are not available,
 - (4) Information about well structure is based on the personal contact with the well owner

3 Hydro-geological Condition

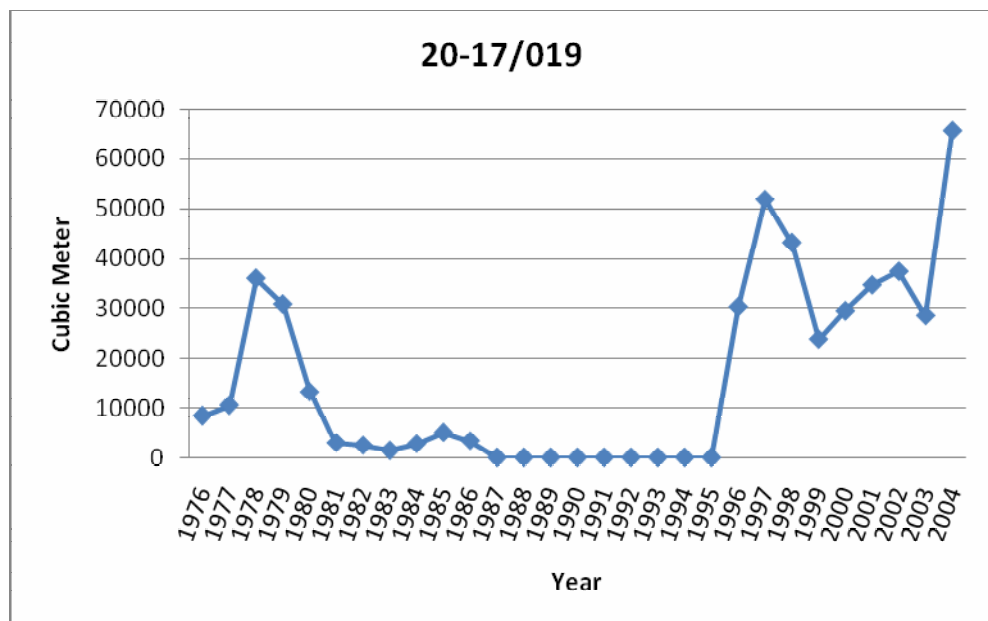
(The information is according to the survey carried out on 11/06/2007)

Tapped Aquifer	Eocene (Eastern Basin)
Static Water Level	33.68 meters below ground level (measured)
Average Pumping Duration	24 hrs/day - 5 days/week - 9 months/yr.
Estimated Discharge Rate	35 m ³ /hr
Dynamic Water Level	40.3 meters below ground level (measured)
Specific Capacity	5.3 m ³ /hr/m
Current needs to maintain	No needs

Well Abstraction

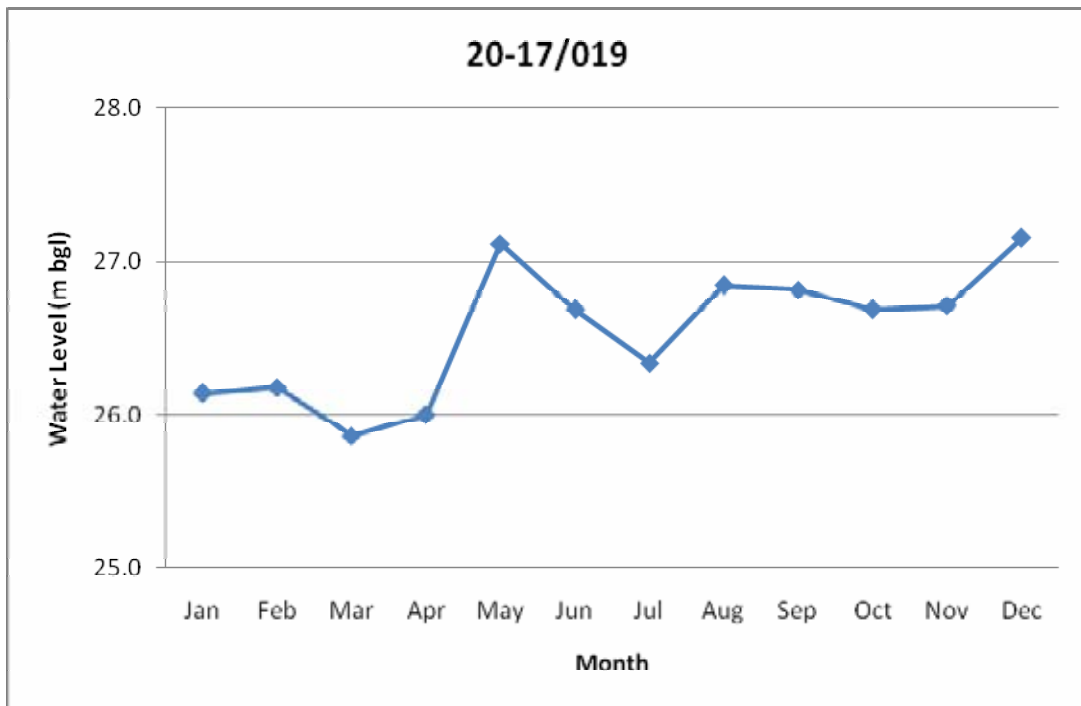


Average Monthly Abstraction (1976 – 2004), (PWA Database)

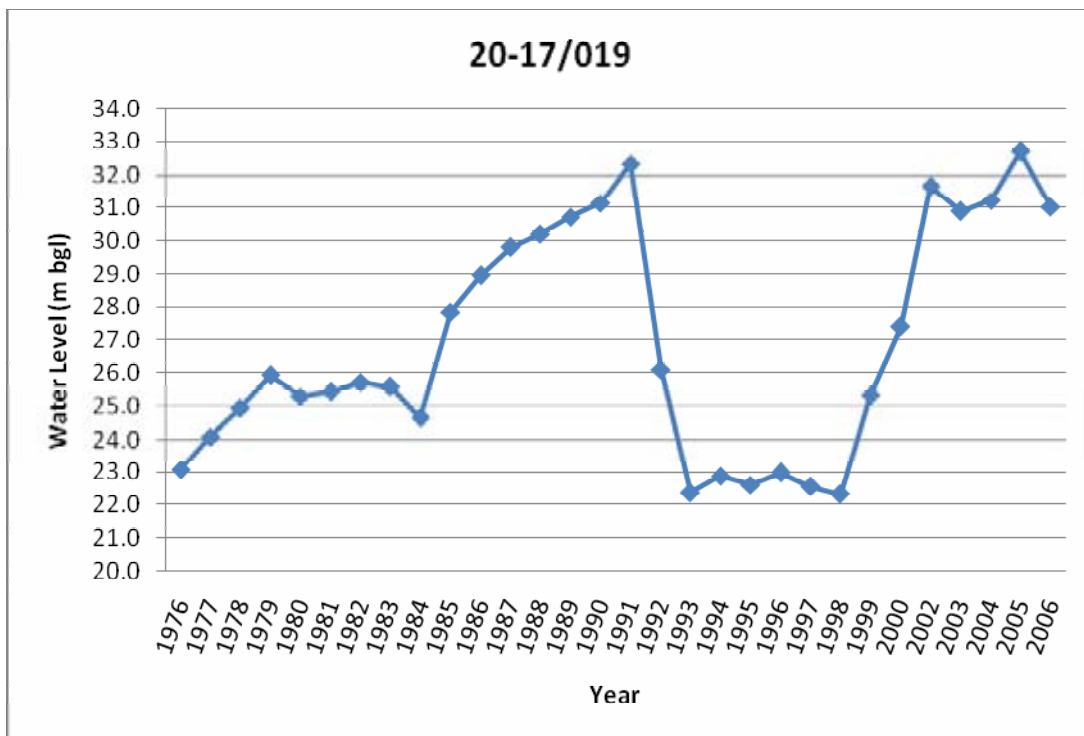


Yearly Abstraction, (PWA Database)

Water Level Fluctuation

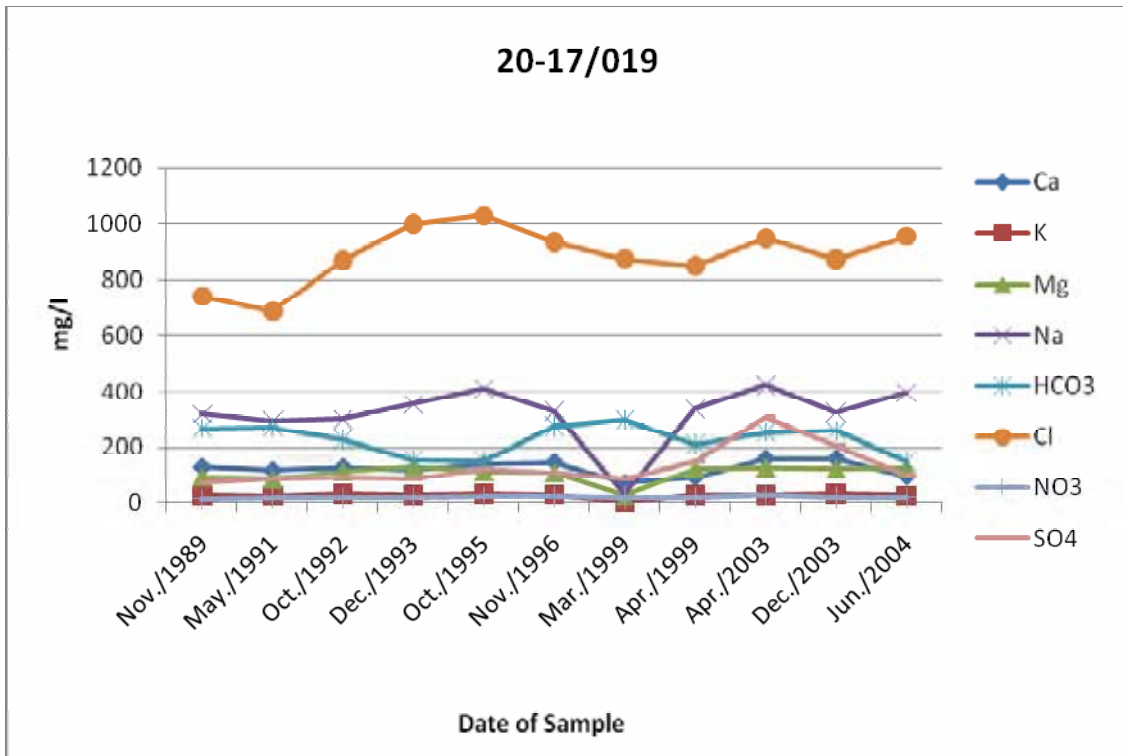


Average Monthly Water Level Fluctuation (1976 – 2004), (PWA Database)

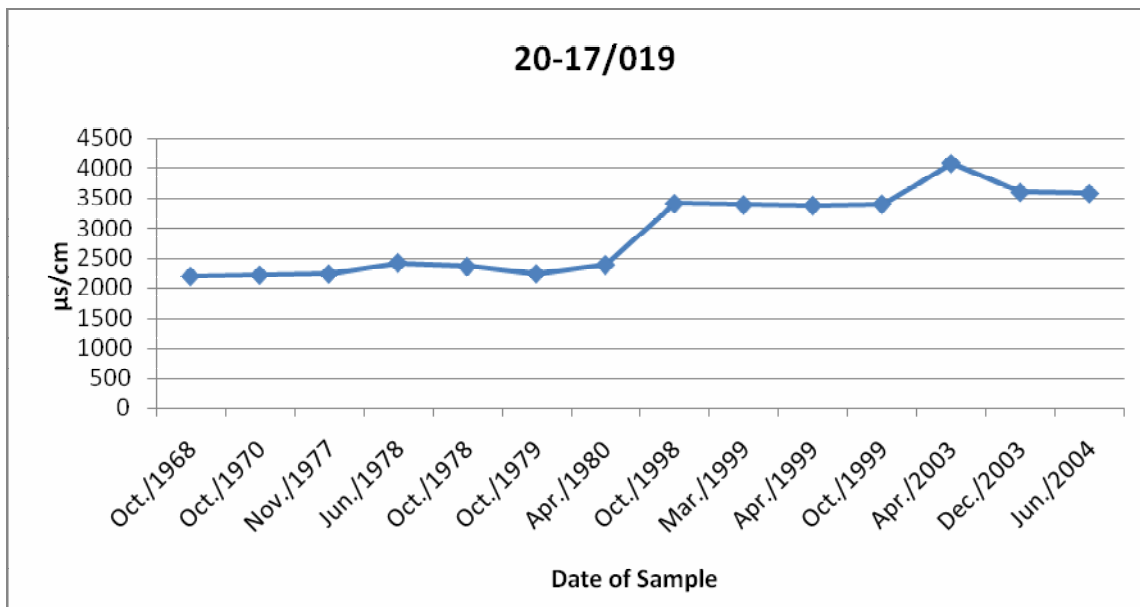


Yearly Water Level Fluctuation, (PWA Database)

Water Quality
 EC: 3980 $\mu\text{S}/\text{cm}$ pH: 7.94 Temperature: 28.8 °C
 (The measurements were taken on 11/06/2007)



Major Cations and Anions, (PWA Database)



Electric Conductivity (EC) - $\mu\text{S}/\text{cm}$, (PWA Database)

4 Pumping Unit

(The information is according to the survey carried out on 11/06/2007)

Pump	
Pump type	Electrical / Submersible
Date of Installation	2001
Manufacturer	NA
Capacity	40 m ³ /hr
Engine	
Method of Driving Engine	Electrical
Condition	Good
Horse Power	15 hp
Volt	400 Volts
Speed Rotations	3000 rpm
Turbine	
Number of Stages	7 stages
Type of Stages	Ø 5" (Closed)
Gear Head	
Condition	There is no gear head
Speed Rotations	
Horse Power	
Others	
Type of Lubrication	Water
Dimension of Shaft	NA
Dimension of Rising Pipes	Ø 4" / 54 m long
Dimension of Discharge Head	NA
Maintenance Record	NA
Control Unit Condition	Fair
Water Meter Condition	Fair
Pump and Engine House	Fair

5 Piping

Pipe Connection	Agricultural network
Leakage	NO
Pipe Condition	Fair
Type	150 m Steel pipes and 500 meters PVC pipes
Diameter	Ø 5"

Well Profile	20-17/022
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1 General Information
(The information is according to the survey carried out on 10/06/2007)

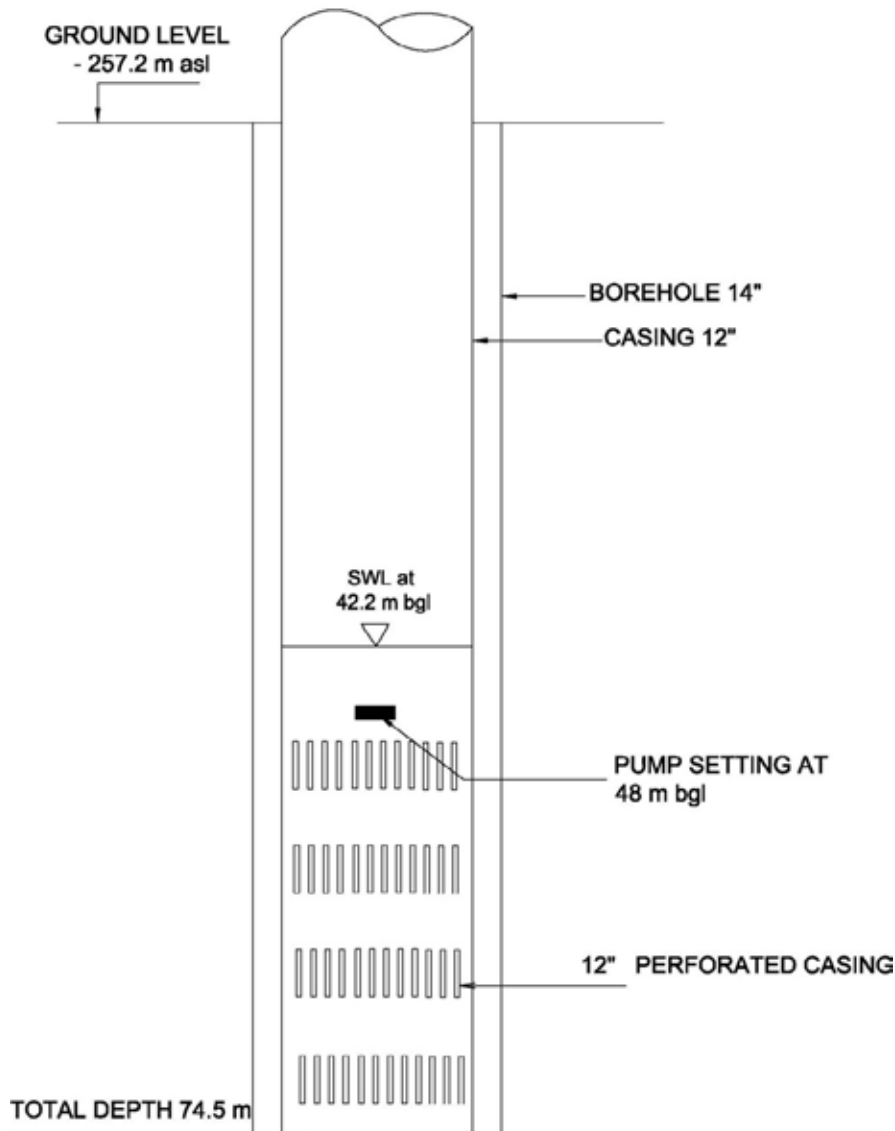
Well Name	Sulayman Saleh
Locality Name	Marj Na'ja
Well Number	20-17/022
Coordinates	PGE 201300 / PGN 178400 / Z : -257 m asl
Date of Survey	10/06/2007
Status	Not Pumping
Extraction License	73,200 m ³ /year, (PWA)
Average Abstraction	65,903 m ³ /year (average from 1976 to 2001), (PWA)
Water Usage	Agricultural Use Only
Availability of Electric Grid	NO
Rehabilitation since Drilling	NO



2 Well Structure

(The information is according to the survey carried out on 10/06/2007)

Drilling Method	Cable Tool (Percussion)
Drilling Year	1950
Total Well Depth	74.5 m
Drilling Diameter/Length	Ø 14"/74.5 m
Upper Casing (Blank)	Ø 12" - steel / welded/ blank
Lower Casing (Screen)	Ø 12" - steel / welded/ perforated
Current needs to maintain	No needs



20-17/022

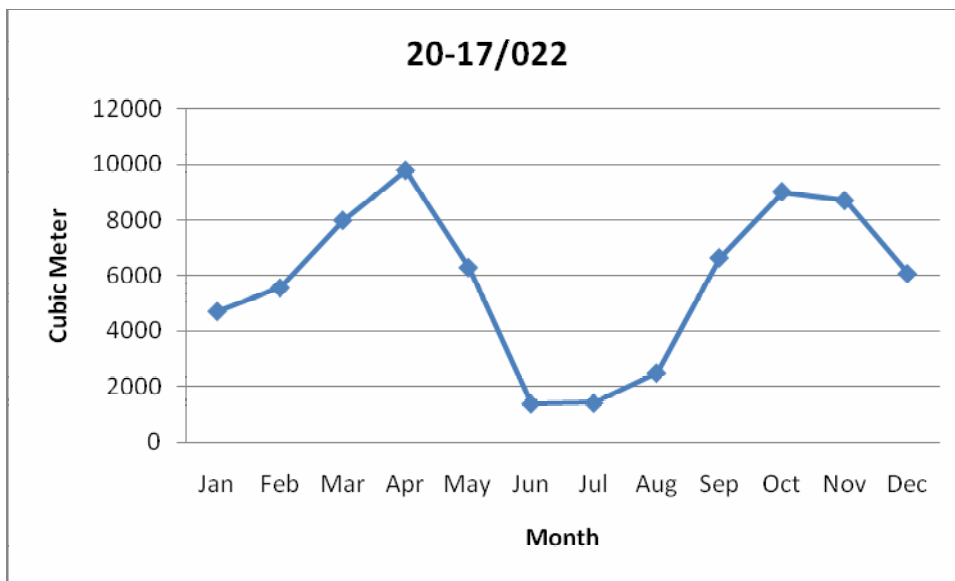
- N.B.**
- (1) Drawing is not to scale,
 - (2) The length of upper and lower casing is unknown,
 - (3) Information about cementing/grouting and other construction data are not available,
 - (4) Information about well structure is based on the personal contact with the well owner

3 Hydro-geological Condition

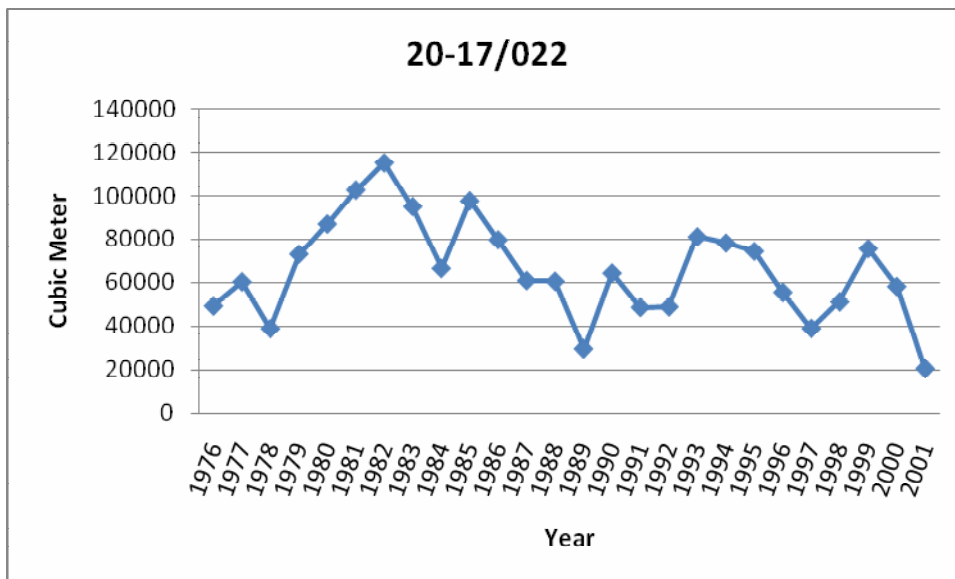
(The information is according to the survey carried out on 10/06/2007)

Tapped Aquifer	Alluvium (Eastern Basin)
Static Water Level	42.20 meters below ground level (measured)
Average Pumping Duration	24 hrs/day - 6 days/week - 9 months/yr.
Estimated Discharge Rate	120 m ³ /hr
Dynamic Water Level	NA, the team couldn't measure it because the pump was taken out and used for another well in January 2007.
Specific Capacity	NA
Current needs to maintain	No needs

Well Abstraction (When the well was pumping)

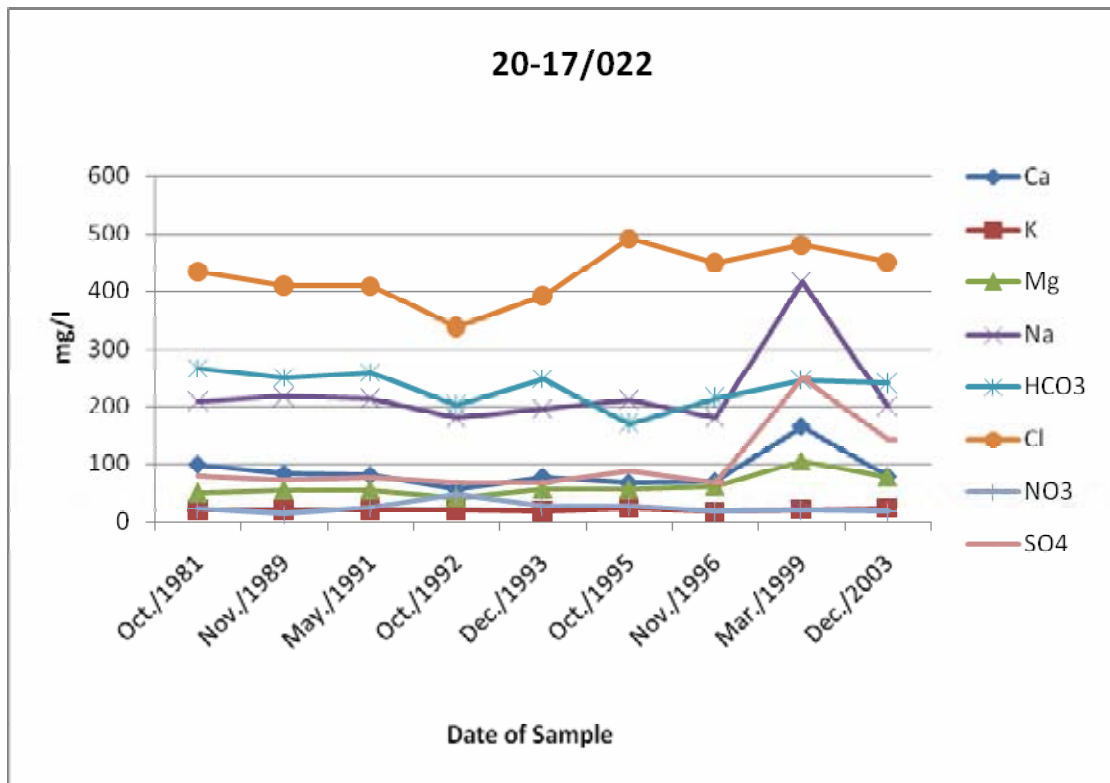


Average Monthly Abstraction (1976 – 2001), (PWA Database)

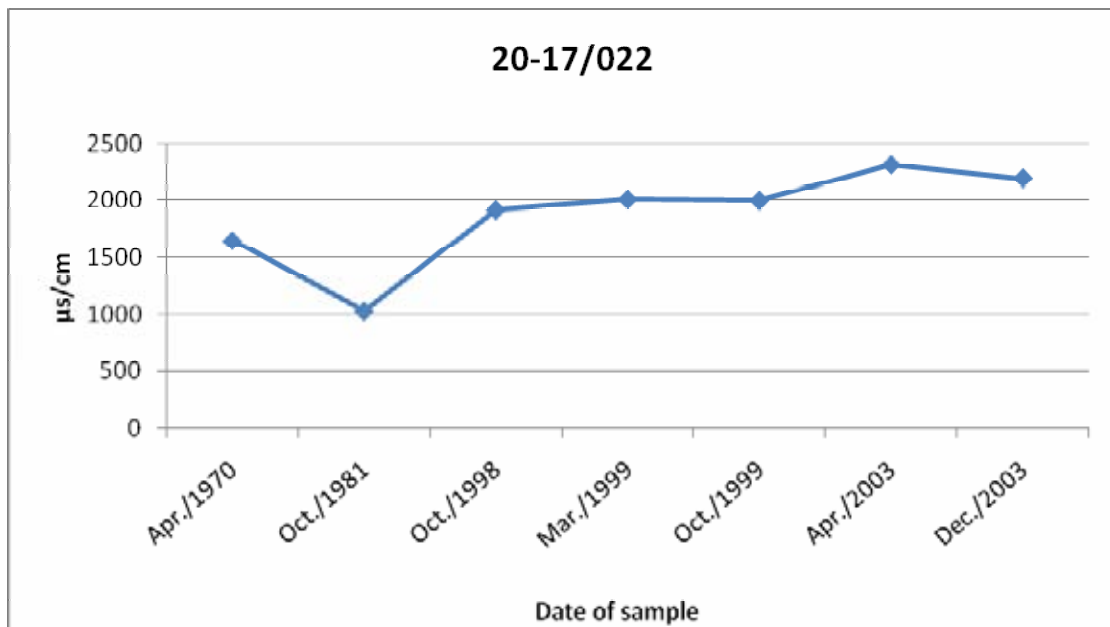


Yearly Abstraction, (PWA Database)

Water Quality (When the well was pumping)



Major Cations and Anions, (PWA Database)



Electric Conductivity (EC) - µS/cm, (PWA Database)

4 Pumping Unit

(The information is according to the survey carried out on 10/06/2007)

Pump	
Pump type	Mechanical
Date of Installation	NA
Manufacturer	NA
Capacity	NA
The pump was taken out from the well and used for another well in January 2007.	
Engine	
Method of Driving Engine	Diesel
Condition	Bad
Horse Power	The engine is malfunctioning
Volt	
Speed Rotations	
Turbine	
Number of Stages	8 stages
Type of Stages	Ø 9" (Closed)
Gear Head	
Condition	NA
Speed Rotations	1800 rpm
Horse Power	60 hp
Others	
Type of Lubrication	Water
Dimension of Shaft	Ø 35 mm / 48 m long
Dimension of Rising Pipes	Ø 6" / 48 m long
Dimension of Discharge Head	NA
Maintenance Record	NA
Control Unit Condition	NA
Water Meter Condition	NA
Pump and Engine House	Bad

5 Piping

Pipe Connection	Agricultural network with a reservoir
Leakage	YES
Pipe Condition	Fair
Type	NA
Diameter	NA