

Tensas Delta Tract, Long Branch Field
Mississippi River Alluvial Aquifer
Annual Operation, Monitoring, and Disposal Cost Estimate
Groundwater Recovery System
April 30, 2009

Item	# of Units	Unit Cost	# per Year	Total
<u>Project Management</u>				
Project Manager	10 hr	\$100.00	12	\$12,000
<u>Groundwater Disposal</u>				
Off-site Disposal of Superconcentrate	156,103,200 gallon	\$0.17	1	\$26,537,544
<u>Groundwater Monitoring</u>				
Quarterly Sampling				
Laboratory Analysis	1 sample	\$870.00	4	\$3,480
Sampling Technician	2 hr	\$57.00	4	\$456
<u>System Maintenance</u>				
Well, Pump and Piping Maintenance	40 hr	\$57.00	52	\$118,560
Miscellaneous Repairs	1 yr	\$2,500.00	4	\$10,000
<u>Storage Tank</u>				
Frac Tank	108 tank/month	\$950.00	12	\$1,231,200
<u>Utilities</u>				
Electricity	365 days	\$4.46	1	\$1,628
<u>Reporting</u>				
	2 yr	\$3,000.00	1	\$6,000
Total Annual Costs				\$27,920,868

Total O & M Costs for 77.2 Years

\$2,155,491,002

Notes:

All costs on a per year basis

Sample 25% of recovery wells each quarter

Tensas Delta Tract, Big Bayou Field
Mississippi River Alluvial Aquifer
Annual Operation, Monitoring, and Disposal Cost Estimate
Groundwater Recovery System
April 30, 2009

Item	# of Units	Unit Cost	# per Year	Total
<u>Project Management</u>				
Project Manager	10 hr	\$100.00	12	\$12,000
<u>Groundwater Disposal</u>				
Off-site Disposal of Superconcentrate	141,912,000 gallon	\$0.17	1	\$24,125,040
<u>Groundwater Monitoring</u>				
Quarterly Sampling				
Laboratory Analysis	1 sample	\$870.00	4	\$3,480
Sampling Technician	2 hr	\$57.00	4	\$456
<u>System Maintenance</u>				
Well, Pump and Piping Maintenance	40 hr	\$57.00	52	\$118,560
Miscellaneous Repairs	1 yr	\$2,500.00	4	\$10,000
<u>Storage Tank</u>				
Frac Tank	99 tank/month	\$950.00	12	\$1,128,600
<u>Utilities</u>				
Electricity	365 days	\$2.98	1	\$1,088
<u>Reporting</u>				
	2 yr	\$3,000.00	1	\$6,000
Total Annual Costs				\$25,405,224

Total O & M Costs for 60.2 Years

\$1,529,394,467

Notes:

All costs on a per year basis

Sample 25% of recovery wells each quarter

- 1 A Yes.
- 2 Q And what you've done - - this spreadsheet captures the
3 variable costs that we talked about earlier; correct?
- 4 A That's correct.
- 5 Q What you've done is broken it into categories of expense
6 but the major expense is the second one down from the top
7 which is called - - can you read it for us, sir?
- 8 A That is the transportation and disposal of the what we
9 called the superconcentrate. It's the part of the water
10 that can't be treated that is going to be transported away.
- 11 Q It's the trucking fee to get it there and it's the disposal
12 fee charged by the commercial disposal well site?
- 13 A That's correct.
- 14 Q It amounts to \$.17 a gallon and when we multiply it by the
15 gallons you come up with 26 million and change per year?
- 16 A That's correct.
- 17 Q Have you figured out, as a fraction, how much the trucking
18 and disposal fee cost is as compared to the annual cost of
19 the whole down at the bottom?
- 20 A It's the largest portion. I don't know the percentage but
21 the greatest portion is the transportation and disposal.
- 22 Q I have a calculator, sir. Can you figure it out for us?
- 23 A If I can turn it on. Here we go.
- 24 Q Do you see where to turn it on, sir?
- 25 A I got it. I divided 26,000,537 by 27,920,000 and got 95
26 percent.
- 27 Q Ninety-five percent of the annual expenses that would be
28 incurred under your plan are the trucking and disposal fee?
- 29 A That's correct.
- 30 Q Am I right that if we could find a better way to dispose of
31 this water than by trucking it over to Jennings we could
32 save about 95 percent of the expense that you had

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1 suggested?

2 A Roughly, yes.

3 Q If we assume that one of the defendants who holds the
4 mineral rights in the property would operate a well at
5 their expense to reinject the water there on the property
6 this expense would go away, wouldn't it, sir?

7 A I would be a lot less. You have an expense that is
8 incurred when you inject on-site so that expense would be
9 there and the other consideration, of course, is we're
10 concluding that these problem that we're having to recover
11 this water came from injection wells so I would not
12 recommend injection into anything onto this site.

13 Q Of course, the saltwater you're talking about is coming
14 from under the site, naturally to begin with, right?

15 A No, I don't believe so.

16 Q Even the salt that you say it came from oil and gas, even
17 if you're right about that the saltwater was here on the
18 property to begin with?

19 A Yes, it was there but it didn't have a way to the surface
20 until oil and gas wells were put in.

21 Q And my point is you can reinject it down safely to a safe
22 zone if you're careful. That is true, isn't it?

23 A If you're careful and you don't have a site that doesn't
24 have hundreds of well bores already that are potential
25 problems.

26 Q If they are potential problems you could fix those and
27 drill a brand new well for pennies on the dollar of what
28 you're suggesting that be awarded here. Isn't that true,
29 sir?

30 **MR. VERON:**

31 There's no evidence you can fix those. It's a
32 hypothetical without any basis.

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- 1 throughout the state of Louisiana?
- 2 **A** Saltwater injection wells are used throughout the state of
- 3 Louisiana because that's the cheapest way to get rid of the
- 4 saltwater.
- 5 **Q** And, in fact, it's the way preferred and recommended by the
- 6 Department of Natural Resources?
- 7 **A** I haven't seen a recommendation. They would prefer that
- 8 over discharging it to the bayou or putting it in a pit.
- 9 **Q** Am I correct that there are a whole slough of regulations
- 10 in the state DNR about saltwater injection wells and how
- 11 they're permitted and how they are to be run?
- 12 **A** Yes, but as we know the regulations don't necessarily mean
- 13 that they're safe.
- 14 **Q** The final point -- haven't you previously testified that
- 15 you can drill a brand new saltwater disposal well from
- 16 scratch for a million dollars?
- 17 **A** I have testified to that.
- 18 **Q** Finally, the final point is in the saltwater, the kind of
- 19 pump and treat plan, you have never performed a pump and
- 20 treat plan for groundwater remediation at an oil and gas
- 21 site?
- 22 **A** That's correct because it's rarely done.
- 23 **Q** Let's leave the MRAA for now and change and talk about the
- 24 shallow groundwater. This is the water that you found
- 25 perched? Is that the right word you use in your business?
- 26 **A** No, that's not a term I use.
- 27 **Q** It's the shallow groundwater is the water you found at the
- 28 interval of 20 to 40 feet in depth?
- 29 **A** Yes, at the Big Bayou site, yes.
- 30 **Q** And it's in the clay layer we talked about?
- 31 **A** Yes, the layers of clay and silt and sand.
- 32 **Q** One thing the jury should know is that there is nobody

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