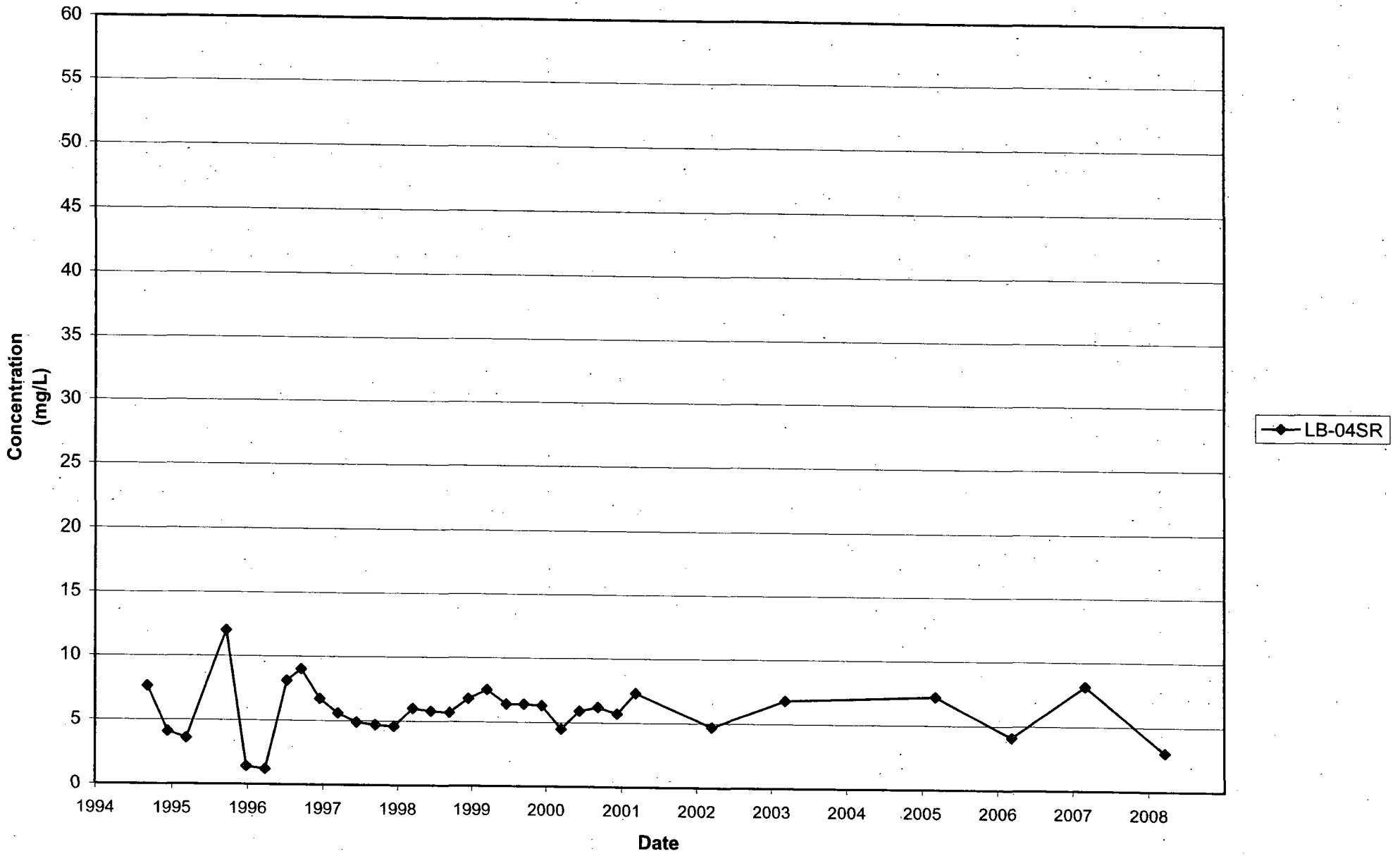
Appendix E
Groundwater Time-Series Concentration Plots

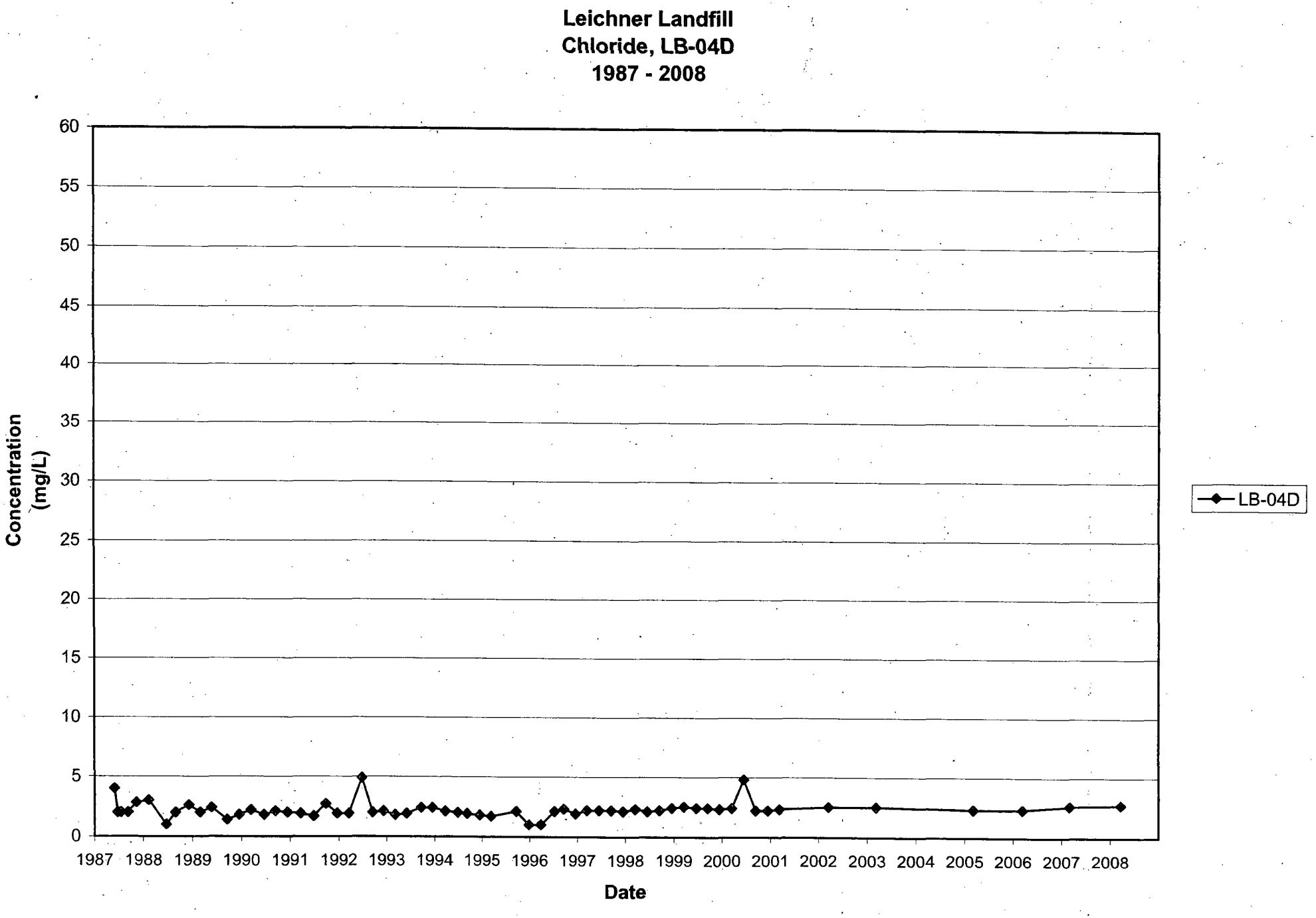
Chloride

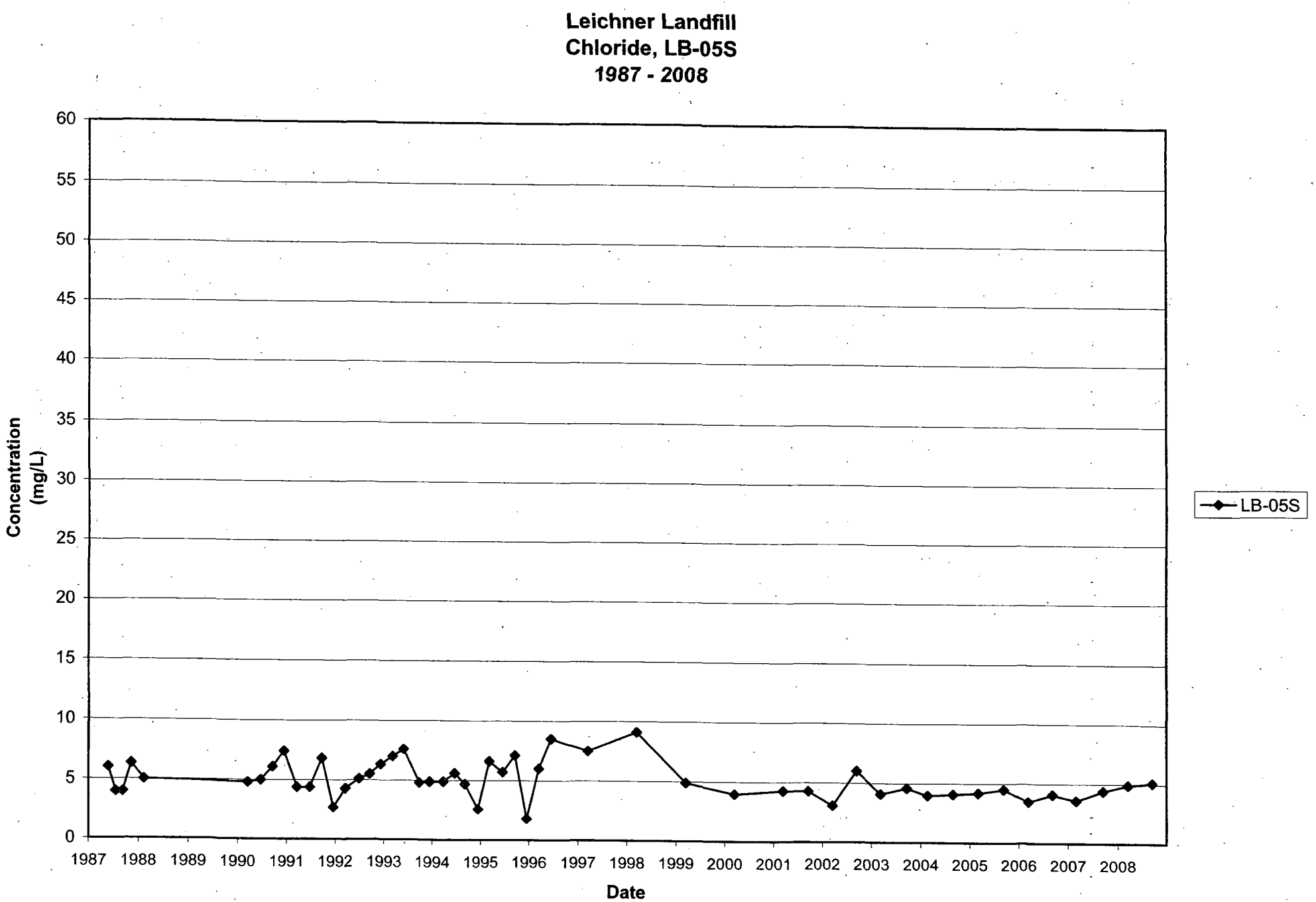
Leichner Landfill
Chloride, LB-04SR
1987 - 2008



TimeTrendData_Chloride.xls, LB-04SR

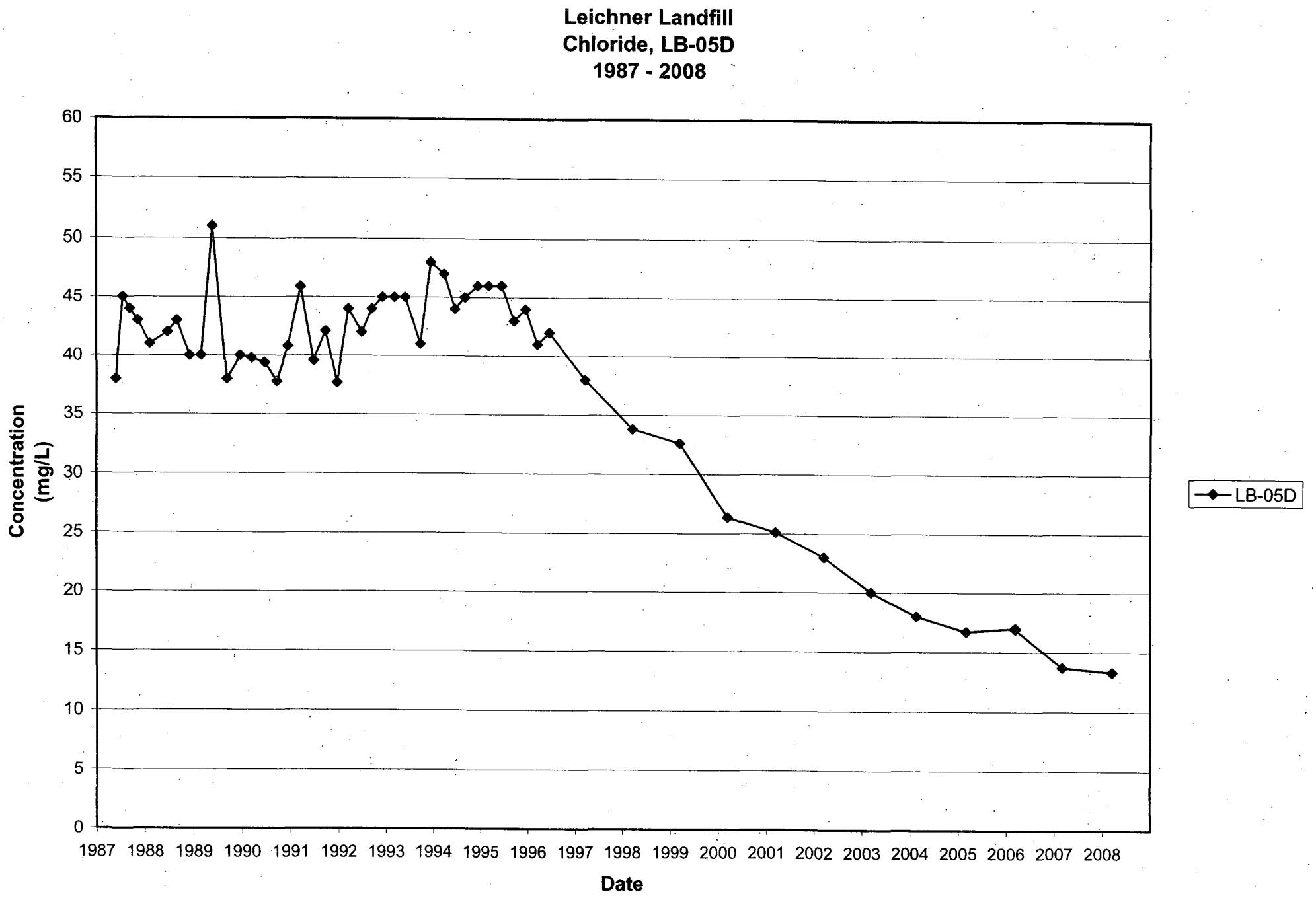
Shaw Environmental, Inc.

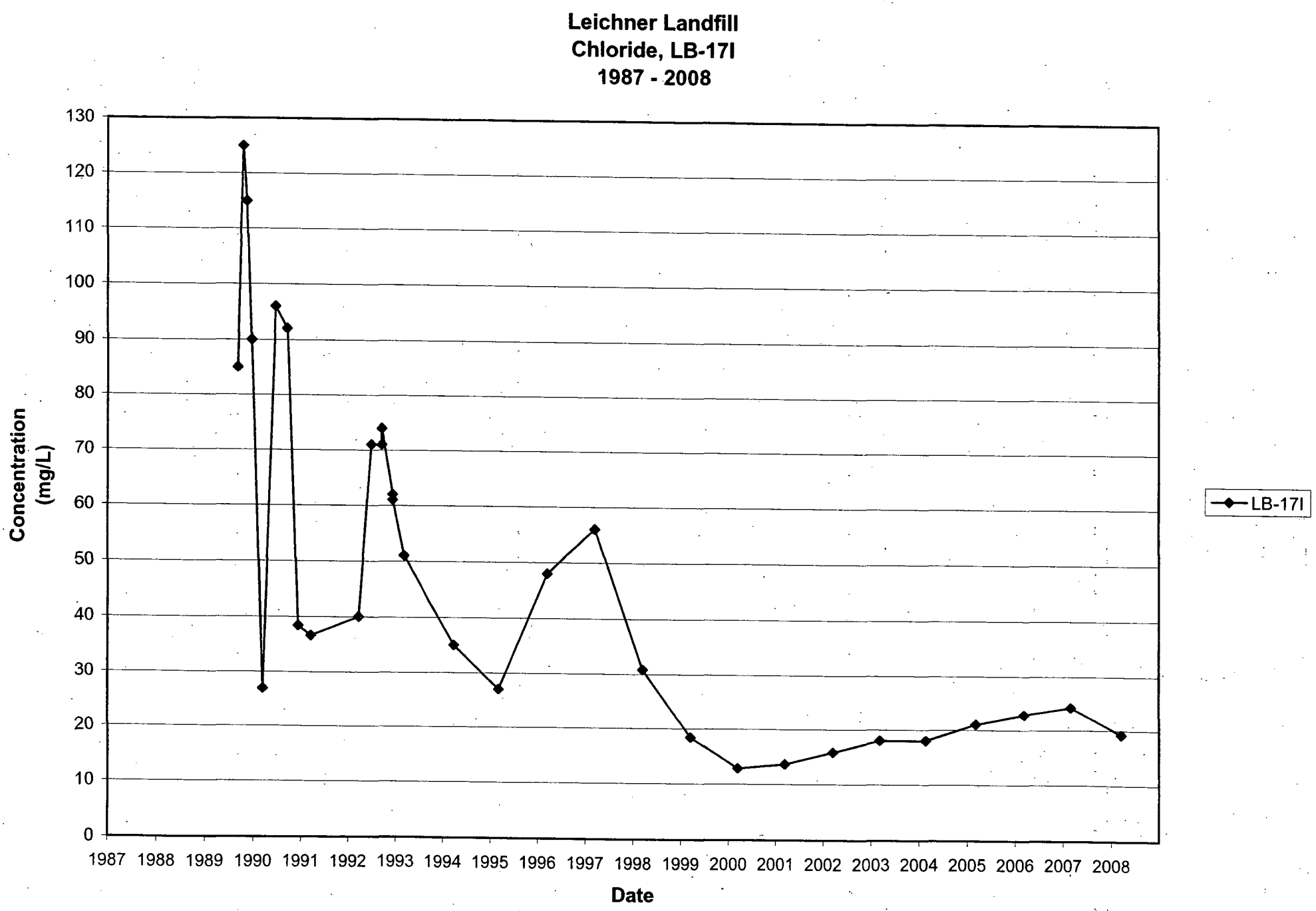

Leichner Landfill
Chloride, LB-04D
1987 - 2008
Concentration (mg/L)
60
55
50
45
40
35
30
25
20
15
10
5
0
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
LB-04D



TimeTrendData_Chloride.xls, LB-05S

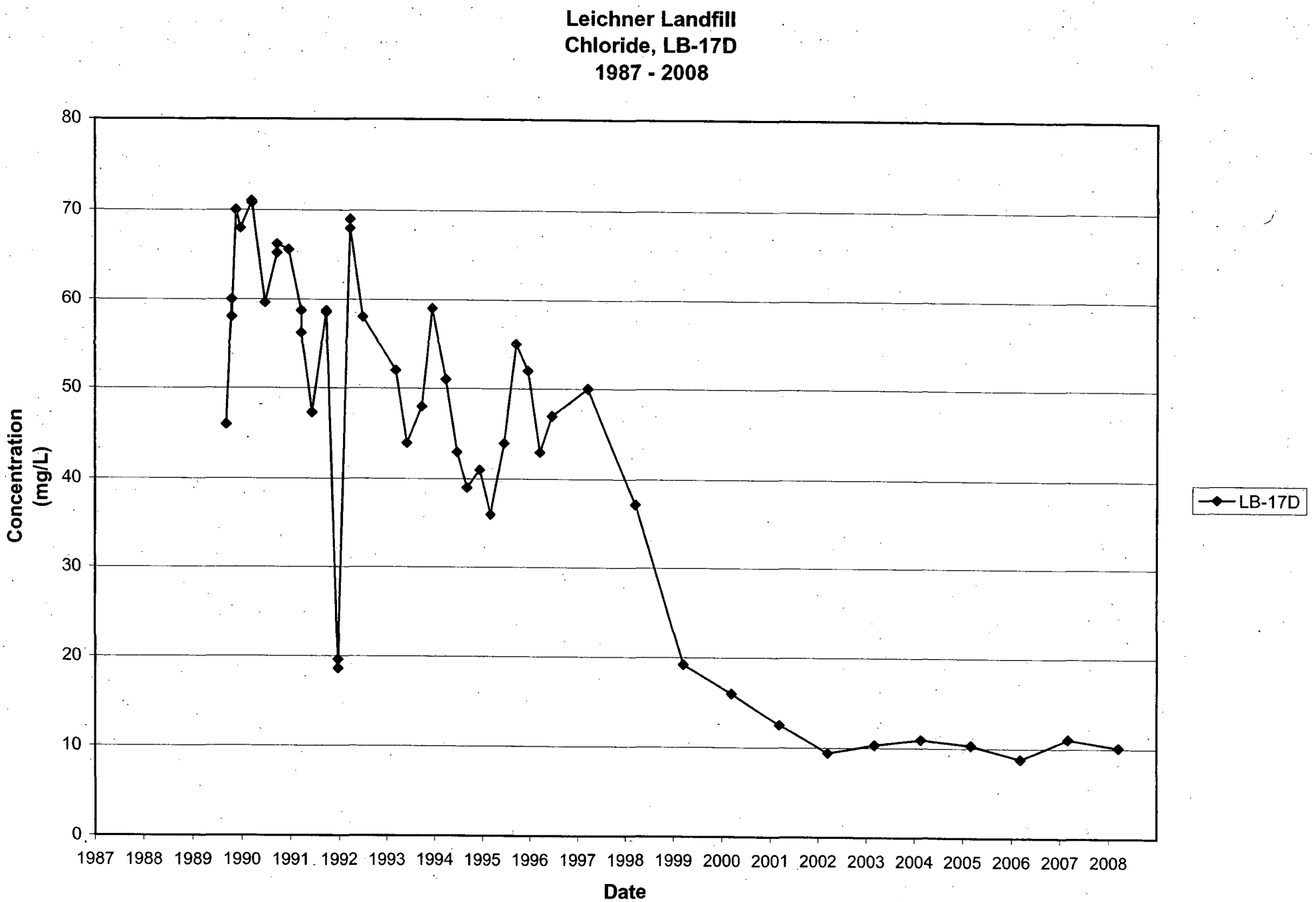
Shaw Environmental, Inc.

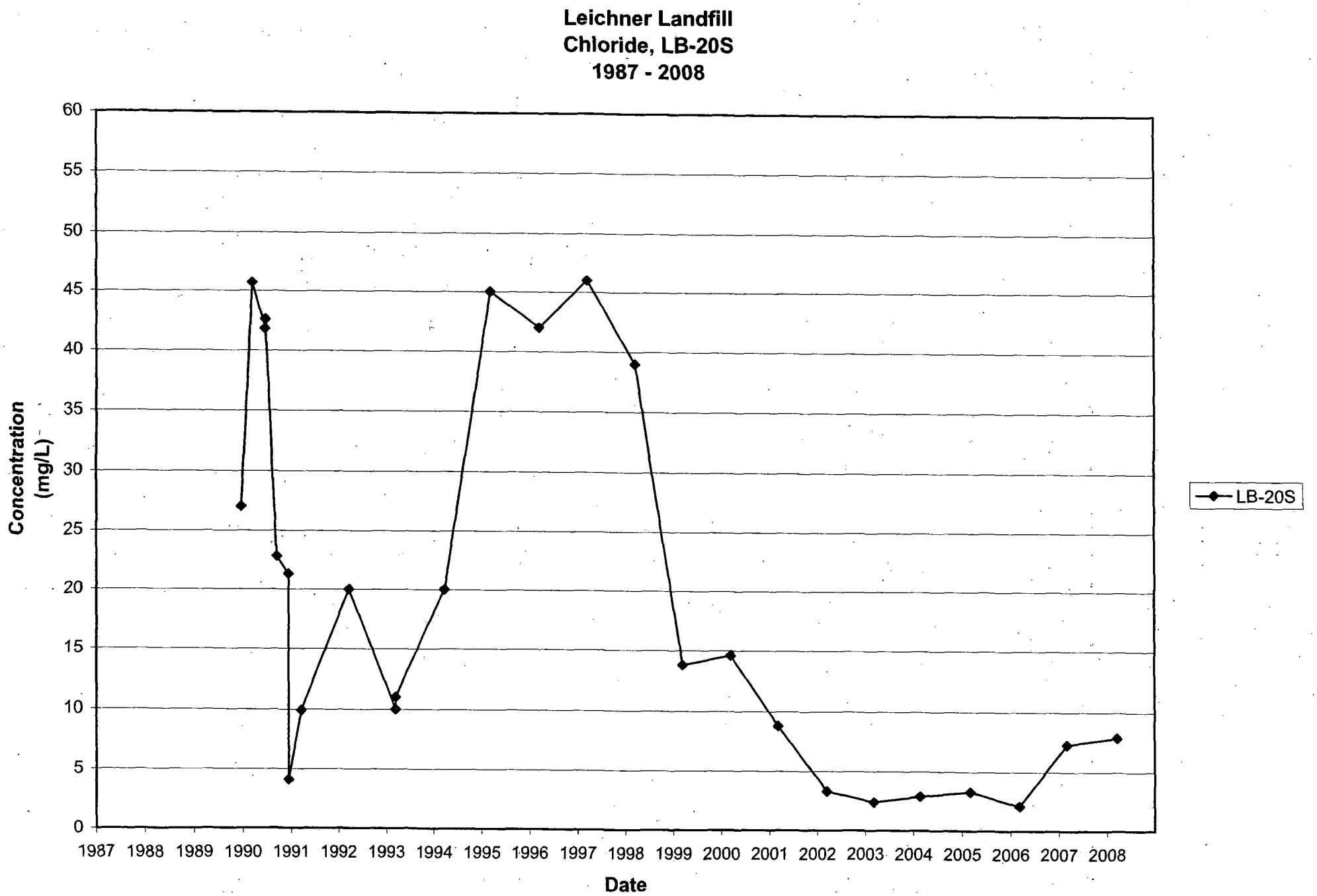

Leichner Landfill
Chloride, LB-05D
1987 - 2008
Concentration (mg/L)
60
55
50
45
40
35
30
25
20
15
10
5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-05D



TimeTrendData_Chloride.xls, LB-17I

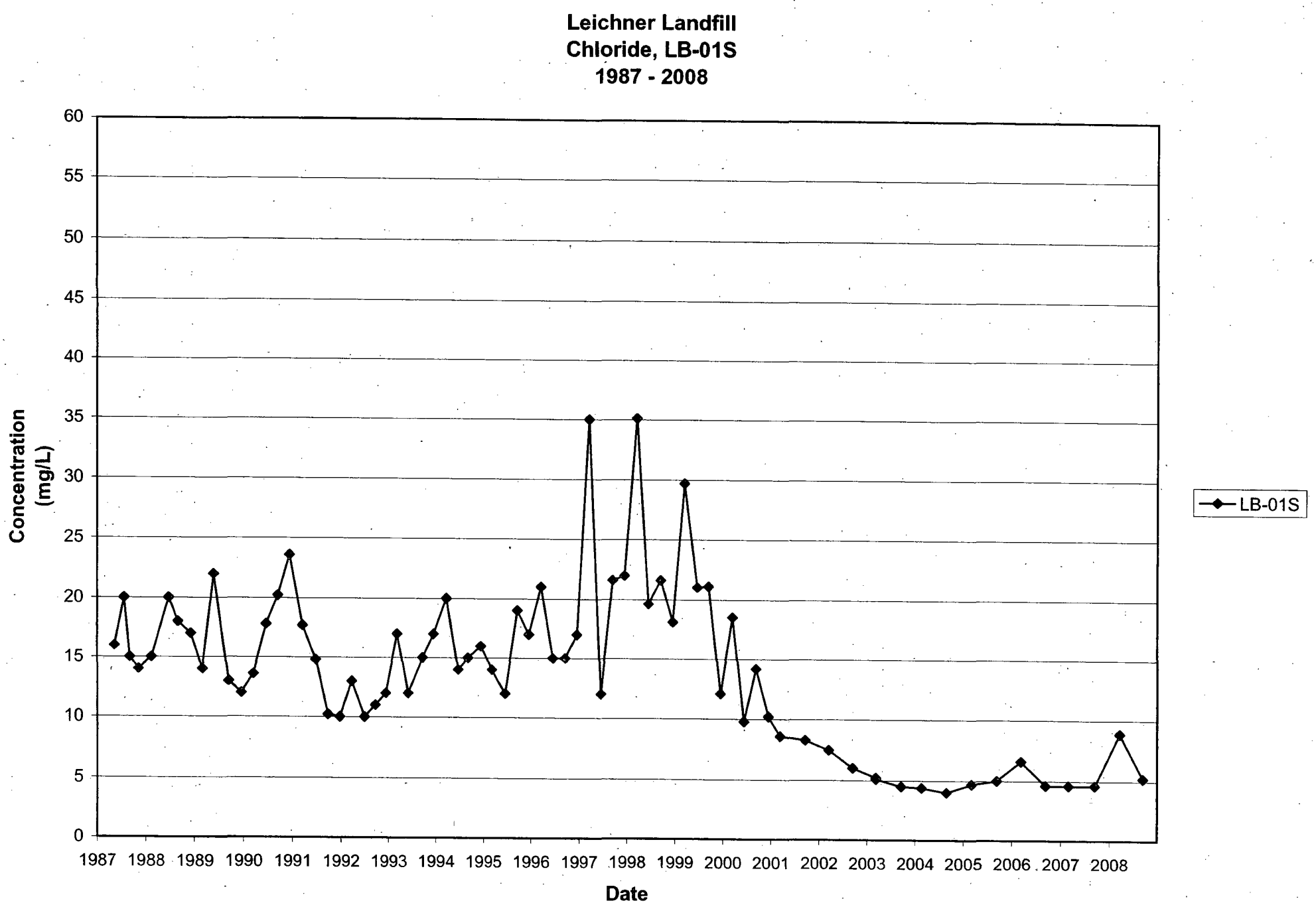
Shaw Environmental, Inc.

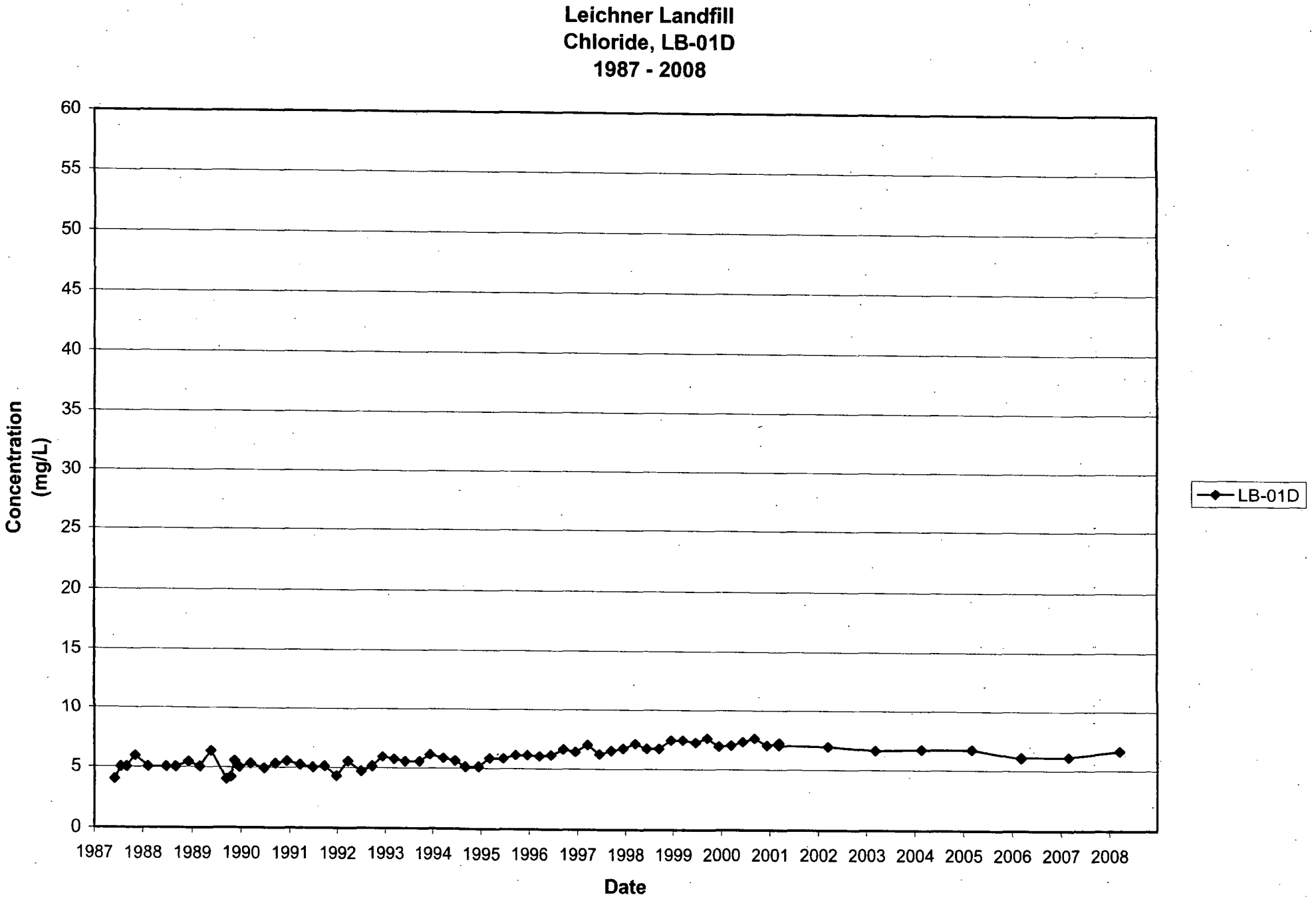

Leichner Landfill
Chloride, LB-17D
1987 - 2008
Concentration (mg/L)
80
70
60
50
40
30
20
10
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-17D



TimeTrendData_Chloride.xls, LB-20S

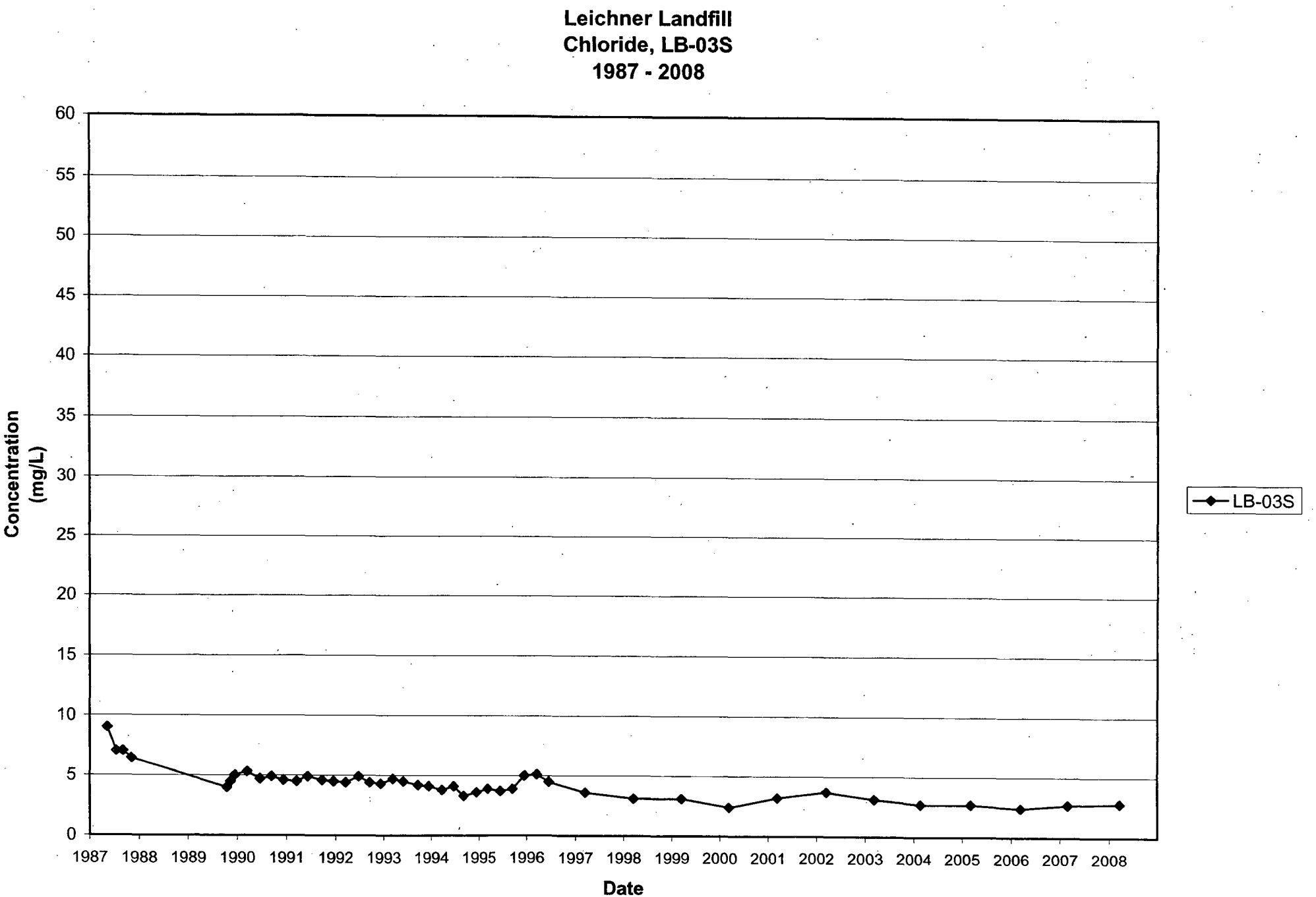
Shaw Environmental, Inc.

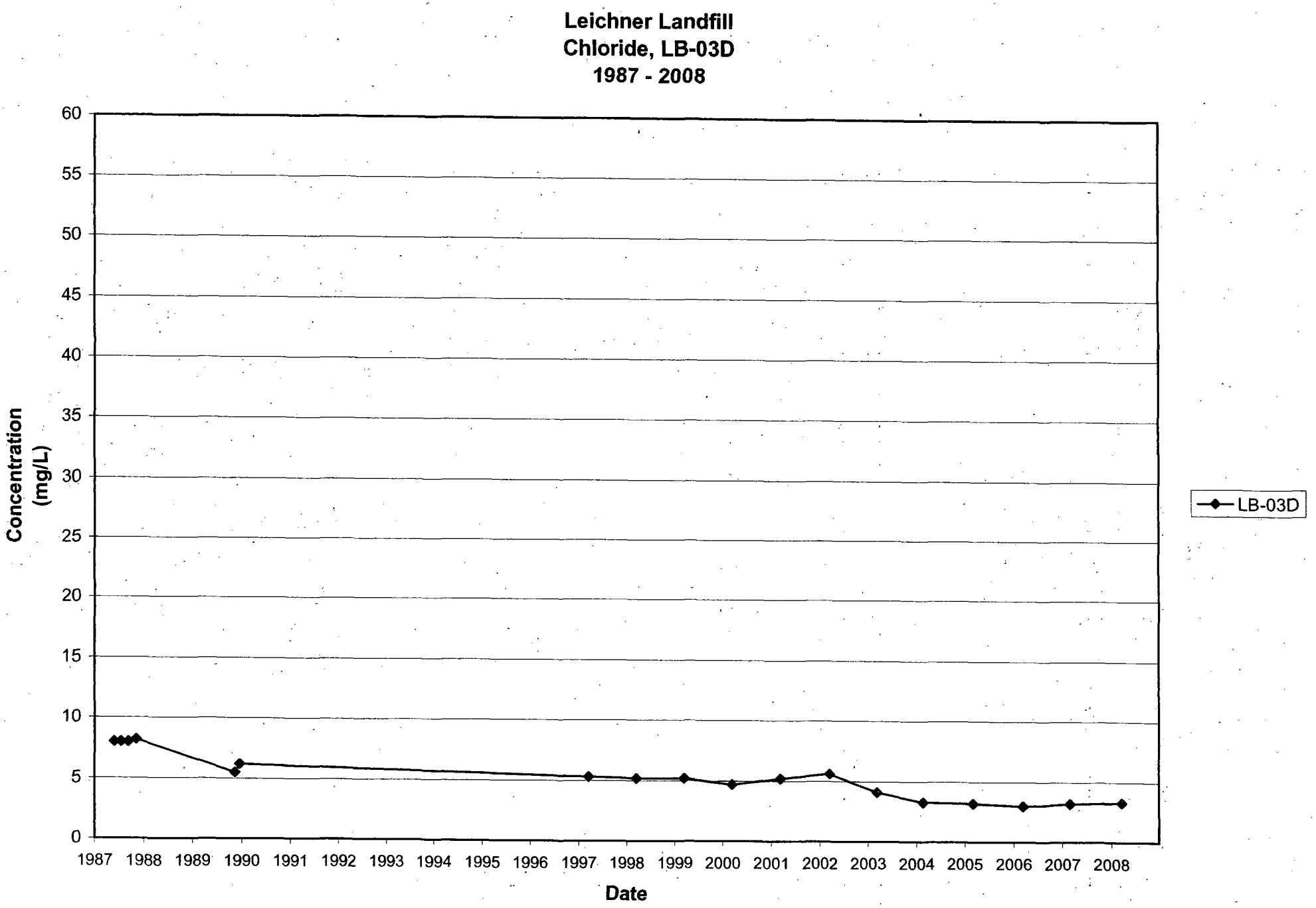

Leichner Landfill
Chloride, LB-01S
1987 - 2008
Concentration (mg/L)
60
55
50
45
40
35
30
25
20
15
10
5
0
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
LB-01S



TimeTrendData_Chloride.xls, LB-01D

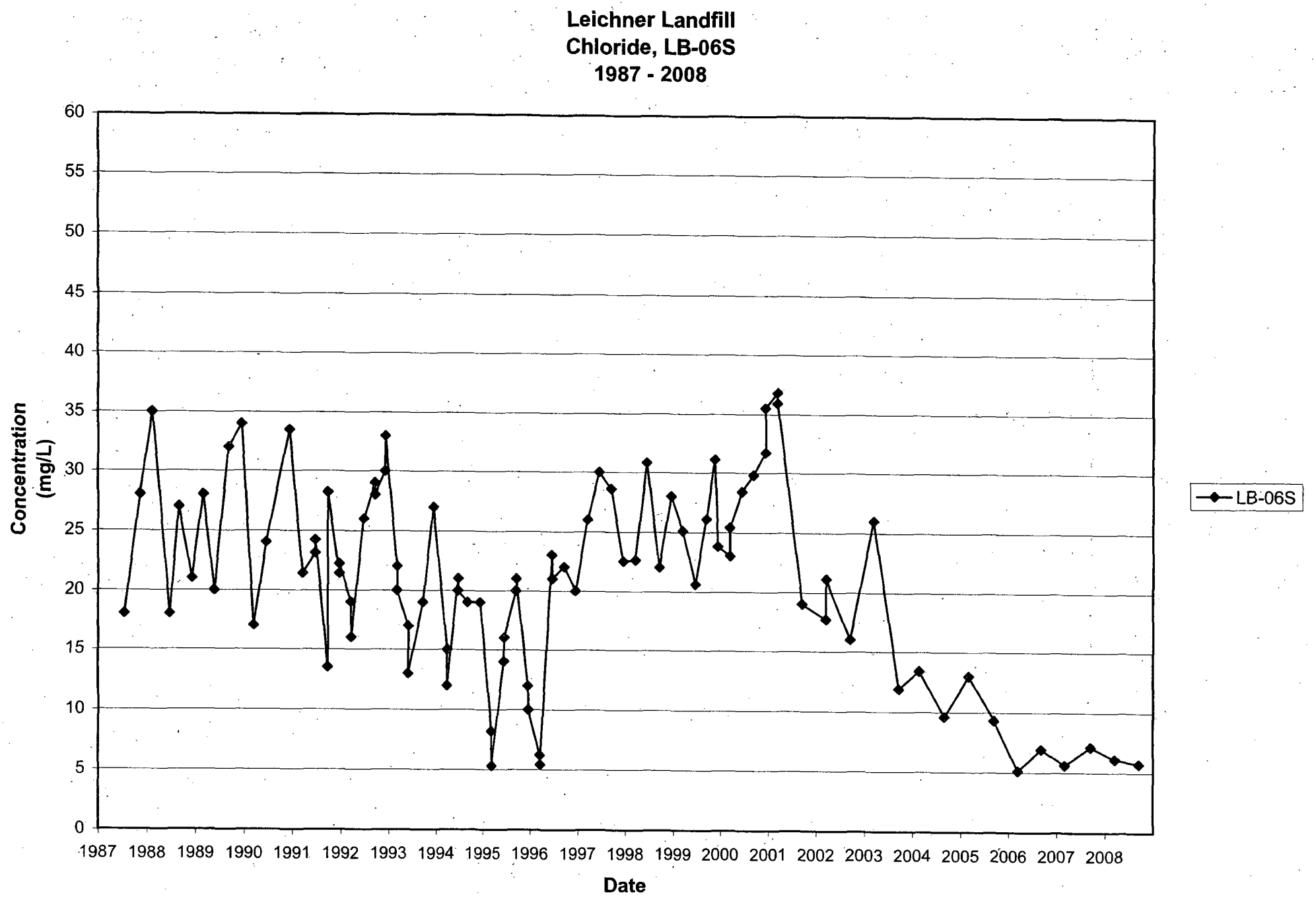
Shaw Environmental, Inc.

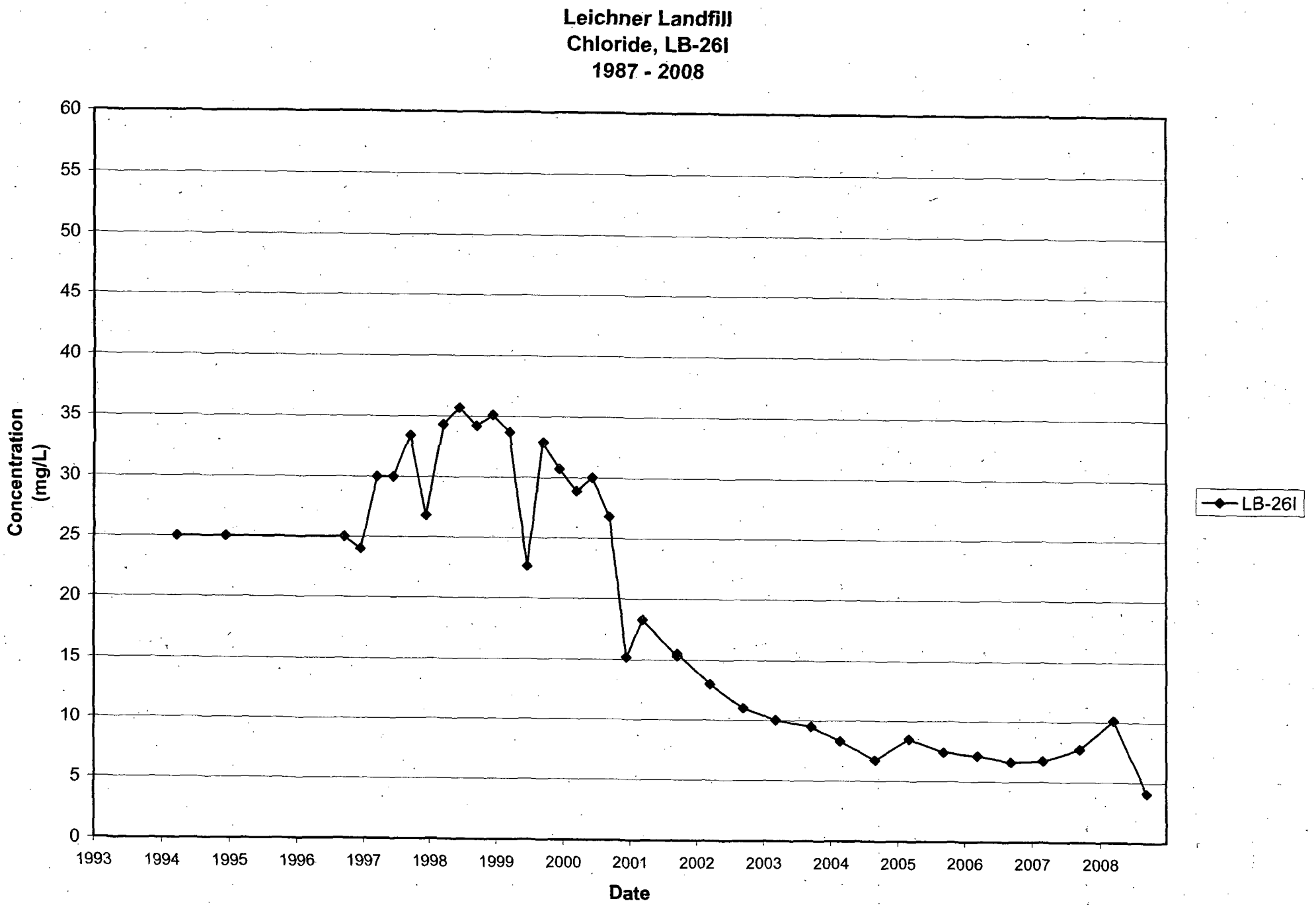

Leichner Landfill
Chloride, LB-03S
1987 - 2008
Concentration (mg/L)
60
55
50
45
40
35
30
25
20
15
10
5
0
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
LB-03S



TimeTrendData_Chloride.xls, LB-03D

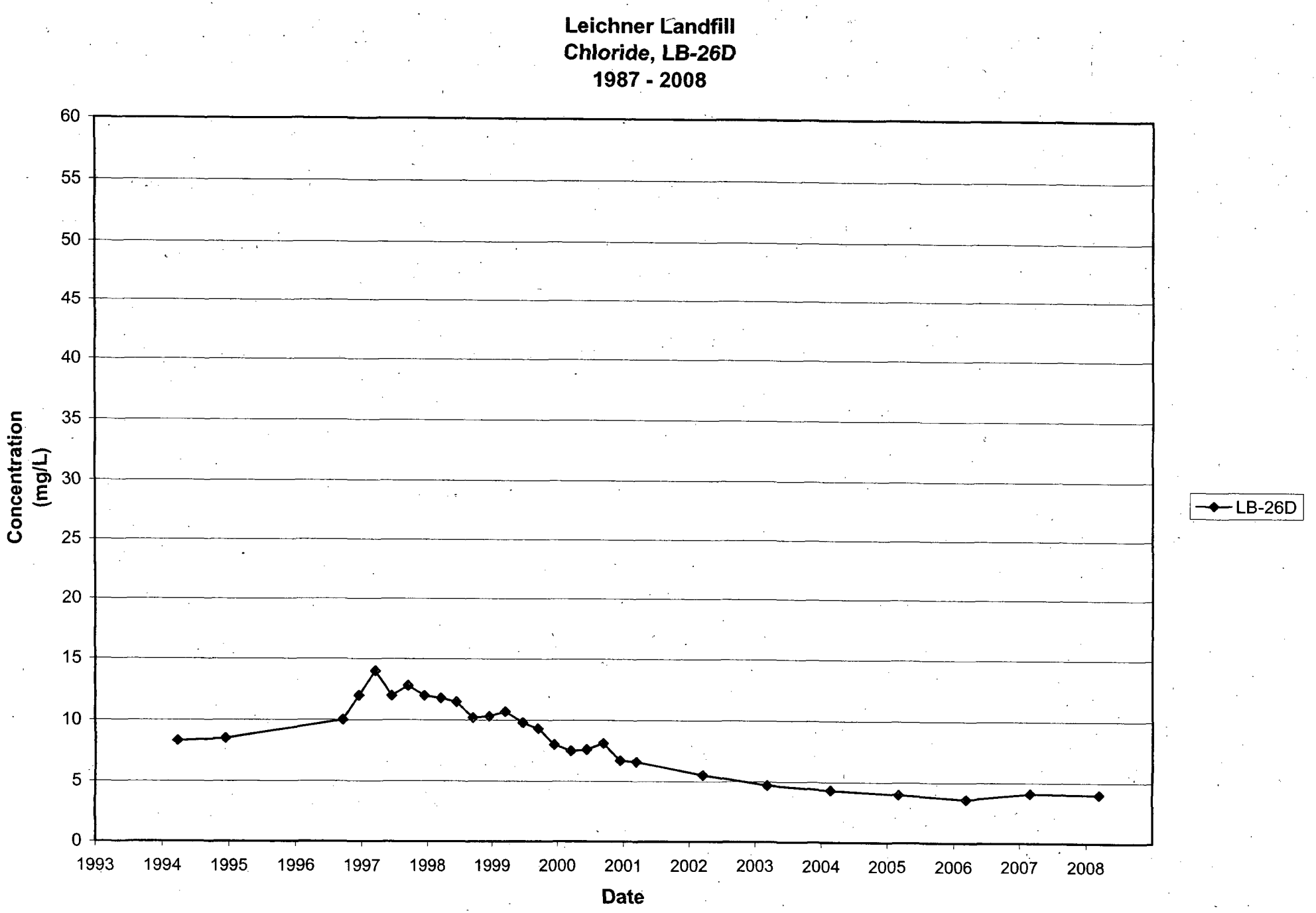
Shaw Environmental, Inc.

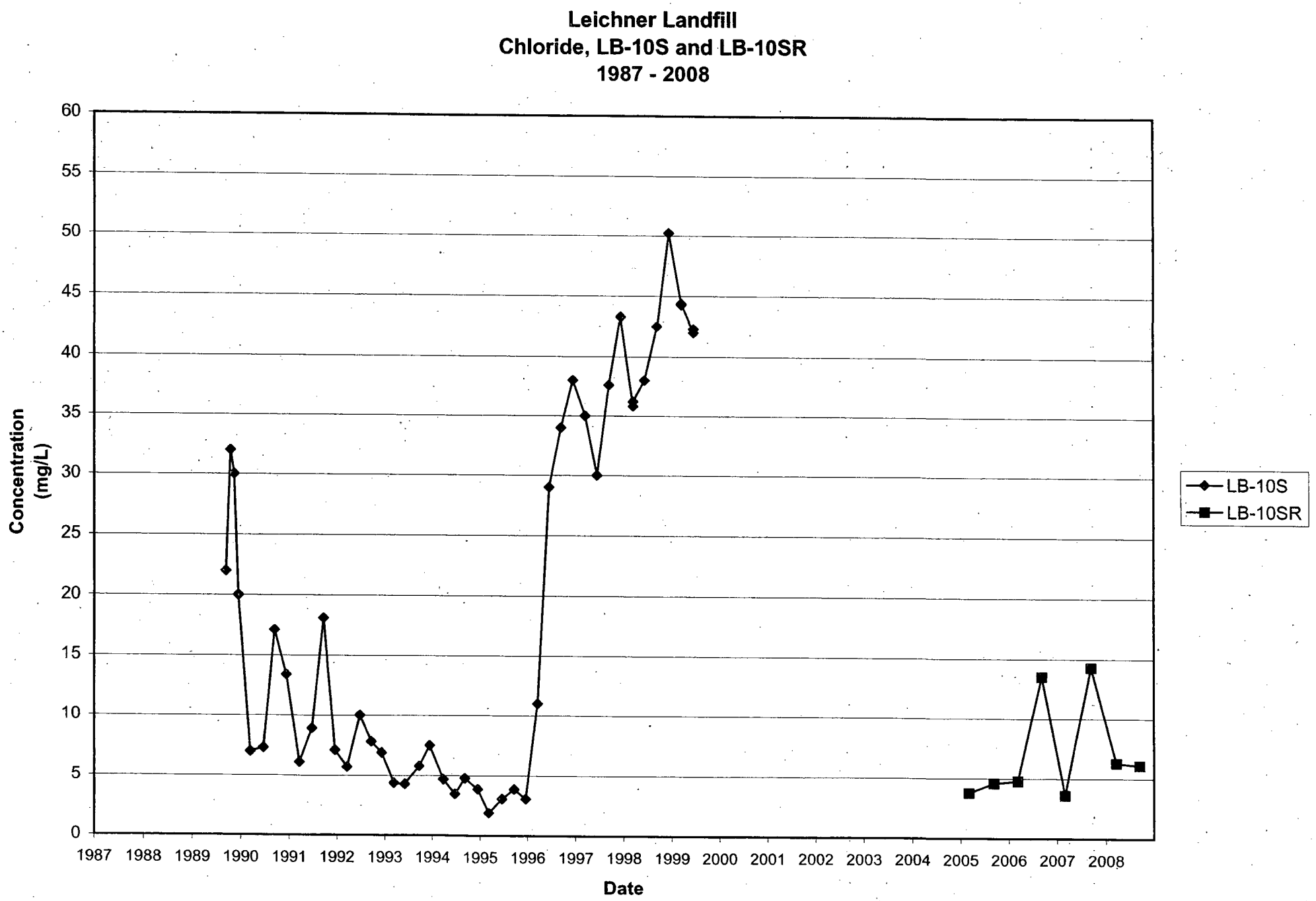

Leichner Landfill
Chloride, LB-06S
1987 - 2008
Concentration (mg/L)
60
55
50
45
40
35
30
25
20
15
10
5
0
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
LB-06S



TimeTrendData_Chloride.xls, LB-26I

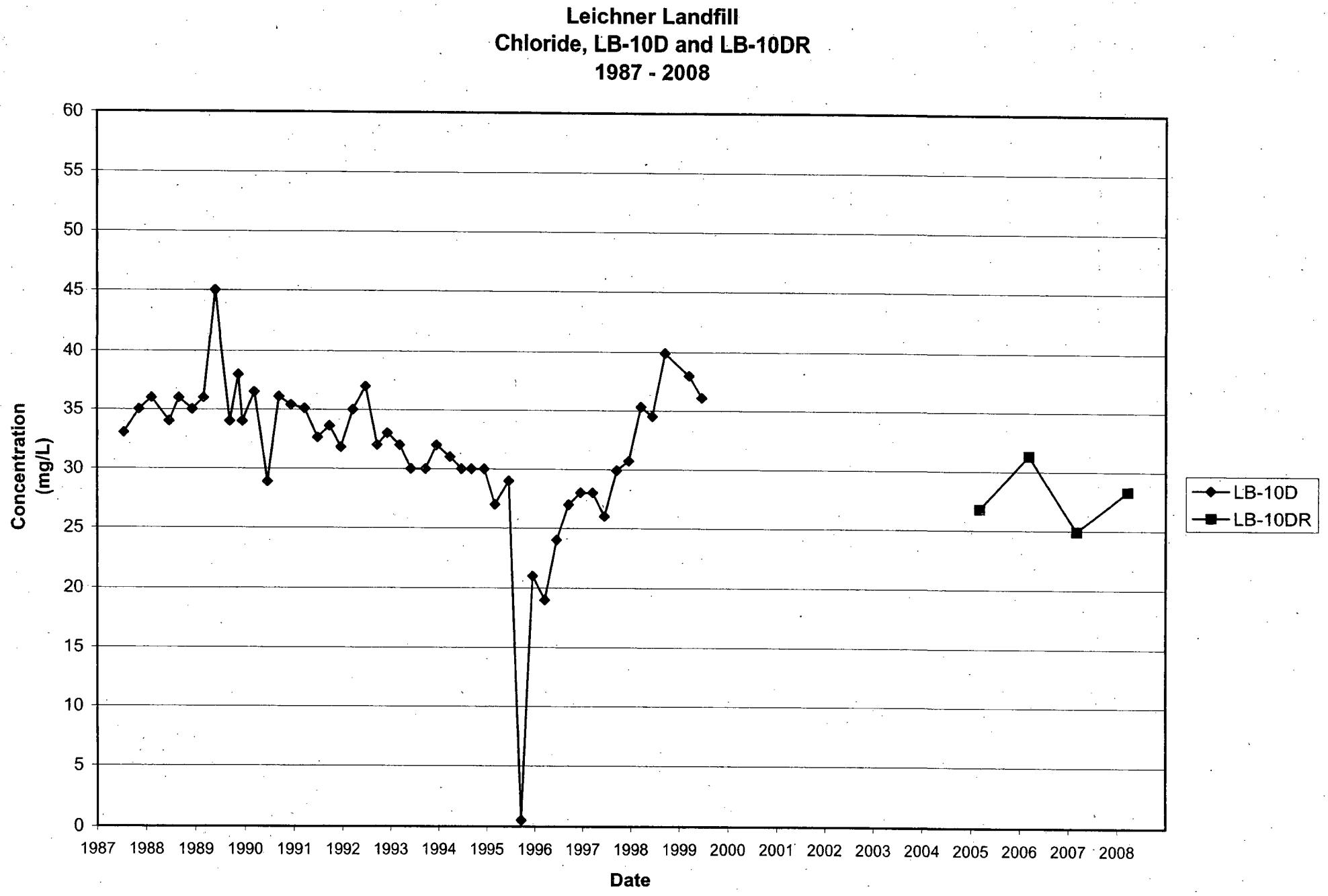
Shaw Environmental, Inc.


Leichner Landfill
Chloride, LB-26D
1987 - 2008
Concentration (mg/L)
60
55
50
45
40
35
30
25
20
15
10
5
0
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
LB-26D

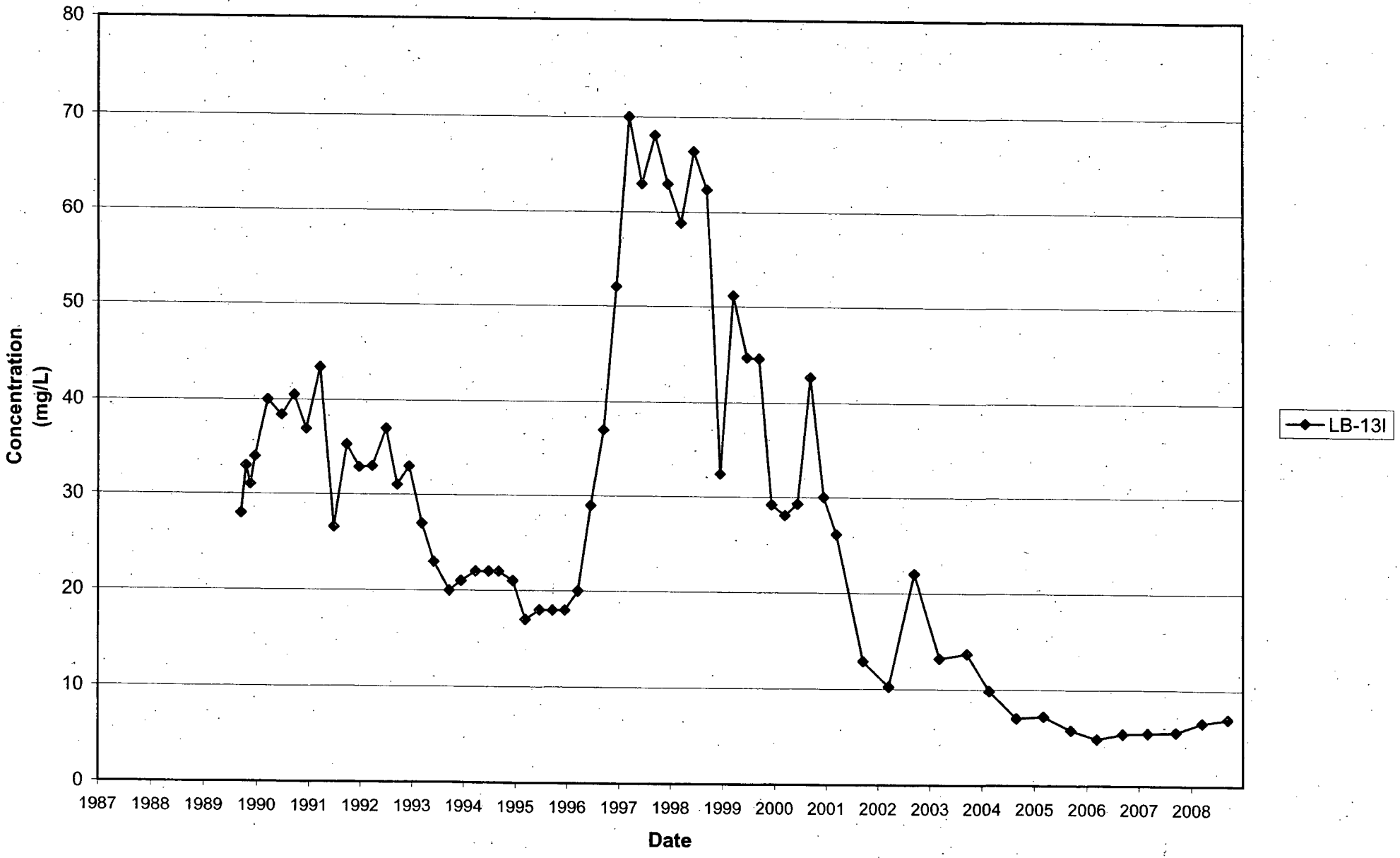


TimeTrendData_Chloride.xls, LB-10S and LB-10SR

Shaw Environmental, Inc.

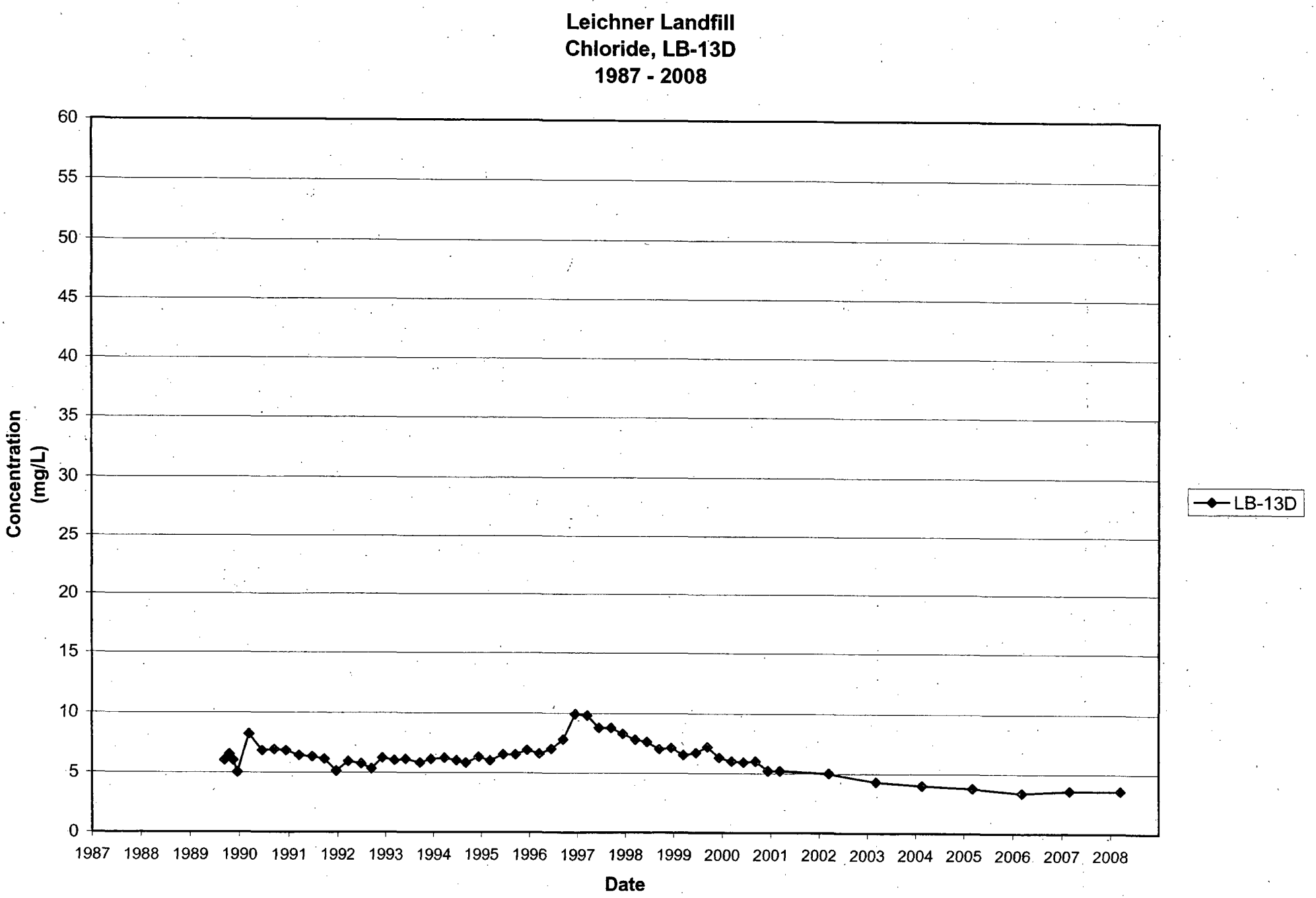

Leichner Landfill
Chloride, LB-10D and LB-10DR
1987 - 2008
Concentration (mg/L)
60
55
50
45
40
35
30
25
20
15
10
5
0
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
LB-10D
LB-10DR

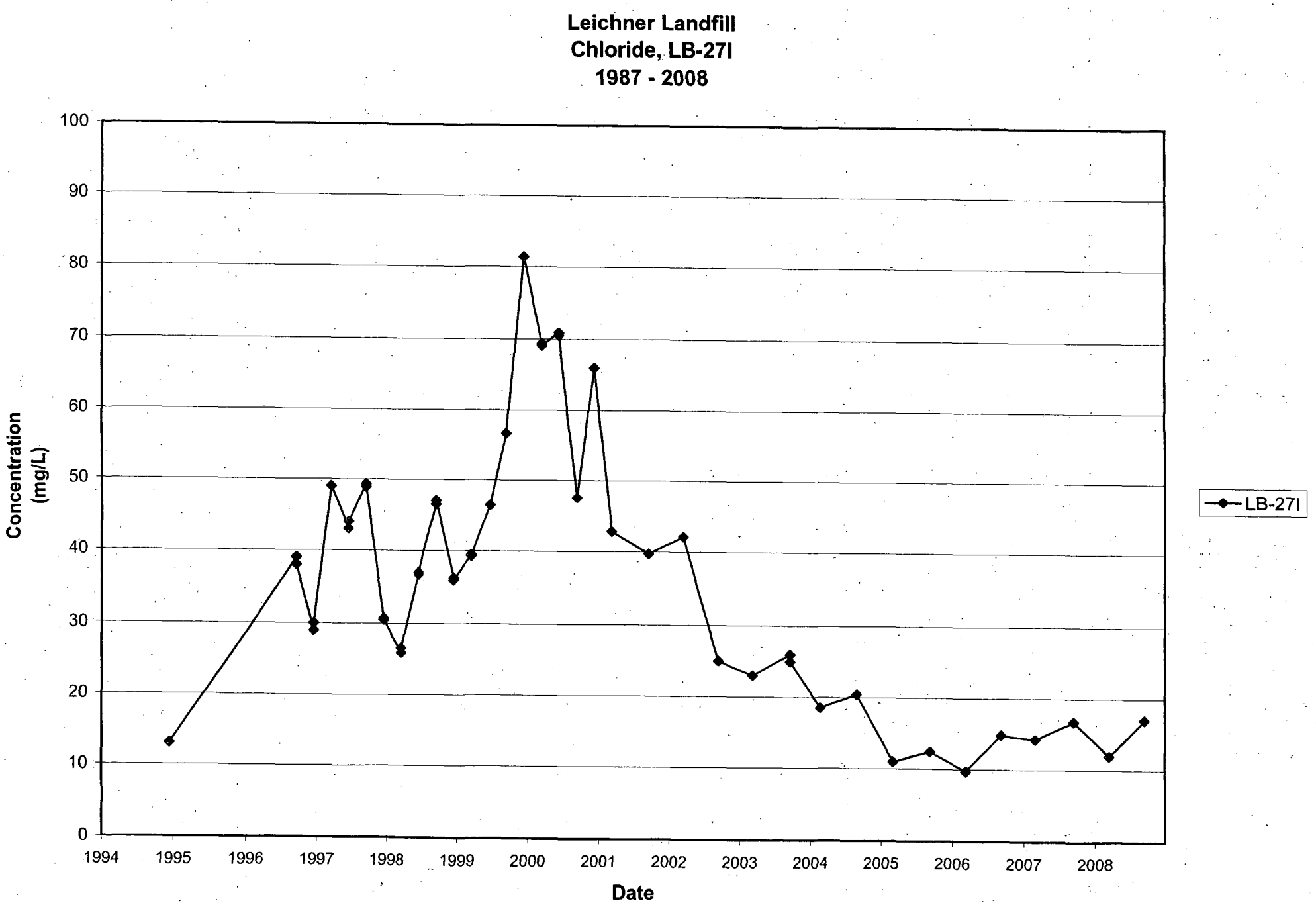
Leichner Landfill
Chloride, LB-13I
1987 - 2008



TimeTrendData_Chloride.xls, LB-13I

Shaw Environmental, Inc.

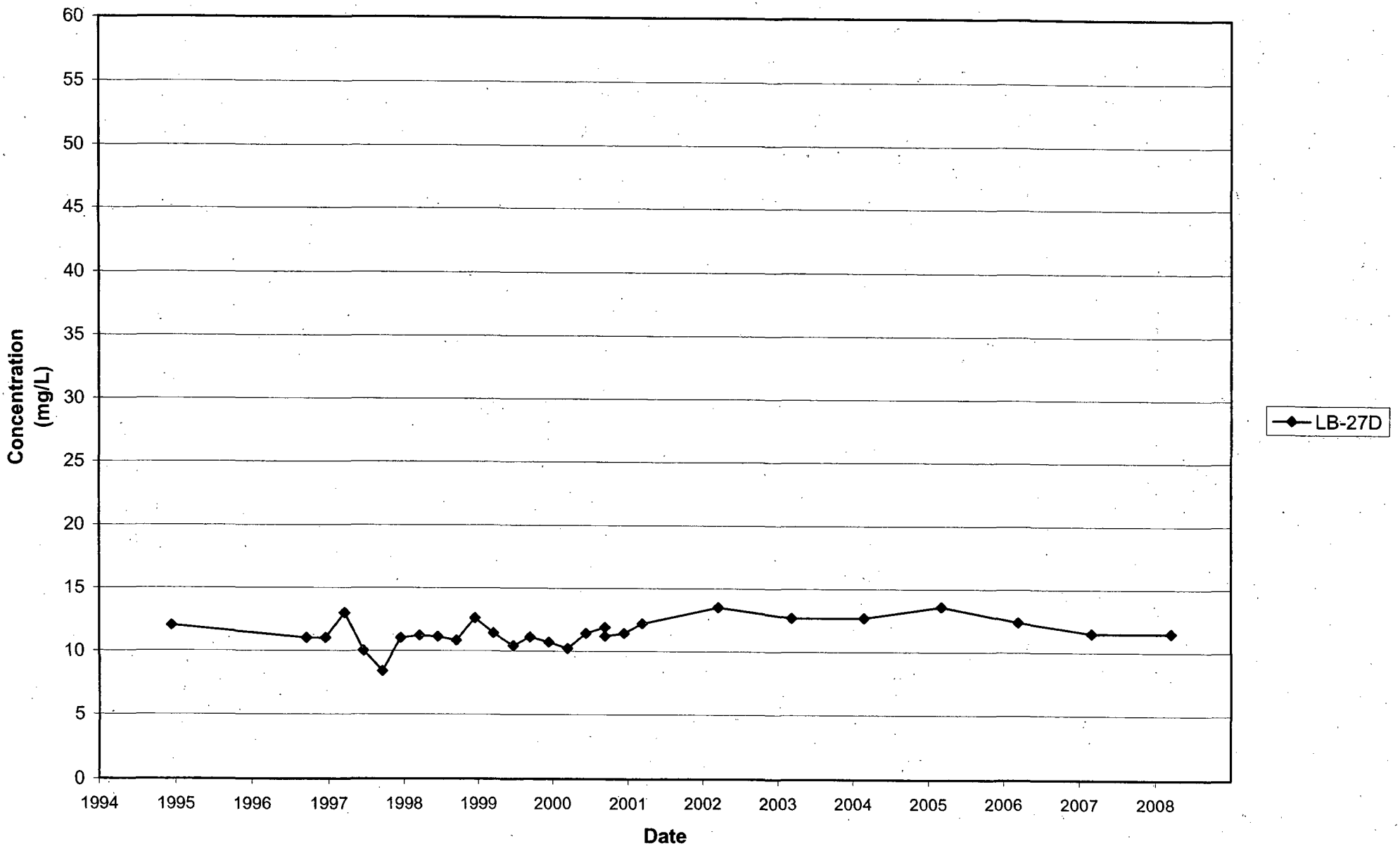

Leichner Landfill
Chloride, LB-13D
1987 - 2008
Concentration (mg/L)
60
55
50
45
40
35
30
25
20
15
10
5
0
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
LB-13D



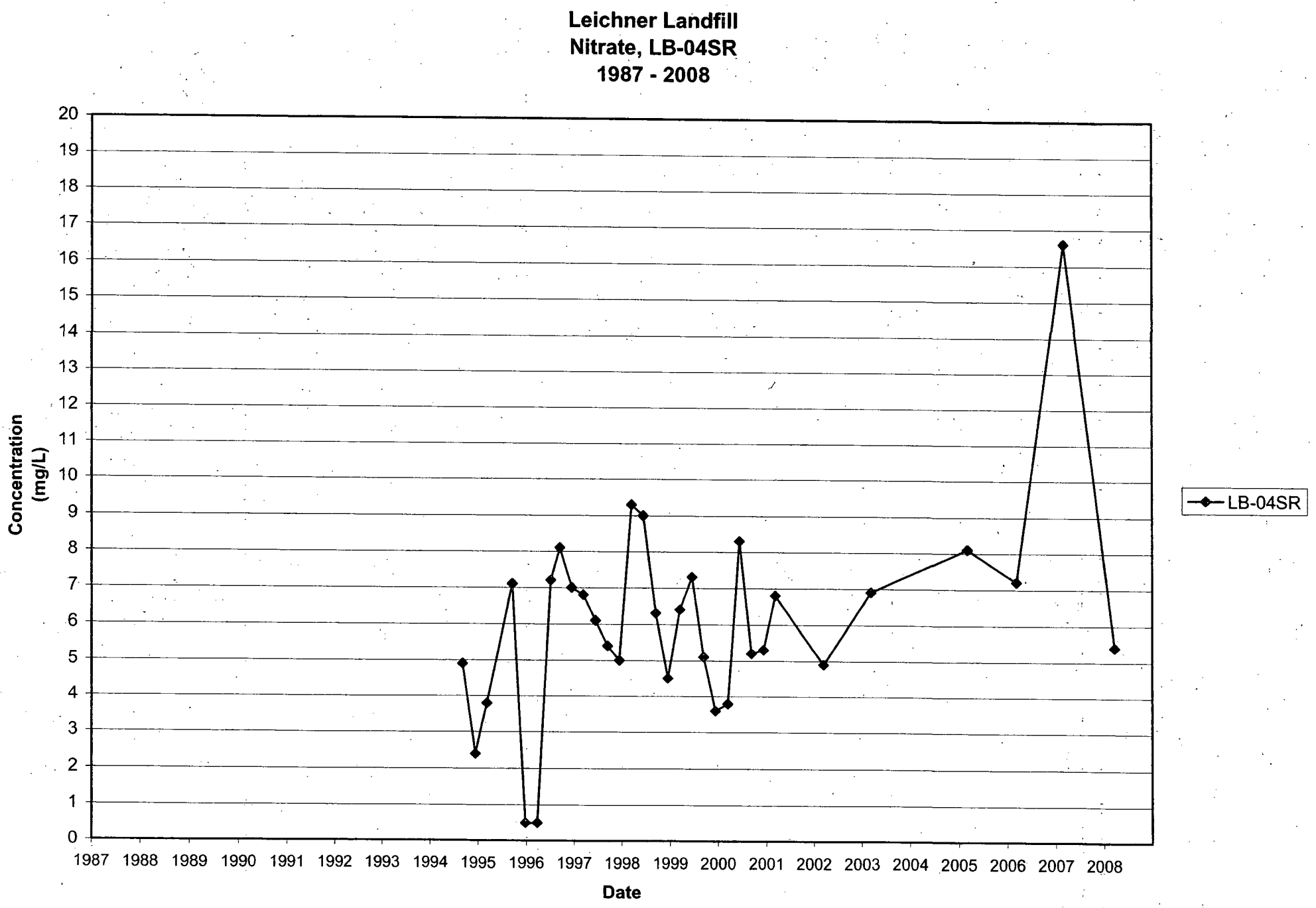
TimeTrendData_Chloride.xls, LB-27I

Shaw Environmental, Inc.

Leichner Landfill
Chloride, LB-27D
1987 - 2008

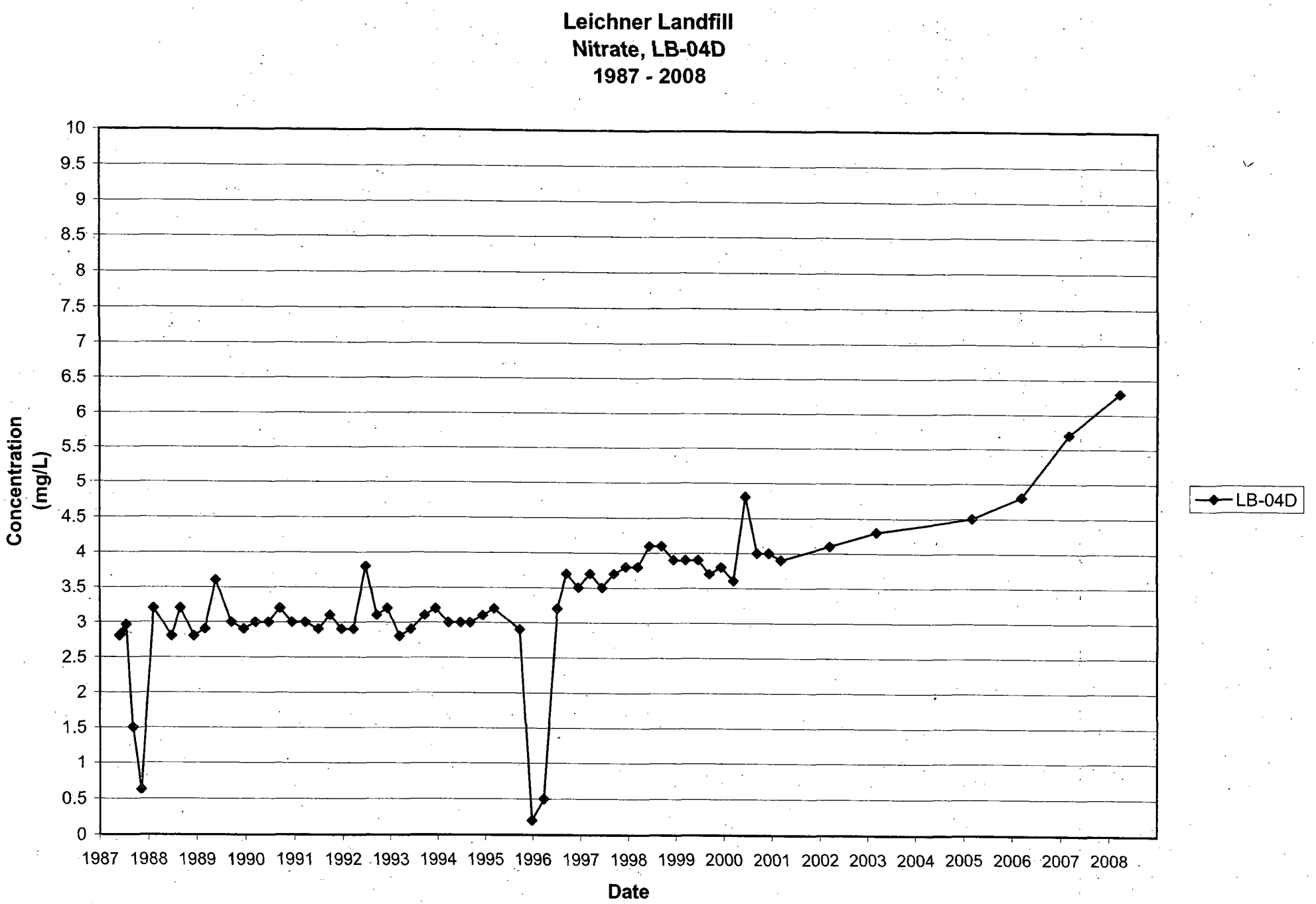


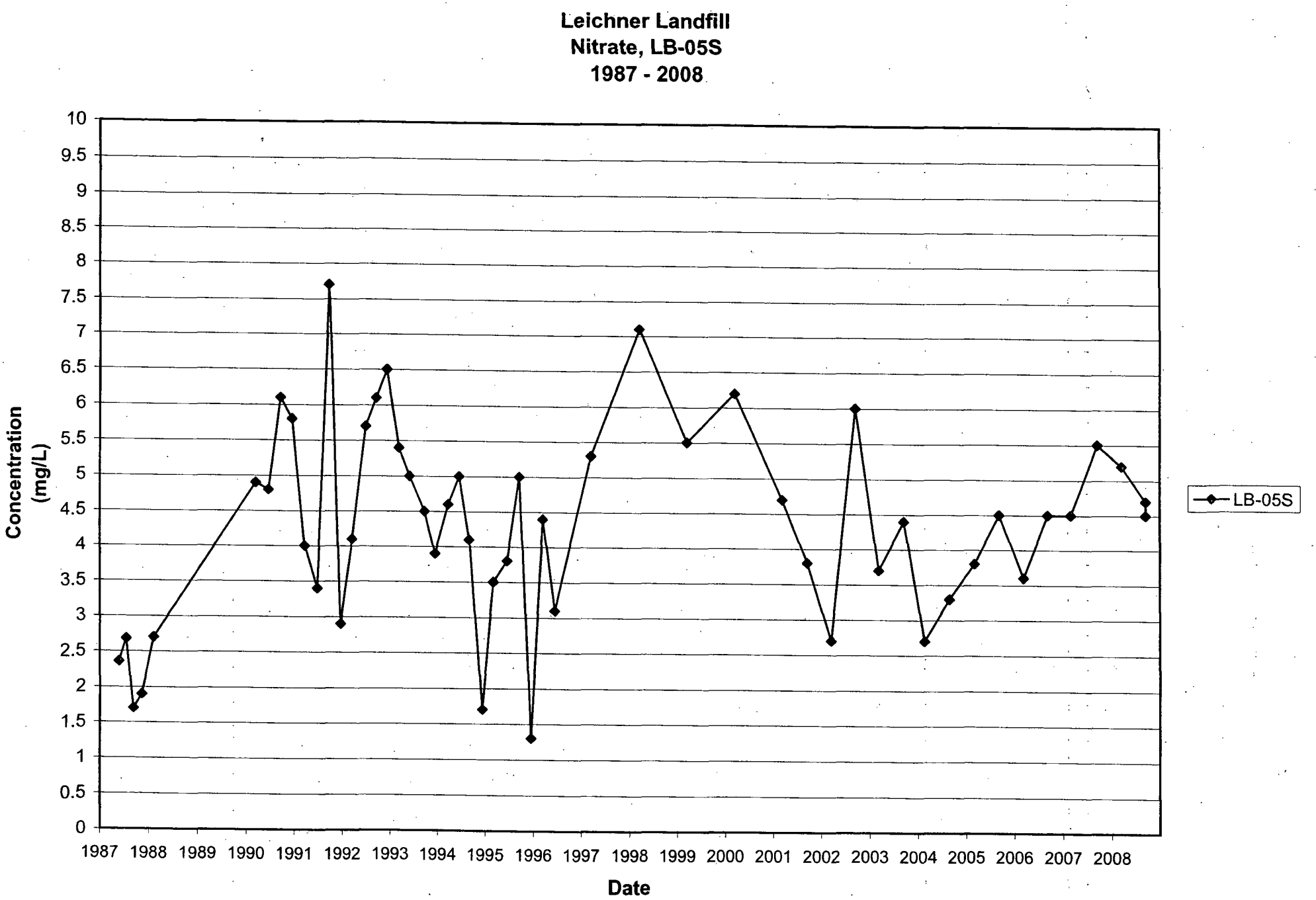
Nitrate



TimeTrendData_Nitrate.xls, LB-04SR

Shaw Environmental, Inc.

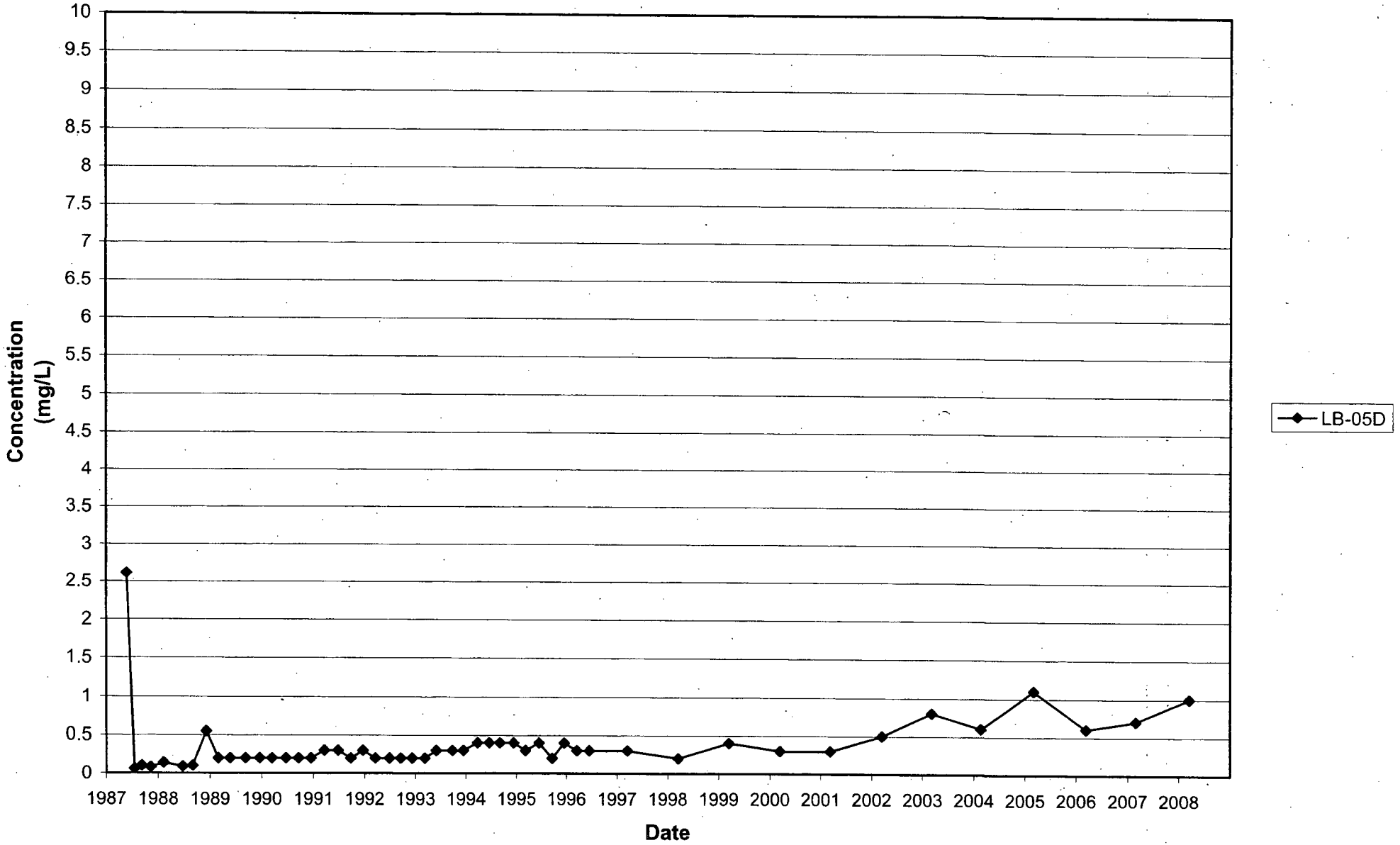

Leichner Landfill
Nitrate, LB-04D
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-04D



TimeTrendData_Nitrate.xls, LB-05S

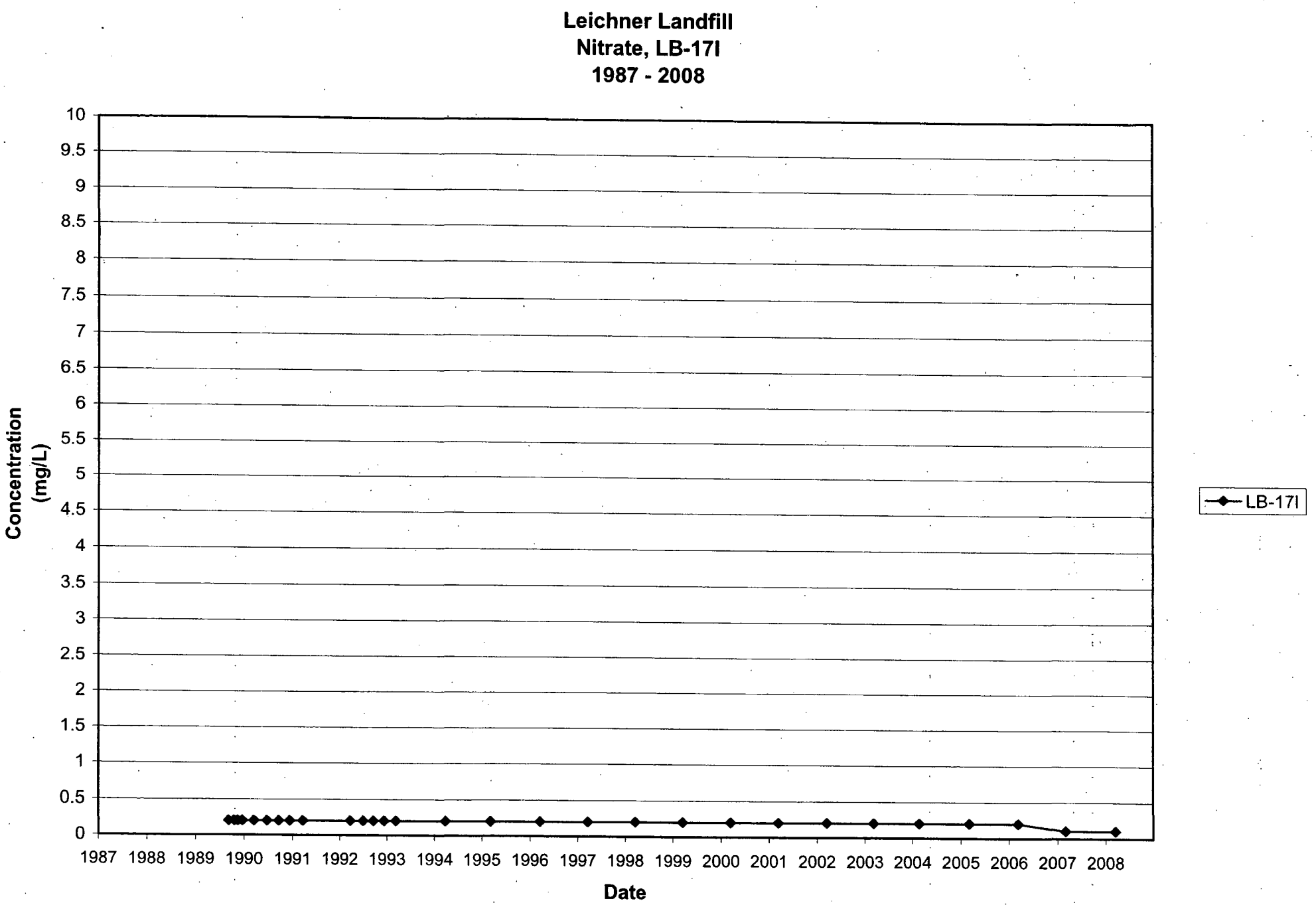
Shaw Environmental, Inc.

Leichner Landfill
Nitrate, LB-05D
1987 - 2008



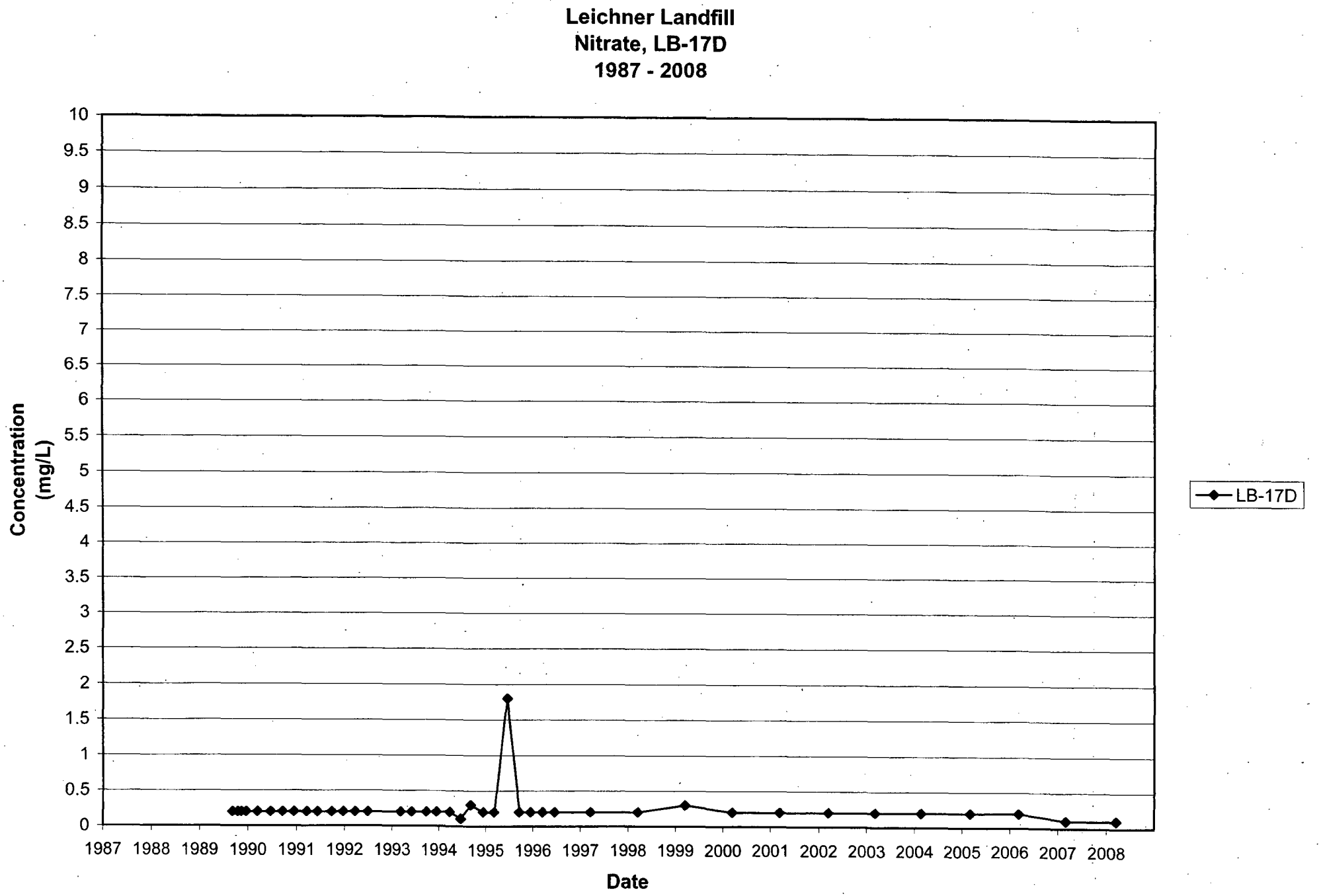
TimeTrendData_Nitrate.xls, LB-05D

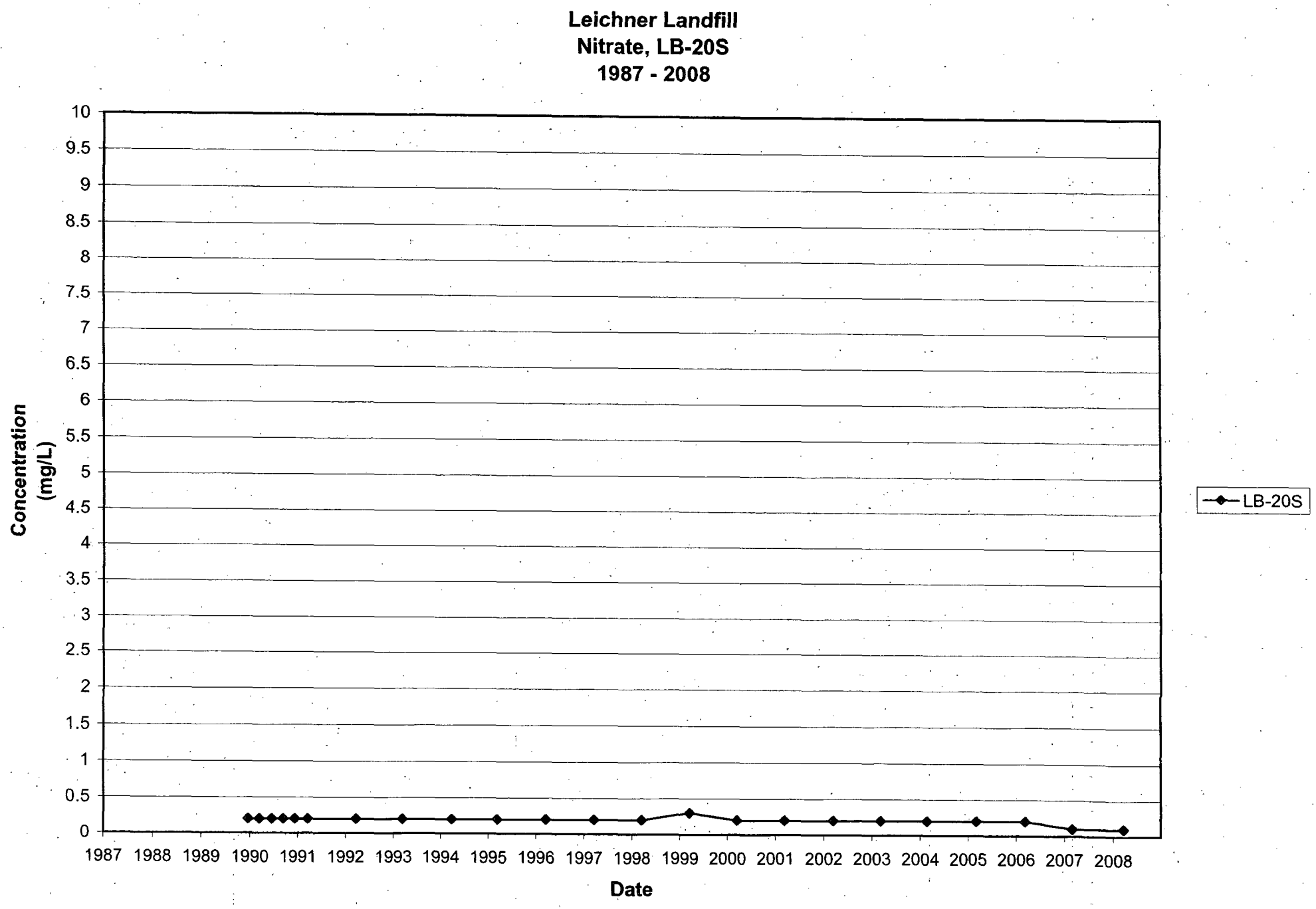
Shaw Environmental, Inc.



TimeTrendData_Nitrate.xls, LB-17I

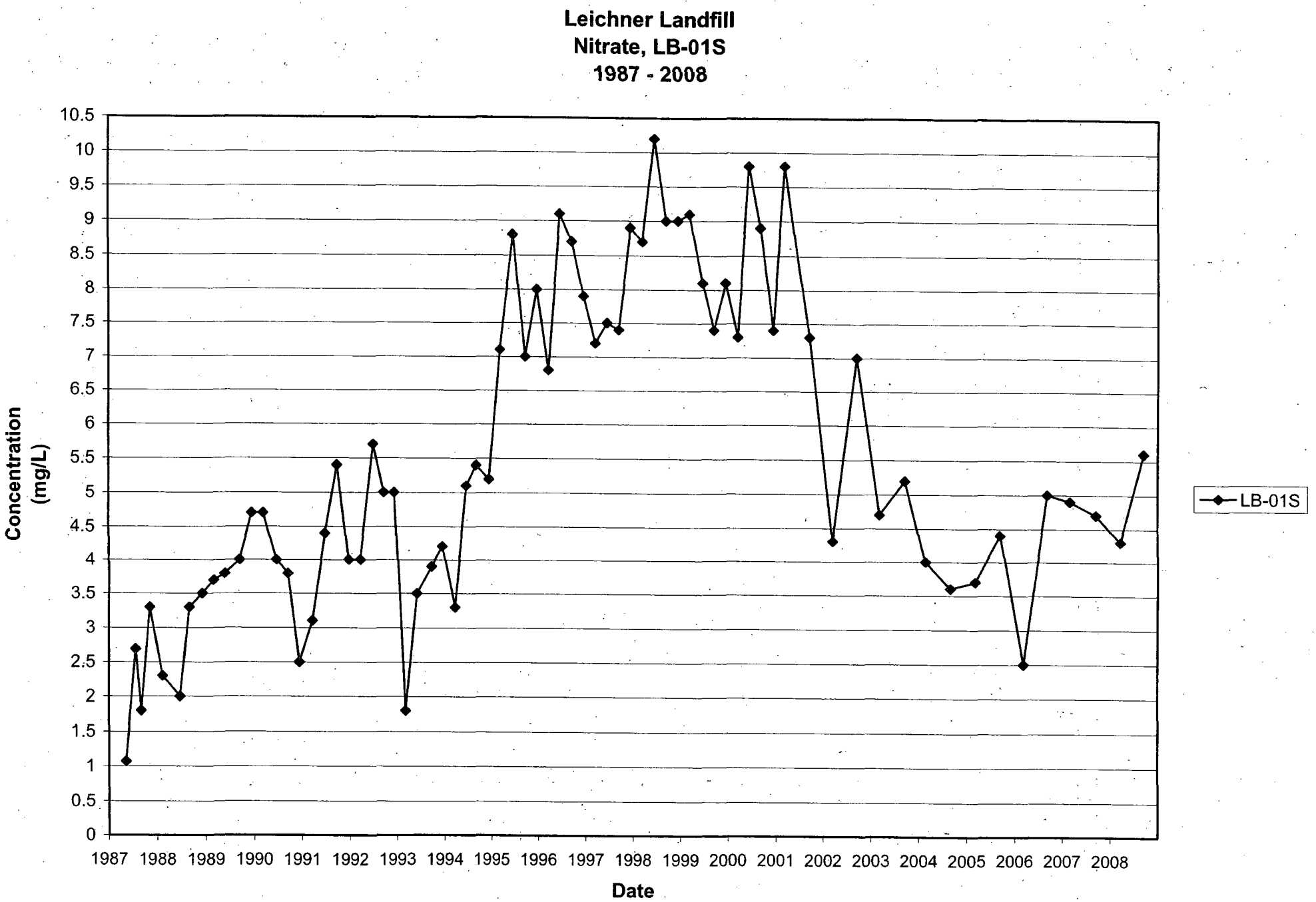
Shaw Environmental, Inc.

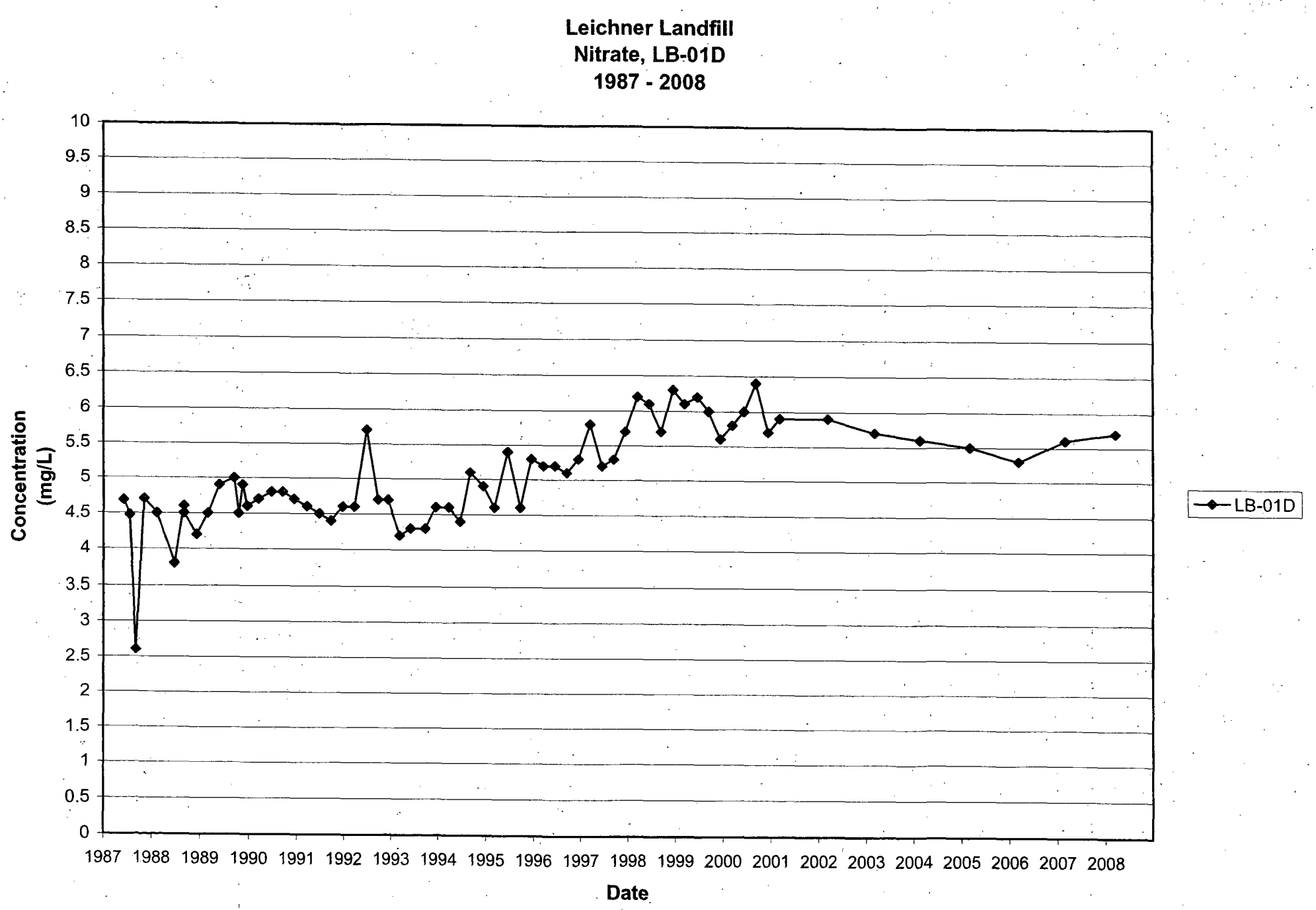

Leichner Landfill
Nitrate, LB-17D
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-17D



TimeTrendData_Nitrate.xls, LB-20S

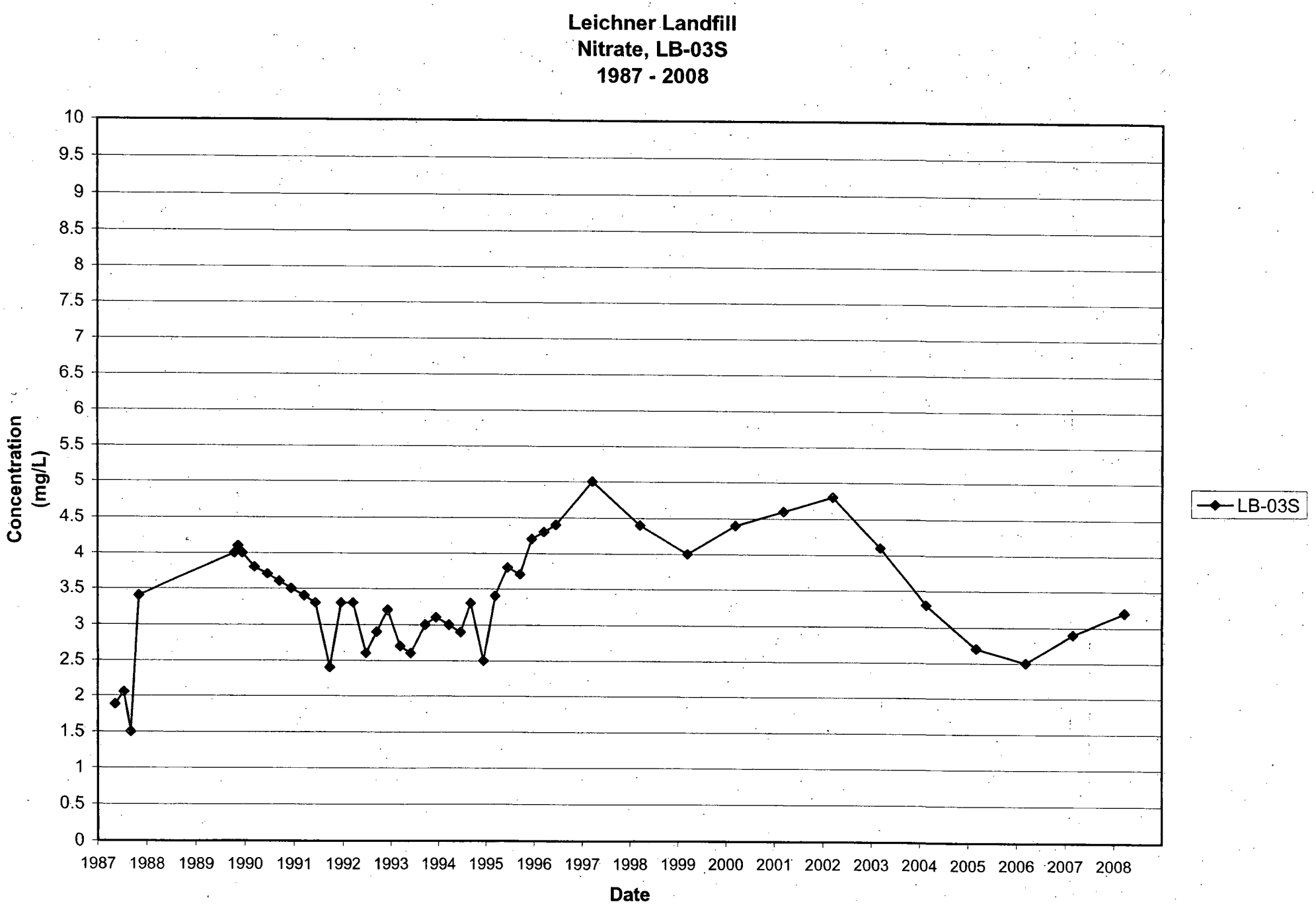
Shaw Environmental, Inc.

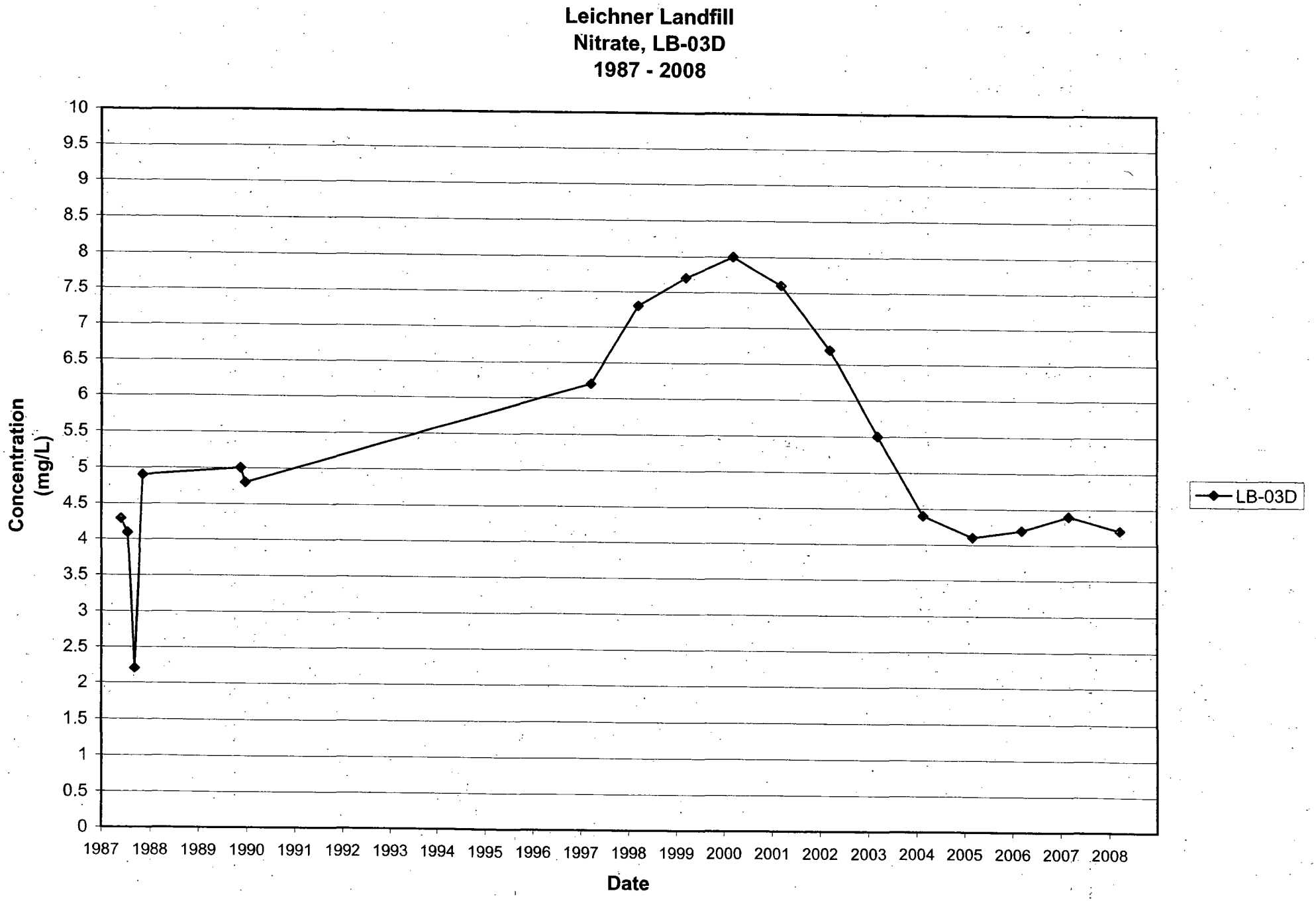

Leichner Landfill
Nitrate, LB-01S
1987 - 2008
Concentration (mg/L)
10.5
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-01S



TimeTrendData_Nitrate.xls, LB-01D

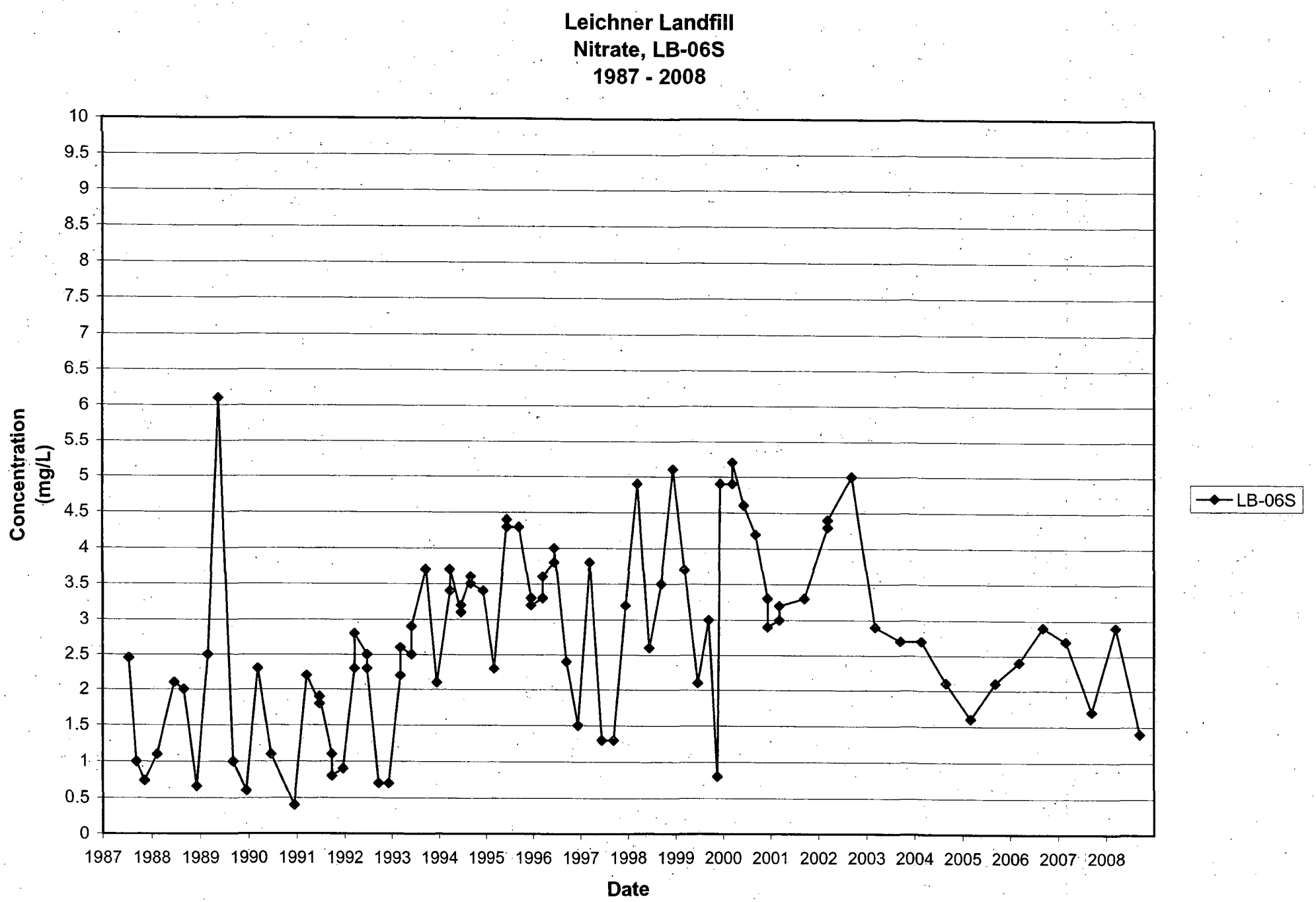
Shaw Environmental, Inc.

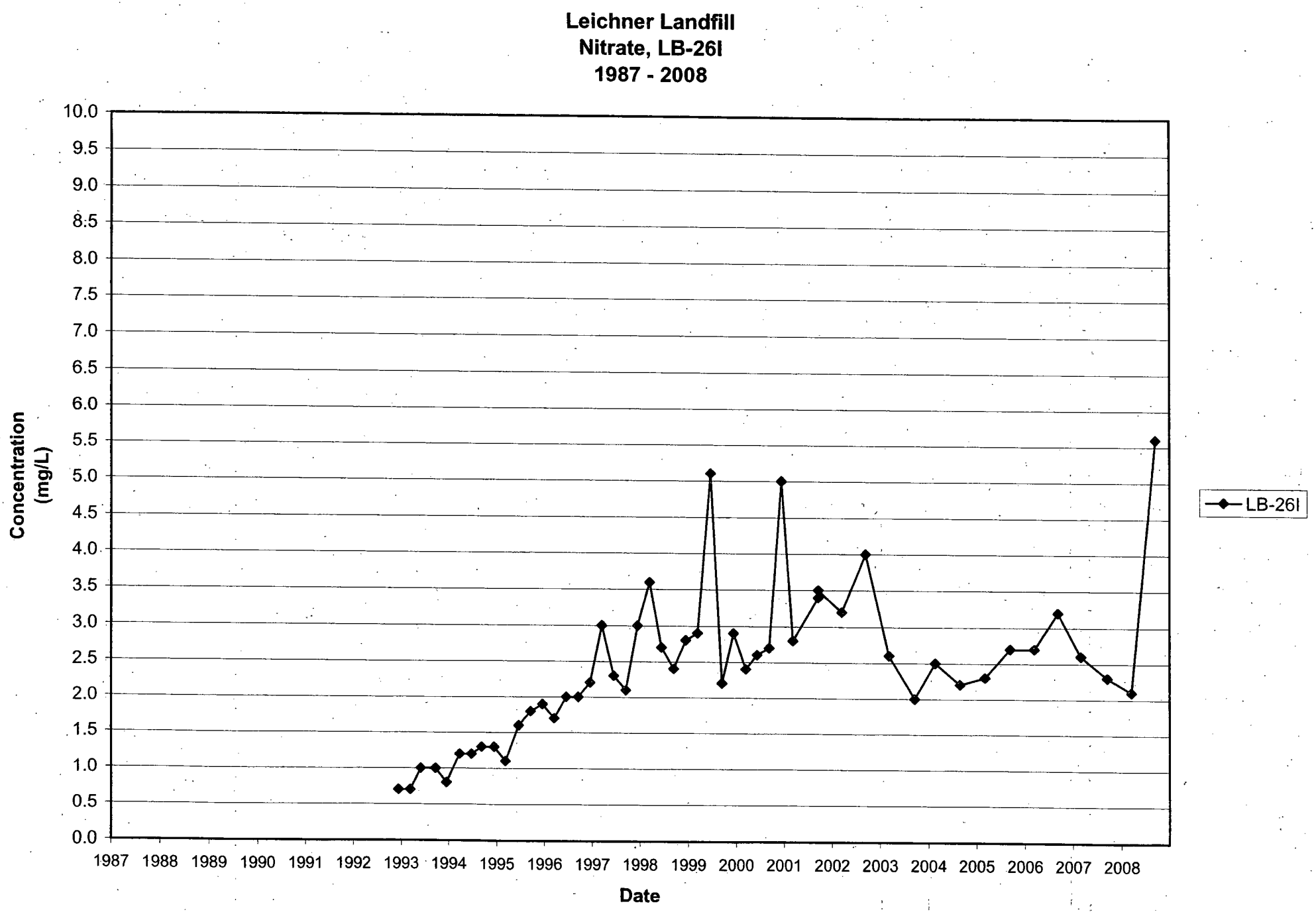

Leichner Landfill
Nitrate, LB-03S
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-03S



TimeTrendData_Nitrate.xls, LB-03D

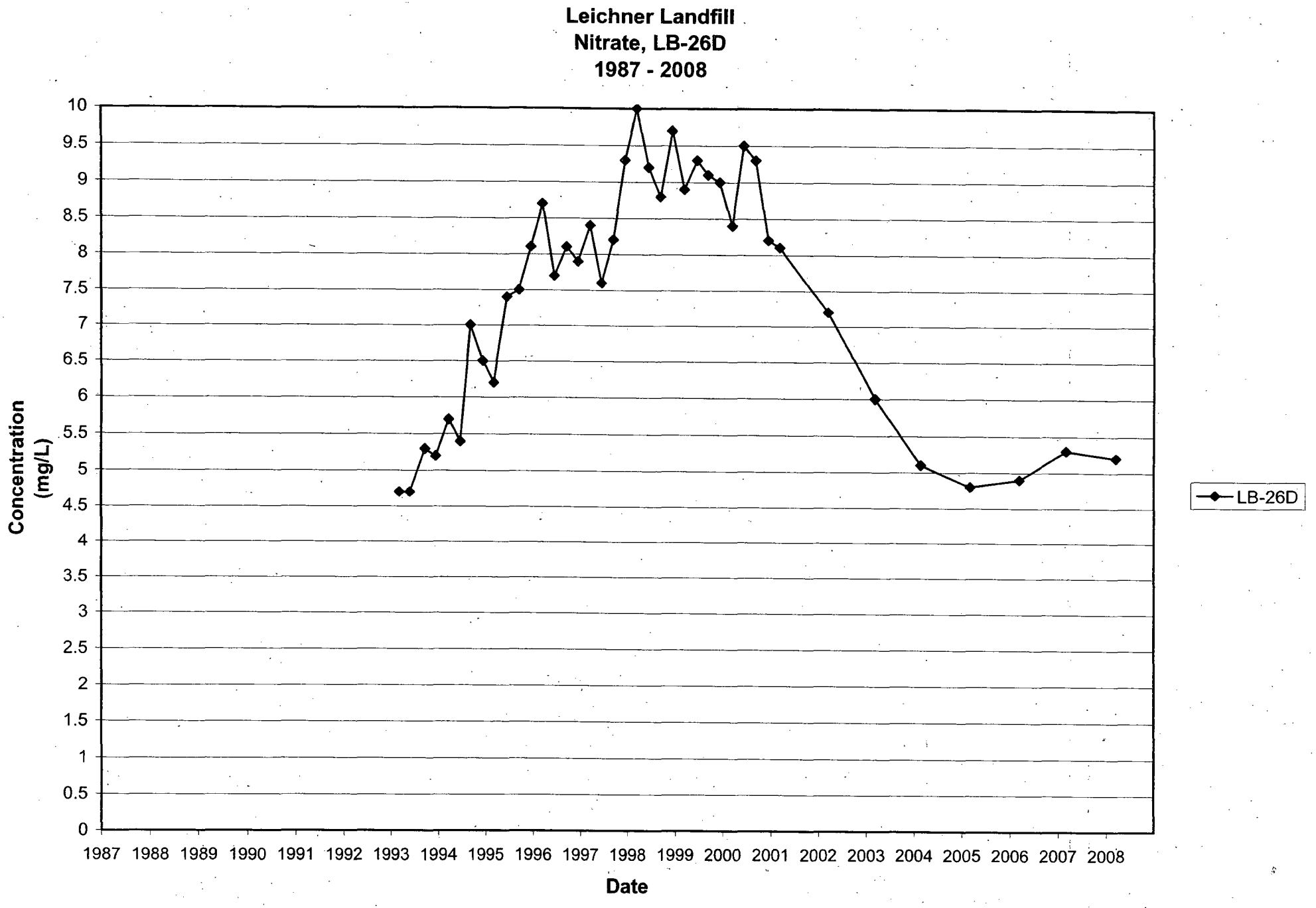
Shaw Environmental, Inc.


Leichner Landfill
Nitrate, LB-06S
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-06S

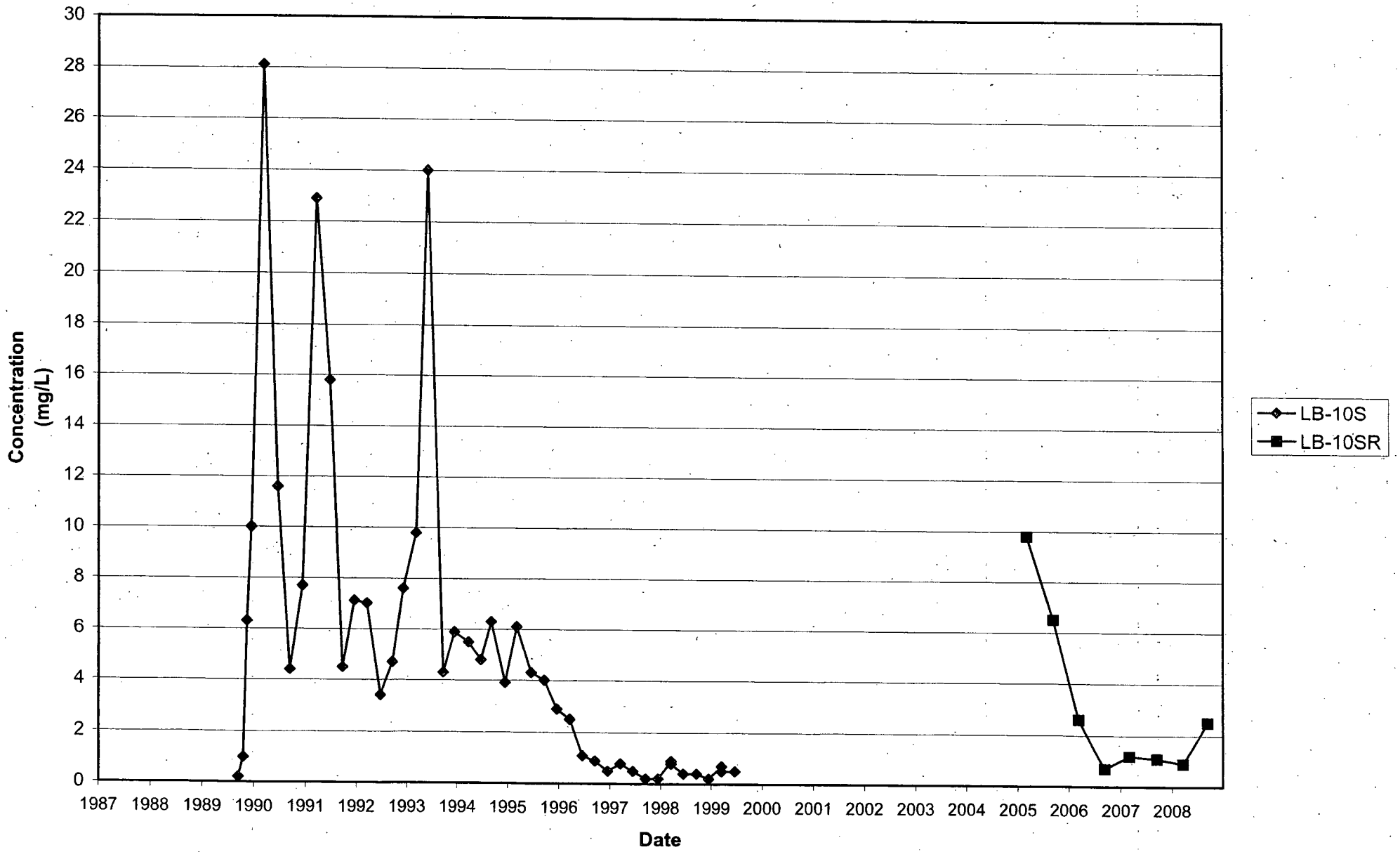


TimeTrendData_Nitrate.xls, LB-26I

Shaw Environmental, Inc.

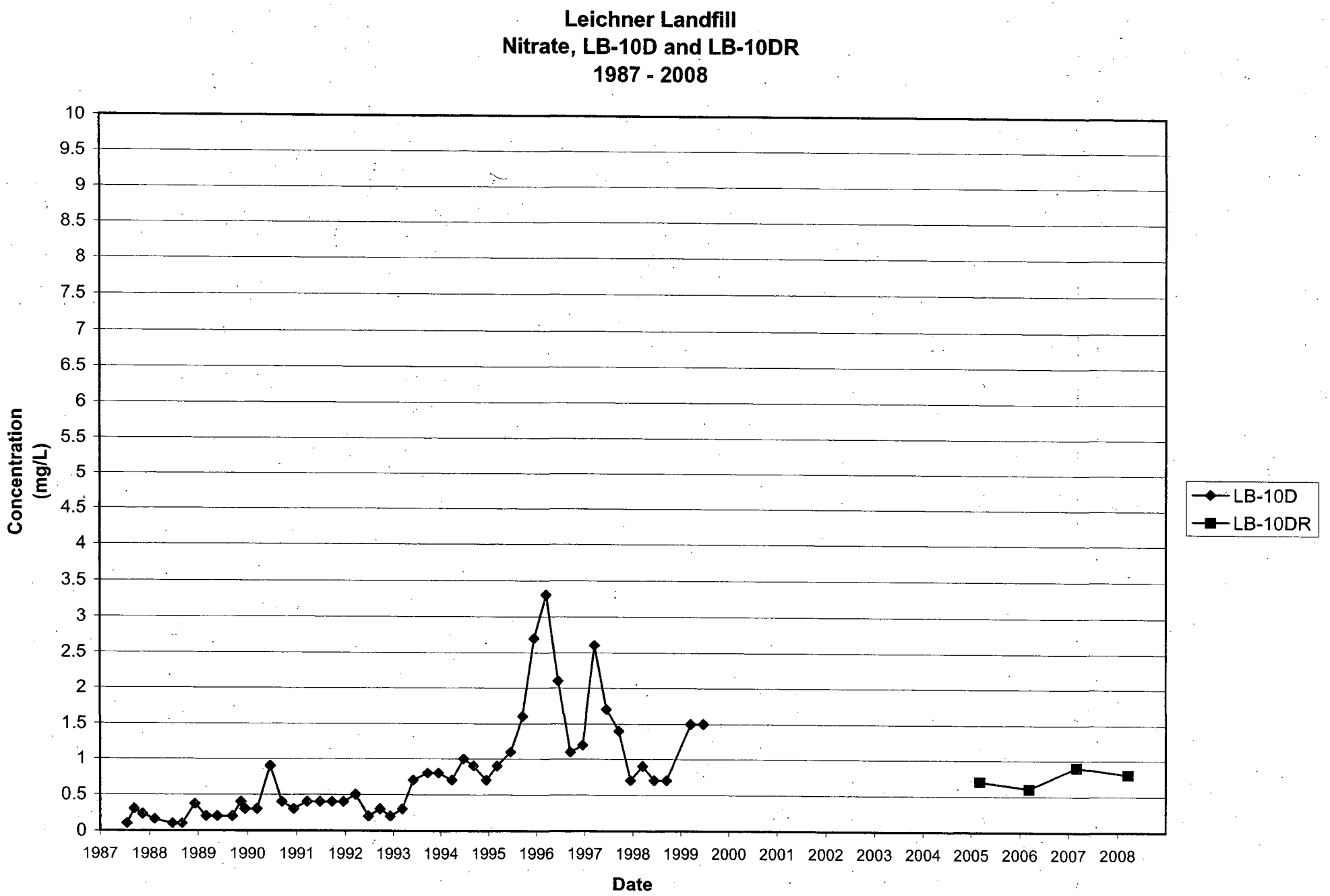

Leichner Landfill
Nitrate, LB-26D
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-26D

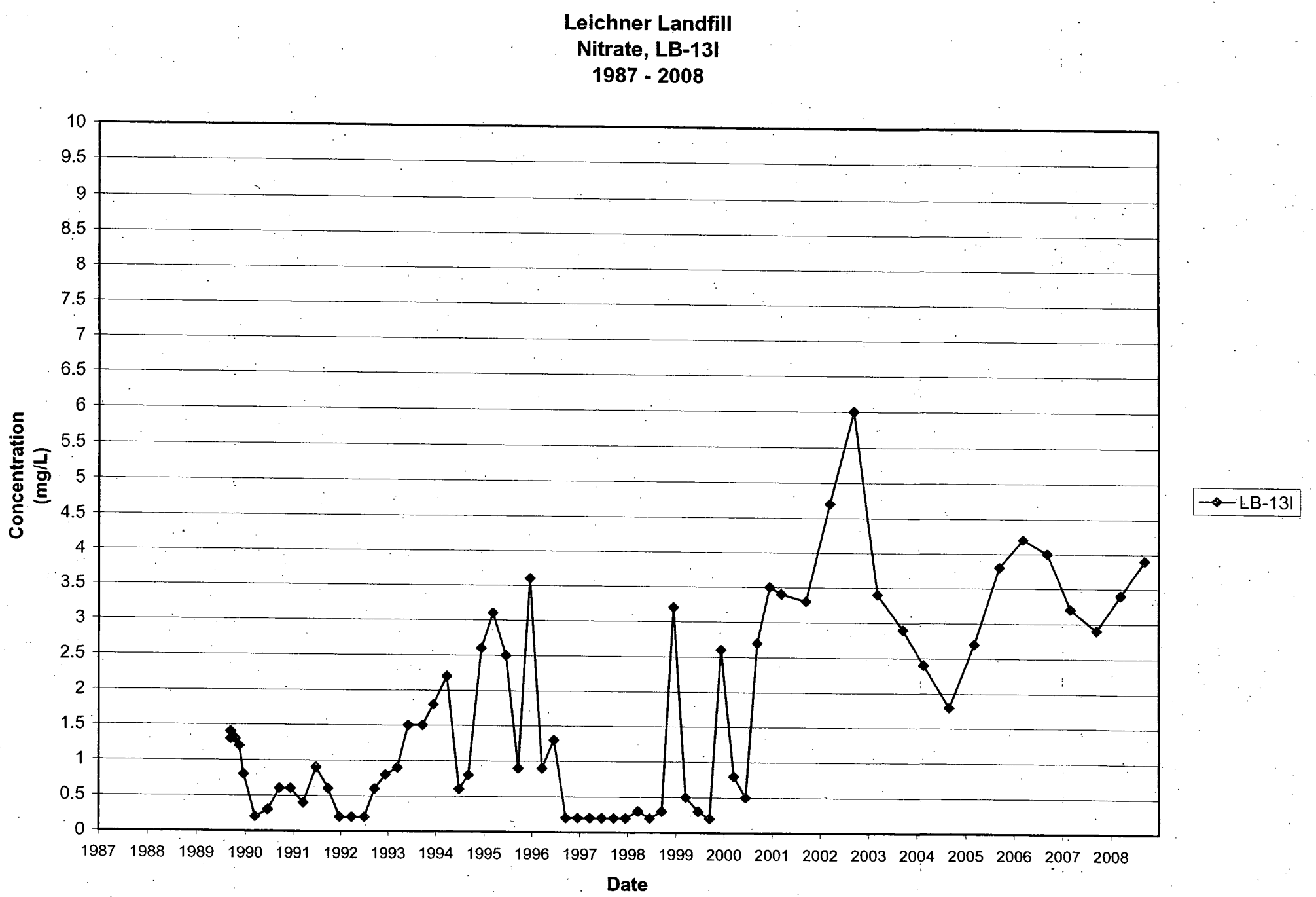
Leichner Landfill
Nitrate, LB-10S and LB-10SR
1987 - 2008



TimeTrendData_Nitrate.xls, LB-10S and LB-10SR

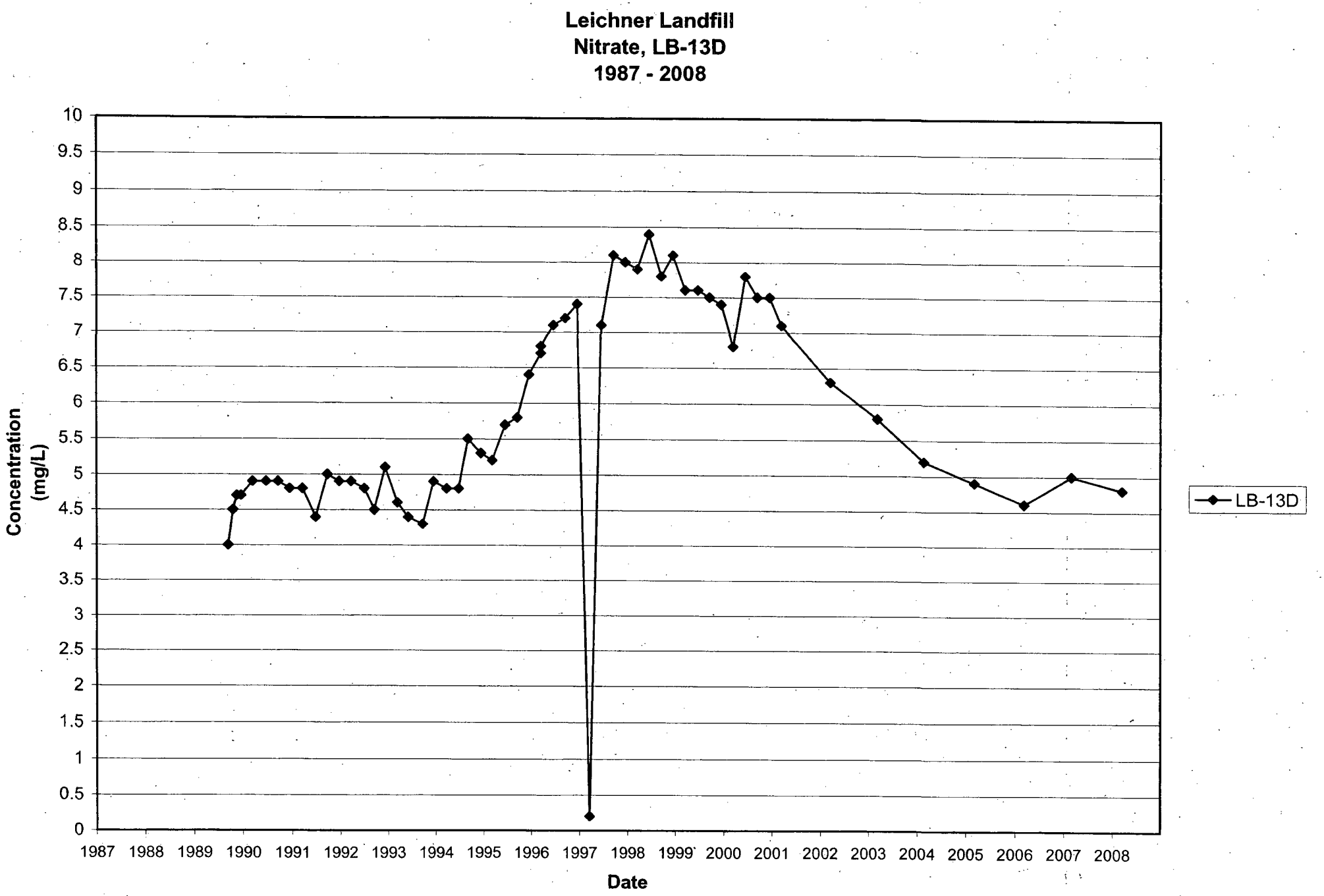
Shaw Environmental, Inc.

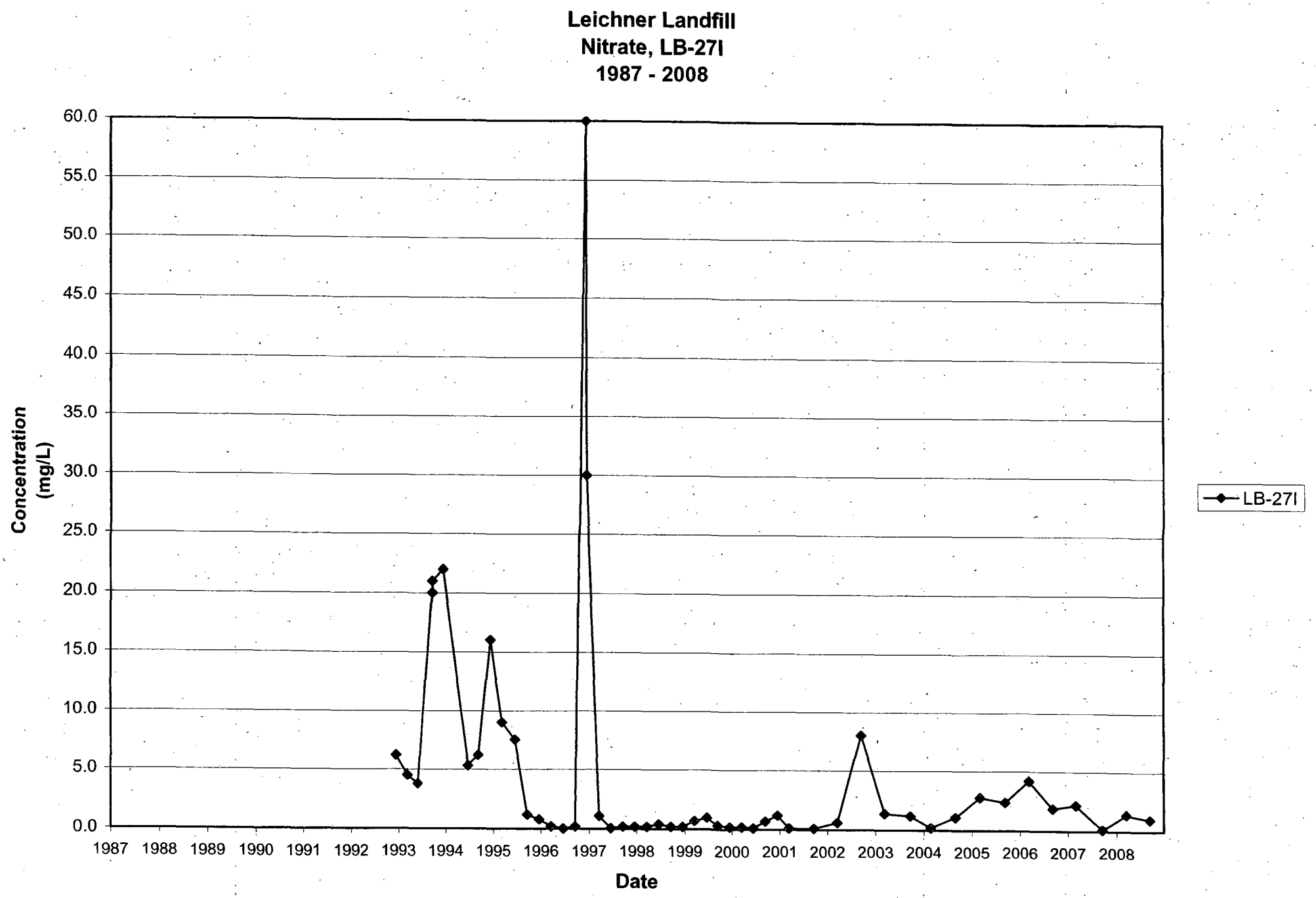

Leichner Landfill
Nitrate, LB-10D and LB-10DR
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
LB-10D
LB-10DR



TimeTrendData_Nitrate.xls, LB-13I

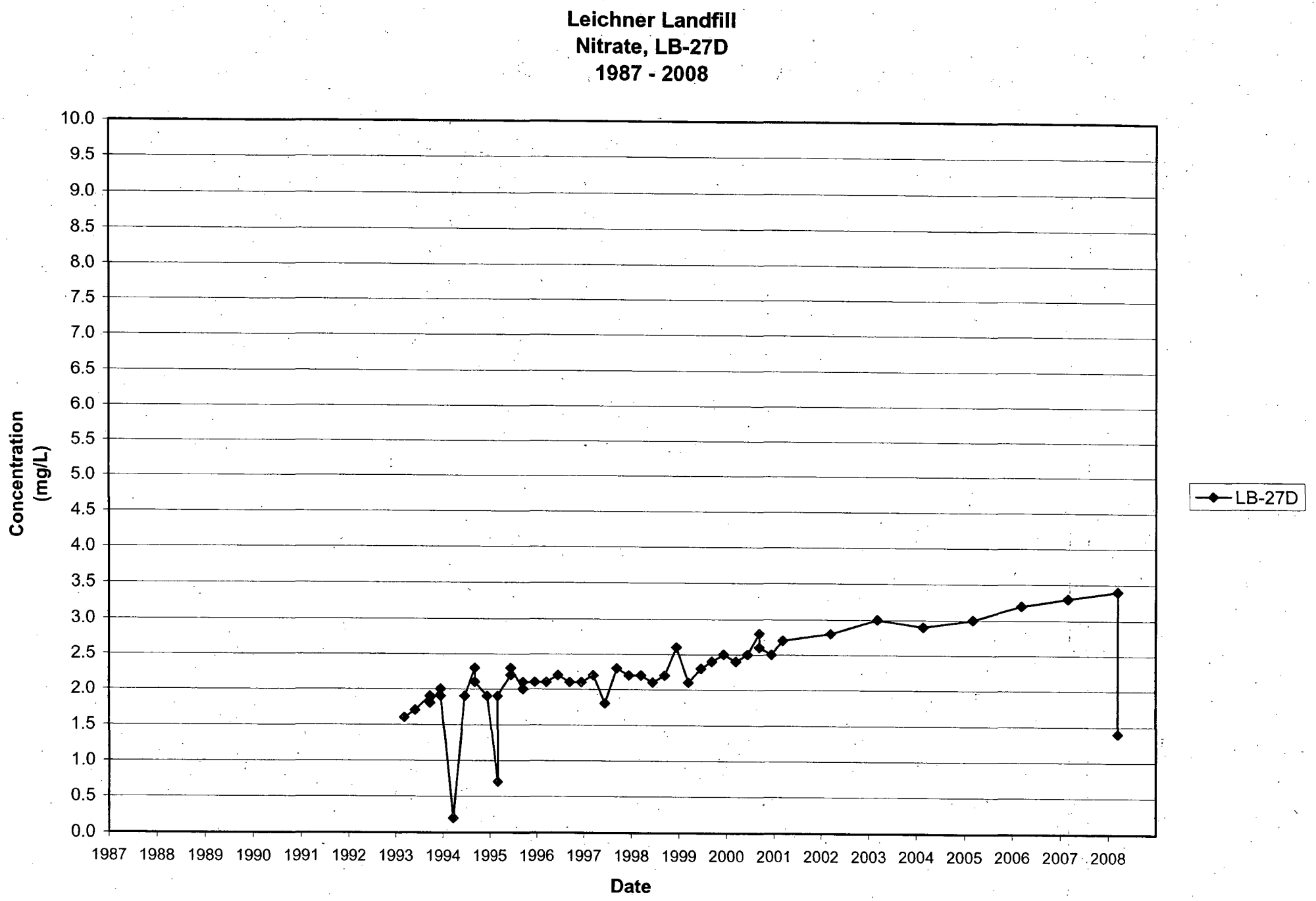
Shaw Environmental, Inc.


Leichner Landfill
Nitrate, LB-13D
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-13D

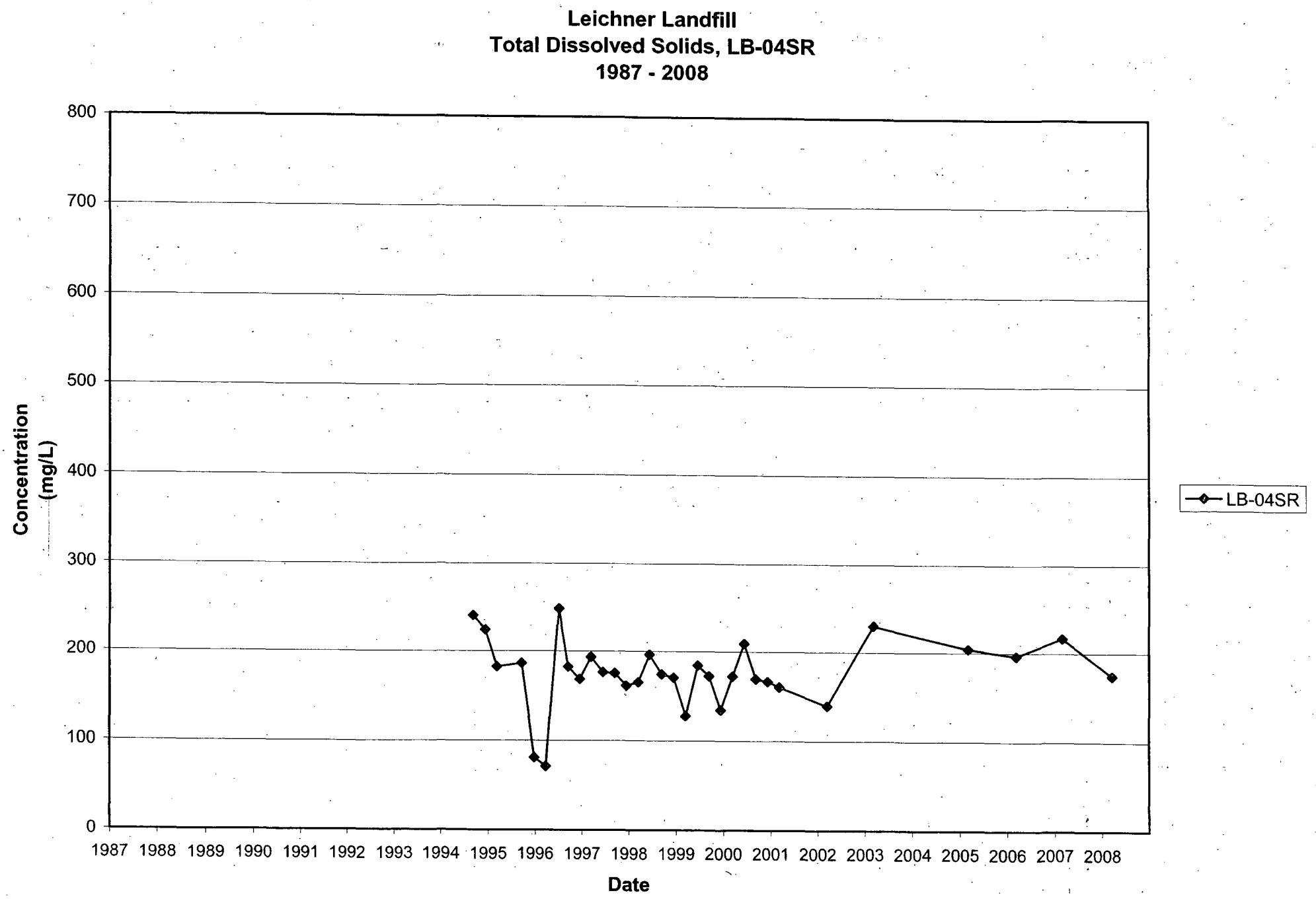


TimeTrendData_Nitrate.xls, LB-27I

Shaw Environmental, Inc.

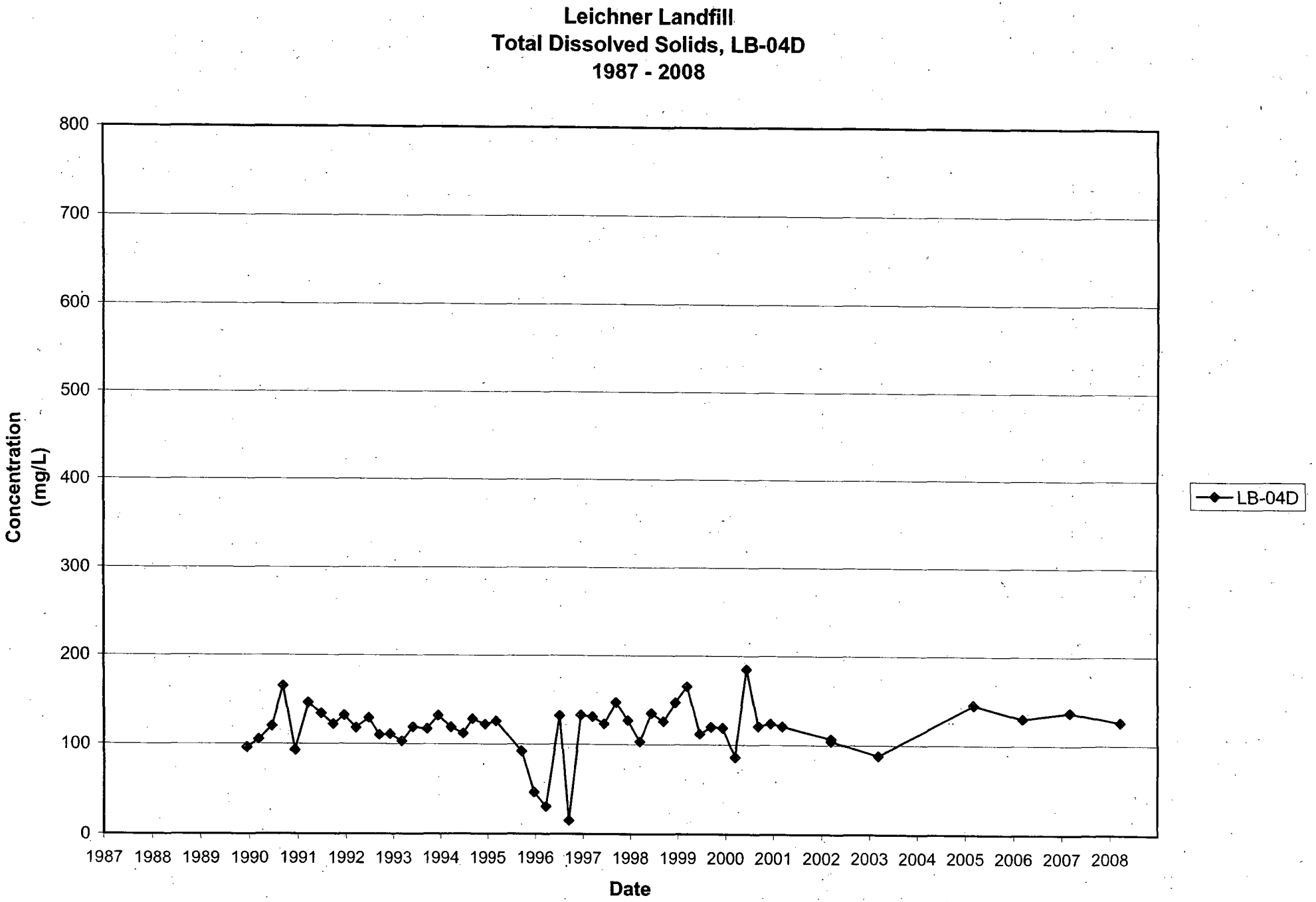

Leichner Landfill
Nitrate, LB-27D
1987 - 2008
Concentration (mg/L)
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-27D

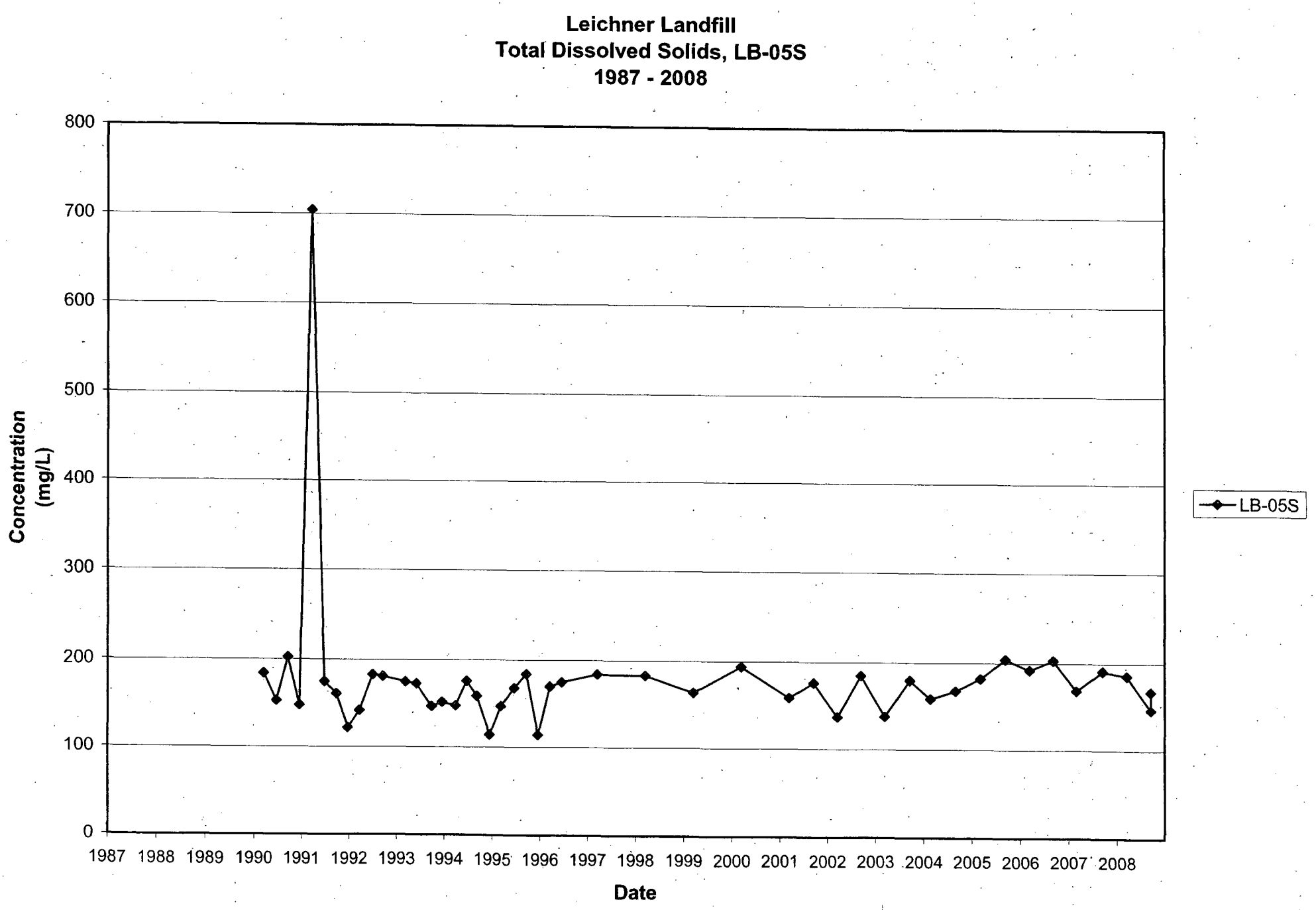
Total Dissolved Solids



TimeTrendData_TDS.xls, LB-04SR

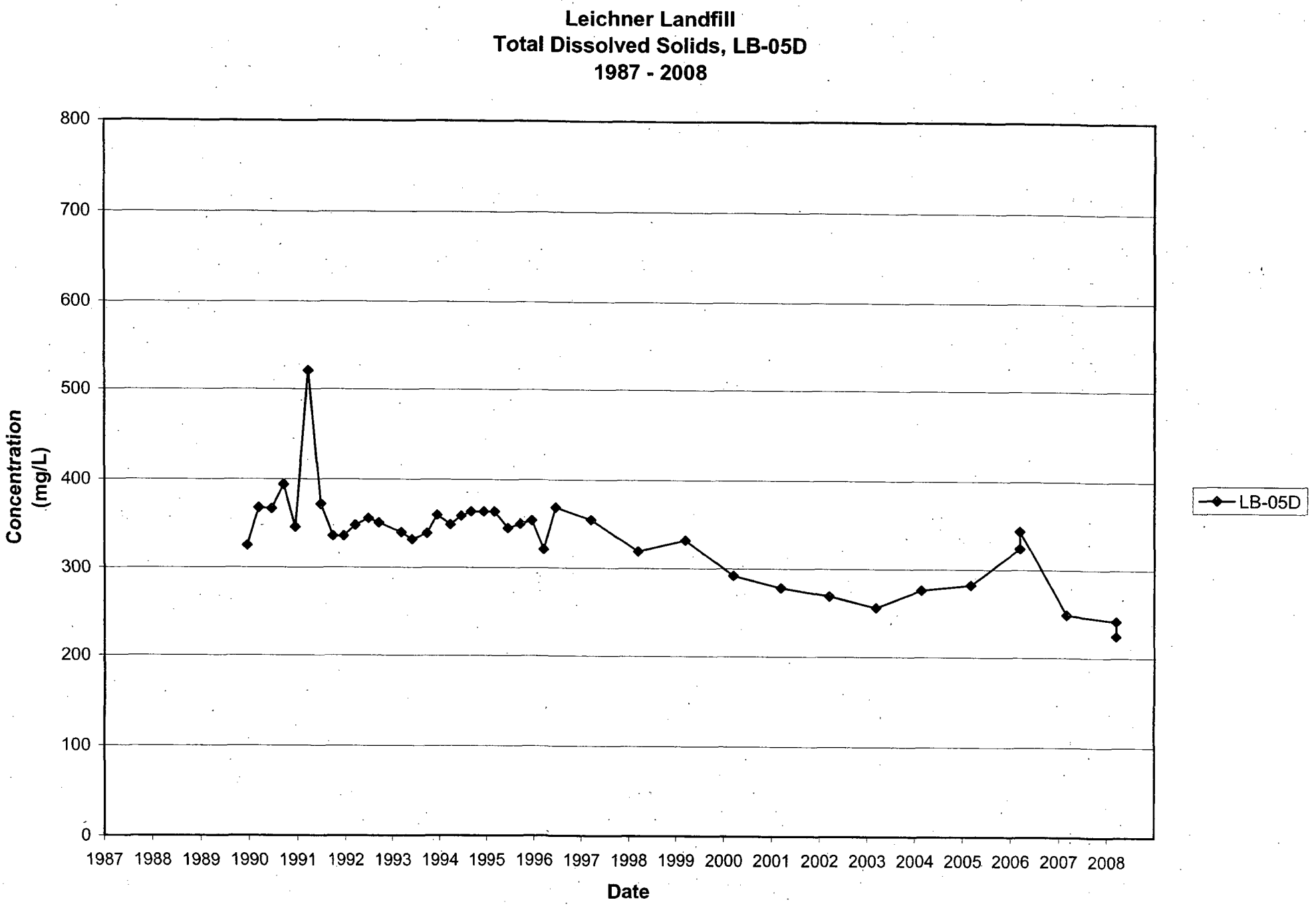
Shaw Environmental, Inc.

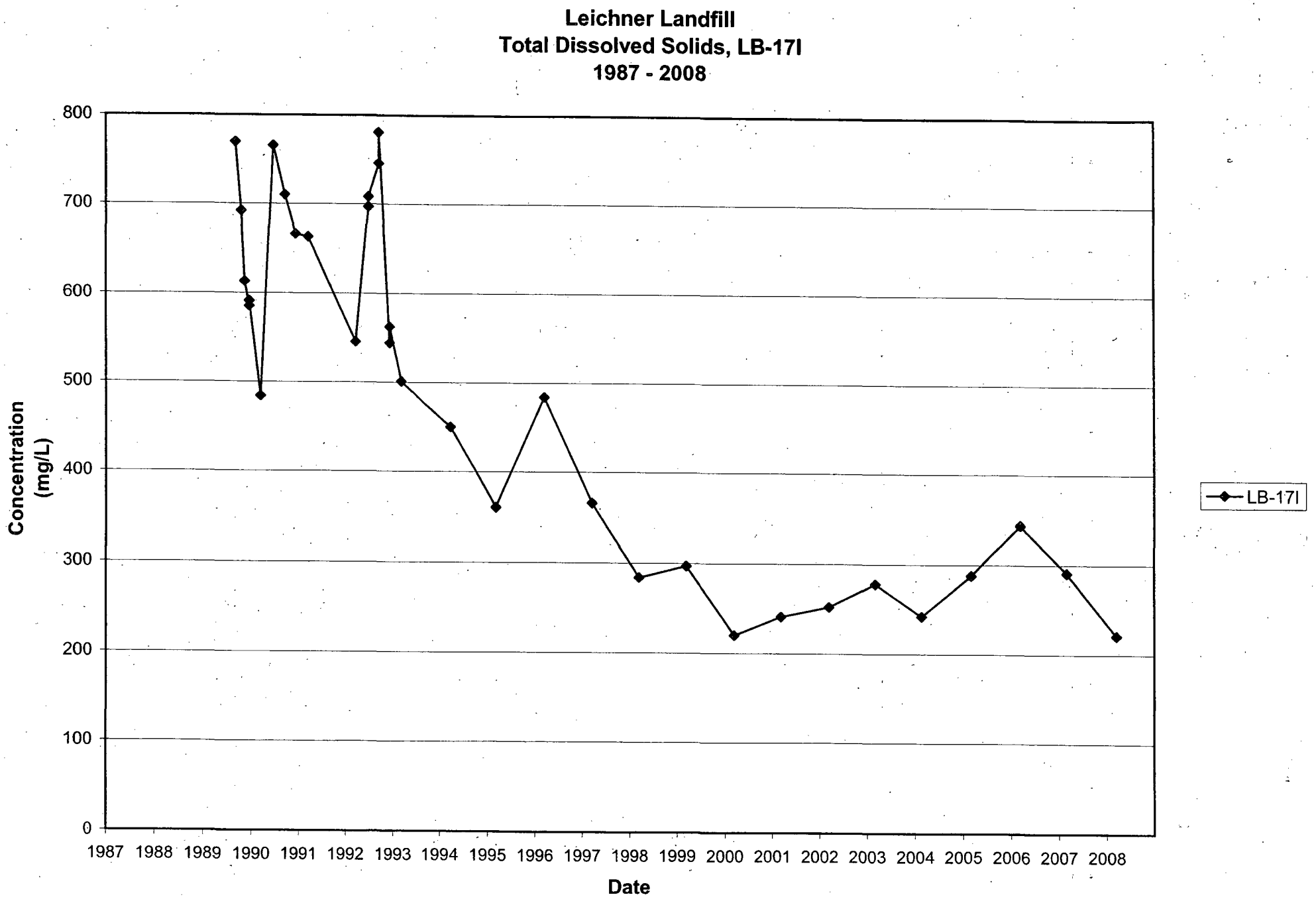

Leichner Landfill
Total Dissolved Solids, LB-04D
1987 - 2008
Concentration (mg/L)
800
700
600
500
400
300
200
100
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-04D



TimeTrendData_TDS.xls, LB-05S

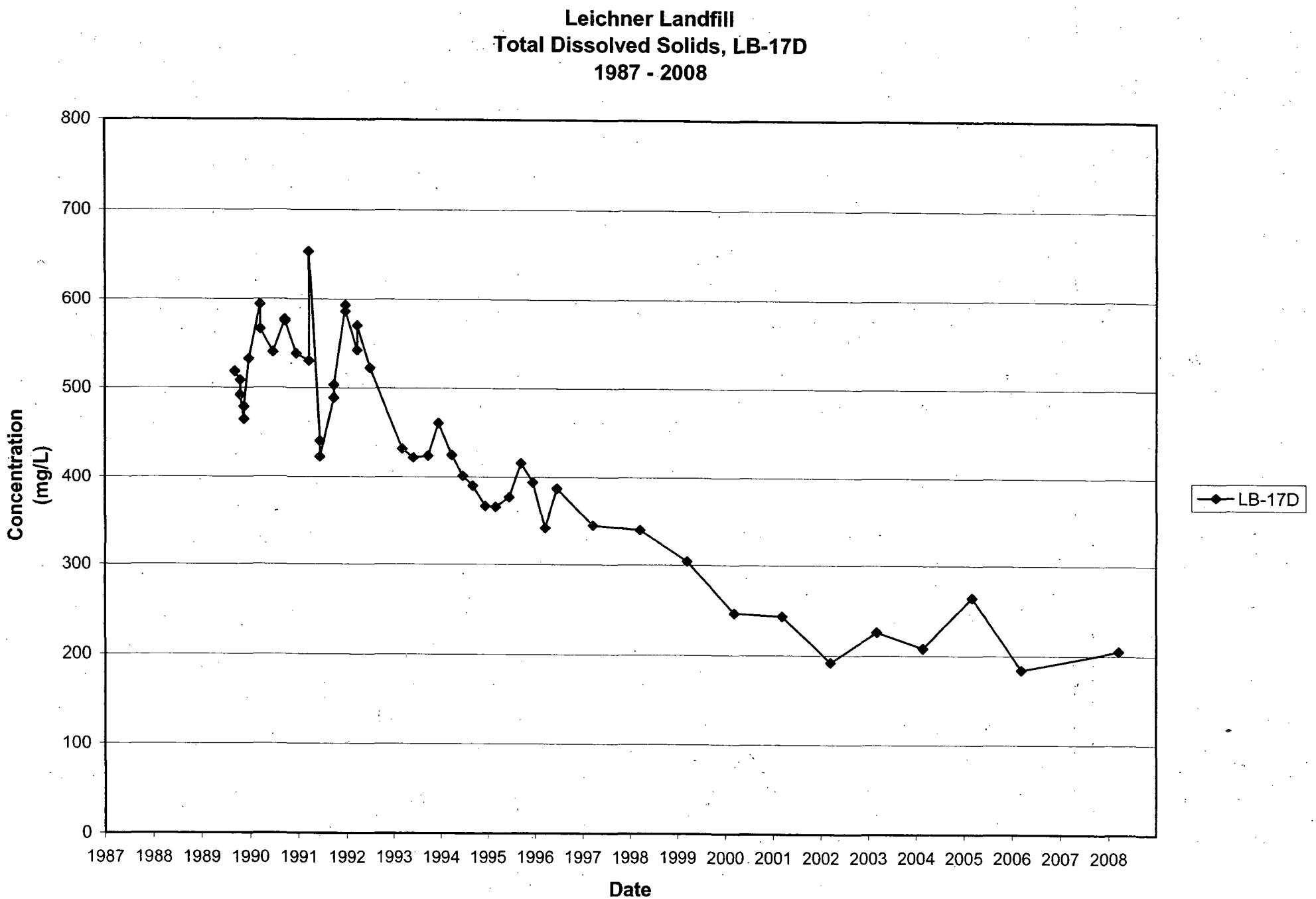
Shaw Environmental, Inc.

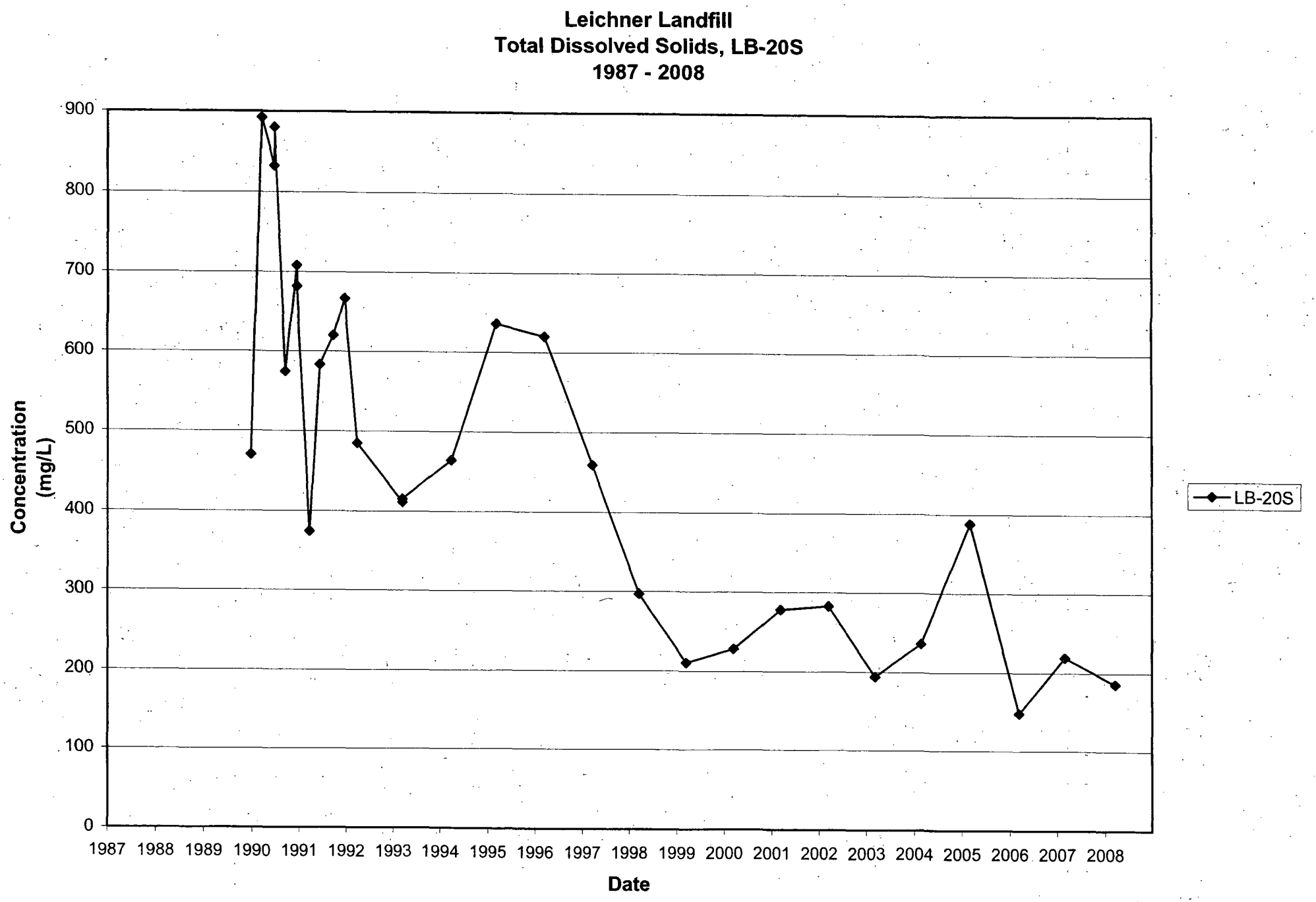

Leichner Landfill
Total Dissolved Solids, LB-05D
1987 - 2008
Concentration (mg/L)
800
700
600
500
400
300
200
100
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-05D



TimeTrendData_TDS.xls, LB-17I

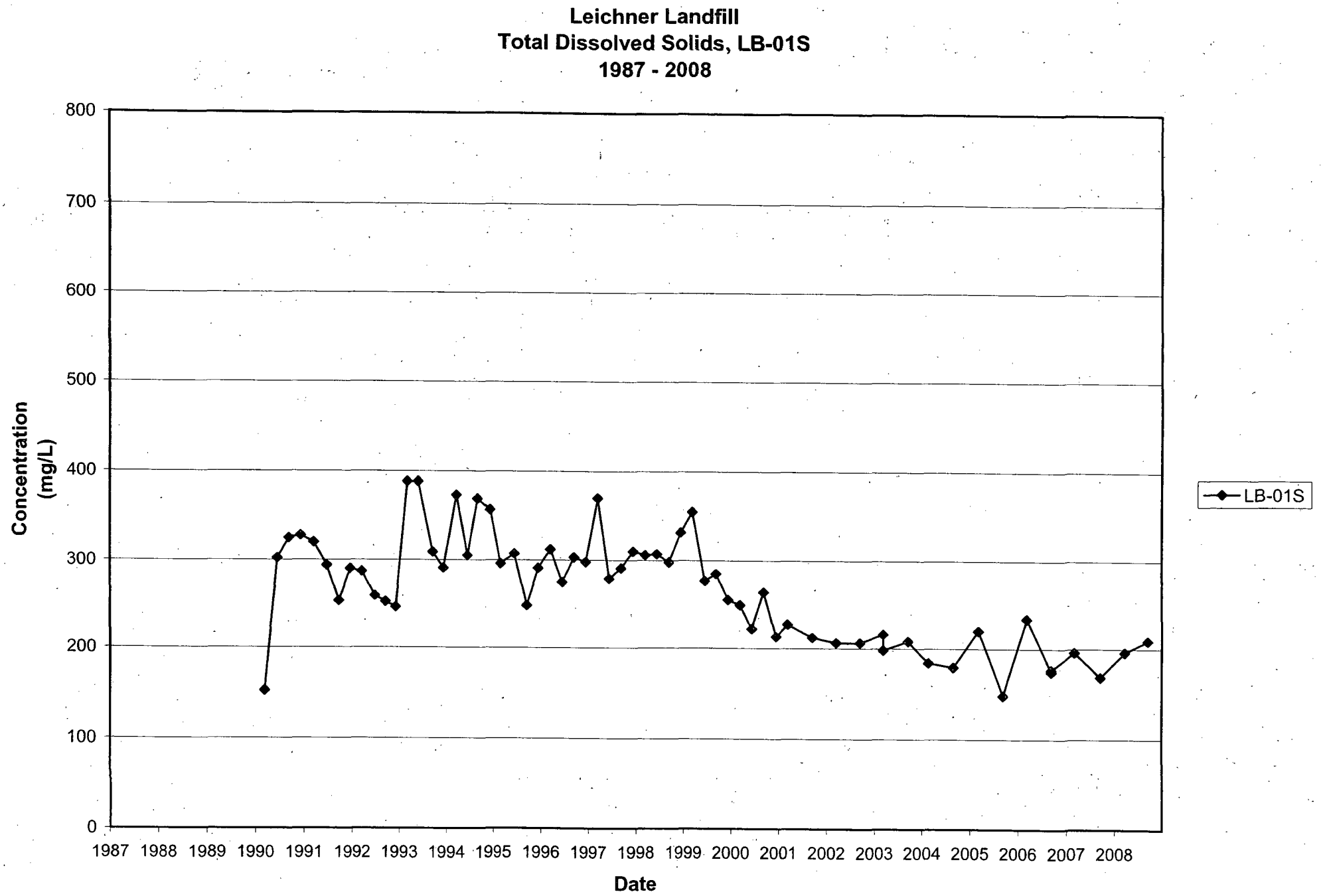
Shaw Environmental, Inc.

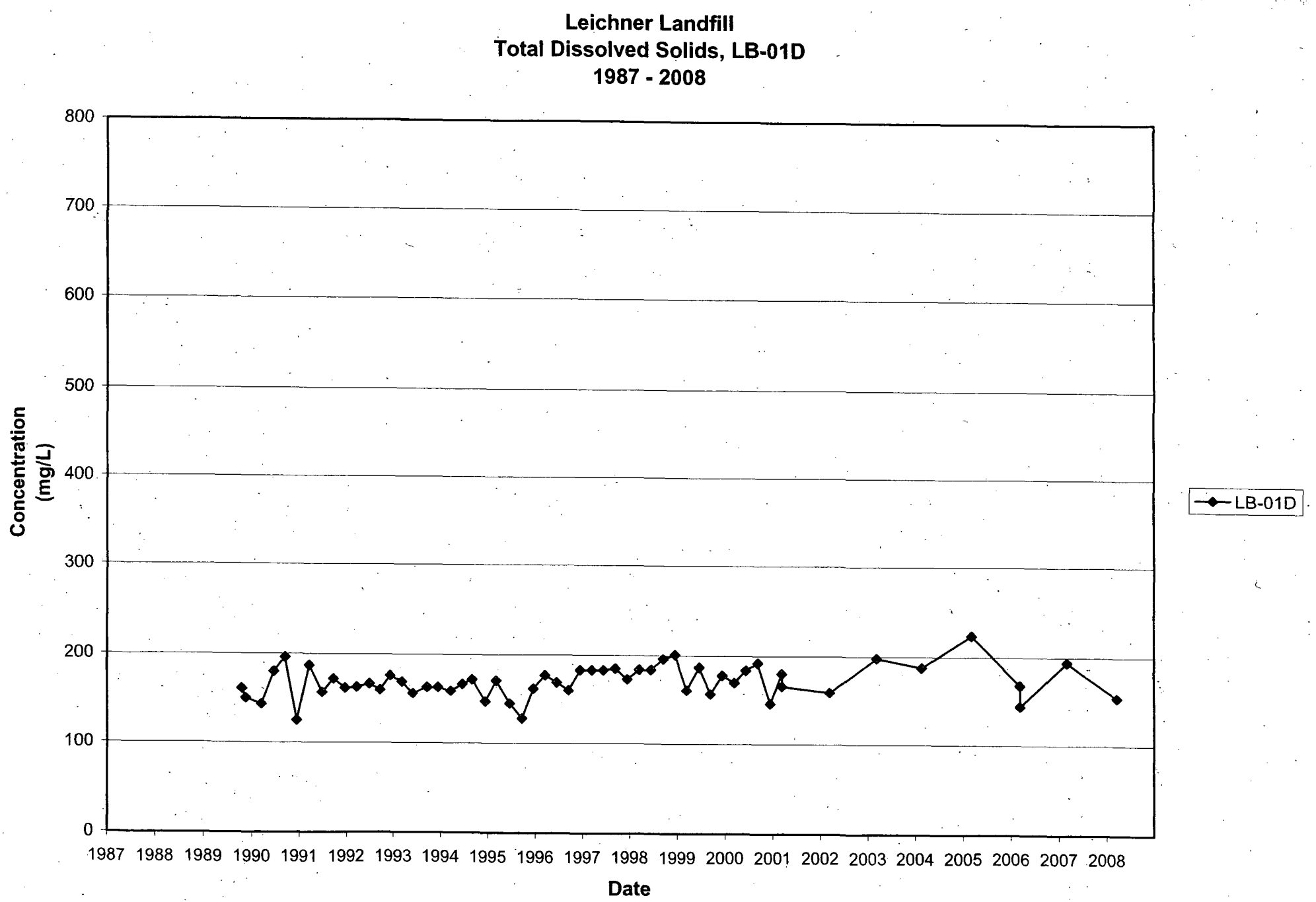

Leichner Landfill
Total Dissolved Solids, LB-17D
1987 - 2008
Concentration (mg/L)
800
700
600
500
400
300
200
100
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-17D



TimeTrendData_TDS.xls, LB-20S

Shaw Environmental, Inc.

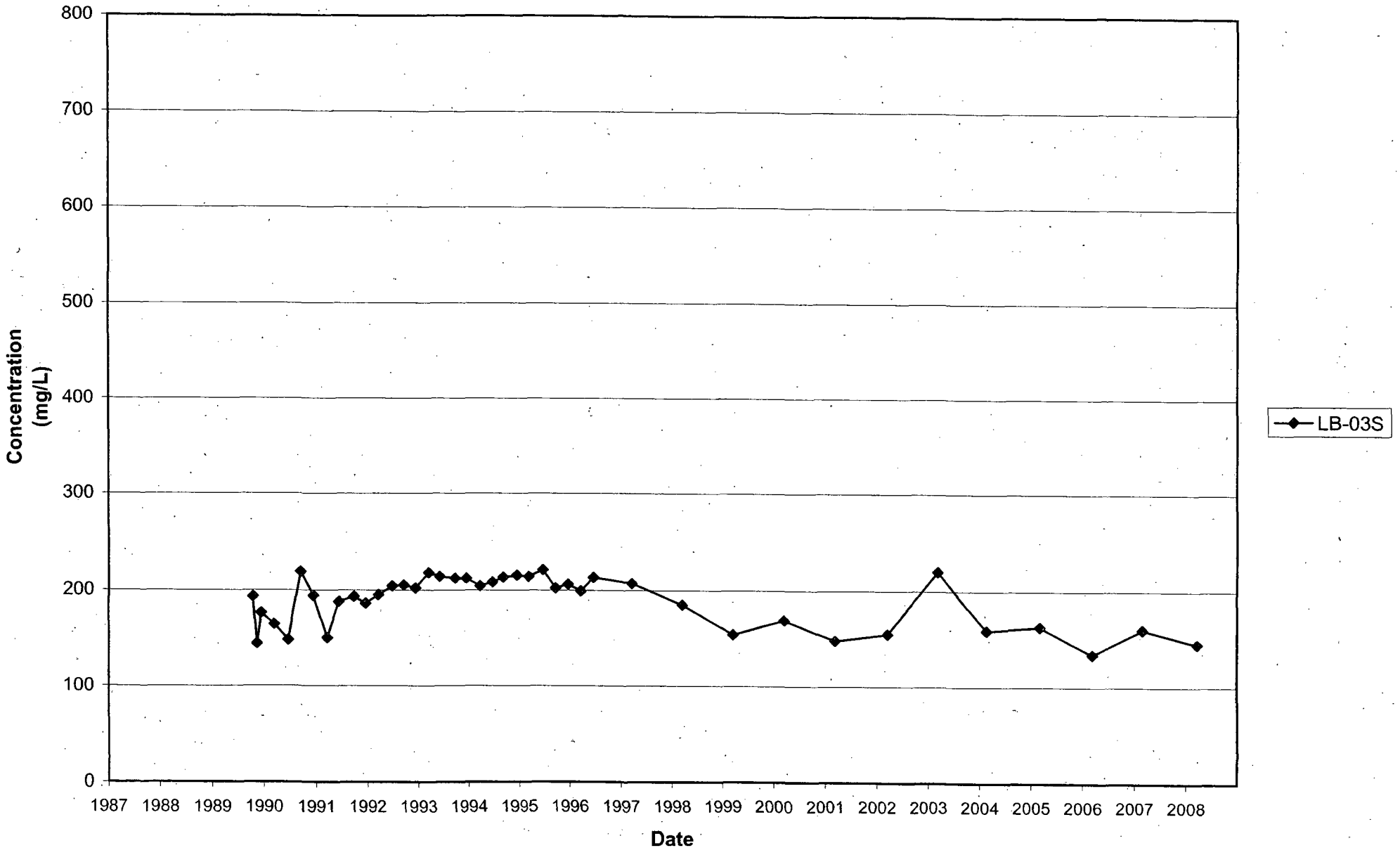

Leichner Landfill
Total Dissolved Solids, LB-01S
1987 - 2008
Concentration (mg/L)
800
700
600
500
400
300
200
100
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-01S

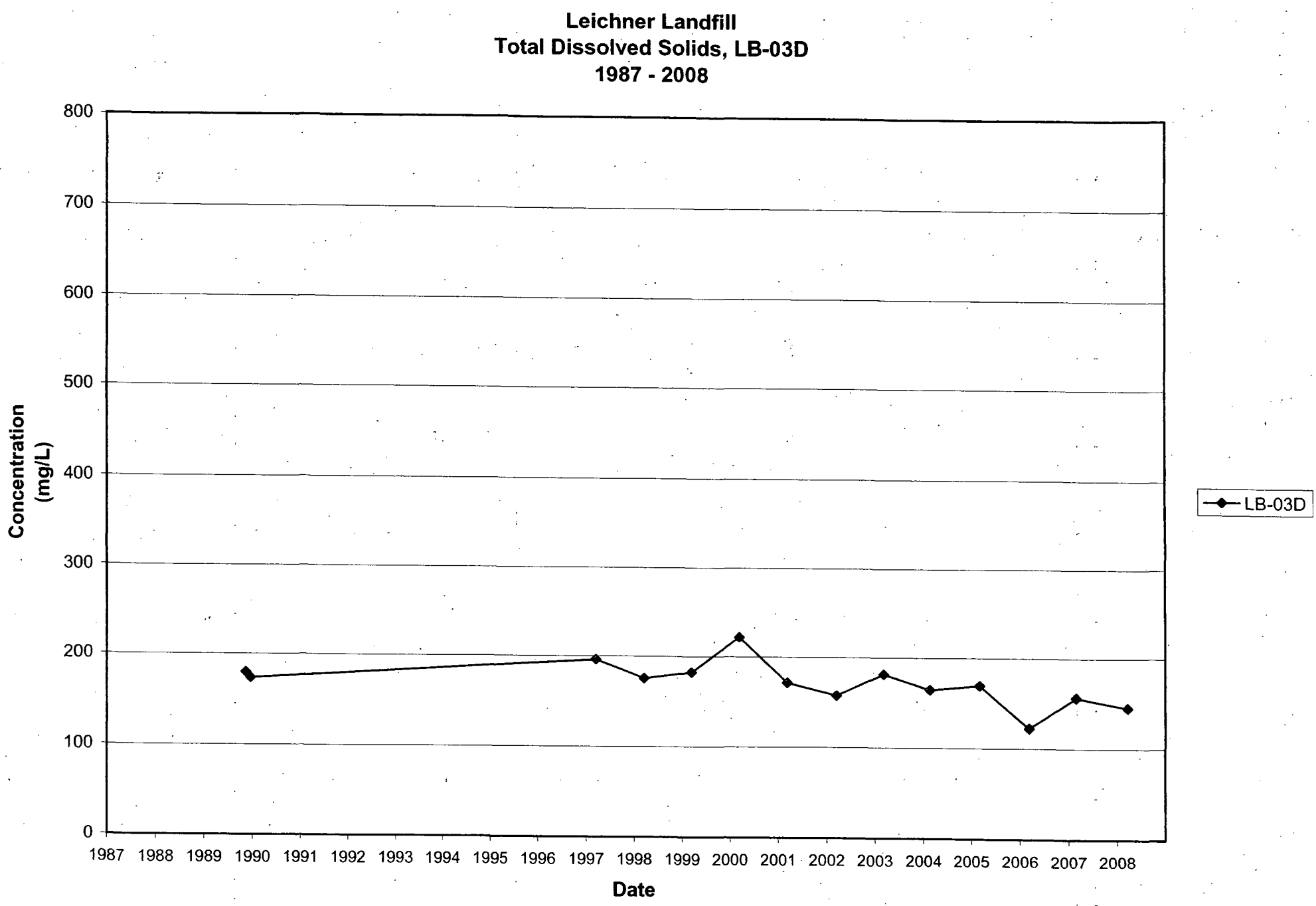


TimeTrendData_TDS.xls, LB-01D

Shaw Environmental, Inc.

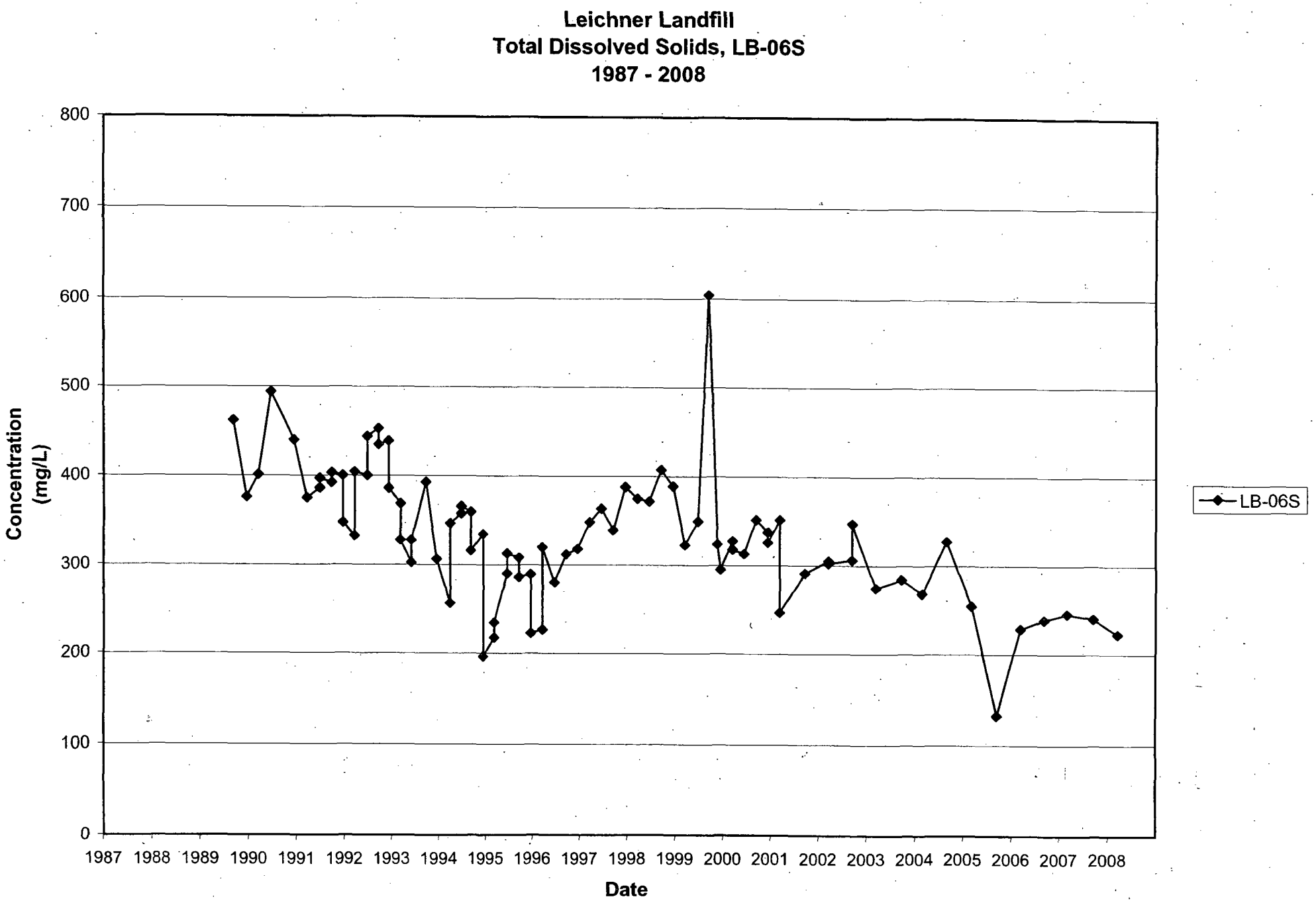
Leichner Landfill
Total Dissolved Solids, LB-03S
1987 - 2008

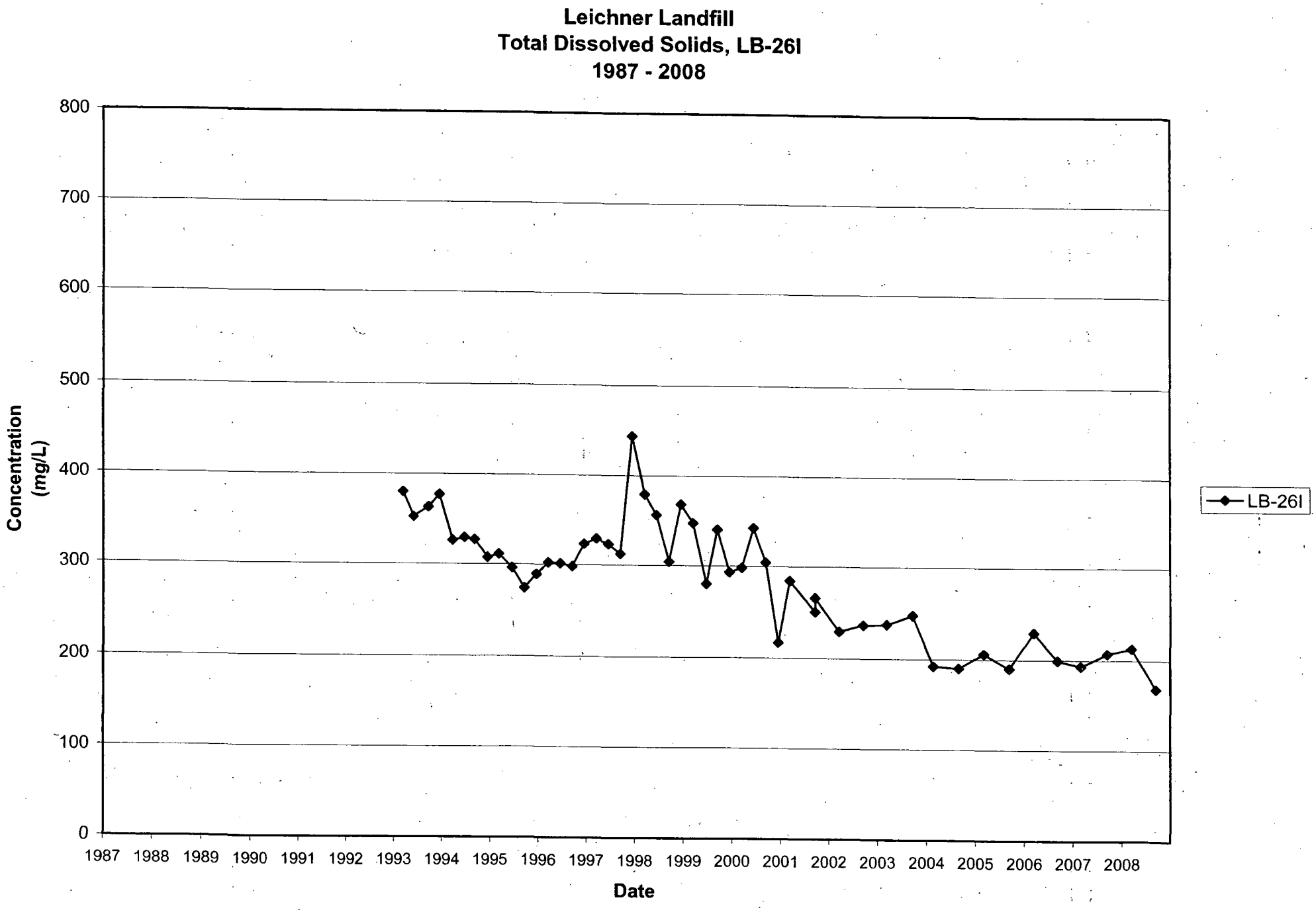




TimeTrendData_TDS.xls, LB-03D

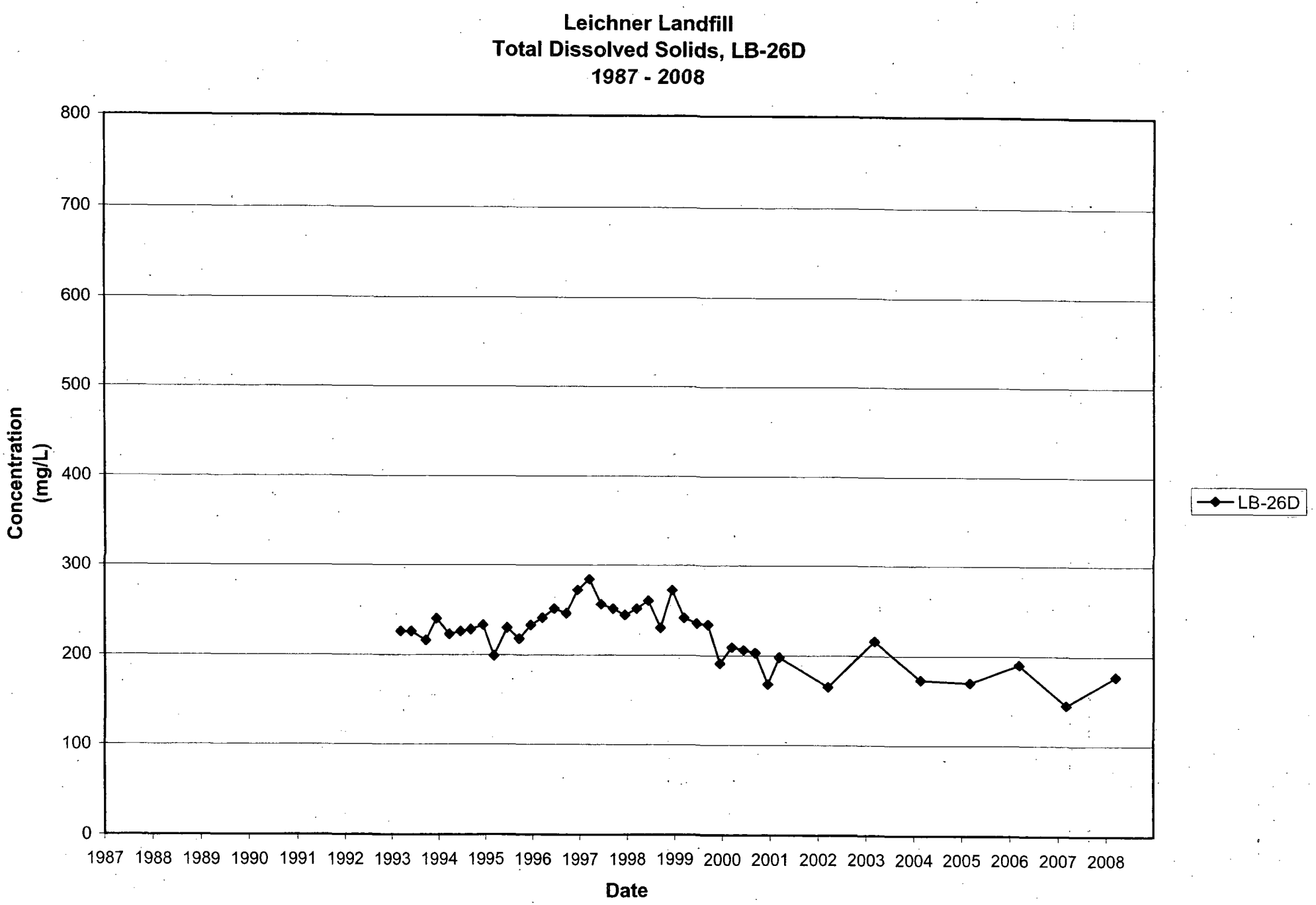
Shaw Environmental, Inc.

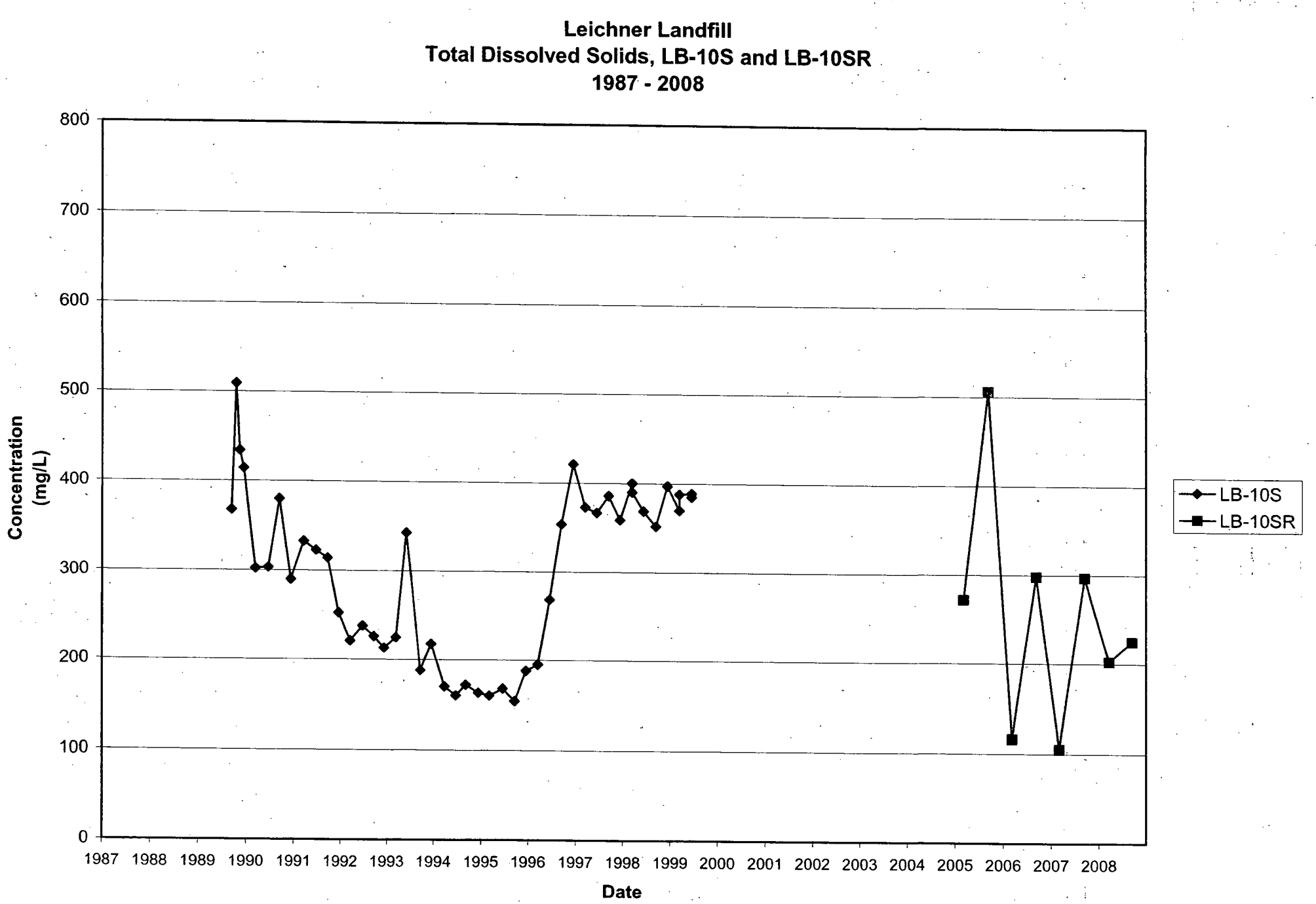

Leichner Landfill
Total Dissolved Solids, LB-06S
1987 - 2008
Concentration (mg/L)
800
700
600
500
400
300
200
100
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-06S



TimeTrendData_TDS.xls, LB-26I

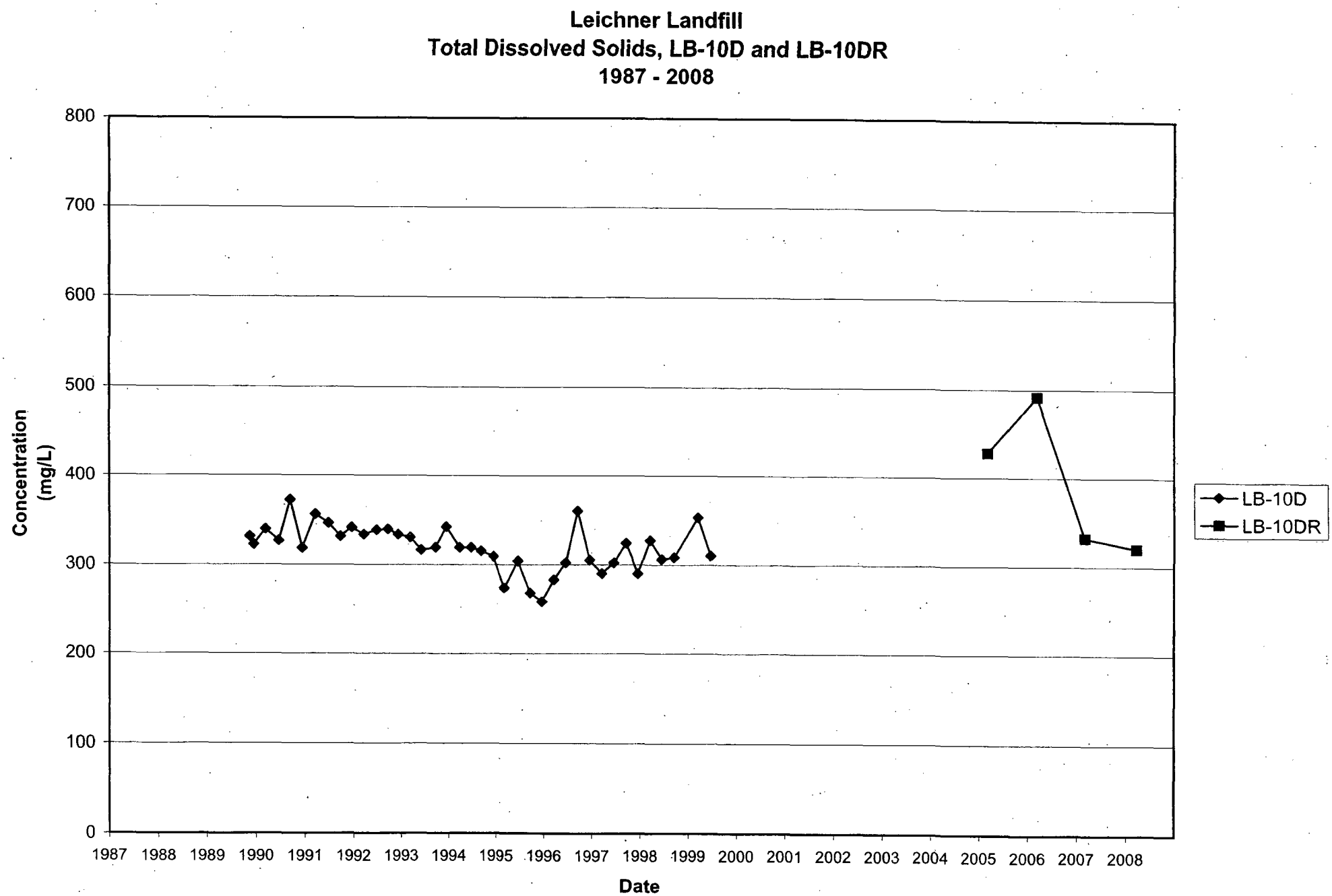
Shaw Environmental, Inc.


Leichner Landfill
Total Dissolved Solids, LB-26D
1987 - 2008
Concentration (mg/L)
800
700
600
500
400
300
200
100
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-26D

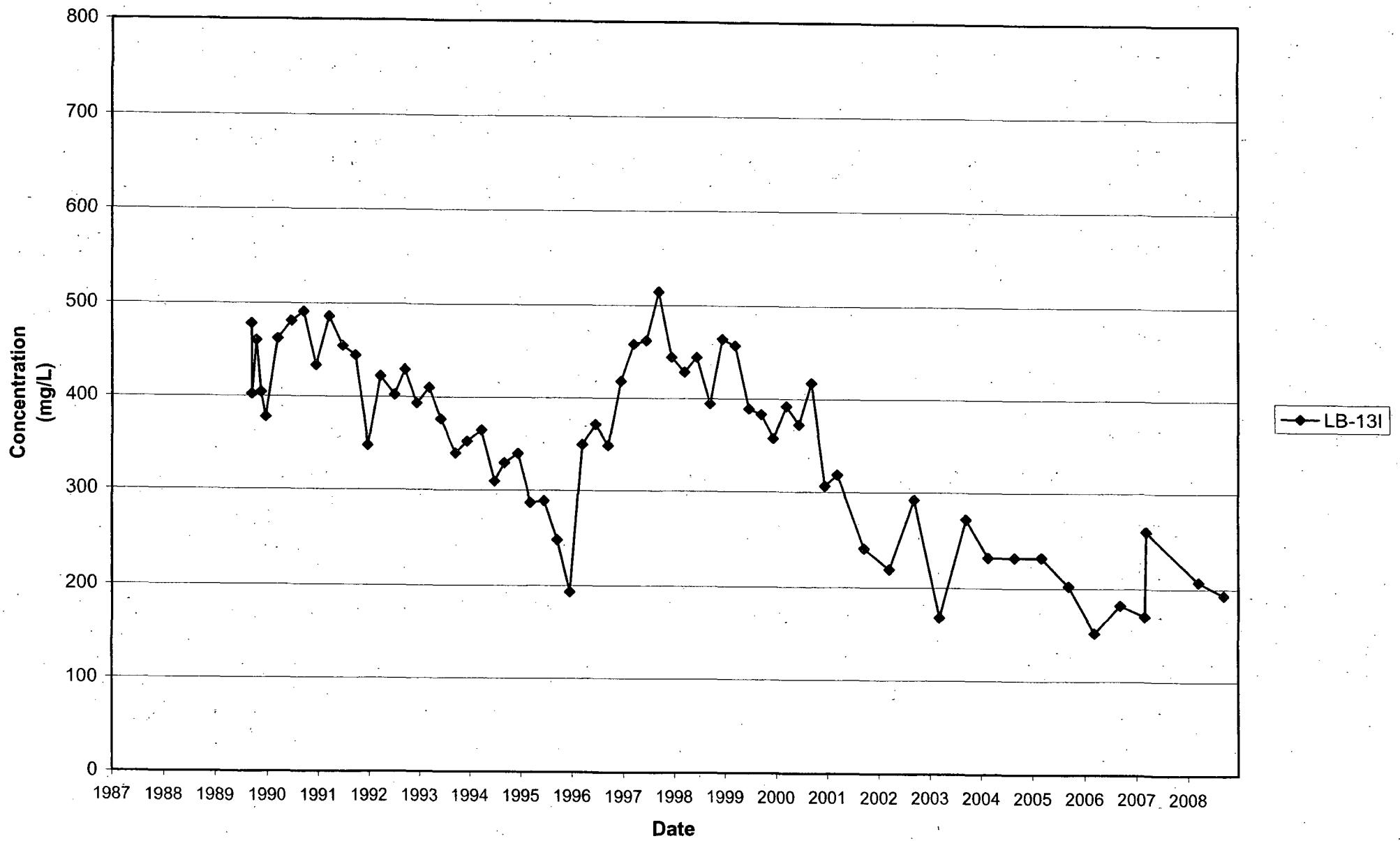


TimeTrendData_TDS.xls, LB-10S and LB-10SR

Shaw Environmental, Inc.

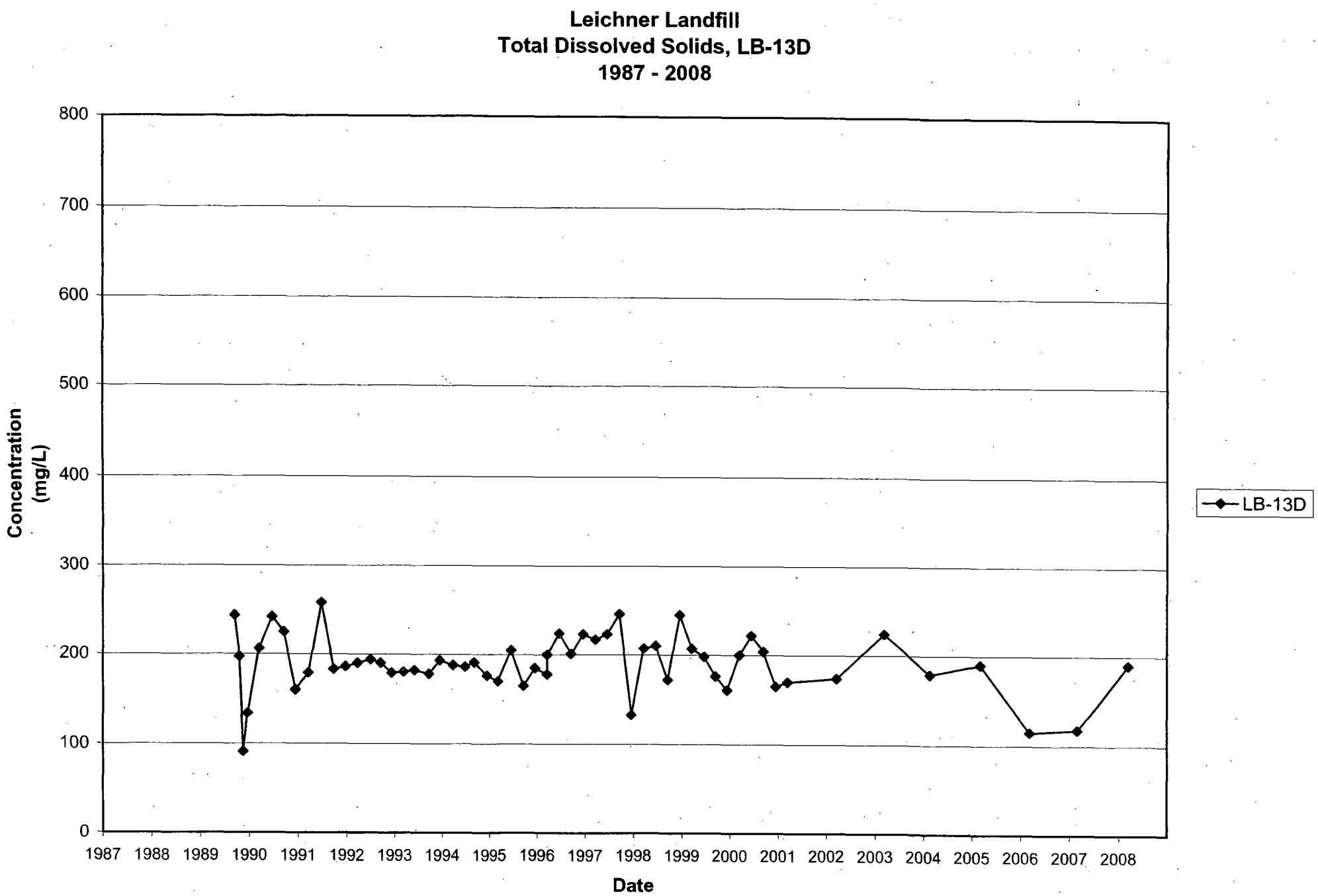

Leichner Landfill
Total Dissolved Solids, LB-10D and LB-10DR
1987 - 2008
Concentration (mg/L)
800
700
600
500
400
300
200
100
0
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
LB-10D
LB-10DR

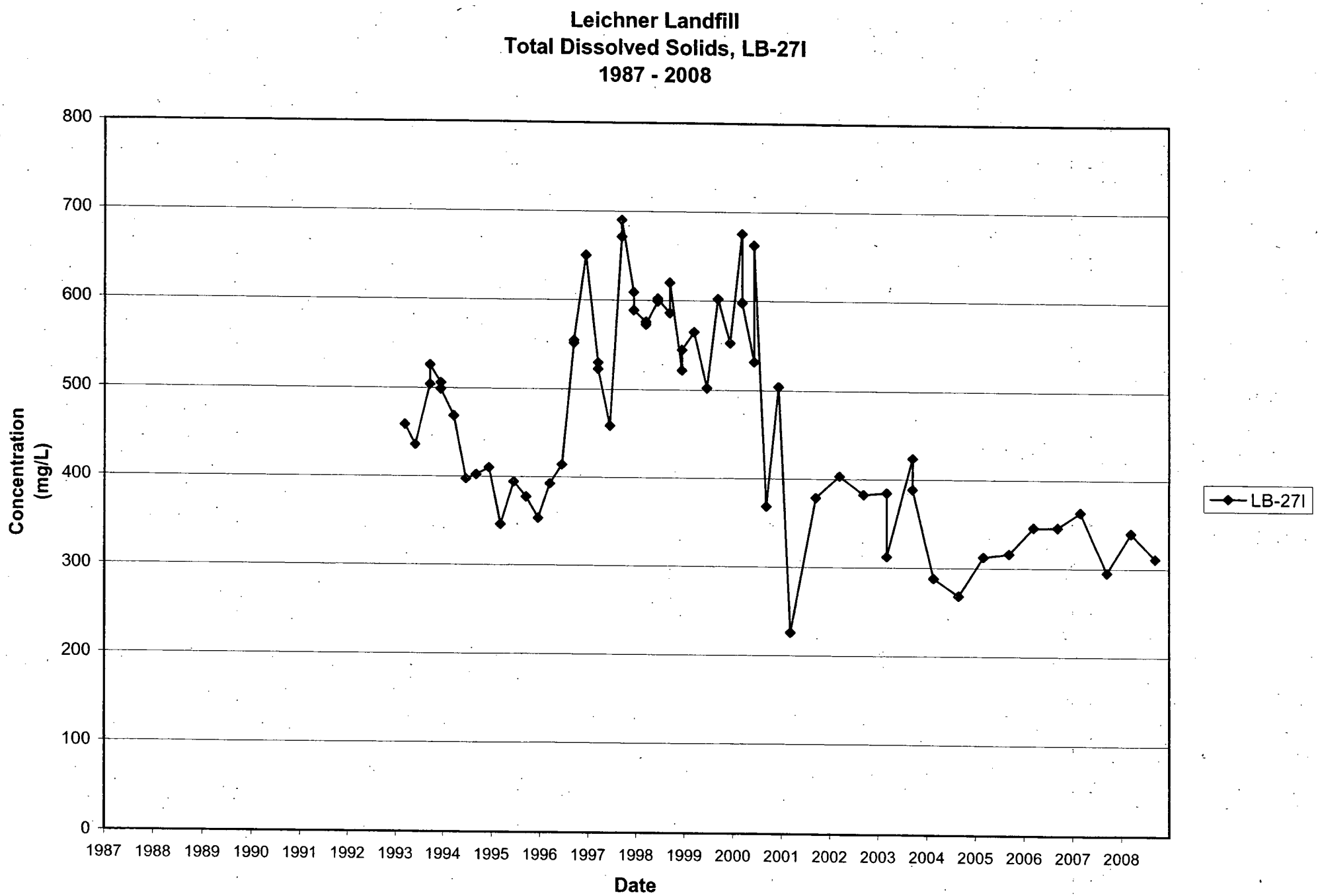
Leichner Landfill
Total Dissolved Solids, LB-13I
1987 - 2008



TimeTrendData_TDS.xls, LB-13I

Shaw Environmental, Inc.

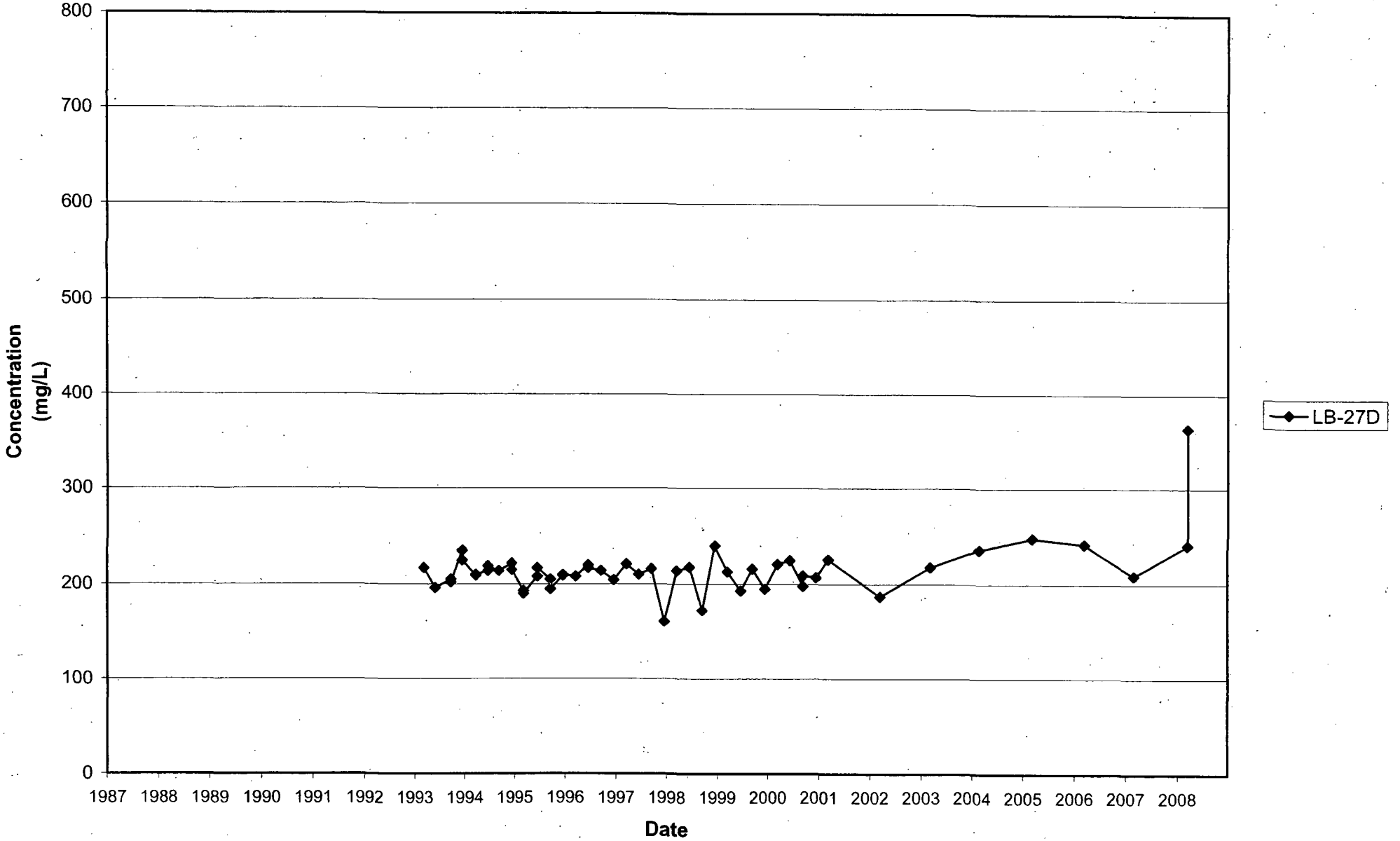

Leichner Landfill
Total Dissolved Solids, LB-13D
1987 - 2008
Concentration (mg/L)
800
700
600
500
400
300
200
100
0
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
LB-13D



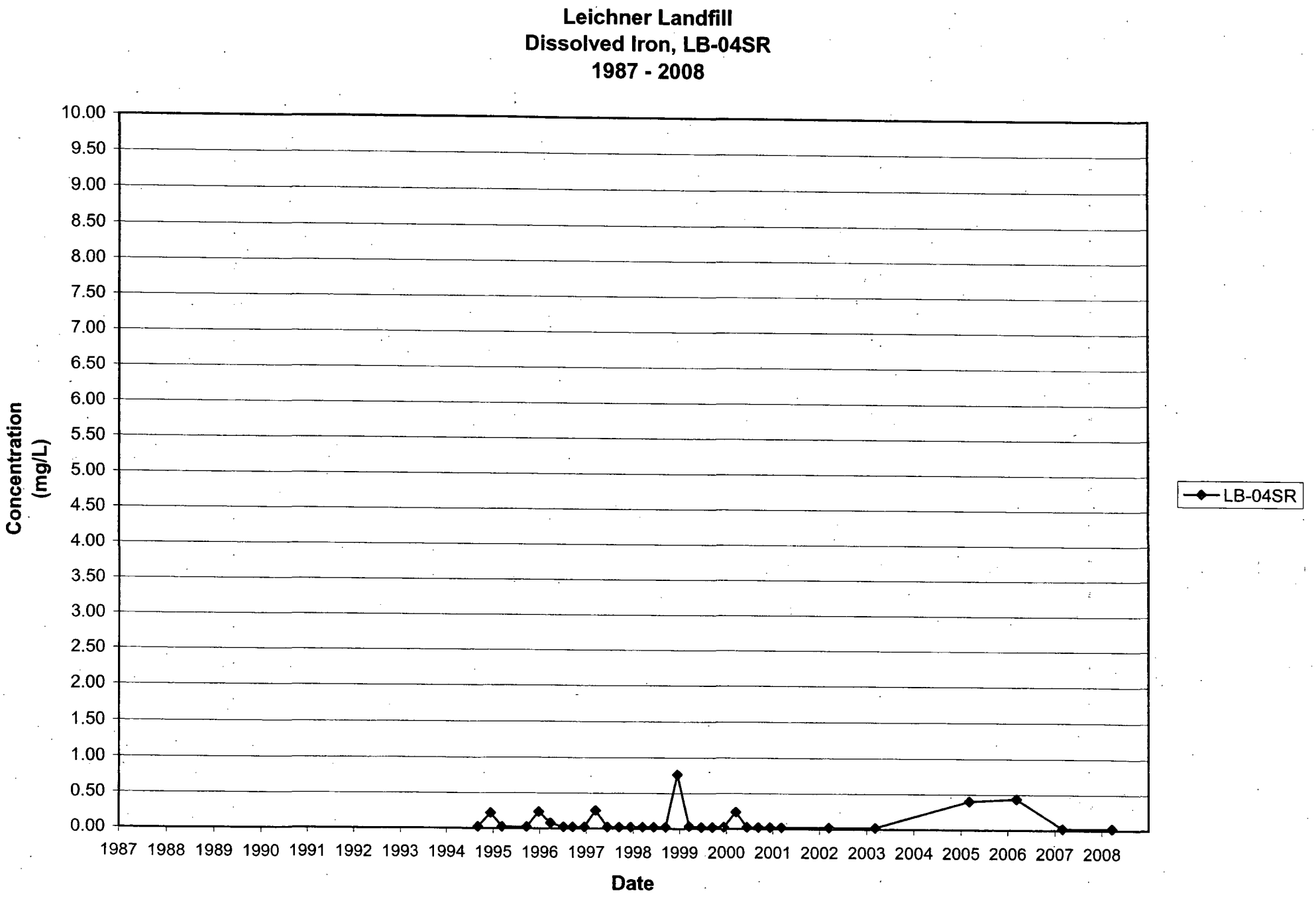
TimeTrendData_TDS.xls, LB-27I

Shaw Environmental, Inc.

Leichner Landfill
Total Dissolved Solids, LB-27D
1987 - 2008

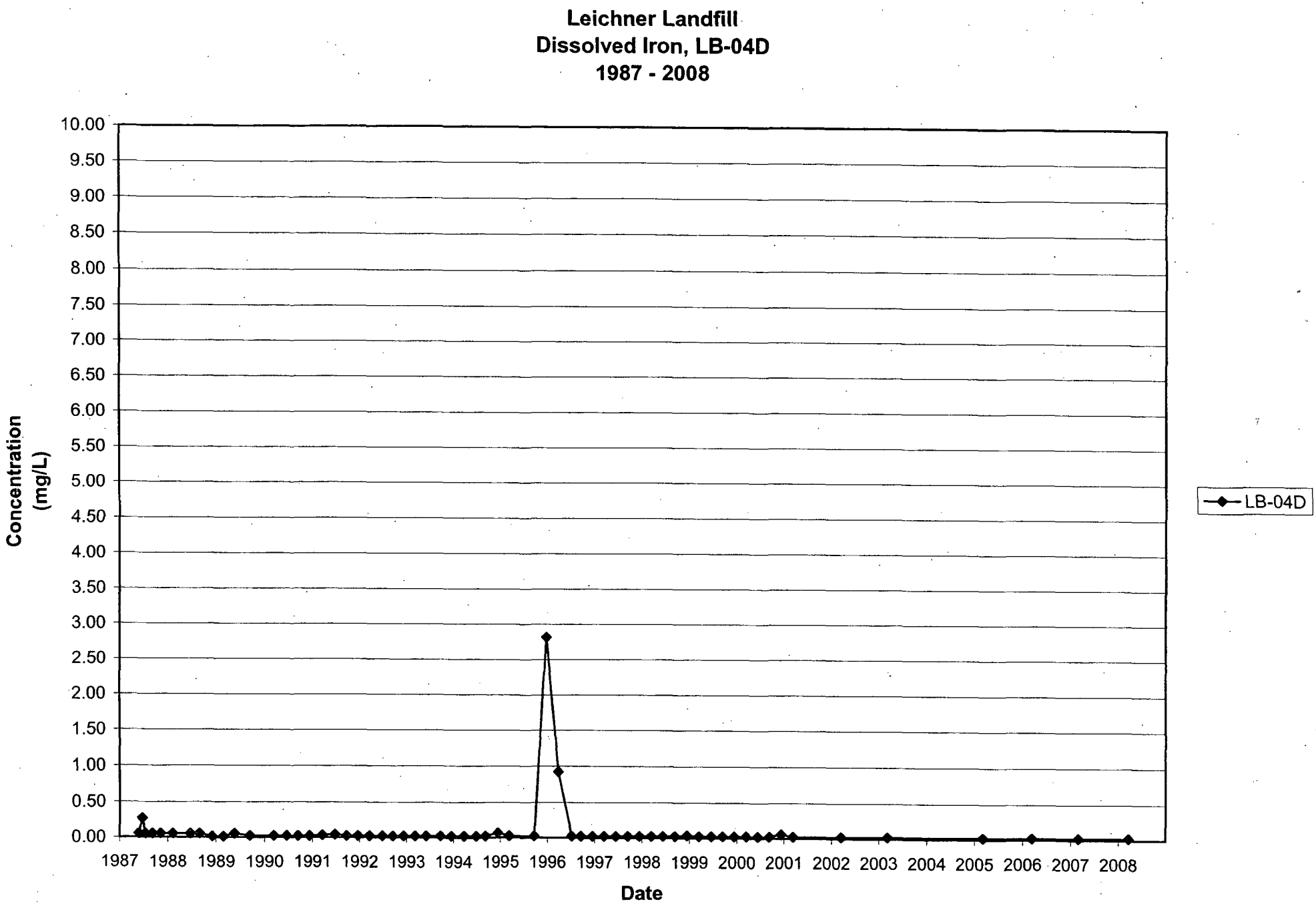


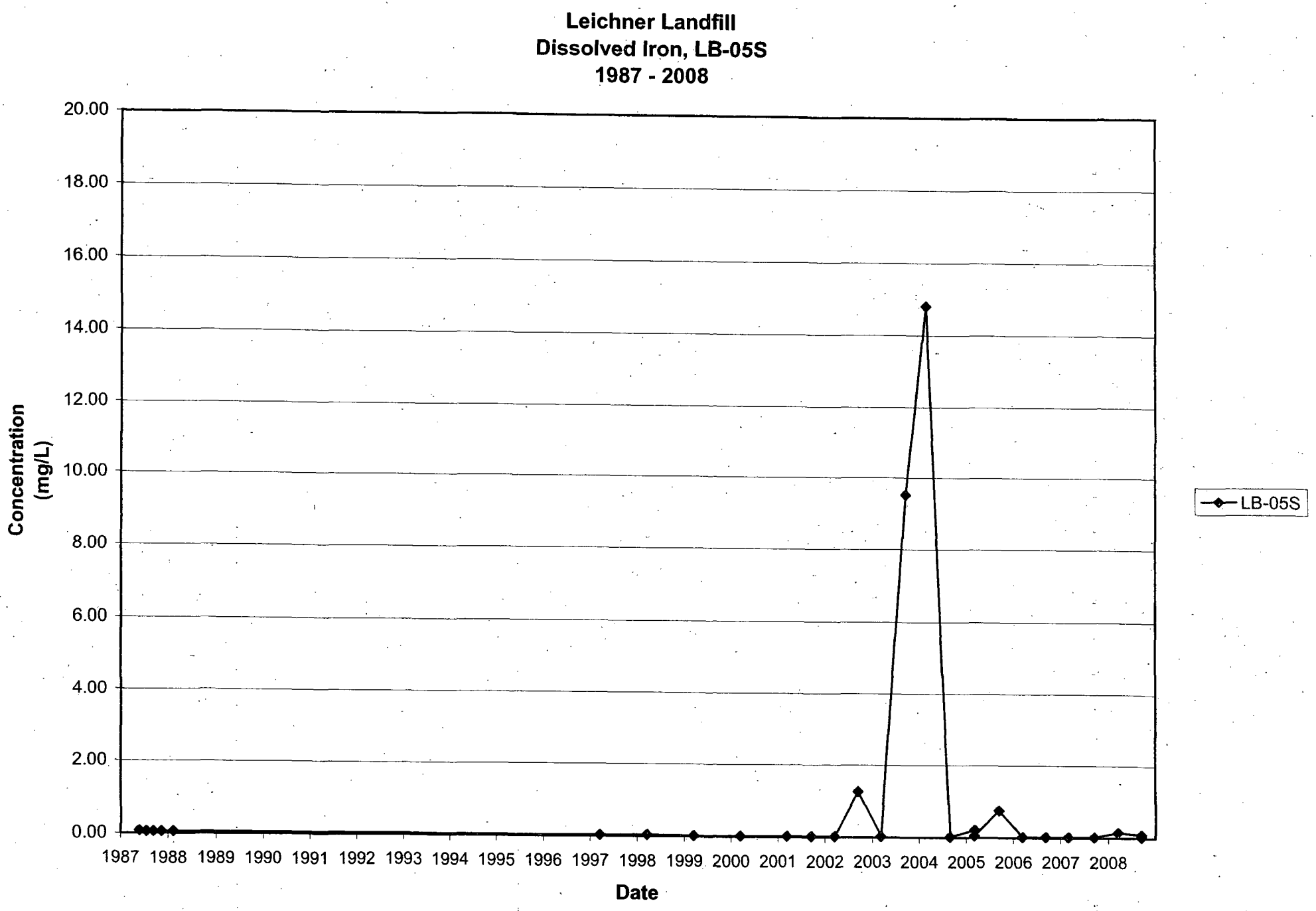
Dissolved Iron



TimeTrendData_DissIron.xls, LB-04SR

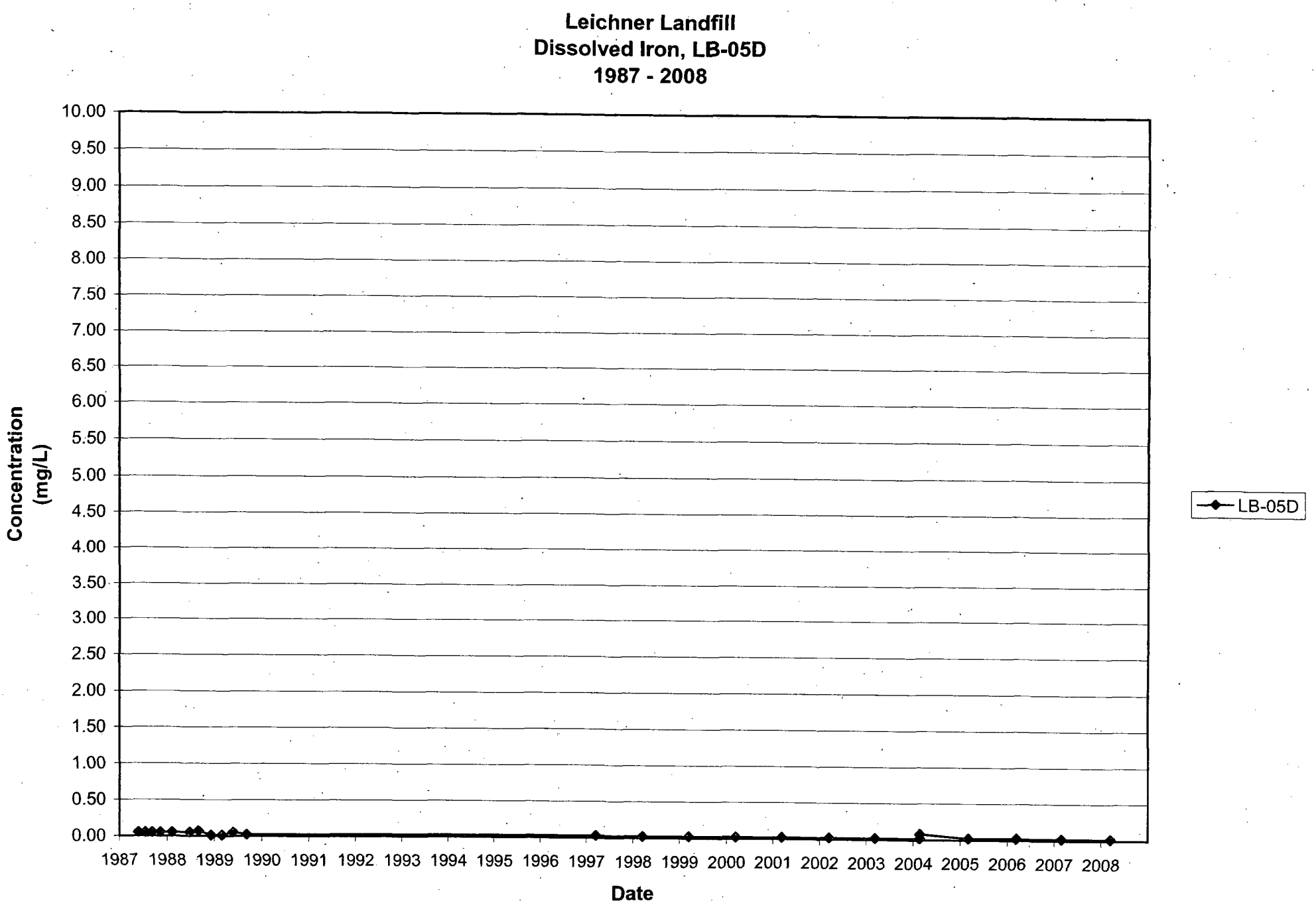
Shaw Environmental, Inc.

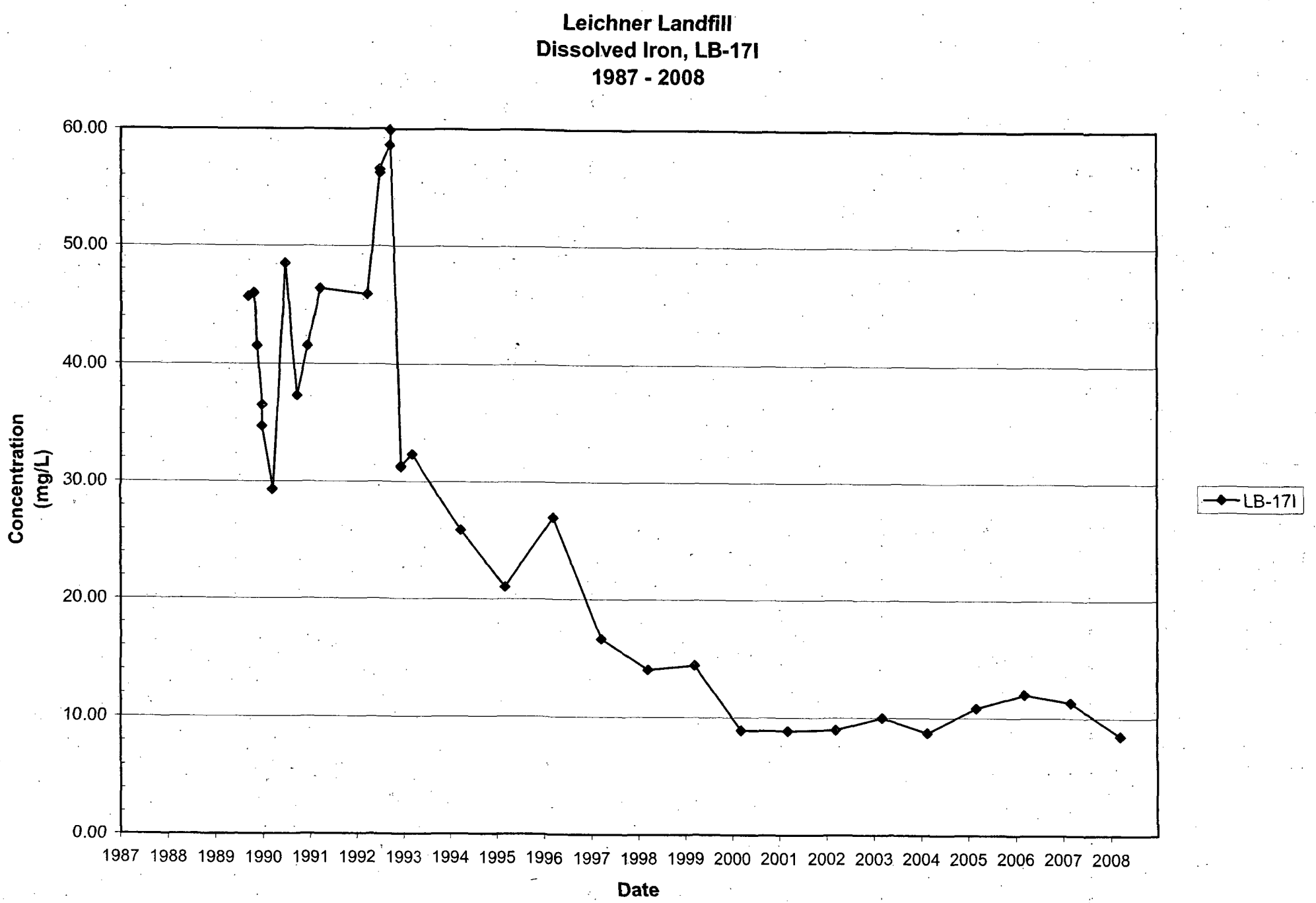

Leichner Landfill
Dissolved Iron, LB-04D
1987 - 2008
Concentration (mg/L)
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-04D



TimeTrendData_DissIron.xls, LB-05S

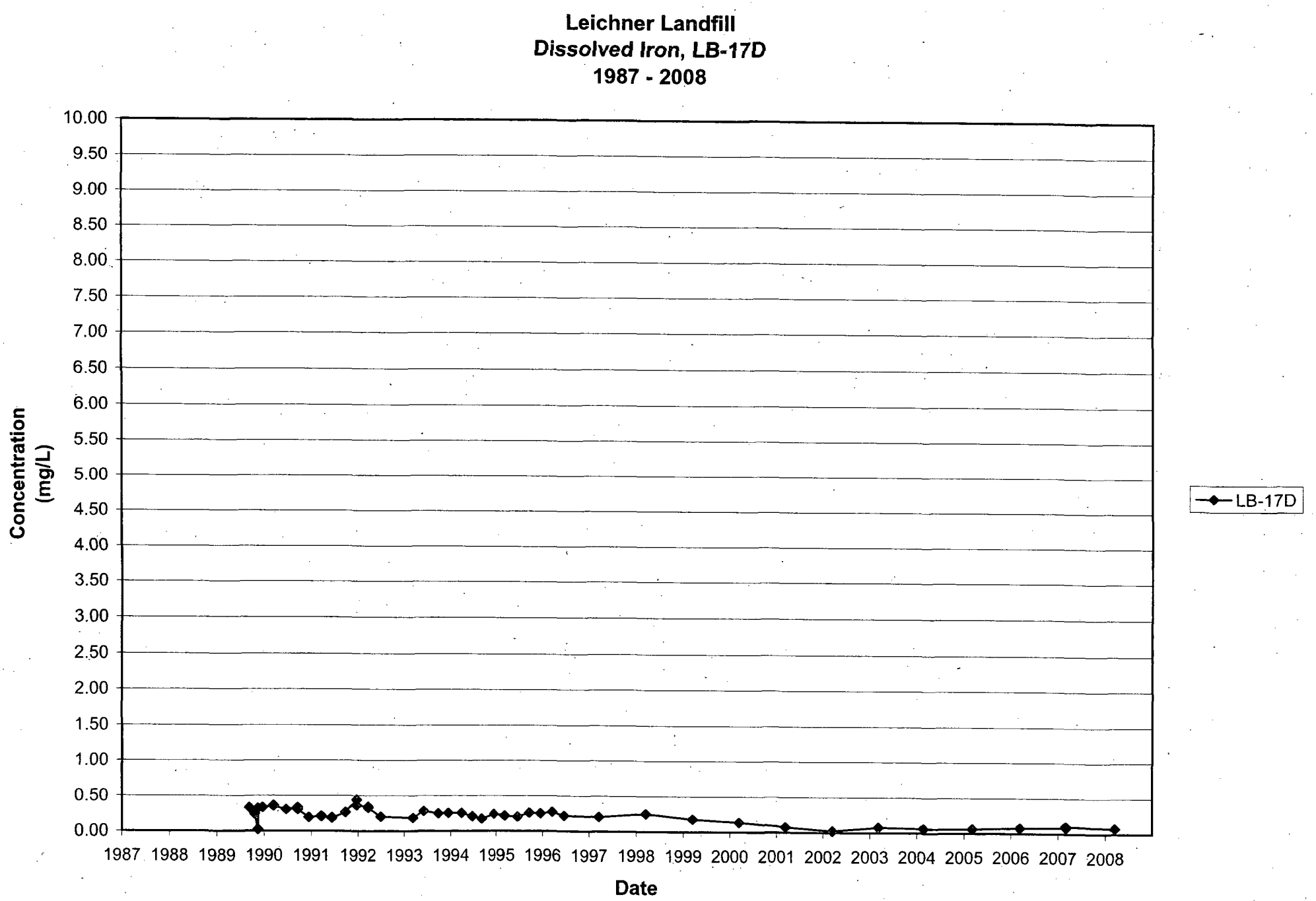
Shaw Environmental, Inc.

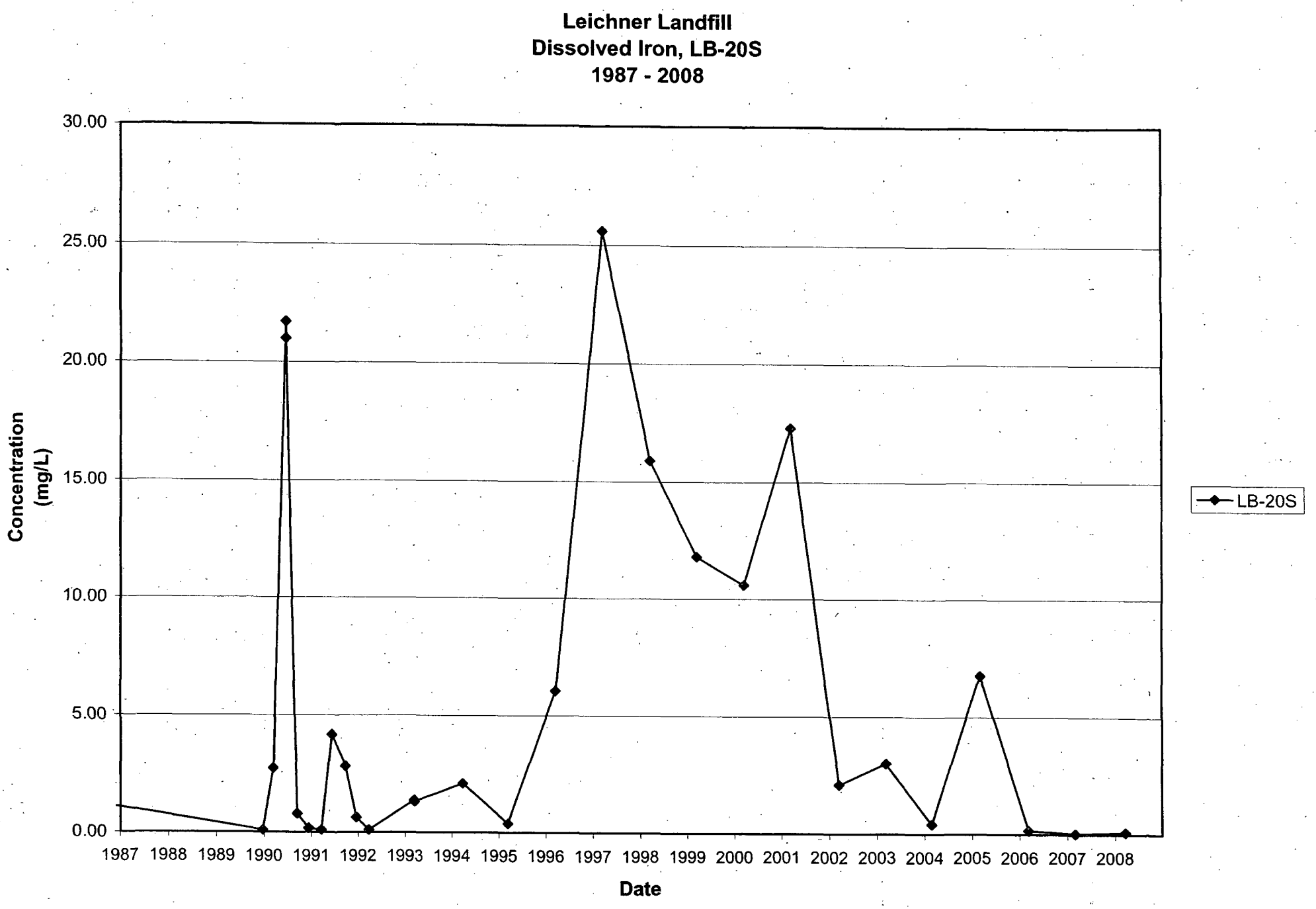

Leichner Landfill
Dissolved Iron, LB-05D
1987 - 2008
Concentration (mg/L)
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-05D



TimeTrendData_DissIron.xls, LB-17I

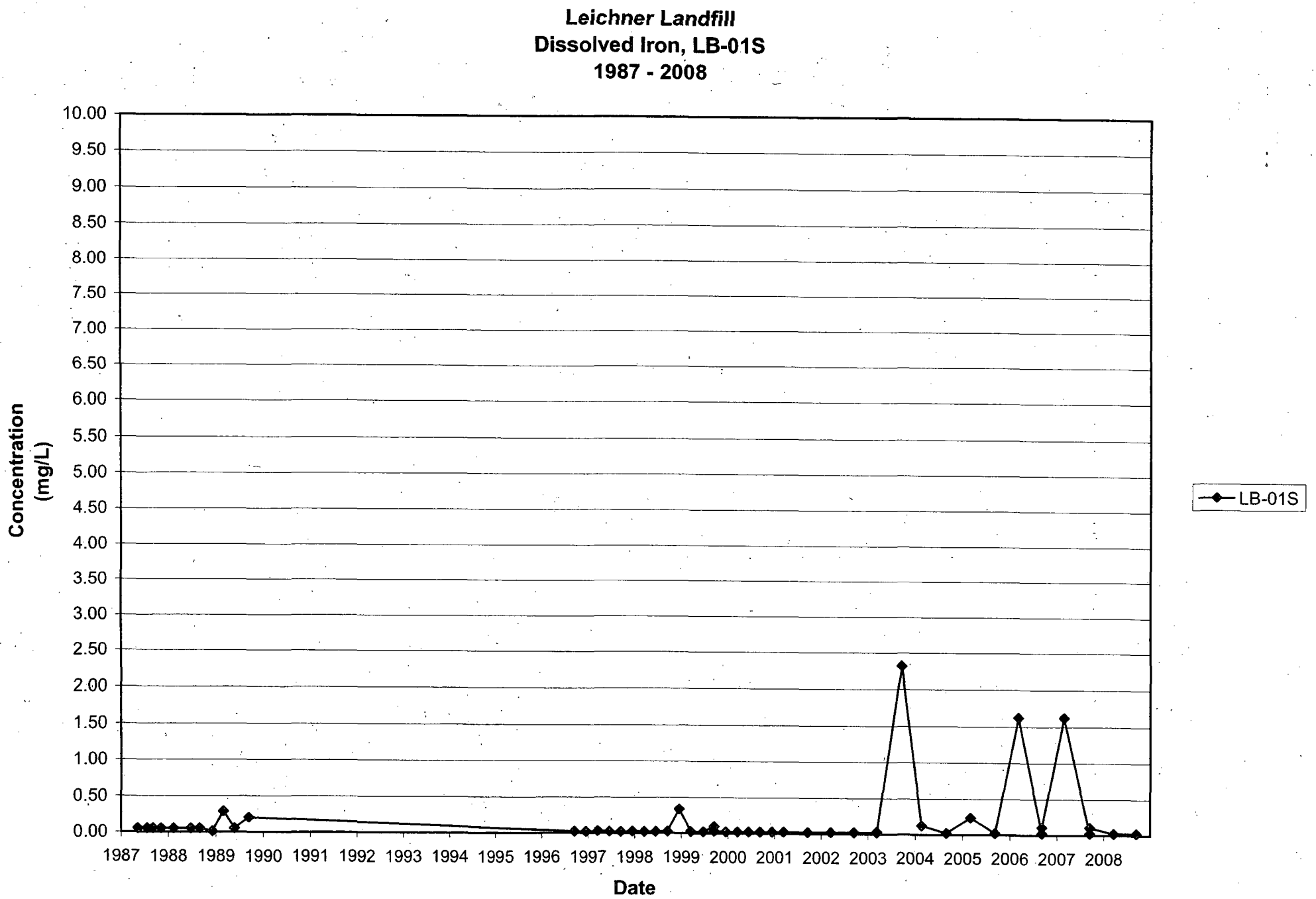
Shaw Environmental, Inc.


Leichner Landfill
Dissolved Iron, LB-17D
1987 - 2008
Concentration (mg/L)
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-17D

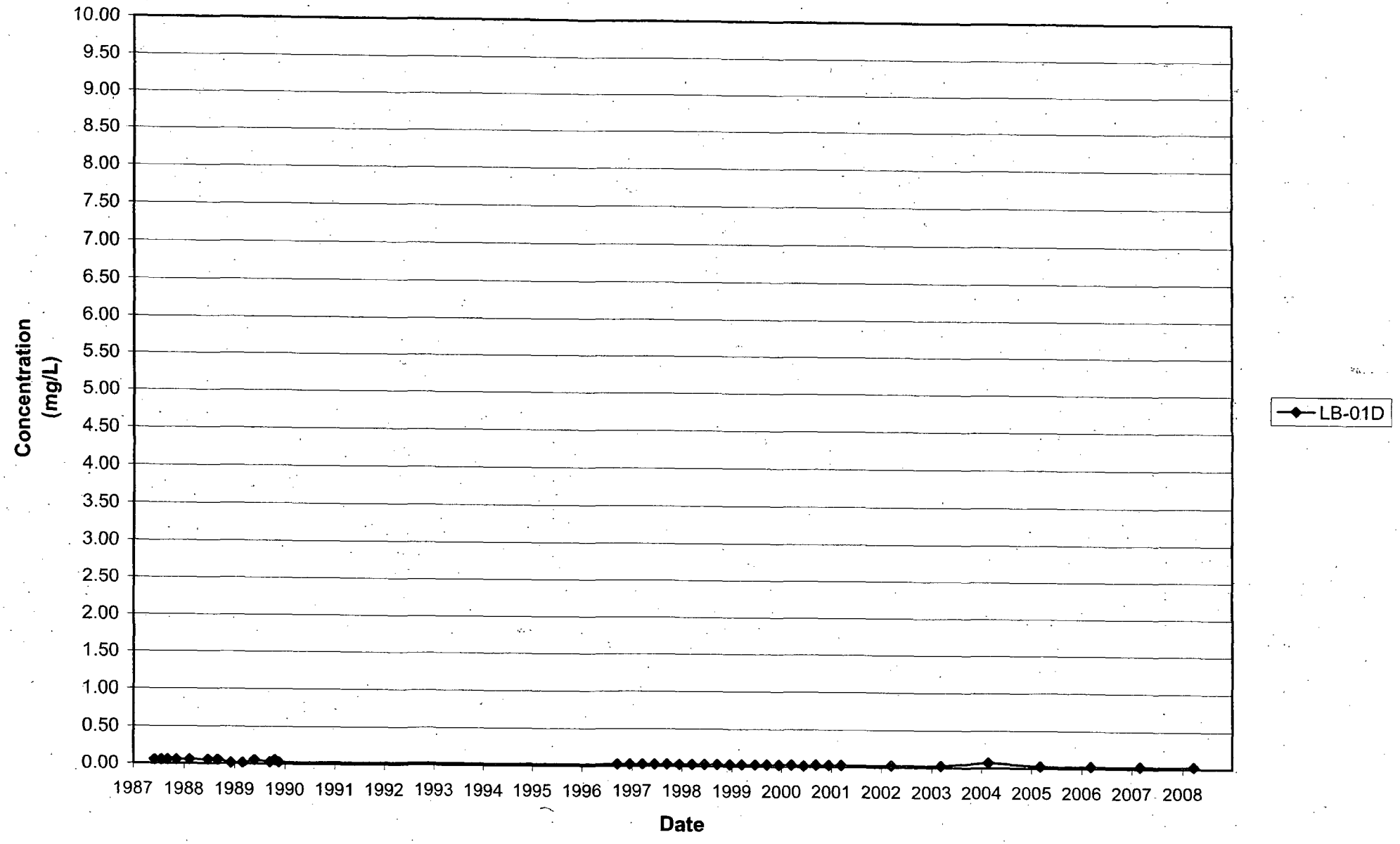


TimeTrendData_DissIron.xls, LB-20S

Shaw Environmental, Inc.

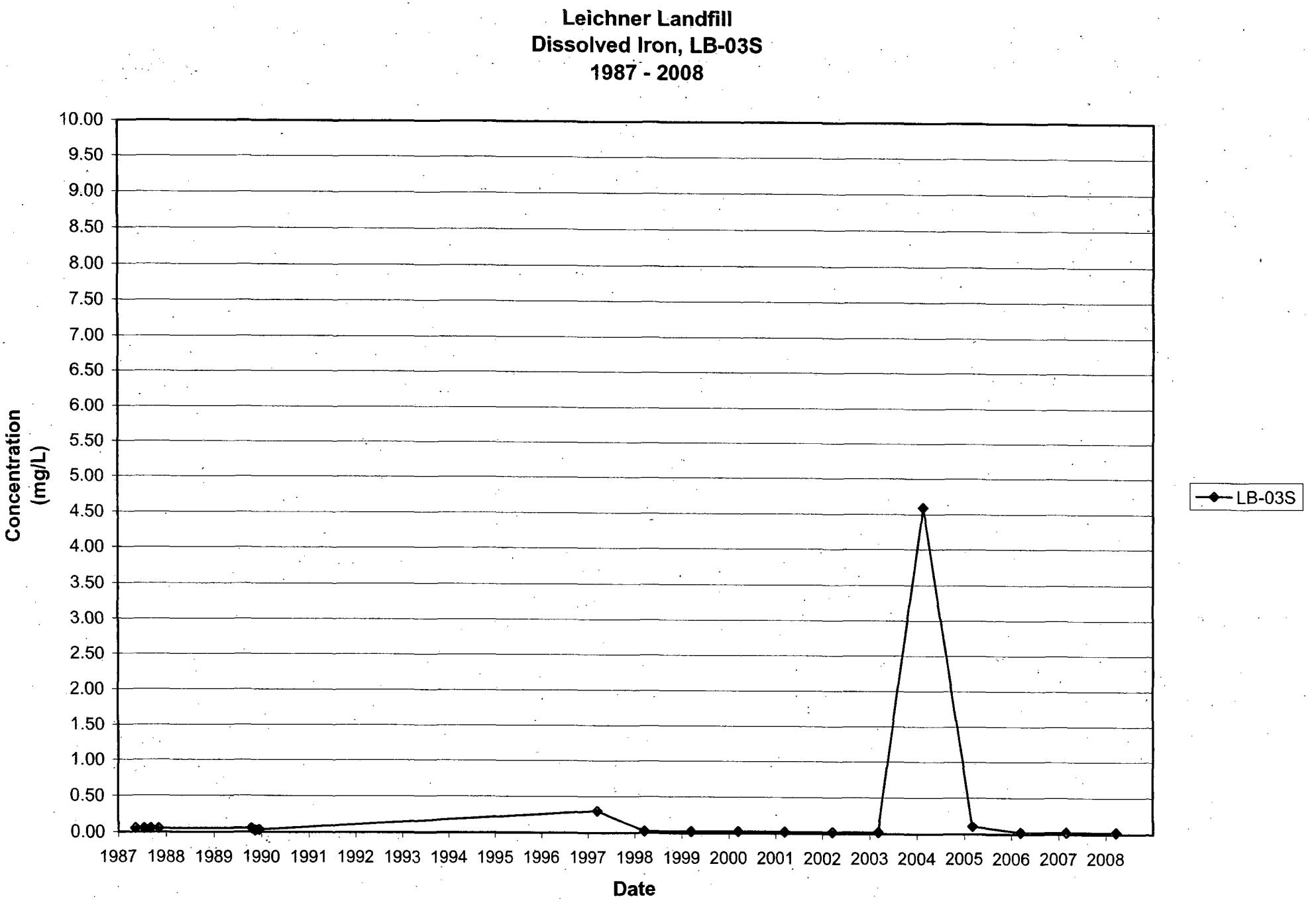

Leichner Landfill
Dissolved Iron, LB-01S
1987 - 2008
Concentration (mg/L)
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-01S

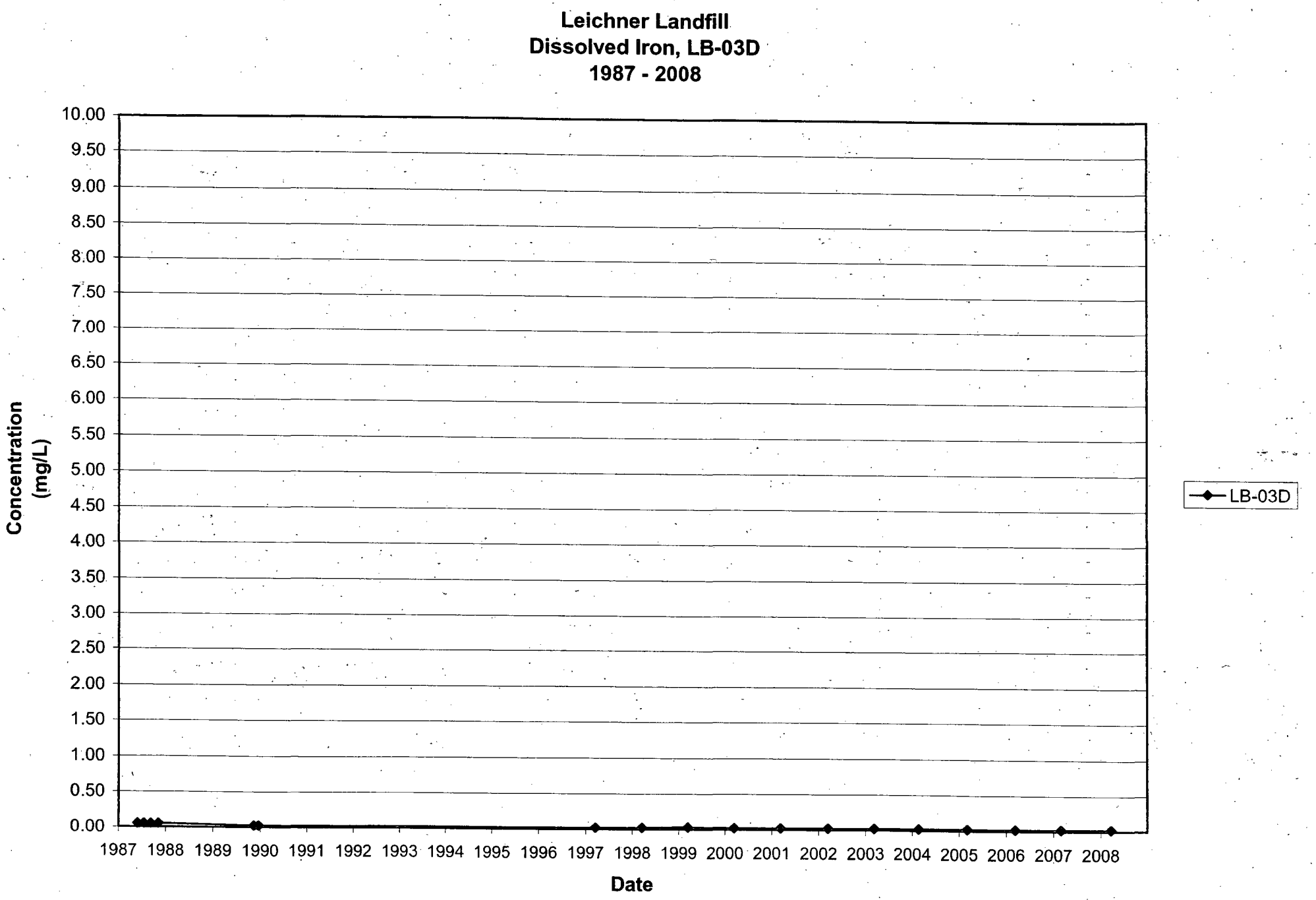
Leichner Landfill
Dissolved Iron, LB-01D
1987 - 2008



TimeTrendData_DissIron.xls, LB-01D

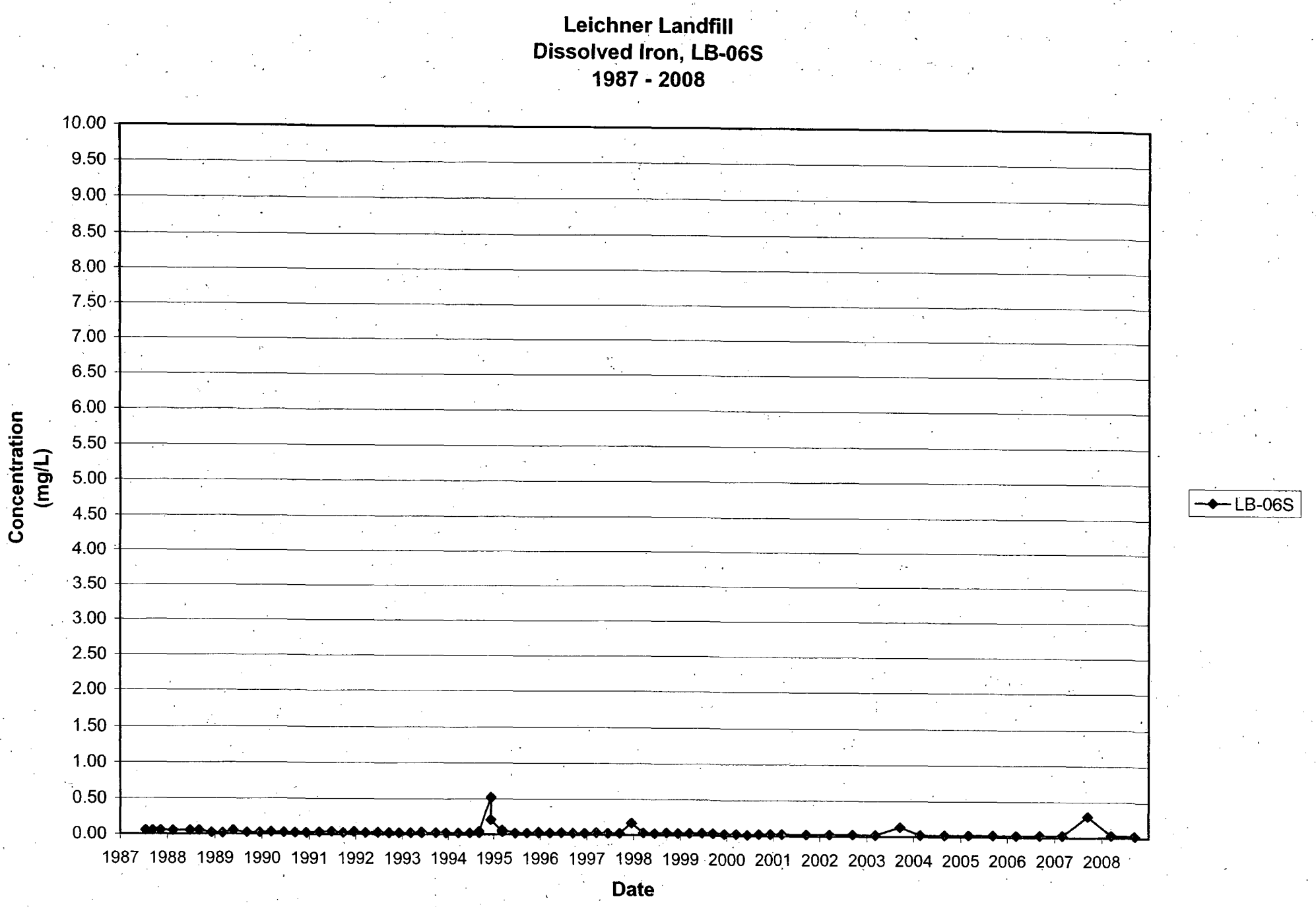
Shaw Environmental, Inc.


Leichner Landfill
Dissolved Iron, LB-03S
1987 - 2008
Concentration (mg/L)
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-03S

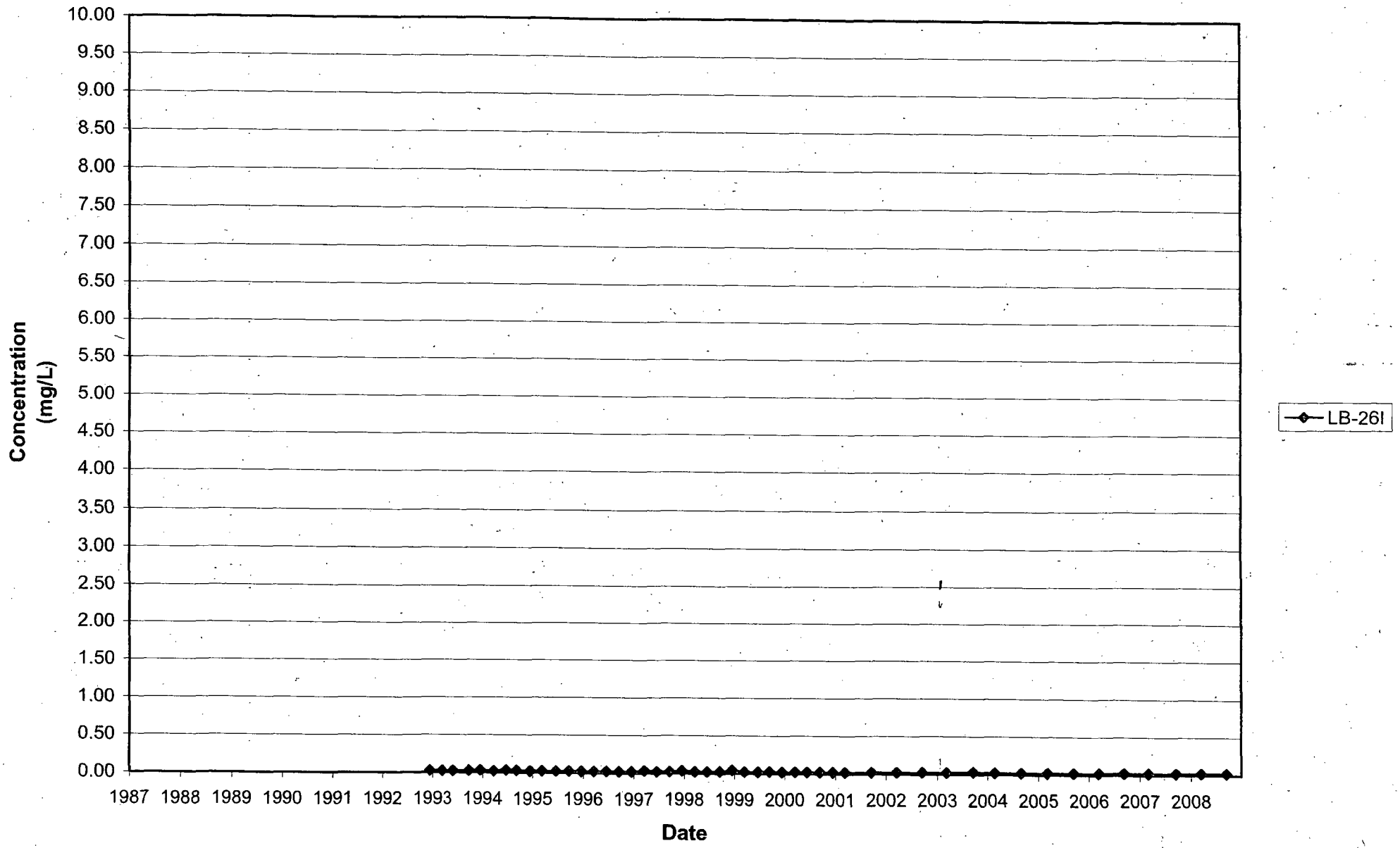


TimeTrendData_DissIron.xls, LB-03D

Shaw Environmental, Inc.

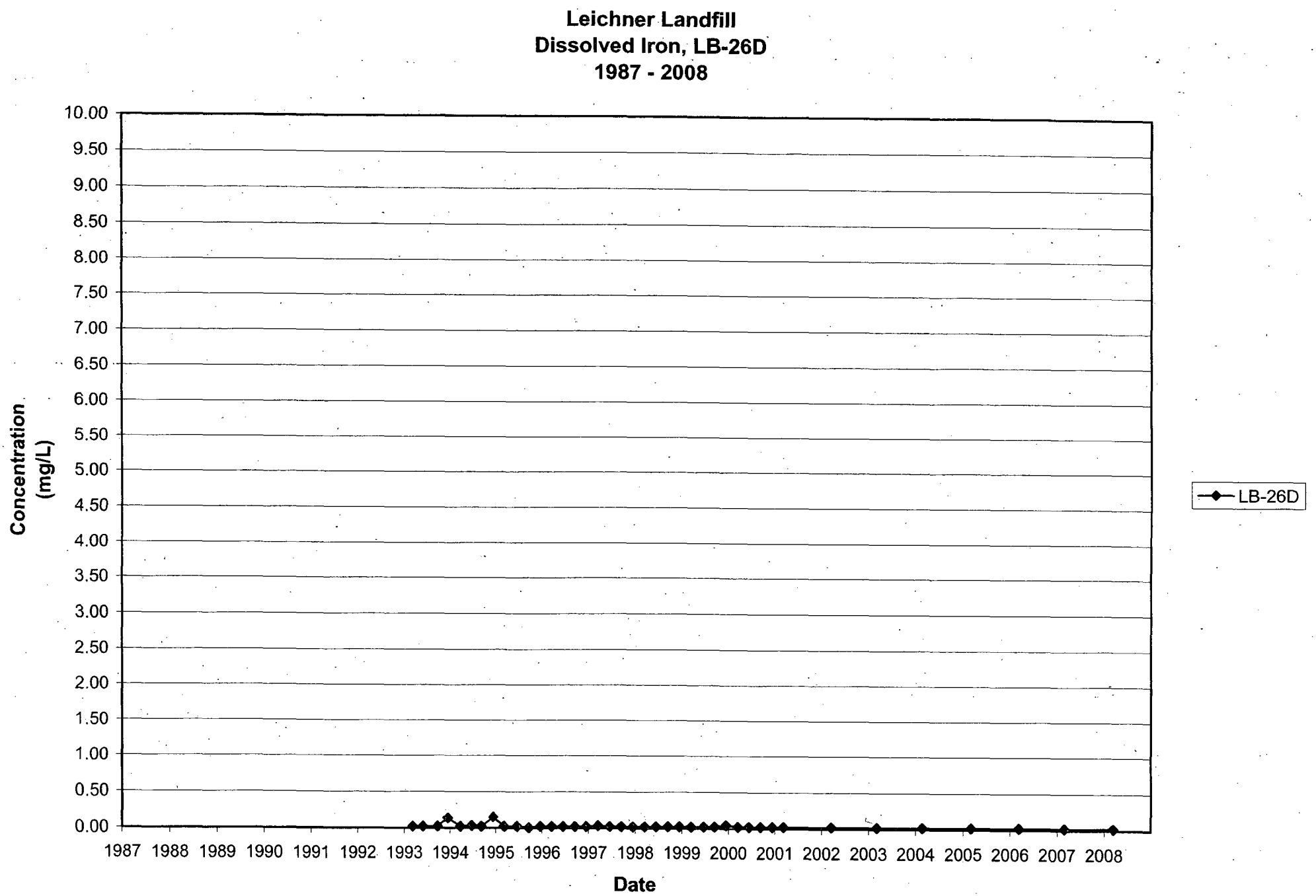

Leichner Landfill
Dissolved Iron, LB-06S
1987 - 2008
Concentration (mg/L)
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-06S

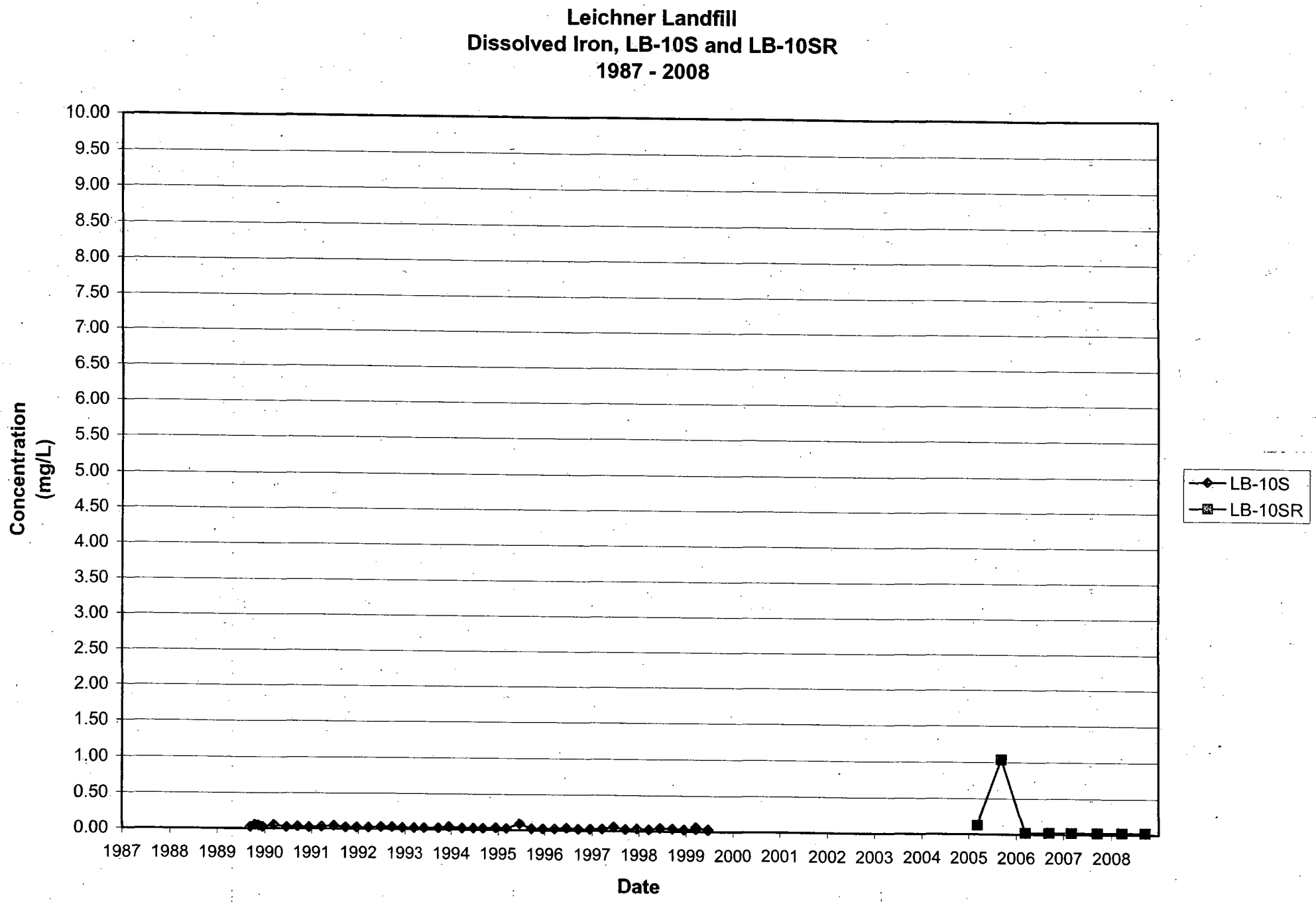
Leichner Landfill
Dissolved Iron, LB-26I
1987 - 2008



TimeTrendData_DissIron.xls, LB-26I

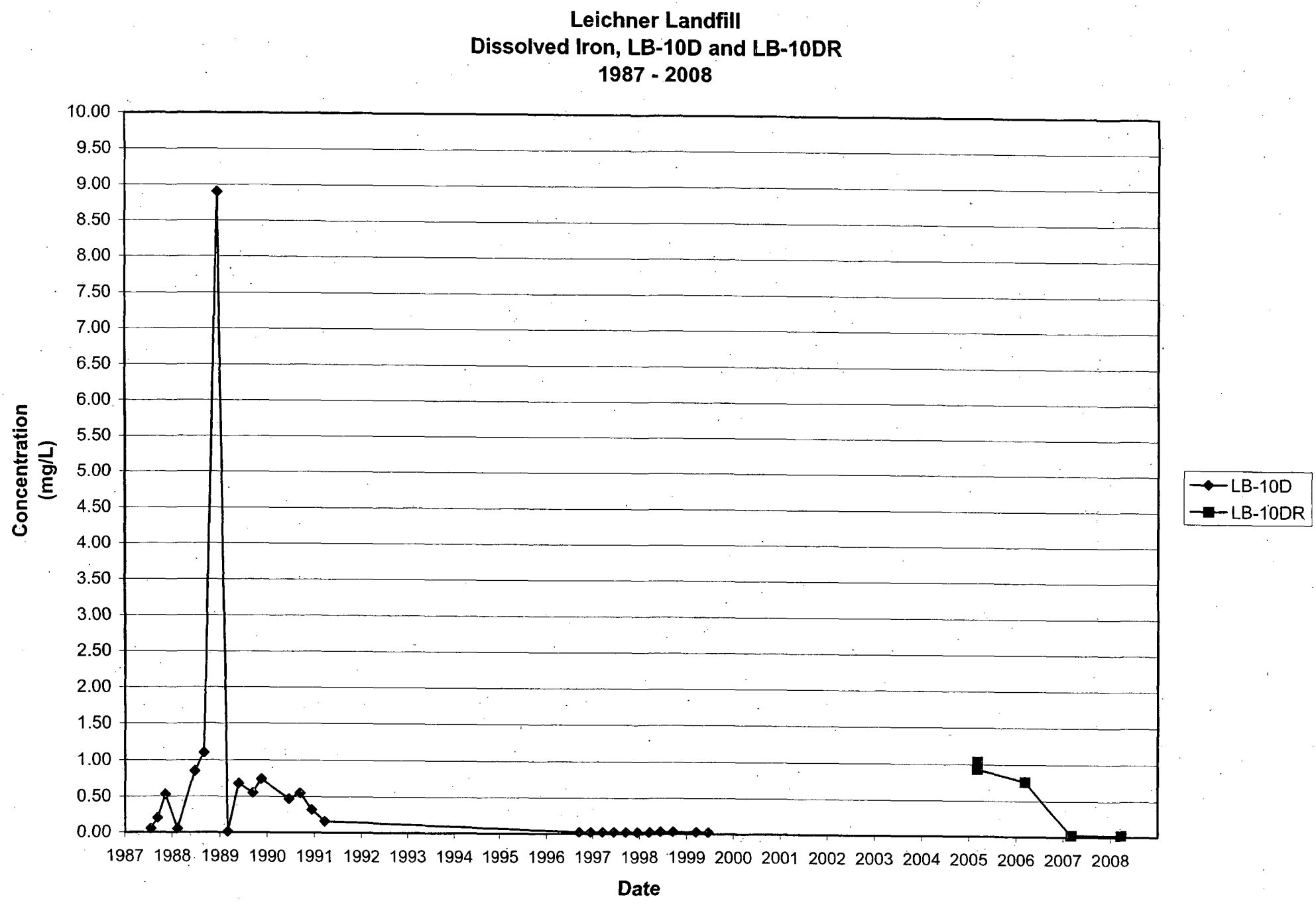
Shaw Environmental, Inc.


Leichner Landfill
Dissolved Iron, LB-26D
1987 - 2008
Concentration (mg/L)
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-26D

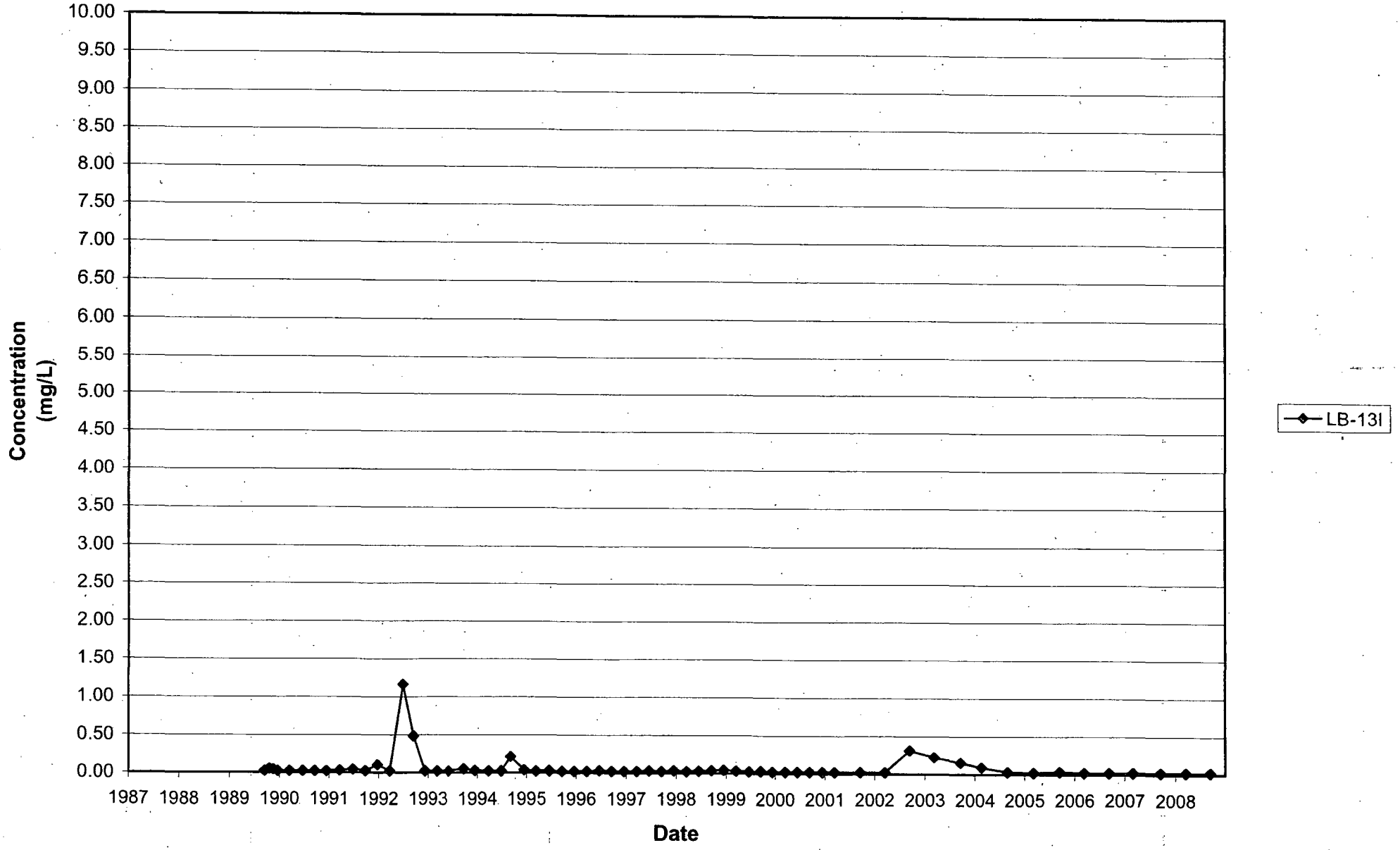


TimeTrendData_DissIron.xls, LB-10S and LB-10SR

Shaw Environmental, Inc.


Leichner Landfill
Dissolved Iron, LB-10D and LB-10DR
1987 - 2008
Concentration (mg/L)
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-10D
LB-10DR

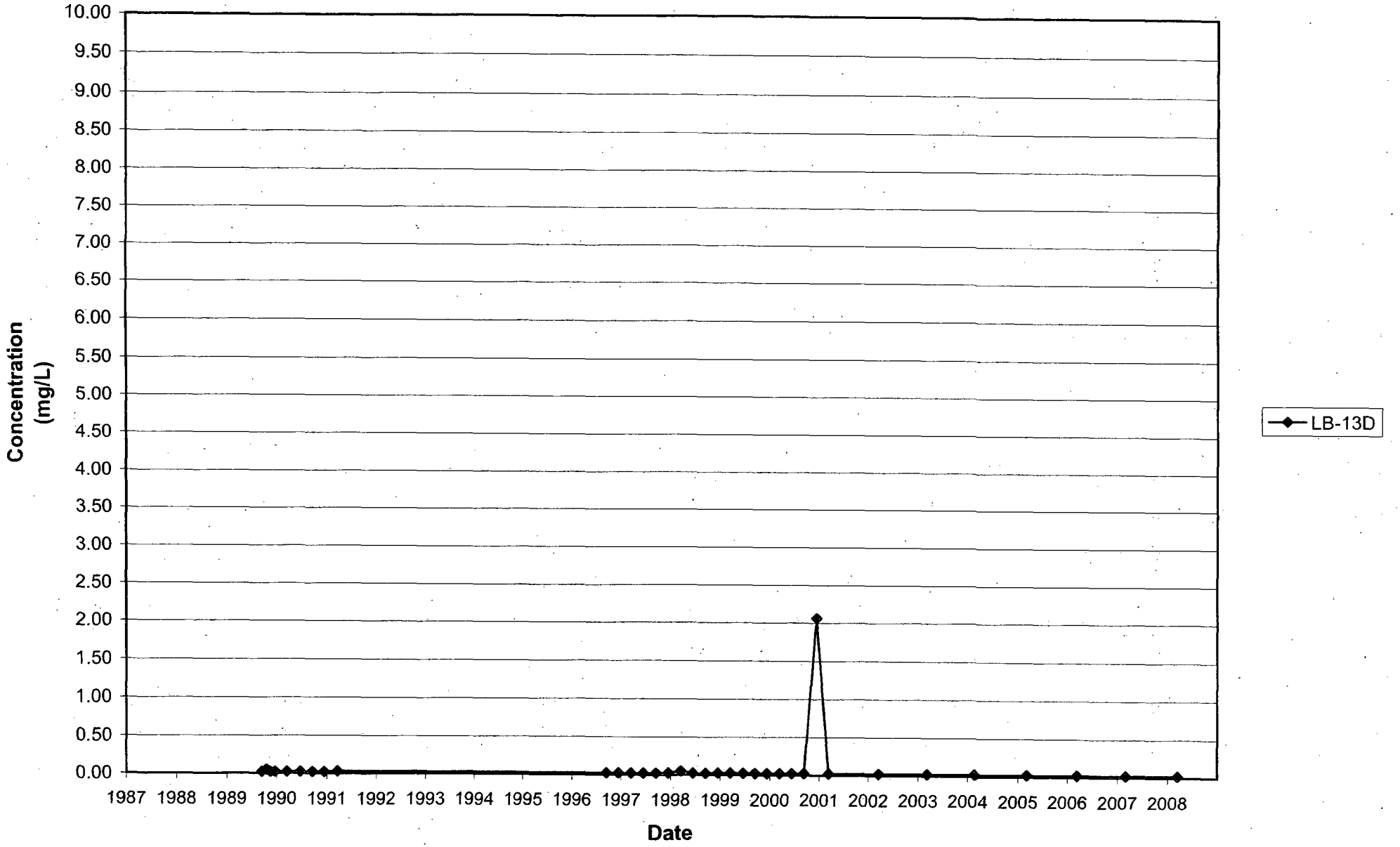
Leichner Landfill
Dissolved Iron, LB-13I
1987 - 2008

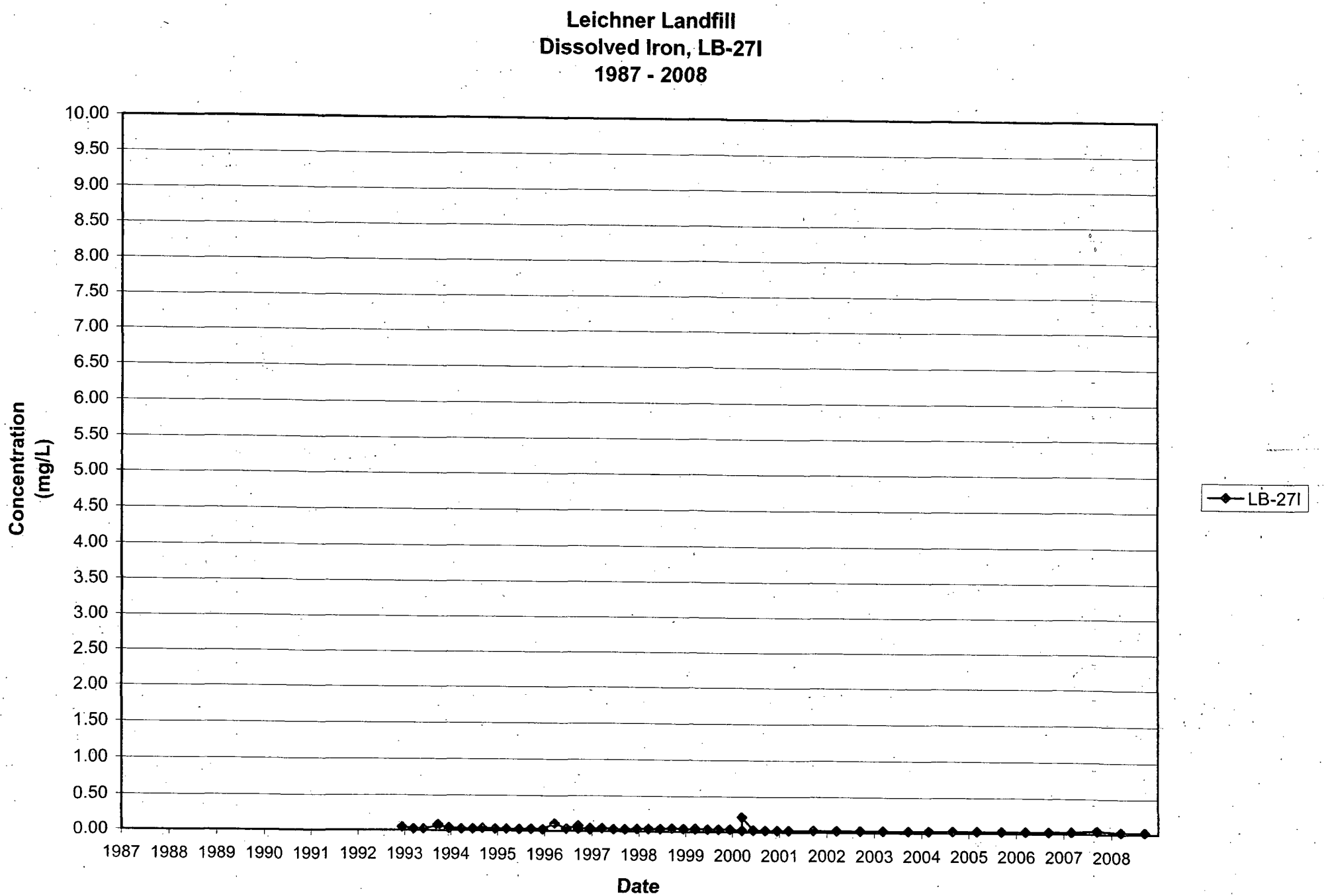


TimeTrendData_DissIron.xls, LB-13I

Shaw Environmental, Inc.

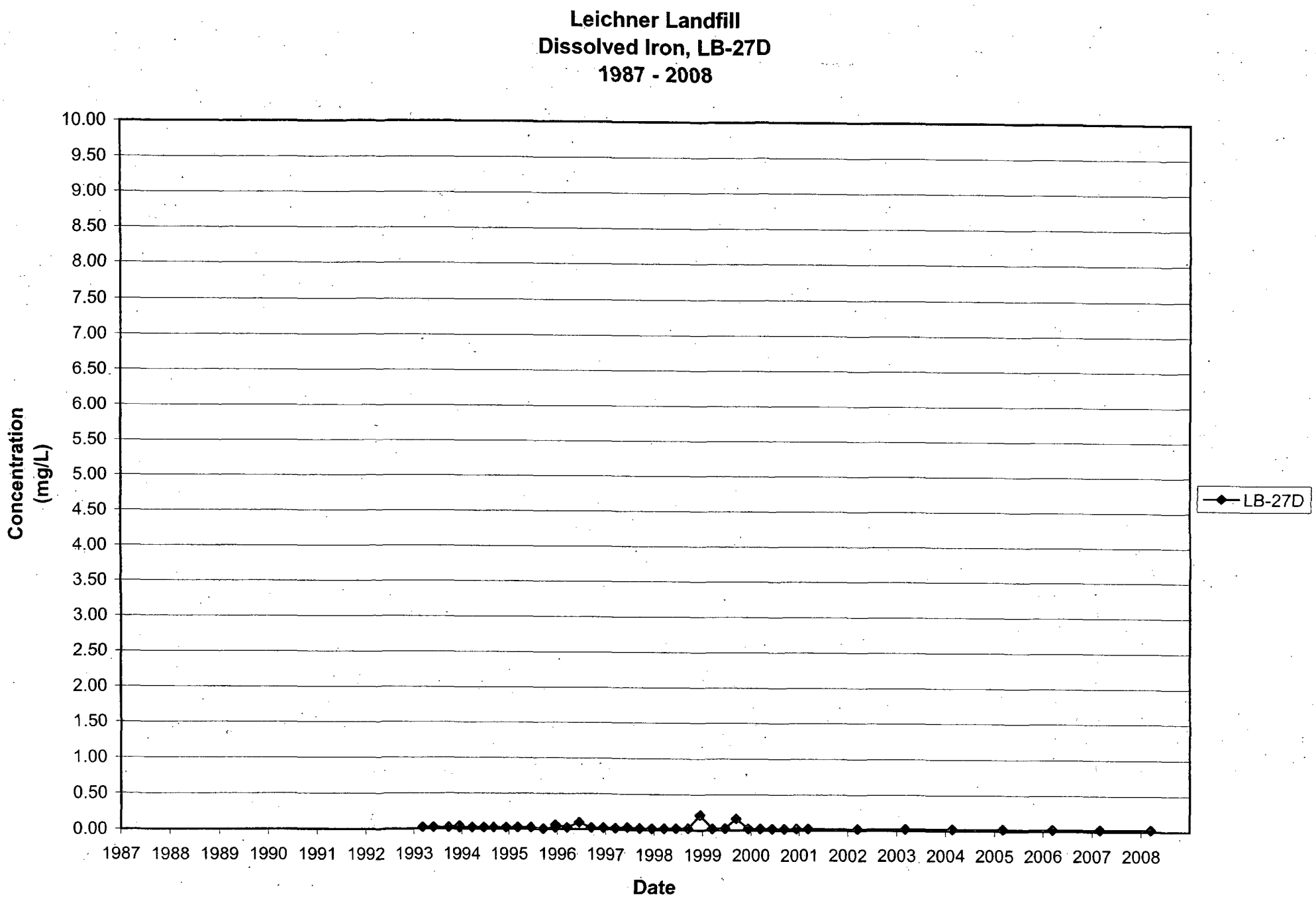
Leichner Landfill
Dissolved Iron, LB-13D
1987 - 2008



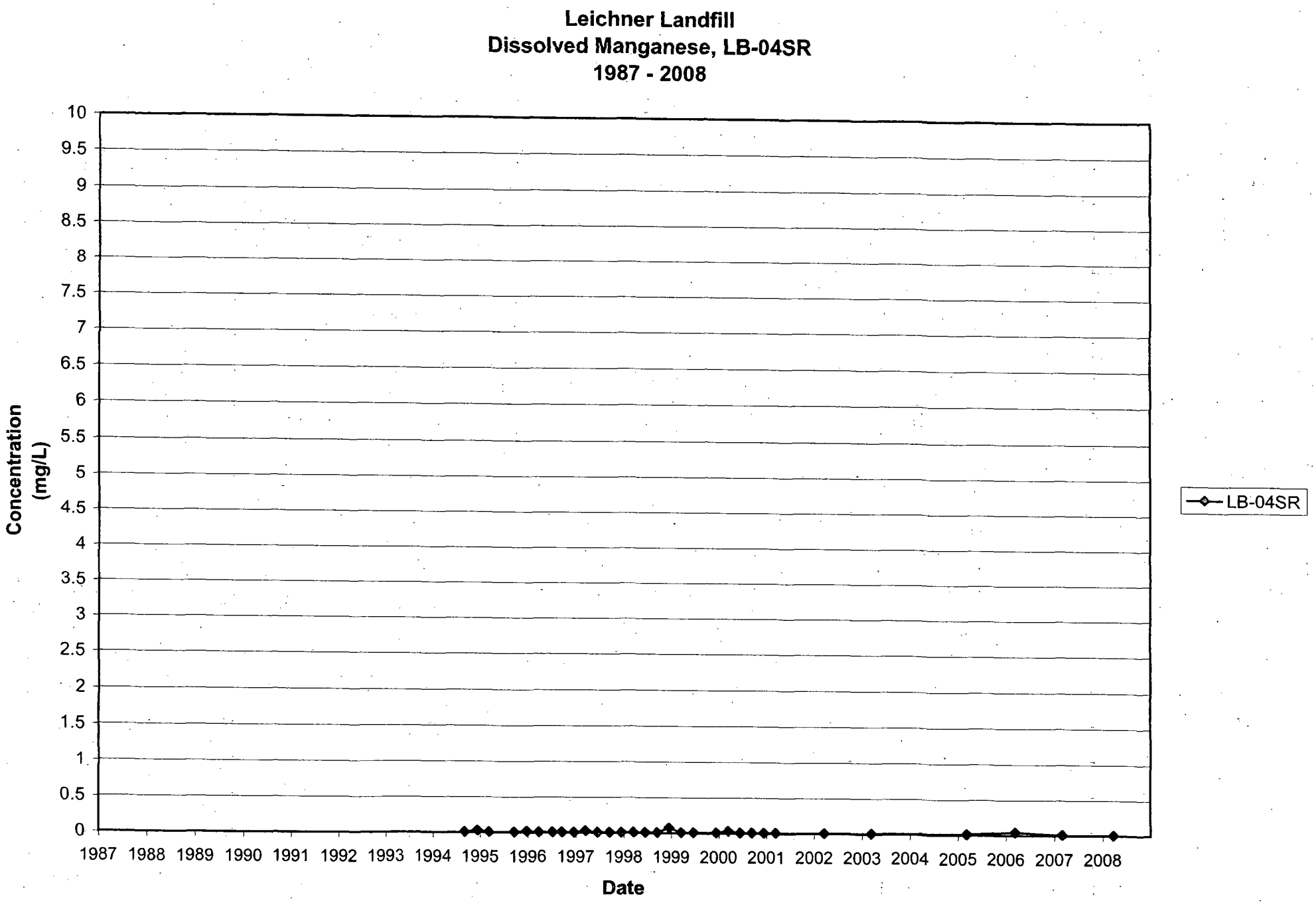


TimeTrendData_DissIron.xls, LB-27I

Shaw Environmental, Inc.

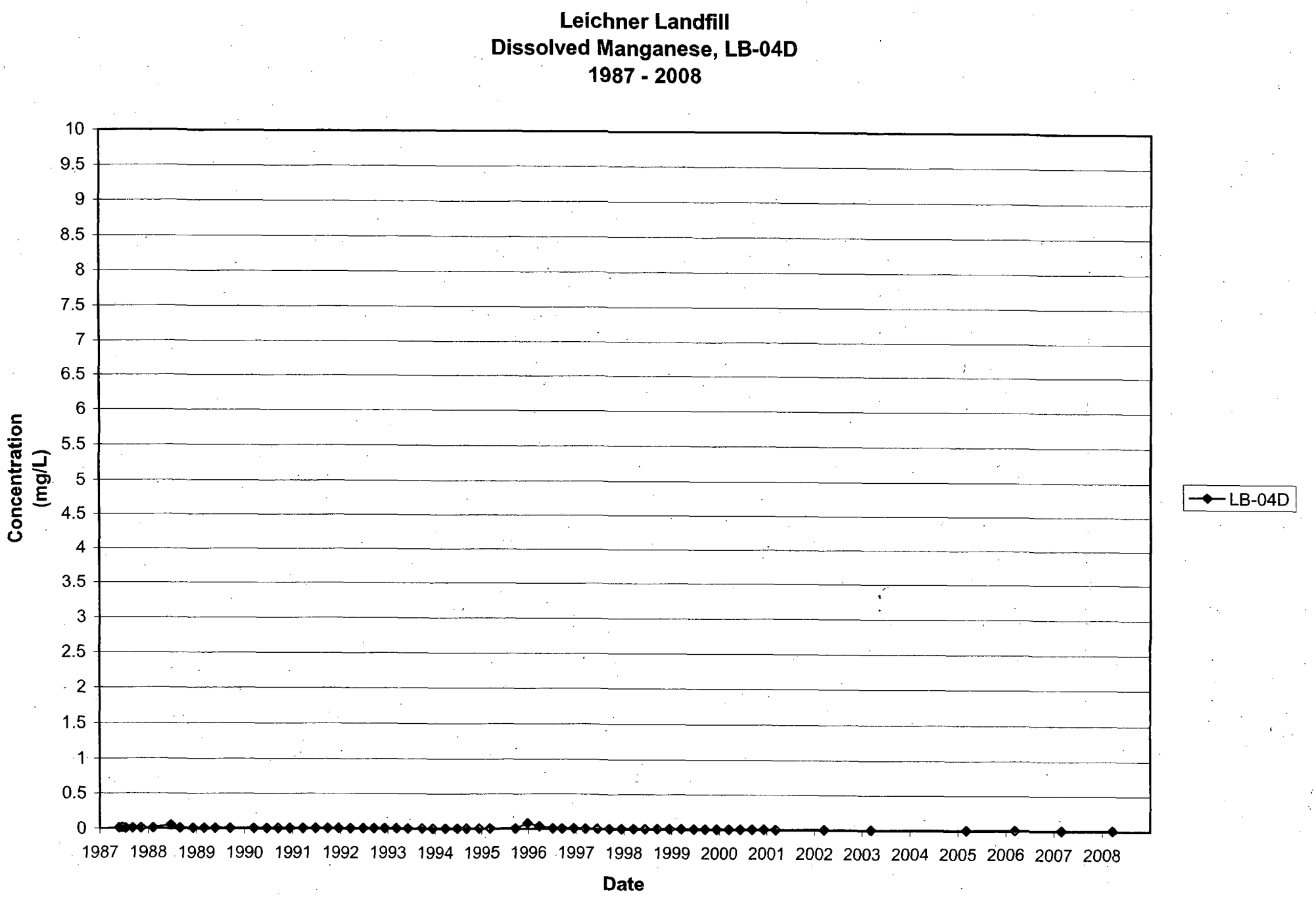

Leichner Landfill
Dissolved Iron, LB-27D
1987 - 2008
Concentration (mg/L)
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-27D

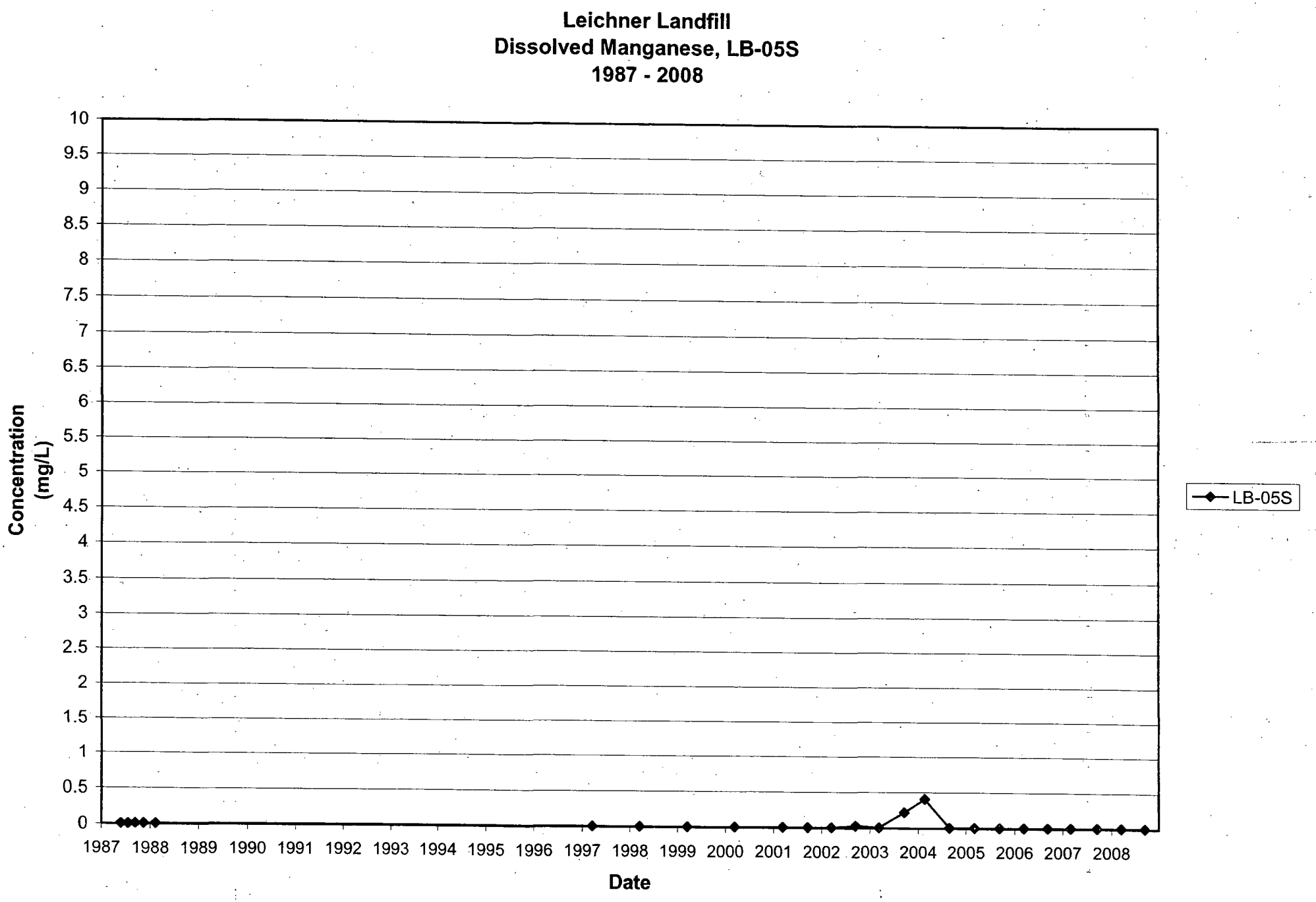
Dissolved Manganese



TimeTrendData_DissManganese.xls, LB-04SR

Shaw Environmental, Inc.

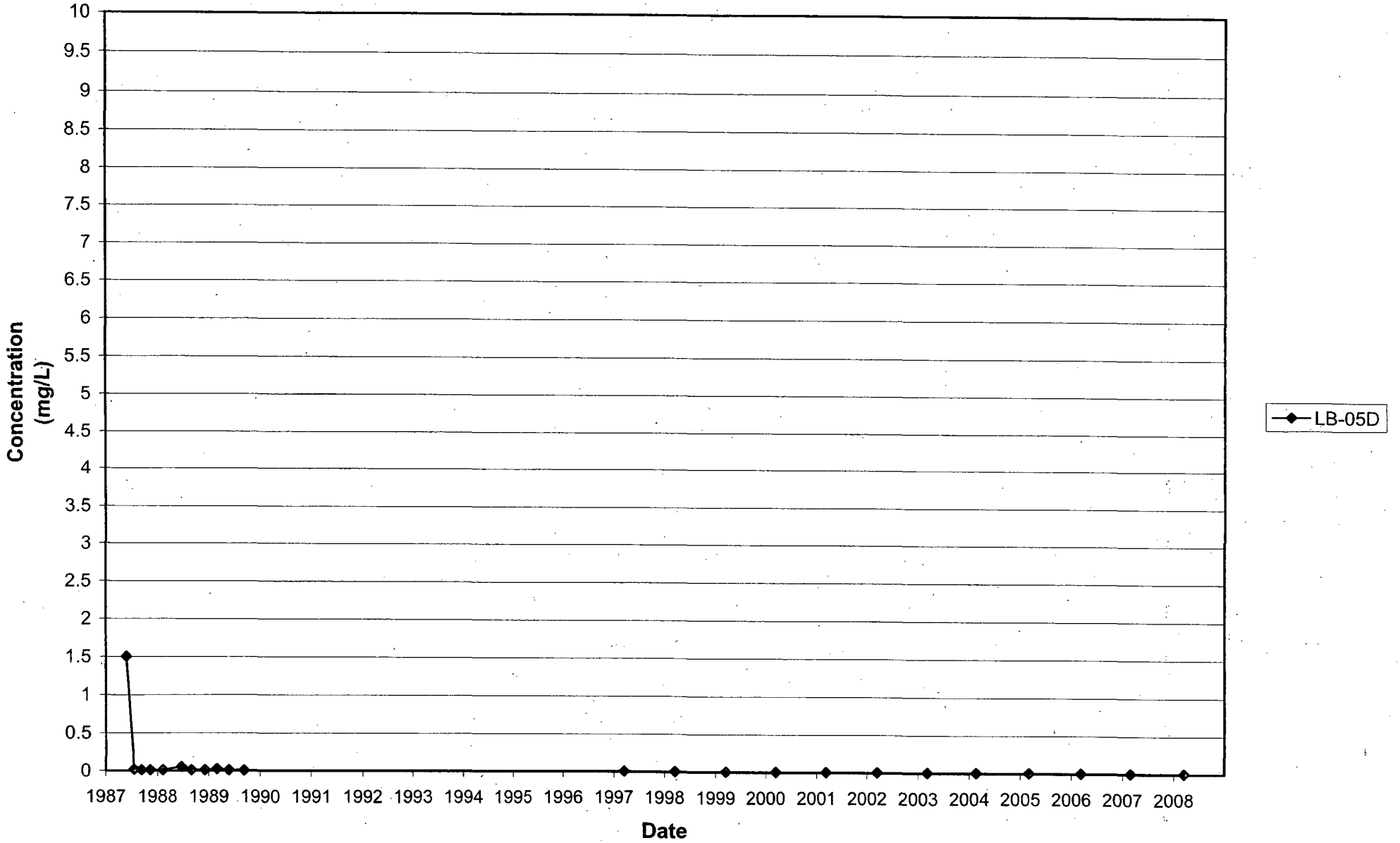

Leichner Landfill
Dissolved Manganese, LB-04D
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-04D

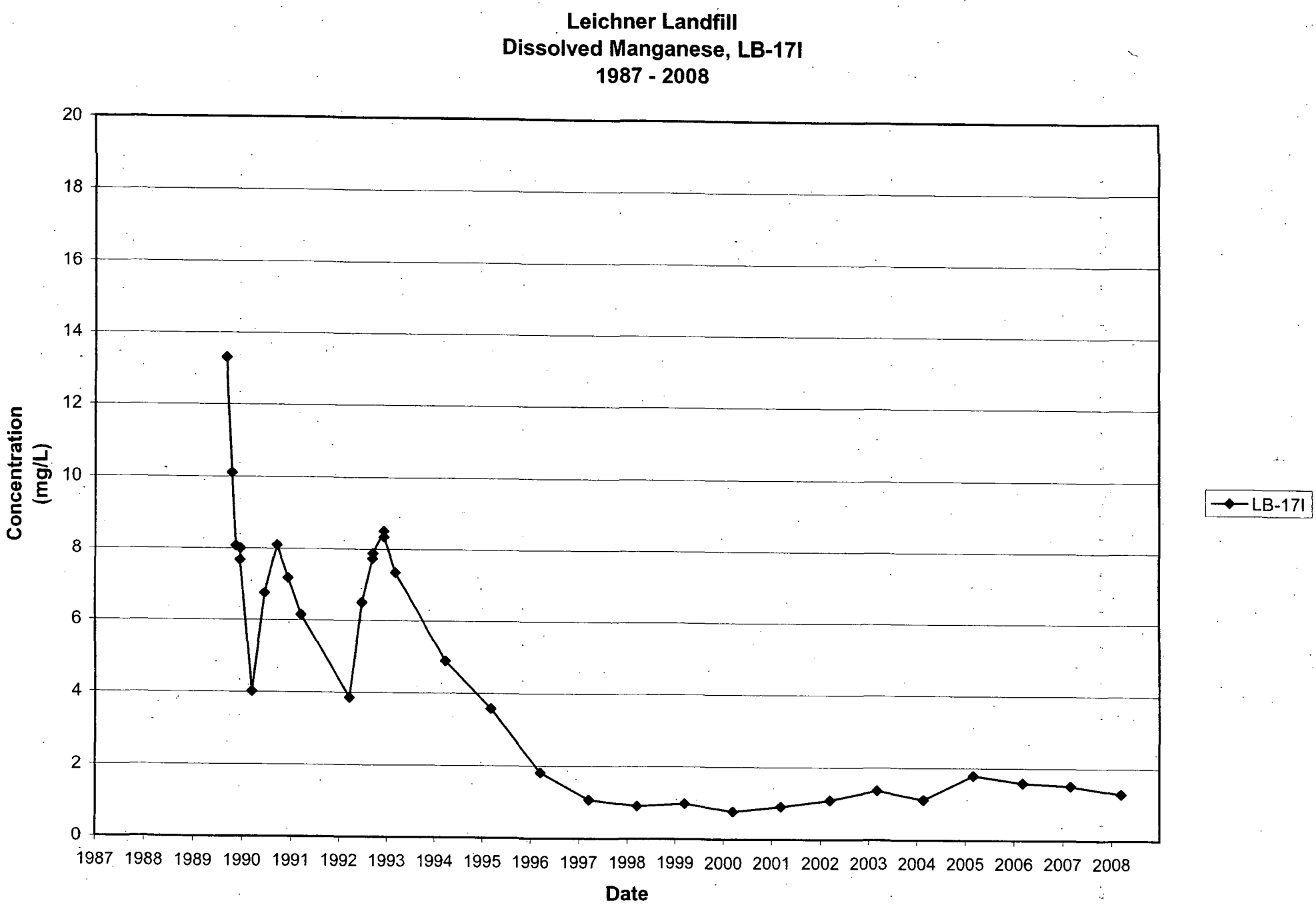


TimeTrendData_DissManganese.xls, LB-05S

Shaw Environmental, Inc.

Leichner Landfill
Dissolved Manganese, LB-05D
1987 - 2008

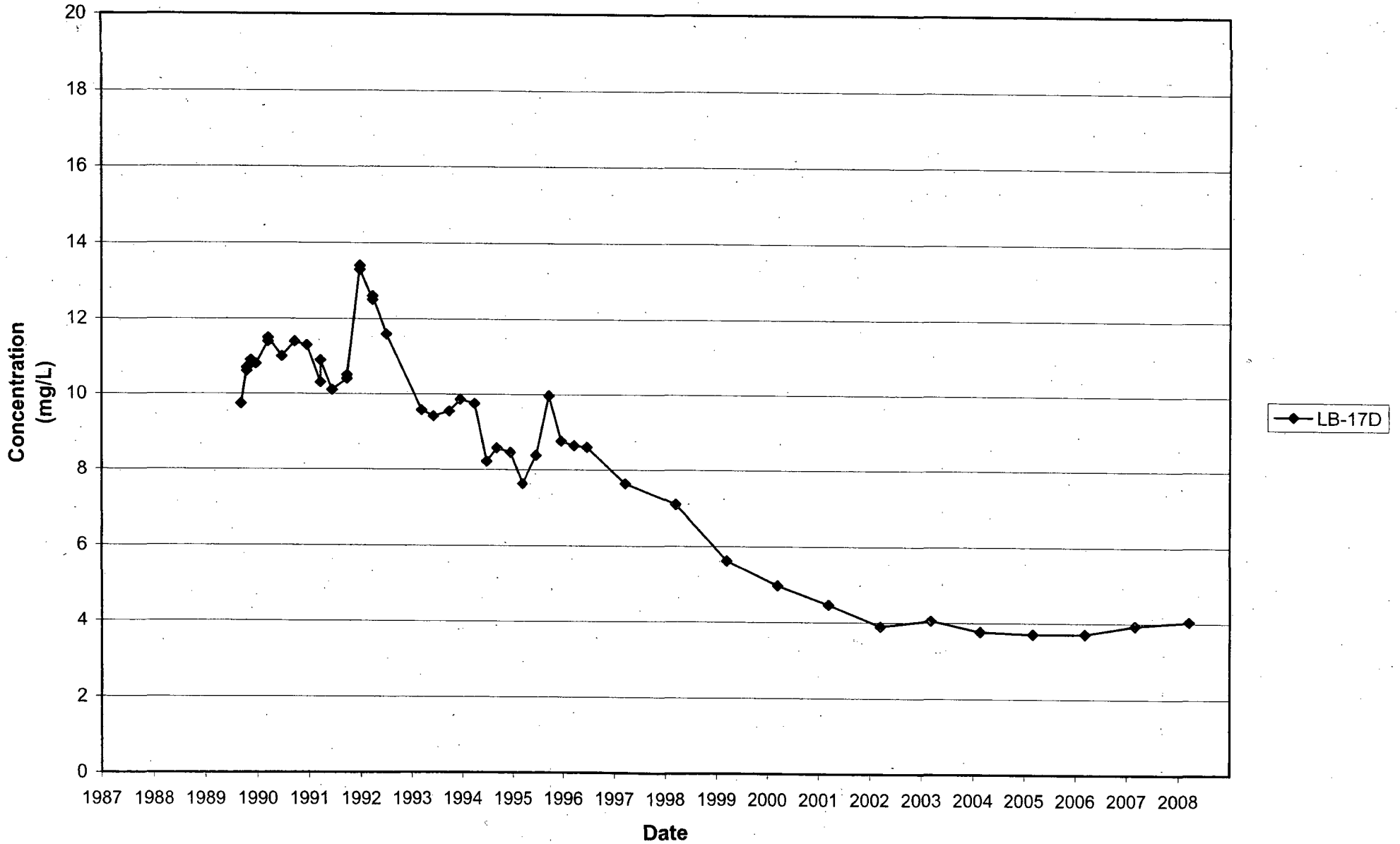


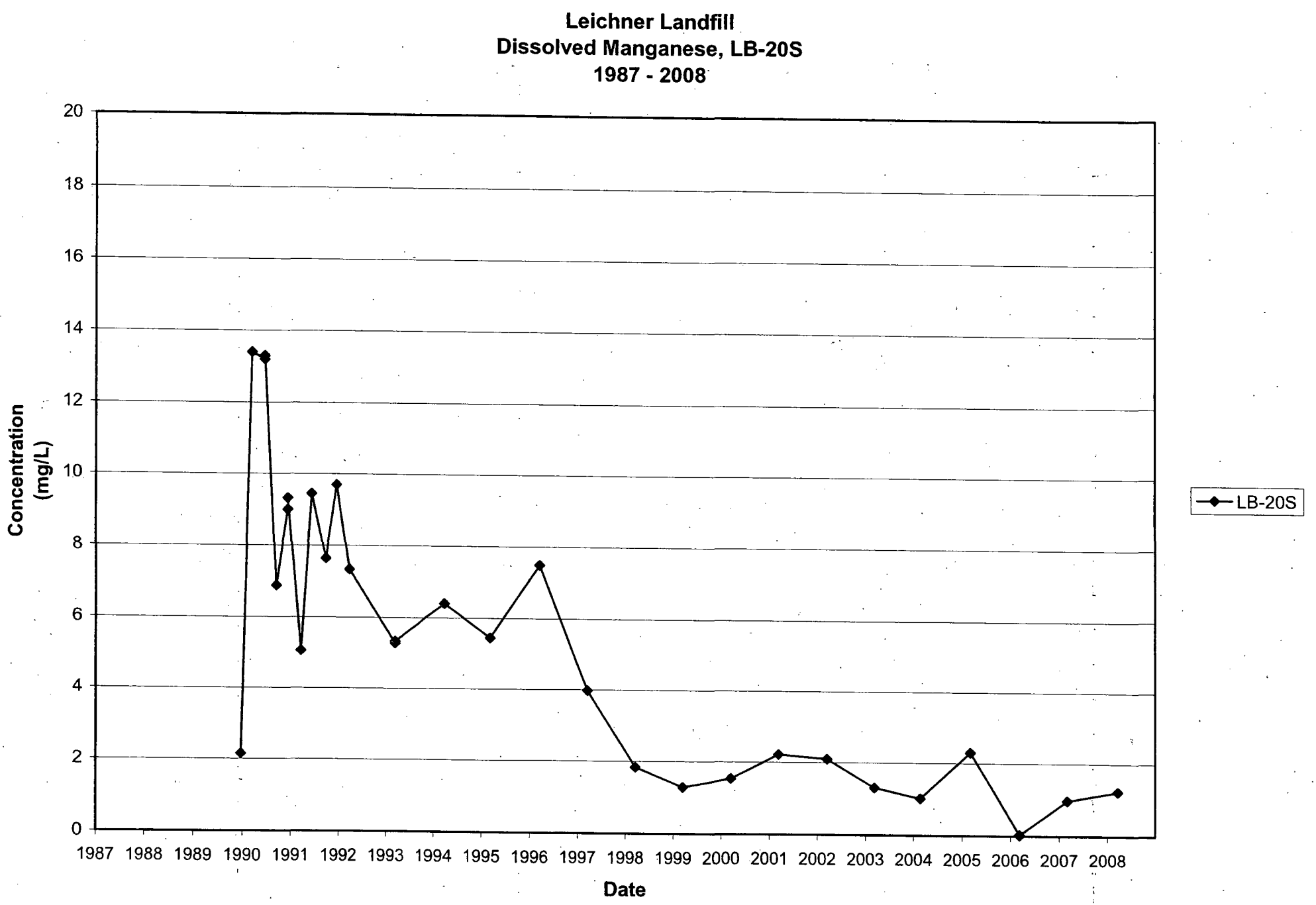


TimeTrendData_DissManganese.xls, LB-17I

Shaw Environmental, Inc.

Leichner Landfill
Dissolved Manganese, LB-17D
1987 - 2008

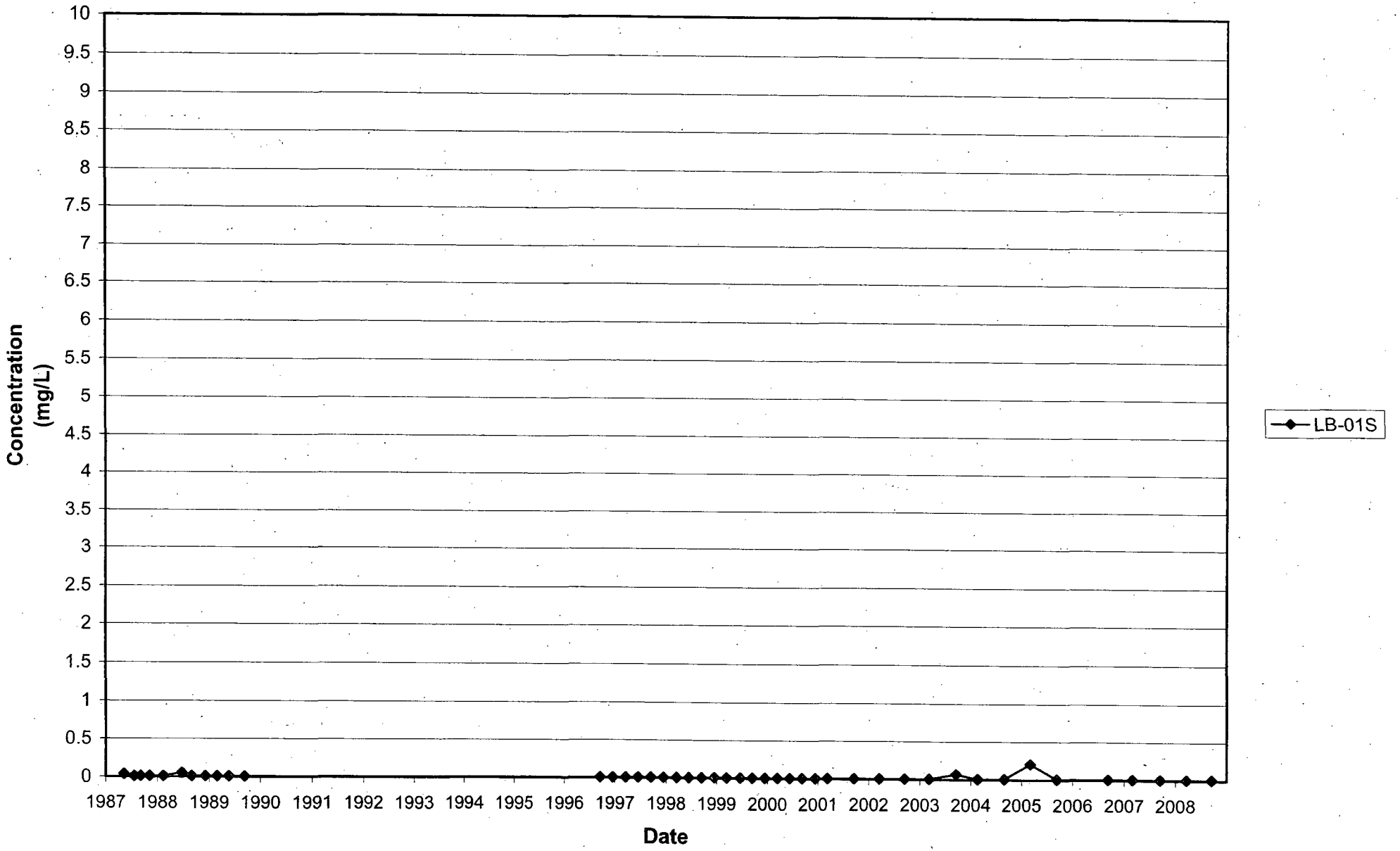


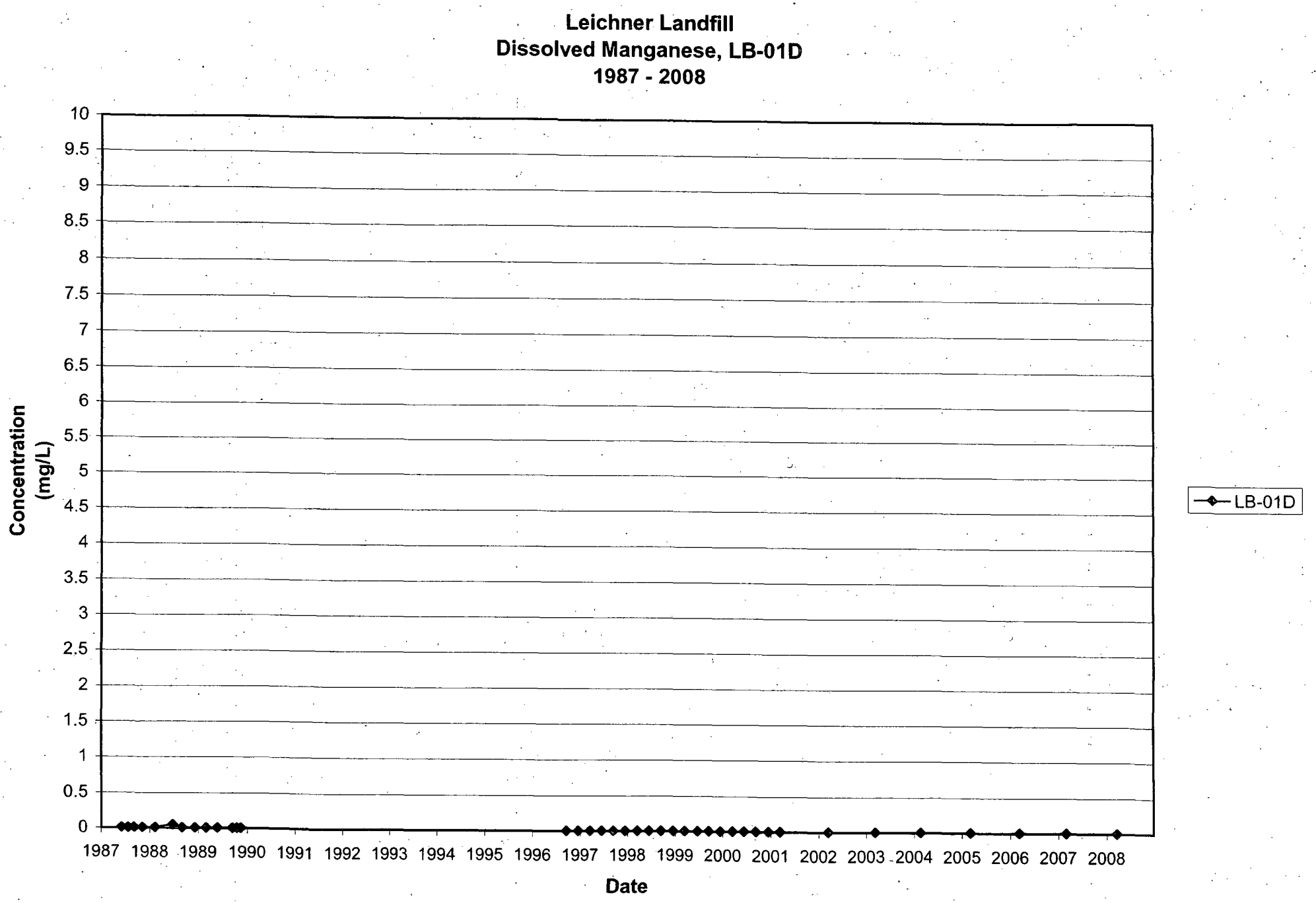


TimeTrendData_DissManganese.xls, LB-20S

Shaw Environmental, Inc.

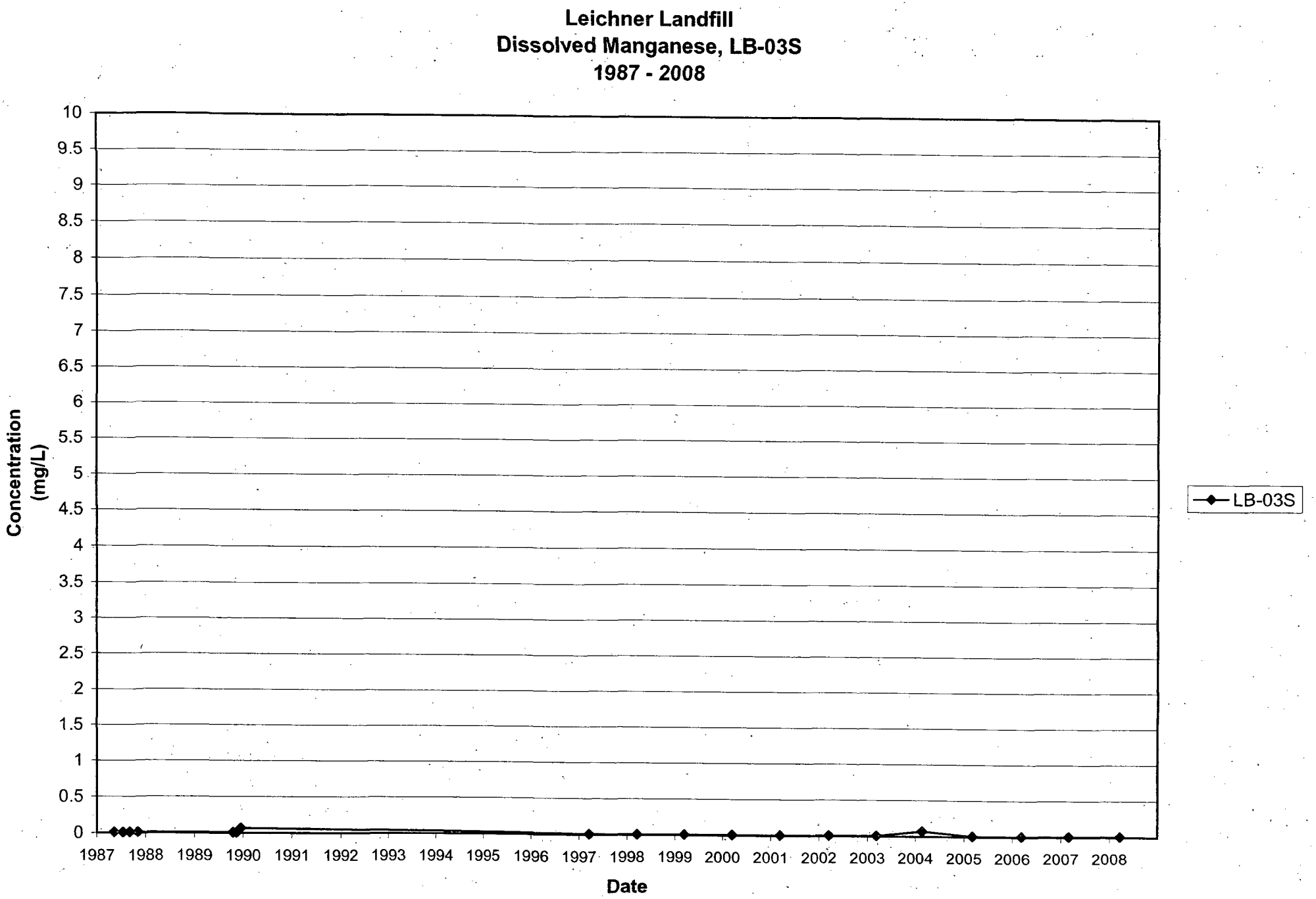
Leichner Landfill
Dissolved Manganese, LB-01S
1987 - 2008

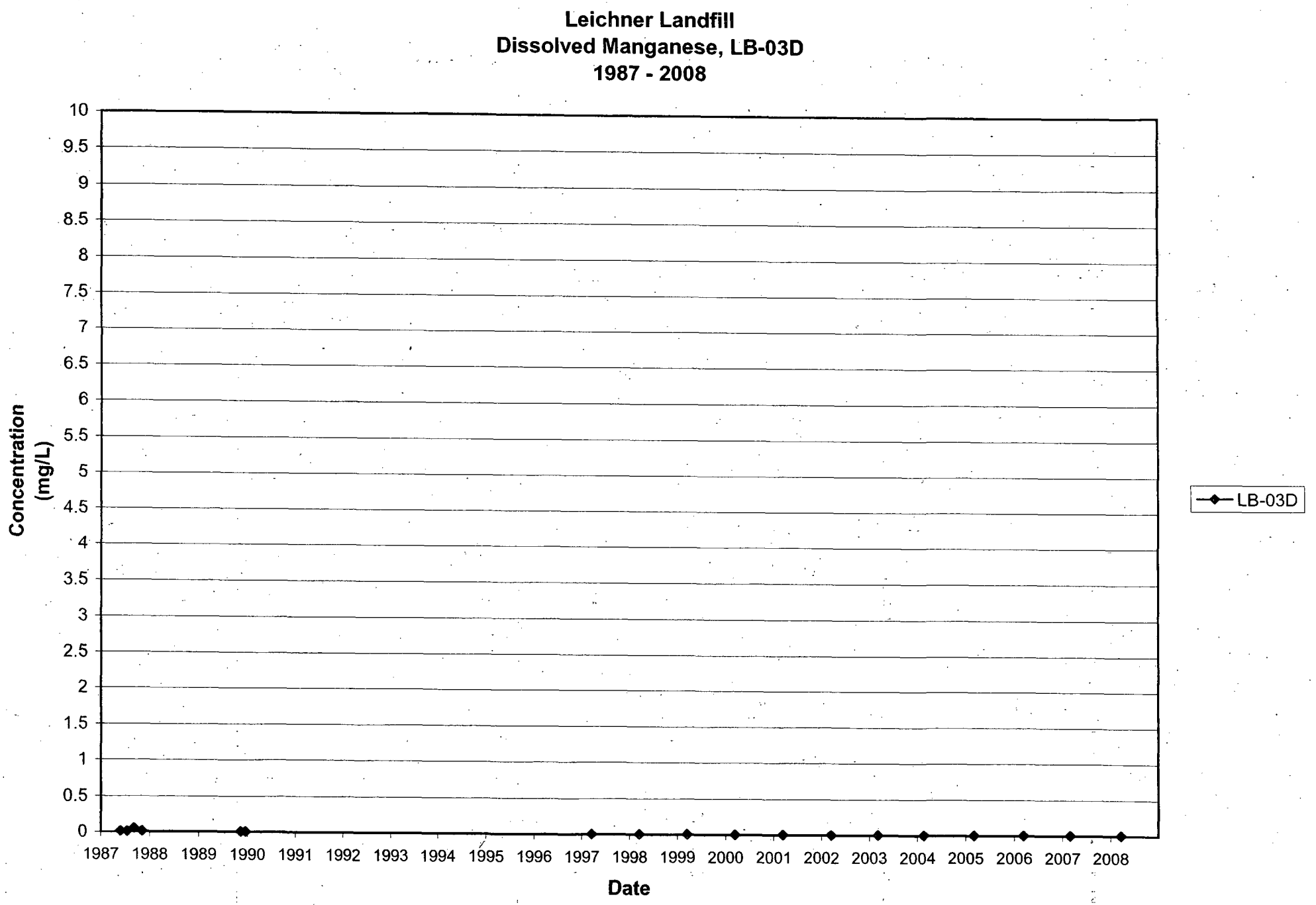




TimeTrendData_DissManganese.xls, LB-01D

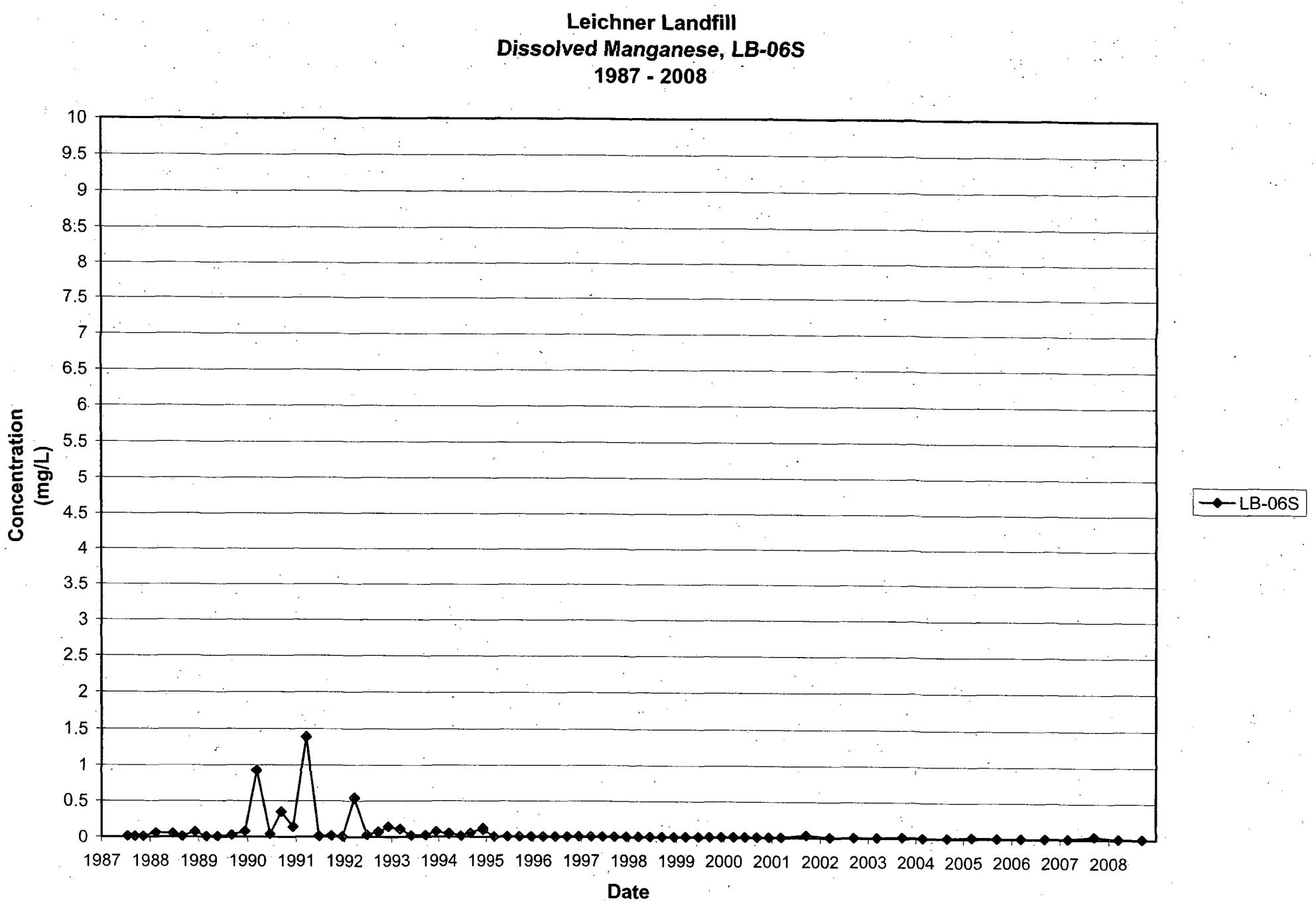
Shaw Environmental, Inc.


Leichner Landfill
Dissolved Manganese, LB-03S
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-03S

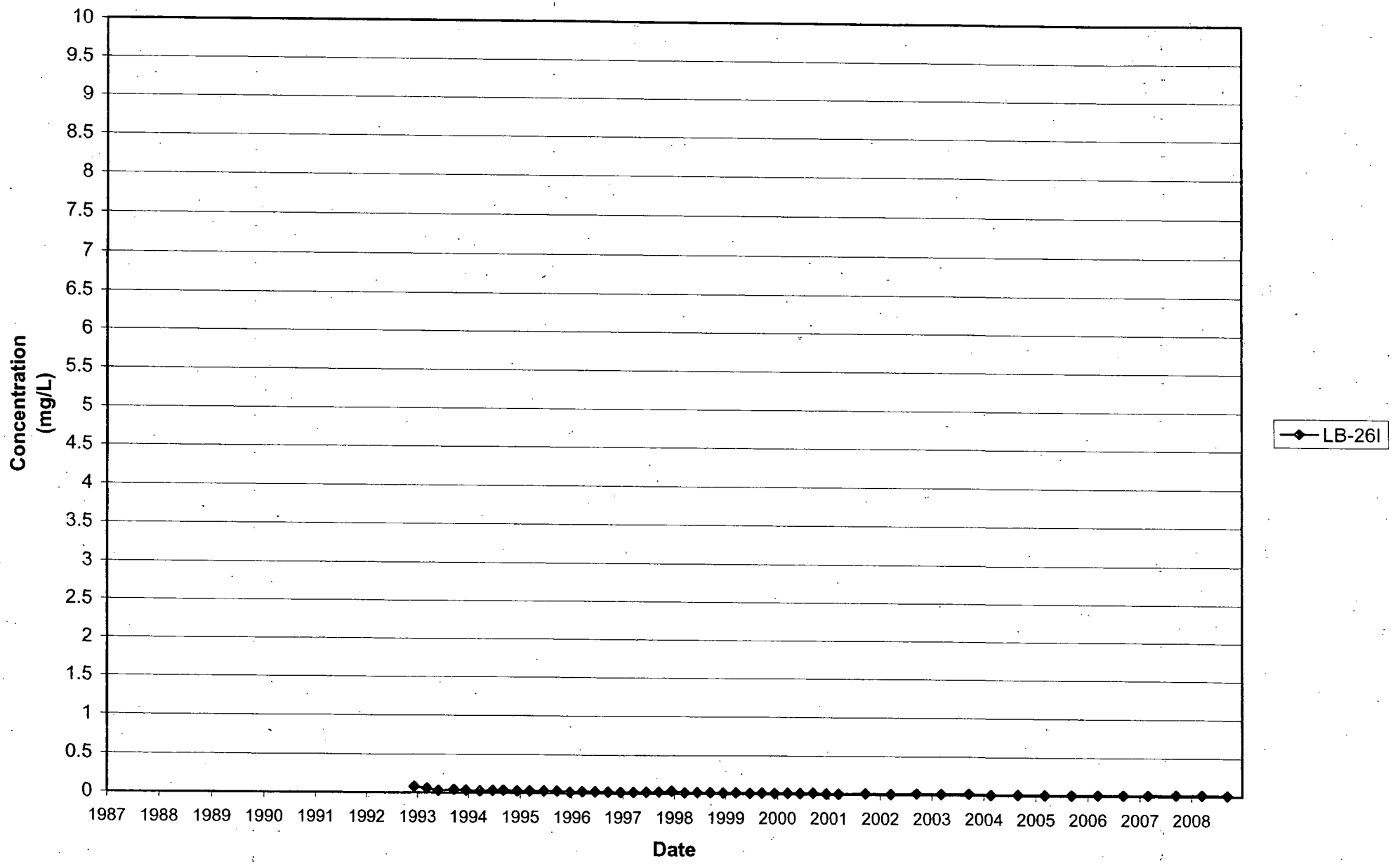


TimeTrendData_DissManganese.xls, LB-03D

Shaw Environmental, Inc.

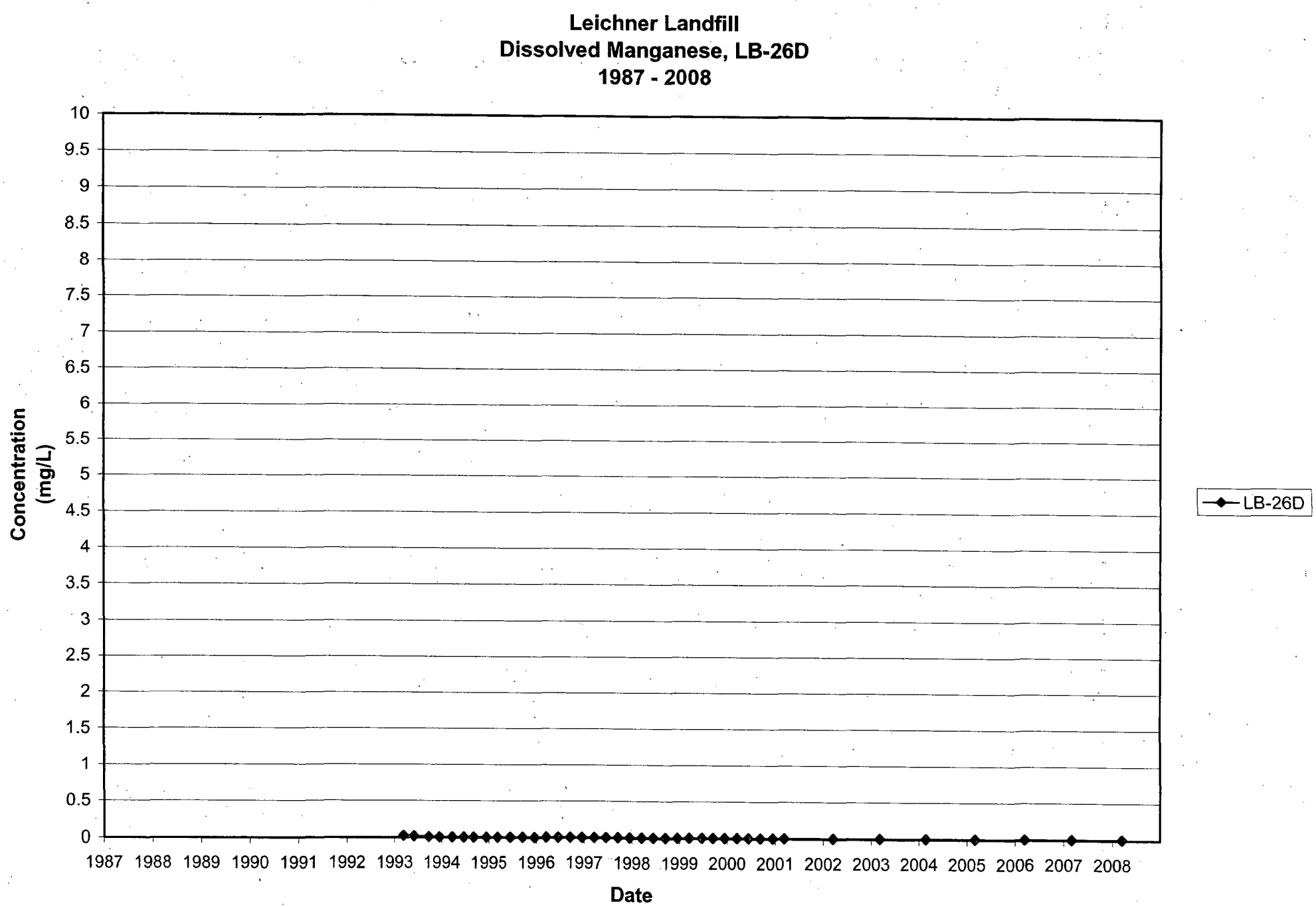

Leichner Landfill
Dissolved Manganese, LB-06S
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-06S

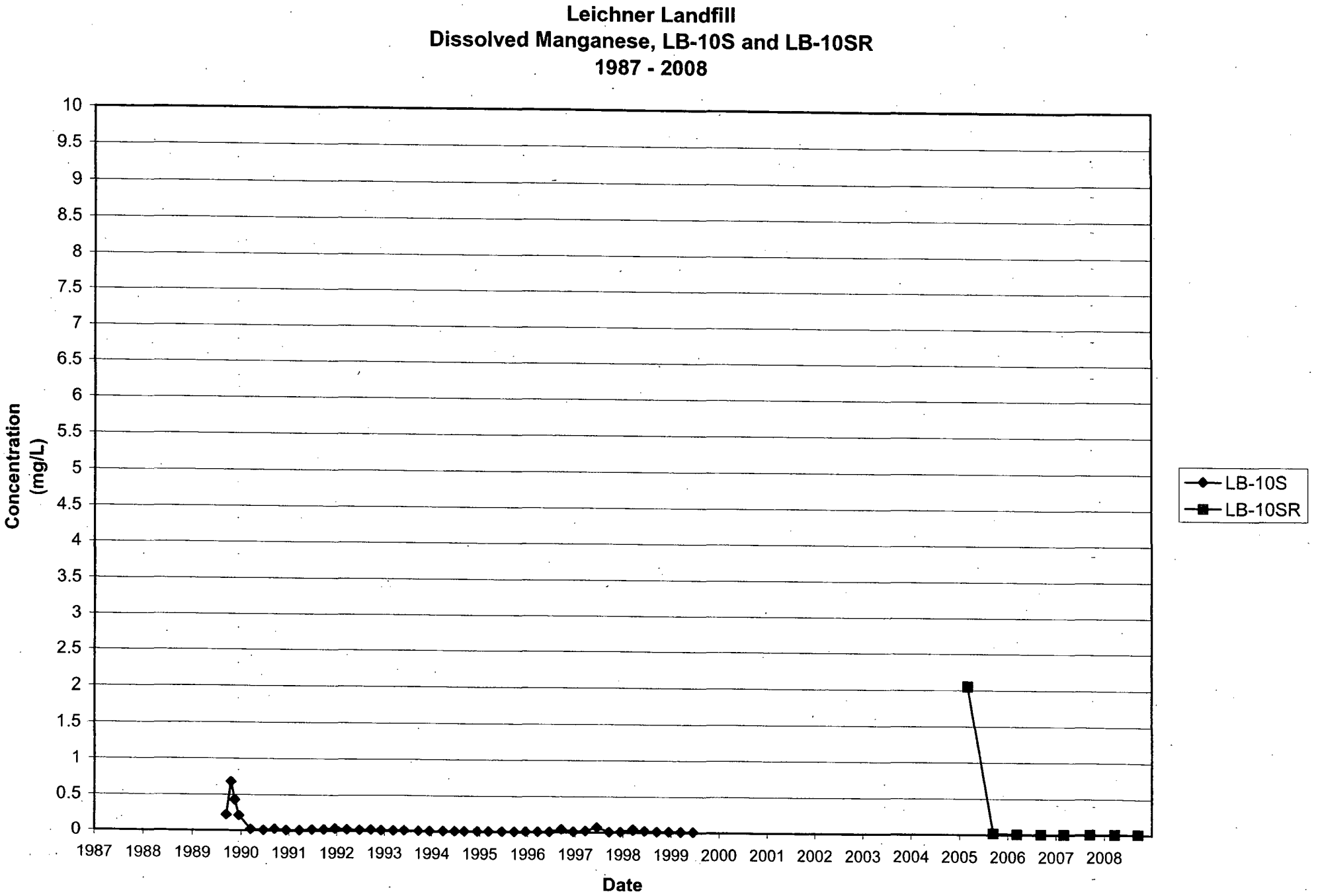
Leichner Landfill
Dissolved Manganese, LB-26I
1987 - 2008



TimeTrendData_DissManganese.xls, LB-26I

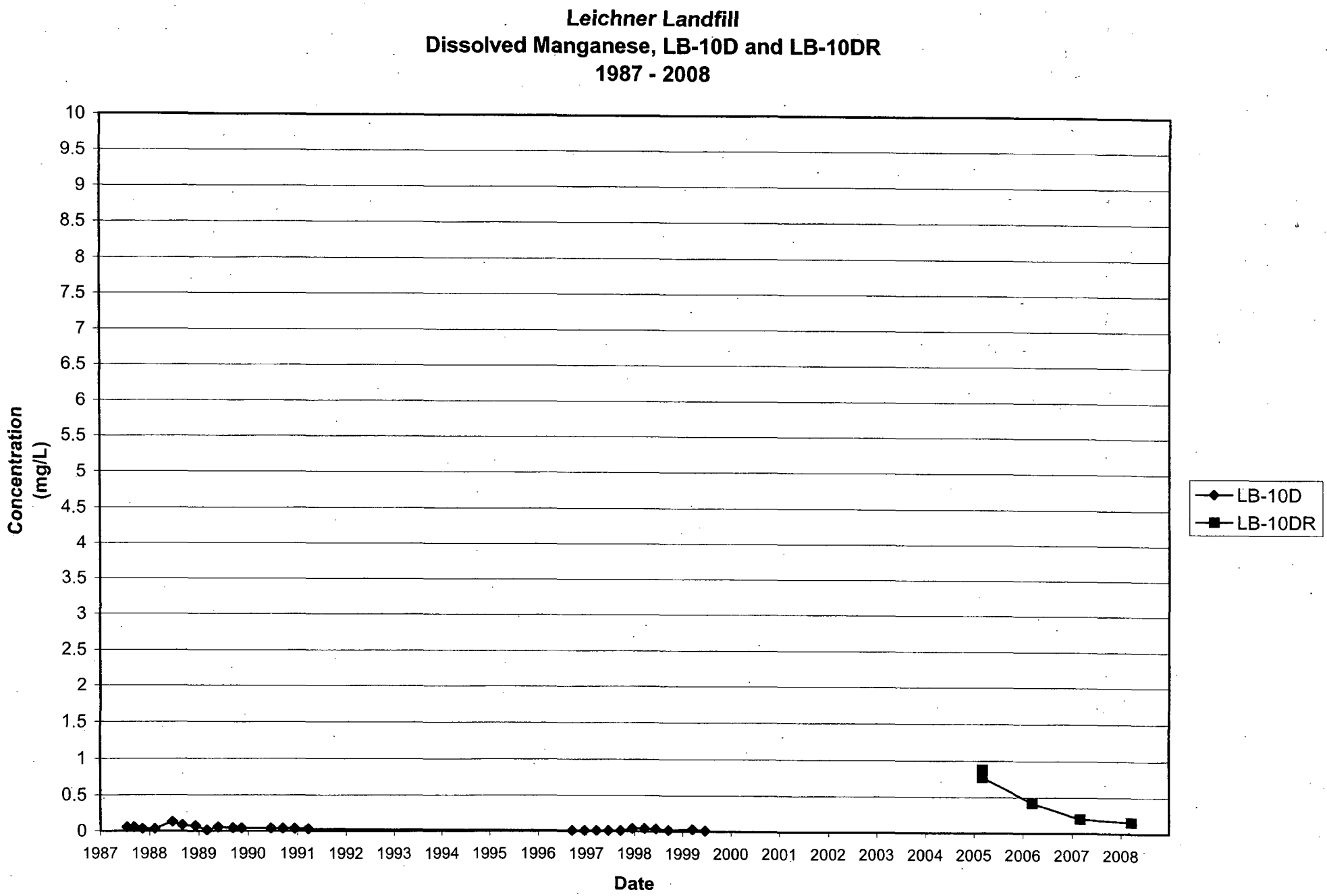
Shaw Environmental, Inc.


Leichner Landfill
Dissolved Manganese, LB-26D
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-26D

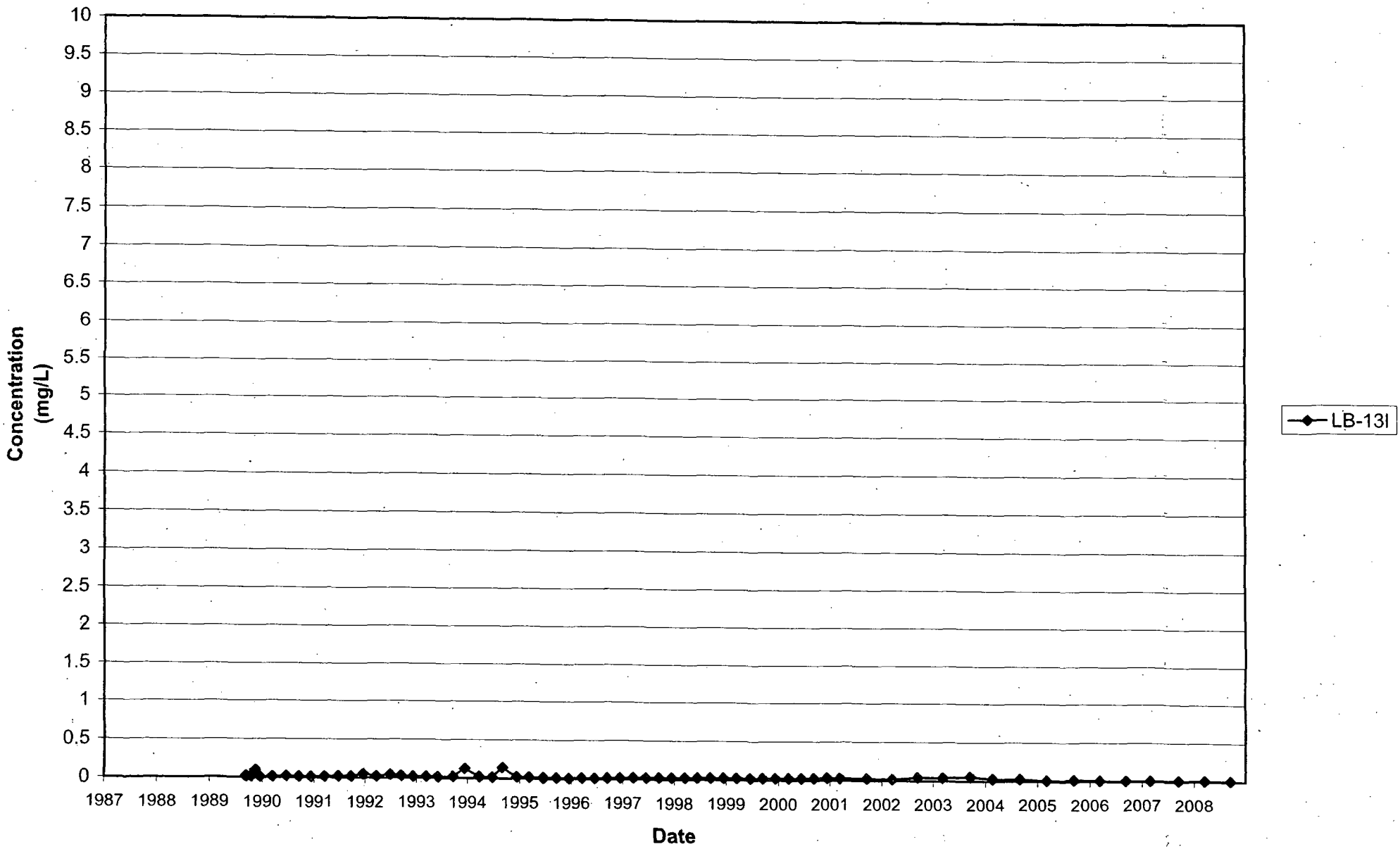


TimeTrendData_DissManganese.xls, LB-10S and LB-10SR

Shaw Environmental, Inc.

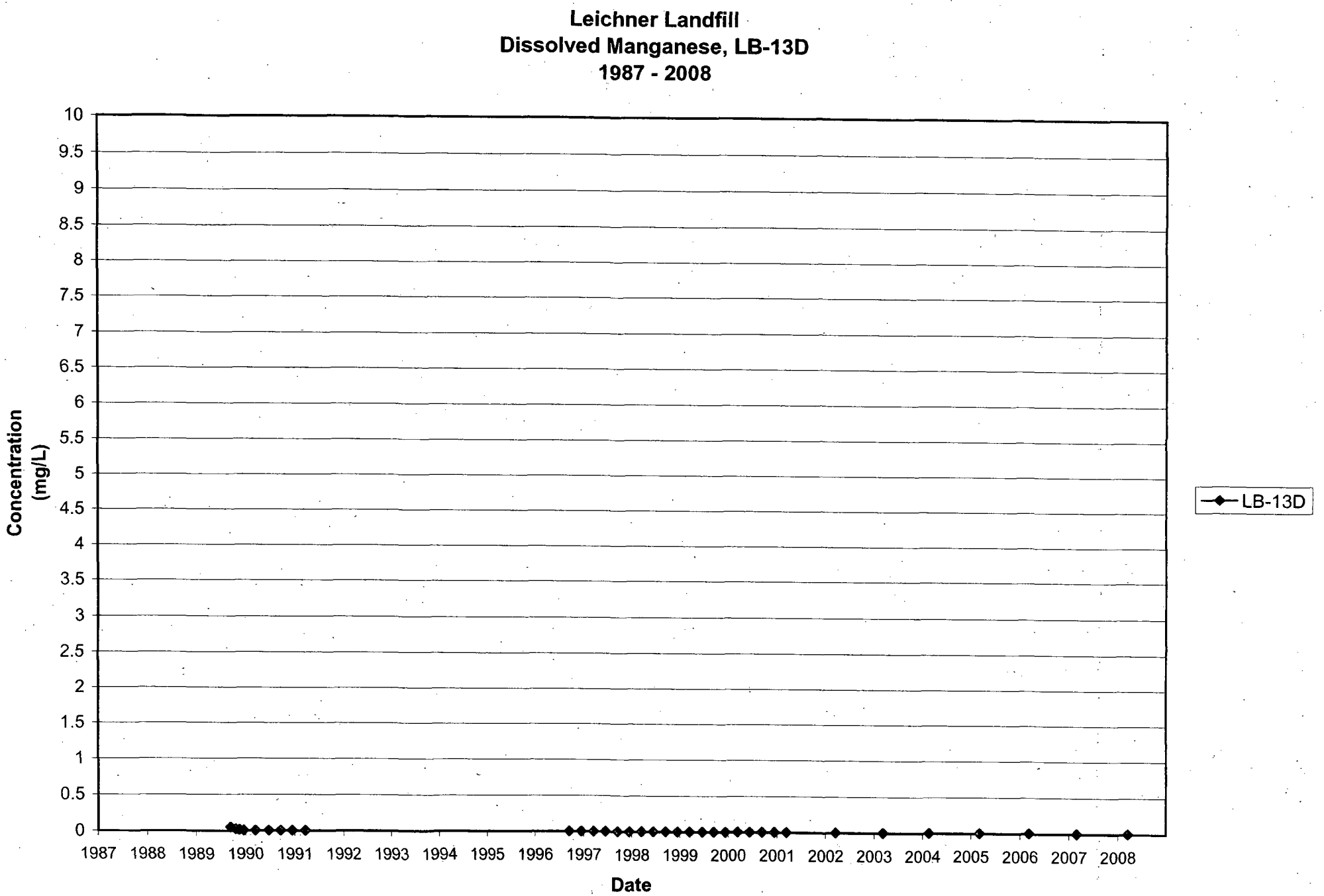

Leichner Landfill
Dissolved Manganese, LB-10D and LB-10DR
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-10D
LB-10DR

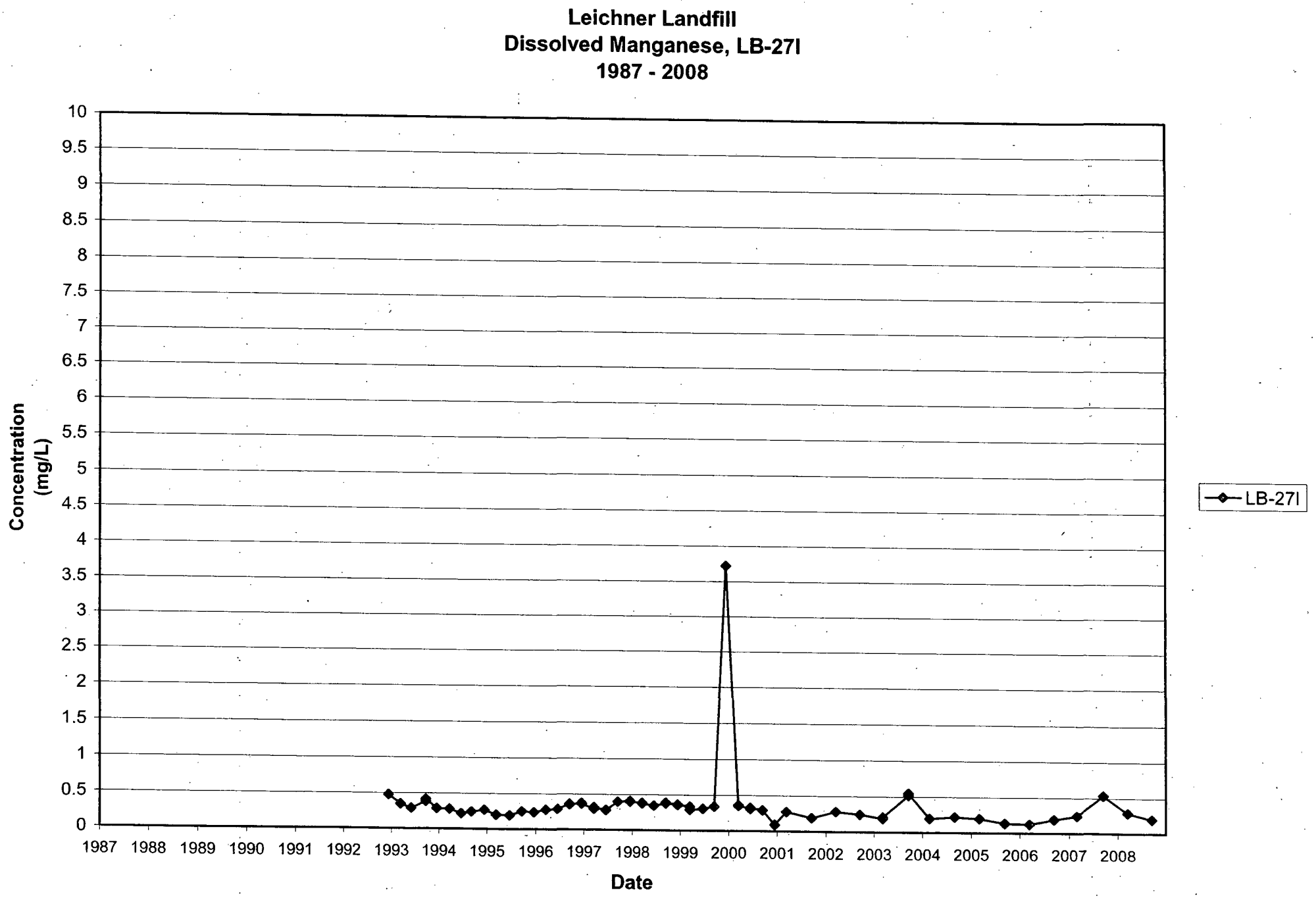
Leichner Landfill
Dissolved Manganese, LB-13I
1987 - 2008



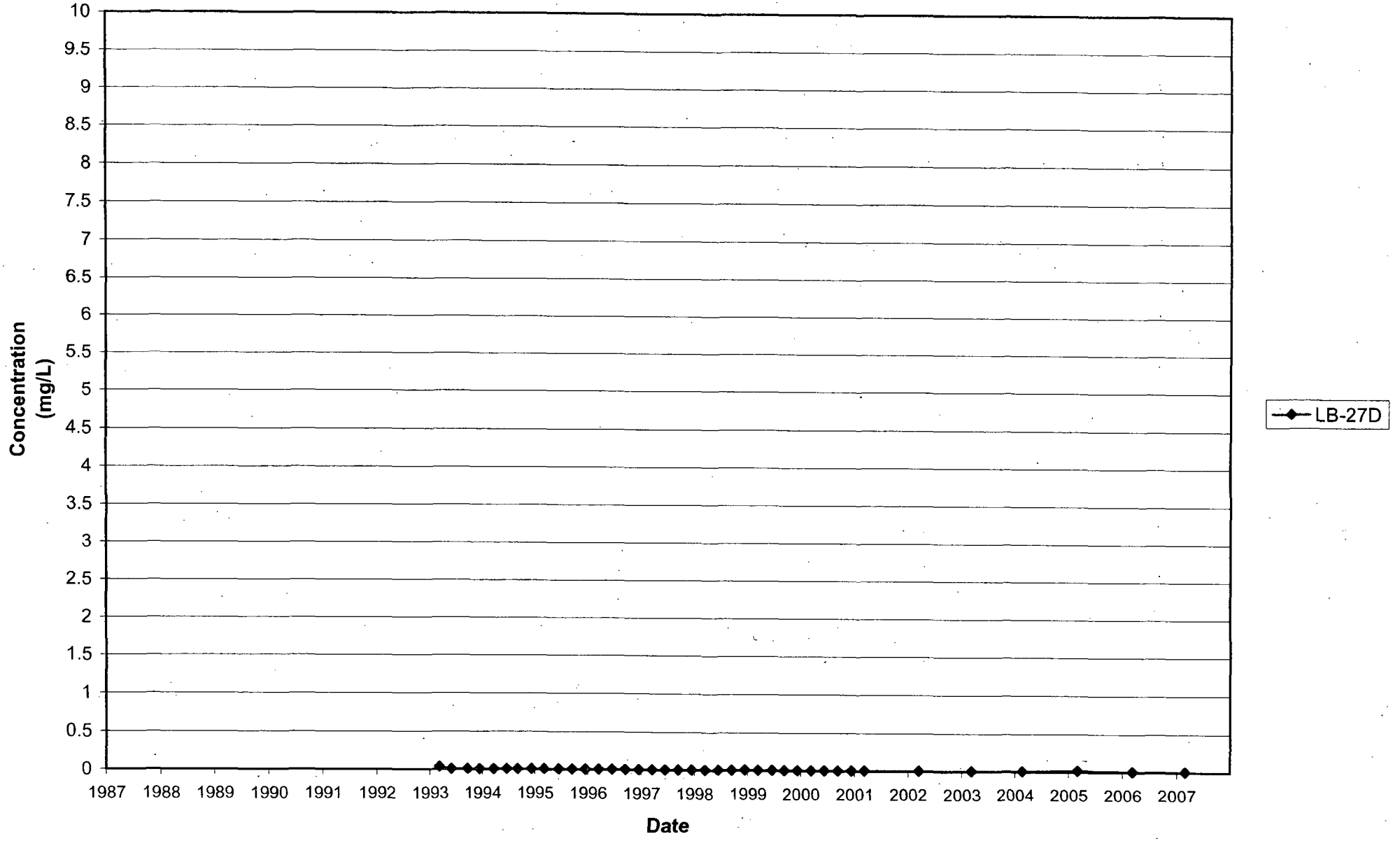
TimeTrendData_DissManganese.xls, LB-13I

Shaw Environmental, Inc.


Leichner Landfill
Dissolved Manganese, LB-13D
1987 - 2008
Concentration (mg/L)
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Date
LB-13D



TimeTrendData_DissManganese.xls, LB-27I

Shaw Environmental, Inc.

Leichner Landfill
Dissolved Manganese, LB-27D
1987 - 2008