

BUILDERS
 MAGNOLIA HOTEL,
 ST. JOHNS RIVER, FLA.
 HOTEL SAN MARCO,
 ST. AUGUSTINE, FLA.
 SANFORD HOUSE,
 SANFORD, FLA.
 SEMINOLE HOTEL,
 WINTER PARK, FLA.
 HOTEL PONCE DE LEON,
 ST. AUGUSTINE, FLA.
 HOTEL ALCAZAR,
 ST. AUGUSTINE, FLA.
 HOTEL ORMOND,
 ORMOND, FLA.
 ROYAL POINCIANA,
 PALM BEACH, FLA.
 THE BREAKERS,
 PALM BEACH, FLA.
 ROYAL PALM,
 MIAMI, FLA.
 HOTEL ROYAL VICTORIA,
 NASSAU, N. P., BAHAMAS
 HOTEL COLONIAL,
 NASSAU, N. P., BAHAMAS
 THE CONTINENTAL,
 ATLANTIC BEACH, FLA.

J. A. McGuire

J. A. McDonald

McGuire & McDonald
 Builders

St. Augustine, Fla.

November 26 - 1886

Time and progress in digging Ponce de Leon Artesian well
 12 inch.

November 26, 1886.- Started piping.

Nov. 27th.,- 6:00 PM. started on second length of pipe.

Nov. 30th. - 40 ft. of pipe down, struck a strata of shell and sand, getting redy to drive another length of pipe.

Dec. 1st - 62 ft. of pipe driven, struck a shell bed which causes the pipe to rebound, this is the first shell that has been struck in all the wells driven in St. Augustine.

Dec. 7th - Pipe now down 76 ft., now getting into a softer strata and with a 60 Lb. blow the pipe goes down 2 inches; think they will be through the bed of clam shell by night.

Dec. 11th - Pipe now down 153 ft., drilling during the day and cleaning at night, latest report from the well that they have entered a sort of flint rock which has been met in every well driven in St. A. and is the fore-runner of the water rock, which usually lies about 30 to 40 ft. below. Drilling through flint rock.

Dec. 13th - Pipe down 167 ft., expect to strike rock at any moment..

Dec. 14th - Drilling and cleaning, pipe brought up solid and supposed to be on the rock, drill put in, water can be seen in the pipe above the level of the ground.

5th - Pipe down 177 ft. three ft. of this is in the rock. Small flow of water with a temperature of 74-1/2

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St. Augustine, Fla.

12" Well Continued.

Sheet No. 2

- Dec. 21st - Pipe brought up on the solid rock. Now drilling into the white coral rock and are about 50 feet below the pipe with a nine inch drill. The flow continually increasing and estimated at 600 gallons a minute with a temperature of 76 degrees. If we have to put a casing inside the 12 inch, this nine inch hole will only permit of a six inch pipe.
- Dec. 22nd - Temperature and flow same as yesterday. We have drilled five feet in the coral making 227 feet in all and then changed the nine inch drill to a ten inch the idea was to press the pipe as near its original shape as possible where it was brought up on the solid rock. If we do not meet with quicksand we will not have to put casing inside the 12 inch pipe.
- Dec. 24th - Well now down 300 ft., still drilling in the coral rock which seems to be a little different coral more of the yellowish sand order but which proves to be coral under the glass. Beautifull flow of water now raising in solid column nearly nine inches above top of pipe but the pressure has not increased 15 lbs. to the square foot and the water is hard and unchanged.
- Dec. 28th - Depth of well at 9:00 AM., 468 feet, temperature 76 degrees, 4,729,000 gallons per twenty-four hours, have drilled 100 feet in the last 24 hours and the water seems to be continually increasing.
- Dec. 30th - Flow increasing steadily, stands 2 ft. above pipe, pressure 20 lbs., Flow 7,000,000 gallons per day. From 6 P. M. yesterday to 9 A.M. to-day we drilled but ten feet as we are now in the hardest strata of rock that we have yet met. Temperature 79 degrees. Depth at 9 A.M. this morning 530 feet, force of the water is strong coming up that they do not have to use their sand pump.

Dec 27 1899
 Dec 28 1899

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12" Well Continued. Sheet No. 3.

- Jan. 25th - Well now down 1000 feet.
- Jan. 29th - Down 1090 feet. We run down the test pipe yesterday and took some water from the bottom which we tested this morning but find no perceptible change. We are still in the coral strata.
- Feb. 1st - Well down 1110 feet. New current of water. Increased flow of $1/3$. At twelve last night we struck the new current of water and judge the flow has increased one third, and the temperature about $1-1/2$ degrees in warmth.
- Feb. 4th - Well down 1140 feet. 15 feet in the solid rock, no perceptible change in the quality of water
- Feb. 5th - Well down 1150 feet, made ten feet in last ten hours. They are now in a softer strata of soft rock, no change in the water.
- Feb. 8th - Well down 1200 feet. We are now in a strata of coarse sharp sand. No change in the water and we have concluded to go still further, say 300 ft.
- Feb. 24th - Little progress made since the bit was lost. Total depth of well 1440 feet.

PONCE DE LEON
ALCAZAR
ST. AUGUSTINE

ORMOND
ORMOND

ROYAL POINCIANA
BREAKERS
PALM BEACH

ROYAL PALM
MIAMI

COLONIAL
ROYAL VICTORIA
NASSAU, N. P.

LONG KEY FISHING CAMP
LONG KEY

FLORIDA EAST COAST HOTEL CO.
FLAGLER SYSTEM

CONSTRUCTION AND MAINTENANCE
DEPARTMENT

H. E. BEMIS

ST. AUGUSTINE, FLA.

ST AUGUSTINE WELLS - LOCATION

Alcazar Well, 6 inches, located in the Dynamo Room.

One 6" and one 4" Well, located at the south-west corner of Albert Lewis Property, on Valencia St.,

8 inch well located north of the Laundry Coal bin.

12 inch well located on Carrera St., directly north of the 4" and 6" well mentioned above.

Forced Artesian Well 12"

Ma: Guinness & McDonald

1886	Temperature	Depth of Stratum	Total Depth	Head	
Nov. 27 th	62°	35	35		Sand
" 30		15	50		Sand with Shell Surface Water stops here
Dec. 2		7	57		Blue Clay
" 4		8	65		Coginita
" 6		11	76		Sand
		1.	95		Indurated Clay & Sand Sumps
	72				Blue Clay
					Clay. Black Sand in pieces hard Stone Sulphur Water 50 Gall
" 14	74°	94	170	32	Rock
" 20	76°	9	177		Sulphur Water 350 Galls
					Coral

1800 Galls per mine

Coral

1800 Galls per mire

Coral

Flow 3000000 Galls per day. Temp. 76°

Coral

Rock 12" thick

Dense light brown Coral

Sudden increase of Water to 7,000,000 Galls per Day

White chalk, green clay & porous coral dark in color

Sand pumping resumed at this point showing that limit of Sulphur water is reached

Again in Coral full of fossil, early Grinoids & Pectin shells

Coral

Sepia found here several Sacs

350 38

Total Depth

Depth of Sand

Temperature

" 24

Oct 12

410

" 27

495

" 28

520 42

" 29 79°

557

" 31

TOTAL DEPTH

DEPTH OF STI

TEMPERAT

DATE

660

Jan 4

dark in color

Sand pumping resumed at this point showing that limit of Sulphur water is reached

Again in Coral full of fossil, early Grinoids & Pectin shells

Coral

Sepia found here several Sacs

Hard drilling as splinter of rock indicates igneous rock

Soft drilling again, sand pump brings up coral as before

Still no water below 520.

Coral

Boring through Limestone composed of Protozoons largely in Matrix of Carbonate of Lime. Color varying from gray to light yellow

Sepia found again in small quantities

Hard drilling through a thin shell of hard Lime stone, afterwards same as above

31

557

TEMPERATURE

DEPTH OF

TOTAL DEPTH

Jan 4

660

" 4

675

5

685

" 6

770

DATE

TEMPERATURE

DEPTH OF

STRATA TOTAL DEPTH

" 22

960

960

22

Harder drilling through a thin sheet
hard limestone, afterwards same as ab

DATE	TEMPERATURE	DEPTH TOTAL	DEPTH OF STRATA
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At this depth an increase of flow amount
to about 1/4 increase. Temperature raises
about one degree

Water taken from new flow 17 grains/l

Hard drilling sand pump brings up Drillings of Sa
Miles flow indicates chalk

Hard drilling in Sand Stone with Flint;
shells or Lumps

Same as above with a larger proportion of Flint

Sand Stone penetrated & drill again enters
limestone as above. A flow occurs at the bottom of the
rock stratum. Water tested 17 grains hard. Sand &
water taken up in sand pump show temp
raised to 85°. Though water discharged at mo
of pipe but little affected

Limestone as above

A. flow just below & just above this point

Again entering sand stone
This time white crystals

Again in Fossiliferous limestone
No flow at this point

Fossiliferous limestone
very soft drilling. No flow
Temperature of water in Sand pump 86°

Harder drilling through denser limestone
Microscopic Fossils

14

Febr. 1 80° 1110

" 2 1115

" 3 1120

" 4 1135

" 5 1140

" 7 1170

" 9 1225

" 12 1278

" 13 1293

DATE	TEMPERATURE	DEPTH TOTAL	DEPTH OF STRATA
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" 14 86° 1340

1390