WOLFVILLE AQUIFER EVALUATION

Kings County, Nova Scotia

By

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Groundwater Section, N. S. Department of Mines

September 29, 1969

Wolfville Aquifer Evaluation

Introduction

After Department of Mines test holes revealed that the northern part of Wolfville is underlain by a productive sand and gravel aquifer, the Town of Wolfville requested the Dept. of Mines to evaluate the potential of the aquifer using a digital model developed by Pinder and Bredehoeft (1968). This report summarizes progress to date and makes recommendations for the continued evaluation of the aquifer.

Geology

As pointed out in an earlier report to the town (Sept. 9, 1968), Wolfville is underlain by pre-Mississippian slate, and by Mississippian and Triassic sandstones and shales, all mantled by glacial deposits. At the site of the Acadia University rink well, bedrock consists of Triassic rocks from 159 to 219 feet and Mississippian rocks from 219 to 294 feet. At the site of the Dept. of Mines test well, however, a few feet of Triassic rocks overlie pre-Mississippian slate. The geology, therefore, varies rapidly from place to place, and although bedrock aquifers supply the rink well, they are not present at the site of the Dept. of Mines test well.

The glaciofluvial deposits overlying the bedrock at Wolfville are seen at the surface in an area adjacent to highway 1 (see Map 1 in Trescott, 1968). The surface exposures, however, cannot be used to outline the subsurface thickness and areal extent of the deposits. Dept. of Mines test holes and lithologic logs (or casing lengths) of nine private wells were used to estimate the thickness and extent of the Wolfville surficial aquifer (Fig. 1). The aquifer appears to fill a trough-shaped depression extending from Greenwich to Wolfville harbour and has a maximum known thickness of 159 feet at the site of the rink well.

Hydrology

The first pumping test (December 16 to 19, 1968) provided enough information to determine the aquifer coefficients of transmissibility and storage. The transmissibility values shown in figure 1 were determined assuming that the transmissibility is directly proportioned to aquifer thickness. The storage coefficient, due to delayed-drainage effects, appears to increase with time and, after adjusting the digital model, was found to vary from 0.0006 at 1 minute to 0.05 at 1,000 minutes. The first test, however, was not long enough to establish whether or not the aquifer is effectively recharged when it is being pumped. Pumping without recharge would de-water the aquifer in a few months.

The second pumping test (July 23 to August 19, 1969) was long enough to establish equilibrium conditions at a pumping rate of 254 imperial gallons per minute (gpm). This conclusion was reached after pumping test data were adjusted for an

assumed average daily water-table recession of 0.03 ft. (see Fig. 3). This was the average recession in a water-table aquifer at Coldbrook during this period and is typical of water-level declines during this time of year (see hydrographs in Trescott, 1958).

The scatter in drawdown data after adjusting for daily recession is understandable after an examination of the hydrograph for observation well 1 shown in figure 2. Aside from the effects of pumping and natural water-table recession, the water level in this well has a twice daily sinusoidal fluctuation with an amplitude of 0.06 to 0.08 feet due to the tides. This is superposed on a larger sinusoidal fluctuation with an amplitude of 0.2 and 0.3 feet and a period of about 4 days. The cause of this fluctuation is not known at the present.

The source of recharge to the aquifer is not obvious because no significant surface water bodies, such as rivers or lakes, overlie the aquifer. Possible sources include salt water from Wolfville harbour and/or freshwater seepage from the underlying bedrock. For the harbour to be a source of recharge, a good hydraulic connection would have to exist between the aquifer and the harbour, and pumping would have to create a large drawdown near the harbour to reverse the natural tendency for fresh water to discharge into the harbour at all times except at and near high tide. It is thought, however, that the harbour bed is composed of silt and clay of low permeability, and the small amount of drawdown in this area when wells are producing up to a total of 1,600 gpm is evident from an examination of figures 4B and 5. The lack of infiltration from the harbour could be substantiated by constructing an observation well near the harbour to monitor water levels and keep a periodic check on water quality.

The most likely source of recharge is the underlying bedrock. Most of the bedrock forming the trough consists of Triassic sandstones and shales. Many of the sandstones are important aquifers elsewhere in the Annapolis-Cornwallis Valley and could easily replenish the water being withdrawn from the surficial aquifer. In constructing the digital model, the bed of the trough was assumed to be 1 foot thick and to have a hydraulic conductivity of 8×10^{-8} ft./sec. This value should be checked and the model revised, if necessary, after a 3-week pumping test is conducted on a production well.

Wolfville Well Field

Drawdown in the Wolfville aquifer with one well producing 254 gpm is shown after 27.5 minutes in figure 4A and after 59 days at equilibrium in figure 4B. Drawdown (adjusted for water-table recession) in the pumping well at equilibrium was 14.2 feet. Due to the fact that only 40 feet of the aquifer are screened, this drawdown is about two times the drawdown for a well screened from the top to the bottom of the aquifer. (Contrary to my earlier opinion [report of Dec. 27, 1968], there is probably little or no 'well loss' - additional drawdown due to poor well development.) For any pumping rate, therefore, the drawdown in the pumping well will be about twice the drawdown for fully penetrating conditions. If the first pumping test at 400 gpm had been continued until the aquifer system reached equilibrium, it is estimated that drawdown in the pumping well (14.3 feet after 3 days) would have stabilized at about 17 feet.

As an example of the usefulness of the model in making predictions based on known information, two wells were inserted in the model, one at the site of the test well and one a thousand feet to the west near Kent Foods Ltd. Equilibrium drawdown in the model with each well pumping at 800 gpm is shown in figure 5. Drawdown in fully penetrating pumping wells would be about 24 feet. Drawdown in pumping wells with only 40 feet of screen would be about 50 feet - a drawdown which can be considered the practical limit for production wells in this aquifer.

Water Quality

The quality of water pumped from the aquifer has remained excellent (see enclosed analyses for the period August 21 to 29, 1969). As pumping continues, the quality of the water will gradually change and approach the quality of water from the principal source of recharge - the underlying bedrock. A slight increase in chloride content with time to 20 or 30 ppm, therefore, should not be alarming. The chloride concentration, however, should not get as high as it is in the rink well (which contained 78 ppm chloride in one analysis) because most of the water in the rink well is coming from deeper bedrock aquifers.

Conclusions and Recommendations

1. Enough information has already been obtained to justify the installation of two production wells designed to meet the needs of the town for the near future. The current testing program since the termination of the 27-day, constant-discharge test has not and will not add any important information.

2. An observation well should be installed near the harbour to monitor water levels and water quality at the base of the aquifer. Water samples should be taken periodically (as they are now) from producing wells to monitor chloride.

3. A constant-discharge pumping test of at least 3-weeks duration at the designed production rate should be conducted on the permanent wells. Information from these tests can be used to check and modify (if necessary) the digital model.

References Cited

Pinder, G. F., and Bredehoeft, J. D., 1968, Application of the digital computer for aquifer evaluation: Water Resources Research, V. 4, No. 5, pp. 1069-1093.

Trescott, P. C., 1968, Groundwater resources and hydrogeology of the Annapolis-Cornwallis Valley, Nova Scotia: N. S. Dept. of Mines Memoir 6, 159 pp.

_____, Sept. 9, 1968, Town of Wolfville - Groundwater Possibilities: N.S.D.M. report to the Town of Wolfville.

Trescott, P. C., Dec. 27, 1968, Analysis of the capacity of the test well at Wolfville, N. S.: N.S.D.M. report to the Town of Wolfville.

Peter C. Trescott
Groundwater Geologist

September 29, 1969
Halifax, Nova Scotia

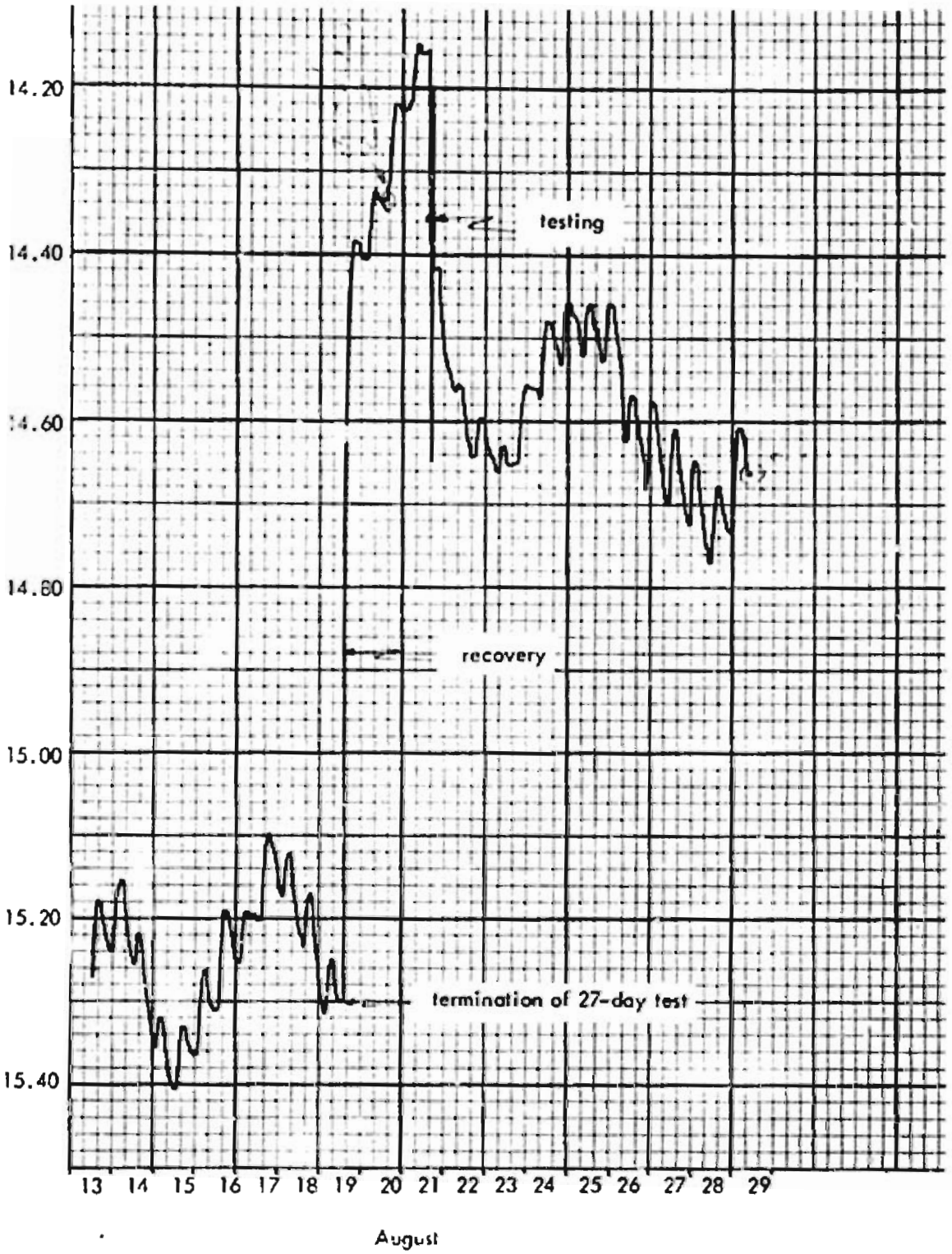
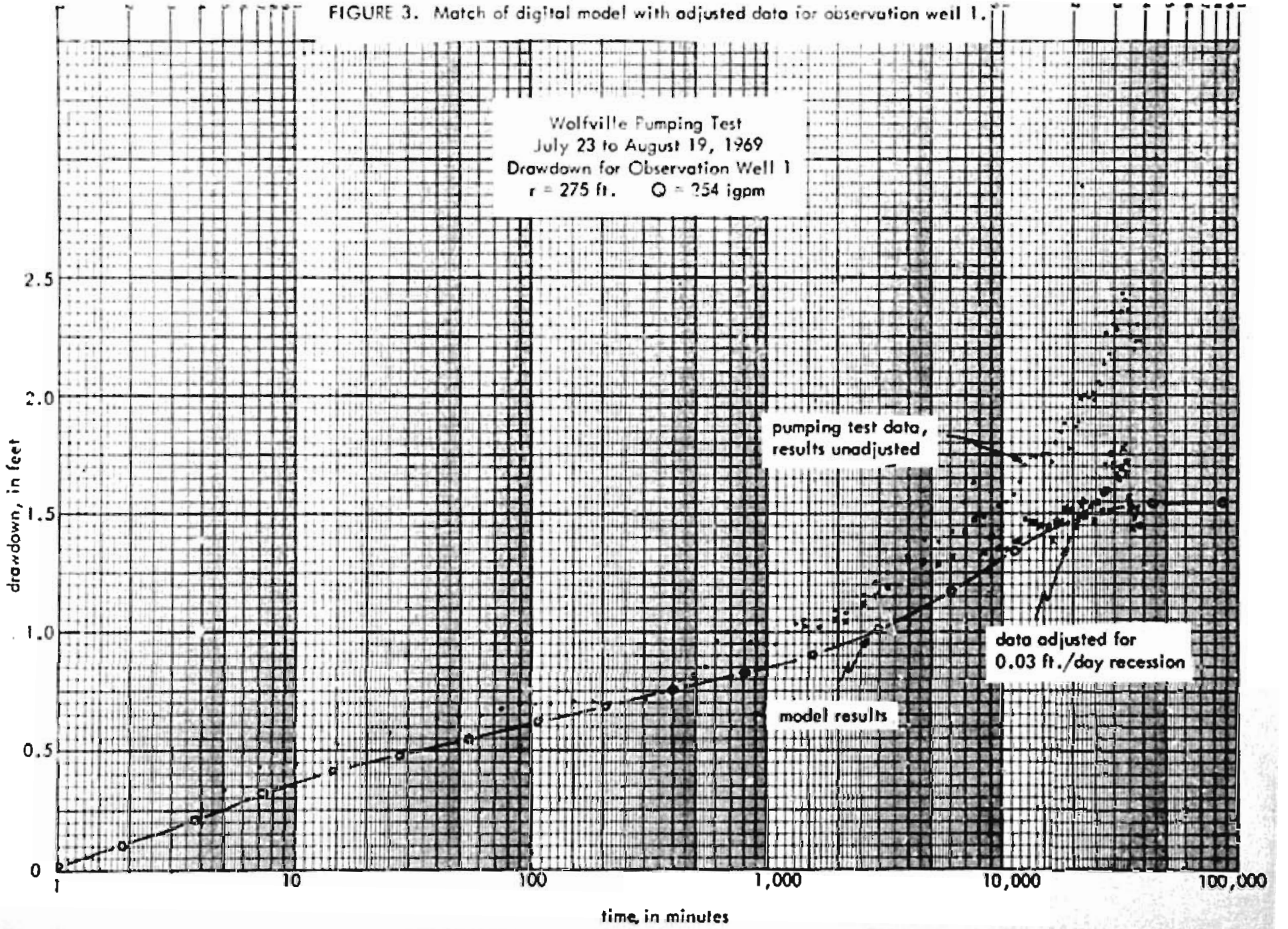


FIGURE 2. Water level in observation well 1 from August 13 to 29, 1969.

FIGURE 3. Match of digital model with adjusted data for observation well 1.



NOVA SCOTIA WATER AUTHORITY

CHEMICAL ANALYSIS OF WATER

Lab. No. 44075/3

LOCATION: 21 - H - 1 - B - 78 - E
Wolfville, Kings Co., N.S.

IDENTIFICATION NUMBER: 1583

SUBMITTED BY: P. C. Trescott

DATE SAMPLED: December 13, 1968 - 10:30 A.M.

DATE RECEIVED: January 7, 1969

SAMPLED BY: P. C. Trescott
for N.S.D.M.

	ppm	epm
Calcium	13.1	0.65
Magnesium	9.2	0.76
Sodium	4.8	0.21
Iron Total	0.02	0.001
Manganese Total	Trace	-
Sulphate	7	0.16
Chloride	8.9	0.25
Nitrate	4	0.06

Alkalinities -Phenolphthalein as $CaCO_3$	0
-Methyl Orange as $CaCO_3$	52
Hardness (Total as $CaCO_3$)	70.4
Loss on Ignition (1 hr. . 500 C)	-
Total Dissolved Solids	-
Suspended Matter	-
Specific Conductance (mhos. x 10^{-5})	18
pH Value	7.7
Color	< 5
Turbidity	1

REMARKS: Water temp. - 47.5°F
Well - ✓
Surficial - Glacio-fluvial sand & gravel
Well depth - 100'

Cag. length - 60'
Diam. - 6"
Owner - N.S.D.M.
Driller & year - N.S.D.M., 1968

TOTAL HARDNESS - DETERMINED BY EDTA TITRATION.
T SIGNIFIES TRACE AMOUNT (LESS THAN 0.01 p.p.m.).
T SIGNIFIES TRACE AMOUNT (LESS THAN 0.01 p.p.m.).
Na - DETERMINED BY FLAME PHOTOMETER.

DATE: January 24, 1969

ANALYSED BY: J. E. Gillespie

NOVA SCOTIA WATER AUTHORITY

CHEMICAL ANALYSIS OF WATER

Lab. No. 44075/2

Location: 21 - H - 1 - B - 78 - E
Wolfville, Kings Co., N.S.

Date Sampled: December 17, 1968 - 10:00 P.M.

Date Received: January 3, 1969

Notification Mark: 1582

Sampled By: P. C. Trescott

Submitted By: P. C. Trescott

for N.S.D.H.

	ppm	epm
Calcium	13.0	0.65
Magnesium	8.7	0.72
Sodium	4.7	0.20
Iron Total	0.02	0.001
Manganese Total	Trace	-
Sulphate	8	0.17
Chloride	8.9	0.25
Nitrate	4	0.06

Alkalinities	
-Phenolphthalein as $CaCO_3$	0
-Methyl Orange as $CaCO_3$	18
Hardness (Total as $CaCO_3$)	68.8
Loss on Ignition (1 hr. - 500°C)	-
Total Dissolved Solids	-
Suspended Matter	-
Specific Conductance (mhos. x 10^{-5})	18
pH Value	7.7
Color	<5
Turbidity	3

REMARKS: Well - 4"
Surficial - Glacio-fluvial sand & gravel
Well depth - 200'
Cag. length - 60'

Diam. - 6"
Owner - N.S.D.H.
Driller & year - N.S.D.H., 1968

Total Hardness - determined by EDTA titration.
Fe - T denotes trace amount (less than 0.01 p.p.m).
Mn - T denotes trace amount (less than 0.01 p.p.m).
NO3 - determined by Flame Photometer

DATE: January 24, 1969

ANALYSED BY: J. E. Milligan

NOVA SCOTIA WATER AUTHORITY

CHEMICAL ANALYSIS OF WATER

Lab. No. 44075/1

Location: 21 - H - 1 - B - 78 - E
Wolfville, Kings Co., N.S.

Identification Mark: 1581

Submitted by: P. C. Trescott

Date Sampled: December 19, 1968 - 10:00 A.M.

Date Received: January 7th, 1969

Sampled by: P. C. Trescott
for N.S.D.M.

	ppm	epm
Calcium	12.2	0.61
Magnesium	9.6	0.79
Sodium	5.2	0.23
Iron Total	0.02	0.001
Manganese Total	Trace	-
Sulphate	8	0.17
Chloride	8.9	0.25
Nitrate	4	0.06

Alkalinities	
-Phenolphthalein as $CaCO_3$	0
-Methyl Orange as $CaCO_3$	48
Hardness (Total as $CaCO_3$)	70.0
Loss on Ignition (1 hr. 500°C)	-
Total Dissolved Solids	-
Suspended Matter	-
Specific Conductance (mhos. x 10^{-5})	18
pH Value	7.7
Color	<5
Turbidity	3

REMARKS: Well - ✓
Surficial - Glacio-fluvial sand and gravel
Well depth - 100'
Csg. 60'

Diam. 6"
Owner - N.S.D.M.
Driller & year - N.S.D.M., 1968

- HARDNESS - DETERMINED BY EDTA TITRATION.
- T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m.).
- T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m.).
- DETERMINED BY FLAME SPECTROMETER.

Date: January 24th, 1969

ANALYSED BY: J. E. Gillespie

15.01/1

NOVA SCOTIA WATER AUTHORITY

CHEMICAL ANALYSIS OF WATER

LOCATION: Wolfville, N.S.
Town Test Well

DATE SAMPLED: July 23, 1969 - 3:09 P.M.

DATE RECEIVED: 24/7/69

IDENTIFICATION MARK: Sample #1

SAMPLED BY: J. MacNeil

SUBMITTED BY: J. MacNeil
Town Office, Wolfville

cc: Mr. Terry Hennigar
N.S.D.M., Box 1087, N.S.

	ppm	epm		
Calcium	15.38	0.767	Alkalinities -Phenolphtholein as $CaCO_3$ -Methyl Orange as $CaCO_3$	 0 60
Magnesium	5.16	0.424	Hardness (Total as $CaCO_3$)	59.60
Sodium	5.0	0.218	Loss on Ignition (1 hr. @500°C)	
Iron Total	0.04	0.002	Total Dissolved Solids	
Manganese Total	T	-	Suspended Matter	
Sulphate	8	0.167	Specific Conductance (mhos. x 10^{-5})	16
Chloride	7.98	0.225	pH Value	6.8
Nitrate	T	-	Color	<5
			Turbidity	0

REMARKS: Water Temp. - 48°F
Surficial - Sand and Gravel
Owner - Town of Wolfville

TOTAL HARDNESS - DETERMINED BY EDTA TITRATION.
Mn - T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m).
Fe - T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m).
Na - DETERMINED BY FLAME PHOTOMETER.

DATE: August 1st, 1969

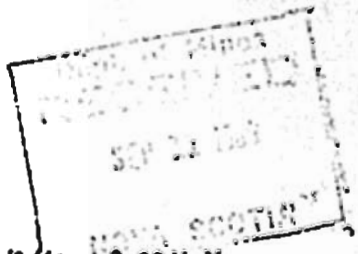
ANALYSED BY: J B Hamish

JSWatts

NOVA SCOTIA WATER AUTHORITY

CHEMICAL ANALYSIS OF WATER

45773/1



LOCATION: Wolfville, N.S.

21-H-1-B-78-E

IDENTIFICATION MARK: T. H. # 396

SUBMITTED BY: T.V. Hennigar

N.S.D.M., Halifax, N.S.

DATE SAMPLED: 21/8/69 - 8:00 A.M.

DATE RECEIVED: 3/9/69

SAMPLED BY: Keith Davison

for N.S.D.M.

	ppm	epm		
Calcium	16.51	0.82	Alkalinities –Phenolphthalein as $CaCO_3$ –Methyl Orange as $CaCO_3$	 0 46
Magnesium	3.60	0.30		
Sodium	6.0	0.26	Hardness (Total as $CaCO_3$)	56.0
Iron Total	0.01	0.0005	Loss on Ignition (1 hr. @500°C)	
Manganese Total	T	-	Total Dissolved Solids	
Sulphate	9	0.19	Suspended Matter	
Chloride	10.64	0.30	Specific Conductance (mhos. x 10^{-5})	19
Nitrate	T	-	pH Value	7.3
			Color	35 6
			Turbidity	0

REMARKS:

Surficial - Sand & Gravel
Well depth - 100'
Csg. length - 100'
Diam. - 6"
Owner - N.S.D.M.
Driller & year - N.S.D.M., 1968

N.B. - First Day Pump was started pumping into Town system

TOTAL HARDNESS - DETERMINED BY EDTA TITRATION.
T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m).
T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m).
Na - DETERMINED BY FLAME PHOTOMETER.

DATE: Sept. 10, 1969

ANALYSED BY: J.B. Harris

JEM:tmg

NOVA SCOTIA WATER AUTHORITY

45773/2

CHEMICAL ANALYSIS OF WATER

LOCATION: Wolfville, N.S.

21-H-1-D-78-E-

IDENTIFICATION MARK: T.H. # 396

SUBMITTED BY: T.W. Hennigar

N.S.D.M., Halifax, N.S.

DATE SAMPLED: 22/8/69 - 8:00 A.M.

DATE RECEIVED: 3/9/69

SAMPLED BY: Keith Davidson

for N.S.D.M.

	ppm	epm		
Calcium	16.6	0.83	Alkalinities -Phenolphthalein as $CaCO_3$ -Methyl Orange as $CaCO_3$	0 48
Magnesium	3.60	0.30		
Sodium	5.6	0.24	Hardness (Total as $CaCO_3$)	56.4
Iron Total	0.50	0.027	Loss on Ignition (1 hr. @500°C)	
Manganese Total	T	-	Total Dissolved Solids	
Sulphate	9	0.19	Suspended Matter	
Chloride	10.64	0.30	Specific Conductance (mhos. x 10^{-5})	19
Nitrate	T	-	pH Value	6.9
			Color	~~25~~ <5
			Turbidity	0

REMARKS:

Surficial - Sand & Gravel
Well depth - 100'
Csg. length - 100'
Diam. - 6"

Owner - N.S.D.M.
Driller & year - N.S.D.M., 1968

Second day pumping into Town System

TOTAL HARDNESS - DETERMINED BY EDTA TITRATION.
T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m).
T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m).
Na - DETERMINED BY FLAME PHOTOMETER.

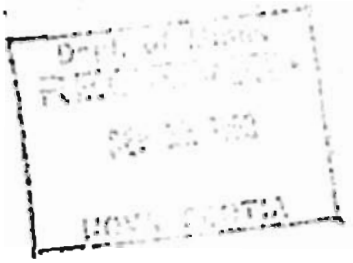
DATE: Sept. 10, 1969

ANALYSED BY: J.B. Hannah

JEM:tmg

NOVA SCOTIA WATER AUTHORITY

CHEMICAL ANALYSIS OF WATER



45773/3

LOCATION: Wolfville, N.S.

21-H-1-B-78-E

IDENTIFICATION MARK: T.H. # 396

SUBMITTED BY: T.W.Hennigar

N.S.D.M., Halifax, N.S.

DATE SAMPLED: 23/8/69 - 8:00 A.M.

DATE RECEIVED: 3/9/69

SAMPLED BY: Keith Davison

for N.S.D.M.

	ppm	epm
Calcium	16.99	0.85
Magnesium	3.60	0.30
Sodium	5.56	0.24
Iron Total	0.01	0.0005
Manganese Total	T	-
Sulphate	9	0.19
Chloride	12.41	0.35
Nitrate	T	-

Alkalinities	
-Phenolphthalein as $CaCO_3$	0
-Methyl Orange as $CaCO_3$	46
Hardness (Total as $CaCO_3$)	57.2
Loss on Ignition (1 hr. @500°C)	
Total Dissolved Solids	
Suspended Matter	
Specific Conductance (mhos. x 10^{-5})	19
pH Value	6.7
Color	25 < 5
Turbidity	0

REMARKS:

Surficial - Sand & Gravel
Well depth - 100'
Cas. length - 100'
Diam. - 6"
Owner - N.S.D.M.
Driller & year - N.S.D.M., 1968

Third day pumping into Town System

TOTAL HARDNESS - DETERMINED BY EDTA TITRATION.
- T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m).
- T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m).
No - DETERMINED BY FLAME PHOTOMETER.

DATE: Sept. 10, 1969

ANALYSED BY: J.B.Hamsel

JEM:lmg

NOVA SCOTIA WATER AUTHORITY

CHEMICAL ANALYSIS OF WATER

45773/4

LOCATION: Wolfville, N.S.

21-H-1-B-78-B

IDENTIFICATION MARK: T.H. # 396

SUBMITTED BY: T.W. Hennigar

Box 1087, Halifax, N.S.

DATE SAMPLED: 29/8/69

DATE RECEIVED: 3/9/69

SAMPLED BY: Keith Davison

for N.S.D.M.

	ppm	epm		
Calcium	17.96	0.90	Alkalinities	
			-Phenolphthalein as $CaCO_3$	0
Magnesium	4.57	0.38	-Methyl Orange as $CaCO_3$	52
Sodium	7.09	0.31	Hardness (Total as $CaCO_3$)	63.6
Iron Total	0.01	0.0005	Loss on Ignition (1 hr. @500°C)	
Manganese Total	T	-	Total Dissolved Solids	
Sulphate	9	0.19	Suspended Matter	
Chloride	12.41	0.35	Specific Conductance (mhos. x 10^{-5})	20
Nitrate	T	-	pH Value	6.9
			Color	20 - < 5
			Turbidity	0

REMARKS:

Surficial - Sand & Gravel
Well depth - 100'
Cas. length - 100'
Diam. - 6"
Owner - N.S.D.M.
Driller & year - N.S.D.M., 1969

Nine days after pumping into Town System was started.

TOTAL HARDNESS - DETERMINED BY EDTA TITRATION.
- T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m).
- T DENOTES TRACE AMOUNT (LESS THAN 0.01 p.p.m).
Na - DETERMINED BY FLAME PHOTOMETER.

DATE: Sept. 10, 1969

ANALYSED BY: J.B. Warrick

JEK:tmg

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY: _____

LOCATION OF PROJECT Wolfville WELL LOCATION: _____

STATUS Pumping (pumping or observation well) R – _____ (distance from pumping well in feet and direction) DATE July 23/67 PAGE 1

Date July	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at: Meas. Point	Tape Reading at: Water level	Depth to water in feet	Drawdown in feet	Q = discharge gals/min		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
23	2:30				13.65				
	3:00	0			13.65	0			
	3:01	1			13.88				
	3:02	2			25.3	11.65	254-6"		Measurement taken at 1' above
	3:03	3			25.38	11.73			well casing with electric tape
	3:04	4			25.43	11.78			
	3:05	5			25.44	11.79			
	3:06	6			25.57	11.92			
	3:07	7			25.72	12.07			
	3:08	8			25:78	12 13			
	3:09	9			25.85	12.20			# 1 water sample, Temp 48°F.
	3:10	10			25.89	12.24			
	3:15	15			25.99	12.34			
	3:20	20			26.00	12.35			
	3:25	25			26.06	12.41			
	3:30	30			26.04	12.39			
	3:40	40			26.12	12.47			
	3:50	50			26.12	12.47			
	4:00	60			26.12	12.47			
	4:15	75			26.13	12.48			
	4:30	90			26.10	12.45			
	4:45	105			26.12	12.47			
	5:00	120			26.15	12.50			

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY: _____

LOCATION OF PROJECT: Wolfville WELL LOCATION: _____

STATUS: Pumping (pumping or observation well) R = _____ (distance from pumping well in feet and direction)

DATE July 23, PAGE 2
25 & 28

Date	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at: Meas. Point	Tape Reading at: Water level	Depth to water in feet	Drawdown in feet	Q — discharge gals/min		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
July									
23	P.M. 5:30	150			26.15	12.50			Temp. 48°F. - 5:37 P.M.
	6:00	180			26.15	12.50			
	6:30	210			26.21	12.56			
	7:00	240			26.20	12.55			
	8:00	300			26.16	12.31			
	9:00	360			26.16	12.51			
	10:00	420			26.17	12.52			
	11:00	480			26.19	12.54			
Midnight	12:00	540			26.29	12.64			
July 24	A.M. 1:00	600			26.33	12.68			
	2:00	660			26.39	12.72			
	3:00	720			26.33	12.68			
	5:00	840			26.33	12.68			
	7:00	960			26.33	12.68			
	9:00	1080			26.40	12.75			
	11:00	1200			26.35	12.70			
	P.M. 1:00	1320			26.36	12.71			
	3:00	1440			26.50	12.85			
	7:00	1680			26.48	12.83			
	11:00	1920			26.50	12.85			
July 25	A.M. 3:00	2160			26.51	12.86			
	9:00	2520			26.53	12.88			
	3:03	2883			26.60	12.95			

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY:

LOCATION OF PROJECT Wolfville WELL LOCATION:

STATUS Pumping (pumping or observation well) R – (distance from pumping well in feet and direction) DATE July 25 PAGE 3

Date	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at: Meas. Point	Tape Reading at: Water level	Depth to water in feet	Drawdown in feet	Q = discharge gals/min		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
July	P.M.								
25	A.M. 8:00	3180			26.16	12.51	254 gpm		
26	P.M. 8:00	3900			26.80	13.15	254 gpm		Temp 50°, 8:00 A.M. July 26
	8:00	4620			26.17	12.52	254 gpm		Temp 50°, 8:00 A.M. July 27
27	A.M. 8:00	5340			26.86	12.21	254 gpm		(Purification sample taken
	P.M. 8:00	6060			26.92	12.27	254 gpm		10:30 July 28)
28	A.M. 8:00	6780			27.18	13.53	254 gpm		Temp. 50° at 8:00 A.M. July 28
	P.M. 8:00	7500			27.17	13.52	254 gpm		
29	A.M. 8:00	8220			27.17	13.52	254 gpm		Temp. 50° at 8:00 A.M. July 29
	P.M. 8:00	8940			27.13	13.48	254 gpm		(Purification sample taken 11:00
30	A.M. 8:00	9660			27.24	13.59	254 gpm		Temp. 50° at 8:00 A.M. July 30 July 2
	P.M. 8:00	10380			27.18	13.53	254 gpm		Purification sample taken 8:00
	A.M. 8:00	11100			27.31	13.66	254 gpm		Temp. 50° at 8:30 A.M. July 31 July 30
	P.M. 8:00	11820			27.30	13.65	254 gpm		Purification sample taken 8:00
Aug. 1	A.M. 8:00	12540			27.64	13.99	254 gpm		Temp. 50° at 9:45 Aug. 1 July 31
	P.M. 8:00	13260			27.50	13.85	254 gpm		Purification sample taken 8:00
2	A.M. 8:00	13980			27.68	14.03	254 gpm		Temp. 50° at 8:15 Aug. 2 Aug. 1
	P.M. 8:00	14700			27.48	13.83	254 gpm		
3	A.M. 8:00	15420			27.50	13.85	254 gpm		Temp. 50° at 8:25 Aug. 3
	P.M. 8:00	16140			27.85	14.20	254 gpm		
4	A.M. 8:00	16860			27.64	13.99	254 gpm		Temp. 50° at 8:30, Aug. 4
	P.M. 8:00	17580			27.71	14.06			
5	A.M. 8:00	18300			27.77	14.12			
	P.M. 8:00	19020			27.64	13.99			

DEPT. OF MINES NOVA SCOTIA -- Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY:

LOCATION OF PROJECT Wolfville WELL LOCATION:

STATUS Pumping (pumping or observation well) R = (distance from pumping well in feet and direction) DATE Aug. 6-17 PAGE 4

Date Aug.	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at: Meas. Point	Tape Reading at: Water level	Depth to water in feet	Drawdown in feet	Q = discharge gals/min		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
6	A.M. 8:00	19740			27.93	14.28	254 gpm		Temp. 50° at 8:20, Aug. 6
	P.M. 8:00	20460			27.99	14.34	254 gpm		
7	A.M. 8:00	21180			27.89	14.24	254 gpm		Temp. 50° at 8:20, Aug. 7
	P.M. 8:00	21900			27.88	14.23	254 gpm		
8	A.M. 8:00	22620			27.91	14.26	254 gpm		Temp. 50° at 8:15, Aug. 8
	P.M. 8:00	23340			27.95	14.30	254 gpm		
9	A.M. 8:00	24060			28:00	14.35	254 gpm		Temp. 50° at 8:15, Aug. 9
	P.M. 8:00	24780			28.00	14.35	254 gpm		
10	A.M. 8:00	25500			28.07	14.42	254 gpm		Temp. 50° at 8:15, Aug. 10
	P.M. 8:00	26220			28.25	14.60	254 gpm		
11	A.M. 8:00	26940			27.88	14.23	254 gpm		Temp. 50° at 8:15, Aug. 11
	P.M. 8:00	27660			28.00	14.35	254 gpm		
12	A.M. 8:00	28380			28.04	14.39	254 gpm		Temp. 50° at 8:20, Aug. 12
	P.M. 8:00	29100			28.00	14.35	254 gpm		
13	A.M. 8:00	29820			28.16	14.51	254 gpm		Temp. 50° at 8:20, Aug. 13
	P.M. 8:00	30540			28.10	14.45	254 gpm		
14	A.M. 8:00	31260			28.21	14.56	254 gpm		Temp. 50° at 8:10, Aug. 14
	P.M. 8:00	31980			28.45	14.00	254 gpm		
15	A.M. 8:00	32700			28.70	15.05	254 gpm		Temp. 50° at 8:[illegible], Aug. 15
	P.M. 8:00	33420			28.65	15.00	254 gpm		
16	A.M. 8:00	34140			28.55	14.90	254 gpm		Temp 50° at 8:05, Aug. 16
	P.M. 8:00	34860			28.65	15.00	254 gpm		Temp. 49° at 8:00, Aug. 16
17	A.M. 8:00	35580			28.50	14.85	254 gpm		Temp. 50° at 8:05, Aug. 17

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: TOWN OF WOLFVILLE MEASURED BY:

LOCATION OF PROJECT Wolfville WELL LOCATION:

STATUS Pumping (pumping or observation well) R = (distance from pumping well in feet and direction) DATE Aug. 17-19 PAGE 5

Date Aug.	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at Meas. Point	Tape Reading at Water level	Depth to water in feet	Draw-down in feet	Q = discharge gals/min		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
17	8:00 P.M.	36300			28.45	14.80	254 gpm		
18	8:00 A.M.	37020			28.45	14.80	254 gpm		Temp. 50° at 8:05 A.M. Aug. 18
	8:00 P.M.	37740			28.60	14.95	254 gpm		Temp. 50° at 8:05 P.M.
19	8:00 A.M.	38460			28.65	15.00	254 gpm		Temp. 50° at 8:05 A.M. Aug. 19
									Test terminated at 1:30 P.M. August 19.

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY: _____

LOCATION OF PROJECT Wolfville WELL LOCATION: _____

STATUS # 1 Observation (pumping or observation well) R = 275 (distance from pumping well in feet and direction) DATE July 23/68 PAGE 1

Date July	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at Meas. Point	Tape Reading at Water level	Depth to water in feet	Drawdown in feet	Q = discharge gals/min		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
23	2:15		14.00	1.05	12.95				Measured with steel tape
	3:00	0	14.00	1.05	12.95	0			
	3:01	1	14.00	1.05	12.95	0			
	3:02	2	14.00	1.05	12.95	0			
	3:03	3	14.00	1.05	12.95	0			
	3:04	4	14.00	0.80	13.20	.25			
	3:05	5	14.00	0.72	13.28	.33			
	3:06	6	14.00	0.70	13.30	.35			
	3:07	7	14.00	0.60	13.38	.43			
	3:08	8	14.00	0.62	13.38	.43			
	3:09	9							
	3:10	10	14.00	0.61	13.39	.44			
	3:15	15	14.00	0.52	13.48	.53			
	3:20	20	14.00	0.49	13.51	.56			
	3:25	25	14.00	0.47	13.53	.58			
	3:30	30	14.00	0.44	13.56	.61			
	3:40	40	14.00	0.42	13.58	.63			
	3:50	50	14.00	0.4	13.59	.64			
	4:00	60	14.00	0.40	13.60	.65			
	4:15	75	14.00	0.37	13.63	.68			
	4:30	90	14.00	0.36	13.64	.69			
	4:45	105	14.00	0.35	13.65	.70			
	5:00	120	14.00	0.35	13.65	.70			

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY:

LOCATION OF PROJECT: WELL LOCATION:

STATUS # 1 Observation (pumping or observation well) R – 275 (distance from pumping well in feet and direction) DATE July/69 PAGE 2

Date	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at: Meas. Point	Tape Reading at: Water level	Depth to water in feet	Draw-down in feet	Q – discharge gals/min (U.S. gal/day)		REMARKS (i.e. pump adjustments, water temp, static levels, etc.)
July 23	P.M. 5:30	150	14.00	0.34	12.66	.71			
	6:00	180	14.00	0.34	12.66	.71			
	6:38	213	14.00	0.35	13.65	.70			
	7:00	240	14.00	0.34	13.66	.71			
	8:02	302	14.00	0.33	13.67	.72			
	9:00	362	14.00	0.30	13.70	.75			
	10:02	420	14.00	0.26	13.74	.79			
	11:02	482	14.00	0.23	13.77	.82			
Midnight	12:02	542	14.00	0.19	14.81	.86			
July 24	A.M. 1:03	603	14.00	.08	13.92	.97			
	3:03	663	14.00	0.05	13.95	1.00			
	3:04	724	14.00	0.05	13.95	1.00			
	5:03	843	15.00	1.08	13.92	.97			
	7:03	963	15.00	1.09	13.91	.96			
	9:03	1083	15.00	1.09	13.91	.96			
	11:03	1203	15.00	1.05	13.95	1.00			
	P.M. 1.00	1323	15.00	1.01	13.99	1.04			
	3:00	1442	15.00	1.00	14.00	1.05	1.02		
	7:00	1682	15.00	1.00	14.00	1.05	1.02		
	11:02	1922	15.00	0.96	14.04	1.09	1.06		
July 25	A.M. 3:04	2164	15.00	0.97	14.03	1.08	1.05		
	9:04	2524	15.00	.89	14.11	1.16	1.13		
	P.M. 3:05	2885	15.00	.83	14.17	1.22	1.16		

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY:

LOCATION OF PROJECT Wolfville WELL LOCATION:

STATUS # 1 Observation (pumping or observation well) R = 275 (distance from pumping well in feet and direction) DATE PAGE 1

Date	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at Meas. Point	Tape Reading at Water level	Depth to water in feet	Draw-down in feet	Adjusted discharge gals/min ~0.03 ft/day		REMARKS (i.e. pump adjustments, water tem, static levels, etc.)
July 25	P.M. 8:03	3183	15.00	.80	14.20	1.25	1.19		
26	A.M. 8:03	3903	15.00	.67	14.33	1.38	1.32		
	P.M. 8:03	4623	15.00	.67	14.33	1.38	1.29		
27	A.M. 8:03	3343	15.00	.67	14.33	1.38	1.29		
	P.M. 8:03	6063	15.00	.61	14.39	1.44	1.32		
28	A.M. 8:04	6784	15.00	.50	14.50	1.55	1.43		
	P.M. 8:02	7502	15.00	.42	14.58	1.63	1.48		
29	A.M. 8:03	8223	15.00	.56	14.44	1.49	1.34		
	P.M. 8:02	8942	15.00	.47	14.53	1.58	1.40		
30	A.M. 8:03	9663	15.00	.52	14.48	1.53	1.35		
	P.M. 8:03	10383	15.00	.49	14.51	1.56	1.35		
31	A.M. 8:04	11104	15.00	.47	14.53	1.58	1.37		
	P.M. 8:03	11820	15.00	.42	14.58	1.63	1.39		
Aug. 1	A.M. 8:03	12543	15.00	.33	14.67	1.72	1.48		
	P.M. 8:05	13260	15.00	.31	14.69	1.74	1.47		
2	A.M. 7:55	13985	15.00	.31	1469	1.74	1.47		
	P.M. 8:02	14700	15.00	.30	14.70	1.75	1.45		
3	A.M. 8:03	15423	15.00	.30	14.70	1.75	1.45		
	P.M. 8:03	16143	15.00	.33	14.67	1.72	1.59		
4	A.M. 8:04	16864	15.00	.25	14.75	1.80	1.47		
	P.M. 8:00	17580			14.79	1.84	1.48		
5	A.M. 8:00	18300			14.83	1.88	1.52		
	P.M. 8:00	19020			14.72	1.77	1.38		

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY:

LOCATION OF PROJECT Wolfville WELL LOCATION:

STATUS Obs. 1 (pumping or observation well) R = 275' (distance from pumping well in feet and direction) DATE Aug. 6-17 PAGE 4

Date Aug.	Time hrs. & mins.	Elapsed time in mins.	Tape reading at Meas. Point	Tape reading at Water level	Depth to water in feet	Draw-down in feet	adjusted 90 – discharge gals/min -0.05 R/day		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
6	A.M. 8:04	19744	16.00	1.14	14.86	1.91	1.52		
	P.M. 7:50	20450	15.00	.18	14.82	1.87	1.45		
7	A.M. 8:04	21184	16.00	1.16	14.84	1.89	1.47		
	P.M. 8:00	21900	15.00	.06	14.94	1.99	1.54		
8	A.M. 8:05	22625	16.00	1.05	14.95	2.00	1.55		
	P.M. 8:05	23345	16.00	1.06	14.94	1.99	1.51		
9	A.M. 8:05	24065	16.00	1.04	14.96	2.01	1.53		
	P.M. 8:04	24784	16.00	1.07	14.93	1.98	1.47		
10	A.M. 8:05	25505	16.00	.99	15.01	2.06	1.55		
	P.M. 8:04	26220	16.00	1.00	15.00	2.05	1.51		
11	A.M. 8:05	26945	16.00	.92	15.08	2.13	1.59		
	P.M. 8:03	27663	16.00	.78	15.22	2.27	1.70		
12	A.M. 8:05	28385	16.00	.88	15.12	2.17	1.60		
	P.M. 7:55	29085	16.00	.70	15.30	2.35	1.75		
13	A.M. 8:03	29823	16.00	.74	15.26	2.31	1.71		
	P.M. 8:00	30540			15.24	2.29	1.66		Readings now taken from water level recorder chart
14	A.M. 8:00	31260			15.23	2.28	1.65		
	P.M. 8:00	31980			15.31	2.36	1.70		
15	A.M. 8:00	32700			15.39	2.44	1.78		
	P.M. 8:00	33420			15.36	2.41	1.72		
16	A.M. 8:00	34140			15.31	2.36	1.67		
	P.M. 8:00	34860			15.24	2.29	1.57		
17	A.M. 8:00	35580			15.20	2.25	1.53		

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY:

LOCATION OF PROJECT: Wolfville WELL LOCATION:

STATUS: # 1 Observation (pumping or observation well) R – 275' (distance from pumping well in feet and direction) DATE: Aug. 17-19 PAGE: 5

Date Aug.	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at: Meas. Point	Tape Reading at: Water level	Depth to water in feet	Draw-down in feet	Q = adjustment discharge gals/min -0.01 ft/day		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
17	P.M. 8:00	36300			15.14	2.19	1.44		
18	A.M. 8:00	36580			15.18	2.23	1.48		
	P.M. 8:00	37710			15.25	2.30	1.52		
19	A.M. 8:00	38460			15.28	2.23	1.45		

Drawdown

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY:

LOCATION OF PROJECT Wolfville WELL LOCATION:

STATUS # 2 Observation (pumping or observation well) R= 640' (distance from pumping well in feet and direction) DATE July 23/69 PAGE 1

Date July	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at Meas. Point	Tape Reading at Water level	Depth to water in feet	Drawdown in feet	Q = discharge gals/min		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
23	2:25		10.00	1.03	8.97				
	3:00	0	10.00	1.06	8.94	0			
	3:01	1	10.00	1.00	9.00	.06			
	3:02	2	10.00	.96	9.04	.10			
	3:03	3	10.00	.97	9.06	.12			
	3:04	4	10.00	.90	9.08	.14			
	3:05	5	10.00	.90	9.10	.16			
	3:06	6	10.00	.90	9.10	.16			
	3:07	7	10.00	.88	9.12	.18			
	3:08	8	10.00	.86	9/14	.20			
	3:09	9	10.00	.84	9.16	.22			
	3:10	10	10.00	.84	9.16	.22			
	3:15	15	10.00	.83	9.17	.23			
	3:20	20	10.00	.79	9.21	.27			
	3:25	25	10.00	.77	9.23	.29			
	3:30	30	10.00	.75	9.25	.31			
	3:40	40	10.00	.72	9.28	.34			
	3:50	50	10.00	.71	9.29	.35			
	4:00	60	10.00	.70	9.30	.36			
	4:15	75	10.00	.68	9.32	.38			
	4:30	90	10.00	.67	9.33	.39			
	4:45	105	10.00	.66	9.34	.40			
	5:00	120	10.00	.66	9.34	.40			

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY:

LOCATION OF PROJECT: Wolfville WELL LOCATION:

STATUS: # 2 Observation (pumping or observation well) A ~ 640' (distance from pumping well in feet and direction)

DATE: 1969 July 23, 24 & 25 PAGE: 2

Date	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at: Meas. Point	Tape Reading at: Water level	Depth to water in feet	Drawdown in feet	Q = discharge gals/min		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
July 23	5:30	150	10.00	.66	9.34	.40			
	6:00	180	10.00	.66	9.34	.40			
	6:30	210	10.00	.68	9.32	.38			
	7:00	240	10.00	.70	9.30	.36			
	8:05	305	10.00	.68	9.32	.38			
	9:05	365	10.00	.65	9.35	.41			
	10:05	425	10.00	.60	9.40	.46			
	11:05	485	10.00	.55	9.45	.51			
Midnight	12:06	546	10.00	.50	9.50	.56			
July 24	A.M. 1:05	605	10.00	.48	9.52	.58			
	2:06	666	10.00	.46	9.54	.60			
	3:07	727	10.00	.45	9.55	.61			
	5:06	846	10.00	.41	9.59	.65			
	7:06	966	10:00	.44	9.56	.62			
	9:05	1085	10.00	.45	9.55	.61			
	11:05	1205	10.00	.40	9.60	.66			
	P.M. 1:00	1327	10.00	.34	9.66	.72			
	3:00	1444	10.00	.31	9.69	.75			
	7:00	1684	10.00	.32	9.68	.74			
	11:05	1925	10.00	.32	9.68	.74			
July 25	A.M. 3:06	2166	10.00	.23	9.77	.83			
	9:06	2576	10.00	.25	9.75	.81			
	P.M. 3:08	2888	10.00	.14	9.86	.92			

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY:

LOCATION OF PROJECT Wolfville WELL LOCATION:

STATUS # 2 Observation (pumping or observation well) R ≃ 640' (distance from pumping well in feet and direction) DATE July 25 PAGE 3

Date	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at: Meas. Point	Tape Reading at: Water level	Depth to water in feet	Drawdown in feet	Q = discharge gals/min		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
July 25	P.M. 8:05	3185	10.00	.15	9.85	.91			
26	A.M. 8:06	3906	11.00	1.01	9.99	1.05			
	P.M. 8:05	4625	11.00	1.01	9.99	1.05			
27	A.M. 8:06	5346	11.00	1.01	9.99	1.05			
	P.M. 8:06	6066	11.00	.95	10.05	1.11			
28	A.M. 8:07	6787	11.00	.83	10.17	1.23			
	P.M. 8:06	7506	11.00	.75	10.25	1.31			
29	A.M. 8:06	8226	11.00	.73	10.07	1.33			
	P.M. 8:04	8944	11.00	.87	10.13	1.19			
30	A.M. 8:06	9666	11.00	.88	10.12	1.18			
	P.M. 8:06	10386	11.00	.84	10.16	1.22			
31	A.M. 8:06	11106	11.00	.78	10.22	1.28			
	P.M. 8:06	11826	11.00	.77	10.23	1.29			
Aug. 1	A.M. 8:06	12546	11.00	.66	10.34	1.40			
	P.M. 8:09	13269	11.00	.64	10.36	1.42			
2	A.M. 7.58	13978	11.00	.59	10.41	1.47			
	P.M. 8:06	14706	11.00	.69	10.31	1.37			
3	A.M. 8:06	15426	11.00	.67	10.33	1.39			
	P.M. 8:06	16146	11.00	.72	10.28	1.34			
4	A.M. 8:07	16867	11.00	.65	10.35	1.41			
	P.M. 8:07	17580			10.43	1.49			
5	A.M. 8:07	18300			10.53	1.59			
	P.M. 8:07	19020			10.32	1.38			

DEPT. OF MINES NOVA SCOTIA – Groundwater Division

WATER LEVEL MEASUREMENTS (FIELD)

TEST CONDUCTED BY: Town of Wolfville MEASURED BY:

LOCATION OF PROJECT Wolfville WELL LOCATION:

STATUS # 2 Observation (pumping or observation well) R= 640' (distance from pumping well in feet and direction) DATE Aug. 6-17 PAGE 4

Date Aug.	Time hrs. & mins.	Elapsed time in mins.	Tape Reading at Meas. Point	Tape Reading at Water level	Depth to water in feet	Draw-down in feet	Q = discharge gals/min.		REMARKS (i.e. pump adjustments, water temp. static levels, etc.)
6	A.M. 8:06	19746	11.00	.53	10.47	1.53			
	P.M. 7:55	20455	11.00	.57	10.43	1.49			
7	A.M. 8:07	21187	11.00	.55	10.45	1.47			
	P.M. 8:07	21903	11.00	.49	10.51	1.57			
8	A.M. 8:08	22628	11.00	.41	10.59	1.65			
	P.M. 8:07	23347	11.00	.43	10.57	1.63			
9	A.M. 8:07	24067	11.00	.40	10.60	1.66			
	P.M. 8:06	24786	11.00	.39	10.61	1.67			
10	A.M. 8:08	25508	11.00	.34	10.66	1.72			
	P.M. 8:07	26227	11.00	.30	10.70	1.76			
11	A.M. 8:10	26950	11.00	.28	10.72	1.78			
	P.M. 8:05	27665	11.00	.20	10.80	1.86			
12	A.M. 8:08	28388	11.00	.19	10.81	1.87			
	P.M. 9:50	29090	12.00	1.14	10.86	1.92			
13	A.M. 8:06	29820	12.00	1.06	10.94	2.00			
	P.M. 8:	30540			10.87	1.93			Readings now from water level recorder chart
14	A.M. 8:	31260			10.87	1.93			
	P.M. 8:	31980			10.95	2.01			
15	A.M. 8:	32700			11.03	2.09			
	P.M. 8:	33420							Clock stopped on recorder
16	A.M. 8:	34140							
	P.M. 8:	34860							
17	A.M. 8:	35580							

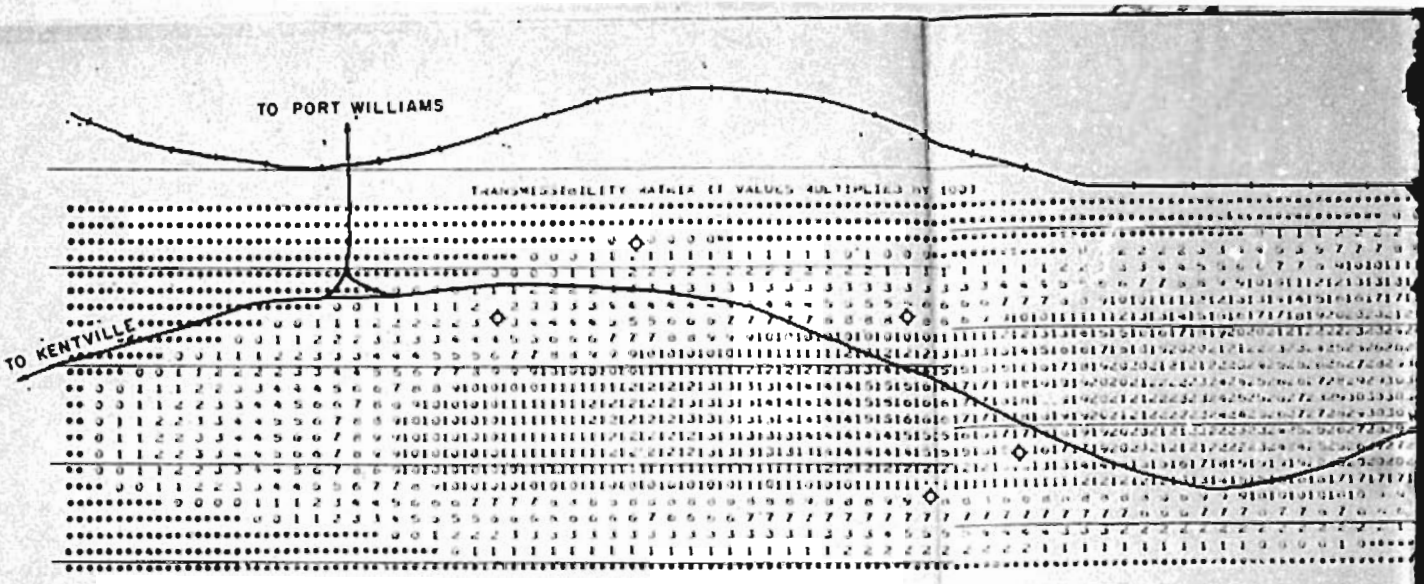


FIGURE 1. Location of Dept. of Mines wells
aquifer. They are superposed on

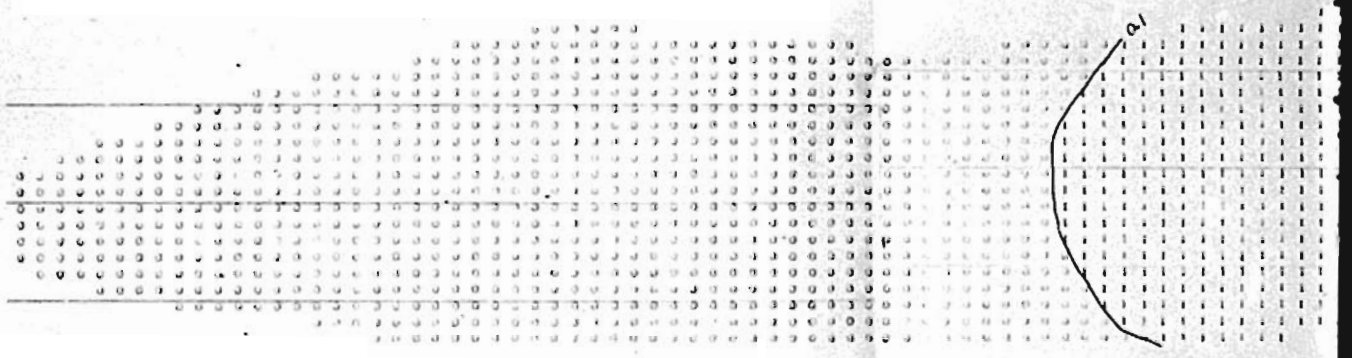
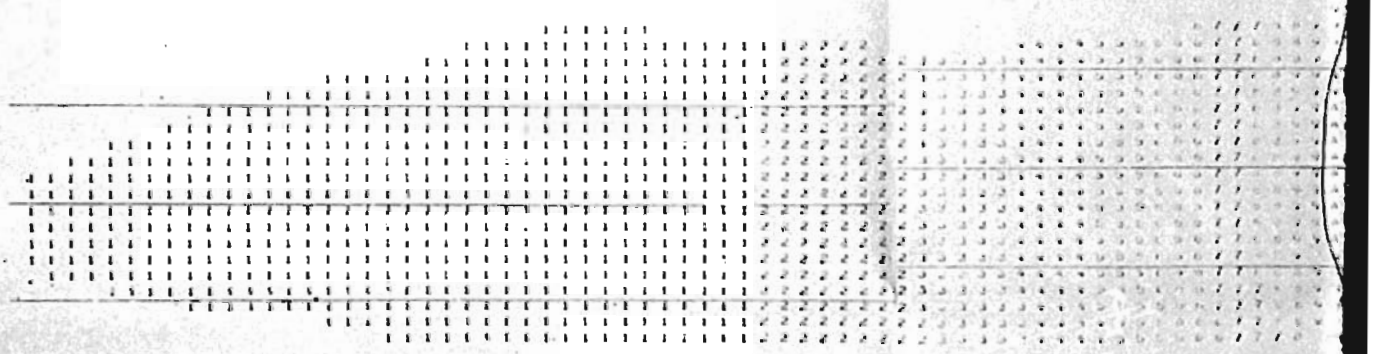


FIGURE 4A. Drawdown in Wel
254 Imperial gall



LEGEND...
DRAWDOWN FROM 0-3.5 FEET REPRESENTED BY SYMBOLS 0-7 (e.g. 1 = 0.1 ft. < drawdown < 0.2 ft.)
DRAWDOWN GREATER THAN 3.5 FEET REPRESENTED BY SYMBOL
CONE OF DEPRESSION INDICATED BY SYMBOL 7
W = well

FIGURE 4B. Drawdown in W
with 1 well pro

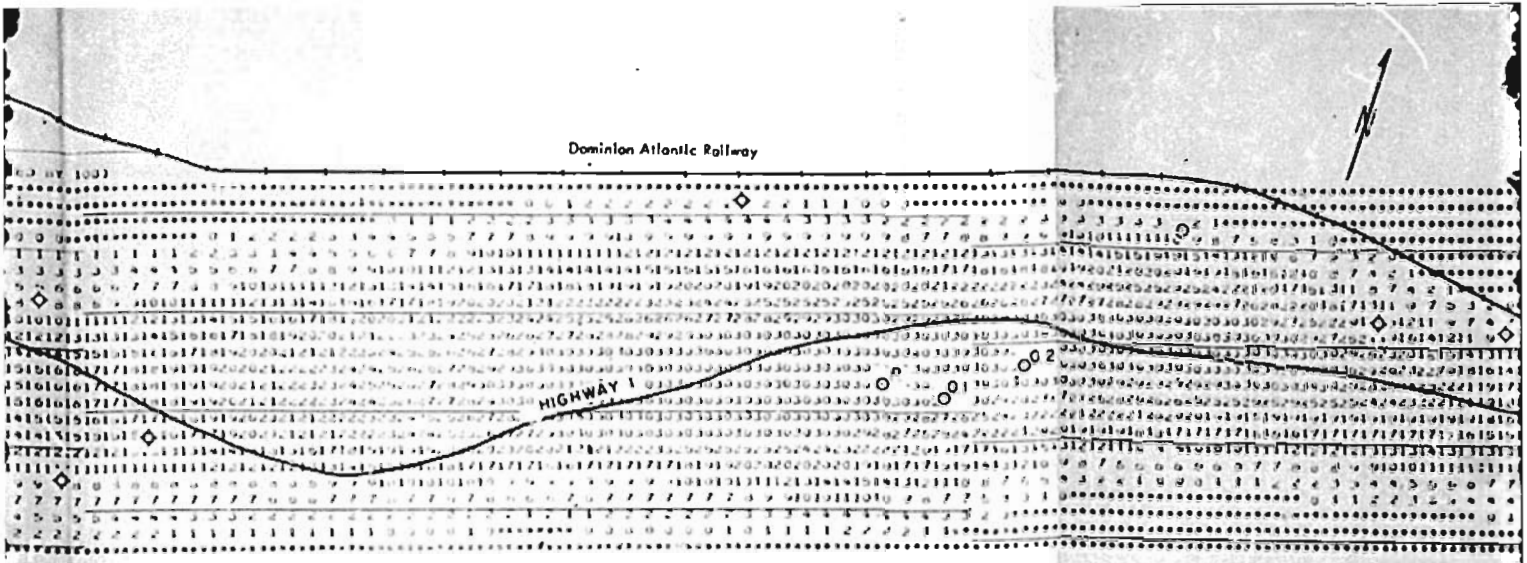


FIGURE 1. Location of Dept. of Mines wells and other wells used in defining the shape of the Wolfville aquifer. They are superposed on the transmissibility values ($ft.^2/sec.$) used in the digital model.

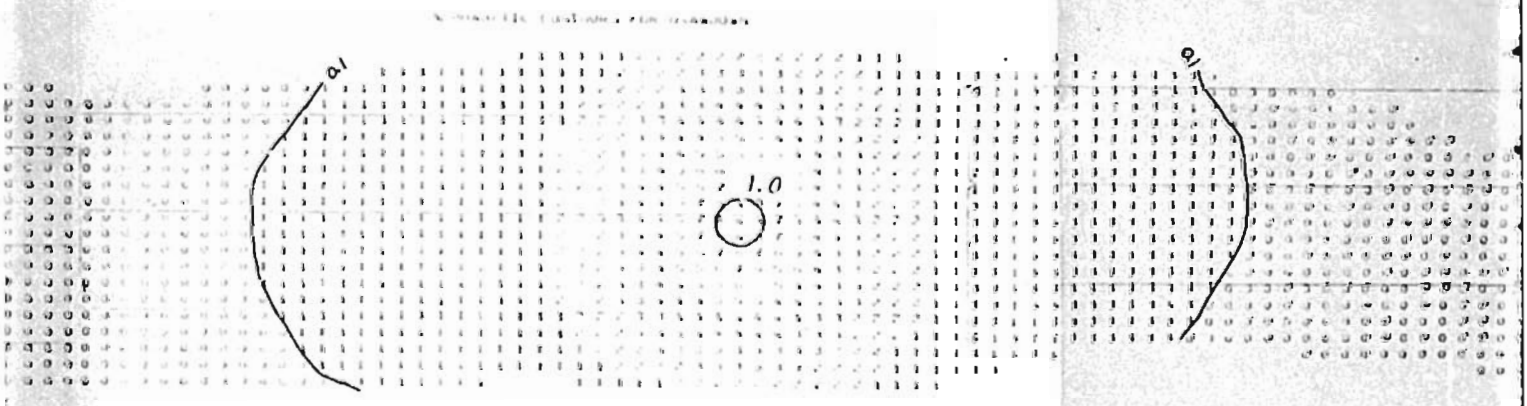


FIGURE 4A. Drawdown in Wolfville aquifer ater 27.5 minutes with 1 well producing 254 imperial gallons per minute (gpm).

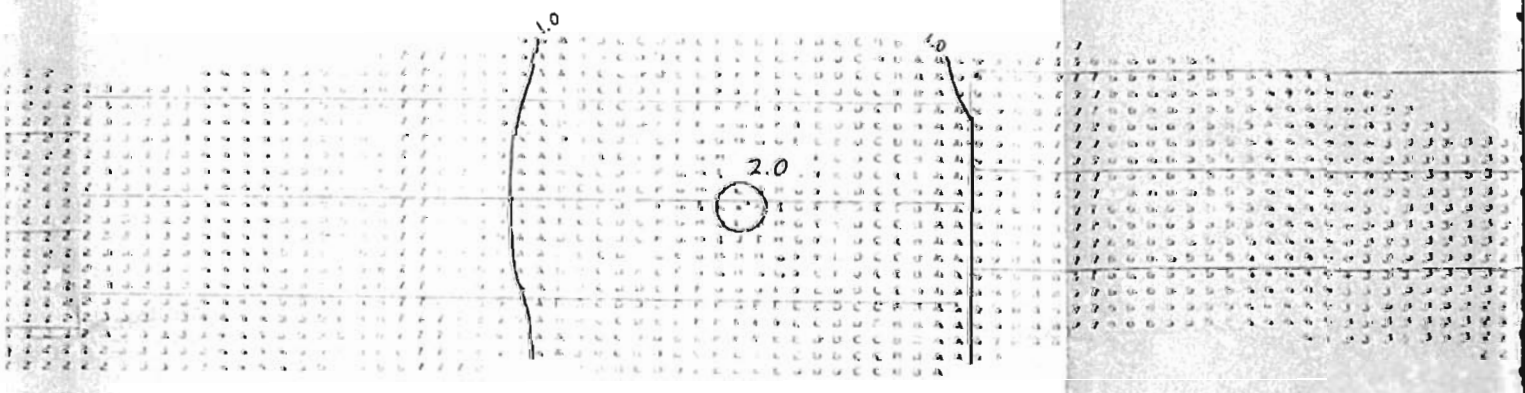
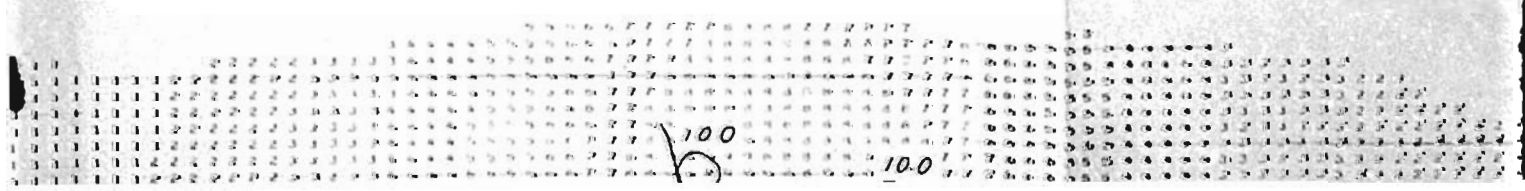
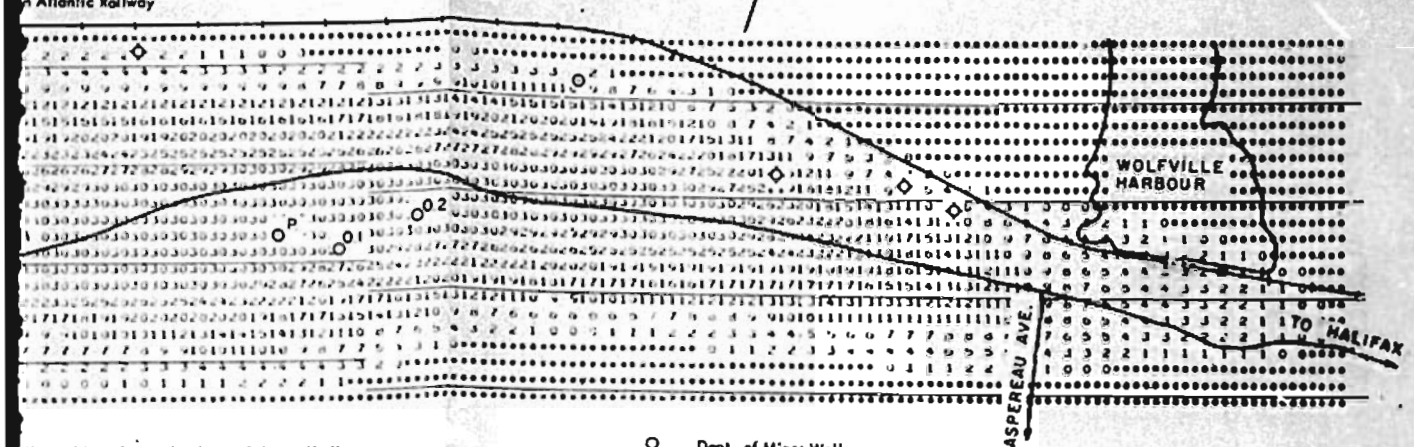


FIGURE 4B. Drawdown in Wolfville aquifer ater 59 days (equilibrium condition) with 1 well producing 254 gpm.



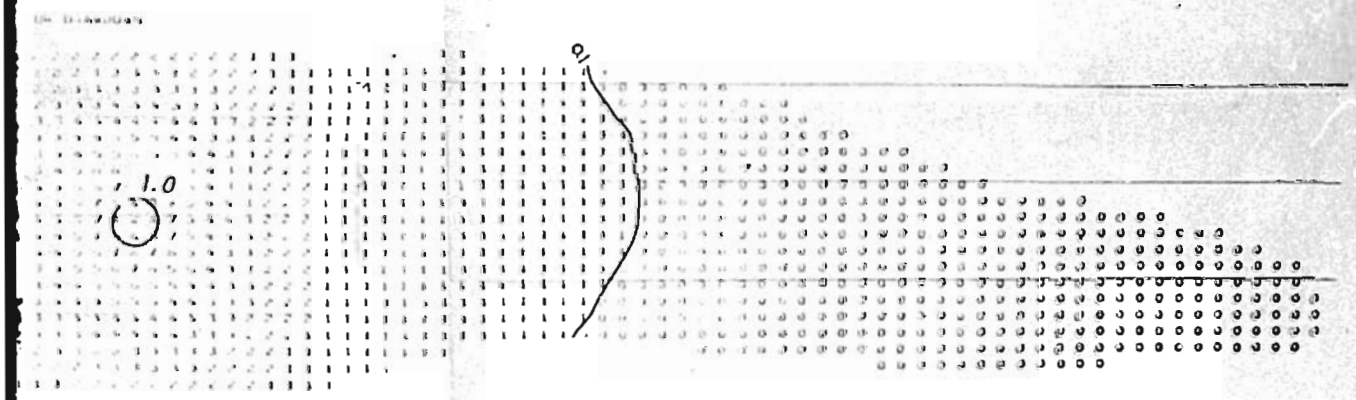
n Atlantic Railway



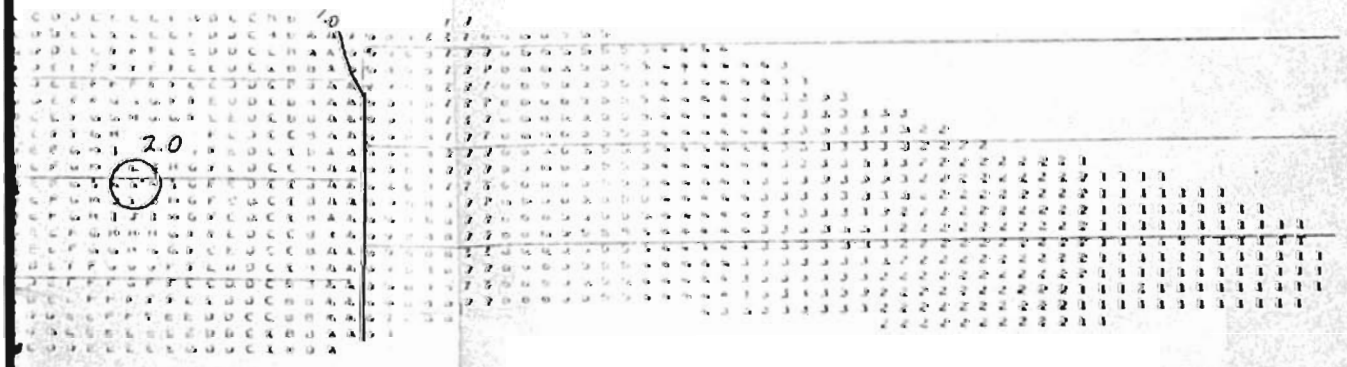
Dept. of Mines Well

Private Well

ll; used in defining the shape of the Wolfville
bility values (ft.²/sec.) used in the digital model.



ter 27.5 minutes with 1 well producing
(gpm).



er after 59 days (equilibrium condition)
m.

27x

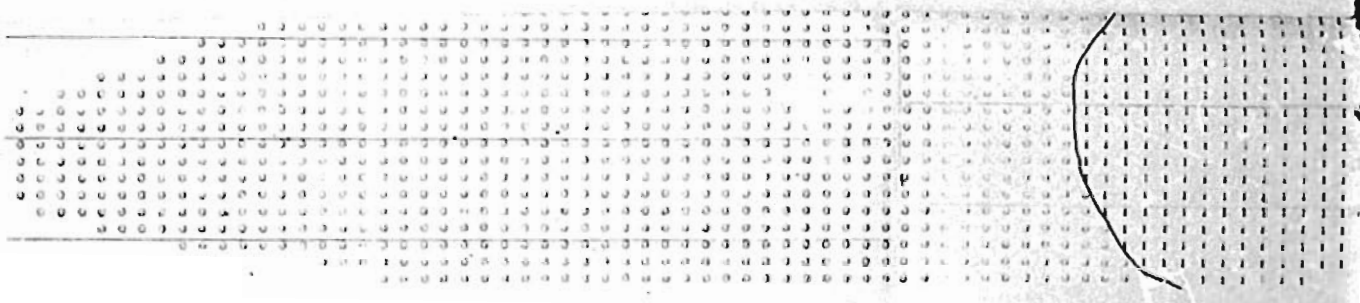
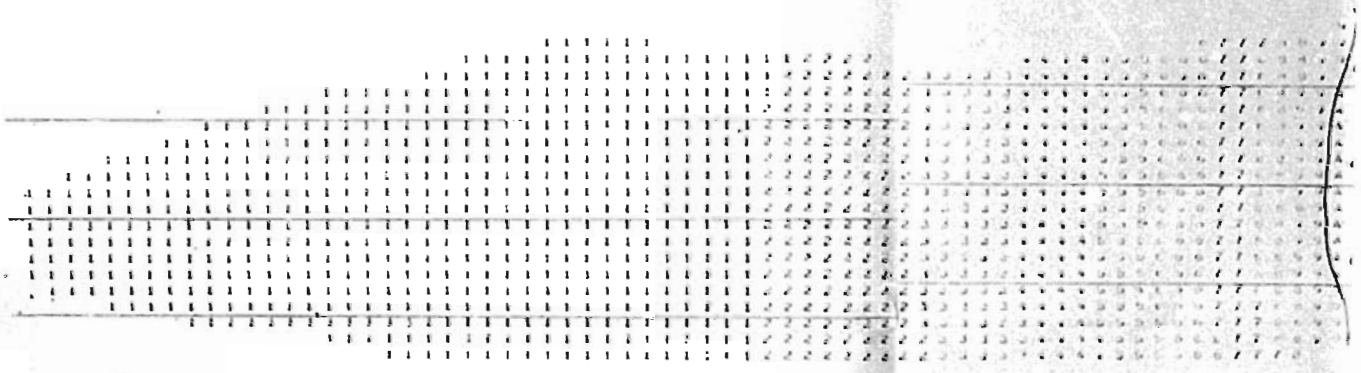
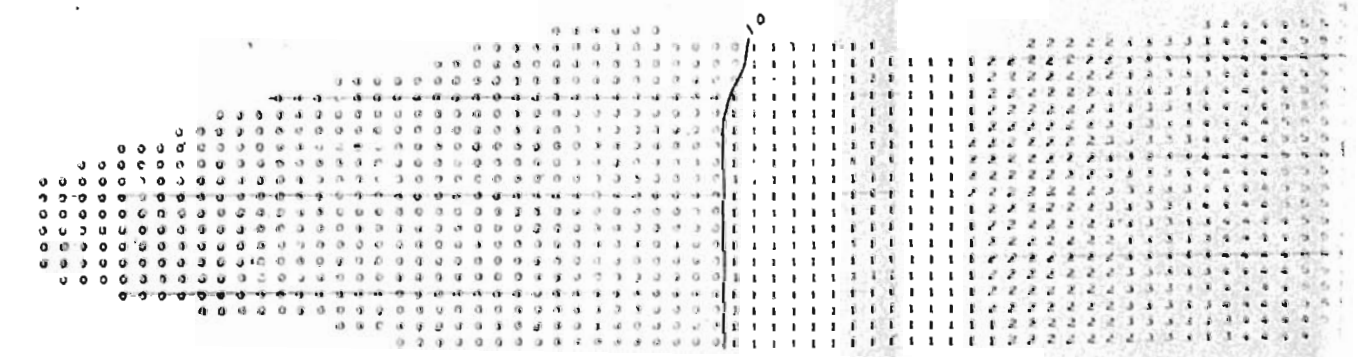


FIGURE 4A. Drawdown in Wolf
254 imperial gallo



LEGEND...
DRAWDOWN FROM 0- 0.5 FEET REPRESENTED BY SYMBOLS 0-7 (e.g. 1 = 0.1 ft. < drawdown < 0.2 ft.)
DRAWDOWN GREATER THAN 3.5 FEET REPRESENTED BY SYMBOL *
CONE OF IMPRESSION INDICATED BY SYMBOL >
W = well

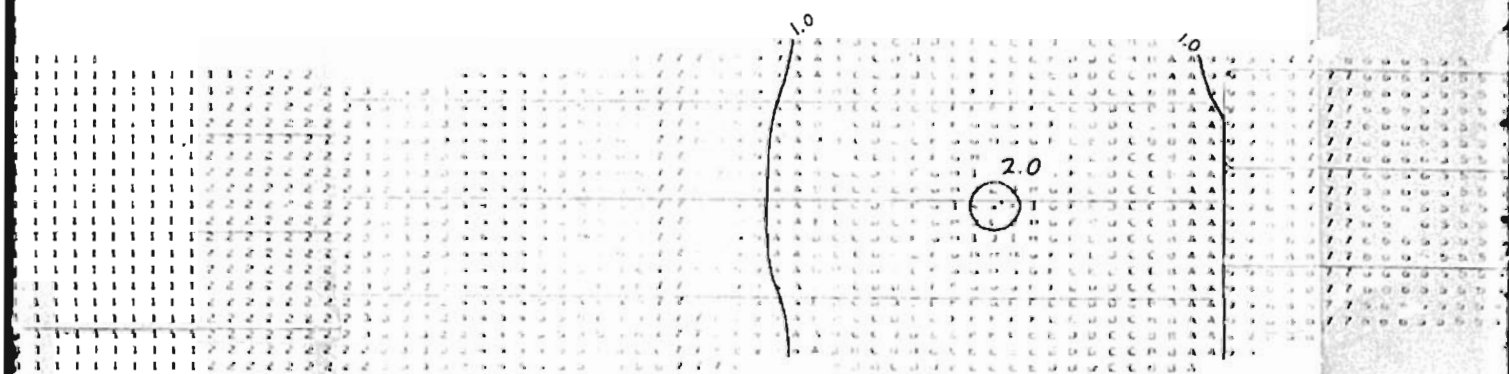
FIGURE 4B. Drawdown in Wol
with 1 well produ



LEGEND...
DRAWDOWN FROM 0- 35 FEET REPRESENTED BY SYMBOLS 0-7 (e.g. 1 = 1 ft. < drawdown < 2 ft.)
DRAWDOWN GREATER THAN 35 FEET REPRESENTED BY SYMBOL *
CONE OF IMPRESSION INDICATED BY SYMBOL >
= WELL

FIGURE 5. Drawdown in Wolfville aquifer af
well is located at the site of the

FIGURE 4A. Drawdown in Wolfville aquifer ater 27.5 minutes with 1 well producing 254 imperial gallons per minute (gpm).



1 = 0.1 ft. < drawdown < 0.2 ft.)

FIGURE 4B. Drawdown in Wolfville aquifer ater 59 days (equilibrium conditions) with 1 well producing 254 gpm.

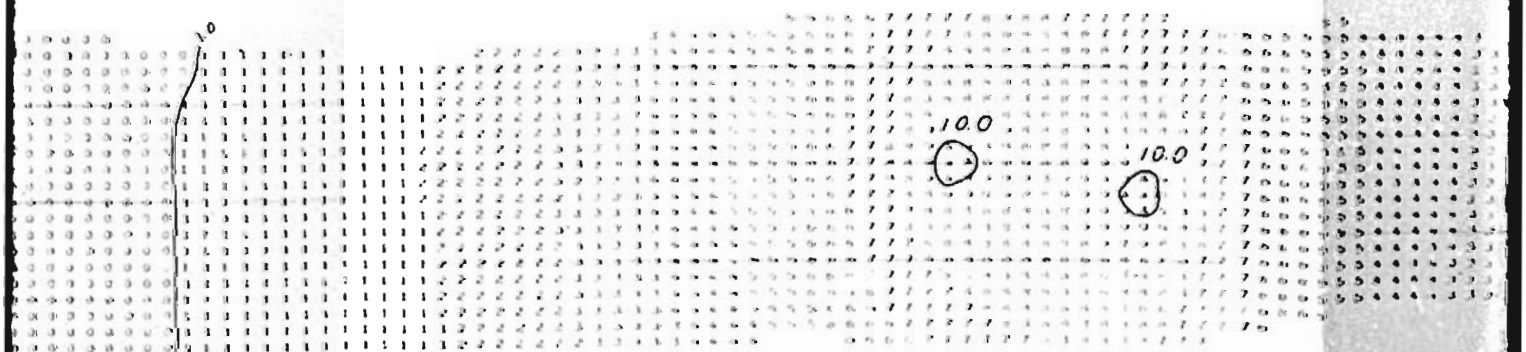


FIGURE 5. Drawdown in Wolfville aquifer after 59 days with 2 wells, each producing 800 gpm. (One well is located at the site of the test well and the other on town property near Kent Foods Ltd.).