

SOUTHWEST GEORGIA-ALBANY HEALTH DISTRICT'S ABANDONED WELL PROGRAM

Melvin F. Jones, Jr.

AUTHORS: Environmental Health Program Director, Georgia Public Health, Georgia Department of Human Resources, Southwest Georgia Health District, 1109 North Jackson Street, Albany, Georgia, 31701

REFERENCE: *Proceedings of the 2005 Georgia Water Resources Conference*, held April 25-27, 2005, at The University of Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, University of Georgia, Athens, Georgia.

Abstract. Over the past 100 plus years, individuals have constructed groundwater wells to meet their needs for drinking water. However, with new technologies, older wells have been abandoned because newer wells provide more reliable sources of water. Today many of these old abandoned wells remain throughout Georgia as a conduit to groundwater. The Georgia Water Well Standards Act addresses abandoned wells by requiring well owners to “fill, seal, and plug” unused wells. However, work is still needed to identify old well sites and properly close out these wells.

In Albany, Georgia, the Southwest Georgia Environmental Health Program created a program to find and properly “fill, seal, and plug” abandoned wells. This paper provides background information on how the county environmentalist identified the wells and techniques to properly close the wells.

INTRODUCTION

Grady and Thomas County Environmental Health officers began to notice a large volume of abandoned wells throughout the county while doing site evaluations for sewage system permits and well permits. Each year, many wells are abandoned when they are replaced with new wells or when homes are connected to community water systems (Figure 1).

Abandoned wells, beyond being a hazard to the

groundwater supply, are also a safety and health hazard to children or adults and animals that could fall into the well or be trapped inside the well. Grady County developed an action plan to “fill, seal, and plug” abandoned wells based on the Georgia Water Well Standards Act and Thomas county followed suit. They reached agreement with the county commission for Public Works to fill the wells that they referred to them. Groundwater plays an important role in meeting rural drinking water needs and will continue to be in demand; therefore, we must protect this vital resource. All of the drinking water in Southwest Georgia comes from wells.

Grady and Thomas County officials identified the abandoned wells from knowledge gained as subdivision lots or individual lots were evaluated for septic tanks, or as requested or routine water samples were obtained. Some articles did appear in the paper that generated additional findings. State legislation passed that allowed County Commission workers to fill the wells on private property, which greatly contributed to the success of these actions. Coordination between the County Commission, Public Works and the Health Department enabled this program to work. In the time period from 1984 until 2004 there have been 931 wells filled in Grady county and 791 filled in Thomas County as a part of 2567 wells filled in the Southwest Health District.

Abandoned wells that had a high priority for closure were commonly shallow bored or hand dug wells that lacked casing material (Figure 2). Many abandoned



Figure 1. Abandoned hand dug well that was located at the roadside and identified for plugging.



Figure 2. Abandoned well with foreign materials inside without casing at rear of house that was identified to be filled.



Figure 3. Abandoned 12-inch bored well with terracotta casing that had deteriorated and posed

wells had a 30-inch concrete culvert pipe casing and were less than 50 feet deep (Figure 3). In a few cases, the wells were used as a dump site containing metal, pots, pans, and glass. These shallow wells tapped into an unconfined aquifer where the water is free flowing and percolating through the soil.

In addition to identifying wells that were no longer in use or “unsafe” for drinking water consumption, officials were able to promote the use of drilled wells which are less susceptible to contamination than bored wells. Another benefit to a drilled well is that it can provide homeowners in Southwest Georgia access to a limestone water bearing aquifer with greater production.

BACKGROUND AND RELATED WORK

The Georgia Water Well Standards Act addresses abandoned wells by requiring well owners to “fill, seal, and plug” unused wells. In addition, the law requires the closure of a well is to be done by a licensed well driller or pump installer. “The basic concept in sealing an abandoned well is restoring the geological conditions that existed before the well is drilled. Therefore, the particular method for sealing a well depends on the type of water well and the local geological features” (Blagojevich, 1999).

METHODS

Abandoned wells are located and identified as the environmentalist make site visits in the county to review the location for a sewage permit, well permit or a request for a water sample or when some one advised the Health Department of an abandoned well. In conjunction with a licensed well driller, Grady and Thomas County environmental health officers and local government public works managers supervised the closure of 931 shallow bored or hand dug abandoned wells in Grady county and 791 in Thomas county.

- The following steps were used to close these wells:
1. *Calculate the volume of the well.* The well diameter, total depth of well, and depth to water, were used to calculate the volume of the well and determine the amount of material needed to fill the well.
 2. *Remove all obstructions from the well.* Debris and trash were removed from the well to prevent potential long-term contamination from any chemicals or materials left in the well.
 3. *Disinfect the well.* This procedure was used to kill microorganisms existing in the well and prevent them from entrapment in the well.
 4. *Remove the casing.* Casing material, if present, were removed so the existing soil could come in contact with the plugging material.
 5. *Fill the well with clean and appropriate plugging material.* The type of plugging material used was based on the geology of the area, depth of the well, and type of well construction.

SUMMARY

Abandoned wells pose a threat to groundwater and are significant health hazards. All abandoned wells should be properly plugged to prevent contamination and eliminate the safety hazard. To “fill, seal, and plug” abandoned wells is required by Georgia state law. Environmental health officials are valuable in identifying concerns regarding drinking water wells and working in their community to educate and provide technical assistance in closing abandoned drinking water wells.

Local governments can develop action plans and address this concern. In addition, they can use the steps listed above to manage the closure of abandoned wells.

LITERATURE CITED

- Blagojevich, Rod and Eric Whitaker. “Abandoned Wells.” Environmental Health Fact Sheet. April 1999. Illinois Department of Public Health. www.idph.state.il.us/envhelath/factsheets
- Georgia Water Well Standards Act. OCGA: 12-5-120 thru 12-5-138.
- Burgin, M. Julie and Franzen, Patricia B. and Pauley, Sharon W. and McLemore, William H. “Grouting and Plugging of Domestic Water Wells in Georgia.” Circular 13. 1988. Georgia Department of Natural Resources, Environmental Protection Division – Georgia Geologic Survey.

Abandoned Wells in District 8-2 by Fiscal Year

Fiscal Year	1984	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000	2001	2002	2003	2004	TOTAL
Baker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Calhoun	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	1	0	0	6
Colquitt	0	1	2	0	1	0	2	2	0	1	0	0	2	0	0	0	0	8	8	6	0	33
Decatur	0	1	8	2	1	6	20	26	35	25	8	2	17	4	4	12	3	10	13	10	3	210
Dougherty	0	0	1	1	0	0	3	0	1	1	0	5	1	10	0	0	0	2	0	0	0	25
Early	0	0	0	1	0	0	0	1	0	2	0	0	0	2	1	4	4	0	0	0	0	15
Grady	0	4	0	10	215	76	77	44	90	54	44	43	33	30	32	21	20	51	15	38	34	931
Lee	0	0	0	12	4	1	7	3	7	0	5	1	0	0	1	0	0	0	0	0	21	62
Miller	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	2	0	0	0	6
Mitchell	1	0	1	1	4	3	2	0	6	6	3	0	19	5	0	0	3	23	7	5	2	91
Seminole	4	1	1	0	55	7	0	7	5	1	0	0	9	0	0	0	2	14	13	9	13	141
Terrell	0	0	0	0	21	36	16	1	1	0	0	0	0	0	0	7	26	26	17	23	0	174
Thomas	1	14	21	25	127	153	107	48	44	26	24	26	15	10	15	22	14	25	26	30	18	791
Worth	1	2	6	4	1	3	2	6	1	0	1	9	19	0	0	0	2	0	4	12	8	81
TOTAL	7	24	40	57	429	285	237	138	190	118	85	86	115	61	53	66	76	164	104	133	99	2567