



E. D. C., Inc.

EL DORADO CHEMICAL CO.

P. O. Box 231

El Dorado, Arkansas 71730

November 8, 1983

Wendell Morgan
LSB Industries Inc.
P. O. Box 750
16 South Pennsylvania
Oklahoma City, OK 73107

Subject: Closure/Post-Closure Insurance

In answer to the mailgram of October 27, 1983 from Stewart Smith, Southwest, to Bob Heiman, I enclose the following items:

March 23, 1981 McClelland Engineers proposed study of the effect of the impoundment pond on groundwater quality

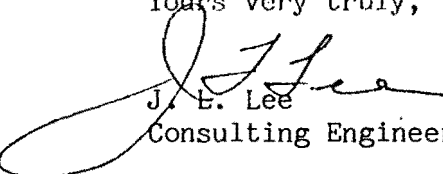
June 9, 1983 McClelland engineers Report "Ground Water Study - Impoundment Pond Area". This report, page 9, states, "Apparently, the regional ground water flow in the first aquifer is from the north and northwest to the south and southeast". Referring to PLATE 1, then, WELLS No. 1, 2, 2A would be up-gradient and No. 3, 4, 5 would be down-gradient.

June 22, 1981, McClelland clarification of the location of the "first aquifer".

October 1983 - Compendum of all analyses performed to date of monitor wells.

The mailgram request for complete ground water analysis was considered to mean an analysis of concentrations of ions or elements that might be attributed to the plant discharge. If further analyses are needed it would be well to specify for which category of elements or compounds.

Yours very truly,


J. E. Lee
Consulting Engineer

ub

cc: John Garrison

*see P. 10 7. d. 27
1980 for
attachments plus Vault
file 41-1145 for
McClelland Report*

SIX

THIS FILE LISTS SAMPLING DATA FROM THE FIVE MONITORING WELLS LOCATED AROUND LAKE KILLDEER. THESE WELLS WERE INSTALLED IN JUNE 1981.

WELL #	NH3-N (PPM)	NO3-N (PPM)	SO4 (PPM)	pH (SU)	WATER DEPTH (FT)	SURFACE ELEV (FT)	DATE
1	-	-	-	-	11.0	183.0	4/24/81
1	-	-	-	-	10.7	"	4/28/81
1	0.12	0.35	-	6.0	-	"	4/30/81
1	-	-	-	-	9.5	"	5/20/81
1	1.0	7.0	-	7.0	11.1	"	10/1/81
1	<1.0	3.1	398	5.9	8.3	"	2/2/83
1	<1.0	4.0	-	5.2	-	"	8/11/83
1	<1.0	8.0	106	5.8	13.9	"	10/17/83
1	0	4.0	82	5.6	14.5"	"	11/8
2	-	-	-	-	1.3	153.6	4/30/81
2	-	-	-	-	1.3	"	4/28/81
2	6.5	38	106	5.2	-	"	4/30/81
2	-	-	-	-	(0.8)	"	5/20/81
2	<1.0	1.0	-	5.7	-	"	8/11/83
2	0	1	38	6.0	1-2"	"	11/8
2A	-	-	-	-	1.3	153.5	4/24/81
2A	-	-	-	-	1.3	"	4/28/81
2A	6.8	38.0	-	5.2	-	"	4/30/81
2A	-	-	-	-	0.9	"	5/20/81
2A	0	27.0	-	6.8	4.7	"	10/1/81
2A	<1.0	2.6	276	6.0	0.5	"	2/2/83
2A	1.4	15	-	5.7	-	"	8/11/83
2A	<1.0	27	71	5.6	8.5	"	10/12/83
2A	0.2	23	98	5.6	8.5"	"	11/8/83
3	-	-	-	-	17.3	181.6	4/28/81
3	0.1	1.5	-	5.4	-	"	4/30/81
3	-	-	-	-	22.1	"	5/20/81
3	0	55.0	-	6.8	23.0	"	10/1/81
3	<1.0	0.83	6.2	6.9	17.5	"	2/2/83
3	2.0	6.0	-	5.9	-	"	8/11/83
3	<1.0	11.0	79	6.8	24.6	"	10/12/83
3	0.2	25	159	5.3	27.6"	"	11/8/83
4	-	-	-	-	3.3	162.3	4/28/81
4	0.1	1.9	-	5.4	-	"	4/30/81
4	-	-	-	-	0.6	"	5/20/81
4	0	6.0	-	6.7	3.9	"	10/1/81
4	<1.0	4.1	13.5	4.9	(0.6)	"	2/2/83
4	1.2	4.0	-	5.0	-	"	8/11/83
4	<1.0	3.0	38	5.5	6.3	"	10/17/83
4	-	-	-	-	2.1	"	11/8/83

THIS FILE LISTS SAMPLING DATA FROM THE SIX MONITORING WELLS LOCATED AROUND LAKE KILDEER.
THESE WELLS WERE INSTALLED IN 1981.

WELL #	NH3-N (PPM)	NO3-N (PPM)	SO4 (PPM)	pH (SU)	WATER DEPTH (FT)	SURFACE ELEV. (FT)	DATE
1	-	-	-	-	11.0	183.0	4/24/81
1	-	-	-	-	10.7	183.0	4/28/81
1	0.12	0.35	-	6.0	-	183.0	4/30/81
1	-	-	-	-	9.5	183.0	5/20/81
1	1.0	7.0	-	7.0	11.1	183.0	10/1/81
1	<1.0	3.1	398	5.9	8.3	183.0	2/2/83
1	<1.0	4.0	-	5.2	-	183.0	8/11/83
1	<1.0	8.0	106	5.8	13.9	183.0	10/7/83
2	-	-	-	-	1.3	153.6	4/30/81
2	-	-	-	-	1.3	153.6	4/28/81
2	6.5	38.0	106	5.2	-	153.6	4/30/81
2	-	-	-	-	(0.8)	153.6	5/20/81
2	<1.0	1.0	-	5.7	-	153.6	8/11/83
2A	-	-	-	-	1.3	153.5	4/24/81
2A	-	-	-	-	1.3	153.5	4/28/81
2A	6.8	38.0	0	5.2	-	153.5	4/30/81
2A	-	-	-	-	0.9	153.5	5/20/81
2A	27.0	-	-	6.8	4.7	153.5	10/1/81
2A	<1.0	2.6	276	6.0	0.5	153.5	2/2/83
2A	1.4	15.0	-	5.7	-	153.5	8/11/83
2A	<1.0	27.0	71	5.6	8.5	153.5	10/12/83
3	-	-	-	-	17.3	181.6	4/28/81
3	0.1	1.5	-	5.4	-	181.6	4/30/81
3	-	-	-	-	22.1	181.6	5/20/81
3	0	55.0	-	6.8	23.0	181.6	2/2/83
3	<2.0	8.0	6.2	5.9	17.5	181.6	8/11/83
3	1.0	11.0	79	6.8	24.6	181.6	10/12/83
4	-	-	-	-	3.3	162.3	4/28/81
4	0.1	1.9	-	5.4	-	162.3	4/30/81
4	-	-	-	-	0.6	162.3	5/20/81
4	0	6.0	-	6.7	3.9	162.3	10/1/81
4	<1.0	4.1	13.5	4.9	(0.6)	162.3	2/2/83
4	1.2	4.0	-	5.0	-	162.3	8/11/83
4	<1.0	3.0	38.0	5.5	6.3	162.3	10/7/83
5	-	-	-	-	5.1	157.1	4/28/81
5	0.1	0.4	-	4.4	-	157.1	4/30/81
5	-	-	-	-	0.8	157.1	5/20/81
5	1.0	8.0	-	6.7	4.1	157.1	10/1/81
5	<1.0	11.3	45.1	4.9	0.7	157.1	2/2/83
5	1.6	10.0	-	4.1	-	157.1	8/11/83
5	1.0	11.0	79.0	5.0	5.7	157.1	10/12/83

date 10-12-83
 to Jack Lee
 from Len Brotherton
 subject Lake Killdeer, Leaching Monitor wells.

date Sampled	WELL NUMBER	DEPTH OF WELL	LEVEL BEFORE PUMPING FROM TOP OF AC	LEVEL AFTER 24 HRS FROM TOP OF PDE	PH	NA ₃ -N ppm	NO ₃ -N ppm	SO ₄ ppm
10-7	1	25'	14' 2"	13' 11"	5.8	-0-	8	106
10-12	2	60' 6"	0	4 1/2"	6.0	-0-	0.3	31
10-12	2A	18' 3"	6'	8' 6"	5.6	-0-	27	71
10-7	3	30'	29'	24' 7"	6.8	-0-	3	79
10-7	4	24'	5' 7"	6' 3"	5.5	-0-	3	38
10-12	5	19' 4"	5' 9"	5' 9"	5.0	-0-	11	79

xc: NO. Wright
 Bill Jones

date 11-8-83
 to Jack Lee
 from Len Brotherton
 subject Lake Killdeer, Leaching Monitor wells.

SAMPLE DATE	WELL NUMBER	DEPTH OF WELL FROM TOP OF PIPE	LEVEL BEFORE PUMPING	LEVEL AFTER 24 HRS FROM TOP OF PIPE	PH	NA ₃ -N ppm	NO ₃ -N ppm	SO ₄ ppm
11-8	1	25'		14'5"	5.6	-0-	4	82
"	2	60'6"		1'2"	6.0	-0-	1	38
"	2A	18'3"		8'8"	5.6	.2	23	98
"	3	30'		27'6"	5.3	.2	25	159
"	4	24'		6'4"	5.4	-0-	3	38
"	5	19'4"		6'0"	4.8	-0-	12	68

XC: N.O. WRIGHT
 Bill Jones

THIS FILE LISTS SAMPLING DATA FROM THE FIVE MONITORING WELLS LOCATED AROUND LAKE KILLDEER. THESE WELLS WERE INSTALLED IN JUNE 1981.

WELL #	NH3-N (PPM)	NO3-N (PPM)	SO4 (PPM)	pH (SU)	WATER DEPTH (FT)	SURFACE ELEV (FT)	DATE
1	-	-	-	-	11.0	183.0	4/24/81
1	-	-	-	-	10.7	"	4/28/81
1	0.12	0.35	-	6.0	-	"	4/30/81
1	-	-	-	-	9.5	"	5/20/81
1	1.0	7.0	-	7.0	11.1	"	10/1/81
1	<1.0	3.1	398	5.9	8.3	"	2/2/83
2	-	-	-	-	1.3	153.5	4/24/81
2	-	-	-	-	1.3	"	4/28/81
2	6.8	38.0	-	5.2	-	"	4/30/81
2	-	-	-	-	0.9	"	5/20/81
2	0	27.0	-	6.8	4.7	"	10/1/81
2	<1.0	2.6	276	6.0	0.5	"	2/2/83
3	-	-	-	-	17.3	181.6	4/28/81
3	0.1	1.5	-	5.4	-	"	4/30/81
3	-	-	-	-	22.1	"	5/20/81
3	0	55.0	-	6.8	23.0	"	10/1/81
3	<1.0	0.83	6.2	6.9	17.5	"	2/2/83
4	-	-	-	-	3.3	162.3	4/28/81
4	0.1	1.9	-	5.4	-	"	4/30/81
4	-	-	-	-	0.6	"	5/20/81
4	0	6.0	-	6.7	3.9	"	10/1/81
4	<1.0	4.1	13.5	4.9	(0.6)	"	2/2/83
5	-	-	-	-	5.1	157.1	4/28/81
5	0.1	0.4	-	4.4	-	"	4/30/81
5	-	-	-	-	0.8	"	5/20/81
5	1.0	8.0	-	6.7	4.1	"	10/1/81
5	<1.0	11.3	45.1	4.9	0.7	"	2/2/83

DISTANCE FROM TOP OF WELL PIPE TO GROUND SURFACE:

WELL #	DISTANCE (FT)
1	2.4
2A	1.8
3	2.3
4	1.8
5	2.3

~~8-11-83~~

8-11-83 ~~2-2-83~~
 NH_2N NO_3N PH NH_3N NO_3N PH

A	1	2	5.9						
B	41	4	6.8						
C	1.6	15	6.2						
D	1.3	2	6.5						
E	1.3	2	5.8						
F	1.2	2	5.8						
1	2.1	4	5.2	2.1	3.1	5.9			
2	2.1	1	5.7						
2A	1.4	15	5.7				2.6	6.0	
3	2.0	6	5.4	2.1	.83	6.9			
4	1.2	4	5.0	2.1	4.1	4.9			
5	1.6	10	4.1	2	11.3	4.9			
Swamp	2.1	4	5.9						
2-2-83									
Killdeer	10	40	7.4	20	72.7	6.3			
(2.5 meter)					(60.65?)				

2-2 lead
 1306