

## Collector Well Projects – Two Page Questionnaire

Thank you for taking the time to help us in this effort to educate interested parties about collector well projects throughout the United States. A copy of this report will be provided to you within a couple months time. Please include references to reports or other documents regarding your project in Question C.2.

### A. General Project Information

1. Name of project?  
GRAND GULF NUCLEAR  
STATION RADIAL WELL  
COMPLETION

2. Project number?  
 \_\_\_\_\_  
 \_\_\_\_\_  
EX.COM  
 \_\_\_\_\_  
150

3. Project priority?  
 \_\_\_\_\_

4. Project location?  
 City/State: PORT GIBSON, MS

5. Project start date?  
 mm/dd/yy: 4-1-05

6. When did wells begin operating (or anticipated start)?  
 mm/dd/yy: 11/1/84

7. Project objective(s)?  
 Municipal water supply  
 Agricultural water supply  
 Conjunctive groundwater/surface water use  
 Others (please list)  
COOLING WATER  
FOR NUCLEAR POWER  
PLANT

8. Status of project?  
 Planning  
 Small-Scale Testing  
 Large-Scale Testing  
 Full-scale operation  
 Other (please explain)  
CONSTRUCTION

9. Project funding source(s)?  
 Agency/owner out of pocket expense  
 Grant funds  
 Partnerships  
 Other (please list)  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

10. What was the primary reason for using collector well technology at this site?  
 Environmental concerns  
 Water demand too great for ordinary production well  
 Water rights for a surface supply not available  
 Research  
 Other: \_\_\_\_\_

11. Number of collector wells and periods of use (seasonal, year-round)? Check boxes that apply.

Well Name	Well Status		Use		Average Flow Production (gpm)
	Active	Proposed	Seasonal	Year-Round	
#1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	4000
#3			<u>OUT OF SERVICE</u>		
#4	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	8500
#5	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	8500

12. Describe the characteristics of your collector wells.

Well Name	Depth of Caisson	Diameter of Caisson	Depth of Laterals	Number of Laterals	Diameter of Laterals
#1	113.7'	13'	100'	5	10"
#3	115'	13'	110'	9	16"
#4	110'	16'	108'	9	12"
#5	120'	13'	115'	10	16"

13. Have you observed decreased flow from your collector wells over time? If so, what do you think is the cause?  
 River migration away from well (please report approximate distance river has migrated: \_\_\_\_\_ ft)  
 Laterals clogging  
 Increased pumping from wells nearby (lowered groundwater elevation)  
 Other: \_\_\_\_\_

14. What measures have you taken, if any, to increase yield of your wells?  
 Well re-development (LATERAL CLEANING)  
 Lateral replacement  
 Added new laterals to existing system  
 Other: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

15. Do you have records indicating well yield with time?

- No records available
- Yes (please fill in the following table)

	Date	Event	Yield (indicate units)
0	Before operation	Designed capacity	
1		Well start-up	
2			
3			
4			
5		Most recent data	

16. What is the cost of your raw water (how much does it cost per unit volume for you to produce untreated water)?

- Number provided includes treatment costs
- No records available

**B. Aquifer Characterization**

1. Describe regional aquifer characteristics.

- Unconfined
- Semi-confined
- Confined
- Unknown
- Other (please list)

2. Describe aquifer geology.

- Cobble
- Gravel
- Sand
- Silt/Clay
- Unknown
- Other (please list)

- Well Sorted
- Poorly Sorted

\_\_\_\_\_

3. What is the closest distance to the nearest surface water body?

Feet or miles: 50 FEET

- Unknown

4. What is the number of monitoring wells if any?

\_\_\_\_\_ wells

- None
- Other
- Unknown

5. What is the frequency of groundwater level monitoring? minutes/days/months: \_\_\_\_\_

- Unknown

**C. Additional Questions**

1. Do you have records indicating changes in yield upon re-development? How often do you re-develop your wells?

SEE ATTACHED ANSWER

2. Are any reports, technical memos, or other documentation available from your project activities? If so, who do we contact for copies?

I AM SURE WE HAVE SOME STUFF  
BUT NOT SURE WHAT WOULD BE NEEDED  
OR WHAT WE HAVE AVAILABLE.  
I WOULD BE THE CONTACT

Historically only radial well #1 has demonstrated any reduction associated with yield (GPM) versus time other than normal lateral clogging. We are told that the Grand Gulf radial well #1 location is located poorly in relation to the existing aquifer.

The other three wells have only demonstrated reduction of yield as lateral clogging occurs. Redevelopment is performed on a frequency as determined by the well performance, amount of drawdown in the caisson per GPM yield. These three radial wells are approximately 25 years old, but based purely on GPM yields they still produce the same GPM as they did the day they started. The difference over the years is to provide that same GPM yield additional well level is sacrificed.

Redevelopment occurs on the average of every 3 – 4 years. Post redevelopment yields do not match yields previously demonstrated. Additionally some initial decline in yield is experienced shortly after each redevelopment.