Table D-1. TDS concentrations in alluvial ground water samples upgradient of the Homestake Site, Grants, New Mexico from July 1978 to May 1999.

Well ID	DD	ND	P	P1	P2	P3	P4	Q	R	All wells	914	916	920	921	922	950	All Wells
1st sampling date	15-Sep-81	12-Jan-83	11-Jul-78	21-Sep-92	21-Sep-92	23-Apr-98	24-Apr-98	10-Jul-78	10-Jul-78	10-Jul-78	10-Jan-83	21-Feb-94	03-Nov-81	28-Feb-94	03-Nov-81	28-Feb-94	03-Nov-81
Most recent sampling date	20-Apr-99	05-Aug-98	10-May-99	21-Jan-99	11-May-99	23-Apr-98	24-Apr-98	02-Mar-99	20-May-99	20-May-99	19-May-99	20-May-99	19-May-99	19-May-99	19-May-99	25-Jan-96	20-May-99
Total number of measurements	53	13	106	33	33	1	1	73	80	393	7	6	19	6	7	3	48
Number of independent measurements	49	13	85	27	27	1	1	64	64	331	7	6	18	6	7	3	47
Percent nondetect of total number of measurements	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Minimum	2400	954	1210	2000	2000	1900	1610	1280	1190	954	430	318	2420	2388	900	1671	318
Median	3020.0	1060.0	1655.0	2090.0	2080.0	1900.0	1610.0	2012.5	1390.0	1840.0	1260.0	361.0	2660.0	2551.0	1060.0	1832.0	2388.0
Mean	2996.0	1101.3	1620.3	2095.3	2068.7	1900.0	1610.0	1974.4	1490.3	1923.0	1139.1	356.8	2633.3	2542.0	1053.3	1794.0	1819.6
Maximum	4250	1430	1890	2210	2130	1900	1610	2360	2110	4250	1418	393	2930	2640	1222	1879	2930
Percent greater than or equal to the NM site standard (1770 mg/L)	100.00%	0.00%	8.24%	100.00%	100.00%	100.00%	0.00%	89.06%	18.75%	54.38%	0.00%	0.00%	100.00%	100.00%	0.00%	66.67%	55.32%

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
DD	09-Mar-94	TDS	Energy Labs	None	3109
DD	21-Oct-94	TDS	Energy Labs	None	3128
DD	10-Oct-95	TDS	Energy Labs	None	3054
DD	10-Oct-96	TDS	Energy Labs	None	3050
DD	14-Apr-97	TDS	Energy Labs	None	3010
DD	09-Sep-97	TDS	Energy Labs	None	2950
DD	01-Apr-98	TDS	Energy Labs	None	2930
DD	20-Apr-99	TDS	Energy Labs	None	2870
ND	12-Jan-83	TDS	Homestake	None	1430
ND	06-Jan-84	TDS	Homestake	None	1320
ND	18-Dec-89	TDS	Homestake	None	1090
ND	17-Oct-90	TDS	Homestake	None	1150
ND	16-Sep-91	TDS	Homestake	None	1160
ND	18-Aug-92	TDS	Homestake	None	1040
ND	25-Aug-93	TDS	Energy Labs	None	957
ND	14-Mar-94	TDS	Energy Labs	None	1053
ND	22-Aug-94	TDS	Energy Labs	None	976
ND	22-Aug-95	TDS	Energy Labs	None	954
ND	29-Jul-96	TDS	Energy Labs	None	1057
ND	11-Aug-97	TDS	Energy Labs	None	1070
ND	05-Aug-98	TDS	Energy Labs	None	1060
P	11-Jul-78	TDS	NMEID	None	1530
P	23-Oct-78	TDS	NMEID	None	1560
P	30-Jan-79	TDS	NMEID	None	1582
P	30-Apr-79	TDS	NMEID	None	1580
P	17-Apr-80	TDS	NMEID	None	1410
P	16-Jul-80	TDS	NMEID	None	1570
P	13-Oct-80	TDS	NMEID	None	1590
P	07-Jan-81	TDS	Homestake	None	1710
P	07-Jan-81	TDS	NMEID	None	1569
P	15-Apr-81	TDS	Homestake	None	1520
P	15-Apr-81	TDS	NMEID	None	1570
P	07-Jul-81	TDS	Homestake	None	1710
P	07-Oct-81	TDS	Homestake	None	1660
P	28-Dec-81	TDS	NMEID	None	1533
P	28-Dec-81	TDS	Homestake	None	1540
P	24-Mar-82	TDS	Homestake	None	1490
P	24-Mar-82	TDS	NMEID	None	1518
P	22-May-82	TDS	Homestake	None	1500
P	25-Aug-82	TDS	Homestake	None	1620
P	18-Nov-82	TDS	Homestake	None	1470
P	18-Nov-82	TDS	Controls for Env Pollution	None	1745
P	18-Nov-82	TDS	Assaigai Lab	None	1690

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P	10-Aug-89	TDS	Homestake	None	1680
P	15-Nov-89	TDS	Homestake	None	1570
P	13-Mar-90	TDS	Homestake	None	1580
P	04-Jun-90	TDS	Homestake	None	1680
P	12-Sep-90	TDS	Homestake	None	1420
P	03-Dec-90	TDS	Homestake	None	1320
P	03-Dec-90	TDS	Barringer	None	1580
P	27-Feb-91	TDS	Homestake	None	1650
P	03-Jun-91	TDS	Homestake	None	1700
P	16-Sep-91	TDS	Homestake	None	1700
P	18-Nov-91	TDS	Homestake	None	1670
P	09-Mar-92	TDS	Homestake	None	1770
P	04-Jun-92	TDS	Homestake	None	1760
P	21-Sep-92	TDS	Homestake	None	1720
P	03-Dec-92	TDS	Homestake	None	1710
P	03-Mar-93	TDS	Homestake	None	1740
P	01-Jun-93	TDS	Homestake	None	1790
P	08-Sep-93	TDS	Energy Labs	None	1506
P	24-Nov-93	TDS	Energy Labs	None	1686
P	01-Mar-94	TDS	Energy Labs	None	1461
P	31-May-94	TDS	Energy Labs	None	1655
P	01-Sep-94	TDS	Energy Labs	None	1704
P	28-Nov-94	TDS	Energy Labs	None	1707
P	16-Mar-95	TDS	Energy Labs	None	1680
P	16-Mar-95	TDS	Energy Labs	None	1685
P	06-Jun-95	TDS	Energy Labs	None	1729
P	05-Sep-95	TDS	Energy Labs	None	1681
P	05-Dec-95	TDS	Energy Labs	None	1703
P	05-Dec-95	TDS	Energy Labs	None	1698
P	11-Mar-96	TDS	Energy Labs	None	1628
P	03-Jun-96	TDS	Energy Labs	None	1669
P	17-Sep-96	TDS	Energy Labs	None	1720
P	10-Oct-96	TDS	Energy Labs	None	1680
P	06-Mar-97	TDS	Energy Labs	None	1670
P	27-May-97	TDS	Energy Labs	None	1680
P	09-Sep-97	TDS	Energy Labs	None	1560
P	03-Nov-97	TDS	Energy Labs	None	1660
P	04-Mar-98	TDS	Energy Labs	None	1700
P	05-May-98	TDS	Energy Labs	None	1870
P	16-Sep-98	TDS	Energy Labs	None	1890
P	12-Nov-98	TDS	Energy Labs	None	1860
P	02-Mar-99	TDS	Energy Labs	None	1830
P	02-Mar-99	TDS	ACZ Lab	None	1780
P	10-May-99	TDS	Energy Labs	None	1790
P1	21-Sep-92	TDS	Homestake	None	2000

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P2	01-Nov-94	TDS	Energy Labs	None	2106
P2	03-Feb-95	TDS	Energy Labs	None	2092
P2	05-May-95	TDS	Energy Labs	None	2101
P2	02-Aug-95	TDS	Energy Labs	None	2108
P2	02-Aug-95	TDS	Energy Labs	None	2121
P2	06-Nov-95	TDS	Energy Labs	None	2065
P2	12-Feb-96	TDS	Energy Labs	None	2083
P2	14-May-96	TDS	Energy Labs	None	2082
P2	14-May-96	TDS	Energy Labs	None	2096
P2	29-Jul-96	TDS	Energy Labs	None	2110
P2	03-Feb-97	TDS	Energy Labs	None	2050
P2	29-Apr-97	TDS	Energy Labs	None	2070
P2	28-Jul-97	TDS	Energy Labs	None	2050
P2	13-Oct-97	TDS	Energy Labs	None	2070
P2	10-Feb-98	TDS	Energy Labs	None	2080
P2	05-May-98	TDS	Energy Labs	None	2060
P2	04-Aug-98	TDS	Energy Labs	None	2090
P2	28-Oct-98	TDS	Energy Labs	None	2000
P2	03-Feb-99	TDS	Energy Labs	None	2000
P2	11-May-99	TDS	Energy Labs	None	2070
P3	23-Apr-98	TDS	Energy Labs	None	1900
P4	24-Apr-98	TDS	Energy Labs	None	1610
Q	10-Jul-78	TDS	NMEID	None	2090
Q	23-Oct-78	TDS	NMEID	None	2150
Q	30-Jan-79	TDS	NMEID	None	2264
Q	30-Apr-79	TDS	NMEID	None	2114
Q	17-Apr-80	TDS	NMEID	None	2101
Q	16-Jul-80	TDS	NMEID	None	2097
Q	13-Oct-80	TDS	NMEID	None	2118
Q	07-Jan-81	TDS	Homestake	None	2300
Q	07-Jan-81	TDS	NMEID	None	2206
Q	15-Apr-81	TDS	Homestake	None	2180
Q	15-Apr-81	TDS	NMEID	None	2302
Q	07-Jul-81	TDS	Homestake	None	2360
Q	07-Oct-81	TDS	Homestake	None	2170
Q	28-Dec-81	TDS	Homestake	None	2100
Q	28-Dec-81	TDS	NMEID	None	2192
Q	24-Mar-82	TDS	Homestake	None	1950
Q	24-Mar-82	TDS	NMEID	None	1965
Q	22-May-82	TDS	Homestake	None	1960
Q	25-Aug-82	TDS	Homestake	None	2000
Q	18-Nov-82	TDS	Homestake	None	1840
Q	23-Feb-83	TDS	Homestake	None	1810
Q	26-May-83	TDS	Homestake	None	1960
Q	28-Jun-83	TDS	NMEID	None	2090

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
Q	17-Sep-96	TDS	Energy Labs	None	2086
Q	06-Mar-97	TDS	Energy Labs	None	2090
Q	09-Sep-97	TDS	Energy Labs	None	2140
Q	04-Mar-98	TDS	Energy Labs	None	2120
Q	02-Mar-99	TDS	Energy Labs	None	2250
R	10-Jul-78	TDS	NMEID	None	1333
R	23-Oct-78	TDS	NMEID	None	1325
R	31-Jan-79	TDS	NMEID	None	1330
R	30-Apr-79	TDS	NMEID	None	1315
R	07-Jan-80	TDS	NMEID	None	1229
R	17-Apr-80	TDS	NMEID	None	1269
R	16-Jul-80	TDS	NMEID	None	1291
R	13-Oct-80	TDS	NMEID	None	1262
R	15-Apr-81	TDS	Homestake	None	1210
R	15-Apr-81	TDS	NMEID	None	1274
R	07-Jul-81	TDS	Homestake	None	1300
R	28-Dec-81	TDS	Homestake	None	1240
R	28-Dec-81	TDS	NMEID	None	1283
R	24-Mar-82	TDS	Homestake	None	1290
R	24-Mar-82	TDS	NMEID	None	1295
R	22-May-82	TDS	Homestake	None	1260
R	25-Aug-82	TDS	Homestake	None	1320
R	18-Nov-82	TDS	Homestake	None	1220
R	23-Feb-83	TDS	Homestake	None	1310
R	26-May-83	TDS	Homestake	None	1220
R	28-Jun-83	TDS	Homestake	None	1310
R	28-Jun-83	TDS	NMEID	None	1330
R	12-Sep-83	TDS	Homestake	None	1320
R	20-Dec-83	TDS	Homestake	None	1270
R	07-Mar-84	TDS	Homestake	None	1190
R	09-May-84	TDS	Homestake	None	1320
R	12-Sep-84	TDS	Homestake	None	1350
R	12-Dec-84	TDS	Homestake	None	1270
R	11-Mar-85	TDS	Homestake	None	1240
R	11-Mar-85	TDS	Controls for Env Pollution	None	1410
R	29-May-85	TDS	Homestake	None	1350
R	05-Sep-85	TDS	Homestake	None	1410
R	16-Dec-85	TDS	Homestake	None	1400
R	10-Mar-86	TDS	Homestake	None	1420
R	30-Jun-86	TDS	Homestake	None	1490
R	15-Sep-86	TDS	Homestake	None	1350
R	15-Sep-86	TDS	Controls for Env Pollution	None	1470
R	15-Dec-86	TDS	Homestake	None	1310
R	19-Mar-87	TDS	Homestake	None	1190

Table D-3. TDS Near Upgradient Background Data Set for Well DD
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
15-Sep-81	TDS	2910
24-Mar-82	TDS	2770
26-May-82	TDS	2960
18-Nov-82	TDS	3060
04-Mar-83	TDS	3010
28-Jun-83	TDS	3052.5
14-Sep-83	TDS	3130
19-Dec-83	TDS	2970
07-Mar-84	TDS	2950
09-May-84	TDS	2930
12-Sep-84	TDS	3070
12-Dec-84	TDS	3000
13-Mar-85	TDS	3020
06-Jun-85	TDS	3040
04-Sep-85	TDS	2710
16-Dec-85	TDS	2560
20-Mar-86	TDS	2430
30-Jun-86	TDS	3200
15-Sep-86	TDS	3110
09-Dec-86	TDS	2810
19-Mar-87	TDS	2670
24-Jun-87	TDS	3020
15-Sep-87	TDS	2400
08-Dec-87	TDS	2640
24-Feb-88	TDS	2580
09-Jun-88	TDS	3050
11-Oct-88	TDS	3110
08-Dec-88	TDS	3000
13-Dec-88	TDS	3240
11-Jan-89	TDS	3000
15-Feb-89	TDS	3115
29-Mar-89	TDS	2830
13-Jun-89	TDS	4250
15-Nov-89	TDS	3060
13-Mar-90	TDS	3230
12-Sep-90	TDS	2696
27-Feb-91	TDS	3160
16-Sep-91	TDS	3330
09-Mar-92	TDS	3280
22-Sep-92	TDS	3190
21-Oct-93	TDS	3161
09-Mar-94	TDS	3109
21-Oct-94	TDS	3128
10-Oct-95	TDS	3054
10-Oct-96	TDS	3050
14-Apr-97	TDS	3010
09-Sep-97	TDS	2950
01-Apr-98	TDS	2930
20-Apr-99	TDS	2870

Table D-5. TDS Near Upgradient Background Data Set for Well P
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
11-Jul-78	TDS	1530
23-Oct-78	TDS	1560
30-Jan-79	TDS	1582
30-Apr-79	TDS	1580
17-Apr-80	TDS	1410
16-Jul-80	TDS	1570
13-Oct-80	TDS	1590
07-Jan-81	TDS	1639.5
15-Apr-81	TDS	1545
07-Jul-81	TDS	1710
07-Oct-81	TDS	1660
28-Dec-81	TDS	1536.5
24-Mar-82	TDS	1504
22-May-82	TDS	1500
25-Aug-82	TDS	1620
18-Nov-82	TDS	1662.5
23-Feb-83	TDS	1610
26-May-83	TDS	1580
27-Jun-83	TDS	1619.5
12-Sep-83	TDS	1590
19-Dec-83	TDS	1640
07-Mar-84	TDS	1440
09-May-84	TDS	1470
12-Sep-84	TDS	1610
13-Dec-84	TDS	1450
11-Mar-85	TDS	1565
29-May-85	TDS	1580
04-Sep-85	TDS	1210
16-Dec-85	TDS	1720
10-Mar-86	TDS	1220
30-Jun-86	TDS	1710
15-Sep-86	TDS	1700
16-Dec-86	TDS	1310
19-Mar-87	TDS	1655
24-Jun-87	TDS	1700
16-Sep-87	TDS	1460
08-Dec-87	TDS	1620
24-Feb-88	TDS	1660
12-May-88	TDS	1310
23-Aug-88	TDS	1465
12-Oct-88	TDS	1650
13-Dec-88	TDS	1675
11-Jan-89	TDS	1665
15-Feb-89	TDS	1735
16-May-89	TDS	1620
10-Aug-89	TDS	1680

Table D-6. TDS Near Upgradient Background Data Set for Well P1
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Sep-92	TDS	2000
21-Jan-93	TDS	2191.5
13-Apr-93	TDS	2130
13-Jul-93	TDS	2090
21-Oct-93	TDS	2023
04-Jan-94	TDS	2062
07-Mar-94	TDS	2040
12-Apr-94	TDS	2058
06-Jul-94	TDS	2063
21-Oct-94	TDS	2006
04-Jan-95	TDS	2089.5
12-Apr-95	TDS	2104
06-Jul-95	TDS	2072
03-Oct-95	TDS	2083
10-Jan-96	TDS	2113.5
09-Apr-96	TDS	2075.5
19-Jul-96	TDS	2191
04-Nov-96	TDS	2100
13-Jan-97	TDS	2030
14-Apr-97	TDS	2120
08-Jul-97	TDS	2100
03-Nov-97	TDS	2090
19-Jan-98	TDS	2130
01-Apr-98	TDS	2140
14-Jul-98	TDS	2210
28-Oct-98	TDS	2110
21-Jan-99	TDS	2150

Table D-9. TDS Near Upgradient Background Data Set for Well Q
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
10-Jul-78	TDS	2090
23-Oct-78	TDS	2150
30-Jan-79	TDS	2264
30-Apr-79	TDS	2114
17-Apr-80	TDS	2101
16-Jul-80	TDS	2097
13-Oct-80	TDS	2118
07-Jan-81	TDS	2253
15-Apr-81	TDS	2241
07-Jul-81	TDS	2360
07-Oct-81	TDS	2170
28-Dec-81	TDS	2146
24-Mar-82	TDS	1957.5
22-May-82	TDS	1960
25-Aug-82	TDS	2000
18-Nov-82	TDS	1840
23-Feb-83	TDS	1810
26-May-83	TDS	1960
28-Jun-83	TDS	2050
21-Sep-83	TDS	2090
19-Dec-83	TDS	2020
07-Mar-84	TDS	1800
09-May-84	TDS	2010
12-Sep-84	TDS	2030
12-Dec-84	TDS	1820
11-Mar-85	TDS	1770
29-May-85	TDS	1940
06-Sep-85	TDS	1780
16-Dec-85	TDS	1930
10-Mar-86	TDS	1370
30-Jun-86	TDS	2060
15-Sep-86	TDS	2010
15-Dec-86	TDS	1720
19-Mar-87	TDS	1810
19-Jun-87	TDS	1630
15-Sep-87	TDS	1280
08-Dec-87	TDS	1730
24-Feb-88	TDS	1970
12-May-88	TDS	1570
23-Aug-88	TDS	1870
03-Nov-88	TDS	1970
13-Dec-88	TDS	1975
11-Jan-89	TDS	2000
15-Feb-89	TDS	2055
16-May-89	TDS	1430

Table D-10. TDS Near Upgradient Background Data Set for Well R
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
10-Jul-78	TDS	1333
23-Oct-78	TDS	1325
31-Jan-79	TDS	1330
30-Apr-79	TDS	1315
07-Jan-80	TDS	1229
17-Apr-80	TDS	1269
16-Jul-80	TDS	1291
13-Oct-80	TDS	1262
15-Apr-81	TDS	1242
07-Jul-81	TDS	1300
28-Dec-81	TDS	1261.5
24-Mar-82	TDS	1292.5
22-May-82	TDS	1260
25-Aug-82	TDS	1320
18-Nov-82	TDS	1220
23-Feb-83	TDS	1310
26-May-83	TDS	1220
28-Jun-83	TDS	1320
12-Sep-83	TDS	1320
20-Dec-83	TDS	1270
07-Mar-84	TDS	1190
09-May-84	TDS	1320
12-Sep-84	TDS	1350
12-Dec-84	TDS	1270
11-Mar-85	TDS	1325
29-May-85	TDS	1350
05-Sep-85	TDS	1410
16-Dec-85	TDS	1400
10-Mar-86	TDS	1420
30-Jun-86	TDS	1490
15-Sep-86	TDS	1410
15-Dec-86	TDS	1310
19-Mar-87	TDS	1375
19-Jun-87	TDS	1390
15-Sep-87	TDS	1735
08-Dec-87	TDS	1210
24-Feb-88	TDS	1315
12-May-88	TDS	1480
22-Aug-88	TDS	1440
03-Nov-88	TDS	1340
13-Dec-88	TDS	1595
11-Jan-89	TDS	1600
15-Feb-89	TDS	1565
16-May-89	TDS	1390
15-Nov-89	TDS	1500
13-Mar-90	TDS	1560

Table D-11. TDS Near Upgradient Background Groundwater Data Set Used in Statistical Analysis
(all concentrations in mg/L)

Well ID								
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R
4250	1430	1890	2210	2130	1900	1610	2360	2110
3330	1320	1870	2191.5	2114.5			2264	2050
3280	1160	1860	2191	2110			2253	2050
3240	1150	1805	2150	2110			2250	2029
3230	1090	1790	2140	2106			2241	1970
3200	1070	1790	2130	2105			2170	1943
3190	1060	1770	2130	2101			2150	1886
3161	1057	1760	2120	2092			2146	1867.5
3160	1053	1740	2113.5	2090			2140	1817
3130	1040	1735	2110	2089			2130	1797
3128	976	1729	2104	2083			2120	1776
3115	957	1720	2100	2082.5			2118	1770
3110	954	1720	2100	2080			2114	1760
3110		1720	2090	2080			2101	1735
3109		1710	2090	2070			2097	1700
3070		1710	2089.5	2070			2090	1682.5
3060		1710	2083	2070			2090	1650
3060		1707	2075.5	2065			2090	1601
3054		1704	2072	2060			2086	1600
3052.5		1700.5	2063	2050			2070	1595
3050		1700	2062	2050			2068	1565
3050		1700	2058	2027			2060	1560
3040		1700	2040	2010.5			2060	1500
3020		1700	2030	2006			2060	1490
3020		1700	2023	2003.5			2055	1490
3010		1686	2006	2000			2050	1480
3010		1682.5	2000	2000			2048	1440
3000		1681					2040	1420
3000		1680					2030	1410
3000		1680					2020	1410
2970		1680					2016	1400
2960		1680					2015	1390
2950		1675					2010	1390
2950		1670					2010	1375
2930		1670					2000	1350
2930		1669					2000	1350
2910		1665					2000	1340
2870		1662.5					2000	1333
2830		1660					1975	1330
2810		1660					1970	1325
2770		1660					1970	1325
2710		1655					1970	1320
2696		1655					1960	1320
2670		1650					1960	1320
2640		1650					1960	1320
2580		1640					1957.5	1315
2560		1639.5					1940	1315

Table D-12. TDS Near Upgradient Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
TDS	4250	3330	1.3	**Pass**

Table D-13. TDS Near Upgradient Background Data Set, Coefficient of Variation Analysis

Parameter	Mean	Standard Deviation	Coefficient of Variation	Results
TDS, normal	1923.02	546.89	0.28	**Pass**
TDS, lognormal	7.52	0.27	0.04	**Pass**

Table D-14. TDS Near Upgradient Background Data Set, Studentized Range Test Analysis

Parameter	Range		Standard Deviation	Critical Values		W/S	Results
	Maximum	Minimum		Maximum	Minimum		
TDS, normal	4250	954	546.89	6.94	5.47	6.03	**Pass**

W = range of values
S = standard deviation

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Normal (xi-avg)^3
1370	-169134551
1375	-164588367
1390	-151440037
1390	-151440037
1400	-143075501
1410	-135024780
1410	-135024780
1410	-135024780
1420	-127281873
1420	-127281873
1430	-119840781
1430	-119840781
1440	-112695503
1440	-112695503
1450	-105840040
1450	-105840040
1460	-99268391.2
1461	-98626605.1
1465	-96087122.3
1470	-92974557
1480	-86952537.3
1490	-81196332.1
1490	-81196332.1
1500	-75699941.4
1500	-75699941.4
1504	-73572789.2
1506	-72524322
1530	-60709656.4
1536.5	-57747071.6
1545	-54020512.8
1560	-47841701.9
1560	-47841701.9
1560	-47841701.9
1565	-45892005.5
1565	-45892005.5
1570	-43996012.7
1570	-43996012.7
1570	-43996012.7
1580	-40362138
1580	-40362138
1580	-40362138
1580	-40362138
1582	-39660252.8
1590	-36934077.9
1590	-36934077.9
1595	-35295353.2
1600	-33705832.2
1601	-33393766.4
1610	-30671401
1610	-30671401
1610	-30671401
1619.5	-27962747.2
1620	-27824784.4

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Normal (xi-avg)^3
1770	-3583274.6
1776	-3178090.07
1780	-2925689.96
1790	-2353919.82
1790	-2353919.82
1797	-2001527.35
1800	-1861964.18
1805	-1644041.8
1810	-1443823.05
1810	-1443823.05
1817	-1191830.88
1820	-1093496.41
1840	-572286.65
1860	-250334.893
1867.5	-171177.314
1870	-149080.767
1870	-149080.767
1886	-50752.3277
1890	-36016.0186
1900	-12205.3968
1915	-516.654517
1930	339.4593829
1940	4892.075095
1943	7971.032014
1957.5	40977.38333
1960	50553.80199
1960	50553.80199
1960	50553.80199
1970	103662.9132
1970	103662.9132
1970	103662.9132
1970	103662.9132
1975	140412.0307
2000	456103.2376
2000	456103.2376
2000	456103.2376
2000	456103.2376
2000	456103.2376
2000	456103.2376
2000	456103.2376
2003.5	521190.399
2006	571287.6409
2006	571287.6409
2010	657954.3428
2010	657954.3428
2010.5	669366.8924
2015	778074.4573
2016	803730.0451
2020	911990.9464
2023	999275.0997
2027	1124079.941
2029	1190201.491
2030	1224213.049

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Normal (xi-avg)^3
2114	6965226.187
2114.5	7020077.195
2118	7412118.242
2120	7642559.4
2120	7642559.4
2130	8866636.487
2130	8866636.487
2130	8866636.487
2130	8866636.487
2140	10214899.07
2140	10214899.07
2146	11085961.66
2150	11693347.16
2150	11693347.16
2170	15064799.82
2191	19243624.69
2191.5	19351542.36
2210	23633931.13
2241	32150100.3
2250	34958030.41
2253	35929104.51
2264	39643390.35
2360	83439607.07
2400	108514836.3
2430	130305205.9
2560	258445432.8
2580	283562096.3
2640	368564538.9
2670	416792264.4
2696	461846593
2710	487398495.4
2770	607593406.9
2810	697807057.9
2830	746082996.3
2870	849213099.2
2910	961434170.1
2930	1021073819
2930	1021073819
2950	1083130209
2950	1083130209
2960	1115079682
2970	1147651341
3000	1249159431
3000	1249159431
3000	1249159431
3010	1284279832
3010	1284279832
3020	1320052419
3020	1320052419
3040	1393578148
3050	1431343291
3050	1431343291
3052.5	1440889996

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
6.860664	-0.29210244
6.863803	-0.28797534
6.883463	-0.26301422
6.946976	-0.19229386
6.959399	-0.18014337
6.96319	-0.1765396
6.966024	-0.17387734
6.975414	-0.16524868
6.993933	-0.14907682
7.047517	-0.10829449
7.056175	-0.10249975
7.081709	-0.0866216
7.098376	-0.07719687
7.098376	-0.07719687
7.106606	-0.07280625
7.106606	-0.07280625
7.106606	-0.07280625
7.113956	-0.06902892
7.124478	-0.06385214
7.138867	-0.05720146
7.140057	-0.05667321
7.140453	-0.05649798
7.145984	-0.05408972
7.146772	-0.05375243
7.146772	-0.05375243
7.154615	-0.05047031
7.163172	-0.04704494
7.164334	-0.04659242
7.17012	-0.04438083
7.177782	-0.04156109
7.177782	-0.04156109
7.177782	-0.04156109
7.177782	-0.04156109
7.181592	-0.04020486
7.181592	-0.04020486
7.185387	-0.03888345
7.185387	-0.03888345
7.185387	-0.03888345
7.185387	-0.03888345
7.185387	-0.03888345
7.189168	-0.03759613
7.189168	-0.03759613
7.192934	-0.03634224
7.195187	-0.03560566
7.200425	-0.03393201
7.20786	-0.03164749
7.20786	-0.03164749
7.222566	-0.02743539
7.226209	-0.0264532

Lognormal	
standard deviation =	0.271384452
mean =	7.524
count =	331
sum of (xi-avg)^3 =	1.597971101
1/n =	0.003021148
standard deviation cubed =	0.019987335
((n-1)/n)^(3/2) =	0.995471702
coef. of skewness =	0.2
acceptable range -1 to 1	Pass

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
7.395108	-0.00214981
7.396335	-0.00208904
7.402147	-0.00181689
7.402452	-0.00180331
7.408531	-0.00154639
7.408531	-0.00154639
7.408531	-0.00154639
7.411556	-0.00142815
7.411556	-0.00142815
7.414573	-0.00131643
7.414573	-0.00131643
7.414573	-0.00131643
7.416078	-0.00126294
7.41758	-0.001211
7.41998	-0.00113104
7.420579	-0.00111165
7.420579	-0.00111165
7.423568	-0.00101816
7.426549	-0.00093031
7.426549	-0.00093031
7.426549	-0.00093031
7.426549	-0.00093031
7.427144	-0.0009134
7.428036	-0.00088844
7.428036	-0.00088844
7.430114	-0.00083207
7.438384	-0.00063133
7.438384	-0.00063133
7.438384	-0.00063133
7.438384	-0.00063133
7.438384	-0.00063133
7.438384	-0.00063133
7.438678	-0.00062486
7.440734	-0.00058085
7.442493	-0.00054488
7.444249	-0.00051049
7.444249	-0.00051049
7.444249	-0.00051049
7.45008	-0.00040671
7.45008	-0.00040671
7.45008	-0.00040671
7.45008	-0.00040671
7.455298	-0.00032668
7.455877	-0.00031852
7.458763	-0.00027982
7.458763	-0.00027982
7.46164	-0.00024449
7.473069	-0.00013344
7.473069	-0.00013344
7.478735	-9.3794E-05
7.478735	-9.3794E-05
7.478735	-9.3794E-05
7.482119	-7.4359E-05

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
7.620705	0.000899613
7.624619	0.00101353
7.625595	0.001043365
7.625595	0.001043365
7.625595	0.001043365
7.625595	0.001043365
7.625595	0.001043365
7.628031	0.001120364
7.62949	0.001168239
7.630461	0.001200861
7.630461	0.001200861
7.630461	0.001200861
7.630461	0.001200861
7.631432	0.001234053
7.631917	0.001250863
7.632886	0.001284916
7.634337	0.00133708
7.635304	0.001372586
7.635304	0.001372586
7.635304	0.001372586
7.635304	0.001372586
7.63627	0.00140868
7.637957	0.00147327
7.640123	0.001559007
7.640123	0.001559007
7.641324	0.001607961
7.641564	0.001617867
7.641564	0.001617867
7.643004	0.001678102
7.644441	0.001739724
7.64468	0.00175013
7.644919	0.001760575
7.644919	0.001760575
7.644919	0.001760575
7.644919	0.001760575
7.644919	0.001760575
7.644919	0.001760575
7.644919	0.001760575
7.645876	0.001802745
7.648263	0.001910919
7.649693	0.001977726
7.649693	0.001977726
7.650169	0.002000315
7.650169	0.002000315
7.651596	0.002069045
7.652071	0.002092278
7.652546	0.002115673
7.654443	0.002210882
7.654443	0.002210882
7.654443	0.002210882
7.654443	0.002210882
7.656101	0.002296344
7.656337	0.002308718
7.656574	0.002321133

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
8.02617	0.126506162
8.029433	0.128988829
8.042056	0.138900422
8.042378	0.139159344
8.042378	0.139159344
8.043984	0.140457527
8.048149	0.143860617
8.048788	0.14438773
8.058327	0.152407922
8.058644	0.152678916
8.067776	0.160639822
8.070906	0.163430551
8.080237	0.171942154
8.083329	0.174825616
8.095599	0.186589057
8.110728	0.201805027
8.354674	0.572829809

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1440	60	0.180723	-0.912614	-1314.164547	0.832865
1440	61	0.183735	-0.901223	-1297.7609	0.812203
1450	62	0.186747	-0.889947	-1290.423711	0.792006
1450	63	0.189759	-0.878784	-1274.237491	0.772262
1460	64	0.192771	-0.867731	-1266.886829	0.752957
1461	65	0.195783	-0.85678	-1251.756148	0.734073
1465	66	0.198795	-0.845932	-1239.290953	0.715602
1470	67	0.201807	-0.835182	-1227.71778	0.697529
1480	68	0.204819	-0.82453	-1220.303966	0.679849
1490	69	0.207831	-0.813968	-1212.812617	0.662544
1490	70	0.210843	-0.803498	-1197.211486	0.645608
1500	71	0.213855	-0.793116	-1189.67364	0.629033
1500	72	0.216867	-0.782816	-1174.223598	0.6128
1504	73	0.21988	-0.7726	-1161.990149	0.596911
1506	74	0.222892	-0.762464	-1148.270053	0.581351
1530	75	0.225904	-0.752405	-1151.17889	0.566113
1536.5	76	0.228916	-0.742423	-1140.73263	0.551192
1545	77	0.231928	-0.732514	-1131.733904	0.536577
1560	78	0.23494	-0.722675	-1127.373616	0.52226
1560	79	0.237952	-0.712906	-1112.133805	0.508235
1560	80	0.240964	-0.703205	-1097.000404	0.494498
1565	81	0.243976	-0.693569	-1085.43594	0.481038
1565	82	0.246988	-0.683999	-1070.458643	0.467855
1570	83	0.25	-0.67449	-1058.949874	0.454937
1570	84	0.253012	-0.665041	-1044.113924	0.442279
1570	85	0.256024	-0.655652	-1029.374357	0.42988
1580	86	0.259036	-0.646319	-1021.183652	0.417728
1580	87	0.262048	-0.637044	-1006.529828	0.405825
1580	88	0.26506	-0.627822	-991.9586319	0.39416
1580	89	0.268072	-0.618654	-977.4736554	0.382733
1582	90	0.271084	-0.609537	-964.2867872	0.371535
1590	91	0.274096	-0.600471	-954.7491118	0.360566
1590	92	0.277108	-0.591453	-940.4110642	0.349817
1595	93	0.28012	-0.582484	-929.0613548	0.339287
1600	94	0.283133	-0.573561	-917.698344	0.328973
1601	95	0.286145	-0.564683	-904.0567193	0.318866
1610	96	0.289157	-0.55585	-894.91881	0.308969
1610	97	0.292169	-0.54706	-880.7664813	0.299275
1610	98	0.295181	-0.538312	-866.6818758	0.28978
1619.5	99	0.298193	-0.529606	-857.6962466	0.280482
1620	100	0.301205	-0.520938	-843.9197245	0.271377
1620	101	0.304217	-0.51231	-829.94286	0.262462
1620	102	0.307229	-0.50372	-816.0267726	0.253734
1628	103	0.310241	-0.495168	-806.1328026	0.245191
1630	104	0.313253	-0.48665	-793.2397466	0.236828
1639.5	105	0.316265	-0.478169	-783.9582611	0.228646
1640	106	0.319277	-0.469721	-770.3425126	0.220638
1650	107	0.322289	-0.461307	-761.1566843	0.212804
1650	108	0.325301	-0.452926	-747.3280448	0.205142
1650	109	0.328313	-0.444576	-733.5500527	0.197648
1655	110	0.331325	-0.436257	-722.0058706	0.19032
1655	111	0.334337	-0.427967	-708.2858474	0.183156
1660	112	0.337349	-0.419708	-696.7151648	0.176155
1660	113	0.340361	-0.411477	-683.0518259	0.169313
1660	114	0.343373	-0.403273	-669.4337799	0.162629
1662.5	115	0.346386	-0.395098	-656.8506592	0.156103
1665	116	0.349398	-0.386947	-644.266413	0.149728
1669	117	0.35241	-0.378823	-632.2551417	0.143507

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1940	176	0.53012	0.075572	146.6100457	0.005711
1943	177	0.533133	0.083146	161.552689	0.006913
1957.5	178	0.536145	0.090726	177.5951802	0.008231
1960	179	0.539157	0.09831	192.6867299	0.009665
1960	180	0.542169	0.105899	207.5626071	0.011215
1960	181	0.545181	0.113495	222.4496257	0.012881
1970	182	0.548193	0.121097	238.5609832	0.014664
1970	183	0.551205	0.128706	253.5508315	0.016565
1970	184	0.554217	0.136322	268.5541176	0.018584
1970	185	0.557229	0.143947	283.5753207	0.020721
1975	186	0.560241	0.15158	299.3701003	0.022976
2000	187	0.563253	0.159222	318.4436537	0.025352
2000	188	0.566265	0.166873	333.745902	0.027847
2000	189	0.569277	0.174534	349.068614	0.030462
2000	190	0.572289	0.182206	364.4117896	0.033199
2000	191	0.575301	0.189887	379.7731551	0.036057
2000	192	0.578313	0.197581	395.1618055	0.039038
2000	193	0.581325	0.205285	410.5709195	0.042142
2003.5	194	0.584337	0.213003	426.7505534	0.04537
2006	195	0.587349	0.220732	442.7885733	0.048723
2006	196	0.590361	0.228475	458.3214536	0.052201
2010	197	0.593373	0.236232	474.8266292	0.055806
2010	198	0.596386	0.244003	490.4453249	0.059537
2010.5	199	0.599398	0.251788	506.2196209	0.063397
2015	200	0.60241	0.259589	523.072066	0.067387
2016	201	0.605422	0.267406	539.0909428	0.071506
2020	202	0.608434	0.275239	555.9832744	0.075757
2023	203	0.611446	0.283089	572.6896961	0.08014
2027	204	0.614458	0.290956	589.7687242	0.084656
2029	205	0.61747	0.298843	606.3522562	0.089307
2030	206	0.620482	0.306748	622.6975302	0.094094
2030	207	0.623494	0.31467	638.7808867	0.099017
2040	208	0.626506	0.322614	658.1319212	0.10408
2040	209	0.629518	0.330577	674.3779977	0.109281
2048	210	0.63253	0.338562	693.3743134	0.114624
2050	211	0.635542	0.346569	710.4657129	0.12011
2050	212	0.638554	0.354597	726.9242701	0.125739
2050	213	0.641566	0.362649	743.4294389	0.131514
2050	214	0.644578	0.370724	759.9835499	0.137436
2050	215	0.64759	0.378823	776.586603	0.143507
2055	216	0.650602	0.386947	795.1756629	0.149728
2058	217	0.653614	0.395098	813.1119739	0.156103
2060	218	0.656627	0.403273	830.7431244	0.162629
2060	219	0.659639	0.411477	847.6426274	0.169313
2060	220	0.662651	0.419708	864.5983371	0.176155
2060	221	0.665663	0.427967	881.6125955	0.183156
2062	222	0.668675	0.436257	899.5626013	0.19032
2063	223	0.671687	0.444576	917.1598538	0.197648
2065	224	0.674699	0.452926	935.2923712	0.205142
2068	225	0.677711	0.461307	953.9830444	0.212804
2070	226	0.680723	0.469721	972.3225617	0.220638
2070	227	0.683735	0.478169	989.8100643	0.228646
2070	228	0.686747	0.48665	1007.365813	0.236828
2070	229	0.689759	0.495168	1024.996868	0.245191
2072	230	0.692771	0.50372	1043.708317	0.253734
2075.5	231	0.695783	0.51231	1063.300251	0.262462
2080	232	0.698795	0.520938	1083.551251	0.271377
2080	233	0.701807	0.529606	1101.579619	0.280482

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2810	292	0.879518	1.172582	3294.955309	1.374948
2830	293	0.88253	1.187732	3361.281188	1.410707
2870	294	0.885542	1.203157	3453.060299	1.447587
2910	295	0.888554	1.218875	3546.926951	1.485657
2930	296	0.891566	1.234901	3618.258575	1.524979
2930	297	0.894578	1.251251	3666.165367	1.565629
2950	298	0.89759	1.26794	3740.423608	1.607672
2950	299	0.900602	1.284993	3790.730034	1.651208
2960	300	0.903614	1.302426	3855.180876	1.696313
2970	301	0.906627	1.320263	3921.182406	1.743096
3000	302	0.909639	1.338533	4015.598734	1.79167
3000	303	0.912651	1.357262	4071.785042	1.842159
3000	304	0.915663	1.376475	4129.424269	1.894683
3010	305	0.918675	1.396211	4202.594482	1.949405
3010	306	0.921687	1.416511	4263.697247	2.006503
3020	307	0.924699	1.437406	4340.967189	2.066137
3020	308	0.927711	1.458952	4406.035896	2.128542
3040	309	0.930723	1.481199	4502.843512	2.193949
3050	310	0.933735	1.5042	4587.808917	2.262617
3050	311	0.936747	1.528028	4660.486638	2.334871
3052.5	312	0.939759	1.552753	4739.778592	2.411042
3054	313	0.942771	1.578469	4820.644272	2.491564
3060	314	0.945783	1.605272	4912.131681	2.576898
3060	315	0.948795	1.63328	4997.835822	2.667603
3070	316	0.951807	1.662634	5104.285219	2.764351
3109	317	0.954819	1.693493	5265.069044	2.867918
3110	318	0.957831	1.726057	5368.038001	2.979274
3110	319	0.960843	1.760554	5475.324087	3.099552
3115	320	0.963855	1.797289	5598.554799	3.230247
3128	321	0.966867	1.836625	5744.961454	3.37319
3130	322	0.96988	1.879025	5881.348716	3.530736
3160	323	0.972892	1.9251	6083.316475	3.706011
3161	324	0.975904	1.975659	6245.057975	3.903228
3190	325	0.978916	2.031848	6481.593664	4.128404
3200	326	0.981928	2.095294	6704.940461	4.390257
3230	327	0.98494	2.168508	7004.281542	4.702428
3240	328	0.987952	2.255583	7308.089698	5.087656
3280	329	0.990964	2.364141	7754.380931	5.58916
3330	330	0.993976	2.510715	8360.679931	6.303688
4250	331	0.996988	2.746456	11672.43681	7.543019

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.26542972	59	0.177711	-0.924124	-6.714157426	0.854005
7.27239839	60	0.180723	-0.912614	-6.63689454	0.832865
7.27239839	61	0.183735	-0.901223	-6.554051587	0.812203
7.27931884	62	0.186747	-0.889947	-6.478210776	0.792006
7.27931884	63	0.189759	-0.878784	-6.396952391	0.772262
7.28619171	64	0.192771	-0.867731	-6.322452274	0.752957
7.28687641	65	0.195783	-0.85678	-6.243252806	0.734073
7.28961052	66	0.198795	-0.845932	-6.166517656	0.715602
7.29301768	67	0.201807	-0.835182	-6.090998284	0.697529
7.29979737	68	0.204819	-0.82453	-6.018899782	0.679849
7.3065314	69	0.207831	-0.813968	-5.947284207	0.662544
7.3065314	70	0.210843	-0.803498	-5.870780748	0.645608
7.31322039	71	0.213855	-0.793116	-5.800230343	0.629033
7.31322039	72	0.216867	-0.782816	-5.724903972	0.6128
7.3158835	73	0.21988	-0.7726	-5.652250374	0.596911
7.31721241	74	0.222892	-0.762464	-5.57910749	0.581351
7.33302301	75	0.225904	-0.752405	-5.517399538	0.566113
7.33726238	76	0.228916	-0.742423	-5.447350873	0.551192
7.34277919	77	0.231928	-0.732514	-5.378687483	0.536577
7.3524411	78	0.23494	-0.722675	-5.313428277	0.52226
7.3524411	79	0.237952	-0.712906	-5.241601471	0.508235
7.3524411	80	0.240964	-0.703205	-5.170276191	0.494498
7.3556411	81	0.243976	-0.693569	-5.101646784	0.481038
7.3556411	82	0.246988	-0.683999	-5.031252136	0.467855
7.3588309	83	0.25	-0.67449	-4.963460544	0.454937
7.3588309	84	0.253012	-0.665041	-4.893922168	0.442279
7.3588309	85	0.256024	-0.655652	-4.824835557	0.42988
7.36518013	86	0.259036	-0.646319	-4.760254141	0.417728
7.36518013	87	0.262048	-0.637044	-4.691945246	0.405825
7.36518013	88	0.26506	-0.627822	-4.62402152	0.39416
7.36518013	89	0.268072	-0.618654	-4.556499709	0.382733
7.36644515	90	0.271084	-0.609537	-4.490117399	0.371535
7.3714893	91	0.274096	-0.600471	-4.426366577	0.360566
7.3714893	92	0.277108	-0.591453	-4.35989314	0.349817
7.37462902	93	0.28012	-0.582484	-4.295600517	0.339287
7.37775891	94	0.283133	-0.573561	-4.231598208	0.328973
7.37838371	95	0.286145	-0.564683	-4.16644433	0.318866
7.38398946	96	0.289157	-0.55585	-4.104391962	0.308969
7.38398946	97	0.292169	-0.54706	-4.039484728	0.299275
7.38398946	98	0.295181	-0.538312	-3.974888096	0.28978
7.38987274	99	0.298193	-0.529606	-3.913717883	0.280482
7.39018143	100	0.301205	-0.520938	-3.849827083	0.271377
7.39018143	101	0.304217	-0.51231	-3.786066858	0.262462
7.39018143	102	0.307229	-0.50372	-3.722583889	0.253734
7.39510755	103	0.310241	-0.495168	-3.661817428	0.245191
7.39633529	104	0.313253	-0.48665	-3.59942769	0.236828
7.4021466	105	0.316265	-0.478169	-3.539477874	0.228646
7.40245152	106	0.319277	-0.469721	-3.477087259	0.220638
7.40853057	107	0.322289	-0.461307	-3.417607613	0.212804
7.40853057	108	0.325301	-0.452926	-3.355516766	0.205142
7.40853057	109	0.328313	-0.444576	-3.293653326	0.197648
7.41155629	110	0.331325	-0.436257	-3.23334571	0.19032
7.41155629	111	0.334337	-0.427967	-3.171903581	0.183156
7.41457288	112	0.337349	-0.419708	-3.111955041	0.176155
7.41457288	113	0.340361	-0.411477	-3.050926232	0.169313
7.41457288	114	0.343373	-0.403273	-2.990099729	0.162629
7.41607777	115	0.346386	-0.395098	-2.93007854	0.156103

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.54960917	173	0.521084	0.052876	0.399191233	0.002796
7.5574729	174	0.524096	0.060437	0.456751442	0.003653
7.56527528	175	0.527108	0.068003	0.514460801	0.004624
7.57044325	176	0.53012	0.075572	0.572114965	0.005711
7.57198845	177	0.533133	0.083146	0.629580594	0.006913
7.57942343	178	0.536145	0.090726	0.687647034	0.008231
7.58069975	179	0.539157	0.09831	0.745255227	0.009665
7.58069975	180	0.542169	0.105899	0.802790716	0.011215
7.58069975	181	0.545181	0.113495	0.860369297	0.012881
7.58578882	182	0.548193	0.121097	0.918615858	0.014664
7.58578882	183	0.551205	0.128706	0.97633658	0.016565
7.58578882	184	0.554217	0.136322	1.034109047	0.018584
7.58578882	185	0.557229	0.143947	1.091950507	0.020721
7.58832368	186	0.560241	0.15158	1.150236567	0.022976
7.60090246	187	0.563253	0.159222	1.210229575	0.025352
7.60090246	188	0.566265	0.166873	1.268385024	0.027847
7.60090246	189	0.569277	0.174534	1.326618243	0.030462
7.60090246	190	0.572289	0.182206	1.384929234	0.033199
7.60090246	191	0.575301	0.189887	1.443309355	0.036057
7.60090246	192	0.578313	0.197581	1.50179317	0.039038
7.60090246	193	0.581325	0.205285	1.560354756	0.042142
7.60265093	194	0.584337	0.213003	1.619383824	0.04537
7.60389797	195	0.587349	0.220732	1.678424294	0.048723
7.60389797	196	0.590361	0.228475	1.737302876	0.052201
7.60589	197	0.593373	0.236232	1.796755777	0.055806
7.60589	198	0.596386	0.244003	1.85585731	0.059537
7.60613873	199	0.599398	0.251788	1.915133878	0.063397
7.60837447	200	0.60241	0.259589	1.975051194	0.067387
7.60887063	201	0.605422	0.267406	2.034659346	0.071506
7.61085279	202	0.608434	0.275239	2.094805374	0.075757
7.61233684	203	0.611446	0.283089	2.154971265	0.08014
7.61431215	204	0.614458	0.290956	2.215433232	0.084656
7.61529834	205	0.61747	0.298843	2.275777886	0.089307
7.61579107	206	0.620482	0.306748	2.336125266	0.094094
7.61579107	207	0.623494	0.31467	2.396463928	0.099017
7.62070509	208	0.626506	0.322614	2.458543765	0.10408
7.62070509	209	0.629518	0.330577	2.519233254	0.109281
7.62461899	210	0.63253	0.338562	2.581403786	0.114624
7.62559507	211	0.635542	0.346569	2.642792117	0.12011
7.62559507	212	0.638554	0.354597	2.704014699	0.125739
7.62559507	213	0.641566	0.362649	2.765410666	0.131514
7.62559507	214	0.644578	0.370724	2.826988689	0.137436
7.62559507	215	0.64759	0.378823	2.888748767	0.143507
7.62803113	216	0.650602	0.386947	2.951642194	0.149728
7.62948992	217	0.653614	0.395098	3.014397282	0.156103
7.63046126	218	0.656627	0.403273	3.077161762	0.162629
7.63046126	219	0.659639	0.411477	3.139759336	0.169313
7.63046126	220	0.662651	0.419708	3.202565106	0.176155
7.63046126	221	0.665663	0.427967	3.265587747	0.183156
7.63143166	222	0.668675	0.436257	3.329267953	0.19032
7.63191651	223	0.671687	0.444576	3.392965309	0.197648
7.63288551	224	0.674699	0.452926	3.45713297	0.205142
7.63433724	225	0.677711	0.461307	3.521773829	0.212804
7.63530389	226	0.680723	0.469721	3.586462915	0.220638
7.63530389	227	0.683735	0.478169	3.650966488	0.228646
7.63530389	228	0.686747	0.48665	3.715721791	0.236828
7.63530389	229	0.689759	0.495168	3.780754865	0.245191

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.8785342	287	0.864458	1.100568	8.670863962	1.21125
7.88983375	288	0.86747	1.114511	8.793304324	1.242134
7.89952447	289	0.870482	1.128674	8.915986541	1.273905
7.90470391	290	0.873494	1.143064	9.035584924	1.306596
7.9266026	291	0.876506	1.157696	9.176594584	1.34026
7.94093976	292	0.879518	1.172582	9.311402714	1.374948
7.94803199	293	0.88253	1.187732	9.440130886	1.410707
7.96206731	294	0.885542	1.203157	9.579616209	1.447587
7.97590836	295	0.888554	1.218875	9.721637223	1.485657
7.9827577	296	0.891566	1.234901	9.857911776	1.524979
7.9827577	297	0.894578	1.251251	9.988433385	1.565629
7.98956045	298	0.89759	1.26794	10.13028492	1.607672
7.98956045	299	0.900602	1.284993	10.2665311	1.651208
7.99294455	300	0.903614	1.302426	10.41021857	1.696313
7.99631723	301	0.906627	1.320263	10.55724527	1.743096
8.00636757	302	0.909639	1.338533	10.71678649	1.79167
8.00636757	303	0.912651	1.357262	10.8667359	1.842159
8.00636757	304	0.915663	1.376475	11.02056285	1.894683
8.00969536	305	0.918675	1.396211	11.18322309	1.949405
8.00969536	306	0.921687	1.416511	11.34581928	2.006503
8.01301211	307	0.924699	1.437406	11.51795452	2.066137
8.01301211	308	0.927711	1.458952	11.69060232	2.128542
8.01961279	309	0.930723	1.481199	11.87863863	2.193949
8.02289687	310	0.933735	1.5042	12.06803862	2.262617
8.02289687	311	0.936747	1.528028	12.25921432	2.334871
8.02371621	312	0.939759	1.552753	12.45884957	2.411042
8.02420749	313	0.942771	1.578469	12.66596262	2.491564
8.02617019	314	0.945783	1.605272	12.8841846	2.576898
8.02617019	315	0.948795	1.63328	13.10898069	2.667603
8.02943284	316	0.951807	1.662634	13.35000501	2.764351
8.04205641	317	0.954819	1.693493	13.61916444	2.867918
8.04237801	318	0.957831	1.726057	13.88160474	2.979274
8.04237801	319	0.960843	1.760554	14.15904373	3.099552
8.04398443	320	0.963855	1.797289	14.45736361	3.230247
8.0481491	321	0.966867	1.836625	14.78142787	3.37319
8.04878828	322	0.96988	1.879025	15.1238756	3.530736
8.05832731	323	0.972892	1.9251	15.51308711	3.706011
8.05864371	324	0.975904	1.975659	15.92113166	3.903228
8.0677762	325	0.978916	2.031848	16.39249125	4.128404
8.07090609	326	0.981928	2.095294	16.91092025	4.390257
8.08023742	327	0.98494	2.168508	17.52206124	4.702428
8.08332861	328	0.987952	2.255583	18.23262053	5.087656
8.0955987	329	0.990964	2.364141	19.13913299	5.58916
8.11072758	330	0.993976	2.510715	20.36372292	6.303688
8.35467426	331	0.996988	2.746456	22.94574292	7.543019

Table D-17. TDS Near Upgradient Background Data, Filliben's Statistic Analysis (continued)

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1310	7.177782416	32	0.09561	-1.3070	-1712.126	1.708162	-9.381122051
1310	7.177782416	33	0.09863	-1.2894	-1689.114	1.662552	-9.255030736
1315	7.181591945	34	0.10165	-1.2722	-1672.968	1.618542	-9.136560442
1315	7.181591945	35	0.10467	-1.2554	-1650.861	1.576048	-9.01582345
1320	7.185387016	36	0.10768	-1.2389	-1635.405	1.53498	-8.902286679
1320	7.185387016	37	0.11070	-1.2228	-1614.105	1.495256	-8.786338175
1320	7.185387016	38	0.11372	-1.2070	-1593.221	1.456815	-8.672660607
1320	7.185387016	39	0.11674	-1.1915	-1572.725	1.419573	-8.5610906
1320	7.185387016	40	0.11975	-1.1762	-1552.601	1.383477	-8.451546466
1325	7.189167738	41	0.12277	-1.1612	-1538.641	1.348474	-8.348336835
1325	7.189167738	42	0.12579	-1.1465	-1519.137	1.314504	-8.242511051
1330	7.192934221	43	0.12881	-1.1320	-1505.618	1.281523	-8.142714487
1333	7.19518732	44	0.13183	-1.1178	-1490.028	1.249479	-8.042786292
1340	7.200424893	45	0.13484	-1.1038	-1479.07	1.218337	-7.947708272
1350	7.207859871	46	0.13786	-1.0900	-1471.469	1.18805	-7.85640223
1350	7.207859871	47	0.14088	-1.0764	-1453.11	1.158589	-7.758380961
1370	7.222566019	48	0.14390	-1.0630	-1456.272	1.129909	-7.67738496
1375	7.22620901	49	0.14692	-1.0498	-1443.416	1.10199	-7.585763309
1390	7.237059026	50	0.14993	-1.0367	-1441.043	1.074792	-7.502815716
1390	7.237059026	51	0.15295	-1.0239	-1423.164	1.048287	-7.409728836
1400	7.244227516	52	0.15597	-1.0112	-1415.634	1.022459	-7.325124634
1410	7.251344983	53	0.15899	-0.9986	-1408.071	0.997266	-7.241425171
1410	7.251344983	54	0.16200	-0.9863	-1390.618	0.972697	-7.151666406
1410	7.251344983	55	0.16502	-0.9740	-1373.376	0.948726	-7.062995827
1420	7.258412151	56	0.16804	-0.9619	-1365.956	0.92533	-6.982162165
1420	7.258412151	57	0.17106	-0.9500	-1348.992	0.90249	-6.895451628
1430	7.265429723	58	0.17408	-0.9382	-1341.601	0.880186	-6.816298574
1430	7.265429723	59	0.17709	-0.9265	-1324.895	0.858402	-6.731420486
1440	7.272398393	60	0.18011	-0.9149	-1317.517	0.83712	-6.653826912
1440	7.272398393	61	0.18313	-0.9035	-1301.048	0.816323	-6.570653249
1450	7.279318835	62	0.18615	-0.8922	-1293.668	0.795994	-6.494497211
1450	7.279318835	63	0.18916	-0.8810	-1277.421	0.776125	-6.412932627
1460	7.286191715	64	0.19218	-0.8699	-1270.027	0.756694	-6.338124544
1461	7.286876412	65	0.19520	-0.8589	-1254.839	0.737693	-6.258628317
1465	7.289610521	66	0.19822	-0.8480	-1242.326	0.71911	-6.181617167
1470	7.29301768	67	0.20124	-0.8372	-1230.706	0.700929	-6.105822951
1480	7.299797367	68	0.20425	-0.8265	-1223.255	0.683142	-6.033456068
1490	7.306531399	69	0.20727	-0.8159	-1215.73	0.665735	-5.961588112
1490	7.306531399	70	0.21029	-0.8054	-1200.073	0.648698	-5.884810536
1500	7.313220387	71	0.21331	-0.7950	-1192.498	0.632022	-5.813998607
1500	7.313220387	72	0.21632	-0.7847	-1176.996	0.615698	-5.738422811
1504	7.315883505	73	0.21934	-0.7744	-1164.719	0.599717	-5.66552462
1506	7.317212408	74	0.22236	-0.7642	-1150.953	0.58407	-5.592142904
1530	7.333023014	75	0.22538	-0.7542	-1153.854	0.568747	-5.530221355
1536.5	7.337262382	76	0.22840	-0.7441	-1143.37	0.553744	-5.45994654
1545	7.342779189	77	0.23141	-0.7342	-1134.337	0.539048	-5.391058883
1560	7.3524411	78	0.23443	-0.7243	-1129.952	0.524652	-5.325581911
1560	7.3524411	79	0.23745	-0.7145	-1114.668	0.510554	-5.253546136
1560	7.3524411	80	0.24047	-0.7048	-1099.487	0.496742	-5.18199517
1565	7.355641103	81	0.24349	-0.6951	-1087.888	0.483214	-5.113170165
1565	7.355641103	82	0.24650	-0.6855	-1072.862	0.469958	-5.042549733
1570	7.358830898	83	0.24952	-0.6760	-1061.317	0.456973	-4.97455389
1570	7.358830898	84	0.25254	-0.6665	-1046.438	0.44425	-4.904814729
1570	7.358830898	85	0.25556	-0.6571	-1031.655	0.431787	-4.835527334

Table D-17. TDS Near Upgradient Background Data, Filliben's Statistic Analysis (continued)

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1710	7.444248649	140	0.42154	-0.1980	-338.5185	0.03919	-1.473693444
1720	7.45007957	141	0.42455	-0.1903	-327.2385	0.036197	-1.417414314
1720	7.45007957	142	0.42757	-0.1826	-314.0003	0.033328	-1.36007404
1720	7.45007957	143	0.43059	-0.1749	-300.7798	0.03058	-1.302809994
1720	7.45007957	144	0.43361	-0.1672	-287.5768	0.027954	-1.245622175
1729	7.455298486	145	0.43663	-0.1595	-275.8272	0.02545	-1.189343157
1730	7.455876687	146	0.43964	-0.1519	-262.7405	0.023065	-1.132347178
1735	7.458762692	147	0.44266	-0.1442	-250.2311	0.020801	-1.075743004
1735	7.458762692	148	0.44568	-0.1366	-236.9761	0.018656	-1.01875988
1740	7.461640392	149	0.44870	-0.1290	-224.3797	0.016629	-0.962207205
1760	7.473069088	150	0.45171	-0.1213	-213.5408	0.014721	-0.906707501
1760	7.473069088	151	0.45473	-0.1137	-200.1349	0.012931	-0.849784998
1770	7.478734826	152	0.45775	-0.1061	-187.7999	0.011258	-0.793506119
1770	7.478734826	153	0.46077	-0.0985	-174.3419	0.009702	-0.736642488
1770	7.478734826	154	0.46379	-0.0909	-160.892	0.008263	-0.679812867
1776	7.482118924	155	0.46680	-0.0833	-147.952	0.00694	-0.623307674
1780	7.484368643	156	0.46982	-0.0757	-134.7775	0.005733	-0.566699237
1790	7.489970899	157	0.47284	-0.0681	-121.9592	0.004642	-0.510319121
1790	7.489970899	158	0.47586	-0.0606	-108.3899	0.003667	-0.45354036
1797	7.493873887	159	0.47888	-0.0530	-95.1975	0.002806	-0.396993909
1800	7.495541944	160	0.48189	-0.0454	-81.7256	0.002061	-0.340320933
1805	7.498315871	161	0.48491	-0.0378	-68.28598	0.001431	-0.283673054
1810	7.501082124	162	0.48793	-0.0303	-54.77682	0.000916	-0.22700852
1810	7.501082124	163	0.49095	-0.0227	-41.0785	0.000515	-0.170239335
1817	7.504942068	164	0.49396	-0.0151	-27.4902	0.000229	-0.113545603
1820	7.50659178	165	0.49698	-0.0076	-13.76779	5.72E-05	-0.056785281
1840	7.517520851	166	0.50000	0.0000	0	0	0
1860	7.528331767	167	0.50302	0.0076	14.07038	5.72E-05	0.056949738
1867.5	7.532355917	168	0.50604	0.0151	28.25424	0.000229	0.11396036
1870	7.53369371	169	0.50905	0.0227	42.44022	0.000515	0.170979465
1870	7.53369371	170	0.51207	0.0303	56.59263	0.000916	0.227995459
1886	7.542213463	171	0.51509	0.0378	71.35034	0.001431	0.285333769
1890	7.544332108	172	0.51811	0.0454	85.81188	0.002061	0.342536159
1900	7.549609165	173	0.52112	0.0530	100.654	0.002806	0.39994653
1915	7.557472902	174	0.52414	0.0606	115.959	0.003667	0.457627811
1930	7.565275282	175	0.52716	0.0681	131.498	0.004642	0.515449884
1940	7.570443252	176	0.53018	0.0757	146.8924	0.005733	0.573216609
1943	7.571988449	177	0.53320	0.0833	161.8641	0.00694	0.630794372
1957.5	7.579423428	178	0.53621	0.0909	177.9357	0.008263	0.688965406
1960	7.580699752	179	0.53923	0.0985	193.0566	0.009702	0.746685858
1960	7.580699752	180	0.54225	0.1061	207.9592	0.011258	0.804324766
1960	7.580699752	181	0.54527	0.1137	222.8775	0.012931	0.862024002
1970	7.585788822	182	0.54829	0.1213	239.0201	0.014721	0.920383787
1970	7.585788822	183	0.55130	0.1290	254.0391	0.016629	0.978216622
1970	7.585788822	184	0.55432	0.1366	269.0737	0.018656	1.036109825
1970	7.585788822	185	0.55734	0.1442	284.124	0.020801	1.094063397
1975	7.588323677	186	0.56036	0.1519	299.9494	0.023065	1.152462314
2000	7.60090246	187	0.56337	0.1595	319.0598	0.02545	1.212571347
2000	7.60090246	188	0.56639	0.1672	334.3916	0.027954	1.270839132
2000	7.60090246	189	0.56941	0.1749	349.7439	0.03058	1.329184687
2000	7.60090246	190	0.57243	0.1826	365.1166	0.033328	1.387608014
2000	7.60090246	191	0.57545	0.1903	380.5098	0.036197	1.446109112
2000	7.60090246	192	0.57846	0.1980	395.9281	0.03919	1.504705263
2000	7.60090246	193	0.58148	0.2057	411.369	0.042306	1.563387826

Table D-17. TDS Near Upgradient Background Data, Filliben's Statistic Analysis (continued)

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
2100	7.649692624	248	0.74746	0.6665	1399.694	0.44425	5.098680153
2100	7.649692624	249	0.75048	0.6760	1419.595	0.456973	5.171175792
2101	7.650168701	250	0.75350	0.6855	1440.309	0.469958	5.244458722
2101	7.650168701	251	0.75651	0.6951	1460.481	0.483214	5.317906871
2104	7.651595574	252	0.75953	0.7048	1482.898	0.496742	5.392839026
2105	7.652070746	253	0.76255	0.7145	1504.087	0.510554	5.467640768
2106	7.652545693	254	0.76557	0.7243	1525.436	0.524652	5.542956191
2110	7.654443226	255	0.76859	0.7342	1549.159	0.539048	5.619882212
2110	7.654443226	256	0.77160	0.7441	1570.134	0.553744	5.695973326
2110	7.654443226	257	0.77462	0.7542	1591.263	0.568747	5.772621374
2110	7.654443226	258	0.77764	0.7642	1612.557	0.58407	5.849869866
2113.5	7.65610062	259	0.78066	0.7744	1636.725	0.599717	5.92899361
2114	7.656337166	260	0.78368	0.7847	1658.78	0.615698	6.007654292
2114.5	7.656573657	261	0.78669	0.7950	1681.024	0.632022	6.086963912
2118	7.658227526	262	0.78971	0.8054	1705.875	0.648698	6.168072861
2120	7.659171368	263	0.79273	0.8159	1729.763	0.665735	6.249316191
2120	7.659171368	264	0.79575	0.8265	1752.23	0.683142	6.330487223
2130	7.663877259	265	0.79876	0.8372	1783.268	0.700929	6.416312111
2130	7.663877259	266	0.80178	0.8480	1806.248	0.71911	6.49899677
2130	7.663877259	267	0.80480	0.8589	1829.437	0.737693	6.582430731
2130	7.663877259	268	0.80782	0.8699	1852.848	0.756694	6.666666272
2140	7.668561108	269	0.81084	0.8810	1885.297	0.776125	6.755847195
2140	7.668561108	270	0.81385	0.8922	1909.275	0.795994	6.841773228
2146	7.671360923	271	0.81687	0.9035	1938.923	0.816323	6.931118161
2150	7.673223121	272	0.81989	0.9149	1967.127	0.83712	7.020558521
2150	7.673223121	273	0.82291	0.9265	1991.975	0.858402	7.10924106
2170	7.682482447	274	0.82592	0.9382	2035.856	0.880186	7.207570115
2191	7.69211334	275	0.82894	0.9500	2081.438	0.90249	7.307465372
2191.5	7.69234152	276	0.83196	0.9619	2108.093	0.92533	7.399576492
2210	7.700747795	277	0.83498	0.9740	2152.597	0.948726	7.50072568
2241	7.714677474	278	0.83800	0.9863	2210.195	0.972697	7.608629827
2250	7.718685495	279	0.84101	0.9986	2246.922	0.997266	7.708126362
2253	7.72001794	280	0.84403	1.0112	2278.16	1.022459	7.806228265
2264	7.724888439	281	0.84705	1.0239	2318.017	1.048287	7.909197426
2360	7.766416898	282	0.85007	1.0367	2446.663	1.074792	8.051612478
2400	7.783224016	283	0.85308	1.0498	2519.417	1.10199	8.170493697
2430	7.795646536	284	0.85610	1.0630	2583.022	1.129909	8.286553465
2560	7.847762537	285	0.85912	1.0764	2755.527	1.158589	8.447158039
2580	7.855544678	286	0.86214	1.0900	2812.141	1.18805	8.562363839
2640	7.878534196	287	0.86516	1.1038	2913.988	1.218337	8.696193952
2670	7.889833751	288	0.86817	1.1178	2984.528	1.249479	8.819262643
2696	7.899524472	289	0.87119	1.1320	3051.989	1.281523	8.942605393
2710	7.904703914	290	0.87421	1.1465	3107.064	1.314504	9.062886239
2770	7.926602599	291	0.87723	1.1612	3216.63	1.348474	9.20467443
2810	7.940939762	292	0.88025	1.1762	3305.159	1.383477	9.340237518
2830	7.948031991	293	0.88326	1.1915	3371.828	1.419573	9.469750456
2870	7.962067309	294	0.88628	1.2070	3464.049	1.456815	9.610102748
2910	7.97590836	295	0.88930	1.2228	3558.367	1.495256	9.752992838
2930	7.982757702	296	0.89232	1.2389	3630.104	1.53498	9.890183702
2930	7.982757702	297	0.89533	1.2554	3678.344	1.576048	10.02161285
2950	7.989560449	298	0.89835	1.2722	3753.047	1.618542	10.16447363
2950	7.989560449	299	0.90137	1.2894	3803.729	1.662552	10.30173712
2960	7.992944547	300	0.90439	1.3070	3868.621	1.708162	10.44651175
2970	7.996317232	301	0.90741	1.3249	3935.094	1.755485	10.5946992

Table D-18. TDS Near Upgradient Background Data Set, Distribution Summary

Parameter	Distribution Type (tested)	Coefficient of Variation	Studentized Range Test	Coefficient of Skewness (-1 to 1)	Shapiro-Wilk Test	Filliben's Statistic	Histogram	Probability Plot	Number of Samples	Distribution Type (determined)
TDS	Normal	Pass	Pass	Pass	Fail	Fail	X	?	331	Nonparametric
TDS	Lognormal	Pass	NA	Pass	Fail	Fail		?	331	

NA - not applicable
? - Results of graphical test were inconclusive.

Table D-19. T_n Statistic Analysis for TDS Near Upgradient Background Data Set

Parameter	Distribution	Maximum Observation	Mean	Standard Deviation	T_n Statistic	N	Upper 5% Critical Value	Pass or Fail T_n Statistic
TDS	Lognormal	8.354674262	7.52	0.27	3.060	331	3.34+	Pass

N - number of samples

Table D-20. 95th Percentile for Near Upgradient TDS Background Data Set

Parameter	Distribution	Censored?	95th Percentile (mg/L)	Sample #
TDS	Nonparametric	No	3060	331

SD = standard deviation

Table D-21. Summary Table for Near Upgradient TDS Background Data Set

Parameter	Distribution	Mean	SD	95th Percentile (mg/L)	Range (normal)	Sample #
TDS	Nonparametric	1923.02	546.89	3060	4250 to 954	331

SD = standard deviation
ND = non-detect, concentration reported as the minimum detecatable activity (MDA)

Table D-23. TDS Far Upgradient Background Data Set for Well 0914
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
10-Jan-83	TDS	430
14-Mar-94	TDS	1260
12-May-94	TDS	1418
24-Jan-96	TDS	1086
22-May-97	TDS	1160
12-May-98	TDS	1300
19-May-99	TDS	1320

Table D-24. TDS Far Upgradient Background Data Set for Well 0916
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Feb-94	TDS	360
26-Apr-94	TDS	318
29-Jan-96	TDS	362
28-May-97	TDS	393
12-May-98	TDS	377
20-May-99	TDS	331

Table D-25. TDS Far Upgradient Background Data Set for Well 0920
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Nov-81	TDS	2670
30-Aug-82	TDS	2480
05-Jan-83	TDS	2470
31-Aug-83	TDS	2420
14-Dec-89	TDS	2540
09-May-90	TDS	2610
21-May-91	TDS	2710
06-May-92	TDS	2630
06-May-93	TDS	2930
28-Feb-94	TDS	2556
29-Apr-94	TDS	2690
11-May-94	TDS	2650
10-May-95	TDS	2476
24-Jan-96	TDS	2723
20-May-96	TDS	2734
23-May-97	TDS	2690
12-May-98	TDS	2670
19-May-99	TDS	2750

Table D-29. TDS Far Upgradient Background Data Set Used in Statistical Analysis
(all concentrations in mg/L)

Well ID					
Well 914	Well 916	Well 920	Well 921	Well 922	Well 950
1418	393	2930	2640	1222	1879
1320	377	2750	2580	1083	1832
1300	362	2734	2560	1071	1671
1260	360	2723	2542	1060	
1160	331	2710	2542	1040	
1086	318	2690	2388	997	
430		2690		900	
		2670			
		2670			
		2650			
		2630			
		2610			
		2556			
		2540			
		2480			
		2476			
		2470			
		2420			

Table D-33. Far Upgradient Background TDS Data Set, Coefficient of Skewness Analysis

TDS	Normal (xi-avg)^3
318	-3385782739
331	-3298605050
360	-3109551584
362	-3096786573
377	-3002160734
393	-2903372592
430	-2683276496
900	-777661966
997	-556620729
1040	-473814536
1060	-438275879
1071	-419509753
1083	-399657177
1086	-394793879
1160	-286968043
1222	-213413795
1260	-175235951
1300	-140280323
1320	-124697054
1418	-64769017.2
1671	-3281097.37
1832	1908.58757
1879	209629.63
2388	183641978
2420	216436890
2470	275137712
2476	282822635
2480	288024604
2540	373877051
2542	376999598
2542	376999598
2556	399345567
2560	405888474
2580	439676866
2610	493796275
2630	532237093
2640	552183866
2650	572622881
2670	615001640
2670	615001640
2690	659421369
2690	659421369
2710	705930068
2723	737303670
2734	764565532
2750	805406377
2930	1369125793

Normal	
standard deviation =	888.1781221
mean =	1819.596
count =	47
sum of (xi-avg)^3 =	-13247434881
1/n =	0.021276596
standard deviation cubed =	700648527.8
((n-1)/n)^(3/2) =	0.968255473
coef. of skewness =	-0.4
acceptable range -1 to 1	Pass

Table D-34. TDS Far Upgradient Background Data Set, Shapiro-Wilk Test of Normality Analysis

TDS - raw data				
X(i)	X(n-i+1)	X(n-i+1)-X(i)	An-i+1	Bi
318	2930	2612	0.3808	994.6496
331	2750	2419	0.262	633.778
360	2734	2374	0.2291	543.8834
362	2723	2361	0.2052	484.4772
377	2710	2333	0.1859	433.7047
393	2690	2297	0.1695	389.3415
430	2690	2260	0.155	350.3
900	2670	1770	0.142	251.34
997	2670	1673	0.13	217.49
1040	2650	1610	0.1189	191.429
1060	2640	1580	0.1085	171.43
1071	2630	1559	0.0986	153.7174
1083	2610	1527	0.0892	136.2084
1086	2580	1494	0.0801	119.6694
1160	2560	1400	0.0713	99.82
1222	2556	1334	0.0628	83.7752
1260	2542	1282	0.0546	69.9972
1300	2542	1242	0.0465	57.753
1320	2540	1220	0.0385	46.97
1418	2480	1062	0.0307	32.6034
1671	2476	805	0.0229	18.4345
1832	2470	638	0.0153	9.7614
1879	2420	541	0.0076	4.1116
2388	2388	0	0	0
2420	1879	-541		
2470	1832	-638		
2476	1671	-805		
2480	1418	-1062		
2540	1320	-1220		
2542	1300	-1242		
2542	1260	-1282		
2556	1222	-1334		
2560	1160	-1400		
2580	1086	-1494		
2610	1083	-1527		
2630	1071	-1559		
2640	1060	-1580		
2650	1040	-1610		
2670	997	-1673		
2670	900	-1770		
2690	430	-2260		
2690	393	-2297		
2710	377	-2333		
2723	362	-2361		
2734	360	-2374		
2750	331	-2419		
2930	318	-2612		

5494.645 =sum of B
888.1781 = standard deviation
46 = count - 1

0.831996 = W statistic
0.946 is acceptable low value
Fails Shapiro-Wilk test

Table D-35 TDS Far Upgradient Background Data Set, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
318	5.76	1	0.01464	-2.1797	-693.149	4.75115	-12.559619
331	5.80	2	0.03552	-1.8052	-597.519	3.25872	-10.47394
360	5.89	3	0.05663	-1.5837	-570.12	2.508	-9.3216272
362	5.89	4	0.07775	-1.4204	-514.181	2.01751	-8.3684308
377	5.93	5	0.09886	-1.2881	-485.605	1.65914	-7.6411851
393	5.97	6	0.11997	-1.1751	-461.824	1.38092	-7.019967
430	6.06	7	0.14109	-1.0755	-462.447	1.15661	-6.5213404
900	6.80	8	0.16220	-0.9855	-886.918	0.97114	-6.7035206
997	6.90	9	0.18331	-0.9028	-900.113	0.81509	-6.233756
1040	6.95	10	0.20442	-0.8259	-858.963	0.68215	-5.7376866
1060	6.97	11	0.22554	-0.7536	-798.848	0.56796	-5.2498051
1071	6.98	12	0.24665	-0.6851	-733.715	0.46933	-4.7793189
1083	6.99	13	0.26776	-0.6196	-671.024	0.3839	-4.3294337
1086	6.99	14	0.28887	-0.5567	-604.553	0.30989	-3.8913288
1160	7.06	15	0.30999	-0.4959	-575.232	0.24591	-3.4990831
1222	7.11	16	0.33110	-0.4369	-533.868	0.19086	-3.105452
1260	7.14	17	0.35221	-0.3794	-477.99	0.14391	-2.7081796
1300	7.17	18	0.37332	-0.3231	-419.98	0.10437	-2.3163904
1320	7.19	19	0.39444	-0.2678	-353.461	0.0717	-1.9240557
1418	7.26	20	0.41555	-0.2133	-302.449	0.04549	-1.5478637
1671	7.42	21	0.43666	-0.1594	-266.421	0.02542	-1.1832165
1832	7.51	22	0.45777	-0.1060	-194.268	0.01124	-0.7967064
1879	7.54	23	0.47889	-0.0529	-99.486	0.0028	-0.3991349
2388	7.78	24	0.50000	0.0000	0	0	0
2420	7.79	25	0.52111	0.0529	128.13	0.0028	0.4125318
2470	7.81	26	0.54223	0.1060	261.922	0.01124	0.8283926
2476	7.81	27	0.56334	0.1594	394.768	0.02542	1.2459109
2480	7.82	28	0.58445	0.2133	528.965	0.04549	1.6670965
2540	7.84	29	0.60556	0.2678	680.145	0.0717	2.0993221
2542	7.84	30	0.62668	0.3231	821.223	0.10437	2.5330313
2542	7.84	31	0.64779	0.3794	964.326	0.14391	2.9744274
2556	7.85	32	0.66890	0.4369	1116.67	0.19086	3.4278499
2560	7.85	33	0.69001	0.4959	1269.48	0.24591	3.8916229
2580	7.86	34	0.71113	0.5567	1436.23	0.30989	4.3730165
2610	7.87	35	0.73224	0.6196	1617.15	0.3839	4.8744414
2630	7.87	36	0.75335	0.6851	1801.75	0.46933	5.3947838
2640	7.88	37	0.77446	0.7536	1989.58	0.56796	5.9375001
2650	7.88	38	0.79558	0.8259	2188.7	0.68215	6.5102071
2670	7.89	39	0.81669	0.9028	2410.53	0.81509	7.1231098
2670	7.89	40	0.83780	0.9855	2631.19	0.97114	7.7751534
2690	7.90	41	0.85891	1.0755	2892.98	1.15661	8.4932029
2690	7.90	42	0.88003	1.1751	3161.08	1.38092	9.2803026
2710	7.90	43	0.90114	1.2881	3490.69	1.65914	10.181863
2723	7.91	44	0.92225	1.4204	3867.72	2.01751	11.234557
2734	7.91	45	0.94337	1.5837	4329.74	2.508	12.53238
2750	7.92	46	0.96448	1.8052	4964.28	3.25872	14.295961
2930	7.98	47	0.98536	2.1797	6386.56	4.75115	17.400122

Normal

36871.683 =sum X(i)*M(i)
43.546 =sum M(i)^2
888.18 = standard deviation
6.5990 = square root of sum Mi^2

0.928 = Filliben's Statistic

Lognormal

28.176 =sum X(i)*M(i)
43.546 =sum M(i)^2
0.70 = standard deviation
6.5990 = square root of sum Mi^2

0.896 = Filliben's Statistic

.975 is acceptable value

Normal - Fail
Lognormal - Fail

Table D-40. TDS Upgradient Background Data, Comparison Statistics Results

Comparison of Medians

Median of Sample 1: 2388.0
Median of Sample 2: 1840.0

Mann-Whitney (Wilcoxon) W test to compare medians

Null hypothesis: median1 = median2
Alt. Hhpothesis: median1 NE median2

Average rank of sample 1: 184.298
Average rank of sample 2: 190.239

w = 8023.0 P-value = 0.72776

The StatAdvisor

This option runs the Mann-Whitney W test to compare the medians of the two samples. This test is constructed by combining the two samples, sorting the data from the smallest to the largest, and comparing the average ranks of the two samples in the combined data. Since the P-value greater than or equal to 0.05, there is not a statistically significant difference between the medians at the 95.0% confidence level.

Table D-41. TDS Combined Background Groundwater Data Set Used in Statistical Analysis
(all concentrations in mg/L) (continued)

Well ID													
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R	Well 914	Well 916	Well 920	Well 921	Well 922	Well 950
2950		1670					2010	1375						
2930		1670					2000	1350						
2930		1669					2000	1350						
2910		1665					2000	1340						
2870		1662.5					2000	1333						
2830		1660					1975	1330						
2810		1660					1970	1325						
2770		1660					1970	1325						
2710		1655					1970	1320						
2696		1655					1960	1320						
2670		1650					1960	1320						
2640		1650					1960	1320						
2580		1640					1957.5	1315						
2560		1639.5					1940	1315						
2430		1628					1930	1310						
2400		1620					1915	1310						
		1620					1870	1300						
		1620					1840	1292.5						
		1619.5					1820	1291						
		1610					1810	1270						
		1610					1810	1270						
		1590					1800	1269						
		1590					1780	1262						
		1582					1770	1261.5						
		1580					1730	1260						
		1580					1720	1242						
		1580					1630	1229						
		1580					1570	1220						
		1570					1430	1220						
		1570					1370	1210						
		1565					1280	1190						
		1560												
		1560												

Table D-42. TDS Combined Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
TDS	4250	3330	1.3	**Pass**

Table D-43. TDS Combined Background Data Set, Coefficient of Variation Analysis

Parameter	Mean	Standard Deviation	Coefficient of Variation	Results
TDS, normal	1910.16	599.35	0.31	**Pass**
TDS, lognormal	7.50	0.36	0.05	**Pass**

Table D-44. TDS Combined Background Data Set, Studentized Range Test Analysis

Parameter	Range		Standard Deviation	Critical Values		W/S	Results
	Maximum	Minimum		Maximum	Minimum		
TDS, normal	4250	318	599.35	6.94	5.47	6.56	**Pass**

W = range of values
S = standard deviation

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi (continued)

TDS	Normal (xi-avg)^3
1315	-210819126
1315	-210819126
1320	-205550335
1320	-205550335
1320	-205550335
1320	-205550335
1320	-205550335
1320	-205550335
1325	-200370069
1325	-200370069
1330	-195277577
1333	-192263902
1340	-185352917
1350	-175770356
1350	-175770356
1370	-157607529
1375	-153271259
1390	-140741096
1390	-140741096
1400	-132779027
1410	-125123056
1410	-125123056
1410	-125123056
1418	-119214639
1420	-117767184
1420	-117767184
1430	-110705410
1430	-110705410
1440	-103931735
1440	-103931735
1450	-97440157.8
1450	-97440157.8
1460	-91224679.2
1461	-90618085.7
1465	-88218601.8
1470	-85279299
1480	-79598017.2
1490	-74174833.9
1490	-74174833.9
1500	-69003749
1500	-69003749
1504	-67004558.5
1506	-66019609.2
1530	-54943084.6
1536.5	-52172764.5
1545	-48692709.6
1560	-42935306
1560	-42935306
1560	-42935306
1565	-41122220.7
1565	-41122220.7

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi (continued)

TDS	Normal (xi-avg)^3
1700	-9282716.95
1700	-9282716.95
1700.5	-9216621.08
1704	-8762713.84
1707	-8385720.83
1710	-8019698.69
1710	-8019698.69
1710	-8019698.69
1720	-6876778.83
1720	-6876778.83
1720	-6876778.83
1720	-6876778.83
1729	-5945876.1
1730	-5847957.39
1735	-5374458.57
1735	-5374458.57
1740	-4927234.36
1760	-3386083.54
1760	-3386083.54
1770	-2753655.75
1770	-2753655.75
1770	-2753655.75
1776	-2414950.31
1780	-2205326.37
1790	-1735095.4
1790	-1735095.4
1797	-1449189.28
1800	-1336962.85
1805	-1163058.48
1810	-1004928.71
1810	-1004928.71
1817	-808620.367
1820	-732992.982
1832	-477552.014
1840	-345416.765
1860	-126234.199
1867.5	-77657.8492
1870	-64790.5344
1870	-64790.5344
1879	-30266.3794
1886	-14109.37
1890	-8198.44399
1900	-1050.01785
1915	113.0975442
1930	7804.784367
1940	26559.55971
1943	35403.80184
1957.5	106065.486
1960	123773.8723
1960	123773.8723
1960	123773.8723

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
2080	4898793.081
2082.5	5118325.079
2083	5163003.99
2083	5163003.99
2086	5436548.042
2089	5719587.236
2089.5	5767694.949
2090	5816071.666
2090	5816071.666
2090	5816071.666
2090	5816071.666
2090	5816071.666
2090	5816071.666
2092	6012283.573
2097	6522011.12
2100	6841251.838
2100	6841251.838
2101	6949935.443
2101	6949935.443
2104	7282880.352
2105	7396180.02
2106	7510648.703
2110	7980333.598
2110	7980333.598
2110	7980333.598
2110	7980333.598
2113.5	8407031.838
2114	8469202.746
2114.5	8531679.407
2118	8977640.148
2120	9239316.944
2120	9239316.944
2130	10624201.88
2130	10624201.88
2130	10624201.88
2130	10624201.88
2140	12140988.4
2140	12140988.4
2146	13116869.07
2150	13795676.51
2150	13795676.51
2170	17542757.49
2191	22149209.85
2191.5	22267723.87
2210	26955738.49
2241	36210806.74
2250	39247144.9
2253	40295743.9
2264	44300229.14
2360	91025393.46
2388	109102961.9

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi (continued)

TDS	Normal (xi-avg)^3
3050	1480904606
3052.5	1490670189
3054	1496550095
3060	1520224339
3060	1520224339
3070	1560233973
3109	1722976305
3110	1727291525
3110	1727291525
3115	1748975734
3128	1806202342
3130	1815115711
3160	1952356252
3161	1957046272
3190	2096345906
3200	2145870261
3230	2299110735
3240	2351766696
3280	2570429557
3330	2862295918
4250	12810209846

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi (continued)

TDS	Normal (xi-avg)^3
7.17012	-0.03552327
7.177782	-0.03309652
7.177782	-0.03309652
7.177782	-0.03309652
7.177782	-0.03309652
7.181592	-0.03193234
7.181592	-0.03193234
7.185387	-0.03080006
7.185387	-0.03080006
7.185387	-0.03080006
7.185387	-0.03080006
7.185387	-0.03080006
7.185387	-0.03080006
7.189168	-0.02969899
7.189168	-0.02969899
7.192934	-0.02862847
7.195187	-0.02800056
7.200425	-0.02657654
7.20786	-0.02463922
7.20786	-0.02463922
7.222566	-0.02108914
7.226209	-0.02026586
7.237059	-0.01794136
7.237059	-0.01794136
7.244228	-0.0165075
7.251345	-0.01516152
7.251345	-0.01516152
7.251345	-0.01516152
7.257003	-0.01414537
7.258412	-0.0138995
7.258412	-0.0138995
7.26543	-0.01271762
7.26543	-0.01271762
7.272398	-0.01161224
7.272398	-0.01161224
7.279319	-0.01057982
7.279319	-0.01057982
7.286192	-0.00961692
7.286876	-0.00952433
7.289611	-0.00916052
7.293018	-0.00872026
7.299797	-0.00788665
7.306531	-0.00711299
7.306531	-0.00711299
7.31322	-0.00639631
7.31322	-0.00639631
7.315884	-0.00612495
7.317212	-0.00599245
7.333023	-0.00455986
7.337262	-0.00421901
7.342779	-0.00380146

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi (continued)

TDS	Normal (xi-avg)^3
7.430114	-0.00032473
7.438384	-0.00022106
7.438384	-0.00022106
7.438384	-0.00022106
7.438384	-0.00022106
7.438384	-0.00022106
7.438384	-0.00022106
7.438678	-0.00021785
7.440734	-0.00019627
7.442493	-0.00017898
7.444249	-0.00016277
7.444249	-0.00016277
7.444249	-0.00016277
7.45008	-0.00011599
7.45008	-0.00011599
7.45008	-0.00011599
7.45008	-0.00011599
7.455298	-8.2596E-05
7.455877	-7.9349E-05
7.458763	-6.4412E-05
7.458763	-6.4412E-05
7.46164	-5.1511E-05
7.473069	-1.7132E-05
7.473069	-1.7132E-05
7.478735	-8.1369E-06
7.478735	-8.1369E-06
7.478735	-8.1369E-06
7.482119	-4.682E-06
7.484369	-3.0358E-06
7.489971	-6.996E-07
7.489971	-6.996E-07
7.493874	-1.2309E-07
7.495542	-3.6144E-08
7.498316	-1.5089E-10
7.501082	1.11474E-08
7.501082	1.11474E-08
7.504942	2.26291E-07
7.506592	4.64319E-07
7.513164	2.9336E-06
7.517521	6.5105E-06
7.528332	2.56294E-05
7.532356	3.76212E-05
7.533694	4.23096E-05
7.533694	4.23096E-05
7.538495	6.23193E-05
7.542213	8.15501E-05
7.544332	9.40961E-05
7.549609	0.000130794
7.557473	0.000201484
7.565275	0.000293113
7.570443	0.000366985

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
7.635304	0.002540823
7.635304	0.002540823
7.63627	0.002595151
7.637957	0.002691949
7.640123	0.00281965
7.640123	0.00281965
7.641324	0.002892186
7.641564	0.002906831
7.641564	0.002906831
7.643004	0.00299566
7.644441	0.00308615
7.64468	0.003101394
7.644919	0.003116684
7.644919	0.003116684
7.644919	0.003116684
7.644919	0.003116684
7.644919	0.003116684
7.644919	0.003116684
7.645876	0.00317831
7.648263	0.003335651
7.649693	0.003432316
7.649693	0.003432316
7.650169	0.003464917
7.650169	0.003464917
7.651596	0.003563861
7.652071	0.003597225
7.652546	0.00363078
7.654443	0.003766923
7.654443	0.003766923
7.654443	0.003766923
7.654443	0.003766923
7.656101	0.003888585
7.656337	0.003906159
7.656574	0.003923783
7.658228	0.004048513
7.659171	0.004120865
7.659171	0.004120865
7.663877	0.004494494
7.663877	0.004494494
7.663877	0.004494494
7.663877	0.004494494
7.668561	0.004888147
7.668561	0.004888147
7.671361	0.005134084
7.673223	0.005302146
7.673223	0.005302146
7.682482	0.006192424
7.692113	0.00721872
7.692342	0.007244319
7.700748	0.008230117
7.714677	0.010053811

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
8.009695	0.133313095
8.013012	0.135926657
8.013012	0.135926657
8.019613	0.141229109
8.022897	0.143917875
8.022897	0.143917875
8.023716	0.144593966
8.024207	0.145000369
8.02617	0.146631585
8.02617	0.146631585
8.029433	0.149370176
8.042056	0.160287203
8.042378	0.160572055
8.042378	0.160572055
8.043984	0.162000001
8.048149	0.165741327
8.048788	0.166320584
8.058327	0.17512635
8.058644	0.175423639
8.067776	0.18415003
8.070906	0.187206023
8.080237	0.196517304
8.083329	0.199668593
8.095599	0.212509458
8.110728	0.229085366
8.354674	0.626839626

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1220	32	0.084433	-1.37586	-1678.54746	1.892987
1222	33	0.087071	-1.35901	-1660.713224	1.846915
1229	34	0.08971	-1.34255	-1649.989103	1.80243
1242	35	0.092348	-1.32643	-1647.431473	1.759428
1260	36	0.094987	-1.31066	-1651.430557	1.717827
1260	37	0.097625	-1.2952	-1631.95491	1.677549
1261.5	38	0.100264	-1.28005	-1614.783237	1.638528
1262	39	0.102902	-1.26519	-1596.665629	1.600697
1269	40	0.105541	-1.2506	-1587.006504	1.563991
1270	41	0.108179	-1.23627	-1570.062045	1.528362
1270	42	0.110818	-1.22219	-1552.181743	1.493749
1280	43	0.113456	-1.20835	-1546.688145	1.46011
1291	44	0.116095	-1.19474	-1542.405791	1.427397
1292.5	45	0.118734	-1.18134	-1526.885399	1.39557
1300	46	0.121372	-1.16815	-1518.601493	1.364586
1300	47	0.124011	-1.15517	-1501.72059	1.334417
1310	48	0.126649	-1.14238	-1496.511732	1.305021
1310	49	0.129288	-1.12977	-1479.992443	1.276369
1310	50	0.131926	-1.11733	-1463.705485	1.248432
1310	51	0.134565	-1.10507	-1447.641921	1.22118
1315	52	0.137203	-1.09297	-1437.257674	1.194587
1315	53	0.139842	-1.08103	-1421.554384	1.168626
1320	54	0.14248	-1.06924	-1411.400626	1.14328
1320	55	0.145119	-1.0576	-1396.033804	1.118521
1320	56	0.147757	-1.0461	-1380.853064	1.094327
1320	57	0.150396	-1.03474	-1365.852404	1.07068
1320	58	0.153034	-1.02351	-1351.028823	1.047566
1320	59	0.155673	-1.0124	-1336.370315	1.024957
1325	60	0.158311	-1.00142	-1326.883989	1.002846
1325	61	0.16095	-0.99056	-1312.495328	0.981214
1330	62	0.163588	-0.97982	-1303.156387	0.960041
1333	63	0.166227	-0.96918	-1291.92036	0.939315
1340	64	0.168865	-0.95866	-1284.600967	0.919024
1350	65	0.171504	-0.94824	-1280.122888	0.899158
1350	66	0.174142	-0.93792	-1266.193294	0.879696
1370	67	0.176781	-0.9277	-1270.952816	0.860632
1375	68	0.17942	-0.91758	-1261.672651	0.841953
1390	69	0.182058	-0.90755	-1261.495413	0.823648
1390	70	0.184697	-0.89761	-1247.677733	0.805703
1400	71	0.187335	-0.88776	-1242.864073	0.788118
1410	72	0.189974	-0.87799	-1237.972037	0.770874
1410	73	0.192612	-0.86831	-1224.317816	0.753963
1410	74	0.195251	-0.85871	-1210.77901	0.73738
1418	75	0.197889	-0.84918	-1204.142677	0.721113
1420	76	0.200528	-0.83974	-1192.427385	0.705159
1420	77	0.203166	-0.83036	-1179.117044	0.689505
1430	78	0.205805	-0.82106	-1174.122281	0.674147
1430	79	0.208443	-0.81183	-1160.923046	0.659075
1440	80	0.211082	-0.80267	-1155.848076	0.644283
1440	81	0.21372	-0.79358	-1142.754627	0.629769
1450	82	0.216359	-0.78455	-1137.596712	0.615518
1450	83	0.218997	-0.77558	-1124.595315	0.601529

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1665	136	0.358839	-0.36156	-602.0039507	0.130728
1669	137	0.361478	-0.35451	-591.6804275	0.125679
1670	138	0.364116	-0.34748	-580.2884857	0.120741
1670	139	0.366755	-0.34046	-568.5705105	0.115914
1671	140	0.369393	-0.33346	-557.2144755	0.111197
1675	141	0.372032	-0.32648	-546.8485824	0.106587
1680	142	0.37467	-0.31951	-536.7768608	0.102087
1680	143	0.377309	-0.31256	-525.0956747	0.097692
1680	144	0.379947	-0.30562	-513.4412277	0.093403
1680	145	0.382586	-0.2987	-501.8096999	0.089219
1681	146	0.385224	-0.29179	-490.4967	0.085141
1682.5	147	0.387863	-0.28489	-479.3333659	0.081164
1682.5	148	0.390501	-0.27801	-467.7553022	0.077291
1686	149	0.39314	-0.27115	-457.1511136	0.07352
1700	150	0.395778	-0.26429	-449.2931112	0.069849
1700	151	0.398417	-0.25745	-437.6603329	0.066279
1700	152	0.401055	-0.25062	-426.0468813	0.062808
1700	153	0.403694	-0.2438	-414.4546892	0.059437
1700	154	0.406332	-0.23699	-402.8818239	0.056164
1700	155	0.408971	-0.23019	-391.3282853	0.052989
1700.5	156	0.411609	-0.22341	-379.9038444	0.049911
1704	157	0.414248	-0.21663	-369.1379789	0.046929
1707	158	0.416887	-0.20986	-358.2391548	0.044043
1710	159	0.419525	-0.20311	-347.3152901	0.041253
1710	160	0.422164	-0.19636	-335.7793275	0.038558
1710	161	0.424802	-0.18962	-324.2550292	0.035957
1720	162	0.427441	-0.18289	-314.5771643	0.03345
1720	163	0.430079	-0.17617	-303.0167591	0.031037
1720	164	0.432718	-0.16946	-291.4700417	0.028716
1720	165	0.435356	-0.16275	-279.9370122	0.026489
1729	166	0.437995	-0.15606	-269.8202161	0.024353
1730	167	0.440633	-0.14936	-258.3997912	0.02231
1735	168	0.443272	-0.14268	-247.5485076	0.020357
1735	169	0.44591	-0.136	-235.9622385	0.018496
1740	170	0.448549	-0.12933	-225.0304988	0.016726
1760	171	0.451187	-0.12266	-215.883847	0.015046
1760	172	0.453826	-0.116	-204.1626431	0.013456
1770	173	0.456464	-0.10935	-193.5408932	0.011956
1770	174	0.459103	-0.10269	-181.7671773	0.010546
1770	175	0.461741	-0.09605	-170.0035227	0.009225
1776	176	0.46438	-0.08941	-158.7843508	0.007993
1780	177	0.467018	-0.08277	-147.323999	0.00685
1790	178	0.469657	-0.07613	-136.2754347	0.005796
1790	179	0.472296	-0.0695	-124.4073474	0.00483
1797	180	0.474934	-0.06287	-112.9814007	0.003953
1800	181	0.477573	-0.05625	-101.2438133	0.003164
1805	182	0.480211	-0.04962	-89.57186992	0.002463
1810	183	0.48285	-0.043	-77.83576166	0.001849
1810	184	0.485488	-0.03638	-65.85564734	0.001324
1817	185	0.488127	-0.02977	-54.08595712	0.000886
1820	186	0.490765	-0.02315	-42.13309239	0.000536
1832	187	0.493404	-0.01653	-30.29141226	0.000273

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2058	240	0.633245	0.340461	700.6695273	0.115914
2060	241	0.635884	0.347478	715.8049584	0.120741
2060	242	0.638522	0.354512	730.294596	0.125679
2060	243	0.641161	0.361564	744.8217048	0.130728
2060	244	0.643799	0.368634	759.3862847	0.135891
2062	245	0.646438	0.375721	774.7374366	0.141167
2063	246	0.649077	0.382829	789.7763453	0.146558
2065	247	0.651715	0.389955	805.2569683	0.152065
2068	248	0.654354	0.397101	821.2054945	0.157689
2070	249	0.656992	0.404268	836.8350109	0.163433
2070	250	0.659631	0.411455	851.7126844	0.169296
2070	251	0.662269	0.418664	866.6350709	0.17528
2070	252	0.664908	0.425895	881.6021705	0.181386
2072	253	0.667546	0.433147	897.4802768	0.187616
2075.5	254	0.670185	0.440423	914.0975408	0.193972
2080	255	0.672823	0.447723	931.2630937	0.200456
2080	256	0.675462	0.455045	946.4940376	0.207066
2082.5	257	0.6781	0.462394	962.9353542	0.213808
2083	258	0.680739	0.469765	978.521291	0.22068
2083	259	0.683377	0.477164	993.9328652	0.227686
2086	260	0.686016	0.484588	1010.850301	0.234825
2089	261	0.688654	0.492039	1027.869278	0.242102
2089.5	262	0.691293	0.499518	1043.743623	0.249519
2090	263	0.693931	0.507025	1059.682472	0.257074
2090	264	0.69657	0.51456	1075.430964	0.264772
2090	265	0.699208	0.522125	1091.241234	0.272615
2090	266	0.701847	0.529719	1107.11328	0.280603
2090	267	0.704485	0.537345	1123.051857	0.28874
2090	268	0.707124	0.545002	1139.054586	0.297027
2092	269	0.709763	0.552691	1156.229227	0.305467
2097	270	0.712401	0.560412	1175.184898	0.314062
2100	271	0.71504	0.568168	1193.153139	0.322815
2100	272	0.717678	0.575958	1209.511765	0.331728
2101	273	0.720317	0.583782	1226.525796	0.340801
2101	274	0.722955	0.591642	1243.040304	0.350041
2104	275	0.725594	0.59954	1261.432253	0.359448
2105	276	0.728232	0.607474	1278.733293	0.369025
2106	277	0.730871	0.615448	1296.134001	0.378777
2110	278	0.733509	0.623461	1315.502482	0.388703
2110	279	0.736148	0.631514	1332.495526	0.398811
2110	280	0.738786	0.639608	1349.572528	0.409098
2110	281	0.741425	0.647744	1366.740685	0.419573
2113.5	282	0.744063	0.655923	1386.293327	0.430235
2114	283	0.746702	0.664147	1404.007048	0.441091
2114.5	284	0.74934	0.672414	1421.820342	0.452141
2118	285	0.751979	0.680729	1441.78508	0.463393
2120	286	0.754617	0.689092	1460.875683	0.474848
2120	287	0.757256	0.697503	1478.706054	0.48651
2130	288	0.759894	0.705963	1503.702106	0.498384
2130	289	0.762533	0.714474	1521.829677	0.510473
2130	290	0.765172	0.723037	1540.068638	0.522782
2130	291	0.76781	0.731654	1558.423833	0.535318

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2930	344	0.907652	1.326434	3886.452669	1.759428
2950	345	0.91029	1.342546	3960.510867	1.80243
2950	346	0.912929	1.359012	4009.086751	1.846915
2960	347	0.915567	1.375859	4072.541378	1.892987
2970	348	0.918206	1.393105	4137.521455	1.940741
3000	349	0.920844	1.410774	4232.322226	1.990283
3000	350	0.923483	1.428896	4286.687272	2.041743
3000	351	0.926121	1.447497	4342.491593	2.095248
3010	352	0.92876	1.466619	4414.524165	2.150972
3010	353	0.931398	1.486287	4473.724312	2.209049
3020	354	0.934037	1.506551	4549.78308	2.269695
3020	355	0.936675	1.527451	4612.901648	2.333106
3040	356	0.939314	1.549042	4709.088535	2.399532
3050	357	0.941953	1.571379	4792.707387	2.469233
3050	358	0.944591	1.594526	4863.304639	2.542514
3052.5	359	0.94723	1.618564	4940.666781	2.61975
3054	360	0.949868	1.643575	5019.47854	2.701339
3060	361	0.952507	1.669659	5109.157973	2.787763
3060	362	0.955145	1.696931	5192.607841	2.879574
3070	363	0.957784	1.725525	5297.362304	2.977437
3109	364	0.960422	1.755607	5458.181286	3.082155
3110	365	0.963061	1.787366	5558.709108	3.194678
3110	366	0.965699	1.821036	5663.421234	3.316171
3115	367	0.968338	1.856906	5784.26293	3.448101
3128	368	0.970976	1.895341	5928.628161	3.592319
3130	369	0.973615	1.936796	6062.17227	3.75118
3160	370	0.976253	1.981871	6262.711759	3.927812
3161	371	0.978892	2.031375	6421.175131	4.126483
3190	372	0.98153	2.086435	6655.728976	4.353213
3200	373	0.984169	2.148645	6875.66353	4.616675
3230	374	0.986807	2.220495	7172.198639	4.930598
3240	375	0.989446	2.306042	7471.5761	5.31783
3280	376	0.992084	2.41278	7913.919399	5.821509
3330	377	0.994723	2.557135	8515.260561	6.538941
4250	378	0.997361	2.789602	11855.80913	7.78188

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.1082441	33	0.087071	-1.35901	-9.660192341	1.846915
7.1139561	34	0.08971	-1.34255	-9.550813721	1.80243
7.1244783	35	0.092348	-1.32643	-9.45015275	1.759428
7.138867	36	0.094987	-1.31066	-9.356621513	1.717827
7.138867	37	0.097625	-1.2952	-9.246277028	1.677549
7.1400568	38	0.100264	-1.28005	-9.139630581	1.638528
7.140453	39	0.102902	-1.26519	-9.0340063	1.600697
7.1459845	40	0.105541	-1.2506	-8.936740608	1.563991
7.1467722	41	0.108179	-1.23627	-8.835335232	1.528362
7.1467722	42	0.110818	-1.22219	-8.734715984	1.493749
7.1546154	43	0.113456	-1.20835	-8.645280277	1.46011
7.1631724	44	0.116095	-1.19474	-8.558108893	1.427397
7.1643336	45	0.118734	-1.18134	-8.463532978	1.39557
7.1701195	46	0.121372	-1.16815	-8.375810959	1.364586
7.1701195	47	0.124011	-1.15517	-8.28270473	1.334417
7.1777824	48	0.126649	-1.14238	-8.199721827	1.305021
7.1777824	49	0.129288	-1.12977	-8.109208956	1.276369
7.1777824	50	0.131926	-1.11733	-8.019969076	1.248432
7.1777824	51	0.134565	-1.10507	-7.931953226	1.22118
7.1815919	52	0.137203	-1.09297	-7.849276149	1.194587
7.1815919	53	0.139842	-1.08103	-7.763515981	1.168626
7.185387	54	0.14248	-1.06924	-7.682924041	1.14328
7.185387	55	0.145119	-1.0576	-7.599275126	1.118521
7.185387	56	0.147757	-1.0461	-7.516639148	1.094327
7.185387	57	0.150396	-1.03474	-7.434983431	1.07068
7.185387	58	0.153034	-1.02351	-7.354291636	1.047566
7.185387	59	0.155673	-1.0124	-7.274498414	1.024957
7.1891677	60	0.158311	-1.00142	-7.199389863	1.002846
7.1891677	61	0.16095	-0.99056	-7.121320054	0.981214
7.1929342	62	0.163588	-0.97982	-7.047758022	0.960041
7.1951873	63	0.166227	-0.96918	-6.973450105	0.939315
7.2004249	64	0.168865	-0.95866	-6.902740879	0.919024
7.2078599	65	0.171504	-0.94824	-6.834775106	0.899158
7.2078599	66	0.174142	-0.93792	-6.760402841	0.879696
7.222566	67	0.176781	-0.9277	-6.700394616	0.860632
7.226209	68	0.17942	-0.91758	-6.630625656	0.841953
7.237059	69	0.182058	-0.90755	-6.567997673	0.823648
7.237059	70	0.184697	-0.89761	-6.496055682	0.805703
7.2442275	71	0.187335	-0.88776	-6.431135797	0.788118
7.251345	72	0.189974	-0.87799	-6.366639945	0.770874
7.251345	73	0.192612	-0.86831	-6.296419046	0.753963
7.251345	74	0.195251	-0.85871	-6.226791701	0.73738
7.2570027	75	0.197889	-0.84918	-6.162529385	0.721113
7.2584122	76	0.200528	-0.83974	-6.095161563	0.705159
7.2584122	77	0.203166	-0.83036	-6.027124984	0.689505
7.2654297	78	0.205805	-0.82106	-5.965386655	0.674147
7.2654297	79	0.208443	-0.81183	-5.898325036	0.659075

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.4085306	127	0.335092	-0.42589	-3.15525441	0.181386
7.4085306	128	0.337731	-0.41866	-3.101687156	0.17528
7.4085306	129	0.340369	-0.41146	-3.048279931	0.169296
7.4115563	130	0.343008	-0.40427	-2.996255936	0.163433
7.4115563	131	0.345646	-0.3971	-2.943138659	0.157689
7.4145729	132	0.348285	-0.38995	-2.891349385	0.152065
7.4145729	133	0.350923	-0.38283	-2.838513947	0.146558
7.4145729	134	0.353562	-0.37572	-2.785813379	0.141167
7.4160778	135	0.356201	-0.36863	-2.733819295	0.135891
7.4175804	136	0.358839	-0.36156	-2.681929554	0.130728
7.4199799	137	0.361478	-0.35451	-2.630471476	0.125679
7.4205789	138	0.364116	-0.34748	-2.57848892	0.120741
7.4205789	139	0.366755	-0.34046	-2.526420561	0.115914
7.4211775	140	0.369393	-0.33346	-2.474678363	0.111197
7.4235684	141	0.372032	-0.32648	-2.423622615	0.106587
7.4265491	142	0.37467	-0.31951	-2.372856963	0.102087
7.4265491	143	0.377309	-0.31256	-2.321219521	0.097692
7.4265491	144	0.379947	-0.30562	-2.269700282	0.093403
7.4265491	145	0.382586	-0.2987	-2.218282358	0.089219
7.4271441	146	0.385224	-0.29179	-2.167156269	0.085141
7.4280361	147	0.387863	-0.28489	-2.116199422	0.081164
7.4280361	148	0.390501	-0.27801	-2.065083657	0.077291
7.4301141	149	0.39314	-0.27115	-2.014641134	0.07352
7.4383835	150	0.395778	-0.26429	-1.96589087	0.069849
7.4383835	151	0.398417	-0.25745	-1.914991419	0.066279
7.4383835	152	0.401055	-0.25062	-1.864176532	0.062808
7.4383835	153	0.403694	-0.2438	-1.813454667	0.059437
7.4383835	154	0.406332	-0.23699	-1.762817367	0.056164
7.4383835	155	0.408971	-0.23019	-1.712264631	0.052989
7.4386776	156	0.411609	-0.22341	-1.661853701	0.049911
7.4407337	157	0.414248	-0.21663	-1.611888147	0.046929
7.4424927	158	0.416887	-0.20986	-1.56191699	0.044043
7.4442486	159	0.419525	-0.20311	-1.511989111	0.041253
7.4442486	160	0.422164	-0.19636	-1.461768892	0.038558
7.4442486	161	0.424802	-0.18962	-1.411599452	0.035957
7.4500796	162	0.427441	-0.18289	-1.362572619	0.03345
7.4500796	163	0.430079	-0.17617	-1.312499399	0.031037
7.4500796	164	0.432718	-0.16946	-1.262485467	0.028716
7.4500796	165	0.435356	-0.16275	-1.212530823	0.026489
7.4552985	166	0.437995	-0.15606	-1.163441439	0.024353
7.4558767	167	0.440633	-0.14936	-1.113639872	0.02231
7.4587627	168	0.443272	-0.14268	-1.064210705	0.020357
7.4587627	169	0.44591	-0.136	-1.01440135	0.018496
7.4616404	170	0.448549	-0.12933	-0.96499808	0.016726
7.4730691	171	0.451187	-0.12266	-0.916656195	0.015046
7.4730691	172	0.453826	-0.116	-0.866887237	0.013456
7.4787348	173	0.456464	-0.10935	-0.817763287	0.011956

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.60589	221	0.583113	0.209865	1.596208322	0.044043
7.6061387	222	0.585752	0.21663	1.64771988	0.046929
7.6083745	223	0.588391	0.223407	1.699765194	0.049911
7.6088706	224	0.591029	0.230193	1.751509586	0.052989
7.6108528	225	0.593668	0.236989	1.803690737	0.056164
7.6123368	226	0.596306	0.243797	1.85586394	0.059437
7.6143121	227	0.598945	0.250616	1.908267026	0.062808
7.6152983	228	0.601583	0.257447	1.960537651	0.066279
7.6157911	229	0.604222	0.26429	2.01277792	0.069849
7.6157911	230	0.60686	0.271145	2.064986577	0.07352
7.6207051	231	0.609499	0.278012	2.118647971	0.077291
7.6207051	232	0.612137	0.284894	2.171089581	0.081164
7.624619	233	0.614776	0.291789	2.224777187	0.085141
7.6255951	234	0.617414	0.298696	2.277736652	0.089219
7.6255951	235	0.620053	0.30562	2.330532676	0.093403
7.6255951	236	0.622691	0.312557	2.383432732	0.097692
7.6255951	237	0.62533	0.31951	2.436454158	0.102087
7.6255951	238	0.627968	0.326477	2.489579615	0.106587
7.6280311	239	0.630607	0.333462	2.543656112	0.111197
7.6294899	240	0.633245	0.340461	2.597546693	0.115914
7.6304613	241	0.635884	0.347478	2.65141845	0.120741
7.6304613	242	0.638522	0.354512	2.705089624	0.125679
7.6304613	243	0.641161	0.361564	2.758899595	0.130728
7.6304613	244	0.643799	0.368634	2.812848363	0.135891
7.6314317	245	0.646438	0.375721	2.867291855	0.141167
7.6319165	246	0.649077	0.382829	2.921719404	0.146558
7.6328855	247	0.651715	0.389955	2.976481473	0.152065
7.6343372	248	0.654354	0.397101	3.031605263	0.157689
7.6353039	249	0.656992	0.404268	3.086709957	0.163433
7.6353039	250	0.659631	0.411455	3.141587038	0.169296
7.6353039	251	0.662269	0.418664	3.196629046	0.17528
7.6353039	252	0.664908	0.425895	3.25183598	0.181386
7.6362696	253	0.667546	0.433147	3.307626138	0.187616
7.6379574	254	0.670185	0.440423	3.363930641	0.193972
7.6401232	255	0.672823	0.447723	3.420656126	0.200456
7.6401232	256	0.675462	0.455045	3.476601457	0.207066
7.6413244	257	0.6781	0.462394	3.533301989	0.213808
7.6415644	258	0.680739	0.469765	3.58974244	0.22068
7.6415644	259	0.683377	0.477164	3.646280384	0.227686
7.6430036	260	0.686016	0.484588	3.703706868	0.234825
7.6444408	261	0.688654	0.492039	3.76136228	0.242102
7.6446801	262	0.691293	0.499518	3.818658091	0.249519
7.6449193	263	0.693931	0.507025	3.876166044	0.257074
7.6449193	264	0.69657	0.51456	3.933771762	0.264772
7.6449193	265	0.699208	0.522125	3.991603453	0.272615
7.6449193	266	0.701847	0.529719	4.049661117	0.280603
7.6449193	267	0.704485	0.537345	4.107962136	0.28874

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.8407065	315	0.831135	0.958657	7.516551558	0.919024
7.8461988	316	0.833773	0.969183	7.604399096	0.939315
7.8477625	317	0.836412	0.979817	7.689369829	0.960041
7.8477625	318	0.83905	0.990563	7.773699373	0.981214
7.8555447	319	0.841689	1.001422	7.86671431	1.002846
7.8555447	320	0.844327	1.012402	7.952967207	1.024957
7.8671055	321	0.846966	1.023507	8.052035062	1.047566
7.8747391	322	0.849604	1.034737	8.148281337	1.07068
7.8785342	323	0.852243	1.046101	8.241740973	1.094327
7.8785342	324	0.854881	1.057601	8.332348532	1.118521
7.8823149	325	0.85752	1.069243	8.428109252	1.14328
7.8898338	326	0.860158	1.08103	8.529146586	1.168626
7.8898338	327	0.862797	1.092972	8.623364341	1.194587
7.8898338	328	0.865435	1.10507	8.718819915	1.22118
7.8972965	329	0.868074	1.117332	8.823905466	1.248432
7.8972965	330	0.870712	1.129765	8.922090915	1.276369
7.8995245	331	0.873351	1.142375	9.024222173	1.305021
7.9047039	332	0.875989	1.15517	9.131274325	1.334417
7.9047039	333	0.878628	1.168155	9.233919361	1.364586
7.9094895	334	0.881266	1.181343	9.343817421	1.39557
7.913521	335	0.883905	1.194737	9.454578349	1.427397
7.9193562	336	0.886544	1.20835	9.56935495	1.46011
7.9266026	337	0.889182	1.22219	9.687817196	1.493749
7.9409398	338	0.891821	1.236269	9.817140255	1.528362
7.948032	339	0.894459	1.250596	9.939778146	1.563991
7.9620673	340	0.897098	1.265187	10.07350175	1.600697
7.9759084	341	0.899736	1.28005	10.20956252	1.638528
7.9827577	342	0.902375	1.295202	10.33928621	1.677549
7.9827577	343	0.905013	1.310659	10.4626746	1.717827
7.9827577	344	0.907652	1.326434	10.58860409	1.759428
7.9895604	345	0.91029	1.342546	10.72635287	1.80243
7.9895604	346	0.912929	1.359012	10.85791219	1.846915
7.9929445	347	0.915567	1.375859	10.99716128	1.892987
7.9963172	348	0.918206	1.393105	11.13970845	1.940741
8.0063676	349	0.920844	1.410774	11.2951758	1.990283
8.0063676	350	0.923483	1.428896	11.44026465	2.041743
8.0063676	351	0.926121	1.447497	11.58919462	2.095248
8.0096954	352	0.92876	1.466619	11.74717399	2.150972
8.0096954	353	0.931398	1.486287	11.90470726	2.209049
8.0130121	354	0.934037	1.506551	12.07200891	2.269695
8.0130121	355	0.936675	1.527451	12.23948237	2.333106
8.0196128	356	0.939314	1.549042	12.4227193	2.399532
8.0228969	357	0.941953	1.571379	12.60701544	2.469233
8.0228969	358	0.944591	1.594526	12.79271855	2.542514
8.0237162	359	0.94723	1.618564	12.98689865	2.61975
8.0242075	360	0.949868	1.643575	13.18838811	2.701339
8.0261702	361	0.952507	1.669659	13.40097106	2.787763

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
318	5.762051383	1	0.00183	-2.9057	-924.021	8.443246	-16.74294501
331	5.802118375	2	0.00445	-2.6161	-865.943	6.844206	-15.17917323
360	5.886104031	3	0.00709	-2.4527	-882.968	6.015683	-14.43678221
362	5.891644212	4	0.00973	-2.3365	-845.81	5.459194	-13.76577891
377	5.932245187	5	0.01238	-2.2453	-846.467	5.041235	-13.3194896
393	5.973809612	6	0.01502	-2.1696	-852.653	4.707162	-12.96077501
430	6.063785209	7	0.01766	-2.1046	-904.993	4.429486	-12.76205097
900	6.802394763	8	0.02030	-2.0475	-1842.75	4.192256	-13.92790292
954	6.860663671	9	0.02295	-1.9964	-1904.53	3.985449	-13.69634808
957	6.863803391	10	0.02559	-1.9500	-1866.11	3.802331	-13.384119
976	6.883462586	11	0.02823	-1.9074	-1861.64	3.638249	-13.12965127
997	6.90475077	12	0.03088	-1.8681	-1862.46	3.48967	-12.89852834
1040	6.946975992	13	0.03352	-1.8314	-1904.67	3.354074	-12.72278285
1040	6.946975992	14	0.03616	-1.7971	-1868.95	3.229463	-12.48420618
1053	6.959398512	15	0.03881	-1.7647	-1858.25	3.114236	-12.28138873
1057	6.963189986	16	0.04145	-1.7341	-1832.97	3.007188	-12.07503802
1060	6.966024187	17	0.04409	-1.7051	-1807.37	2.90725	-11.87753167
1060	6.966024187	18	0.04673	-1.6774	-1778.02	2.813607	-11.68467716
1070	6.975413927	19	0.04938	-1.6509	-1766.49	2.72555	-11.51587741
1071	6.97634807	20	0.05202	-1.6256	-1740.99	2.642498	-11.34058581
1083	6.987490247	21	0.05466	-1.6012	-1734.13	2.563935	-11.18857263
1086	6.9902565	22	0.05731	-1.5778	-1713.49	2.489454	-11.02923023
1090	6.993932975	23	0.05995	-1.5552	-1695.17	2.41866	-10.87699329
1150	7.047517221	24	0.06259	-1.5334	-1763.38	2.351243	-10.80649542
1160	7.056175284	25	0.06523	-1.5123	-1754.21	2.28691	-10.6707238
1160	7.056175284	26	0.06788	-1.4918	-1730.47	2.225423	-10.52629674
1190	7.081708586	27	0.07052	-1.4719	-1751.59	2.166567	-10.42375259
1210	7.098375639	28	0.07316	-1.4526	-1757.68	2.110124	-10.31129032
1210	7.098375639	29	0.07581	-1.4339	-1734.97	2.055953	-10.1780721
1220	7.106606138	30	0.07845	-1.4156	-1727.01	2.003862	-10.05995872
1220	7.106606138	31	0.08109	-1.3978	-1705.27	1.953737	-9.933340312

Normal

220771.175	=sum X(i)*M(i)
373.123	=sum M(i)^2
599.35	= standard deviation
19.3164	= square root of sum Mi^2
0.982	= Filliben's Statistic

Lognormal

127.196	=sum X(i)*M(i)
373.123	=sum M(i)^2
0.36	= standard deviation
19.3164	= square root of sum Mi^2
0.944	= Filliben's Statistic

.987+ is acceptable value

Normal - Fail
Lognormal - Fail

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1490	7.306531399	90	0.23703	-0.7159	-1066.69	0.512512	-5.230743341
1500	7.313220387	91	0.23967	-0.7074	-1061.049	0.500367	-5.173125833
1500	7.313220387	92	0.24231	-0.6989	-1048.325	0.488437	-5.111085504
1504	7.315883505	93	0.24496	-0.6905	-1038.438	0.476722	-5.051258064
1506	7.317212408	94	0.24760	-0.6821	-1027.192	0.465215	-4.99082514
1530	7.333023014	95	0.25024	-0.6737	-1030.808	0.453913	-4.940484472
1536.5	7.337262382	96	0.25288	-0.6654	-1022.45	0.442812	-4.882514435
1545	7.342779189	97	0.25553	-0.6572	-1015.368	0.431907	-4.825647491
1560	7.3524411	98	0.25817	-0.6490	-1012.436	0.421197	-4.771713903
1560	7.3524411	99	0.26081	-0.6408	-999.7125	0.410678	-4.711748174
1560	7.3524411	100	0.26346	-0.6327	-987.0531	0.400343	-4.652083361
1565	7.355641103	101	0.26610	-0.6247	-977.5845	0.390193	-4.594735077
1565	7.355641103	102	0.26874	-0.6166	-965.0144	0.380223	-4.535654751
1570	7.358830898	103	0.27138	-0.6086	-955.548	0.37043	-4.47880015
1570	7.358830898	104	0.27403	-0.6007	-943.061	0.360811	-4.420271459
1570	7.358830898	105	0.27667	-0.5928	-930.6346	0.351365	-4.362027213
1580	7.365180126	106	0.27931	-0.5849	-924.1142	0.342087	-4.307764231
1580	7.365180126	107	0.28196	-0.5770	-911.7201	0.332973	-4.249988872
1580	7.365180126	108	0.28460	-0.5692	-899.3852	0.324024	-4.19248983
1580	7.365180126	109	0.28724	-0.5615	-887.1042	0.315235	-4.135241986
1582	7.366445148	110	0.28989	-0.5537	-875.9828	0.306604	-4.078937432
1590	7.371489295	111	0.29253	-0.5460	-868.1605	0.29813	-4.02492803
1590	7.371489295	112	0.29517	-0.5383	-855.959	0.289809	-3.968360241
1595	7.374629015	113	0.29781	-0.5307	-846.4617	0.281639	-3.913693345
1600	7.377758908	114	0.30046	-0.5231	-836.937	0.273619	-3.859199784
1601	7.378383713	115	0.30310	-0.5155	-825.3217	0.265744	-3.803585364
1610	7.383989458	116	0.30574	-0.5080	-817.804	0.258016	-3.750718053
1610	7.383989458	117	0.30839	-0.5004	-805.6925	0.25043	-3.695170826
1610	7.383989458	118	0.31103	-0.4929	-793.6268	0.242986	-3.639833464
1619.5	7.389872739	119	0.31367	-0.4855	-786.2151	0.235679	-3.587545321
1620	7.390181428	120	0.31631	-0.4780	-774.4056	0.228511	-3.532714694
1620	7.390181428	121	0.31896	-0.4706	-762.3975	0.221479	-3.477935847
1620	7.390181428	122	0.32160	-0.4632	-750.4281	0.214579	-3.423333436
1628	7.395107547	123	0.32424	-0.4559	-742.1462	0.207812	-3.371161499
1630	7.396335294	124	0.32689	-0.4485	-731.098	0.201176	-3.317451695
1639.5	7.402146596	125	0.32953	-0.4412	-723.3667	0.194668	-3.265914394
1640	7.402451521	126	0.33217	-0.4339	-711.6324	0.188288	-3.212088019
1650	7.408530567	127	0.33482	-0.4267	-703.9794	0.182034	-3.160880656
1650	7.408530567	128	0.33746	-0.4194	-692.0247	0.175904	-3.107203909
1650	7.408530567	129	0.34010	-0.4122	-680.1076	0.169898	-3.053695614
1655	7.411556288	130	0.34274	-0.4050	-670.2491	0.164012	-3.001564293
1655	7.411556288	131	0.34539	-0.3978	-658.3654	0.158248	-2.948345905
1660	7.414572881	132	0.34803	-0.3906	-648.4689	0.152603	-2.896457597
1660	7.414572881	133	0.35067	-0.3835	-636.6153	0.147075	-2.843512577
1660	7.414572881	134	0.35332	-0.3764	-624.7958	0.141664	-2.790719286
1662.5	7.416077773	135	0.35596	-0.3693	-613.9297	0.136368	-2.738616593
1665	7.417580402	136	0.35860	-0.3622	-603.0583	0.131187	-2.68662663
1669	7.419979924	137	0.36125	-0.3551	-592.7164	0.126119	-2.635077281
1670	7.420578905	138	0.36389	-0.3481	-581.3023	0.121163	-2.582993862
1670	7.420578905	139	0.36653	-0.3411	-569.5635	0.116319	-2.530832705
1671	7.421177529	140	0.36917	-0.3340	-558.1833	0.111584	-2.478981183
1675	7.423568444	141	0.37182	-0.3270	-547.8007	0.106959	-2.427842425
1680	7.426549072	142	0.37446	-0.3201	-537.7089	0.102441	-2.376977151
1680	7.426549072	143	0.37710	-0.3131	-526.0067	0.098031	-2.325246836
1680	7.426549072	144	0.37975	-0.3061	-514.3313	0.093728	-2.273634724
1680	7.426549072	145	0.38239	-0.2992	-502.6787	0.089529	-2.222123927
1681	7.427144133	146	0.38503	-0.2923	-491.3433	0.085435	-2.170896821
1682.5	7.428036062	147	0.38767	-0.2854	-480.1616	0.081445	-2.119855977

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1970	7.585788822	206	0.54361	0.1095	215.7727	0.011997	0.830866216
1970	7.585788822	207	0.54625	0.1162	228.9082	0.013502	0.881446231
1970	7.585788822	208	0.54889	0.1229	242.0503	0.015097	0.932052117
1975	7.588323677	209	0.55154	0.1295	255.8536	0.016782	0.983038129
2000	7.60090246	210	0.55418	0.1362	272.4619	0.018559	1.035478069
2000	7.60090246	211	0.55682	0.1429	285.8405	0.020426	1.086323041
2000	7.60090246	212	0.55947	0.1496	299.2329	0.022385	1.13721986
2000	7.60090246	213	0.56211	0.1563	312.6388	0.024436	1.188168526
2000	7.60090246	214	0.56475	0.1630	326.0584	0.026579	1.23916904
2000	7.60090246	215	0.56740	0.1697	339.4916	0.028814	1.290221401
2000	7.60090246	216	0.57004	0.1765	352.9431	0.031142	1.341342892
2003.5	7.60265093	217	0.57268	0.1832	367.0493	0.033564	1.392836557
2006	7.603897969	218	0.57532	0.1899	381.0311	0.036079	1.444327682
2006	7.603897969	219	0.57797	0.1967	394.5707	0.038689	1.495650857
2010	7.605890001	220	0.58061	0.2035	408.9425	0.041394	1.547448476
2010	7.605890001	221	0.58325	0.2102	422.548	0.044194	1.598932094
2010.5	7.606138726	222	0.58590	0.2170	436.2803	0.047089	1.650538861
2015	7.608374474	223	0.58854	0.2238	450.9328	0.050081	1.70266285
2016	7.608870629	224	0.59118	0.2306	464.8623	0.05317	1.754502585
2020	7.61085279	225	0.59382	0.2374	479.5382	0.056356	1.806779693
2023	7.612336837	226	0.59647	0.2442	494.0474	0.059641	1.859048695
2027	7.614312146	227	0.59911	0.2510	508.8693	0.063024	1.911539171
2029	7.61529834	228	0.60175	0.2579	523.2578	0.066507	1.963905454
2030	7.615791072	229	0.60440	0.2647	537.4297	0.070089	2.016232523
2030	7.615791072	230	0.60704	0.2716	551.3713	0.073773	2.06853642
2040	7.620705087	231	0.60968	0.2785	568.1233	0.077558	2.122304069
2040	7.620705087	232	0.61233	0.2854	582.187	0.081445	2.17484098
2048	7.624618986	233	0.61497	0.2923	598.6146	0.085435	2.228617194
2050	7.625595072	234	0.61761	0.2992	613.3877	0.089529	2.281681182
2050	7.625595072	235	0.62025	0.3061	627.6066	0.093728	2.334572569
2050	7.625595072	236	0.62290	0.3131	641.8534	0.098031	2.387567987
2050	7.625595072	237	0.62554	0.3201	656.1329	0.102441	2.440684775
2050	7.625595072	238	0.62818	0.3270	670.4427	0.106959	2.493914264
2055	7.628031127	239	0.63083	0.3340	686.4553	0.111584	2.548078867
2058	7.629489916	240	0.63347	0.3411	701.8932	0.116319	2.602083051
2060	7.630461262	241	0.63611	0.3481	717.0556	0.121163	2.656050809
2060	7.630461262	242	0.63875	0.3551	731.5733	0.126119	2.709826081
2060	7.630461262	243	0.64140	0.3622	746.1262	0.131187	2.763731475
2060	7.630461262	244	0.64404	0.3693	760.7189	0.136368	2.817784342
2062	7.631431665	245	0.64668	0.3764	776.1018	0.141664	2.872341248
2063	7.631916513	246	0.64933	0.3835	791.1671	0.147075	2.92686456
2065	7.632885505	247	0.65197	0.3906	806.6796	0.152603	2.98174009
2068	7.634337236	248	0.65461	0.3978	822.6584	0.158248	3.036969032
2070	7.635303886	249	0.65726	0.4050	838.3176	0.164012	3.092178568
2070	7.635303886	250	0.65990	0.4122	853.2259	0.169898	3.147168494
2070	7.635303886	251	0.66254	0.4194	868.1765	0.175904	3.202314666
2070	7.635303886	252	0.66518	0.4267	883.1742	0.182034	3.257634444
2072	7.636269603	253	0.66783	0.4339	899.0868	0.188288	3.313546875
2075.5	7.637957367	254	0.67047	0.4412	915.7351	0.194668	3.369956888
2080	7.640123173	255	0.67311	0.4485	932.9349	0.201176	3.426796997
2080	7.640123173	256	0.67576	0.4559	948.1966	0.207812	3.482855243
2082.5	7.641324374	257	0.67840	0.4632	964.6708	0.214579	3.539669692
2083	7.641564441	258	0.68104	0.4706	980.2926	0.221479	3.596240655
2083	7.641564441	259	0.68369	0.4780	995.7326	0.228511	3.652882848
2086	7.643003636	260	0.68633	0.4855	1012.686	0.235679	3.710432223
2089	7.644440762	261	0.68897	0.4929	1029.743	0.242986	3.76821926
2089.5	7.644680082	262	0.69161	0.5004	1045.649	0.25043	3.825628269
2090	7.644919345	263	0.69426	0.5080	1061.621	0.258016	3.883258118

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
2630	7.874739125	322	0.85019	1.0373	2727.977	1.075895	8.168102265
2640	7.878534196	323	0.85283	1.0487	2768.477	1.0997	8.261947641
2640	7.878534196	324	0.85548	1.0602	2798.971	1.124058	8.352949301
2650	7.882314919	325	0.85812	1.0719	2840.561	1.148991	8.449132121
2670	7.889833751	326	0.86076	1.0838	2893.623	1.174522	8.550637993
2670	7.889833751	327	0.86341	1.0958	2925.653	1.200668	8.645286294
2670	7.889833751	328	0.86605	1.1079	2958.108	1.227455	8.741190353
2690	7.897296473	329	0.86869	1.1202	3013.416	1.254913	8.846781886
2690	7.897296473	330	0.87133	1.1327	3047.026	1.283062	8.945452157
2696	7.899524472	331	0.87398	1.1454	3087.991	1.311935	9.048092925
2710	7.904703914	332	0.87662	1.1583	3138.878	1.34156	9.155681952
2710	7.904703914	333	0.87926	1.1713	3174.259	1.371975	9.258884157
2723	7.909489493	334	0.88191	1.1846	3225.588	1.403209	9.369354839
2734	7.913521017	335	0.88455	1.1980	3275.444	1.435302	9.480722561
2750	7.919356191	336	0.88719	1.2117	3332.261	1.468292	9.596130662
2770	7.926602599	337	0.88984	1.2257	3395.06	1.502226	9.715266237
2810	7.940939762	338	0.89248	1.2398	3483.884	1.537145	9.845307001
2830	7.948031991	339	0.89512	1.2542	3549.476	1.573098	9.968674846
2870	7.962067309	340	0.89776	1.2689	3641.781	1.610141	10.10317363
2910	7.97590836	341	0.90041	1.2839	3736.075	1.648334	10.24006578
2930	7.982757702	342	0.90305	1.2991	3806.441	1.68773	10.3706143
2930	7.982757702	343	0.90569	1.3147	3852.043	1.728411	10.49485578
2930	7.982757702	344	0.90834	1.3306	3898.591	1.770435	10.62167464
2950	7.989560449	345	0.91098	1.3468	3973.081	1.813889	10.76039625
2950	7.989560449	346	0.91362	1.3634	4022.032	1.858862	10.89297287
2960	7.992944547	347	0.91626	1.3804	4085.914	1.905439	11.03327273
2970	7.996317232	348	0.91891	1.3978	4151.352	1.953737	11.17694421
3000	8.006367568	349	0.92155	1.4156	4246.735	2.003862	11.33364164
3000	8.006367568	350	0.92419	1.4339	4301.578	2.055953	11.48000479
3000	8.006367568	351	0.92684	1.4526	4357.88	2.110124	11.63026368
3010	8.009695358	352	0.92948	1.4719	4430.498	2.166567	11.78968065
3010	8.009695358	353	0.93212	1.4918	4490.273	2.225423	11.94874373
3020	8.01301211	354	0.93477	1.5123	4567.005	2.28691	12.11770337
3020	8.01301211	355	0.93741	1.5334	4630.796	2.351243	12.28696234
3040	8.019612794	356	0.94005	1.5552	4727.82	2.41866	12.47213476
3050	8.02289687	357	0.94269	1.5778	4812.292	2.489454	12.65853072
3050	8.02289687	358	0.94534	1.6012	4883.749	2.563935	12.84649583
3052.5	8.023716206	359	0.94798	1.6256	4962.072	2.642498	13.04316258
3054	8.024207486	360	0.95062	1.6509	5041.922	2.72555	13.24735574
3060	8.026170195	361	0.95327	1.6774	5132.786	2.813607	13.46294602
3060	8.026170195	362	0.95591	1.7051	5217.502	2.90725	13.68515069
3070	8.029432841	363	0.95855	1.7341	5323.762	3.007188	13.92403583
3109	8.04205641	364	0.96119	1.7647	5486.514	3.114236	14.19197662
3110	8.042378005	365	0.96384	1.7971	5588.89	3.229463	14.45272092
3110	8.042378005	366	0.96648	1.8314	5695.695	3.354074	14.72891644
3115	8.043984431	367	0.96912	1.8681	5819.025	3.48967	15.02669171
3128	8.048149102	368	0.97177	1.9074	5966.408	3.638249	15.35119713
3130	8.048788284	369	0.97441	1.9500	6103.364	3.802331	15.69478816
3160	8.058327307	370	0.97705	1.9964	6308.495	3.985449	16.08731473
3161	8.058643712	371	0.97970	2.0475	6472.147	4.192256	16.50007258
3190	8.067776196	372	0.98234	2.1046	6713.784	4.429486	16.97971935
3200	8.070906089	373	0.98498	2.1696	6942.719	4.707162	17.51063471
3230	8.080237416	374	0.98762	2.2453	7252.221	5.041235	18.14231119
3240	8.083328609	375	0.99027	2.3365	7570.234	5.459194	18.88663173
3280	8.095598701	376	0.99291	2.4527	8044.82	6.015683	19.85598533
3330	8.110727583	377	0.99555	2.6161	8711.757	6.844206	21.21882578
4250	8.354674262	378	0.99817	2.9057	12349.34	8.443246	24.27639784

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Normality Analysis (censored data set)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
318	1	0.002646	-2.7888	-886.8389705	7.777415
331	2	0.005291	-2.55619	-846.098701	6.534104
360	3	0.007937	-2.41183	-868.2603948	5.816945
362	4	0.010582	-2.30504	-834.4250455	5.313217
377	5	0.013228	-2.21946	-836.7357077	4.925994
393	6	0.015873	-2.14759	-844.0028068	4.612142
430	7	0.018519	-2.08535	-896.7018402	4.348698
900	8	0.021164	-2.03028	-1827.254891	4.12205
954	9	0.02381	-1.98075	-1889.637533	3.923379
957	10	0.026455	-1.93565	-1852.417327	3.746742
976	11	0.029101	-1.89418	-1848.717075	3.587908
997	12	0.031746	-1.85573	-1850.165791	3.443745
1040	13	0.034392	-1.81984	-1892.638102	3.311833
1040	14	0.037037	-1.78616	-1857.602911	3.190356
1053	15	0.039683	-1.75438	-1847.360982	3.077845
1057	16	0.042328	-1.72428	-1822.567892	2.973154
1060	17	0.044974	-1.69568	-1797.416098	2.875316
1060	18	0.047619	-1.66839	-1768.494167	2.783528
1070	19	0.050265	-1.64229	-1757.253267	2.697126
1071	20	0.05291	-1.61727	-1732.094056	2.615556
1083	21	0.055556	-1.59322	-1725.453403	2.538339
1086	22	0.058201	-1.57006	-1705.080986	2.465076
1090	23	0.060847	-1.54771	-1686.998803	2.395392
1150	24	0.063492	-1.5261	-1755.020548	2.328996
1160	25	0.066138	-1.50519	-1746.021553	2.2656
1160	26	0.068783	-1.48491	-1722.500019	2.204969
1190	27	0.071429	-1.46523	-1743.62649	2.146906
1210	28	0.074074	-1.44611	-1749.787862	2.091222
1210	29	0.07672	-1.42749	-1727.26086	2.037723
1220	30	0.079365	-1.40936	-1719.416196	1.986289
1220	31	0.082011	-1.39167	-1697.840344	1.936752

TDS - normal
46069767824 = (sum of Mi*Xi)^2
376 = count -1
345582.0115 = standard deviation ^2
366.8494342 = sum of Mi^2

0.966 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1440	80	0.21164	-0.80074	-1153.068297	0.641188
1440	81	0.214286	-0.79164	-1139.958476	0.62669
1450	82	0.216931	-0.7826	-1134.769605	0.612462
1450	83	0.219577	-0.77362	-1121.753371	0.598493
1460	84	0.222222	-0.76471	-1116.476551	0.584781
1461	85	0.224868	-0.75586	-1104.305668	0.571318
1465	86	0.227513	-0.74706	-1094.44469	0.5581
1470	87	0.230159	-0.73832	-1085.33518	0.545121
1480	88	0.232804	-0.72964	-1079.870344	0.532378
1490	89	0.23545	-0.72102	-1074.313195	0.519863
1490	90	0.238095	-0.71244	-1061.540934	0.507576
1500	91	0.240741	-0.70392	-1055.882421	0.495506
1500	92	0.243386	-0.69545	-1043.177917	0.483653
1504	93	0.246032	-0.68703	-1033.293156	0.47201
1506	94	0.248677	-0.67866	-1022.059137	0.460577
1530	95	0.251323	-0.67033	-1025.609242	0.449346
1536.5	96	0.253968	-0.66205	-1017.244474	0.438314
1545	97	0.256614	-0.65382	-1010.15163	0.42748
1560	98	0.259259	-0.64563	-1007.182527	0.416838
1560	99	0.261905	-0.63748	-994.4752946	0.406386
1560	100	0.26455	-0.62938	-981.8319086	0.396118
1565	101	0.267196	-0.62132	-972.3607263	0.386035
1565	102	0.269841	-0.61329	-959.8031397	0.376128
1570	103	0.272487	-0.60531	-950.3361525	0.3664
1570	104	0.275132	-0.59736	-937.8598179	0.356842
1570	105	0.277778	-0.58945	-925.4441693	0.347457
1580	106	0.280423	-0.58158	-918.9032653	0.33824
1580	107	0.283069	-0.57375	-906.5234963	0.329188
1580	108	0.285714	-0.56595	-894.1994111	0.320298
1580	109	0.28836	-0.55818	-881.9274171	0.311567
1582	110	0.291005	-0.55045	-870.8120072	0.302995
1590	111	0.293651	-0.54275	-862.9725926	0.294578
1590	112	0.296296	-0.53508	-850.7819985	0.286314
1595	113	0.298942	-0.52745	-841.2756301	0.278199
1600	114	0.301587	-0.51984	-831.7438187	0.270234
1601	115	0.304233	-0.51226	-820.1361572	0.262415
1610	116	0.306878	-0.50472	-812.5966247	0.254741
1610	117	0.309524	-0.4972	-800.4924666	0.247208
1610	118	0.312169	-0.48971	-788.4340675	0.239816
1619.5	119	0.314815	-0.48225	-781.0009549	0.232563
1620	120	0.31746	-0.47481	-769.1971859	0.225447
1620	121	0.320106	-0.4674	-757.1928109	0.218466
1620	122	0.322751	-0.46002	-745.2307955	0.211617
1628	123	0.325397	-0.45266	-736.9305786	0.204901
1630	124	0.328042	-0.44532	-725.8797268	0.198314
1639.5	125	0.330688	-0.43801	-718.1254648	0.191857
1640	126	0.333333	-0.43073	-706.3932571	0.185526
1650	127	0.335979	-0.42346	-698.7139614	0.179321

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1776	176	0.465608	-0.08631	-153.292458	0.00745
1780	177	0.468254	-0.07966	-141.79343	0.006346
1790	178	0.470899	-0.07301	-130.6853051	0.00533
1790	179	0.473545	-0.06636	-118.7866928	0.004404
1797	180	0.47619	-0.05972	-107.3122075	0.003566
1800	181	0.478836	-0.05307	-95.53446034	0.002817
1805	182	0.481481	-0.04644	-83.81587691	0.002156
1810	183	0.484127	-0.0398	-72.03501582	0.001584
1810	184	0.486772	-0.03316	-60.02403552	0.0011
1817	185	0.489418	-0.02653	-48.20080676	0.000704
1820	186	0.492063	-0.0199	-36.20925781	0.000396
1832	187	0.494709	-0.01326	-24.29727829	0.000176
1840	188	0.497354	-0.00663	-12.20168997	4.4E-05
1860	189	0.5	0	0	0
1867.5	190	0.502646	0.006631	12.38405218	4.4E-05
1870	191	0.505291	0.013263	24.80126113	0.000176
1870	192	0.507937	0.019895	37.20401764	0.000396
1879	193	0.510582	0.026528	49.84552334	0.000704
1886	194	0.513228	0.033162	62.54438176	0.0011
1890	195	0.515873	0.039798	75.21888392	0.001584
1900	196	0.518519	0.046435	88.22723885	0.002156
1915	197	0.521164	0.053075	101.6380509	0.002817
1930	198	0.52381	0.059717	115.2546247	0.003566
1940	199	0.526455	0.066361	128.740885	0.004404
1943	200	0.529101	0.073009	141.8556133	0.00533
1957.5	201	0.531746	0.079659	155.9329434	0.006346
1960	202	0.534392	0.086313	169.174109	0.00745
1960	203	0.537037	0.092972	182.2250397	0.008644
1960	204	0.539683	0.099634	195.2826551	0.009927
1970	205	0.542328	0.106301	209.4121896	0.0113
1970	206	0.544974	0.112972	222.5543426	0.012763
1970	207	0.547619	0.119649	235.7076937	0.014316
1970	208	0.550265	0.12633	248.8700034	0.015959
1975	209	0.55291	0.133017	262.7085962	0.017694
2000	210	0.555556	0.13971	279.4195098	0.019519
2000	211	0.558201	0.14641	292.8209142	0.021436
2000	212	0.560847	0.153116	306.2314136	0.023444
2000	213	0.563492	0.159829	319.6578291	0.025545
2000	214	0.566138	0.166549	333.0978871	0.027739
2000	215	0.568783	0.173277	346.5538612	0.030025
2000	216	0.571429	0.180012	360.0234777	0.032404
2003.5	217	0.574074	0.186756	374.1649289	0.034878
2006	218	0.57672	0.193509	388.1783323	0.037446
2006	219	0.579365	0.20027	401.7408105	0.040108
2010	220	0.582011	0.20704	416.1496918	0.042865
2010	221	0.584656	0.21382	429.7780606	0.045719
2010.5	222	0.587302	0.220609	443.5350149	0.048668
2015	223	0.589947	0.227409	458.2289705	0.051715

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2100	272	0.719577	0.581584	1221.327125	0.33824
2101	273	0.722222	0.589455	1238.444713	0.347457
2101	274	0.724868	0.597363	1255.05954	0.356842
2104	275	0.727513	0.60531	1273.571506	0.3664
2105	276	0.730159	0.613293	1290.98122	0.376128
2106	277	0.732804	0.621317	1308.493092	0.386035
2110	278	0.73545	0.629379	1327.990594	0.396118
2110	279	0.738095	0.637484	1345.091584	0.406386
2110	280	0.740741	0.64563	1362.278931	0.416838
2110	281	0.743386	0.65382	1379.559831	0.42748
2113.5	282	0.746032	0.662053	1399.24907	0.438314
2114	283	0.748677	0.670333	1417.08362	0.449346
2114.5	284	0.751323	0.678658	1435.022606	0.460577
2118	285	0.753968	0.68703	1455.129591	0.47201
2120	286	0.756614	0.695452	1474.358123	0.483653
2120	287	0.759259	0.703922	1492.313822	0.495506
2130	288	0.761905	0.712444	1517.504825	0.507576
2130	289	0.76455	0.721016	1535.763158	0.519863
2130	290	0.767196	0.729642	1554.137725	0.532378
2130	291	0.769841	0.738323	1572.628526	0.545121
2140	292	0.772487	0.747061	1598.711015	0.5581
2140	293	0.775132	0.755856	1617.531916	0.571318
2146	294	0.777778	0.76471	1641.067588	0.584781
2150	295	0.780423	0.773623	1663.289481	0.598493
2150	296	0.783069	0.7826	1682.589414	0.612462
2170	297	0.785714	0.791638	1717.854093	0.62669
2191	298	0.78836	0.800742	1754.425443	0.641188
2191.5	299	0.791005	0.809914	1774.926809	0.655961
2210	300	0.793651	0.819155	1810.331651	0.671014
2241	301	0.796296	0.828464	1856.588739	0.686353
2250	302	0.798942	0.837847	1885.155712	0.701988
2253	303	0.801587	0.847303	1908.974682	0.717923
2264	304	0.804233	0.856837	1939.879494	0.73417
2360	305	0.806878	0.866451	2044.823395	0.750737
2388	306	0.809524	0.876144	2092.230752	0.767627
2400	307	0.812169	0.885918	2126.203981	0.784851
2420	308	0.814815	0.89578	2167.786442	0.802421
2430	309	0.81746	0.905729	2200.922427	0.820346
2470	310	0.820106	0.915768	2261.946815	0.838631
2476	311	0.822751	0.925902	2292.533318	0.857294
2480	312	0.825397	0.936129	2321.60055	0.876338
2540	313	0.828042	0.946457	2403.999679	0.89578
2542	314	0.830688	0.956886	2432.404713	0.915631
2542	315	0.833333	0.96742	2459.182706	0.935902
2556	316	0.835979	0.978064	2499.931024	0.956609
2560	317	0.838624	0.988821	2531.381324	0.977767
2560	318	0.84127	0.999689	2559.204586	0.999379
2580	319	0.843915	1.010681	2607.55578	1.021475

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
3128	368	0.973545	1.93565	6054.714104	3.746742
3130	369	0.97619	1.980752	6199.754171	3.923379
3160	370	0.978836	2.030283	6415.694952	4.12205
3161	371	0.981481	2.085353	6591.801202	4.348698
3190	372	0.984127	2.14759	6850.811587	4.612142
3200	373	0.986772	2.219458	7102.265954	4.925994
3230	374	0.989418	2.305042	7445.284245	5.313217
3240	375	0.992063	2.411834	7814.343553	5.816945
3280	376	0.994709	2.556189	8384.301327	6.534104
3330	377	0.997354	2.788802	9286.709974	7.777415

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.1066061	31	0.082011	-1.39167	-9.890067711	1.936752
7.1066061	32	0.084656	-1.37442	-9.767456622	1.889028
7.1082441	33	0.087302	-1.35756	-9.649880809	1.842974
7.1139561	34	0.089947	-1.34108	-9.540396852	1.7985
7.1244783	35	0.092593	-1.32496	-9.439623277	1.75551
7.138867	36	0.095238	-1.30917	-9.346005848	1.713932
7.138867	37	0.097884	-1.29371	-9.235596435	1.673676
7.1400568	38	0.100529	-1.27854	-9.128867035	1.634671
7.140453	39	0.103175	-1.26367	-9.023160979	1.596856
7.1459845	40	0.10582	-1.24907	-8.925821893	1.560171
7.1467722	41	0.108466	-1.23473	-8.824334064	1.524558
7.1467722	42	0.111111	-1.22064	-8.723649816	1.489967
7.1546154	43	0.113757	-1.20679	-8.634120627	1.456343
7.1631724	44	0.116402	-1.19317	-8.54685446	1.423645
7.1643336	45	0.119048	-1.17976	-8.452195271	1.391834
7.1701195	46	0.121693	-1.16657	-8.364415187	1.360875
7.1701195	47	0.124339	-1.15357	-8.271227443	1.330721
7.1777824	48	0.126984	-1.14076	-8.188150672	1.301341
7.1777824	49	0.12963	-1.12814	-8.09757252	1.272709
7.1777824	50	0.132275	-1.1157	-8.008251038	1.244786
7.1777824	51	0.134921	-1.10343	-7.920169906	1.217555
7.1815919	52	0.137566	-1.09132	-7.837421259	1.190981
7.1815919	53	0.140212	-1.07937	-7.751595775	1.16504
7.185387	54	0.142857	-1.06757	-7.670899509	1.139704
7.185387	55	0.145503	-1.05592	-7.587185244	1.114965
7.185387	56	0.148148	-1.04441	-7.504483915	1.09079
7.185387	57	0.150794	-1.03304	-7.422762847	1.067163
7.185387	58	0.153439	-1.02179	-7.341989365	1.044064
7.185387	59	0.156085	-1.01068	-7.262130792	1.021475
7.1891677	60	0.15873	-0.99969	-7.186934002	0.999379
7.1891677	61	0.161376	-0.98882	-7.108798808	0.977767
7.1929342	62	0.164021	-0.97806	-7.035148441	0.956609
7.1951873	63	0.166667	-0.96742	-6.960771134	0.935902
7.2004249	64	0.169312	-0.95689	-6.889987192	0.915631
7.2078599	65	0.171958	-0.94646	-6.821926305	0.89578
7.2078599	66	0.174603	-0.93613	-6.747488485	0.876338
7.222566	67	0.177249	-0.9259	-6.687388222	0.857294
7.226209	68	0.179894	-0.91577	-6.61753055	0.838631
7.237059	69	0.18254	-0.90573	-6.554817084	0.820346
7.237059	70	0.185185	-0.89578	-6.482809273	0.802421
7.2442275	71	0.187831	-0.88592	-6.417793909	0.784851
7.251345	72	0.190476	-0.87614	-6.353218999	0.767627
7.251345	73	0.193122	-0.86645	-6.282932148	0.750737
7.251345	74	0.195767	-0.85684	-6.213222366	0.73417
7.2570027	75	0.198413	-0.8473	-6.14888346	0.717923
7.2584122	76	0.201058	-0.83785	-6.081438721	0.701988
7.2584122	77	0.203704	-0.82846	-6.013336127	0.686353

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.603898	219	0.579365	0.20027	1.522829578	0.040108
7.60589	220	0.582011	0.20704	1.574720786	0.042865
7.60589	221	0.584656	0.21382	1.626290873	0.045719
7.6061387	222	0.587302	0.220609	1.677985006	0.048668
7.6083745	223	0.589947	0.227409	1.73021221	0.051715
7.6088706	224	0.592593	0.23422	1.782148894	0.054859
7.6108528	225	0.595238	0.241041	1.834528382	0.058101
7.6123368	226	0.597884	0.247874	1.886897991	0.061441
7.6143121	227	0.600529	0.254718	1.939499572	0.064881
7.6152983	228	0.603175	0.261573	1.991956052	0.06842
7.6157911	229	0.60582	0.268442	2.044397492	0.072061
7.6157911	230	0.608466	0.275322	2.096796628	0.075802
7.6207051	231	0.611111	0.282216	2.150686476	0.079646
7.6207051	232	0.613757	0.289124	2.203327352	0.083593
7.624619	233	0.616402	0.296045	2.257230884	0.087643
7.6255951	234	0.619048	0.30298	2.310402566	0.091797
7.6255951	235	0.621693	0.309931	2.363406654	0.096057
7.6255951	236	0.624339	0.316895	2.416514772	0.100423
7.6255951	237	0.626984	0.323876	2.469744262	0.104895
7.6255951	238	0.62963	0.330873	2.52310379	0.109477
7.6280311	239	0.632275	0.337885	2.577399126	0.114166
7.6294899	240	0.634921	0.344914	2.631521677	0.118966
7.6304613	241	0.637566	0.351961	2.685623305	0.123876
7.6304613	242	0.640212	0.359025	2.739528699	0.128899
7.6304613	243	0.642857	0.366106	2.793555541	0.134033
7.6304613	244	0.645503	0.373207	2.84773853	0.139283
7.6314317	245	0.648148	0.380326	2.902429385	0.144648
7.6319165	246	0.650794	0.387464	2.957093432	0.150128
7.6328855	247	0.653439	0.394623	3.012111642	0.155727
7.6343372	248	0.656085	0.401801	3.067485227	0.161444
7.6353039	249	0.65873	0.409	3.122837513	0.167281
7.6353039	250	0.661376	0.416221	3.177975005	0.17324
7.6353039	251	0.664021	0.423463	3.233268742	0.179321
7.6353039	252	0.666667	0.430728	3.288736086	0.185526
7.6362696	253	0.669312	0.438015	3.344800036	0.191857
7.6379574	254	0.671958	0.445325	3.401373256	0.198314
7.6401232	255	0.674603	0.45266	3.458378618	0.204901
7.6401232	256	0.677249	0.460019	3.514601895	0.211617
7.6413244	257	0.679894	0.467403	3.571577705	0.218466
7.6415644	258	0.68254	0.474813	3.628314731	0.225447
7.6415644	259	0.685185	0.482248	3.685130674	0.232563
7.6430036	260	0.687831	0.489711	3.742859904	0.239816
7.6444408	261	0.690476	0.4972	3.800818162	0.247208
7.6446801	262	0.693122	0.504718	3.858410703	0.254741
7.6449193	263	0.695767	0.512265	3.916224094	0.262415
7.6449193	264	0.698413	0.51984	3.974134006	0.270234
7.6449193	265	0.701058	0.527446	4.032278583	0.278199

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.8399194	313	0.828042	0.946457	7.420143159	0.89578
7.8407065	314	0.830688	0.956886	7.502663778	0.915631
7.8407065	315	0.833333	0.96742	7.585259523	0.935902
7.8461988	316	0.835979	0.978064	7.674082881	0.956609
7.8477625	317	0.838624	0.988821	7.760031063	0.977767
7.8477625	318	0.84127	0.999689	7.84532417	0.999379
7.8555447	319	0.843915	1.010681	7.939446096	1.021475
7.8555447	320	0.846561	1.021795	8.026752818	1.044064
7.8671055	321	0.849206	1.033036	8.127002526	1.067163
7.8747391	322	0.851852	1.044409	8.224449563	1.09079
7.8785342	323	0.854497	1.055919	8.319092384	1.114965
7.8785342	324	0.857143	1.067569	8.410882249	1.139704
7.8823149	325	0.859788	1.07937	8.507935217	1.16504
7.8898338	326	0.862434	1.091321	8.610340333	1.190981
7.8898338	327	0.865079	1.103429	8.705867664	1.217555
7.8898338	328	0.867725	1.1157	8.802686633	1.244786
7.8972965	329	0.87037	1.128144	8.909288021	1.272709
7.8972965	330	0.873016	1.140763	9.008945893	1.301341
7.8995245	331	0.875661	1.153569	9.112646338	1.330721
7.9047039	332	0.878307	1.166566	9.221356083	1.360875
7.9047039	333	0.880952	1.17976	9.325654654	1.391834
7.9094895	334	0.883598	1.193166	9.437334725	1.423645
7.913521	335	0.886243	1.20679	9.549960639	1.456343
7.9193562	336	0.888889	1.220642	9.666698258	1.489967
7.9266026	337	0.891534	1.23473	9.787214084	1.524558
7.9409398	338	0.89418	1.249068	9.918775265	1.560171
7.948032	339	0.896825	1.263668	10.04367254	1.596856
7.9620673	340	0.899471	1.278543	10.17984256	1.634671
7.9759084	341	0.902116	1.293706	10.31848202	1.673676
7.9827577	342	0.904762	1.309172	10.45080405	1.713932
7.9827577	343	0.907407	1.324956	10.57680614	1.75551
7.9827577	344	0.910053	1.341082	10.70553083	1.7985
7.9895604	345	0.912698	1.357562	10.84632218	1.842974
7.9895604	346	0.915344	1.374419	10.98100607	1.889028
7.9929445	347	0.917989	1.391672	11.12356042	1.936752
7.9963172	348	0.920635	1.409358	11.26966996	1.986289
8.0063676	349	0.92328	1.427488	11.42899614	2.037723
8.0063676	350	0.925926	1.446106	11.57805354	2.091222
8.0063676	351	0.928571	1.465232	11.73118872	2.146906
8.0096954	352	0.931217	1.484914	11.89370725	2.204969
8.0096954	353	0.933862	1.505191	12.05612132	2.2656
8.0130121	354	0.936508	1.526105	12.22869644	2.328996
8.0130121	355	0.939153	1.547705	12.4017815	2.395392
8.0196128	356	0.941799	1.570056	12.59124244	2.465076
8.0228969	357	0.944444	1.593216	12.78221118	2.538339
8.0228969	358	0.94709	1.617268	12.97517458	2.615556
8.0237162	359	0.949735	1.642293	13.17729114	2.697126

STATISTICAL EVALUATION OF ALLUVIAL GROUNDWATER QUALITY UPGRADIENT OF THE HOMESTAKE SITE NEAR GRANTS, NM

MOLYBDENUM
SELENIUM
URANIUM

Prepared for:

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EXCUTIVE SUMMARY

Molybdenum, selenium, and uranium are key contaminants introduced into the shallow groundwater as a result of the processing of uranium ore at the Homestake site, located near Grants, New Mexico. However, a natural source of these same constituents exists upgradient which influences natural background groundwater quality. The purpose of this report is to statistically characterize upgradient concentrations of molybdenum, selenium, and uranium in the alluvial aquifer and to propose statistical methods for determining whether alluvial wells located downgradient of the site have been impacted by contamination originating at the site.

Samples were collected at near and far upgradient wells from 1976 to 1998. Fifteen wells provided the upgradient well data while data from six far upgradient wells were used to construct that data set. Close examination of the groundwater database provided justification for elimination of select samples. Samples were eliminated based upon high detection limits, reported zero concentrations, and extreme maximum concentrations. Only a minor percentage of samples were eliminated; the completeness of the data set was not compromised.

Statistical analyses were preformed on the individual data sets (constituent and location specific) to determine distribution, statistical similarities between near and far upgradient data, and upper tolerance limits. Results of the distribution analysis indicated that all data sets were nonparametrically distributed. The molybdenum and uranium near and far upgradient background data sets were shown to be statistically similar and so analyses on the combined data set was performed.

The 95th percentile was calculated as the non-parametric upper tolerance limit for all analyzed data sets. The 95th percentile should be used to compare to downgradient well concentrations to determine if "above expected background concentrations" exist. If the downgradient concentration is greater than the 95th percentile, contamination may be indicated. However, it should be noted that since the 95th percentile was calculated as the upper tolerance limit, statistically 5% of the time one would expect the upper tolerance limit to be exceeded. Because the molybdenum and uranium near and far upgradient data sets were statistically similar, the combined data set 95th percentile should be representative of upgradient background concentrations. Because the selenium near and far upgradient data sets were not statistically similar, it is advised to use the near upgradient 95th percentile for downgradient well concentration comparisons. A summary table of the parameter, data set, distribution, 95th percentile, range, arithmetic mean and sample number is provided as Table ES-1.

Table ES-1. Summary Table for Upgradient Wells, Statistical Analysis

Parameter	Data Set	Distribution	95th Percentile	Range	Arithmetic Mean	Samples
Molybdenum	Near Upgradient	Nonparametric	0.054	<0.001 to 0.2	0.019	366
	Far Upgradient	Nonparametric	0.04	<0.01 to 0.07	0.018	42
	Combined	Nonparametric	0.05	<0.001 to 0.2	0.019	408
Selenium	Near Upgradient	Nonparametric	0.27	0.009 to 0.755	0.13	365
	Far Upgradient	Nonparametric	0.72	<0.005 to 0.79	0.3	42
Uranium	Near Upgradient	Nonparametric	0.147	0.003392 to 0.7208	0.05	366
	Far Upgradient	Nonparametric	0.18	0.001 to 0.192	0.07	42
	Combined	Nonparametric	0.16	0.001 to 0.7208	0.05	408

1.0 INTRODUCTION

Molybdenum, selenium, and uranium are key contaminants introduced into the shallow groundwater as a result of the processing of uranium ore at the Homestake site, located near Grants, New Mexico. Because of their mobility, these constituents are used to track contaminant plume migration downgradient of the site. However, extensive mineralized areas upgradient of the site serve as a natural source of these same constituents in the alluvial groundwater. The purpose of this report is to statistically characterize upgradient concentrations of molybdenum, selenium, and uranium in the alluvial aquifer and to propose statistical methods for determining whether alluvial wells located downgradient of the site have been impacted by contamination originating at the site.

This report was prepared at the request of Homestake Mining Company. Homestake Mining Company provided the chemical analysis data, and George Hoffman from Hydro-Engineering, a contractor for the Homestake site, provided the well location map presented in this report as well as other valuable information, both printed and verbal, used in this assessment.

1.1 Monitor well network

Figure 1 shows the location of the fifteen upgradient monitor wells for which ground water quality data were provided. Alluvial wells DD, ND, P, P1, P2, P3, P4, Q, and R are located within approximately one mile of the site and are referred to in this report as near upgradient background wells, four of these wells (DD, P, Q, and R) have been sampled since 1976, data from well ND extends back to 1983, wells P1 and P2 have been sampled since 1992 and wells P3 and P4 were sampled for the first time in 1998. The sampling frequency varies by well and over time, but generally most of the near upgradient wells were sampled at least twice per year through 1998. These data were combined into a statistical set of data based upon geochemical similarities and knowledge of completion interval (Hoffman 1999).

Data from six additional wells farther upgradient of the site were also provided for this analysis. Wells 914, 916, 920, 921, 922, and 950 are located approximately two to three miles upgradient of the Homestake site and are collectively referred to in this report as far upgradient background wells. In addition to being located farther from the site, these wells were not installed by Homestake. Because completion logs are not available (personal communication, G. Hoffman) it cannot be determined whether these wells access alluvial groundwater, water from a deeper water bearing unit, or some combination from both groundwater sources. These wells have been sampled less frequently than the near upgradient wells. These data were combined into a statistical data set based upon upgradient placement in relation to the Homestake site and lack of completion interval knowledge.

A statistical comparison analyses between well sets was performed and the two data sets were combined into a single data set when statistically defensible.

1.2 Data preparation

The database provided for analysis consisted of six fields describing, well identification number, sample date, measured parameter, laboratory identification where the sample was processed, remark code (qualifiers) and concentration (mg/L).

Examination of the database revealed isolated problems with individual data values. For example, two molybdenum values reported as <0.1 mg/L were omitted as uninformative because typically molybdenum analyses were performed using a detection limit of 0.01 or 0.03 mg/L, and most upgradient molybdenum levels lie well below 0.1 mg/L. This data was from well P in November 1982 and from Well R in September 1992. A reported selenium concentration of 12 mg/L for well P on 2/27/91 was determined to be an error and was removed from the database. This concentration was determined to be the result of laboratory error. Two uranium measurements of exactly 0.00 mg/L were omitted (one was from Well P the other from Well R in September 1979). None of the removed data appears on any table in this report.

The laboratory code field entries in the database indicate that the majority of water samples were analyzed on-site (lab code Homestake), with frequent verification analyses provided by independent laboratories. When the dates reported for the on-site and verification results differed by only one or two days, the data were assumed to represent the same sampling round and one of the dates was changed to agree with the other. The database also includes rare cases of what appear to be replicate analyses of a water sample by the same laboratory. Replicate measurements were removed and replaced by a single data value equal to their arithmetic average. Master data tables and corrected data tables are provided for each constituent so all changes to the original set of data can be tracked.

Multiple measurements of constituent concentrations made by different laboratories on split or replicate samples of a well can be expected to be correlated, which violates the assumption of independence required by most statistical procedures. Therefore, as a last step before processing, the on-site and any verification lab results for a sampling round were averaged together to produce one value for the concentration of a constituent in each well on that date. This process equates the number of data to the number of sampling rounds for a well, and should produce more stable data with less noise.

The data used for statistical evaluation are presented for each constituent in tabular form in the back of this report.

2.0 METHODS

2.1 Distribution Analyses

A distribution analysis was performed to determine if a particular data set was parametric or non-parametric. The data first were subjected to an *a priori* screen (Section 2.1.1). The number of non-detects was then evaluated for the data set (Section 2.1.2). If greater than 15% non-detects existed, the data set was considered non-parametric and the distribution analysis was concluded. If fewer than 15% non-detects existed, the data were subjected to six numerical and two graphical procedures to determine the distribution type. The numerical procedures included the coefficient of variation (Section 2.1.3), the Studentized range test (Section 2.1.4), Geary's test (Section 2.1.5), the coefficient of skewness (Section 2.1.6), the Shapiro-Wilk Test of Normality if the sample size was less than or equal to 50 or the Shapiro-Francia test if the sample size was greater than 50 (Section 2.1.7), and Filliben's statistic (Section 2.1.8). The graphical procedures used were the histogram (Section 2.1.9) and the probability plot (Section 2.1.10). The results of the procedures were compared and the distribution was determined (Section 2.1.11). The T_n statistic was then calculated for the parametric data sets as a second screening mechanism for outliers (Section 2.1.12). If a data set contained fewer than 15% non-detects but failed the numerical and graphical procedures for a parametric distribution, the data set was often carried through to the T_n statistic procedure to determine if outliers were present. In some instances, outliers are identified and removed during the T_n statistic procedure causing a data set that had initially failed to pass the parametric numerical and graphical tests. If outliers were identified during the T_n statistical test, the outliers were removed and the mean and standard deviation were recalculated for the data set, and the distribution analysis was performed again.

2.1.1 Rejection of Outliers: *A Priori* Test

The *a priori* test is a screening test used to eliminate outliers before the distribution analysis is performed. This test is applied to all data whether parametric or non-parametric. An observation that is 4 or 5 times as large as the rest of the data is generally considered suspect (EPA 1989). Conservatively, for this *a priori* test, outliers are defined as maximum values greater than three times the next highest value. Non-transformed data are used for this screening test. If a data value fails the *a priori* test, it is removed from the data set for all following statistical analyses. The data point, however, must be explained as either potential sampling error, laboratory error, an anomalously high value, or some other factor contributing to an unexpectedly "high concentration".

2.1.2 Determination of Percent Non-detects

If the percentage of non-detects was less than 15%, the non-detect was replaced by the detection limit divided by two. A parametric distribution analyses was then performed on the modified data set. If the percentage of non-detects was greater than 15%, the distribution was considered non-parametric and a distribution analysis was not performed (EPA 1989, 1992).

2.1.3 Coefficient of Variation

The coefficient of variation (CV) is a unitless measure that determines dispersion for a set of data. The CV is commonly used in environmental statistical analyses because variability (expressed as a standard deviation) is often proportional to the mean. The CV may be used to determine whether or not the data follow a normal curve by comparing the sample CV to 1. EPA guidance (EPA 1998) suggests that the use of the CV is most valid if the data is non-negative. If the CV was greater than 1, the normality of the data was considered suspect. However, this method cannot be used to conclude the opposite, i.e. the distribution is normal if the CV is less than 1 (EPA 1998). This test was used as a preliminary screening test in conjunction with other more powerful distribution determining tests. The CV was calculated by dividing the standard deviation by the mean. Further information is provided in Guidance for Data Quality Assessment, Practical Methods for Data Analysis (EPA 1998).

The following formula is used to calculate CV:

$$CV = \frac{s}{\bar{X}}$$

where,

CV = coefficient of variation
s = standard deviation, and

$\bar{X}$ = sample mean

2.1.4 Studentized Range Test

Almost 100% of the area of a normal curve lies within +/-5 standard deviations from the mean. The Studentized range test for normality was developed based on this fact. This test compares the range of the sample (w) divided by the sample standard deviation (s) to a critical value range. If (w/s) exists outside of the critical value range, the data set fails the test. The Studentized range test does not perform well if the data are asymmetric. If the data appear to be lognormally distributed the test should not be applied (EPA 1998).

The following formula is used to perform the Studentized Range Test:

$$\frac{w}{s} = \frac{X_n - X_1}{s}$$

where,

w/s = sample range divided by the sample standard deviation
X_n = the maximum value of the data set
X_1 = the minimum value of the data set, and
s = the sample standard deviation

2.1.5 Geary's Test

Another numerical test utilized for normality testing was Geary's test. Geary's test uses the ratio of the mean deviation of the sample to the sample standard deviation. This ratio is then adjusted to approximate a standard normal distribution (EPA 1998). A "Z" value is calculated from the sample mean, the sample sum of squares, and the sum of absolute deviations. The "Z" value is then compared to a critical value such that if the absolute value of "Z" is greater than the critical value, the test indicates that the data do not follow a normal distribution.

The following formulas are used in Geary's Test. The first procedure is to calculate the sample mean:

$$\bar{X} = \frac{1}{n}\sum_{i=1}^{n} X_i$$

where,

$\bar{X}$ = the sample mean
X_i = the individual sample within the data set, and
n = the number of samples within the data set

The second procedure is to calculate the sample sum of squares:

$$SSS = \sum_{i=1}^{n} X_i^2 - \frac{\left(\sum_{i=1}^{n} X_i\right)^2}{n}$$

where,

SSS = sample sum of squares
X_i = the individual sample within the data set, and
n = the number of samples within the data set

The third procedure is to calculate the sum of absolute deviations:

$$SAD = \sum_{i=1}^{n} \left| X_i - \bar{X} \right|$$

where,

SAD = sum of the absolute deviations
$\bar{X}$ = the sample mean
X_i = the individual sample within the data set, and
n = the number of samples within the data set

The fourth procedure is to calculate Geary's test statistic:

$$a = \frac{SAD}{\sqrt{n(SSS)}}$$

where,

a = Geary's test statistic
SAD = sum of the absolute deviations
SSS = sample sum of squares, and
n = the number of samples within the data set

The final step in performing Geary's test is to test "a" for significance by computing:

$$Z = \frac{a - 0.7979}{0.2123/\sqrt{n}}$$

where,

Z = test of "a" for significance
a = Geary's test statistic, and
n = the number of samples within the data set

2.1.6 Coefficient of Skewness

The coefficient of skewness indicates to what degree a data set is skewed or asymmetric with respect to the mean. Data from a perfectly shaped normal distribution have a coefficient of skewness of zero, while asymmetric data have either positive or negative skewness depending on whether the right- or left-hand tail of the distribution is longer and "skinnier" than the opposite tail. A small degree of skewness (between -1 and +1) is not likely to affect the results of statistical tests based on an assumption of normality. However, if the coefficient of skewness is larger than 1 (in absolute value) and the sample size is small (e.g., n<25), statistical research has shown that standard normal theory-based tests are much less powerful than when the absolute skewness is less than 1 (Gayen, 1949). Therefore, it is considered a failure of the test for normality if the coefficient of skewness exceeds 1. The formula

for the coefficient of skewness γ_i is shown below, where n is the number of data points, x_i is an individual sample observation, $\bar{x}$ is the mean of the data set, and σ is the standard deviation.

$$\gamma_i = \frac{\frac{1}{n}\sum_{i=1}^{n}(x_i - \bar{x})^3}{\left(\frac{n-1}{n}\right)^{\frac{3}{2}}(\sigma)^3}$$

The Coefficient of Skewness can also be used to evaluate whether the distribution of a data set is more normal or lognormal, based on the closeness of γ_i to zero.

2.1.7 Shapiro-Wilk (n<50) or Shapiro-Francia (n≥50) Test of Normality

The Shapiro-Wilk Test of Normality is based on the premise that, if a set of data is normally distributed, the ordered values should be highly correlative with corresponding quantiles taken from a normal distribution (Shapiro and Wilk, 1965). In particular, the Shapiro-Wilk Test of Normality gives substantial weight to evidence of non-normality in the tails of a distribution, where the robustness of statistical tests based on the normality assumption is the most severely affected (EPA, 1992).

The Shapiro-Wilk test statistic (W) will tend to be large (close to 1) when the data is normally distributed. Only when the plotted data show significant bends or curves will the test statistic be small. The Shapiro-Wilk Test of Normality is considered to be one of the best available tests of normality (Miller, 1986; Madansky, 1988).

The following formula is used to calculate W:

$$W = \left[\frac{b}{\sigma\sqrt{n-1}}\right]^2$$

where,

$$b = \sum_{i=1}^{k} b_i = \sum_{i=1}^{k} a_{n-i+1}\left(x_{(n-i+1)} - x_i\right)$$

and σ = standard deviation,
n = number of data points,
a_{n-i+1} = coefficients determined from Table A-1in EPA (1992) for $3 \leq n \leq 50$
K = greatest integer less than or equal to n/2

Normality of the data should be rejected if the Shapiro-Wilk statistic is too low when compared to the critical values provided in Table A-2 (EPA, 1992). Otherwise, the data are assumed to be approximately normal for purposes of further statistical analysis.

The Shapiro-Francia Test of Normality is also based on the premise that, if a set of data is normally distributed, the ordered values should be highly correlative with corresponding quantiles taken from a normal distribution (Shapiro and Francia 1972).

The Shapiro-Francia test statistic (W') will tend to be large (close to 1) when the data is normally distributed. Only when the plotted data show significant bends or curves will the test statistic be small. Normality of the data should be rejected if the Shapiro-Francia statistic is below calculated critical values (EPA 1992). Otherwise, the data are assumed to be approximately normal for purposes of further statistical analysis.

The following formula is used to calculate W':

$$W' = \frac{\left[\Sigma_i m_i x_i\right]^2}{(n-1)SD^2 \Sigma_i m_i^2}$$

where,

W' = test statistic

x_i = represents the ith ordered value of the sample

n = the number of samples within the data set

SD = the sample standard deviation

m_i = the approximated expected value of the ith ordered Normal quantile.

The values for m_i can be approximately computed as

$$m_i = \Phi^{-1}\left(\frac{i}{n+1}\right)$$

where,

m_i = the approximated expected value of the ith ordered Normal quantile

Φ^{-1} = the inverse of the standard Normal distribution with zero mean and unit variance

n = the number of samples within the data set

2.1.8 Filliben's Statistic

Filliben's statistic is approximately equivalent to the Shapiro-Wilk and Shapiro-Francia tests as described by Filliben (1975). This test correlates well with the use of probability plots, because the essence of the test is to compute the common correlation coefficient for points on a probability plot (EPA 1992). Since the correlation coefficient is a measure of the linearity of the points on a scatterplot, Filliben's statistic will be high when the plotted points fall along a straight line and low when there are significant bends and curves in the probability plot. Comparison of the Shapiro-Wilk and Filliben's statistic has indicated very similar statistical power for detecting non-normality (Ryan and Joiner, 1976). Critical values for the correlation coefficient have been derived in EPA 1992. If the calculated value is less than the critical value, there is significant evidence of non-normality.

Filliben's statistic may be computed as:

$$r = \frac{\Sigma_{i=1}^{n} X_i M_i}{\left(\sqrt{\Sigma_i M_i^2}\right)(SD)\left(\sqrt{n-1}\right)}$$

where,

r = Filliben's statistic

X_i = represents the ith smallest ordered concentration value

n = the number of samples within the data set

SD = the sample standard deviation

M_i = the median of the ith order statistic from a standard Normal distribution.

The ith Normal order statistic median may be approximated as $M_i = \Phi^{-1}(m_i)$, where as before Φ^{-1} is the inverse of the standard Normal cumulative distribution and m_i can be can be computed as follows (given sample size n):

$$m_i = 1 - \left(0.5^{1/n}\right) \text{ for i = 1}$$

$$m_i = (i - 0.3175)/(n + 0.365) \text{ for 1<i<n}$$

$$m_i = 0.5^{1/n} \text{ for i = n}$$

2.1.9 Histograms

Histograms are useful for visually determining whether the data sets are skewed, and if so, in what direction. Histograms are created by determining the range of sample concentrations, then dividing the concentration range into equal intervals. Samples are then placed into the appropriate concentration intervals. The concentration range forms the x-axis. Calculating the percentage of samples per concentration interval compared to the total number of samples, or simply plotting the number of data values that fall within an interval, provides the y-axis in terms of percent frequency or frequency, respectively, of a particular concentration interval.

2.1.10 Probability Plots

Another simple and useful graphical test for determining normality is to plot the data on probability paper. The y-axis is scaled to represent probabilities according to the normal distribution, and the data are arranged in increasing order. An observed value is plotted on the x-axis, and the proportion of observations less than or equal to each observed value is plotted as the y-coordinate. The scale is constructed so that, if the data are normal, the points when plotted will approximate a straight line. Visually apparent curves or bends indicate that the data do not follow a normal distribution (EPA, 1992).

Probability plots are particularly useful for spotting irregularities within the data when compared to a specific distributional model such as the normal distribution. It is easy to determine whether departures from normality are occurring more or less in the middle ranges of the data or in the extreme tails. Probability plots can also indicate the presence of possible outlier values that do not follow the basic pattern of the data and can show the presence of significant positive or negative skewness.

The probability for a particular data value x is calculated as

$$\text{Probability} = 100*((i-3/8)/(n+1/4))$$

where,

i = ranked order of x_i from i to n
n = number of samples

2.1.11 Determination of Distribution

Upon completion of the *a priori* screen, percent non-detect determination, and graphical and numerical distribution analysis, a determination of the distribution was made (EPA, 1992).

2.1.12 The T_n Statistic Test

The T_n Statistic test was performed on the near and far upgradient background data after the *a priori* screen and initial distribution analysis had been completed. The test was run iteratively until the largest remaining value in the

data set passed. If a particular data set had fewer than 15% non-detects but failed the parametric distribution tests, it was often carried over to the T_n Statistic and analyzed using the parametric distribution that it most closely resembled. In some instances, identification and removal of outliers during the T_n Statistic procedure allows for the previously failed data set to pass the parametric numerical and graphical tests. If failures were reported during the T_n statistical test, the values were removed and the mean and standard deviation were recalculated on the censored data set. Failures of the T_n Statistic are defined as T_n calculated values that exceed the critical value (EPA, 1989). The censored data set was then used for all additional statistical tests. (Removed data points are considered either potential sampling error, laboratory error, an anomalously high value, or some other factor contributing to an unexpectedly large concentration).

To calculate the T_n statistic, the following formula is used:

$$T_n = \frac{(x_n - \bar{x})}{\sigma}$$

where

T_n = T_n statistic,
x_n = individual sample,
$\bar{x}$ = mean of sample set, and
σ = standard deviation.

2.1.13 Determination of Upper Tolerance Limit

This section describes two methods, one for parametric data and the other for non-parametric data that establish the maximum expected background concentration using a 95 percent confidence limit. A parametric upper tolerance limit (Section 2.1.13.1) is calculated for parametric data sets, while a 95th percentile (considered a non-parametric upper tolerance limit)(Section 2.1.13.2) is calculated for non-parametric data sets.

2.1.13.1 Parametric Upper Tolerance Limit

A tolerance interval establishes a concentration range that is constructed to contain a specified proportion (P%) of the population with a specified confidence coefficient, Y. The proportion of the population included, P, is referred to as the coverage. The probability with which the tolerance interval includes the proportion P% of the population is referred to as the tolerance coefficient.

A coverage of 95% was used as recommended by EPA (1989). By using this coverage, random observations from the same distribution would exceed the upper tolerance limit less than 5% of the time. Similarly, a tolerance coefficient of 95% was used. This means that there is a confidence level of 95% that the upper 95% tolerance limit would contain at least 95% of the distribution of observations from background groundwater data. These values were chosen to be consistent with the performance standards described in Section 2 of EPA 1989.

Tolerance intervals were constructed assuming that the data or the transformed data were normally distributed.

The formula for the UTL is as follows:

$$UTL = \bar{x} + t_{.05(n-1)} \cdot \sigma$$

where

$\bar{x}$ = the mean of the population,
$t_{.05(n-1)}$ is one-sided tolerance factor for n (Table 5, Appendix B, EPA 1989), and
σ = the standard deviation

2.1.13.2 95th Percentile

For non-parametric data sets, the 95th percentile value was used for expressing the upper range of background. The 95th percentile indicated that 95 percent of the data would be expected to be below that value, while 5 percent would be above the value. The calculated background was therefore insensitive to the magnitude of the largest 5 percent of the data points.

Percentiles can be calculated in several similar manners. EPA 1998 provides one method of calculating percentiles. The 95th percentile presented in this report was calculated electronically by the Microsoft Excel software program (Microsoft 1992).

2.2 Comparison Test

2.2.1 Introduction

A comparison test was performed between near upgradient and far upgradient data sets to determine if the two data sets were statistically similar. If the data sets were similar, then the data sets were combined to determine the upper tolerance limit for the larger data set. If the near and far upgradient data sets did not compare statistically, the data sets were not combined.

Comparison tests are of two basic types: parametric and non-parametric. Only a non-parametric test was applied to the Homestake background data. This test was the Wilcoxon Rank-sum test.

2.2.2. Wilcoxon Rank Sum Test

The Wilcoxon-Rank Sum (WRS) Test is a powerful nonparametric test to determine if data sets are statistically similar (EPA 1992). As a general rule, the WRS test should be used with caution if more than about 40% of the measurements are non-detects. All data were subjected to the WRS test in this analysis with the knowledge that the test power was greatly reduced when the non-detect percent was greater than 40.

In general the WRS test is performed by combining two data sets and ranking that set from highest to lowest. The ranked sum of each set is compared to determine if one set is statistically different than the other. A statistical software package (STATGRAPHICS) (Manugistics 1998) was used to perform this two-way procedure.

3.0 MOLYBDENUM

3.1 Introduction

Molybdenum concentration data for near upgradient wells are characterized by a high frequency of nondetects at laboratory detection limits of 0.03, 0.01, and 0.001 mg/L. Approximately 16 percent of measurements from these wells exceed the NRC site standard of 0.03 mg/L, with exceedences ranging from 0.03 to 0.2 mg/L. Only two of 408 (0.5 percent) measurements exceed 0.10 mg/L.

Molybdenum concentration data for far upgradient wells are also characterized by a high percentage of nondetects at laboratory detection limits of 0.03 and 0.01 mg/L. Approximately 14 percent of measurements from these wells exceed the NRC site standard of 0.03 mg/L, with exceedences ranging from 0.03 to 0.07 mg/L. No measurements from the far upgradient wells exceeded 0.10 mg/L.

Table 1 summarizes data for both near upgradient and far upgradient background wells.

3.2 Molybdenum Near Upgradient

Table 2 presents the molybdenum near upgradient background data set with the data not corrected for non-detects or duplicates. Tables 3 through 10 present the sampling date and the final data set (corrected for non-detects and duplicates for the near upgradient background wells. Finally, Table 11 is a summary table of all the final data sets for the near upgradient wells used in the statistical analyses. A distribution analysis was first performed for the molybdenum data. Then the 95th upper tolerance limit was calculated.

3.2.1 Distribution Analysis Results

3.2.1.1 Rejection of Outliers: *A Priori* Test

Results of the *a priori* test are presented in Table 12. No outliers were determined or eliminated from the molybdenum near upgradient background data set.

3.2.1.2 Determination of Percent Non-detects

Because the near upgradient molybdenum data had 40% non-detects, the data were considered to be nonparametric (EPA 1989)(Table 1). Thus, no more distribution tests were applied to the data.

3.2.2. Determination of Upper Tolerance Limit

3.2.2.1 95th Percentile

Because the data was determined to be nonparametrically distributed (due to greater than 15% non-detects), the 95th percentile of the data was calculated. The 95th percentile was determined to be 0.054 mg/L (Table 13). The molybdenum near upgradient background data set summary table is presented as Table 14.

3.3 Molybdenum Far Upgradient Distribution Analysis Results

Table 15 presents the molybdenum far upgradient background data set with the data not corrected for non-detects or duplicates. Tables 16 through 21 present the sampling date and the final data set (corrected for non-detects and duplicates for the far upgradient background wells. Finally, Table 22 is a summary table of all the final data sets for the far upgradient wells used in the statistical analyses. A distribution analysis was first performed for the molybdenum data. Then the 95th upper tolerance limit was calculated.

3.3.1 Distribution Analysis Results

3.3.1.1 Rejection of Outliers: *A Priori* Test

Results of the *a priori* test are presented in Table 23. No outliers were determined or eliminated from the molybdenum far upgradient background data set.

3.3.1.2 Determination of Percent Non-detects

Because the far upgradient molybdenum data had 86% non-detects, the data were considered to be nonparametric (EPA 1989) (Table 1). Thus, no more distribution tests were applied to the data.

3.3.2 Determination of Upper Tolerance Limit

3.3.2.1 95th Percentile

Because the data was determined to be nonparametrically distributed (due to greater than 15% non-detects), the 95th percentile of the data was calculated. The 95th percentile was determined to be 0.040 mg/L (Table 24). The molybdenum far upgradient background data set summary table is presented as Table 25.

3.4 Molybdenum Near and Far Upgradient Comparison Statistics Results

The molybdenum near upgradient background data set was statistically similar to the molybdenum far upgradient background data set (Table 26). Thus, distribution fitting and an upper tolerance limit calculation was performed on the combined data set.

3.5 Molybdenum Combined Distribution Analysis Results

Table 27 is a summary table of all the final data sets for the combined upgradient wells used in the statistical analyses. A distribution analysis was first performed for the molybdenum data. Then the 95th upper tolerance limit was calculated.

3.5.1 Distribution Analysis Results

3.5.1.1 Rejection of Outliers: *A Priori* Test

Results of the *a priori* test are presented in Table 28. No outliers were determined or eliminated from the molybdenum combined upgradient background data set.

3.5.1.2 Determination of Percent Non-detects

Because the combined upgradient molybdenum data had over 40% non-detects, the data were considered to be nonparametric (EPA 1989) (Table 1). Thus, no more distribution tests were applied to the data.

3.5.2 Determination of Upper Tolerance Limit

3.5.2.1 95th Percentile

Because the data was determined to be nonparametrically distributed (due to greater than 15% non-detects), the 95th percentile of the data was calculated. The 95th percentile was determined to be 0.05 mg/L (Table 29). The molybdenum combined upgradient background data set summary table is presented as Table 30.

4.0 SELENIUM

4.1 Introduction

Selenium concentrations measured in near upgradient wells range from 0.009 mg/L to 0.755 mg/L. Less than five percent of measurements are below detection, and slightly above half of all measurements from the near upgradient wells lie above the NRC site standard of 0.10 mg/L with exceedances ranging from 0.1 to 0.755. Table 31 provides a statistical summary of the data by well for both near upgradient and far upgradient wells.

Selenium concentrations measured in far upgradient wells range from <0.005 to 0.79 mg/L. Approximately 16% of the data for the far upgradient wells are nondetect. Approximately 60 percent of measurements from these wells exceed the NRC site standard of 0.10 mg/L, with exceedences ranging from 0.276 to 0.79 mg/L. Though typically when non-detects exceed 15% of the data set only non-parametric statistics are applied, because the percent non-detect was so close to 15, parametric distribution analyses were still performed.

4.2 Selenium Near Upgradient

Table 32 presents the selenium near upgradient background data set with the data not corrected for non-detects or duplicates. Tables 33 through 40 present the sampling date and the final data set (corrected for non-detects and duplicates for the near upgradient background wells. Finally, Table 41 is a summary table of all the final data sets for the near upgradient wells used in the statistical analyses. A distribution analysis was first performed for the molybdenum data. Then the 95th upper tolerance limit was calculated.

4.2.1 Distribution Analysis Results

4.2.1.1 Rejection of Outliers: *A Priori* Test

Results of the *a priori* test are presented in Table 42. No outliers were determined or eliminated from the selenium near upgradient background data set.

4.2.1.2 Determination of Percent Non-detects

Because the near upgradient selenium data set had less than 15% non-detects, distribution tests were applied to the data (Table 31).

4.2.1.3 Coefficient of Variation

Both the normal and log-transformed data sets passed the CV screen (Table 43). The CV value was 0.73 for the normal data and –0.41 for the log-transformed data compared to the critical value of 1. According to EPA 1998, if the CV is less than 1, the data may be, but does not necessarily have to be normal.

4.2.1.4 Studentized Range Test

The normal data set failed the Studentized range test (Table 44). The range (w) divided by the standard deviation (s) produced a result of 8.05. The critical value range was 5.47 to 6.94. When (w/s) falls outside the critical range, it implies that the data are not well modeled by a normal curve (EPA 1998).

4.2.1.5 Geary's Test

Both the normal and log-transformed data sets failed Geary's test (Table 45). The calculated "Z" values were –2.0 and –2.9 respectively, while the critical value is 1.645. Because the absolute value of "Z" was

4.2.1.6 Coefficient of Skewness

Both the normal and log-transformed data sets failed the coefficient of skewness test (Table 46). The calculated coefficient of skewness was 1.7 for the normal set and −1.1 for the log-transformed data set compared to an acceptable range of −1 to 1. Because the coefficient of skewness is greater than 1, the normal distribution may provide a poor approximation to the data set (EPA 1992).

4.2.1.7 Shapiro-Francia (n≥50) Test of Normality

Both data sets failed the Shapiro-Francia test (Table 47). Though the critical value for the test could not be precisely determined, it is evident from comparison of tabulated critical values to n that the critical value approaches 1 as n increases. The critical value for n=99 is 0.975 for 95% confidence. The calculated W' for the normal data was 0.88, for the log-transformed data it was 0.90. Therefore, normality of the data was rejected (EPA 1992).

4.2.1.8 Filliben's Statistic

Both data sets failed Filliben's Statistic (Table 48). Though the critical value for the test could not be precisely determined, it is also evident from comparison of tabulated critical values to n that the critical value approaches 1 as n increases. The critical value for n=100 is 0.987 for 95% confidence. The calculated test statistic for the normal data was 0.937, for the log-transformed data it was 0.950. Therefore, normality of the data was rejected (EPA 1992).

4.2.1.9 Histograms

Figure 2 depicts the histogram for the normal data set. The figure depicts a fair distribution "fit" with right skewness implying that the normal distribution could provide a poor approximation to the data set. Figure 3 depicts the histogram for the log-transformed data set. This figure also depicts a fair distribution "fit" with left skewness implying that the normal distribution could provide a poor approximation to the data set

4.2.1.10 Probability Plots

Figure 4 shows the probability plot for the normal data set. There are two sharp breaks in the plot, one near the detection limit, the other near 0.4 mg/l. This probability plot depicts a poor normal distribution "fit", implying the normal distribution will provide a poor approximation to the data set. Figure 5 is the probability plot for the log-transformed data set. There are at least four breaks in the plot. This probability plot also depicts a poor normal distribution "fit", with the same implication as above.

4.2.1.11 Determination of Distribution

Based on the distribution analysis results, the selenium near upgradient background data set is non-parametric (Table 49).

4.2.1.12 The T_n Statistic Test

Though the data set was determined to be nonparametric, the T_n statistic outlier test was applied to the log-transformed data set. The log-transformed data set was selected because it approximated normality better than the non-transformed data set. No outliers were detected using the T_n statistic (Table 50).

4.2.2. Determination of Upper Tolerance Limit

4.2.2.1 95th Percentile

Because the data was determined to be non-parametrically distributed, the 95th percentile of the data was calculated. The 95th percentile was determined to be 0.27 mg/L (Table 51). The selenium near upgradient background data set summary table is presented as Table 52.

4.3 Selenium Far Upgradient Distribution Analysis Results

Table 53 presents the selenium far upgradient background data set with the data not corrected for non-detects or duplicates. Tables 54 through 59 present the sampling date and the final data set (corrected for non-detects and duplicates for the far upgradient background wells. Finally, Table 60 is a summary table of all the final data sets for the far upgradient wells used in the statistical analyses. A distribution analysis was first performed for the selenium data. Then the 95th upper tolerance limit was calculated.

4.3.1 Distribution Analysis Results

4.3.1.1 Rejection of Outliers: *A Priori* Test

Results of the *a priori* test are presented in Table 61. No outliers were determined or eliminated from the selenium far upgradient background data set.

4.3.1.2 Determination of Percent Non-detects

Because the far upgradient selenium data set had only slightly more than 15% non-detects, distribution tests were applied to the data (Table 31).

4.3.1.3 Coefficient of Variation

Both the normal and log-transformed data sets passed the CV screen (Table 62). The CV value was 0.88 for the normal data and –0.88 for the log-transformed data compared to the critical value of 1. According to EPA 1998, if the CV is less than 1, the data may be, but does not necessarily have to be normal.

4.3.1.4 Studentized Range Test

The normal data set failed the Studentized range test (Table 63). The range (w) divided by the standard deviation (s) produced a result of 3.03. The critical value range was 3.75 to 5.26. When (w/s) falls outside the critical range, it implies that the data are not well modeled by a normal curve (EPA 1998).

4.3.1.5 Geary's Test

Both the normal and log-transformed data sets failed Geary's test (Table 64). The calculated "Z" values were 3.2 and 4.5 respectively, while the critical value is 1.645. Because the absolute value of "Z" was greater than the associated critical value, it implies that the data are not well modeled by a normal curve (EPA 1998).

4.3.1.6 Coefficient of Skewness

Both the normal and log-transformed data sets passed the coefficient of skewness test (Table 65). The calculated coefficient of skewness was 0.1 for the normal set and –0.5 for the log-transformed data set compared to an acceptable range of –1 to 1. Because the coefficient of skewness was less than 1, the normal distribution may accurately approximate the data set (EPA 1992).

4.3.1.7 Shapiro-Wilk (n<50)

Both data sets failed the Shapiro-Wilk test (Table 66). The calculated W for the normal data was 0.85, for the log-transformed data it was 0.77 compared to a critical value of 0.942. Therefore, normality of the data was rejected (EPA 1992).

4.3.1.8 Filliben's Statistic

Both data sets failed Filliben's Statistic (Table 67). The calculated test statistic for the normal data was 0.934, for the log-transformed data it was 0.893 compared to a critical value of 0.973. Therefore, normality of the data was rejected (EPA 1992).

4.3.1.9 Histograms

Figure 6 depicts the histogram for the normal data set. The figure depicts a poor distribution "fit" implying that the normal distribution could provide a poor approximation to the data set. Figure 7 depicts the histogram for the log-transformed data set. This figure also depicts a poor distribution "fit" also implying that the normal distribution could provide a poor approximation to the data set

4.3.1.10 Probability Plots

Figure 8 shows the probability plot for the normal data set. There is at least two sharp breaks in the plot. This probability plot depicts a poor normal distribution "fit", implying the normal distribution will provide a poor approximation to the data set. Figure 9 is the probability plot for the log-transformed data set. There are at least four breaks in the plot. This probability plot also depicts a poor normal distribution "fit", with the same implicatic as above.

4.3.1.11 Determination of Distribution

Based on the distribution analysis results, the selenium far upgradient background data set is non-parametric (Table 68).

4.3.1.12 The T_n Statistic Test

Though the data set was determined to be nonparametric, the T_n statistic outlier test was applied to the normal data set. The normal data set was selected because it approximated normality better than the log-transformed data set. No outliers were detected using the T_n statistic (Table 69).

4.3.2 Determination of Upper Tolerance Limit

4.3.2.1 95th Percentile

Because the data was determined to be non-parametrically distributed, the 95th percentile of the data was calculated. The 95th percentile was determined to be 0.72 mg/L (Table 70). The selenium far upgradient background data set summary table is presented as Table 71.

4.4 Selenium Near and Far Upgradient Comparison Statistics Results

The selenium near upgradient background data set was not statistically similar to the selenium far upgradient background data set (Table 72). Thus, distribution fitting and an upper tolerance limit calculation was not performed on the combined data set.

5.0 URANIUM

5.1 Introduction

Uranium concentrations measured in the near upgradient wells range from 0.003392 to 0.7208 mg/L. The highest uranium concentrations are found in samples from well DD, where 96 percent of measurements exceed the NRC site standard of 0.04 mg/L. Other wells also show exceedences of the standard, and overall 46 percent of measurements in near upgradient wells are above the 0.04 mg/L NRC standard.

Uranium concentrations measured in the far upgradient wells range from 0.001 to 0.192 mg/L. The highest uranium concentrations are found in samples from wells 920 , 921 and 950, where over 80 percent of measurements exceed the NRC site standard of 0.04 mg/L. No other wells show exceedences of the standard, and overall approximately 53 percent of measurements in the far upgradient wells are above the 0.04 mg/L NRC standard.

Table 73 provides a statistical summary of the uranium data by well for both near upgradient and far upgradient wells.

5.2 Uranium Near Upgradient

Table 74 presents the uranium near upgradient background data set with the data not corrected for non-detects or duplicates. Tables 75 through 82 present the sampling date and the final data set (corrected for non-detects and duplicates for the near upgradient background wells. Finally, Table 83 is a summary table of all the final data sets for the near upgradient wells used in the statistical analyses. A distribution analysis was first performed for the uranium data. Then the 95th upper tolerance limit was calculated.

5.2.1 Distribution Analysis Results

5.2.1.1 Rejection of Outliers: *A Priori* Test

Results of the *a priori* test are presented in Table 84. No outliers were determined or eliminated from the uranium near upgradient background data set.

5.2.1.2 Determination of Percent Non-detects

Because the near upgradient uranium data less than 15% non-detects, distribution tests were applied to the data (Table 73).

5.2.1.3 Coefficient of Variation

The log-transformed data set passed the CV screen (Table 85). The normal data set failed the CV test. The CV value was 1.09 for the normal data and –0.29 for the log-transformed data compared to the critical value of 1. According to EPA 1998, if the CV is less than 1, the data may be, but does not necessarily have to be normal.

5.2.1.4 Studentized Range Test

The normal data set failed the Studentized range test (Table 86). The range (w) divided by the standard deviation (s) produced a result of 12.72. The critical value range was 5.47 to 6.94. When (w/s) falls outside the critical range, it implies that the data are not well modeled by a normal curve (EPA 1998).

5.2.1.5 Geary's Test

Both the normal and log-transformed data sets failed Geary's test (Table 87). The calculated "Z" values were –16.6 and –3.9 respectively, while the critical value is 1.645. Because the absolute value of "Z" was greater than the associated critical value, it implies that the data are not well modeled by a normal curve (EPA 1998).

5.2.1.6 Coefficient of Skewness

The normal data set failed the coefficient or skewness test while the log-transformed data set passed (Table 88). The calculated coefficient of skewness was 5.4 for the normal set and –0.4 for the log-transformed data set compared to an acceptable range of –1 to 1. Because the coefficient of skewness was less than 1 for the log-transformed data set, the normal distribution may accurately approximate the data set (EPA 1992).

5.2.1.7 Shapiro-Francia (n≥50) Test of Normality

Both data sets failed the Shapiro-Francia test (Table 89). Though the critical value for the test could not be precisely determined, it is evident from comparison of tabulated critical values to n that the critical value approaches 1 as n increases. The critical value for n=99 is 0.975 for 95% confidence. The calculated W' for the normal data was 0.62, for the log-transformed data it was 0.96. Therefore, normality of the data was rejected (EPA 1992).

5.2.1.8 Filliben's Statistic

Both data sets failed Filliben's Statistic (Table 90). Though the critical value for the test could not be precisely determined, it is also evident from comparison of tabulated critical values to n that the critical value approaches 1 as n increases. The critical value for n=100 is 0.987 for 95% confidence. The calculated test statistic for the normal data was 0.790, for the log-transformed data it was 0.982. Therefore, normality of the data was rejected (EPA 1992).

5.2.1.9 Histograms

Figure 10 depicts the histogram for the normal data set. The figure depicts a poor distribution "fit" implying that the normal distribution could provide a poor approximation to the data set. Figure 11 depicts the histogram for the log-transformed data set. This figure depicts a good distribution "fit" implying that the normal distribution could provide a representative approximation to the data set

5.2.1.10 Probability Plots

Figure 12 shows the probability plot for the normal data set. There is at least three sharp breaks in the plot. This probability plot depicts a poor normal distribution "fit", implying the normal distribution will provide a poor approximation to the data set. Figure 13 is the probability plot for the log-transformed data set. There are at least two breaks in the plot. This probability plot depicts a fair to poor normal distribution "fit", with the same implication as above.

5.2.1.11 Determination of Distribution

Based on the distribution analysis results, the uranium near upgradient background data set is non-parametric (Table 91).

5.2.1.12 The T_n Statistic Test

Though the data set was determined to be nonparametric, the T_n statistic outlier test was applied to the log-transformed data set. The log-transformed data set was selected because it approximated normality better than the normal data set. No outliers were detected using the T_n statistic (Table 92).

5.2.2 Determination of Upper Tolerance Limit

5.2.2.1 95th Percentile

Because the data was determined to be non-parametrically distributed, the 95th percentile of the data was calculated. The 95th percentile was determined to be 0.147 mg/L (Table 93). The uranium near upgradient background data set summary table is presented as Table 94.

5.3 Uranium Far Upgradient Distribution Analysis Results

Table 95 presents the uranium far upgradient background data set with the data not corrected for non-detects or duplicates. Tables 96 through 101 present the sampling date and the final data set (corrected for non-detects and duplicates for the near upgradient background wells. Finally, Table 102 is a summary table of all the final data sets for the near upgradient wells used in the statistical analyses. A distribution analysis was first performed for the uranium data. Then the 95th upper tolerance limit was calculated.

5.3.1 Distribution Analysis Results

5.3.1.1 Rejection of Outliers: *A Priori* Test

Results of the *a priori* test are presented in Table 103. No outliers were determined or eliminated from the uranium far upgradient background data set.

5.3.1.2 Determination of Percent Non-detects

Because the far upgradient uranium data set had only slightly more than 15% non-detects, distribution tests were applied to the data (Table 73).

5.3.1.3 Coefficient of Variation

Both the normal and log-transformed data sets passed the CV screen (Table 104). The CV value was 0.99 for the normal data and –0.45 for the log-transformed data compared to the critical value of 1. According to EPA 1998, if the CV is less than 1, the data may be, but does not necessarily have to be normal.

5.3.1.4 Studentized Range Test

The normal data set failed the Studentized range test (Table 105). The range (w) divided by the standard deviation (s) produced a result of 2.83. The critical value range was 3.75 to 5.26. When (w/s) falls outside the critical range, it implies that the data are not well modeled by a normal curve (EPA 1998).

5.3.1.5 Geary's Test

Both the normal and log-transformed data sets failed Geary's test (Table 106). The calculated "Z" values were 3.1 and 3.6 respectively, while the critical value is 1.645. Because the absolute value of "Z" was greater than the associated critical value, it implies that the data are not well modeled by a normal curve (EPA 1998).

5.3.1.6 Coefficient of Skewness

Both the normal and log-transformed data sets passed the coefficient of skewness test (Table 107). The calculated coefficient of skewness was 0.5 for the normal set and –0.3 for the log-transformed data set compared to an acceptable range of –1 to 1. Because the coefficient of skewness was less than 1, the normal distribution may accurately approximate the data set (EPA 1992).

5.3.1.7 Shapiro-Wilk (n<50) Test of Normality

Both data sets failed the Shapiro-Wilk test (Table 108). The calculated W for the normal data was 0.83, for the log-transformed data it was 0.88 compared to a critical value of 0.942. Therefore, normality of the data was rejected (EPA 1992).

5.3.1.8 Filliben's Statistic

Both data sets failed Filliben's Statistic (Table 109). The calculated test statistic for the normal data was 0.924, for the log-transformed data it was 0.951 compared to a critical value of 0.973. Therefore, normality of the data was rejected (EPA 1992).

5.3.1.9 Histograms

Figure 14 depicts the histogram for the normal data set. The figure depicts a poor distribution "fit" implying that the normal distribution could provide a poor approximation to the data set. Figure 15 depicts the histogram for the log-transformed data set. This figure also depicts a poor distribution "fit" also implying that the normal distribution could provide a poor approximation to the data set

5.3.1.10 Probability Plots

Figure 16 shows the probability plot for the normal data set. There is at least two sharp breaks in the plot. This probability plot depicts a fair to poor normal distribution "fit", implying the normal distribution will provide a poor approximation to the data set. Figure 17 is the probability plot for the log-transformed data set. There are at least two breaks in the plot. This probability plot also depicts a poor normal distribution "fit", with the same implication as above.

5.3.1.11 Determination of Distribution

Based on the distribution analysis results, the uranium far upgradient background data set is non-parametric (Table 110).

5.3.1.12 The T_n Statistic Test

Though the data set was determined to be nonparametric, the T_n statistic outlier test was applied to the log-transformed data set. The log-transformed data set was selected because it approximated normality better than the normal data set. No outliers were detected using the T_n statistic (Table 111).

5.3.2 Determination of Upper Tolerance Limit

5.3.2.1 95th Percentile

Because the data was determined to be non-parametrically distributed, the 95th percentile of the data was calculated The 95th percentile was determined to be 0.18 mg/L (Table 112). The uranium far upgradient background data set summary table is presented as Table 113.

5.4 Uranium Near and Far Upgradient Comparison Statistics Results

The uranium near upgradient background data set was statistically similar to the uranium far upgradient background data set (Table 114). Thus, distribution fitting and an upper tolerance limit calculation was performed on the combined data set.

5.5 Uranium Combined

Table 115 is a summary table of all the final data sets for the near upgradient wells used in the statistical analyses. A distribution analysis was first performed for the uranium data. Then the 95th upper tolerance limit was calculated.

5.5.1 Distribution Analysis Results

5.5.1.1 Rejection of Outliers: *A Priori* Test

Results of the *a priori* test are presented in Table 116. No outliers were determined or eliminated from the uranium combined upgradient background data set.

5.5.1.2 Determination of Percent Non-detects

Because the combined upgradient uranium data had less than 15% non-detects, distribution tests were applied to the data (Table 73).

5.5.1.3 Coefficient of Variation

The normal data set failed the CV screen while the log-transformed data set passed (Table 117). The CV value was 1.08 for the normal data and –0.31 for the log-transformed data compared to the critical value of 1. According to EPA 1998, if the CV is less than 1, the data may be, but does not necessarily have to be normal.

5.5.1.4 Studentized Range Test

The data set failed the Studentized range test (Table 118). The range (w) divided by the standard deviation (s) produced a result of 12.46. The critical value range was 5.47 to 6.94. When (w/s) falls outside the critical range, it implies that the data are not well modeled by a normal curve (EPA 1998).

5.5.1.5 Geary's Test

Both the normal and log-transformed data sets failed Geary's test (Table 119). The calculated "Z" values were -13.8 and –2.9 respectively, while the critical value is 1.645. Because the absolute value of "Z" was greater than the associated critical value, it implies that the data are not well modeled by a normal curve (EPA 1998).

5.5.1.6 Coefficient of Skewness

The normal data set failed the coefficient of skewness test while the log-transformed data set passed (Table 120). The calculated coefficient of skewness was 4.6 for the normal set and –0.5 for the log-transformed data set compared to an acceptable range of –1 to 1. Because the coefficient of skewness was less than 1 for the log-transformed data set, the normal distribution may accurately approximate that data set (EPA 1992).

5.5.1.7 Shapiro-Francia (n≥50) Test of Normality

Both data sets failed the Shapiro-Francia test (Table 121). Though the critical value for the test could not be precisely determined, it is evident from comparison of tabulated critical values to n that the critical value approaches 1 as n increases. The critical value for n=99 is 0.975 for 95% confidence. The calculated W' for the normal data was 0.67, for the log-transformed data it was 0.966. Therefore, normality of the data was rejected (EPA 1992).

5.5.1.8 Filliben's Statistic

Both data sets failed Filliben's Statistic (Table 122). Though the critical value for the test could not be precisely determined, it is also evident from comparison of tabulated critical values to n that the critical value approaches 1 as n increases. The critical value for n=100 is 0.987 for 95% confidence. The calculated test statistic for the normal data was 0.818, for the log-transformed data it was 0.983. Therefore, normality of the data was rejected (EPA 1992).

5.5.1.9 Histograms

Figure 18 depicts the histogram for the normal data set. The figure depicts a poor distribution "fit" implying that the normal distribution could provide a poor approximation to the data set. Figure 19 depicts the histogram for the log-transformed data set. This figure also depicts a good distribution "fit" implying that the normal distribution could provide a good approximation to the data set.

5.5.1.10 Probability Plots

Figure 20 shows the probability plot for the normal data set. There is at least four breaks in the plot. This probability plot depicts a poor normal distribution "fit", implying the normal distribution will provide a poor approximation to the data set. Figure 21 is the probability plot for the log-transformed data set. There are also at least four breaks in this plot. This probability plot also depicts a poor normal distribution "fit", with the same implication as above.

5.5.1.11 Determination of Distribution

Based on the distribution analysis results, the uranium combined upgradient background data set is non-parametric (Table 123).

5.5.1.12 The T_n Statistic Test

Though the data set was determined to be nonparametric, the T_n statistic outlier test was applied to the log-transformed data set. The log-transformed data set was selected because it approximated normality better than the normal data set. No outliers were detected using the T_n statistic (Table 124).

5.5.2 Determination of Upper Tolerance Limit

5.5.2.1 95th Percentile

Because the data was determined to be non-parametrically distributed, the 95th percentile of the data was calculated. The 95th percentile was determined to be 0.16 mg/L (Table 125). The uranium combined upgradient background data set summary table is presented as Table 126.

6.0 SUMMARY

Samples were collected at near and far upgradient wells from 1976 to 1998. Fifteen wells provided the upgradient well data while data from six far upgradient wells were used to construct that data set. Close examination of the groundwater database provided justification for elimination of select samples. Samples were eliminated based upon high detection limits, reported zero concentrations, and extreme maximum concentrations.

Statistical analyses were preformed on the individual data sets to determine distribution, statistical similarities between near and far upgradient data, and upper tolerance limits. Results of the distribution analysis indicated that all data sets were nonparametrically distributed. The molybdenum and uranium near and far upgradient background data sets were shown to be statistically similar and so analyses on the combined data set was performed.

The 95th percentile was calculated as the non-parametric upper tolerance limit for all analyzed data sets. The 95th percentile should be used to compare to downgradient well concentrations to determine if "above expected background concentrations" exist. If the downgradient concentration is greater than the 95th percentile, contamination may be indicated. However, it should be noted that since the 95th percentile was calculated as the upper tolerance limit, statistically 5% of the time one would expect the upper tolerance limit to be exceeded. Because the molybdenum and uranium near and far upgradient data sets were statistically similar, the combined data set 95th percentile should be representative of upgradient background concentrations. Because the selenium near and far upgradient data sets were not statistically similar, it is advised to use the near upgradient 95th percentile for downgradient well concentration comparisons. A summary table of the parameter, data set, distribution, 95th percentile, range, and sample number is provided as Table 127.

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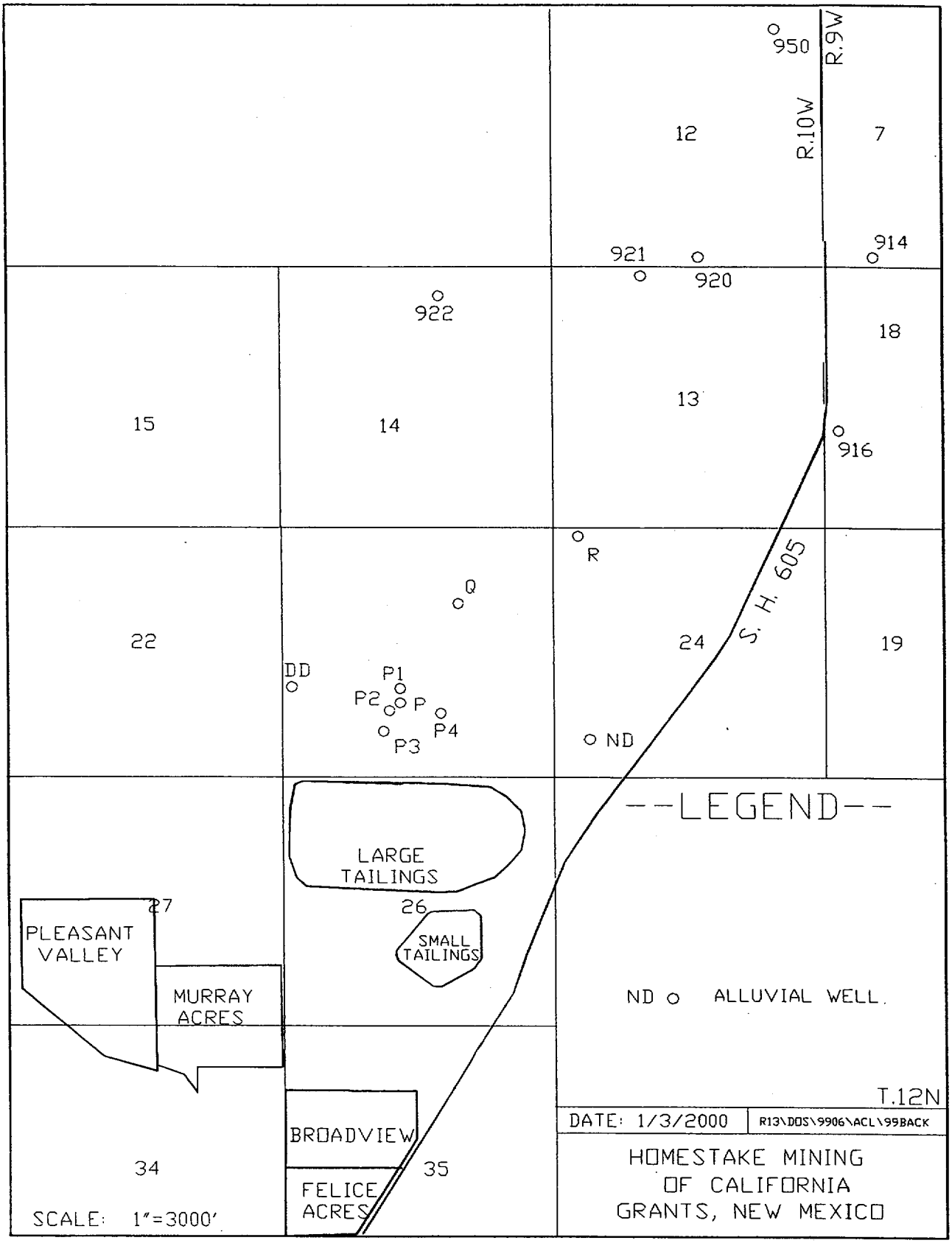

FIGURE 1. LOCATION OF UPGRADIENT WELLS

Table 1. Molybdenum concentrations in alluvial ground water samples upgradient of the Homestake Site, Grants, New Mexico from January 1976 to November 1998

Well ID	DD	ND	P	P1	P2	P3	P4	Q	R	All wells	914	916	920	921	922	950	All Wells
1st sampling date	03-Jun-76	12-Jan-83	07-Jan-76	21-Sep-92	21-Sep-92	23-Apr-98	24-Apr-98	07-Jan-76	07-Jan-76	07-Jan-76	10-Jan-83	21-Feb-94	03-Nov-81	28-Feb-94	03-Nov-81	28-Feb-94	03-Nov-81
Most recent sampling date	01-Apr-98	05-Aug-98	12-Nov-98	28-Oct-98	28-Oct-98	23-Apr-98	24-Apr-98	04-Mar-98	06-May-98	12-Nov-98	12-May-98	12-May-98	12-May-98	12-May-98	12-May-98	25-Jan-96	12-May-98
Total number of measurments	56	13	132	32	29	1	1	98	107	469	6	5	18	5	6	3	43
Number of independent measurements	50	13	97	26	24	1	1	77	77	366	6	5	17	5	6	3	42
Percent nondect of total number of measurements	28.57%	46.15%	32.58%	90.63%	72.41%	100.00%	100.00%	34.69%	34.58%	40.10%	83.33%	100.00%	77.78%	100.00%	83.33%	100.00%	86%
Minimum	0.0075	<0.01	0.007	<0.01	<0.01	<0.03	<0.03	<0.001	0.0045	<0.001	<0.03	<0.03	<0.01	<0.03	<0.03	<0.03	<0.01
Median	0.01	0.015	0.015	0.015	0.015	<0.03	<0.03	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Mean	0.02	0.031538462	0.020405498	0.015961538	0.019375	<0.03	<0.03	0.0183636	0.0206039	0.0194	0.02416667	0.015	0.01794118	0.015	0.0175	0.015	0.016585
Maximum	0.05	0.16	0.1	0.05	0.05	<0.03	<0.03	0.07	0.2	0.2	0.07	0.015	0.05	0.015	0.03	0.015	0.07
Percent greater than or equal to the NRC site standard (0.03mg/L)	18.00%	38.46%	16.49%	7.69%	20.83%	0.00%	0.00%	12.99%	14.29%	15.85%	16.67%	0.00%	23.53%	0.00%	16.67%	0.00%	14.29%

Table 2. Molybdenum Near Upgradient Background Data Set (data not corrected for non-detects or duplicates)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
DD	03-Jun-76	Molybdenum	Homestake	None	0.01
DD	27-Aug-76	Molybdenum	Homestake	None	0.04
DD	15-Sep-81	Molybdenum	Homestake	None	0.05
DD	24-Mar-82	Molybdenum	Homestake	None	0.03
DD	26-May-82	Molybdenum	Homestake	None	0.01
DD	18-Nov-82	Molybdenum	Homestake	None	0.03
DD	04-Mar-83	Molybdenum	Homestake	None	0.03
DD	28-Jun-83	Molybdenum	Homestake	None	0.01
DD	28-Jun-83	Molybdenum	NM EID	Less Than	0.01
DD	14-Sep-83	Molybdenum	Homestake	None	0.01
DD	19-Dec-83	Molybdenum	Homestake	None	0.02
DD	07-Mar-84	Molybdenum	Homestake	None	0.01
DD	09-May-84	Molybdenum	Homestake	None	0.01
DD	09-May-84	Molybdenum	Controls for Env	None	0.007
DD	12-Sep-84	Molybdenum	Homestake	None	0.04
DD	12-Dec-84	Molybdenum	Homestake	None	0.04
DD	13-Mar-85	Molybdenum	Homestake	None	0.02
DD	06-Jun-85	Molybdenum	Homestake	None	0.01
DD	04-Sep-85	Molybdenum	Homestake	None	0.01
DD	16-Dec-85	Molybdenum	Homestake	None	0.01
DD	20-Mar-86	Molybdenum	Homestake	None	0.01
DD	30-Jun-86	Molybdenum	Homestake	None	0.01
DD	15-Sep-86	Molybdenum	Homestake	None	0.01
DD	09-Dec-86	Molybdenum	Homestake	None	0.01
DD	19-Mar-87	Molybdenum	Homestake	None	0.01
DD	24-Jun-87	Molybdenum	Homestake	None	0.01
DD	15-Sep-87	Molybdenum	Homestake	None	0.01
DD	08-Dec-87	Molybdenum	Homestake	None	0.01
DD	24-Feb-88	Molybdenum	Homestake	None	0.02
DD	09-Jun-88	Molybdenum	Homestake	None	0.02
DD	11-Oct-88	Molybdenum	Homestake	None	0.01
DD	08-Dec-88	Molybdenum	Homestake	None	0.01
DD	13-Dec-88	Molybdenum	Homestake	None	0.01
DD	13-Dec-88	Molybdenum	Barringer Lab	None	0.05
DD	11-Jan-89	Molybdenum	Homestake	None	0.01
DD	11-Jan-89	Molybdenum	Barringer Lab	None	0.01
DD	15-Feb-89	Molybdenum	Homestake	None	0.01
DD	15-Feb-89	Molybdenum	Barringer Lab	None	0.02
DD	29-Mar-89	Molybdenum	Homestake	None	0.01
DD	13-Jun-89	Molybdenum	Homestake	Less Than	0.01
DD	15-Nov-89	Molybdenum	Homestake	Less Than	0.01
DD	13-Mar-90	Molybdenum	Homestake	Less Than	0.01
DD	13-Mar-90	Molybdenum	Barringer Lab	None	0.03
DD	12-Sep-90	Molybdenum	Homestake	Less Than	0.01
DD	27-Feb-91	Molybdenum	Homestake	Less Than	0.01
DD	16-Sep-91	Molybdenum	Homestake	Less Than	0.01
DD	09-Mar-92	Molybdenum	Homestake	Less Than	0.01
DD	22-Sep-92	Molybdenum	Homestake	Less Than	0.01
DD	21-Oct-93	Molybdenum	Energy Lab	Less Than	0.03
DD	09-Mar-94	Molybdenum	Energy Lab	Less Than	0.03
DD	21-Oct-94	Molybdenum	Energy Lab	Less Than	0.03
DD	10-Oct-95	Molybdenum	Energy Lab	Less Than	0.03

Table 2. Molybdenum Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continue

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
DD	10-Oct-96	Molybdenum	Energy Lab	Less Than	0.03
DD	14-Apr-97	Molybdenum	Energy Lab	Less Than	0.03
DD	09-Sep-97	Molybdenum	Energy Lab	Less Than	0.03
DD	01-Apr-98	Molybdenum	Energy Lab	None	0.04
ND	12-Jan-83	Molybdenum	Homestake	None	0.06
ND	06-Jan-84	Molybdenum	Homestake	None	0.03
ND	18-Dec-89	Molybdenum	Homestake	None	0.01
ND	17-Oct-90	Molybdenum	Homestake	None	0.03
ND	16-Sep-91	Molybdenum	Homestake	Less than	0.01
ND	18-Aug-92	Molybdenum	Homestake	None	0.01
ND	25-Aug-93	Molybdenum	Energy	None	0.16
ND	14-Mar-94	Molybdenum	Energy	Less than	0.03
ND	22-Aug-94	Molybdenum	Energy	Less than	0.03
ND	22-Aug-95	Molybdenum	Energy	Less than	0.03
ND	29-Jul-96	Molybdenum	Energy	None	0.03
ND	11-Aug-97	Molybdenum	Energy	Less than	0.03
ND	05-Aug-98	Molybdenum	Energy	Less than	0.03
P	07-Jan-76	Molybdenum	Homestake	Less than	0.05
P	30-Mar-76	Molybdenum	Homestake	None	0.07
P	09-Apr-76	Molybdenum	Homestake	None	0.07
P	03-Jun-76	Molybdenum	Homestake	None	0.01
P	27-Aug-76	Molybdenum	Homestake	None	0.1
P	13-Jun-77	Molybdenum	Eberline	None	0.01
P	13-Jun-77	Molybdenum	Homestake	None	0.02
P	13-Jun-77	Molybdenum	NM EID	None	0.01
P	24-Aug-77	Molybdenum	Eberline	Less than	0.01
P	24-Aug-77	Molybdenum	Homestake	None	0.03
P	24-Aug-77	Molybdenum	NM EID	None	0.01
P	11-Oct-77	Molybdenum	NM EID	None	0.01
P	11-Oct-77	Molybdenum	Homestake	None	0.01
P	01-Feb-78	Molybdenum	NM EID	None	0.01
P	01-Feb-78	Molybdenum	Homestake	None	0.04
P	17-Apr-78	Molybdenum	Homestake	None	0.04
P	11-Jul-78	Molybdenum	NM EID	None	0.014
P	11-Jul-78	Molybdenum	Homestake	None	0.03
P	23-Oct-78	Molybdenum	Homestake	None	0.03
P	23-Oct-78	Molybdenum	NM EID	None	0.01
P	30-Jan-79	Molybdenum	Homestake	None	0.05
P	30-Jan-79	Molybdenum	NM EID	None	0.001
P	30-Apr-79	Molybdenum	Homestake	None	0.03
P	30-Apr-79	Molybdenum	NM EID	None	0.005
P	12-Jul-79	Molybdenum	Homestake	None	0.06
P	10-Sep-79	Molybdenum	Homestake	None	0.1
P	06-Nov-79	Molybdenum	Homestake	None	0.05
P	09-Jan-80	Molybdenum	Homestake	None	0.08
P	16-Apr-80	Molybdenum	Homestake	None	0.04
P	17-Apr-80	Molybdenum	NM EID	None	0.005
P	16-Jul-80	Molybdenum	Homestake	None	0.01
P	16-Jul-80	Molybdenum	NM EID	None	0.005
P	13-Oct-80	Molybdenum	Homestake	None	0.02
P	07-Jan-81	Molybdenum	Homestake	None	0.01
P	07-Jan-81	Molybdenum	NM EID	None	0.005

Table 2. Molybdenum Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continue

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P	15-Apr-81	Molybdenum	Homestake	None	0.05
P	15-Apr-81	Molybdenum	NM EID	None	0.005
P	07-Jul-81	Molybdenum	Homestake	None	0.04
P	07-Oct-81	Molybdenum	Homestake	None	0.02
P	28-Dec-81	Molybdenum	NM EID	None	0.01
P	28-Dec-81	Molybdenum	Homestake	None	0.05
P	24-Mar-82	Molybdenum	Homestake	None	0.02
P	24-Mar-82	Molybdenum	NM EID	None	0.01
P	22-May-82	Molybdenum	Homestake	None	0.02
P	25-Aug-82	Molybdenum	Homestake	None	0.02
P	18-Nov-82	Molybdenum	Controls for	None	0.009
P	18-Nov-82	Molybdenum	Homestake	None	0.04
P	18-Nov-82	Molybdenum	Controls for	None	0.008
P	23-Feb-83	Molybdenum	Homestake	None	0.03
P	26-May-83	Molybdenum	Homestake	None	0.02
P	27-Jun-83	Molybdenum	Homestake	None	0.01
P	27-Jun-83	Molybdenum	NM EID	Less than	0.01
P	12-Sep-83	Molybdenum	Homestake	None	0.01
P	19-Dec-83	Molybdenum	Homestake	None	0.02
P	07-Mar-84	Molybdenum	Homestake	None	0.02
P	09-May-84	Molybdenum	Controls for	None	0.004
P	09-May-84	Molybdenum	Homestake	None	0.01
P	12-Sep-84	Molybdenum	Homestake	None	0.02
P	13-Dec-84	Molybdenum	Homestake	None	0.01
P	11-Mar-85	Molybdenum	Controls for	Less than	0.01
P	11-Mar-85	Molybdenum	Homestake	None	0.02
P	29-May-85	Molybdenum	Homestake	None	0.01
P	04-Sep-85	Molybdenum	Controls for	Less than	0.01
P	04-Sep-85	Molybdenum	Homestake	None	0.02
P	16-Dec-85	Molybdenum	Homestake	None	0.02
P	10-Mar-86	Molybdenum	Controls for	Less than	0.01
P	10-Mar-86	Molybdenum	Homestake	None	0.01
P	30-Jun-86	Molybdenum	Homestake	None	0.01
P	15-Sep-86	Molybdenum	Controls for	Less than	0.01
P	15-Sep-86	Molybdenum	Homestake	Less than	0.01
P	16-Dec-86	Molybdenum	Homestake	Less than	0.01
P	19-Mar-87	Molybdenum	Controls for	Less than	0.01
P	19-Mar-87	Molybdenum	Homestake	None	0.01
P	24-Jun-87	Molybdenum	Homestake	None	0.01
P	16-Sep-87	Molybdenum	Controls for	Less than	0.01
P	16-Sep-87	Molybdenum	Homestake	None	0.01
P	08-Dec-87	Molybdenum	Homestake	None	0.01
P	24-Feb-88	Molybdenum	Homestake	None	0.02
P	24-Feb-88	Molybdenum	Barringer	None	0.03
P	12-May-88	Molybdenum	Homestake	None	0.03
P	23-Aug-88	Molybdenum	Homestake	None	0.01
P	23-Aug-88	Molybdenum	Barringer	None	0.01
P	12-Oct-88	Molybdenum	Homestake	None	0.01
P	13-Dec-88	Molybdenum	Homestake	None	0.02
P	13-Dec-88	Molybdenum	Barringer	None	0.04
P	11-Jan-89	Molybdenum	Homestake	None	0.01
P	11-Jan-89	Molybdenum	Barringer	None	0.02

Table 2. Molybdenum Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continue

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P	15-Feb-89	Molybdenum	Homestake	None	0.01
P	15-Feb-89	Molybdenum	Barringer	None	0.06
P	16-May-89	Molybdenum	Homestake	None	0.01
P	10-Aug-89	Molybdenum	Homestake	None	0.02
P	15-Nov-89	Molybdenum	Homestake	None	0.01
P	13-Mar-90	Molybdenum	Homestake	None	0.01
P	13-Mar-90	Molybdenum	Barringer	None	0.1
P	04-Jun-90	Molybdenum	Homestake	None	0.01
P	12-Sep-90	Molybdenum	Homestake	None	0.01
P	03-Dec-90	Molybdenum	Homestake	None	0.01
P	03-Dec-90	Molybdenum	Barringer	None	0.02
P	27-Feb-91	Molybdenum	Homestake	Less than	0.01
P	03-Jun-91	Molybdenum	Homestake	Less than	0.01
P	16-Sep-91	Molybdenum	Homestake	Less than	0.01
P	18-Nov-91	Molybdenum	Homestake	Less than	0.01
P	09-Mar-92	Molybdenum	Homestake	None	0.01
P	04-Jun-92	Molybdenum	Homestake	Less than	0.01
P	21-Sep-92	Molybdenum	Homestake	Less than	0.01
P	03-Dec-92	Molybdenum	Homestake	Less than	0.01
P	03-Mar-93	Molybdenum	Homestake	Less than	0.01
P	01-Jun-93	Molybdenum	Homestake	Less than	0.01
P	08-Sep-93	Molybdenum	Energy	Less than	0.05
P	24-Nov-93	Molybdenum	Energy	Less than	0.03
P	01-Mar-94	Molybdenum	Energy	Less than	0.03
P	31-May-94	Molybdenum	Energy	Less than	0.03
P	01-Sep-94	Molybdenum	Energy	Less than	0.03
P	28-Nov-94	Molybdenum	Energy	Less than	0.03
P	16-Mar-95	Molybdenum	Energy	Less than	0.03
P	16-Mar-95	Molybdenum	Energy	Less than	0.03
P	06-Jun-95	Molybdenum	Energy	Less than	0.03
P	05-Sep-95	Molybdenum	Energy	Less than	0.03
P	05-Dec-95	Molybdenum	Energy	Less than	0.03
P	05-Dec-95	Molybdenum	Energy	Less than	0.03
P	11-Mar-96	Molybdenum	Energy	Less than	0.03
P	03-Jun-96	Molybdenum	Energy	Less than	0.03
P	17-Sep-96	Molybdenum	Energy	Less than	0.03
P	10-Oct-96	Molybdenum	Energy	Less than	0.03
P	06-Mar-97	Molybdenum	Energy	Less than	0.03
P	27-May-97	Molybdenum	Energy	Less than	0.03
P	09-Sep-97	Molybdenum	Energy	Less than	0.03
P	09-Sep-97	Molybdenum	Energy	Quality Control	0.03
P	03-Nov-97	Molybdenum	Energy	Less than	0.03
P	04-Mar-98	Molybdenum	Energy	Less than	0.03
P	04-Mar-98	Molybdenum	Energy	Quality Control	0.03
P	05-May-98	Molybdenum	Energy	None	0.05
P	16-Sep-98	Molybdenum	Energy	Less than	0.03
P	12-Nov-98	Molybdenum	Energy	Less than	0.03
P	12-Nov-98	Molybdenum	ACZ Laboratories	Quality Control	0.01
P	12-Nov-98	Molybdenum	Energy	Quality Control	0.03
P1	21-Sep-92	Molybdenum	Homestake	Less than	0.01
P1	21-Jan-93	Molybdenum	Energy	Less than	0.01
P1	21-Jan-93	Molybdenum	Homestake	Less than	0.01

Table 2. Molybdenum Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continue

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P1	13-Apr-93	Molybdenum	Homestake	Less than	0.01
P1	13-Jul-93	Molybdenum	Homestake	None	0.01
P1	21-Oct-93	Molybdenum	Energy	Less than	0.03
P1	04-Jan-94	Molybdenum	Energy	Less than	0.03
P1	07-Mar-94	Molybdenum	Energy	Less than	0.03
P1	12-Apr-94	Molybdenum	Energy	Less than	0.03
P1	06-Jul-94	Molybdenum	Energy	Less than	0.03
P1	21-Oct-94	Molybdenum	Energy	Less than	0.03
P1	04-Jan-95	Molybdenum	Energy	Less than	0.03
P1	04-Jan-95	Molybdenum	Energy	Less than	0.03
P1	12-Apr-95	Molybdenum	Energy	Less than	0.03
P1	06-Jul-95	Molybdenum	Energy	Less than	0.03
P1	03-Oct-95	Molybdenum	Energy	Less than	0.03
P1	10-Jan-96	Molybdenum	Energy	Less than	0.03
P1	10-Jan-96	Molybdenum	Energy	Less than	0.03
P1	09-Apr-96	Molybdenum	Energy	Less than	0.03
P1	09-Apr-96	Molybdenum	Energy	Less than	0.03
P1	19-Jul-96	Molybdenum	Energy	Less than	0.03
P1	19-Jul-96	Molybdenum	Energy	Less than	0.03
P1	04-Nov-96	Molybdenum	Energy	Less than	0.03
P1	04-Nov-96	Molybdenum	Energy	Less than	0.03
P1	13-Jan-97	Molybdenum	Energy	Quality Control	0.03
P1	13-Jan-97	Molybdenum	Energy	Less than	0.03
P1	14-Apr-97	Molybdenum	Energy	Less than	0.03
P1	14-Apr-97	Molybdenum	Energy	Quality Control	0.03
P1	08-Jul-97	Molybdenum	Energy	Less than	0.03
P1	03-Nov-97	Molybdenum	Energy	Less than	0.03
P1	19-Jan-98	Molybdenum	Energy	Less than	0.03
P1	19-Jan-98	Molybdenum	Energy	Quality Control	0.03
P1	01-Apr-98	Molybdenum	Energy	None	0.04
P1	01-Apr-98	Molybdenum	Energy	Quality Control	0.03
P1	14-Jul-98	Molybdenum	Energy	None	0.05
P1	28-Oct-98	Molybdenum	Energy	Less than	0.03
P2	21-Sep-92	Molybdenum	Homestake	Less than	0.01
P2	08-Feb-93	Molybdenum	Energy	None	0.01
P2	08-Feb-93	Molybdenum	Homestake	Less than	0.01
P2	04-May-93	Molybdenum	Energy	None	0.01
P2	04-May-93	Molybdenum	Homestake	Less than	0.01
P2	12-Aug-93	Molybdenum	Homestake	None	0.01
P2	01-Nov-93	Molybdenum	Energy	Less than	0.03
P2	02-Feb-94	Molybdenum	Energy	Less than	0.03
P2	07-Mar-94	Molybdenum	Energy	Less than	0.03
P2	29-Apr-94	Molybdenum	Energy	Less than	0.03
P2	29-Apr-94	Molybdenum	Energy	Less than	0.03
P2	01-Aug-94	Molybdenum	Energy	None	0.04
P2	01-Nov-94	Molybdenum	Energy	Less than	0.03
P2	03-Feb-95	Molybdenum	Energy	Less than	0.03
P2	05-May-95	Molybdenum	Energy	Less than	0.03
P2	02-Aug-95	Molybdenum	Energy	Less than	0.03
P2	02-Aug-95	Molybdenum	Energy	Less than	0.03
P2	06-Nov-95	Molybdenum	Energy	None	0.04
P2	12-Feb-96	Molybdenum	Energy	Less than	0.03

Table 2. Molybdenum Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continue

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P2	14-May-96	Molybdenum	Energy	Less than	0.03
P2	14-May-96	Molybdenum	Energy	Less than	0.03
P2	29-Jul-96	Molybdenum	Energy	None	0.04
P2	03-Feb-97	Molybdenum	Energy	Less than	0.03
P2	03-Feb-97	Molybdenum	Energy	Quality Control	0.03
P2	29-Apr-97	Molybdenum	Energy	Less than	0.03
P2	29-Apr-97	Molybdenum	Energy	Quality Control	0.03
P2	13-Oct-97	Molybdenum	Energy	Less than	0.03
P2	10-Feb-98	Molybdenum	Energy	Quality Control	0.03
P2	10-Feb-98	Molybdenum	Energy	Less than	0.03
P2	05-May-98	Molybdenum	Energy	None	0.04
P2	04-Aug-98	Molybdenum	Energy	None	0.05
P2	28-Oct-98	Molybdenum	Energy	Less than	0.03
P3	23-Apr-98	Molybdenum	Energy	Less than	0.03
P4	24-Apr-98	Molybdenum	Energy	Less than	0.03
Q	07-Jan-76	Molybdenum	Homestake	Less than	0.05
Q	30-Mar-76	Molybdenum	Homestake	None	0.06
Q	09-Apr-76	Molybdenum	Homestake	None	0.02
Q	03-Jun-76	Molybdenum	Homestake	None	0.01
Q	27-Aug-76	Molybdenum	Homestake	None	0.02
Q	13-Jun-77	Molybdenum	Homestake	None	0.02
Q	24-Aug-77	Molybdenum	Eberline	Less than	0.01
Q	24-Aug-77	Molybdenum	Homestake	None	0.03
Q	11-Oct-77	Molybdenum	Eberline	Less than	0.01
Q	11-Oct-77	Molybdenum	Homestake	None	0.01
Q	01-Feb-78	Molybdenum	Eberline	Less than	0.01
Q	01-Feb-78	Molybdenum	Homestake	None	0.03
Q	17-Apr-78	Molybdenum	Homestake	None	0.04
Q	10-Jul-78	Molybdenum	NM EID	None	0.01
Q	10-Jul-78	Molybdenum	Homestake	None	0.02
Q	23-Oct-78	Molybdenum	Homestake	None	0.03
Q	23-Oct-78	Molybdenum	NM EID	Less than	0.01
Q	23-Oct-78	Molybdenum	NM EID	None	0.01
Q	30-Jan-79	Molybdenum	Homestake	None	0.02
Q	30-Jan-79	Molybdenum	NM EID	Less than	0.001
Q	30-Apr-79	Molybdenum	Homestake	None	0.03
Q	30-Apr-79	Molybdenum	NM EID	Less than	0.005
Q	12-Jul-79	Molybdenum	Homestake	None	0.07
Q	10-Sep-79	Molybdenum	Homestake	None	0.07
Q	06-Nov-79	Molybdenum	Homestake	None	0.03
Q	09-Jan-80	Molybdenum	Homestake	None	0.07
Q	16-Apr-80	Molybdenum	Homestake	None	0.03
Q	17-Apr-80	Molybdenum	NM EID	Less than	0.005
Q	16-Jul-80	Molybdenum	Homestake	None	0.01
Q	16-Jul-80	Molybdenum	NM EID	Less than	0.005
Q	13-Oct-80	Molybdenum	Homestake	None	0.02
Q	07-Jan-81	Molybdenum	Homestake	Less than	0.01
Q	07-Jan-81	Molybdenum	NM EID	None	0.005
Q	15-Apr-81	Molybdenum	Homestake	None	0.03
Q	15-Apr-81	Molybdenum	NM EID	None	0.005
Q	07-Jul-81	Molybdenum	Homestake	None	0.03
Q	07-Oct-81	Molybdenum	Homestake	None	0.01

Table 2. Molybdenum Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continue

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
Q	28-Dec-81	Molybdenum	Homestake	None	0.04
Q	28-Dec-81	Molybdenum	NM EID	None	0.01
Q	24-Mar-82	Molybdenum	Homestake	None	0.02
Q	24-Mar-82	Molybdenum	NM EID	None	0.01
Q	22-May-82	Molybdenum	Homestake	None	0.02
Q	25-Aug-82	Molybdenum	Homestake	None	0.05
Q	18-Nov-82	Molybdenum	Homestake	None	0.02
Q	23-Feb-83	Molybdenum	Homestake	None	0.02
Q	26-May-83	Molybdenum	Homestake	None	0.02
Q	28-Jun-83	Molybdenum	NM EID	Less than	0.01
Q	28-Jun-83	Molybdenum	Homestake	None	0.01
Q	21-Sep-83	Molybdenum	Homestake	None	0.03
Q	19-Dec-83	Molybdenum	Homestake	None	0.01
Q	07-Mar-84	Molybdenum	Homestake	None	0.01
Q	09-May-84	Molybdenum	Controls for	None	0.005
Q	09-May-84	Molybdenum	Homestake	Less than	0.01
Q	12-Sep-84	Molybdenum	Homestake	None	0.01
Q	12-Dec-84	Molybdenum	Homestake	None	0.02
Q	11-Mar-85	Molybdenum	Homestake	None	0.02
Q	29-May-85	Molybdenum	Homestake	None	0.01
Q	06-Sep-85	Molybdenum	Homestake	None	0.02
Q	16-Dec-85	Molybdenum	Homestake	None	0.02
Q	10-Mar-86	Molybdenum	Homestake	Less than	0.01
Q	30-Jun-86	Molybdenum	Homestake	None	0.01
Q	15-Sep-86	Molybdenum	Homestake	Less than	0.01
Q	15-Dec-86	Molybdenum	Homestake	Less than	0.01
Q	19-Mar-87	Molybdenum	Homestake	None	0.01
Q	19-Jun-87	Molybdenum	Homestake	None	0.01
Q	15-Sep-87	Molybdenum	Homestake	None	0.01
Q	08-Dec-87	Molybdenum	Homestake	None	0.01
Q	24-Feb-88	Molybdenum	Homestake	None	0.02
Q	12-May-88	Molybdenum	Homestake	None	0.02
Q	23-Aug-88	Molybdenum	Homestake	None	0.01
Q	03-Nov-88	Molybdenum	Homestake	None	0.01
Q	13-Dec-88	Molybdenum	Homestake	None	0.02
Q	13-Dec-88	Molybdenum	Barringer	None	0.03
Q	11-Jan-89	Molybdenum	Homestake	None	0.01
Q	11-Jan-89	Molybdenum	Barringer	None	0.01
Q	15-Feb-89	Molybdenum	Homestake	None	0.01
Q	15-Feb-89	Molybdenum	Barringer	None	0.1
Q	16-May-89	Molybdenum	Homestake	Less than	0.01
Q	15-Nov-89	Molybdenum	Homestake	None	0.01
Q	13-Mar-90	Molybdenum	Homestake	Less than	0.01
Q	13-Mar-90	Molybdenum	Barringer	None	0.04
Q	12-Sep-90	Molybdenum	Homestake	Less than	0.01
Q	27-Feb-91	Molybdenum	Homestake	Less than	0.01
Q	16-Sep-91	Molybdenum	Homestake	Less than	0.01
Q	09-Mar-92	Molybdenum	Homestake	Less than	0.01
Q	16-Sep-92	Molybdenum	Homestake	Less than	0.01
Q	03-Mar-93	Molybdenum	Homestake	Less than	0.01
Q	08-Sep-93	Molybdenum	Energy	Less than	0.05
Q	01-Mar-94	Molybdenum	Energy	Less than	0.03

Table 2. Molybdenum Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continue

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
Q	01-Mar-94	Molybdenum	Energy	Less than	0.03
Q	01-Sep-94	Molybdenum	Energy	Less than	0.03
Q	16-Mar-95	Molybdenum	Energy	Less than	0.03
Q	05-Sep-95	Molybdenum	Energy	Less than	0.03
Q	11-Mar-96	Molybdenum	Energy	Less than	0.03
Q	17-Sep-96	Molybdenum	Energy	Less than	0.03
Q	06-Mar-97	Molybdenum	Energy	Less than	0.03
Q	09-Sep-97	Molybdenum	Energy	Less than	0.03
Q	04-Mar-98	Molybdenum	Energy	Less than	0.03
R	07-Jan-76	Molybdenum	Homestake	None	0.1
R	30-Mar-76	Molybdenum	Homestake	None	0.05
R	09-Apr-76	Molybdenum	Homestake	None	0.02
R	03-Jun-76	Molybdenum	Homestake	None	0.01
R	01-Sep-76	Molybdenum	Homestake	None	0.2
R	13-Jun-77	Molybdenum	Eberline	None	0.03
R	13-Jun-77	Molybdenum	Homestake	None	0.01
R	24-Aug-77	Molybdenum	Eberline	Less than	0.01
R	24-Aug-77	Molybdenum	Homestake	None	0.02
R	11-Oct-77	Molybdenum	Eberline	Less than	0.01
R	11-Oct-77	Molybdenum	Homestake	None	0.01
R	01-Feb-78	Molybdenum	Eberline	Less than	0.01
R	01-Feb-78	Molybdenum	Homestake	None	0.03
R	17-Apr-78	Molybdenum	Homestake	None	0.02
R	10-Jul-78	Molybdenum	Homestake	None	0.02
R	10-Jul-78	Molybdenum	NM EID	None	0.012
R	23-Oct-78	Molybdenum	Homestake	None	0.03
R	23-Oct-78	Molybdenum	NM EID	Less than	0.01
R	31-Jan-79	Molybdenum	Homestake	None	0.01
R	31-Jan-79	Molybdenum	NM EID	Less than	0.001
R	30-Apr-79	Molybdenum	Homestake	None	0.03
R	30-Apr-79	Molybdenum	NM EID	Less than	0.005
R	12-Jul-79	Molybdenum	Homestake	None	0.05
R	10-Sep-79	Molybdenum	Homestake	None	0.09
R	06-Nov-79	Molybdenum	Homestake	None	0.03
R	07-Jan-80	Molybdenum	NM EID	None	0.005
R	09-Jan-80	Molybdenum	Homestake	None	0.04
R	16-Apr-80	Molybdenum	Homestake	None	0.02
R	17-Apr-80	Molybdenum	NM EID	Less than	0.005
R	16-Jul-80	Molybdenum	Homestake	None	0.01
R	16-Jul-80	Molybdenum	NM EID	Less than	0.005
R	13-Oct-80	Molybdenum	Homestake	None	0.02
R	07-Jan-81	Molybdenum	Homestake	None	0.01
R	15-Apr-81	Molybdenum	Homestake	None	0.09
R	15-Apr-81	Molybdenum	NM EID	None	0.034
R	07-Jul-81	Molybdenum	Homestake	None	0.03
R	28-Dec-81	Molybdenum	Homestake	None	0.04
R	28-Dec-81	Molybdenum	NM EID	None	0.01
R	24-Mar-82	Molybdenum	Homestake	None	0.01
R	24-Mar-82	Molybdenum	NM EID	None	0.01
R	22-May-82	Molybdenum	Homestake	None	0.01
R	25-Aug-82	Molybdenum	Homestake	Less than	0.01
R	18-Nov-82	Molybdenum	Homestake	None	0.01

Table 2. Molybdenum Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continue

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
R	23-Feb-83	Molybdenum	Homestake	None	0.01
R	26-May-83	Molybdenum	Homestake	None	0.01
R	28-Jun-83	Molybdenum	Homestake	None	0.01
R	28-Jun-83	Molybdenum	NM EID	Less than	0.01
R	12-Sep-83	Molybdenum	Homestake	None	0.01
R	20-Dec-83	Molybdenum	Homestake	None	0.06
R	07-Mar-84	Molybdenum	Homestake	None	0.01
R	09-May-84	Molybdenum	Controls for	None	0.004
R	09-May-84	Molybdenum	Homestake	Less than	0.01
R	12-Sep-84	Molybdenum	Homestake	None	0.02
R	12-Dec-84	Molybdenum	Homestake	None	0.02
R	11-Mar-85	Molybdenum	Controls for	Less than	0.01
R	11-Mar-85	Molybdenum	Homestake	None	0.02
R	29-May-85	Molybdenum	Homestake	None	0.01
R	05-Sep-85	Molybdenum	Controls for	None	0.06
R	05-Sep-85	Molybdenum	Homestake	None	0.01
R	16-Dec-85	Molybdenum	Homestake	None	0.01
R	10-Mar-86	Molybdenum	Controls for	Less than	0.01
R	10-Mar-86	Molybdenum	Homestake	Less than	0.01
R	30-Jun-86	Molybdenum	Homestake	None	0.01
R	15-Sep-86	Molybdenum	Controls for	Less than	0.01
R	15-Sep-86	Molybdenum	Homestake	None	0.01
R	15-Dec-86	Molybdenum	Homestake	None	0.01
R	19-Mar-87	Molybdenum	Controls for	Less than	0.01
R	19-Mar-87	Molybdenum	Homestake	None	0.01
R	19-Jun-87	Molybdenum	Homestake	None	0.01
R	15-Sep-87	Molybdenum	Controls for	Less than	0.01
R	15-Sep-87	Molybdenum	Homestake	None	0.01
R	08-Dec-87	Molybdenum	Homestake	None	0.02
R	24-Feb-88	Molybdenum	Homestake	None	0.02
R	24-Feb-88	Molybdenum	Barringer	None	0.03
R	12-May-88	Molybdenum	Homestake	None	0.02
R	22-Aug-88	Molybdenum	Homestake	None	0.02
R	22-Aug-88	Molybdenum	Barringer	Less than	0.01
R	03-Nov-88	Molybdenum	Homestake	None	0.03
R	13-Dec-88	Molybdenum	Homestake	None	0.02
R	13-Dec-88	Molybdenum	Barringer	None	0.02
R	11-Jan-89	Molybdenum	Homestake	None	0.01
R	11-Jan-89	Molybdenum	Barringer	None	0.01
R	15-Feb-89	Molybdenum	Homestake	None	0.01
R	15-Feb-89	Molybdenum	Barringer	None	0.01
R	16-May-89	Molybdenum	Homestake	None	0.01
R	15-Nov-89	Molybdenum	Homestake	None	0.01
R	13-Mar-90	Molybdenum	Homestake	Less than	0.01
R	13-Mar-90	Molybdenum	Barringer	None	0.05
R	12-Sep-90	Molybdenum	Homestake	Less than	0.01
R	27-Feb-91	Molybdenum	Homestake	Less than	0.01
R	16-Sep-91	Molybdenum	Homestake	Less than	0.01
R	09-Mar-92	Molybdenum	Homestake	Less than	0.01
R	16-Sep-92	Molybdenum	Homestake	None	0.01
R	01-Jun-93	Molybdenum	Homestake	Less than	0.01
R	08-Sep-93	Molybdenum	Energy	Less than	0.05

Table 2. Molybdenum Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continue

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
R	07-Mar-94	Molybdenum	Energy	Less than	0.03
R	31-May-94	Molybdenum	Energy	Less than	0.03
R	01-Sep-94	Molybdenum	Energy	Less than	0.03
R	06-Jun-95	Molybdenum	Energy	Less than	0.03
R	06-Jun-95	Molybdenum	Energy	Less than	0.03
R	05-Sep-95	Molybdenum	Energy	Less than	0.03
R	05-Sep-95	Molybdenum	Energy	Less than	0.03
R	03-Jun-96	Molybdenum	Energy	Less than	0.03
R	17-Sep-96	Molybdenum	Energy	Less than	0.03
R	10-Oct-96	Molybdenum	Energy	Less than	0.03
R	27-May-97	Molybdenum	Energy	Less than	0.03
R	06-May-98	Molybdenum	Energy	Less than	0.03

Table 3. Molybdenum Near Upgradient Background Data Set for Well DD
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Jun-76	Molybdenum	0.01
27-Aug-76	Molybdenum	0.04
15-Sep-81	Molybdenum	0.05
24-Mar-82	Molybdenum	0.03
26-May-82	Molybdenum	0.01
18-Nov-82	Molybdenum	0.03
04-Mar-83	Molybdenum	0.03
28-Jun-83	Molybdenum	0.0075
14-Sep-83	Molybdenum	0.01
19-Dec-83	Molybdenum	0.02
07-Mar-84	Molybdenum	0.01
09-May-84	Molybdenum	0.0085
12-Sep-84	Molybdenum	0.04
12-Dec-84	Molybdenum	0.04
13-Mar-85	Molybdenum	0.02
06-Jun-85	Molybdenum	0.01
04-Sep-85	Molybdenum	0.01
16-Dec-85	Molybdenum	0.01
20-Mar-86	Molybdenum	0.01
30-Jun-86	Molybdenum	0.01
15-Sep-86	Molybdenum	0.01
09-Dec-86	Molybdenum	0.01
19-Mar-87	Molybdenum	0.01
24-Jun-87	Molybdenum	0.01
15-Sep-87	Molybdenum	0.01
08-Dec-87	Molybdenum	0.01
24-Feb-88	Molybdenum	0.02
09-Jun-88	Molybdenum	0.02
11-Oct-88	Molybdenum	0.01
08-Dec-88	Molybdenum	0.01
13-Dec-88	Molybdenum	0.03
11-Jan-89	Molybdenum	0.01
15-Feb-89	Molybdenum	0.015
29-Mar-89	Molybdenum	0.01
13-Jun-89	Molybdenum	0.005
15-Nov-89	Molybdenum	0.005
13-Mar-90	Molybdenum	0.0175
12-Sep-90	Molybdenum	0.005
27-Feb-91	Molybdenum	0.005
16-Sep-91	Molybdenum	0.005
09-Mar-92	Molybdenum	0.005
22-Sep-92	Molybdenum	0.005
21-Oct-93	Molybdenum	0.015
09-Mar-94	Molybdenum	0.015

Table 3. Molybdenum Near Upgradient Background Data Set for Well DD (continued)
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Oct-94	Molybdenum	0.015
10-Oct-95	Molybdenum	0.015
10-Oct-96	Molybdenum	0.015
14-Apr-97	Molybdenum	0.015
09-Sep-97	Molybdenum	0.015
01-Apr-98	Molybdenum	0.04

Table 4. Molybdenum Near Upgradient Background Data Set for Well ND
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
12-Jan-83	Molybdenum	0.06
06-Jan-84	Molybdenum	0.03
18-Dec-89	Molybdenum	0.01
17-Oct-90	Molybdenum	0.03
16-Sep-91	Molybdenum	0.005
18-Aug-92	Molybdenum	0.01
25-Aug-93	Molybdenum	0.16
14-Mar-94	Molybdenum	0.015
22-Aug-94	Molybdenum	0.015
22-Aug-95	Molybdenum	0.015
29-Jul-96	Molybdenum	0.03
11-Aug-97	Molybdenum	0.015
05-Aug-98	Molybdenum	0.015

Table 5. Molybdenum Near Upgradient Background Data Set for Well P
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
07-Jan-76	Molybdenum	0.025
30-Mar-76	Molybdenum	0.07
09-Apr-76	Molybdenum	0.07
03-Jun-76	Molybdenum	0.01
27-Aug-76	Molybdenum	0.1
13-Jun-77	Molybdenum	0.0133333
24-Aug-77	Molybdenum	0.015
11-Oct-77	Molybdenum	0.01
01-Feb-78	Molybdenum	0.025
17-Apr-78	Molybdenum	0.04
11-Jul-78	Molybdenum	0.022
23-Oct-78	Molybdenum	0.02
30-Jan-79	Molybdenum	0.0255
30-Apr-79	Molybdenum	0.0175
12-Jul-79	Molybdenum	0.06
10-Sep-79	Molybdenum	0.1
06-Nov-79	Molybdenum	0.05
09-Jan-80	Molybdenum	0.08
16-Apr-80	Molybdenum	0.0225
16-Jul-80	Molybdenum	0.0075
13-Oct-80	Molybdenum	0.02
07-Jan-81	Molybdenum	0.0075
15-Apr-81	Molybdenum	0.0275
07-Jul-81	Molybdenum	0.04
07-Oct-81	Molybdenum	0.02
28-Dec-81	Molybdenum	0.03
24-Mar-82	Molybdenum	0.015
22-May-82	Molybdenum	0.02
25-Aug-82	Molybdenum	0.02
18-Nov-82	Molybdenum	0.019
23-Feb-83	Molybdenum	0.03
26-May-83	Molybdenum	0.02
27-Jun-83	Molybdenum	0.0075
12-Sep-83	Molybdenum	0.01
19-Dec-83	Molybdenum	0.02
07-Mar-84	Molybdenum	0.02
09-May-84	Molybdenum	0.007
12-Sep-84	Molybdenum	0.02
13-Dec-84	Molybdenum	0.01
11-Mar-85	Molybdenum	0.0125
29-May-85	Molybdenum	0.01
04-Sep-85	Molybdenum	0.0125
16-Dec-85	Molybdenum	0.02
10-Mar-86	Molybdenum	0.0075
30-Jun-86	Molybdenum	0.01

Table 5. Molybdenum Near Upgradient Background Data Set for Well P (continued)
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
15-Sep-86	Molybdenum	0.005
16-Dec-86	Molybdenum	0.005
19-Mar-87	Molybdenum	0.0075
24-Jun-87	Molybdenum	0.01
16-Sep-87	Molybdenum	0.0075
08-Dec-87	Molybdenum	0.01
24-Feb-88	Molybdenum	0.025
12-May-88	Molybdenum	0.03
23-Aug-88	Molybdenum	0.01
12-Oct-88	Molybdenum	0.01
13-Dec-88	Molybdenum	0.03
11-Jan-89	Molybdenum	0.015
15-Feb-89	Molybdenum	0.035
16-May-89	Molybdenum	0.01
10-Aug-89	Molybdenum	0.02
15-Nov-89	Molybdenum	0.01
13-Mar-90	Molybdenum	0.055
04-Jun-90	Molybdenum	0.01
12-Sep-90	Molybdenum	0.01
03-Dec-90	Molybdenum	0.015
27-Feb-91	Molybdenum	0.005
03-Jun-91	Molybdenum	0.005
16-Sep-91	Molybdenum	0.005
18-Nov-91	Molybdenum	0.005
09-Mar-92	Molybdenum	0.01
04-Jun-92	Molybdenum	0.005
21-Sep-92	Molybdenum	0.005
03-Dec-92	Molybdenum	0.005
03-Mar-93	Molybdenum	0.005
01-Jun-93	Molybdenum	0.005
08-Sep-93	Molybdenum	0.025
24-Nov-93	Molybdenum	0.015
01-Mar-94	Molybdenum	0.015
31-May-94	Molybdenum	0.015
01-Sep-94	Molybdenum	0.015
28-Nov-94	Molybdenum	0.015
16-Mar-95	Molybdenum	0.015
06-Jun-95	Molybdenum	0.015
05-Sep-95	Molybdenum	0.015
05-Dec-95	Molybdenum	0.015
11-Mar-96	Molybdenum	0.015
03-Jun-96	Molybdenum	0.015
17-Sep-96	Molybdenum	0.015
10-Oct-96	Molybdenum	0.015
06-Mar-97	Molybdenum	0.015
27-May-97	Molybdenum	0.015
09-Sep-97	Molybdenum	0.015
03-Nov-97	Molybdenum	0.015
04-Mar-98	Molybdenum	0.015
05-May-98	Molybdenum	0.05
16-Sep-98	Molybdenum	0.015
12-Nov-98	Molybdenum	0.015

Table 6. Molybdenum Near Upgradient Background Data Set for Well P1
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Sep-92	Molybdenum	0.005
21-Jan-93	Molybdenum	0.005
13-Apr-93	Molybdenum	0.005
13-Jul-93	Molybdenum	0.01
21-Oct-93	Molybdenum	0.015
04-Jan-94	Molybdenum	0.015
07-Mar-94	Molybdenum	0.015
12-Apr-94	Molybdenum	0.015
06-Jul-94	Molybdenum	0.015
21-Oct-94	Molybdenum	0.015
04-Jan-95	Molybdenum	0.015
12-Apr-95	Molybdenum	0.015
06-Jul-95	Molybdenum	0.015
03-Oct-95	Molybdenum	0.015
10-Jan-96	Molybdenum	0.015
09-Apr-96	Molybdenum	0.015
19-Jul-96	Molybdenum	0.015
04-Nov-96	Molybdenum	0.015
13-Jan-97	Molybdenum	0.015
14-Apr-97	Molybdenum	0.015
08-Jul-97	Molybdenum	0.015
03-Nov-97	Molybdenum	0.015
19-Jan-98	Molybdenum	0.015
01-Apr-98	Molybdenum	0.04
14-Jul-98	Molybdenum	0.05
28-Oct-98	Molybdenum	0.015

Table 7. Molybdenum Near Upgradient Background Data Set for Well P2
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Sep-92	Molybdenum	0.005
08-Feb-93	Molybdenum	0.0075
04-May-93	Molybdenum	0.0075
12-Aug-93	Molybdenum	0.01
01-Nov-93	Molybdenum	0.015
02-Feb-94	Molybdenum	0.015
07-Mar-94	Molybdenum	0.015
29-Apr-94	Molybdenum	0.015
01-Aug-94	Molybdenum	0.04
01-Nov-94	Molybdenum	0.015
03-Feb-95	Molybdenum	0.015
05-May-95	Molybdenum	0.015
02-Aug-95	Molybdenum	0.015
06-Nov-95	Molybdenum	0.04
12-Feb-96	Molybdenum	0.015
14-May-96	Molybdenum	0.015
29-Jul-96	Molybdenum	0.04
03-Feb-97	Molybdenum	0.015
29-Apr-97	Molybdenum	0.015
13-Oct-97	Molybdenum	0.015
10-Feb-98	Molybdenum	0.015
05-May-98	Molybdenum	0.04
04-Aug-98	Molybdenum	0.05
28-Oct-98	Molybdenum	0.015

Table 8. Molybdenum Near Upgradient Background Data Set for Wells P3 and P4
(corrected for non-detects and duplicates)

Well	Sample Date	Parameter	Final Data
P3	23-Apr-98	Molybdenum	0.015
P4	24-Apr-98	Molybdenum	0.015

Table 9. Molybdenum Near Upgradient Background Data Set for Well Q
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
07-Jan-76	Molybdenum	0.025
30-Mar-76	Molybdenum	0.06
09-Apr-76	Molybdenum	0.02
03-Jun-76	Molybdenum	0.01
27-Aug-76	Molybdenum	0.02
13-Jun-77	Molybdenum	0.02
24-Aug-77	Molybdenum	0.0175
11-Oct-77	Molybdenum	0.0075
01-Feb-78	Molybdenum	0.0175
17-Apr-78	Molybdenum	0.04
10-Jul-78	Molybdenum	0.015
23-Oct-78	Molybdenum	0.015
30-Jan-79	Molybdenum	0.01025
30-Apr-79	Molybdenum	0.01625
12-Jul-79	Molybdenum	0.07
10-Sep-79	Molybdenum	0.07
06-Nov-79	Molybdenum	0.03
09-Jan-80	Molybdenum	0.07
16-Apr-80	Molybdenum	0.01625
16-Jul-80	Molybdenum	0.00625
13-Oct-80	Molybdenum	0.02
07-Jan-81	Molybdenum	0.005
15-Apr-81	Molybdenum	0.0175
07-Jul-81	Molybdenum	0.03
07-Oct-81	Molybdenum	0.01
28-Dec-81	Molybdenum	0.025
24-Mar-82	Molybdenum	0.015
22-May-82	Molybdenum	0.02
25-Aug-82	Molybdenum	0.05
18-Nov-82	Molybdenum	0.02
23-Feb-83	Molybdenum	0.02
26-May-83	Molybdenum	0.02
28-Jun-83	Molybdenum	0.0075
21-Sep-83	Molybdenum	0.03
19-Dec-83	Molybdenum	0.01
07-Mar-84	Molybdenum	0.01
09-May-84	Molybdenum	0.005
12-Sep-84	Molybdenum	0.01
12-Dec-84	Molybdenum	0.02
11-Mar-85	Molybdenum	0.02
29-May-85	Molybdenum	0.01
06-Sep-85	Molybdenum	0.02
16-Dec-85	Molybdenum	0.02
10-Mar-86	Molybdenum	0.005
30-Jun-86	Molybdenum	0.01

Table 9. Molybdenum Near Upgradient Background Data Set for Well Q (continued)
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
15-Sep-86	Molybdenum	0.005
15-Dec-86	Molybdenum	0.005
19-Mar-87	Molybdenum	0.01
19-Jun-87	Molybdenum	0.01
15-Sep-87	Molybdenum	0.01
08-Dec-87	Molybdenum	0.01
24-Feb-88	Molybdenum	0.02
12-May-88	Molybdenum	0.02
23-Aug-88	Molybdenum	0.01
03-Nov-88	Molybdenum	0.01
13-Dec-88	Molybdenum	0.025
11-Jan-89	Molybdenum	0.01
15-Feb-89	Molybdenum	0.055
16-May-89	Molybdenum	0.005
15-Nov-89	Molybdenum	0.01
13-Mar-90	Molybdenum	0.0225
12-Sep-90	Molybdenum	0.005
27-Feb-91	Molybdenum	0.005
16-Sep-91	Molybdenum	0.005
09-Mar-92	Molybdenum	0.005
16-Sep-92	Molybdenum	0.005
03-Mar-93	Molybdenum	0.005
08-Sep-93	Molybdenum	0.025
01-Mar-94	Molybdenum	0.015
01-Sep-94	Molybdenum	0.015
16-Mar-95	Molybdenum	0.015
05-Sep-95	Molybdenum	0.015
11-Mar-96	Molybdenum	0.015
17-Sep-96	Molybdenum	0.015
06-Mar-97	Molybdenum	0.015
09-Sep-97	Molybdenum	0.015
04-Mar-98	Molybdenum	0.015

Table 10. Molybdenum Near Upgradient Background Data Set for Well R
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
07-Jan-76	Molybdenum	0.1
30-Mar-76	Molybdenum	0.05
09-Apr-76	Molybdenum	0.02
03-Jun-76	Molybdenum	0.01
01-Sep-76	Molybdenum	0.2
13-Jun-77	Molybdenum	0.02
24-Aug-77	Molybdenum	0.0125
11-Oct-77	Molybdenum	0.0075
01-Feb-78	Molybdenum	0.0175
17-Apr-78	Molybdenum	0.02
10-Jul-78	Molybdenum	0.016
23-Oct-78	Molybdenum	0.0175
31-Jan-79	Molybdenum	0.00525
30-Apr-79	Molybdenum	0.01625
12-Jul-79	Molybdenum	0.05
10-Sep-79	Molybdenum	0.09
06-Nov-79	Molybdenum	0.03
07-Jan-80	Molybdenum	0.0225
16-Apr-80	Molybdenum	0.01125
16-Jul-80	Molybdenum	0.00625
13-Oct-80	Molybdenum	0.02
07-Jan-81	Molybdenum	0.01
15-Apr-81	Molybdenum	0.062
07-Jul-81	Molybdenum	0.03
28-Dec-81	Molybdenum	0.025
24-Mar-82	Molybdenum	0.01
22-May-82	Molybdenum	0.01
25-Aug-82	Molybdenum	0.005
18-Nov-82	Molybdenum	0.01
23-Feb-83	Molybdenum	0.01
26-May-83	Molybdenum	0.01
28-Jun-83	Molybdenum	0.0075
12-Sep-83	Molybdenum	0.01
20-Dec-83	Molybdenum	0.06
07-Mar-84	Molybdenum	0.01
09-May-84	Molybdenum	0.0045
12-Sep-84	Molybdenum	0.02
12-Dec-84	Molybdenum	0.02
11-Mar-85	Molybdenum	0.0125
29-May-85	Molybdenum	0.01
05-Sep-85	Molybdenum	0.035
16-Dec-85	Molybdenum	0.01
10-Mar-86	Molybdenum	0.005
30-Jun-86	Molybdenum	0.01
15-Sep-86	Molybdenum	0.0075

Table 10. Molybdenum Near Upgradient Background Data Set for Well R (continued)
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
15-Dec-86	Molybdenum	0.01
19-Mar-87	Molybdenum	0.0075
19-Jun-87	Molybdenum	0.01
15-Sep-87	Molybdenum	0.0075
08-Dec-87	Molybdenum	0.02
24-Feb-88	Molybdenum	0.025
12-May-88	Molybdenum	0.02
22-Aug-88	Molybdenum	0.0125
03-Nov-88	Molybdenum	0.03
13-Dec-88	Molybdenum	0.02
11-Jan-89	Molybdenum	0.01
15-Feb-89	Molybdenum	0.01
16-May-89	Molybdenum	0.01
15-Nov-89	Molybdenum	0.01
13-Mar-90	Molybdenum	0.0275
12-Sep-90	Molybdenum	0.005
27-Feb-91	Molybdenum	0.005
16-Sep-91	Molybdenum	0.005
09-Mar-92	Molybdenum	0.005
16-Sep-92	Molybdenum	0.01
01-Jun-93	Molybdenum	0.005
08-Sep-93	Molybdenum	0.025
07-Mar-94	Molybdenum	0.015
31-May-94	Molybdenum	0.015
01-Sep-94	Molybdenum	0.015
06-Jun-95	Molybdenum	0.015
05-Sep-95	Molybdenum	0.015
03-Jun-96	Molybdenum	0.015
17-Sep-96	Molybdenum	0.015
10-Oct-96	Molybdenum	0.015
27-May-97	Molybdenum	0.015
06-May-98	Molybdenum	0.015

Table 11. Molybdenum Near Upgradient Background Groundwater Data Set Used in Statistical Analysis (all concentrations in mg/L)

Well ID								
DD	ND	P	P1	P2	P3	P4	Q	R
0.05	0.16	0.1	0.05	0.05	0.015	0.015	0.07	0.2
0.04	0.06	0.1	0.04	0.04			0.07	0.1
0.04	0.03	0.08	0.015	0.04			0.07	0.09
0.04	0.03	0.07	0.015	0.04			0.06	0.062
0.04	0.03	0.07	0.015	0.04			0.055	0.06
0.03	0.015	0.06	0.015	0.015			0.05	0.05
0.03	0.015	0.055	0.015	0.015			0.04	0.05
0.03	0.015	0.05	0.015	0.015			0.03	0.035
0.03	0.015	0.05	0.015	0.015			0.03	0.03
0.02	0.015	0.04	0.015	0.015			0.03	0.03
0.02	0.01	0.04	0.015	0.015			0.025	0.03
0.02	0.01	0.035	0.015	0.015			0.025	0.0275
0.02	0.005	0.03	0.015	0.015			0.025	0.025
0.0175		0.03	0.015	0.015			0.025	0.025
0.015		0.03	0.015	0.015			0.0225	0.025
0.015		0.03	0.015	0.015			0.02	0.0225
0.015		0.0275	0.015	0.015			0.02	0.02
0.015		0.0255	0.015	0.015			0.02	0.02
0.015		0.025	0.015	0.015			0.02	0.02
0.015		0.025	0.015	0.015			0.02	0.02
0.015		0.025	0.015	0.01			0.02	0.02
0.015		0.025	0.015	0.0075			0.02	0.02
0.01		0.0225	0.01	0.0075			0.02	0.02
0.01		0.022	0.005	0.005			0.02	0.02
0.01		0.02	0.005				0.02	0.02
0.01		0.02	0.005				0.02	0.0175
0.01		0.02					0.02	0.0175
0.01		0.02					0.02	0.01625
0.01		0.02					0.02	0.016
0.01		0.02					0.0175	0.015
0.01		0.02					0.0175	0.015
0.01		0.02					0.0175	0.015
0.01		0.02					0.01625	0.015
0.01		0.02					0.01625	0.015
0.01		0.02					0.015	0.015
0.01		0.019					0.015	0.015
0.01		0.0175					0.015	0.015
0.01		0.015					0.015	0.015
0.01		0.015					0.015	0.015
0.01		0.015					0.015	0.0125
0.01		0.015					0.015	0.0125
0.0085		0.015					0.015	0.0125
0.0075		0.015					0.015	0.01125
0.005		0.015					0.015	0.01
0.005		0.015					0.015	0.01
0.005		0.015					0.015	0.01
0.005		0.015					0.01025	0.01

Table 11. Molybdenum Near Upgradient Background Groundwater Data Set Used in Statistical Analysis (continued)
(all concentrations in mg/L)

Well ID								
DD	ND	P	P1	P2	P3	P4	Q	R
0.005		0.015					0.01	0.01
0.005		0.015					0.01	0.01
0.005		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.0133333					0.01	0.01
		0.0125					0.0075	0.0075
		0.0125					0.0075	0.0075
		0.01					0.00625	0.0075
		0.01					0.005	0.0075
		0.01					0.005	0.0075
		0.01					0.005	0.00625
		0.01					0.005	0.00525
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.0045
		0.01						
		0.01						
		0.0075						
		0.0075						
		0.0075						
		0.0075						
		0.0075						
		0.0075						
		0.007						
		0.005						
		0.005						
		0.005						

Table 11. Molybdenum Near Upgradient Background Groundwater Data Set Used in Statistical Analysis (continued)
(all concentrations in mg/L)

Well ID								
DD	ND	P	P1	P2	P3	P4	Q	R
		0.005						
		0.005						
		0.005						
		0.005						
		0.005						
		0.005						
		0.005						
		0.005						

Table 12. Molybdenum Near Upgradient Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
Molybdenum	0.2	0.16	1.3	**PASS**

Table 13. Molybdenum Near Upgradient Background Data Set, 95th Percentile Calculation

Parameter	**Distribution**	**95th Percentile (mg/L)**	**Sample #**
Molybdenum	Nonparametric	0.054	366

Table 14. Molybdenum Near Upgradient Background Data Set, Summary Table

Parameter	**Distribution**	**95th Percentile (mg/L)**	**Range**	**Sample #**
Molybdenum	Nonparametric	0.054	<0.001 to 0.2	366

Table 15. Molybdenum Far Upgradient Background Data Set (data not corrected for non-detects or duplicates)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value
0914	10-Jan-83	Molybdenum	Homestake	None	0.07
0914	14-Mar-94	Molybdenum	Energy Laboratories	Less Than	0.03
0914	12-May-94	Molybdenum	Energy Laboratories	Less Than	0.03
0914	24-Jan-96	Molybdenum	Energy Laboratories	Less Than	0.03
0914	22-May-97	Molybdenum	Energy Laboratories	Less Than	0.03
0914	12-May-98	Molybdenum	Energy Laboratories	Less Than	0.03
0916	21-Feb-94	Molybdenum	Energy Laboratories	Less Than	0.03
0916	26-Apr-94	Molybdenum	Energy Laboratories	Less Than	0.03
0916	29-Jan-96	Molybdenum	Energy Laboratories	Less Than	0.03
0916	28-May-97	Molybdenum	Energy Laboratories	Less Than	0.03
0916	12-May-98	Molybdenum	Energy Laboratories	Less Than	0.03
0920	03-Nov-81	Molybdenum	Homestake	None	0.03
0920	30-Aug-82	Molybdenum	Homestake	None	0.04
0920	05-Jan-83	Molybdenum	Homestake	None	0.04
0920	31-Aug-83	Molybdenum	Homestake	None	0.05
0920	14-Dec-89	Molybdenum	Homestake	Less Than	0.01
0920	09-May-90	Molybdenum	Homestake	Less Than	0.01
0920	21-May-91	Molybdenum	Homestake	Less Than	0.01
0920	06-May-92	Molybdenum	Homestake	Less Than	0.01
0920	06-May-93	Molybdenum	Homestake	Less Than	0.01
0920	28-Feb-94	Molybdenum	Energy Laboratories	Less Than	0.03
0920	29-Apr-94	Molybdenum	Energy Laboratories	Less Than	0.03
0920	29-Apr-94	Molybdenum	Energy Laboratories	Less Than	0.03
0920	11-May-94	Molybdenum	Energy Laboratories	Less Than	0.03
0920	10-May-95	Molybdenum	Energy Laboratories	Less Than	0.03
0920	24-Jan-96	Molybdenum	Energy Laboratories	Less Than	0.03
0920	20-May-96	Molybdenum	Energy Laboratories	Less Than	0.03
0920	23-May-97	Molybdenum	Energy Laboratories	Less Than	0.03
0920	12-May-98	Molybdenum	Energy Laboratories	Less Than	0.03
0921	28-Feb-94	Molybdenum	Energy Laboratories	Less Than	0.03
0921	16-May-94	Molybdenum	Energy Laboratories	Less Than	0.03
0921	24-Jan-96	Molybdenum	Energy Laboratories	Less Than	0.03
0921	23-May-97	Molybdenum	Energy Laboratories	Less Than	0.03
0921	12-May-98	Molybdenum	Energy Laboratories	Less Than	0.03
0922	03-Nov-81	Molybdenum	Homestake	None	0.03
0922	04-Mar-94	Molybdenum	Energy Laboratories	Less Than	0.03
0922	16-May-94	Molybdenum	Energy Laboratories	Less Than	0.03
0922	24-Jan-96	Molybdenum	Energy Laboratories	Less Than	0.03
0922	23-May-97	Molybdenum	Energy Laboratories	Less Than	0.03
0922	12-May-98	Molybdenum	Energy Laboratories	Less Than (QC)	0.03
0922	12-May-98	Molybdenum	Energy Laboratories	Less Than	0.03
0950	28-Feb-94	Molybdenum	Energy Laboratories	Less Than	0.03
0950	11-May-94	Molybdenum	Energy Laboratories	Less Than	0.03
0950	25-Jan-96	Molybdenum	Energy Laboratories	Less Than	0.03

Table 16. Molybdenum Far Upgradient Background Data Set for Well 914
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
10-Jan-83	Molybdenum	0.07
14-Mar-94	Molybdenum	0.015
12-May-94	Molybdenum	0.015
24-Jan-96	Molybdenum	0.015
22-May-97	Molybdenum	0.015
12-May-98	Molybdenum	0.015

Table 17. Molybdenum Far Upgradient Background Data Set for Well 916
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Feb-94	Molybdenum	0.015
26-Apr-94	Molybdenum	0.015
29-Jan-96	Molybdenum	0.015
28-May-97	Molybdenum	0.015
12-May-98	Molybdenum	0.015

Table 18. Molybdenum Far Upgradient Background Data Set for Well 920
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Nov-81	Molybdenum	0.03
30-Aug-82	Molybdenum	0.04
05-Jan-83	Molybdenum	0.04
31-Aug-83	Molybdenum	0.05
14-Dec-89	Molybdenum	0.005
09-May-90	Molybdenum	0.005
21-May-91	Molybdenum	0.005
06-May-92	Molybdenum	0.005
06-May-93	Molybdenum	0.005
28-Feb-94	Molybdenum	0.015
29-Apr-94	Molybdenum	0.015
11-May-94	Molybdenum	0.015
10-May-95	Molybdenum	0.015
24-Jan-96	Molybdenum	0.015
20-May-96	Molybdenum	0.015
23-May-97	Molybdenum	0.015
12-May-98	Molybdenum	0.015

Table 19. Molybdenum Far Upgradient Background Data Set for Well 921
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
28-Feb-94	Molybdenum	0.015
16-May-94	Molybdenum	0.015
24-Jan-96	Molybdenum	0.015
23-May-97	Molybdenum	0.015
12-May-98	Molybdenum	0.015

Table 20. Molybdenum Far Upgradient Background Data Set for Well 922
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Nov-81	Molybdenum	0.03
04-Mar-94	Molybdenum	0.015
16-May-94	Molybdenum	0.015
24-Jan-96	Molybdenum	0.015
23-May-97	Molybdenum	0.015
12-May-98	Molybdenum	0.015

Table 21. Molybdenum Far Upgradient Background Data Set for Well 950
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
28-Feb-94	Molybdenum	0.015
11-May-94	Molybdenum	0.015
25-Jan-96	Molybdenum	0.015

Table 22. Molybdenum Far Upgradient Background Groundwater Data Set Used in Statistical Analysis (all concentrations in mg/L)

Well ID					
914	**916**	**920**	**921**	**922**	**950**
0.07	0.015	0.05	0.015	0.03	0.015
0.015	0.015	0.04	0.015	0.015	0.015
0.015	0.015	0.04	0.015	0.015	0.015
0.015	0.015	0.03	0.015	0.015	
0.015	0.015	0.015	0.015	0.015	
0.015		0.015		0.015	
		0.015			
		0.015			
		0.015			
		0.015			
		0.015			
		0.015			
		0.005			
		0.005			
		0.005			
		0.005			
		0.005			

Table 23. Molybdenum Far Upgradient Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
Molybdenum	0.07	0.05	1.4	**PASS**

Table 24. Molybdenum Far Upgradient Background Data Set, 95th Percentile Calculation

Parameter	**Distribution**	**95th Percentile (mg/L)**	**Sample #**
Molybdenum	Nonparametric	0.040	42

Table 25. Molybdenum Far Upgradient Background Data Set, Summary Table

Parameter	**Distribution**	**95th Percentile (mg/L)**	**Range**	**Sample #**
Molybdenum	Nonparametric	0.040	<0.01 to 0.07	42

Table 26. Molybdenum Upgradient Background Data, Comparison Statistics Results

Comparison of Medians

Median of sample 1: 0.015
Median of sample 2: 0.015

Mann-Whitney (Wilcoxon) W test to compare medians

Null hypothesis: median1 = median2
Alt. hypothesis: median1 NE median2

Average rank of sample 1: 213.417
Average rank of sample 2: 203.477

W = 7311.5
P-value = 0.598284

The StatAdvisor

This option runs a Mann-Whitney W test option to compare the medians of the two samples. This test is constructed by combining the two samples, sorting the data from smallest to largest, and comparing the average ranks of the two samples in the combined data. Since the P-value is greater than or equal to 0.05, there is not a statistically significant difference between the medians at the 95.0% confidence level.

Table 27. Molybdenum Combined Upgradient Background Groundwater Data Set Used in Statistical Analysis
(all concentrations in mg/L)

Well ID														
DD	ND	P	P1	P2	P3	P4	Q	R	914	916	920	921	922	950
0.05	0.16	0.1	0.05	0.05	0.015	0.015	0.07	0.2	0.07	0.015	0.05	0.015	0.03	0.015
0.04	0.06	0.1	0.04	0.04			0.07	0.1	0.015	0.015	0.04	0.015	0.015	0.015
0.04	0.03	0.08	0.015	0.04			0.07	0.09	0.015	0.015	0.04	0.015	0.015	0.015
0.04	0.03	0.07	0.015	0.04			0.06	0.062	0.015	0.015	0.03	0.015	0.015	
0.04	0.03	0.07	0.015	0.04			0.055	0.06	0.015	0.015	0.015	0.015	0.015	
0.03	0.015	0.06	0.015	0.015			0.05	0.05	0.015		0.015		0.015	
0.03	0.015	0.055	0.015	0.015			0.04	0.05			0.015			
0.03	0.015	0.05	0.015	0.015			0.03	0.035			0.015			
0.03	0.015	0.05	0.015	0.015			0.03	0.03			0.015			
0.02	0.015	0.04	0.015	0.015			0.03	0.03			0.015			
0.02	0.01	0.04	0.015	0.015			0.025	0.03			0.015			
0.02	0.01	0.035	0.015	0.015			0.025	0.0275			0.015			
0.02	0.005	0.03	0.015	0.015			0.025	0.025			0.005			
0.0175		0.03	0.015	0.015			0.025	0.025			0.005			
0.015		0.03	0.015	0.015			0.0225	0.025			0.005			
0.015		0.03	0.015	0.015			0.02	0.0225			0.005			
0.015		0.0275	0.015	0.015			0.02	0.02			0.005			
0.015		0.0255	0.015	0.015			0.02	0.02						
0.015		0.025	0.015	0.015			0.02	0.02						
0.015		0.025	0.015	0.015			0.02	0.02						
0.015		0.025	0.015	0.01			0.02	0.02						
0.015		0.025	0.015	0.0075			0.02	0.02						
0.01		0.0225	0.01	0.0075			0.02	0.02						
0.01		0.022	0.005	0.005			0.02	0.02						
0.01		0.02	0.005				0.02	0.02						
0.01		0.02	0.005				0.02	0.0175						
0.01		0.02					0.02	0.0175						
0.01		0.02					0.02	0.01625						
0.01		0.02					0.02	0.016						
0.01		0.02					0.0175	0.015						
0.01		0.02					0.0175	0.015						
0.01		0.02					0.0175	0.015						
0.01		0.02					0.01625	0.015						
0.01		0.02					0.01625	0.015						
0.01		0.02					0.015	0.015						
0.01		0.019					0.015	0.015						
0.01		0.0175					0.015	0.015						
0.01		0.015					0.015	0.015						
0.01		0.015					0.015	0.015						
0.01		0.015					0.015	0.0125						
0.01		0.015					0.015	0.0125						
0.0085		0.015					0.015	0.0125						
0.0075		0.015					0.015	0.01125						
0.005		0.015					0.015	0.01						
0.005		0.015					0.015	0.01						
0.005		0.015					0.015	0.01						
0.005		0.015					0.01025	0.01						

Table 27. Molybdenum Combined Upgradient Background Groundwater Data Set Used in Statistical Analysis (continued)
(all concentrations in mg/L)

Well ID								
DD	ND	P	P1	P2	P3	P4	Q	R
0.005		0.015					0.01	0.01
0.005		0.015					0.01	0.01
0.005		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.015					0.01	0.01
		0.013333					0.01	0.01
		0.0125					0.0075	0.0075
		0.0125					0.0075	0.0075
		0.01					0.00625	0.0075
		0.01					0.005	0.0075
		0.01					0.005	0.0075
		0.01					0.005	0.00625
		0.01					0.005	0.00525
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.005
		0.01					0.005	0.0045
		0.01						
		0.01						
		0.0075						
		0.0075						
		0.0075						
		0.0075						
		0.0075						
		0.0075						
		0.007						
		0.005						
		0.005						
		0.005						

Table 27. Molybdenum Combined Upgradient Background Groundwater Data Set Used in Statistical Analysis (continued)
(all concentrations in mg/L)

Well ID								
DD	ND	P	P1	P2	P3	P4	Q	R
		0.005						
		0.005						
		0.005						
		0.005						
		0.005						
		0.005						
		0.005						
		0.005						

Table 28. Molybdenum Combined Upgradient Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
Molybdenum	0.2	0.16	1.3	**PASS**

Table 29. Molybdenum Combined Upgradient Background Data Set, 95th Percentile Calculation

Parameter	Distribution	95th Percentile (mg/L)	Sample #
Molybdenum	Nonparametric	0.05	408

Table 30. Molybdenum Combined Upgradient Background Data Set, Summary Table

Parameter	Distribution	95th Percentile (mg/L)	Range	Sample #
Molybdenum	Nonparametric	0.05	<0.001 to 0.2	408

Table 31. Selenium concentrations in alluvial ground water samples upgradient of the Homestake Site, Grants, New Mexico, March 1976 to November 1998

Well ID	DD	ND	P	P1	P2	P3	P4	Q	R	All wells	914	916	920	921	922	950	All Wells
1st sampling date	03-Jun-76	12-Jan-83	30-Mar-76	21-Sep-92	21-Sep-92	23-Apr-98	24-Apr-98	07-Jan-76	07-Jan-76	30-Mar-76	10-Jan-83	21-Feb-94	03-Nov-81	28-Feb-94	03-Nov-81	28-Feb-94	03-Nov-81
Most recent sampling date	01-Apr-98	05-Aug-98	12-Nov-98	28-Oct-98	28-Oct-98	23-Apr-98	24-Apr-98	04-Mar-98	06-May-98	12-Nov-98	12-May-98	12-May-98	12-May-98	12-May-98	12-May-98	25-Jan-96	12-May-98
Total number of measurments	56	13	131	32	31	1	1	98	108	471	6	5	18	5	6	3	43
Number of independent measurements	50	13	95	26	25	1	1	77	77	365	6	5	17	5	6	3	42
Percent nondect of total number of measurements	12.50%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	1.02%	1.85%	2.34%	50.00%	20.00%	0.00%	0.00%	50.00%	0.00%	16.3%
Minimum	<0.01	<0.01	0.009	0.144	0.096	0.173	0.104	0.04	0.03	0.009	<0.005	0.007	0.32	0.415	<0.005	0.276	<0.005
Median	0.01	0.04	0.1	0.2385	0.233	0.173	0.104	0.179	0.09	0.104	0.006	0.008	0.495	0.534	0.0055	0.288	0.34125
Mean	0.02	0.0314615	0.11377368	0.2314615	0.2275	0.173	0.104	0.1751074	0.11028617	0.127	0.01708333	0.1064	0.51126471	0.5246	0.00766667	0.3	0.295
Maximum	0.11	0.059	0.755	0.322	0.31	0.173	0.104	0.7	0.406	0.755	0.052	0.009	0.79	0.605	0.019	0.336	0.79
Percent greater than or equal to the NRC site standard (0.10mg/L)	8.00%	0.00%	54.74%	100.00%	96.00%	100.00%	100.00%	84.42%	41.56%	56.20%	0.00%	0.00%	100.00%	100.00%	0.00%	100.00%	59.50%

Table 32. Selenium Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates)

Well Name	Sample_Date	Parameter Code	Lab_Code	Remark Code	Value
DD	03-Jun-76	Selenium	Homestake	None	0.1
DD	27-Aug-76	Selenium	Homestake	None	0.11
DD	15-Sep-81	Selenium	Homestake	None	0.02
DD	24-Mar-82	Selenium	Homestake	Less Than	0.01
DD	26-May-82	Selenium	Homestake	None	0.1
DD	18-Nov-82	Selenium	Homestake	None	0.04
DD	18-Nov-82	Selenium	Homestake	None	0.04
DD	04-Mar-83	Selenium	Homestake	None	0.04
DD	28-Jun-83	Selenium	Homestake	None	0.01
DD	28-Jun-83	Selenium	NM EID	None	0.04
DD	14-Sep-83	Selenium	Homestake	None	0.01
DD	19-Dec-83	Selenium	Homestake	None	0.01
DD	07-Mar-84	Selenium	Homestake	None	0.01
DD	09-May-84	Selenium	Homestake	None	0.01
DD	09-May-84	Selenium	Controls for Env	None	0.03
DD	12-Sep-84	Selenium	Homestake	None	0.01
DD	12-Dec-84	Selenium	Homestake	None	0.01
DD	13-Mar-85	Selenium	Homestake	None	0.02
DD	06-Jun-85	Selenium	Homestake	None	0.1
DD	04-Sep-85	Selenium	Homestake	None	0.01
DD	16-Dec-85	Selenium	Homestake	None	0.01
DD	20-Mar-86	Selenium	Homestake	None	0.01
DD	30-Jun-86	Selenium	Homestake	None	0.01
DD	15-Sep-86	Selenium	Homestake	Less Than	0.01
DD	09-Dec-86	Selenium	Homestake	None	0.01
DD	19-Mar-87	Selenium	Homestake	None	0.01
DD	24-Jun-87	Selenium	Homestake	None	0.01
DD	15-Sep-87	Selenium	Homestake	None	0.01
DD	08-Dec-87	Selenium	Homestake	None	0.01
DD	24-Feb-88	Selenium	Homestake	None	0.01
DD	09-Jun-88	Selenium	Homestake	None	0.01
DD	11-Oct-88	Selenium	Homestake	None	0.02
DD	08-Dec-88	Selenium	Homestake	Less Than	0.01
DD	13-Dec-88	Selenium	Homestake	None	0.02
DD	13-Dec-88	Selenium	Barringer Lab	None	0.029
DD	11-Jan-89	Selenium	Homestake	None	0.01
DD	11-Jan-89	Selenium	Barringer Lab	None	0.031
DD	15-Feb-89	Selenium	Homestake	None	0.01
DD	15-Feb-89	Selenium	Barringer Lab	None	0.037
DD	29-Mar-89	Selenium	Homestake	Less Than	0.01
DD	13-Jun-89	Selenium	Homestake	Less Than	0.01
DD	15-Nov-89	Selenium	Homestake	Less Than	0.01
DD	13-Mar-90	Selenium	Homestake	Less Than	0.01
DD	12-Sep-90	Selenium	Homestake	None	0.01
DD	27-Feb-91	Selenium	Homestake	None	0.02

Table 32. Selenium Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample_Date	Parameter Code	Lab_Code	Remark Code	Value
DD	16-Sep-91	Selenium	Homestake	None	0.01
DD	09-Mar-92	Selenium	Homestake	None	0.01
DD	22-Sep-92	Selenium	Homestake	None	0.01
DD	21-Oct-93	Selenium	Energy Lab	None	0.02
DD	09-Mar-94	Selenium	Energy Lab	None	0.015
DD	21-Oct-94	Selenium	Energy Lab	None	0.016
DD	10-Oct-95	Selenium	Energy Lab	None	0.017
DD	10-Oct-96	Selenium	Energy Lab	None	0.021
DD	14-Apr-97	Selenium	Energy Lab	None	0.018
DD	09-Sep-97	Selenium	Energy Lab	None	0.023
DD	01-Apr-98	Selenium	Energy Lab	None	0.031
ND	12-Jan-83	Selenium	Homestake	None	0.04
ND	06-Jan-84	Selenium	Homestake	None	0.02
ND	18-Dec-89	Selenium	Homestake	Less than	0.01
ND	17-Oct-90	Selenium	Homestake	None	0.01
ND	16-Sep-91	Selenium	Homestake	None	0.01
ND	18-Aug-92	Selenium	Homestake	None	0.02
ND	25-Aug-93	Selenium	Energy Laboratories	None	0.045
ND	14-Mar-94	Selenium	Energy Laboratories	None	0.024
ND	22-Aug-94	Selenium	Energy Laboratories	None	0.059
ND	22-Aug-95	Selenium	Energy Laboratories	None	0.042
ND	29-Jul-96	Selenium	Energy Laboratories	None	0.05
ND	11-Aug-97	Selenium	Energy Laboratories	None	0.04
ND	05-Aug-98	Selenium	Energy Laboratories	None	0.044
P	30-Mar-76	Selenium	Homestake	None	0.16
P	09-Apr-76	Selenium	Homestake	None	0.18
P	03-Jun-76	Selenium	Homestake	None	0.14
P	27-Aug-76	Selenium	Homestake	None	0.17
P	13-Jun-77	Selenium	Eberline	None	0.5
P	13-Jun-77	Selenium	Homestake	None	0.08
P	13-Jun-77	Selenium	NM EID	None	0.5
P	24-Aug-77	Selenium	Eberline	None	1.085
P	24-Aug-77	Selenium	Homestake	None	0.09
P	24-Aug-77	Selenium	NM EID	None	1.09
P	11-Oct-77	Selenium	NM EID	None	0.22
P	11-Oct-77	Selenium	Homestake	None	0.11
P	01-Feb-78	Selenium	NM Bureau of Mines	None	0.088
P	01-Feb-78	Selenium	NM EID	None	0.12
P	01-Feb-78	Selenium	Homestake	None	0.08
P	17-Apr-78	Selenium	Homestake	None	0.22
P	11-Jul-78	Selenium	NM EID	None	0.06
P	11-Jul-78	Selenium	Homestake	None	0.07
P	23-Oct-78	Selenium	Homestake	None	0.11
P	23-Oct-78	Selenium	NM EID	None	0.18
P	30-Jan-79	Selenium	Homestake	None	0.09
P	30-Jan-79	Selenium	NM EID	None	0.136
P	30-Apr-79	Selenium	Homestake	None	0.08
P	30-Apr-79	Selenium	NM EID	None	0.2
P	12-Jul-79	Selenium	Homestake	None	0.13
P	10-Sep-79	Selenium	Homestake	None	0.12
P	06-Nov-79	Selenium	Homestake	None	0.08
P	09-Jan-80	Selenium	Homestake	None	0.12

Table 32. Selenium Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample_Date	Parameter Code	Lab_Code	Remark Code	Value
P	16-Apr-80	Selenium	Homestake	None	0.12
P	17-Apr-80	Selenium	NM EID	None	0.12
P	16-Jul-80	Selenium	Homestake	None	0.16
P	16-Jul-80	Selenium	NM EID	None	0.13
P	13-Oct-80	Selenium	Homestake	None	0.16
P	07-Jan-81	Selenium	Homestake	None	0.16
P	07-Jan-81	Selenium	NM EID	None	0.025
P	15-Apr-81	Selenium	Homestake	None	0.15
P	15-Apr-81	Selenium	NM EID	None	0.096
P	07-Jul-81	Selenium	Homestake	None	0.15
P	07-Oct-81	Selenium	Homestake	None	0.17
P	28-Dec-81	Selenium	NM EID	None	0.083
P	28-Dec-81	Selenium	Homestake	None	0.12
P	24-Mar-82	Selenium	Homestake	None	0.12
P	24-Mar-82	Selenium	NM EID	None	0.085
P	22-May-82	Selenium	Homestake	None	0.17
P	25-Aug-82	Selenium	Homestake	None	0.05
P	18-Nov-82	Selenium	Assaigai Lab	None	0.6
P	18-Nov-82	Selenium	Controls for	None	0.06
P	18-Nov-82	Selenium	Homestake	None	0.08
P	18-Nov-82	Selenium	Controls for	None	0.06
P	23-Feb-83	Selenium	Homestake	None	0.1
P	26-May-83	Selenium	Homestake	None	0.06
P	27-Jun-83	Selenium	Homestake	None	0.06
P	27-Jun-83	Selenium	NM EID	None	0.092
P	12-Sep-83	Selenium	Homestake	None	0.06
P	19-Dec-83	Selenium	Homestake	None	0.05
P	07-Mar-84	Selenium	Homestake	None	0.09
P	09-May-84	Selenium	Controls for	None	0.05
P	09-May-84	Selenium	Homestake	None	0.11
P	12-Sep-84	Selenium	Homestake	None	0.17
P	13-Dec-84	Selenium	Homestake	None	0.14
P	11-Mar-85	Selenium	Controls for	None	0.04
P	11-Mar-85	Selenium	Homestake	None	0.14
P	29-May-85	Selenium	Homestake	None	0.12
P	04-Sep-85	Selenium	Controls for	None	0.04
P	04-Sep-85	Selenium	Homestake	None	0.12
P	16-Dec-85	Selenium	Homestake	None	0.12
P	10-Mar-86	Selenium	Controls for	None	0.04
P	10-Mar-86	Selenium	Homestake	None	0.14
P	30-Jun-86	Selenium	Homestake	None	0.13
P	15-Sep-86	Selenium	Controls for	None	0.07
P	15-Sep-86	Selenium	Homestake	None	0.13
P	16-Dec-86	Selenium	Homestake	None	0.13
P	19-Mar-87	Selenium	Controls for	None	0.05
P	19-Mar-87	Selenium	Homestake	None	0.08
P	24-Jun-87	Selenium	Homestake	None	0.1
P	16-Sep-87	Selenium	Controls for	None	0.06
P	16-Sep-87	Selenium	Homestake	None	0.1
P	08-Dec-87	Selenium	Homestake	None	0.12
P	24-Feb-88	Selenium	Homestake	None	0.11
P	24-Feb-88	Selenium	Barringer	None	0.072

Table 32. Selenium Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample_Date	Parameter Code	Lab_Code	Remark Code	Value
P	12-May-88	Selenium	Homestake	None	0.08
P	23-Aug-88	Selenium	Homestake	None	0.11
P	23-Aug-88	Selenium	Barringer	None	0.132
P	12-Oct-88	Selenium	Homestake	None	0.11
P	13-Dec-88	Selenium	Homestake	None	0.11
P	13-Dec-88	Selenium	Barringer	None	0.094
P	11-Jan-89	Selenium	Homestake	None	0.11
P	11-Jan-89	Selenium	Barringer	None	0.09
P	15-Feb-89	Selenium	Homestake	None	0.09
P	15-Feb-89	Selenium	Barringer	None	0.119
P	16-May-89	Selenium	Homestake	None	0.08
P	10-Aug-89	Selenium	Homestake	None	0.1
P	15-Nov-89	Selenium	Homestake	None	0.05
P	13-Mar-90	Selenium	Homestake	None	0.1
P	04-Jun-90	Selenium	Homestake	None	0.07
P	12-Sep-90	Selenium	Homestake	None	0.09
P	03-Dec-90	Selenium	Homestake	None	0.13
P	03-Dec-90	Selenium	Barringer	None	0.074
P	03-Jun-91	Selenium	Homestake	None	0.1
P	16-Sep-91	Selenium	Homestake	None	0.11
P	18-Nov-91	Selenium	Homestake	None	0.11
P	09-Mar-92	Selenium	Homestake	None	0.13
P	04-Jun-92	Selenium	Homestake	None	0.13
P	21-Sep-92	Selenium	Homestake	None	0.13
P	03-Dec-92	Selenium	Homestake	None	0.13
P	03-Mar-93	Selenium	Homestake	None	0.09
P	01-Jun-93	Selenium	Homestake	None	0.07
P	08-Sep-93	Selenium	Energy Laboratories	None	0.085
P	24-Nov-93	Selenium	Energy Laboratories	None	0.073
P	01-Mar-94	Selenium	Energy Laboratories	None	0.009
P	31-May-94	Selenium	Energy Laboratories	None	0.081
P	01-Sep-94	Selenium	Energy Laboratories	None	0.057
P	28-Nov-94	Selenium	Energy Laboratories	None	0.089
P	16-Mar-95	Selenium	Energy Laboratories	None	0.03
P	16-Mar-95	Selenium	Energy Laboratories	None	0.03
P	06-Jun-95	Selenium	Energy Laboratories	None	0.085
P	05-Sep-95	Selenium	Energy Laboratories	None	0.062
P	05-Dec-95	Selenium	Energy Laboratories	None	0.063
P	05-Dec-95	Selenium	Energy Laboratories	None	0.06
P	11-Mar-96	Selenium	Energy Laboratories	None	0.051
P	03-Jun-96	Selenium	Energy Laboratories	None	0.055
P	17-Sep-96	Selenium	Energy Laboratories	None	0.077
P	10-Oct-96	Selenium	Energy Laboratories	None	0.065
P	06-Mar-97	Selenium	Energy Laboratories	None	0.063
P	27-May-97	Selenium	Energy Laboratories	None	0.059
P	09-Sep-97	Selenium	Energy Laboratories	None	0.026
P	09-Sep-97	Selenium	Energy Laboratories	Quality Control	0.009
P	03-Nov-97	Selenium	Energy Laboratories	None	0.061
P	04-Mar-98	Selenium	Energy Laboratories	None	0.082
P	04-Mar-98	Selenium	Energy Laboratories	Quality Control	0.1
P	05-May-98	Selenium	Energy Laboratories	None	0.182
P	16-Sep-98	Selenium	Energy Laboratories	None	0.196

Table 32. Selenium Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample_Date	Parameter Code	Lab_Code	Remark Code	Value
P	12-Nov-98	Selenium	Energy Laboratories	None	0.164
P	12-Nov-98	Selenium	ACZ Laboratories	Quality Control	0.15
P	12-Nov-98	Selenium	Energy Laboratories	Quality Control	0.152
P1	21-Sep-92	Selenium	Homestake	None	0.24
P1	21-Jan-93	Selenium	Energy Laboratories	None	0.216
P1	21-Jan-93	Selenium	Homestake	None	0.22
P1	13-Apr-93	Selenium	Homestake	None	0.24
P1	13-Jul-93	Selenium	Homestake	None	0.27
P1	21-Oct-93	Selenium	Energy Laboratories	None	0.144
P1	04-Jan-94	Selenium	Energy Laboratories	None	0.225
P1	07-Mar-94	Selenium	Energy Laboratories	None	0.171
P1	12-Apr-94	Selenium	Energy Laboratories	None	0.162
P1	06-Jul-94	Selenium	Energy Laboratories	None	0.292
P1	21-Oct-94	Selenium	Energy Laboratories	None	0.322
P1	04-Jan-95	Selenium	Energy Laboratories	None	0.238
P1	04-Jan-95	Selenium	Energy Laboratories	None	0.246
P1	12-Apr-95	Selenium	Energy Laboratories	None	0.167
P1	06-Jul-95	Selenium	Energy Laboratories	None	0.294
P1	03-Oct-95	Selenium	Energy Laboratories	None	0.214
P1	10-Jan-96	Selenium	Energy Laboratories	None	0.224
P1	10-Jan-96	Selenium	Energy Laboratories	None	0.22
P1	09-Apr-96	Selenium	Energy Laboratories	None	0.246
P1	09-Apr-96	Selenium	Energy Laboratories	None	0.267
P1	19-Jul-96	Selenium	Energy Laboratories	None	0.194
P1	19-Jul-96	Selenium	Energy Laboratories	None	0.204
P1	04-Nov-96	Selenium	Energy Laboratories	None	0.241
P1	04-Nov-96	Selenium	Energy Laboratories	None	0.266
P1	13-Jan-97	Selenium	Energy Laboratories	Quality Control	0.245
P1	13-Jan-97	Selenium	Energy Laboratories	None	0.237
P1	14-Apr-97	Selenium	Energy Laboratories	None	0.215
P1	14-Apr-97	Selenium	Energy Laboratories	Quality Control	0.209
P1	08-Jul-97	Selenium	Energy Laboratories	None	0.232
P1	03-Nov-97	Selenium	Energy Laboratories	None	0.225
P1	19-Jan-98	Selenium	Energy Laboratories	None	0.243
P1	19-Jan-98	Selenium	Energy Laboratories	Quality Control	0.239
P1	01-Apr-98	Selenium	Energy Laboratories	None	0.242
P1	01-Apr-98	Selenium	Energy Laboratories	Quality Control	0.253
P1	14-Jul-98	Selenium	Energy Laboratories	None	0.252
P1	28-Oct-98	Selenium	Energy Laboratories	None	0.24
P2	21-Sep-92	Selenium	Homestake	None	0.24
P2	08-Feb-93	Selenium	Energy Laboratories	None	0.11
P2	08-Feb-93	Selenium	Homestake	None	0.24
P2	04-May-93	Selenium	Energy Laboratories	None	0.245
P2	04-May-93	Selenium	Homestake	None	0.22
P2	12-Aug-93	Selenium	Homestake	None	0.22
P2	01-Nov-93	Selenium	Energy Laboratories	None	0.183
P2	01-Nov-93	Selenium	Energy Laboratories	None	0.169
P2	02-Feb-94	Selenium	Energy Laboratories	None	0.096
P2	07-Mar-94	Selenium	Energy Laboratories	None	0.194
P2	29-Apr-94	Selenium	Energy Laboratories	None	0.128
P2	29-Apr-94	Selenium	Energy Laboratories	None	0.132
P2	01-Aug-94	Selenium	Energy Laboratories	None	0.31

Table 32. Selenium Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample_Date	Parameter Code	Lab_Code	Remark Code	Value
P2	01-Nov-94	Selenium	Energy Laboratories	None	0.299
P2	03-Feb-95	Selenium	Energy Laboratories	None	0.294
P2	05-May-95	Selenium	Energy Laboratories	None	0.244
P2	02-Aug-95	Selenium	Energy Laboratories	None	0.244
P2	02-Aug-95	Selenium	Energy Laboratories	None	0.252
P2	06-Nov-95	Selenium	Energy Laboratories	None	0.264
P2	12-Feb-96	Selenium	Energy Laboratories	None	0.221
P2	14-May-96	Selenium	Energy Laboratories	None	0.234
P2	14-May-96	Selenium	Energy Laboratories	None	0.232
P2	29-Jul-96	Selenium	Energy Laboratories	None	0.236
P2	03-Feb-97	Selenium	Energy Laboratories	None	0.194
P2	03-Feb-97	Selenium	Energy Laboratories	Quality Control	0.212
P2	29-Apr-97	Selenium	Energy Laboratories	None	0.233
P2	29-Apr-97	Selenium	Energy Laboratories	Quality Control	0.296
P2	28-Jul-97	Selenium	Energy Laboratories	None	0.276
P2	28-Jul-97	Selenium	Energy Laboratories	Quality Control	0.224
P2	13-Oct-97	Selenium	Energy Laboratories	None	0.217
P2	10-Feb-98	Selenium	Energy Laboratories	Quality Control	0.23
P2	10-Feb-98	Selenium	Energy Laboratories	None	0.3
P2	05-May-98	Selenium	Energy Laboratories	None	0.21
P2	04-Aug-98	Selenium	Energy Laboratories	None	0.209
P2	28-Oct-98	Selenium	Energy Laboratories	None	0.236
P3	23-Apr-98	Selenium	Energy Laboratories	None	0.173
P4	24-Apr-98	Selenium	Energy Laboratories	None	0.104
Q	07-Jan-76	Selenium	Homestake	Less than	0.05
Q	30-Mar-76	Selenium	Homestake	None	0.19
Q	09-Apr-76	Selenium	Homestake	None	0.3
Q	03-Jun-76	Selenium	Homestake	None	0.18
Q	27-Aug-76	Selenium	Homestake	None	0.23
Q	13-Jun-77	Selenium	Eberline	None	0.5
Q	13-Jun-77	Selenium	Homestake	None	0.09
Q	24-Aug-77	Selenium	Eberline	None	1.28
Q	24-Aug-77	Selenium	Homestake	None	0.12
Q	11-Oct-77	Selenium	Eberline	None	0.35
Q	11-Oct-77	Selenium	Homestake	None	0.12
Q	01-Feb-78	Selenium	Eberline	None	0.15
Q	01-Feb-78	Selenium	NM Bureau of Mines	None	0.16
Q	01-Feb-78	Selenium	Homestake	None	0.1
Q	17-Apr-78	Selenium	Homestake	None	0.22
Q	10-Jul-78	Selenium	NM EID	None	0.05
Q	10-Jul-78	Selenium	Homestake	None	0.11
Q	23-Oct-78	Selenium	Homestake	None	0.19
Q	23-Oct-78	Selenium	NM EID	None	0.24
Q	30-Jan-79	Selenium	Homestake	None	0.14
Q	30-Jan-79	Selenium	NM EID	None	0.194
Q	30-Apr-79	Selenium	Homestake	None	0.1
Q	30-Apr-79	Selenium	NM EID	None	0.2732
Q	12-Jul-79	Selenium	Homestake	None	0.18
Q	10-Sep-79	Selenium	Homestake	None	0.15
Q	06-Nov-79	Selenium	Homestake	None	0.14
Q	09-Jan-80	Selenium	Homestake	None	0.14
Q	16-Apr-80	Selenium	Homestake	None	0.16

Table 32. Selenium Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample_Date	Parameter Code	Lab_Code	Remark Code	Value
Q	17-Apr-80	Selenium	NM EID	None	0.139
Q	16-Jul-80	Selenium	Homestake	None	0.18
Q	16-Jul-80	Selenium	NM EID	None	0.115
Q	13-Oct-80	Selenium	Homestake	None	0.2
Q	07-Jan-81	Selenium	Homestake	None	0.24
Q	07-Jan-81	Selenium	NM EID	None	0.08
Q	15-Apr-81	Selenium	Homestake	None	0.22
Q	15-Apr-81	Selenium	NM EID	None	0.106
Q	07-Jul-81	Selenium	Homestake	None	0.23
Q	07-Oct-81	Selenium	Homestake	None	0.2
Q	28-Dec-81	Selenium	Homestake	None	0.15
Q	28-Dec-81	Selenium	NM EID	None	0.074
Q	24-Mar-82	Selenium	Homestake	None	0.14
Q	24-Mar-82	Selenium	NM EID	None	0.116
Q	22-May-82	Selenium	Homestake	None	0.15
Q	25-Aug-82	Selenium	Homestake	None	0.04
Q	18-Nov-82	Selenium	Homestake	None	0.08
Q	23-Feb-83	Selenium	Homestake	None	0.09
Q	26-May-83	Selenium	Homestake	None	0.07
Q	28-Jun-83	Selenium	NM EID	None	0.078
Q	28-Jun-83	Selenium	Homestake	None	0.07
Q	21-Sep-83	Selenium	Homestake	None	0.1
Q	19-Dec-83	Selenium	Homestake	None	0.09
Q	07-Mar-84	Selenium	Homestake	None	0.07
Q	09-May-84	Selenium	Controls for	None	0.07
Q	09-May-84	Selenium	Homestake	None	0.16
Q	12-Sep-84	Selenium	Homestake	None	0.2
Q	12-Dec-84	Selenium	Homestake	None	0.14
Q	11-Mar-85	Selenium	Homestake	None	0.15
Q	29-May-85	Selenium	Homestake	None	0.15
Q	06-Sep-85	Selenium	Homestake	None	0.15
Q	16-Dec-85	Selenium	Homestake	None	0.16
Q	10-Mar-86	Selenium	Homestake	None	0.19
Q	30-Jun-86	Selenium	Homestake	None	0.2
Q	15-Sep-86	Selenium	Homestake	None	0.21
Q	15-Dec-86	Selenium	Homestake	None	0.2
Q	19-Mar-87	Selenium	Homestake	None	0.2
Q	19-Jun-87	Selenium	Homestake	None	0.16
Q	15-Sep-87	Selenium	Homestake	None	0.19
Q	08-Dec-87	Selenium	Homestake	None	0.22
Q	24-Feb-88	Selenium	Homestake	None	0.21
Q	12-May-88	Selenium	Homestake	None	0.17
Q	23-Aug-88	Selenium	Homestake	None	0.21
Q	03-Nov-88	Selenium	Homestake	None	0.23
Q	13-Dec-88	Selenium	Homestake	None	0.2
Q	13-Dec-88	Selenium	Barringer	None	0.215
Q	11-Jan-89	Selenium	Homestake	None	0.2
Q	11-Jan-89	Selenium	Barringer	None	0.158
Q	15-Feb-89	Selenium	Homestake	None	0.17
Q	15-Feb-89	Selenium	Barringer	None	0.19
Q	16-May-89	Selenium	Homestake	None	0.14
Q	15-Nov-89	Selenium	Homestake	None	0.15

Table 32. Selenium Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample_Date	Parameter Code	Lab_Code	Remark Code	Value
Q	13-Mar-90	Selenium	Homestake	None	0.2
Q	12-Sep-90	Selenium	Homestake	None	0.23
Q	27-Feb-91	Selenium	Homestake	None	0.23
Q	16-Sep-91	Selenium	Homestake	None	0.17
Q	09-Mar-92	Selenium	Homestake	None	0.25
Q	16-Sep-92	Selenium	Homestake	None	0.21
Q	03-Mar-93	Selenium	Homestake	None	0.2
Q	08-Sep-93	Selenium	Energy Laboratories	None	0.07
Q	01-Mar-94	Selenium	Energy Laboratories	None	0.081
Q	01-Mar-94	Selenium	Energy Laboratories	None	0.118
Q	01-Sep-94	Selenium	Energy Laboratories	None	0.138
Q	16-Mar-95	Selenium	Energy Laboratories	None	0.096
Q	05-Sep-95	Selenium	Energy Laboratories	None	0.155
Q	11-Mar-96	Selenium	Energy Laboratories	None	0.201
Q	17-Sep-96	Selenium	Energy Laboratories	None	0.294
Q	06-Mar-97	Selenium	Energy Laboratories	None	0.197
Q	09-Sep-97	Selenium	Energy Laboratories	None	0.207
Q	04-Mar-98	Selenium	Energy Laboratories	None	0.2
R	07-Jan-76	Selenium	Homestake	Less than	0.05
R	30-Mar-76	Selenium	Homestake	None	0.11
R	09-Apr-76	Selenium	Homestake	None	0.08
R	03-Jun-76	Selenium	Homestake	None	0.09
R	01-Sep-76	Selenium	Homestake	None	0.08
R	13-Jun-77	Selenium	Eberline	None	0.4
R	13-Jun-77	Selenium	Homestake	None	0.05
R	24-Aug-77	Selenium	Eberline	None	0.091
R	24-Aug-77	Selenium	Homestake	None	0.06
R	11-Oct-77	Selenium	Eberline	None	0.13
R	11-Oct-77	Selenium	Homestake	None	0.06
R	01-Feb-78	Selenium	Eberline	None	0.043
R	01-Feb-78	Selenium	NM Bureau of Mines	None	0.072
R	01-Feb-78	Selenium	Homestake	None	0.05
R	17-Apr-78	Selenium	Homestake	None	0.16
R	10-Jul-78	Selenium	Homestake	None	0.07
R	10-Jul-78	Selenium	NM EID	None	0.03097
R	23-Oct-78	Selenium	Homestake	None	0.08
R	23-Oct-78	Selenium	NM EID	Less than	0.096
R	31-Jan-79	Selenium	Homestake	None	0.05
R	31-Jan-79	Selenium	NM EID	None	0.067
R	30-Apr-79	Selenium	Homestake	None	0.03
R	30-Apr-79	Selenium	NM EID	None	0.0891
R	12-Jul-79	Selenium	Homestake	None	0.05
R	10-Sep-79	Selenium	Homestake	None	0.05
R	06-Nov-79	Selenium	Homestake	None	0.03
R	07-Jan-80	Selenium	NM EID	None	0.037
R	09-Jan-80	Selenium	Homestake	None	0.06
R	16-Apr-80	Selenium	Homestake	None	0.05
R	17-Apr-80	Selenium	NM EID	None	0.044
R	16-Jul-80	Selenium	Homestake	None	0.06
R	16-Jul-80	Selenium	NM EID	None	0.053
R	13-Oct-80	Selenium	Homestake	None	0.09
R	07-Jan-81	Selenium	Homestake	None	0.06

Table 32. Selenium Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample_Date	Parameter Code	Lab_Code	Remark Code	Value
R	15-Apr-81	Selenium	Homestake	None	0.1
R	15-Apr-81	Selenium	NM EID	None	0.047
R	07-Jul-81	Selenium	Homestake	None	0.11
R	28-Dec-81	Selenium	Homestake	None	0.08
R	28-Dec-81	Selenium	NM EID	None	0.048
R	24-Mar-82	Selenium	Homestake	None	0.07
R	24-Mar-82	Selenium	NM EID	None	0.04
R	22-May-82	Selenium	Homestake	None	0.04
R	25-Aug-82	Selenium	Homestake	None	0.06
R	18-Nov-82	Selenium	Homestake	None	0.07
R	23-Feb-83	Selenium	Homestake	None	0.07
R	26-May-83	Selenium	Homestake	None	0.05
R	28-Jun-83	Selenium	Homestake	None	0.04
R	28-Jun-83	Selenium	NM EID	None	0.045
R	12-Sep-83	Selenium	Homestake	None	0.03
R	20-Dec-83	Selenium	Homestake	None	0.05
R	07-Mar-84	Selenium	Homestake	None	0.09
R	09-May-84	Selenium	Controls for	None	0.03
R	09-May-84	Selenium	Homestake	None	0.06
R	12-Sep-84	Selenium	Homestake	None	0.1
R	12-Dec-84	Selenium	Homestake	None	0.1
R	11-Mar-85	Selenium	Controls for	None	0.02
R	11-Mar-85	Selenium	Homestake	None	0.1
R	29-May-85	Selenium	Homestake	None	0.1
R	05-Sep-85	Selenium	Controls for	None	0.03
R	05-Sep-85	Selenium	Homestake	None	0.1
R	16-Dec-85	Selenium	Homestake	None	0.09
R	10-Mar-86	Selenium	Controls for	None	0.02
R	10-Mar-86	Selenium	Homestake	None	0.1
R	30-Jun-86	Selenium	Homestake	None	0.1
R	15-Sep-86	Selenium	Controls for	None	0.05
R	15-Sep-86	Selenium	Homestake	None	0.09
R	15-Dec-86	Selenium	Homestake	None	0.1
R	19-Mar-87	Selenium	Controls for	None	0.04
R	19-Mar-87	Selenium	Homestake	None	0.09
R	19-Jun-87	Selenium	Homestake	None	0.09
R	15-Sep-87	Selenium	Controls for	None	0.04
R	15-Sep-87	Selenium	Homestake	None	0.09
R	08-Dec-87	Selenium	Homestake	None	0.11
R	24-Feb-88	Selenium	Homestake	None	0.09
R	24-Feb-88	Selenium	Barringer	None	0.066
R	12-May-88	Selenium	Homestake	None	0.09
R	22-Aug-88	Selenium	Homestake	None	0.1
R	22-Aug-88	Selenium	Barringer	None	0.142
R	03-Nov-88	Selenium	Homestake	None	0.12
R	13-Dec-88	Selenium	Homestake	None	0.1
R	13-Dec-88	Selenium	Barringer	None	0.074
R	11-Jan-89	Selenium	Homestake	None	0.09
R	11-Jan-89	Selenium	Barringer	None	0.091
R	15-Feb-89	Selenium	Homestake	None	0.09
R	15-Feb-89	Selenium	Barringer	None	0.099
R	16-May-89	Selenium	Homestake	None	0.11

Table 32. Selenium Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample_Date	Parameter Code	Lab_Code	Remark Code	Value
R	15-Nov-89	Selenium	Homestake	None	0.1
R	13-Mar-90	Selenium	Homestake	None	0.13
R	12-Sep-90	Selenium	Homestake	None	0.15
R	27-Feb-91	Selenium	Homestake	None	0.17
R	16-Sep-91	Selenium	Homestake	None	0.15
R	09-Mar-92	Selenium	Homestake	None	0.23
R	16-Sep-92	Selenium	Energy Laboratories	None	0.27
R	16-Sep-92	Selenium	Homestake	None	0.19
R	01-Jun-93	Selenium	Homestake	None	0.17
R	08-Sep-93	Selenium	Energy Laboratories	None	0.101
R	07-Mar-94	Selenium	Energy Laboratories	None	0.191
R	31-May-94	Selenium	Energy Laboratories	None	0.18
R	01-Sep-94	Selenium	Energy Laboratories	None	0.182
R	06-Jun-95	Selenium	Energy Laboratories	None	0.22
R	06-Jun-95	Selenium	Energy Laboratories	None	0.258
R	05-Sep-95	Selenium	Energy Laboratories	None	0.214
R	05-Sep-95	Selenium	Energy Laboratories	None	0.232
R	03-Jun-96	Selenium	Energy Laboratories	None	0.269
R	17-Sep-96	Selenium	Energy Laboratories	None	0.406
R	10-Oct-96	Selenium	Energy Laboratories	None	0.281
R	27-May-97	Selenium	Energy Laboratories	None	0.288
R	06-May-98	Selenium	Energy Laboratories	None	0.326

Table 33. Selenium Near Upgradient Background Data Set for Well DD
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Jun-76	Selenium	0.1
27-Aug-76	Selenium	0.11
15-Sep-81	Selenium	0.02
24-Mar-82	Selenium	0.005
26-May-82	Selenium	0.1
18-Nov-82	Selenium	0.04
04-Mar-83	Selenium	0.04
28-Jun-83	Selenium	0.025
14-Sep-83	Selenium	0.01
19-Dec-83	Selenium	0.01
07-Mar-84	Selenium	0.01
09-May-84	Selenium	0.02
12-Sep-84	Selenium	0.01
12-Dec-84	Selenium	0.01
13-Mar-85	Selenium	0.02
06-Jun-85	Selenium	0.1
04-Sep-85	Selenium	0.01
16-Dec-85	Selenium	0.01
20-Mar-86	Selenium	0.01
30-Jun-86	Selenium	0.01
15-Sep-86	Selenium	0.005
09-Dec-86	Selenium	0.01
19-Mar-87	Selenium	0.01
24-Jun-87	Selenium	0.01
15-Sep-87	Selenium	0.01
08-Dec-87	Selenium	0.01
24-Feb-88	Selenium	0.01
09-Jun-88	Selenium	0.01
11-Oct-88	Selenium	0.02
08-Dec-88	Selenium	0.005
13-Dec-88	Selenium	0.0245
11-Jan-89	Selenium	0.0205
15-Feb-89	Selenium	0.0235
29-Mar-89	Selenium	0.005
13-Jun-89	Selenium	0.005
15-Nov-89	Selenium	0.005
13-Mar-90	Selenium	0.005
12-Sep-90	Selenium	0.01
27-Feb-91	Selenium	0.02
16-Sep-91	Selenium	0.01
09-Mar-92	Selenium	0.01
22-Sep-92	Selenium	0.01
21-Oct-93	Selenium	0.02
09-Mar-94	Selenium	0.015
21-Oct-94	Selenium	0.016
10-Oct-95	Selenium	0.017
10-Oct-96	Selenium	0.021
14-Apr-97	Selenium	0.018
09-Sep-97	Selenium	0.023
01-Apr-98	Selenium	0.031

Table 34. Selenium Near Upgradient Background Data Set for Well ND
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
12-Jan-83	Selenium	0.04
06-Jan-84	Selenium	0.02
18-Dec-89	Selenium	0.005
17-Oct-90	Selenium	0.01
16-Sep-91	Selenium	0.01
18-Aug-92	Selenium	0.02
25-Aug-93	Selenium	0.045
14-Mar-94	Selenium	0.024
22-Aug-94	Selenium	0.059
22-Aug-95	Selenium	0.042
29-Jul-96	Selenium	0.05
11-Aug-97	Selenium	0.04
05-Aug-98	Selenium	0.044

Table 35. Selenium Near Upgradient Background Data Set for Well P
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
30-Mar-76	Selenium	0.16
09-Apr-76	Selenium	0.18
03-Jun-76	Selenium	0.14
27-Aug-76	Selenium	0.17
13-Jun-77	Selenium	0.36
24-Aug-77	Selenium	0.755
11-Oct-77	Selenium	0.165
01-Feb-78	Selenium	0.096
17-Apr-78	Selenium	0.22
11-Jul-78	Selenium	0.065
23-Oct-78	Selenium	0.145
30-Jan-79	Selenium	0.113
30-Apr-79	Selenium	0.14
12-Jul-79	Selenium	0.13
10-Sep-79	Selenium	0.12
06-Nov-79	Selenium	0.08
09-Jan-80	Selenium	0.12
16-Apr-80	Selenium	0.12
16-Jul-80	Selenium	0.145
13-Oct-80	Selenium	0.16
07-Jan-81	Selenium	0.0925
15-Apr-81	Selenium	0.123
07-Jul-81	Selenium	0.15
07-Oct-81	Selenium	0.17
28-Dec-81	Selenium	0.1015
24-Mar-82	Selenium	0.1025
22-May-82	Selenium	0.17
25-Aug-82	Selenium	0.05
18-Nov-82	Selenium	0.2
23-Feb-83	Selenium	0.1
26-May-83	Selenium	0.06
27-Jun-83	Selenium	0.076
12-Sep-83	Selenium	0.06
19-Dec-83	Selenium	0.05
07-Mar-84	Selenium	0.09
09-May-84	Selenium	0.08
12-Sep-84	Selenium	0.17
13-Dec-84	Selenium	0.14
11-Mar-85	Selenium	0.09
29-May-85	Selenium	0.12
04-Sep-85	Selenium	0.08
16-Dec-85	Selenium	0.12
10-Mar-86	Selenium	0.09
30-Jun-86	Selenium	0.13

Table 35. Selenium Near Upgradient Background Data Set for Well P (continued)
(corrected for non-detects and duplicates)

Sample Date	Parameter	Final Data Set
15-Sep-86	Selenium	0.1
16-Dec-86	Selenium	0.13
19-Mar-87	Selenium	0.065
24-Jun-87	Selenium	0.1
16-Sep-87	Selenium	0.08
08-Dec-87	Selenium	0.12
24-Feb-88	Selenium	0.091
12-May-88	Selenium	0.08
23-Aug-88	Selenium	0.121
12-Oct-88	Selenium	0.11
13-Dec-88	Selenium	0.102
11-Jan-89	Selenium	0.1
15-Feb-89	Selenium	0.1045
16-May-89	Selenium	0.08
10-Aug-89	Selenium	0.1
15-Nov-89	Selenium	0.05
13-Mar-90	Selenium	0.1
04-Jun-90	Selenium	0.07
12-Sep-90	Selenium	0.09
03-Dec-90	Selenium	0.102
03-Jun-91	Selenium	0.1
16-Sep-91	Selenium	0.11
18-Nov-91	Selenium	0.11
09-Mar-92	Selenium	0.13
04-Jun-92	Selenium	0.13
21-Sep-92	Selenium	0.13
03-Dec-92	Selenium	0.13
03-Mar-93	Selenium	0.09
01-Jun-93	Selenium	0.07
08-Sep-93	Selenium	0.085
24-Nov-93	Selenium	0.073
01-Mar-94	Selenium	0.009
31-May-94	Selenium	0.081
01-Sep-94	Selenium	0.057
28-Nov-94	Selenium	0.089
16-Mar-95	Selenium	0.03
06-Jun-95	Selenium	0.085
05-Sep-95	Selenium	0.062
05-Dec-95	Selenium	0.0615
11-Mar-96	Selenium	0.051
03-Jun-96	Selenium	0.055
17-Sep-96	Selenium	0.077
10-Oct-96	Selenium	0.065
06-Mar-97	Selenium	0.063
27-May-97	Selenium	0.059
09-Sep-97	Selenium	0.026
03-Nov-97	Selenium	0.061
04-Mar-98	Selenium	0.082
05-May-98	Selenium	0.182
16-Sep-98	Selenium	0.196
12-Nov-98	Selenium	0.164

Table 36. Selenium Near Upgradient Background Data Set for Well P1
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Sep-92	Selenium	0.24
21-Jan-93	Selenium	0.218
13-Apr-93	Selenium	0.24
13-Jul-93	Selenium	0.27
21-Oct-93	Selenium	0.144
04-Jan-94	Selenium	0.225
07-Mar-94	Selenium	0.171
12-Apr-94	Selenium	0.162
06-Jul-94	Selenium	0.292
21-Oct-94	Selenium	0.322
04-Jan-95	Selenium	0.242
12-Apr-95	Selenium	0.167
06-Jul-95	Selenium	0.294
03-Oct-95	Selenium	0.214
10-Jan-96	Selenium	0.222
09-Apr-96	Selenium	0.2565
19-Jul-96	Selenium	0.199
04-Nov-96	Selenium	0.2535
13-Jan-97	Selenium	0.237
14-Apr-97	Selenium	0.215
08-Jul-97	Selenium	0.232
03-Nov-97	Selenium	0.225
19-Jan-98	Selenium	0.243
01-Apr-98	Selenium	0.242
14-Jul-98	Selenium	0.252
28-Oct-98	Selenium	0.24

Table 37. Selenium Near Upgradient Background Data Set for Well P2
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Sep-92	Selenium	0.24
08-Feb-93	Selenium	0.175
04-May-93	Selenium	0.2325
12-Aug-93	Selenium	0.22
01-Nov-93	Selenium	0.176
02-Feb-94	Selenium	0.096
07-Mar-94	Selenium	0.194
29-Apr-94	Selenium	0.13
01-Aug-94	Selenium	0.31
01-Nov-94	Selenium	0.299
03-Feb-95	Selenium	0.294
05-May-95	Selenium	0.244
02-Aug-95	Selenium	0.248
06-Nov-95	Selenium	0.264
12-Feb-96	Selenium	0.221
14-May-96	Selenium	0.233
29-Jul-96	Selenium	0.236
03-Feb-97	Selenium	0.194
29-Apr-97	Selenium	0.233
28-Jul-97	Selenium	0.276
13-Oct-97	Selenium	0.217
10-Feb-98	Selenium	0.3
05-May-98	Selenium	0.21
04-Aug-98	Selenium	0.209
28-Oct-98	Selenium	0.236

Table 38. Selenium Near Upgradient Background Data Set for Wells P3 and P4
(corrected for non-detects and duplicates)

Name	Sample Date	Code	Final Data Set
P3	23-Apr-98	Selenium	0.173
P4	24-Apr-98	Selenium	0.104

Table 39. Selenium Near Upgradient Background Data Set for Well Q
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
07-Jan-76	Selenium	0.025
30-Mar-76	Selenium	0.19
09-Apr-76	Selenium	0.3
03-Jun-76	Selenium	0.18
27-Aug-76	Selenium	0.23
13-Jun-77	Selenium	0.295
24-Aug-77	Selenium	0.7
11-Oct-77	Selenium	0.235
01-Feb-78	Selenium	0.136666667
17-Apr-78	Selenium	0.22
10-Jul-78	Selenium	0.08
23-Oct-78	Selenium	0.215
30-Jan-79	Selenium	0.167
30-Apr-79	Selenium	0.1866
12-Jul-79	Selenium	0.18
10-Sep-79	Selenium	0.15
06-Nov-79	Selenium	0.14
09-Jan-80	Selenium	0.14
16-Apr-80	Selenium	0.1495
16-Jul-80	Selenium	0.1475
13-Oct-80	Selenium	0.2
07-Jan-81	Selenium	0.16
15-Apr-81	Selenium	0.163
07-Jul-81	Selenium	0.23
07-Oct-81	Selenium	0.2
28-Dec-81	Selenium	0.112
24-Mar-82	Selenium	0.128
22-May-82	Selenium	0.15
25-Aug-82	Selenium	0.04
18-Nov-82	Selenium	0.08
23-Feb-83	Selenium	0.09
26-May-83	Selenium	0.07
28-Jun-83	Selenium	0.074
21-Sep-83	Selenium	0.1
19-Dec-83	Selenium	0.09
07-Mar-84	Selenium	0.07
09-May-84	Selenium	0.115

Table 39. Selenium Near Upgradient Background Data Set for Well Q (continued)
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
12-Sep-84	Selenium	0.2
12-Dec-84	Selenium	0.14
11-Mar-85	Selenium	0.15
29-May-85	Selenium	0.15
06-Sep-85	Selenium	0.15
16-Dec-85	Selenium	0.16
10-Mar-86	Selenium	0.19
30-Jun-86	Selenium	0.2
15-Sep-86	Selenium	0.21
15-Dec-86	Selenium	0.2
19-Mar-87	Selenium	0.2
19-Jun-87	Selenium	0.16
15-Sep-87	Selenium	0.19
08-Dec-87	Selenium	0.22
24-Feb-88	Selenium	0.21
12-May-88	Selenium	0.17
23-Aug-88	Selenium	0.21
03-Nov-88	Selenium	0.23
13-Dec-88	Selenium	0.2075
11-Jan-89	Selenium	0.179
15-Feb-89	Selenium	0.18
16-May-89	Selenium	0.14
15-Nov-89	Selenium	0.15
13-Mar-90	Selenium	0.2
12-Sep-90	Selenium	0.23
27-Feb-91	Selenium	0.23
16-Sep-91	Selenium	0.17
09-Mar-92	Selenium	0.25
16-Sep-92	Selenium	0.21
03-Mar-93	Selenium	0.2
08-Sep-93	Selenium	0.07
01-Mar-94	Selenium	0.0995
01-Sep-94	Selenium	0.138
16-Mar-95	Selenium	0.096
05-Sep-95	Selenium	0.155
11-Mar-96	Selenium	0.201
17-Sep-96	Selenium	0.294
06-Mar-97	Selenium	0.197
09-Sep-97	Selenium	0.207
04-Mar-98	Selenium	0.2

Table 40. Selenium Near Upgradient Background Data Set for Well R
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
07-Jan-76	Selenium	0.025
30-Mar-76	Selenium	0.11
09-Apr-76	Selenium	0.08
03-Jun-76	Selenium	0.09
01-Sep-76	Selenium	0.08
13-Jun-77	Selenium	0.225
24-Aug-77	Selenium	0.0755
11-Oct-77	Selenium	0.095
01-Feb-78	Selenium	0.055
17-Apr-78	Selenium	0.16
10-Jul-78	Selenium	0.050485
23-Oct-78	Selenium	0.064
31-Jan-79	Selenium	0.0585
30-Apr-79	Selenium	0.05955
12-Jul-79	Selenium	0.05
10-Sep-79	Selenium	0.05
06-Nov-79	Selenium	0.03
07-Jan-80	Selenium	0.0485
16-Apr-80	Selenium	0.047
16-Jul-80	Selenium	0.0565
13-Oct-80	Selenium	0.09
07-Jan-81	Selenium	0.06
15-Apr-81	Selenium	0.0735
07-Jul-81	Selenium	0.11
28-Dec-81	Selenium	0.064
24-Mar-82	Selenium	0.055
22-May-82	Selenium	0.04
25-Aug-82	Selenium	0.06
18-Nov-82	Selenium	0.07
23-Feb-83	Selenium	0.07
26-May-83	Selenium	0.05
28-Jun-83	Selenium	0.0425
12-Sep-83	Selenium	0.03
20-Dec-83	Selenium	0.05
07-Mar-84	Selenium	0.09
09-May-84	Selenium	0.045

Table 40. Selenium Near Upgradient Background Data Set for Well R (continued)
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
12-Sep-84	Selenium	0.1
12-Dec-84	Selenium	0.1
11-Mar-85	Selenium	0.06
29-May-85	Selenium	0.1
05-Sep-85	Selenium	0.065
16-Dec-85	Selenium	0.09
10-Mar-86	Selenium	0.06
30-Jun-86	Selenium	0.1
15-Sep-86	Selenium	0.07
15-Dec-86	Selenium	0.1
19-Mar-87	Selenium	0.065
19-Jun-87	Selenium	0.09
15-Sep-87	Selenium	0.065
08-Dec-87	Selenium	0.11
24-Feb-88	Selenium	0.078
12-May-88	Selenium	0.09
22-Aug-88	Selenium	0.121
03-Nov-88	Selenium	0.12
13-Dec-88	Selenium	0.087
11-Jan-89	Selenium	0.0905
15-Feb-89	Selenium	0.0945
16-May-89	Selenium	0.11
15-Nov-89	Selenium	0.1
13-Mar-90	Selenium	0.13
12-Sep-90	Selenium	0.15
27-Feb-91	Selenium	0.17
16-Sep-91	Selenium	0.15
09-Mar-92	Selenium	0.23
16-Sep-92	Selenium	0.23
01-Jun-93	Selenium	0.17
08-Sep-93	Selenium	0.101
07-Mar-94	Selenium	0.191
31-May-94	Selenium	0.18
01-Sep-94	Selenium	0.182
06-Jun-95	Selenium	0.239
05-Sep-95	Selenium	0.223
03-Jun-96	Selenium	0.269
17-Sep-96	Selenium	0.406
10-Oct-96	Selenium	0.281
27-May-97	Selenium	0.288
06-May-98	Selenium	0.326

Table 41. Selenium Near Upgradient Background Groundwater Data Set Used in Statistical Analysis (all concentrations in mg/L)

Well ID								
DD	ND	P	P1	P2	P3	P4	Q	R
0.11	0.059	0.755	0.322	0.31	0.173	0.104	0.7	0.406
0.1	0.05	0.36	0.294	0.3			0.3	0.326
0.1	0.045	0.22	0.292	0.299			0.295	0.288
0.1	0.044	0.2	0.27	0.294			0.294	0.281
0.04	0.042	0.196	0.2565	0.276			0.25	0.269
0.04	0.04	0.182	0.2535	0.264			0.235	0.239
0.031	0.04	0.18	0.252	0.248			0.23	0.23
0.025	0.024	0.17	0.243	0.244			0.23	0.23
0.0245	0.02	0.17	0.242	0.24			0.23	0.225
0.0235	0.02	0.17	0.242	0.236			0.23	0.223
0.023	0.01	0.17	0.24	0.236			0.23	0.191
0.021	0.01	0.165	0.24	0.233			0.22	0.182
0.0205	0.005	0.164	0.24	0.233			0.22	0.18
0.02		0.16	0.237	0.2325			0.215	0.17
0.02		0.16	0.232	0.221			0.21	0.17
0.02		0.15	0.225	0.22			0.21	0.16
0.02		0.145	0.225	0.217			0.21	0.15
0.02		0.145	0.222	0.21			0.21	0.15
0.02		0.14	0.218	0.209			0.2075	0.13
0.018		0.14	0.215	0.194			0.207	0.121
0.017		0.14	0.214	0.194			0.201	0.12
0.016		0.13	0.199	0.176			0.2	0.11
0.015		0.13	0.171	0.175			0.2	0.11
0.01		0.13	0.167	0.13			0.2	0.11
0.01		0.13	0.162	0.096			0.2	0.11
0.01		0.13	0.144				0.2	0.101
0.01		0.13					0.2	0.1
0.01		0.13					0.2	0.1
0.01		0.123					0.2	0.1
0.01		0.121					0.2	0.1
0.01		0.12					0.197	0.1
0.01		0.12					0.19	0.1
0.01		0.12					0.19	0.095
0.01		0.12					0.19	0.0945
0.01		0.12					0.1866	0.0905
0.01		0.12					0.18	0.09
0.01		0.113					0.18	0.09
0.01		0.11					0.18	0.09
0.01		0.11					0.179	0.09
0.01		0.11					0.17	0.09
0.01		0.1045					0.17	0.09
0.01		0.1025					0.167	0.087
0.01		0.102					0.163	0.08
0.005		0.102					0.16	0.08
0.005		0.1015					0.16	0.078
0.005		0.1					0.16	0.0755

Table 41. Selenium Near Upgradient Background Groundwater Data Set Used in Statistical Analysis (continued) (all concentrations in mg/L)

Well ID								
DD	ND	P	P1	P2	P3	P4	Q	R
0.005		0.1					0.155	0.0735
0.005		0.1					0.15	0.07
0.005		0.1					0.15	0.07
0.005		0.1					0.15	0.07
		0.1					0.15	0.065
		0.1					0.15	0.065
		0.096					0.15	0.065
		0.0925					0.1495	0.064
		0.091					0.1475	0.064
		0.09					0.14	0.06
		0.09					0.14	0.06
		0.09					0.14	0.06
		0.09					0.14	0.06
		0.09					0.138	0.05955
		0.089					0.136666667	0.0585
		0.085					0.128	0.0565
		0.085					0.115	0.055
		0.082					0.112	0.055
		0.081					0.1	0.050485
		0.08					0.0995	0.05
		0.08					0.096	0.05
		0.08					0.09	0.05
		0.08					0.09	0.05
		0.08					0.08	0.0485
		0.08					0.08	0.047
		0.077					0.074	0.045
		0.076					0.07	0.0425
		0.073					0.07	0.04
		0.07					0.07	0.03
		0.07					0.04	0.03
		0.065					0.025	0.025
		0.065						
		0.065						
		0.063						
		0.062						
		0.0615						
		0.061						
		0.06						
		0.06						
		0.059						
		0.057						
		0.055						
		0.051						
		0.05						
		0.05						
		0.05						
		0.03						
		0.026						
		0.009						

Table 42. Selenium Near Upgradient Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
Selenium	0.755	0.7	1.1	**PASS**

Table 43. Selenium Near Upgradient Background Data Set, Coefficient of Variation Analysis

Parameter	Mean	Standard Deviation	Coefficient of Variation	Results
Selenium, normal	0.1267255	0.093143	0.73	**Pass**
Selenium, lognormal	-2.42326	0.998153	-0.41	**Pass**

Table 44. Selenium Near Upgradient Background Data Set, Studentized Range Test Analysis

Parameter	Range		Standard Deviation	Critical Values		W/S	Results
	Maximum	Minimum		Maximum	Minimum		
Selenium, normal	0.755	0.005[a]	0.09	6.94	5.47	8.05	**FAIL**

w = range of values
s = standard deviation
[a]Minimum value based on 0.5 of detection limit of 0.01

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis

Selenium - raw data			
Xi	Xi^2	Xi-Mean	abs(Xi-mean)
0.755	0.570025	0.628274516	0.628274516
0.7	0.49	0.573274516	0.573274516
0.406	0.164836	0.279274516	0.279274516
0.36	0.1296	0.233274516	0.233274516
0.326	0.106276	0.199274516	0.199274516
0.322	0.103684	0.195274516	0.195274516
0.31	0.0961	0.183274516	0.183274516
0.3	0.09	0.173274516	0.173274516
0.3	0.09	0.173274516	0.173274516
0.299	0.089401	0.172274516	0.172274516
0.295	0.087025	0.168274516	0.168274516
0.294	0.086436	0.167274516	0.167274516
0.294	0.086436	0.167274516	0.167274516
0.294	0.086436	0.167274516	0.167274516
0.292	0.085264	0.165274516	0.165274516
0.288	0.082944	0.161274516	0.161274516
0.281	0.078961	0.154274516	0.154274516
0.276	0.076176	0.149274516	0.149274516
0.27	0.0729	0.143274516	0.143274516
0.269	0.072361	0.142274516	0.142274516
0.264	0.069696	0.137274516	0.137274516
0.2565	0.0657923	0.129774516	0.129774516
0.2535	0.0642623	0.126774516	0.126774516
0.252	0.063504	0.125274516	0.125274516
0.25	0.0625	0.123274516	0.123274516
0.248	0.061504	0.121274516	0.121274516
0.244	0.059536	0.117274516	0.117274516
0.243	0.059049	0.116274516	0.116274516
0.242	0.058564	0.115274516	0.115274516
0.242	0.058564	0.115274516	0.115274516
0.24	0.0576	0.113274516	0.113274516
0.24	0.0576	0.113274516	0.113274516
0.24	0.0576	0.113274516	0.113274516
0.24	0.0576	0.113274516	0.113274516
0.239	0.057121	0.112274516	0.112274516
0.237	0.056169	0.110274516	0.110274516
0.236	0.055696	0.109274516	0.109274516
0.236	0.055696	0.109274516	0.109274516
0.235	0.055225	0.108274516	0.108274516
0.233	0.054289	0.106274516	0.106274516
0.233	0.054289	0.106274516	0.106274516
0.2325	0.0540563	0.105774516	0.105774516
0.232	0.053824	0.105274516	0.105274516
0.23	0.0529	0.103274516	0.103274516
0.23	0.0529	0.103274516	0.103274516
0.23	0.0529	0.103274516	0.103274516
0.23	0.0529	0.103274516	0.103274516

0.1267255 =mean
46.254802 = sum of Xi
9.0196 = sum of Xi^2
365 = count

3.1579379 = SSS
26.340378 = SAD

0.7758429 = alpha

-2.0 = Z

Critical value = 1.645

abs(Z)>critical value, thus failed test.

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - raw data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
0.23	0.0529	0.103274516	0.103274516
0.23	0.0529	0.103274516	0.103274516
0.23	0.0529	0.103274516	0.103274516
0.225	0.050625	0.098274516	0.098274516
0.225	0.050625	0.098274516	0.098274516
0.225	0.050625	0.098274516	0.098274516
0.223	0.049729	0.096274516	0.096274516
0.222	0.049284	0.095274516	0.095274516
0.221	0.048841	0.094274516	0.094274516
0.22	0.0484	0.093274516	0.093274516
0.22	0.0484	0.093274516	0.093274516
0.22	0.0484	0.093274516	0.093274516
0.22	0.0484	0.093274516	0.093274516
0.218	0.047524	0.091274516	0.091274516
0.217	0.047089	0.090274516	0.090274516
0.215	0.046225	0.088274516	0.088274516
0.215	0.046225	0.088274516	0.088274516
0.214	0.045796	0.087274516	0.087274516
0.21	0.0441	0.083274516	0.083274516
0.21	0.0441	0.083274516	0.083274516
0.21	0.0441	0.083274516	0.083274516
0.21	0.0441	0.083274516	0.083274516
0.21	0.0441	0.083274516	0.083274516
0.209	0.043681	0.082274516	0.082274516
0.2075	0.0430563	0.080774516	0.080774516
0.207	0.042849	0.080274516	0.080274516
0.201	0.040401	0.074274516	0.074274516
0.2	0.04	0.073274516	0.073274516
0.2	0.04	0.073274516	0.073274516
0.2	0.04	0.073274516	0.073274516
0.2	0.04	0.073274516	0.073274516
0.2	0.04	0.073274516	0.073274516
0.2	0.04	0.073274516	0.073274516
0.2	0.04	0.073274516	0.073274516
0.2	0.04	0.073274516	0.073274516
0.2	0.04	0.073274516	0.073274516
0.2	0.04	0.073274516	0.073274516
0.199	0.039601	0.072274516	0.072274516
0.197	0.038809	0.070274516	0.070274516
0.196	0.038416	0.069274516	0.069274516
0.194	0.037636	0.067274516	0.067274516
0.194	0.037636	0.067274516	0.067274516
0.191	0.036481	0.064274516	0.064274516
0.19	0.0361	0.063274516	0.063274516
0.19	0.0361	0.063274516	0.063274516
0.19	0.0361	0.063274516	0.063274516
0.1866	0.0348196	0.059874516	0.059874516
0.182	0.033124	0.055274516	0.055274516

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - raw data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
0.182	0.033124	0.055274516	0.055274516
0.18	0.0324	0.053274516	0.053274516
0.18	0.0324	0.053274516	0.053274516
0.18	0.0324	0.053274516	0.053274516
0.18	0.0324	0.053274516	0.053274516
0.18	0.0324	0.053274516	0.053274516
0.179	0.032041	0.052274516	0.052274516
0.176	0.030976	0.049274516	0.049274516
0.175	0.030625	0.048274516	0.048274516
0.173	0.029929	0.046274516	0.046274516
0.171	0.029241	0.044274516	0.044274516
0.17	0.0289	0.043274516	0.043274516
0.17	0.0289	0.043274516	0.043274516
0.17	0.0289	0.043274516	0.043274516
0.17	0.0289	0.043274516	0.043274516
0.17	0.0289	0.043274516	0.043274516
0.17	0.0289	0.043274516	0.043274516
0.17	0.0289	0.043274516	0.043274516
0.17	0.0289	0.043274516	0.043274516
0.167	0.027889	0.040274516	0.040274516
0.167	0.027889	0.040274516	0.040274516
0.165	0.027225	0.038274516	0.038274516
0.164	0.026896	0.037274516	0.037274516
0.163	0.026569	0.036274516	0.036274516
0.162	0.026244	0.035274516	0.035274516
0.16	0.0256	0.033274516	0.033274516
0.16	0.0256	0.033274516	0.033274516
0.16	0.0256	0.033274516	0.033274516
0.16	0.0256	0.033274516	0.033274516
0.16	0.0256	0.033274516	0.033274516
0.16	0.0256	0.033274516	0.033274516
0.155	0.024025	0.028274516	0.028274516
0.15	0.0225	0.023274516	0.023274516
0.15	0.0225	0.023274516	0.023274516
0.15	0.0225	0.023274516	0.023274516
0.15	0.0225	0.023274516	0.023274516
0.15	0.0225	0.023274516	0.023274516
0.15	0.0225	0.023274516	0.023274516
0.15	0.0225	0.023274516	0.023274516
0.15	0.0225	0.023274516	0.023274516
0.15	0.0225	0.023274516	0.023274516
0.1495	0.0223503	0.022774516	0.022774516
0.1475	0.0217563	0.020774516	0.020774516
0.145	0.021025	0.018274516	0.018274516
0.145	0.021025	0.018274516	0.018274516
0.144	0.020736	0.017274516	0.017274516
0.14	0.0196	0.013274516	0.013274516
0.14	0.0196	0.013274516	0.013274516

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - raw data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
0.14	0.0196	0.013274516	0.013274516
0.14	0.0196	0.013274516	0.013274516
0.14	0.0196	0.013274516	0.013274516
0.14	0.0196	0.013274516	0.013274516
0.14	0.0196	0.013274516	0.013274516
0.138	0.019044	0.011274516	0.011274516
0.1366667	0.0186778	0.009941183	0.009941183
0.13	0.0169	0.003274516	0.003274516
0.13	0.0169	0.003274516	0.003274516
0.13	0.0169	0.003274516	0.003274516
0.13	0.0169	0.003274516	0.003274516
0.13	0.0169	0.003274516	0.003274516
0.13	0.0169	0.003274516	0.003274516
0.13	0.0169	0.003274516	0.003274516
0.13	0.0169	0.003274516	0.003274516
0.13	0.0169	0.003274516	0.003274516
0.128	0.016384	0.001274516	0.001274516
0.123	0.015129	-0.00372548	0.003725484
0.121	0.014641	-0.00572548	0.005725484
0.121	0.014641	-0.00572548	0.005725484
0.12	0.0144	-0.00672548	0.006725484
0.12	0.0144	-0.00672548	0.006725484
0.12	0.0144	-0.00672548	0.006725484
0.12	0.0144	-0.00672548	0.006725484
0.12	0.0144	-0.00672548	0.006725484
0.12	0.0144	-0.00672548	0.006725484
0.12	0.0144	-0.00672548	0.006725484
0.115	0.013225	-0.01172548	0.011725484
0.113	0.012769	-0.01372548	0.013725484
0.112	0.012544	-0.01472548	0.014725484
0.11	0.0121	-0.01672548	0.016725484
0.11	0.0121	-0.01672548	0.016725484
0.11	0.0121	-0.01672548	0.016725484
0.11	0.0121	-0.01672548	0.016725484
0.11	0.0121	-0.01672548	0.016725484
0.11	0.0121	-0.01672548	0.016725484
0.11	0.0121	-0.01672548	0.016725484
0.11	0.0121	-0.01672548	0.016725484
0.1045	0.0109203	-0.02222548	0.022225484
0.104	0.010816	-0.02272548	0.022725484
0.1025	0.0105063	-0.02422548	0.024225484
0.102	0.010404	-0.02472548	0.024725484
0.102	0.010404	-0.02472548	0.024725484
0.1015	0.0103023	-0.02522548	0.025225484
0.101	0.010201	-0.02572548	0.025725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - raw data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.1	0.01	-0.02672548	0.026725484
0.0995	0.0099003	-0.02722548	0.027225484
0.096	0.009216	-0.03072548	0.030725484
0.096	0.009216	-0.03072548	0.030725484
0.096	0.009216	-0.03072548	0.030725484
0.095	0.009025	-0.03172548	0.031725484
0.0945	0.0089303	-0.03222548	0.032225484
0.0925	0.0085563	-0.03422548	0.034225484
0.091	0.008281	-0.03572548	0.035725484
0.0905	0.0081903	-0.03622548	0.036225484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.09	0.0081	-0.03672548	0.036725484
0.089	0.007921	-0.03772548	0.037725484
0.087	0.007569	-0.03972548	0.039725484
0.085	0.007225	-0.04172548	0.041725484
0.085	0.007225	-0.04172548	0.041725484
0.082	0.006724	-0.04472548	0.044725484
0.081	0.006561	-0.04572548	0.045725484
0.08	0.0064	-0.04672548	0.046725484
0.08	0.0064	-0.04672548	0.046725484
0.08	0.0064	-0.04672548	0.046725484
0.08	0.0064	-0.04672548	0.046725484
0.08	0.0064	-0.04672548	0.046725484
0.08	0.0064	-0.04672548	0.046725484

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - raw data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
0.08	0.0064	-0.04672548	0.046725484
0.08	0.0064	-0.04672548	0.046725484
0.08	0.0064	-0.04672548	0.046725484
0.08	0.0064	-0.04672548	0.046725484
0.078	0.006084	-0.04872548	0.048725484
0.077	0.005929	-0.04972548	0.049725484
0.076	0.005776	-0.05072548	0.050725484
0.0755	0.0057003	-0.05122548	0.051225484
0.074	0.005476	-0.05272548	0.052725484
0.0735	0.0054023	-0.05322548	0.053225484
0.073	0.005329	-0.05372548	0.053725484
0.07	0.0049	-0.05672548	0.056725484
0.07	0.0049	-0.05672548	0.056725484
0.07	0.0049	-0.05672548	0.056725484
0.07	0.0049	-0.05672548	0.056725484
0.07	0.0049	-0.05672548	0.056725484
0.07	0.0049	-0.05672548	0.056725484
0.07	0.0049	-0.05672548	0.056725484
0.07	0.0049	-0.05672548	0.056725484
0.065	0.004225	-0.06172548	0.061725484
0.065	0.004225	-0.06172548	0.061725484
0.065	0.004225	-0.06172548	0.061725484
0.065	0.004225	-0.06172548	0.061725484
0.065	0.004225	-0.06172548	0.061725484
0.065	0.004225	-0.06172548	0.061725484
0.064	0.004096	-0.06272548	0.062725484
0.064	0.004096	-0.06272548	0.062725484
0.063	0.003969	-0.06372548	0.063725484
0.062	0.003844	-0.06472548	0.064725484
0.0615	0.0037823	-0.06522548	0.065225484
0.061	0.003721	-0.06572548	0.065725484
0.06	0.0036	-0.06672548	0.066725484
0.06	0.0036	-0.06672548	0.066725484
0.06	0.0036	-0.06672548	0.066725484
0.06	0.0036	-0.06672548	0.066725484
0.06	0.0036	-0.06672548	0.066725484
0.06	0.0036	-0.06672548	0.066725484
0.05955	0.0035462	-0.06717548	0.067175484
0.059	0.003481	-0.06772548	0.067725484
0.059	0.003481	-0.06772548	0.067725484
0.0585	0.0034223	-0.06822548	0.068225484
0.057	0.003249	-0.06972548	0.069725484
0.0565	0.0031923	-0.07022548	0.070225484
0.055	0.003025	-0.07172548	0.071725484
0.055	0.003025	-0.07172548	0.071725484
0.055	0.003025	-0.07172548	0.071725484
0.051	0.002601	-0.07572548	0.075725484
0.050485	0.0025487	-0.07624048	0.076240484

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - raw data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
0.05	0.0025	-0.07672548	0.076725484
0.05	0.0025	-0.07672548	0.076725484
0.05	0.0025	-0.07672548	0.076725484
0.05	0.0025	-0.07672548	0.076725484
0.05	0.0025	-0.07672548	0.076725484
0.05	0.0025	-0.07672548	0.076725484
0.05	0.0025	-0.07672548	0.076725484
0.05	0.0025	-0.07672548	0.076725484
0.0485	0.0023523	-0.07822548	0.078225484
0.047	0.002209	-0.07972548	0.079725484
0.045	0.002025	-0.08172548	0.081725484
0.045	0.002025	-0.08172548	0.081725484
0.044	0.001936	-0.08272548	0.082725484
0.0425	0.0018063	-0.08422548	0.084225484
0.042	0.001764	-0.08472548	0.084725484
0.04	0.0016	-0.08672548	0.086725484
0.04	0.0016	-0.08672548	0.086725484
0.04	0.0016	-0.08672548	0.086725484
0.04	0.0016	-0.08672548	0.086725484
0.04	0.0016	-0.08672548	0.086725484
0.04	0.0016	-0.08672548	0.086725484
0.031	0.000961	-0.09572548	0.095725484
0.03	0.0009	-0.09672548	0.096725484
0.03	0.0009	-0.09672548	0.096725484
0.03	0.0009	-0.09672548	0.096725484
0.026	0.000676	-0.10072548	0.100725484
0.025	0.000625	-0.10172548	0.101725484
0.025	0.000625	-0.10172548	0.101725484
0.025	0.000625	-0.10172548	0.101725484
0.0245	0.0006003	-0.10222548	0.102225484
0.024	0.000576	-0.10272548	0.102725484
0.0235	0.0005523	-0.10322548	0.103225484
0.023	0.000529	-0.10372548	0.103725484
0.021	0.000441	-0.10572548	0.105725484
0.0205	0.0004203	-0.10622548	0.106225484
0.02	0.0004	-0.10672548	0.106725484
0.02	0.0004	-0.10672548	0.106725484
0.02	0.0004	-0.10672548	0.106725484
0.02	0.0004	-0.10672548	0.106725484
0.02	0.0004	-0.10672548	0.106725484
0.02	0.0004	-0.10672548	0.106725484
0.02	0.0004	-0.10672548	0.106725484
0.02	0.0004	-0.10672548	0.106725484
0.018	0.000324	-0.10872548	0.108725484
0.017	0.000289	-0.10972548	0.109725484
0.016	0.000256	-0.11072548	0.110725484
0.015	0.000225	-0.11172548	0.111725484
0.01	0.0001	-0.11672548	0.116725484

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - raw data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.01	0.0001	-0.11672548	0.116725484
0.009	0.000081	-0.11772548	0.117725484
0.005	0.000025	-0.12172548	0.121725484
0.005	0.000025	-0.12172548	0.121725484
0.005	0.000025	-0.12172548	0.121725484
0.005	0.000025	-0.12172548	0.121725484
0.005	0.000025	-0.12172548	0.121725484
0.005	0.000025	-0.12172548	0.121725484
0.005	0.000025	-0.12172548	0.121725484
0.005	0.000025	-0.12172548	0.121725484

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - lognormal data			
Xi	Xi^2	Xi-Mean	abs(Xi-mean)
-0.281038	0.0789821	2.142225983	2.142225983
-0.356675	0.127217	2.066588569	2.066588569
-0.901402	0.8125258	1.521861394	1.521861394
-1.021651	1.0437713	1.401612266	1.401612266
-1.120858	1.2563224	1.302405616	1.302405616
-1.133204	1.2841507	1.29005978	1.29005978
-1.171183	1.3716696	1.252080532	1.252080532
-1.203973	1.4495505	1.219290709	1.219290709
-1.203973	1.4495505	1.219290709	1.219290709
-1.207312	1.4576016	1.215951808	1.215951808
-1.22078	1.4903036	1.202483591	1.202483591
-1.224176	1.4986057	1.199088002	1.199088002
-1.224176	1.4986057	1.199088002	1.199088002
-1.224176	1.4986057	1.199088002	1.199088002
-1.231001	1.5153646	1.192262036	1.192262036
-1.244795	1.5495141	1.178468714	1.178468714
-1.269401	1.6113779	1.153862904	1.153862904
-1.287354	1.6572814	1.1359091	1.1359091
-1.309333	1.7143537	1.113930193	1.113930193
-1.313044	1.7240843	1.110219614	1.110219614
-1.331806	1.7737077	1.091457337	1.091457337
-1.360627	1.8513048	1.062636899	1.062636899
-1.372391	1.8834583	1.050872057	1.050872057
-1.378326	1.8997831	1.044937322	1.044937322
-1.386294	1.9218121	1.036969152	1.036969152
-1.394327	1.9441465	1.02893698	1.02893698
-1.410587	1.9897558	1.012676459	1.012676459
-1.414694	2.0013586	1.008569678	1.008569678
-1.418818	2.0130432	1.00444596	1.00444596
-1.418818	2.0130432	1.00444596	1.00444596
-1.427116	2.0366611	0.996147158	0.996147158
-1.427116	2.0366611	0.996147158	0.996147158
-1.427116	2.0366611	0.996147158	0.996147158
-1.427116	2.0366611	0.996147158	0.996147158
-1.431292	2.048596	0.991971786	0.991971786
-1.439695	2.0727221	0.983568375	0.983568375
-1.443923	2.084915	0.979340039	0.979340039
-1.443923	2.084915	0.979340039	0.979340039
-1.44817	2.0971957	0.975093748	0.975093748
-1.456717	2.1220239	0.966546688	0.966546688
-1.456717	2.1220239	0.966546688	0.966546688
-1.458865	2.1282872	0.964398459	0.964398459
-1.461018	2.1345733	0.962245606	0.962245606
-1.469676	2.1599475	0.953587543	0.953587543
-1.469676	2.1599475	0.953587543	0.953587543
-1.469676	2.1599475	0.953587543	0.953587543
-1.469676	2.1599475	0.953587543	0.953587543

-2.423264 =mean
-884.4912 = sum of Xi
2506.0121 = sum of Xi^2
365 = count

362.65693 = SSS
278.48302 = SAD

0.7654279 = alpha

-2.9 = Z

Critical value = 1.645

abs(Z)>critical value, thus failed test.

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - lognormal data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
-1.469676	2.1599475	0.953587543	0.953587543
-1.469676	2.1599475	0.953587543	0.953587543
-1.469676	2.1599475	0.953587543	0.953587543
-1.491655	2.2250343	0.931608636	0.931608636
-1.491655	2.2250343	0.931608636	0.931608636
-1.491655	2.2250343	0.931608636	0.931608636
-1.500584	2.2517509	0.922680006	0.922680006
-1.505078	2.2652595	0.918185616	0.918185616
-1.509593	2.2788697	0.913670936	0.913670936
-1.514128	2.2925828	0.909135781	0.909135781
-1.514128	2.2925828	0.909135781	0.909135781
-1.514128	2.2925828	0.909135781	0.909135781
-1.514128	2.2925828	0.909135781	0.909135781
-1.52326	2.3203217	0.900003297	0.900003297
-1.527858	2.3343498	0.895405588	0.895405588
-1.537117	2.3627294	0.886146262	0.886146262
-1.537117	2.3627294	0.886146262	0.886146262
-1.541779	2.3770833	0.881484249	0.881484249
-1.560648	2.4356214	0.862615765	0.862615765
-1.560648	2.4356214	0.862615765	0.862615765
-1.560648	2.4356214	0.862615765	0.862615765
-1.560648	2.4356214	0.862615765	0.862615765
-1.560648	2.4356214	0.862615765	0.862615765
-1.565421	2.450543	0.857842486	0.857842486
-1.572624	2.4731461	0.850639574	0.850639574
-1.575036	2.4807399	0.848227027	0.848227027
-1.60445	2.574261	0.818813142	0.818813142
-1.609438	2.5902904	0.813825601	0.813825601
-1.609438	2.5902904	0.813825601	0.813825601
-1.609438	2.5902904	0.813825601	0.813825601
-1.609438	2.5902904	0.813825601	0.813825601
-1.609438	2.5902904	0.813825601	0.813825601
-1.609438	2.5902904	0.813825601	0.813825601
-1.609438	2.5902904	0.813825601	0.813825601
-1.609438	2.5902904	0.813825601	0.813825601
-1.609438	2.5902904	0.813825601	0.813825601
-1.609438	2.5902904	0.813825601	0.813825601
-1.61445	2.6064503	0.808813059	0.808813059
-1.624552	2.6391677	0.798711963	0.798711963
-1.629641	2.6557285	0.793622893	0.793622893
-1.639897	2.6892626	0.783366393	0.783366393
-1.639897	2.6892626	0.783366393	0.783366393
-1.655482	2.7406202	0.767781662	0.767781662
-1.660731	2.7580281	0.762532306	0.762532306
-1.660731	2.7580281	0.762532306	0.762532306
-1.660731	2.7580281	0.762532306	0.762532306
-1.678788	2.8183291	0.744475523	0.744475523
-1.703749	2.9027593	0.719514921	0.719514921

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - lognormal data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
-1.703749	2.9027593	0.719514921	0.719514921
-1.714798	2.9405336	0.708465085	0.708465085
-1.714798	2.9405336	0.708465085	0.708465085
-1.714798	2.9405336	0.708465085	0.708465085
-1.714798	2.9405336	0.708465085	0.708465085
-1.714798	2.9405336	0.708465085	0.708465085
-1.720369	2.9596711	0.70289404	0.70289404
-1.737271	3.0181115	0.685992229	0.685992229
-1.742969	3.037942	0.680294208	0.680294208
-1.754464	3.0781428	0.668799829	0.668799829
-1.766092	3.11908	0.657171791	0.657171791
-1.771957	3.139831	0.651306671	0.651306671
-1.771957	3.139831	0.651306671	0.651306671
-1.771957	3.139831	0.651306671	0.651306671
-1.771957	3.139831	0.651306671	0.651306671
-1.771957	3.139831	0.651306671	0.651306671
-1.771957	3.139831	0.651306671	0.651306671
-1.771957	3.139831	0.651306671	0.651306671
-1.771957	3.139831	0.651306671	0.651306671
-1.789761	3.2032461	0.633502047	0.633502047
-1.789761	3.2032461	0.633502047	0.633502047
-1.80181	3.2465186	0.621453708	0.621453708
-1.807889	3.2684621	0.615374662	0.615374662
-1.814005	3.2906144	0.609258435	0.609258435
-1.820159	3.3129786	0.603104569	0.603104569
-1.832581	3.3583548	0.590682049	0.590682049
-1.832581	3.3583548	0.590682049	0.590682049
-1.832581	3.3583548	0.590682049	0.590682049
-1.832581	3.3583548	0.590682049	0.590682049
-1.832581	3.3583548	0.590682049	0.590682049
-1.832581	3.3583548	0.590682049	0.590682049
-1.86433	3.475727	0.558933351	0.558933351
-1.89712	3.5990642	0.526143528	0.526143528
-1.89712	3.5990642	0.526143528	0.526143528
-1.89712	3.5990642	0.526143528	0.526143528
-1.89712	3.5990642	0.526143528	0.526143528
-1.89712	3.5990642	0.526143528	0.526143528
-1.89712	3.5990642	0.526143528	0.526143528
-1.89712	3.5990642	0.526143528	0.526143528
-1.89712	3.5990642	0.526143528	0.526143528
-1.900459	3.611744	0.522804627	0.522804627
-1.913927	3.663117	0.50933641	0.50933641
-1.931022	3.7288442	0.492241977	0.492241977
-1.931022	3.7288442	0.492241977	0.492241977
-1.937942	3.7556191	0.485321534	0.485321534
-1.966113	3.8655998	0.457150657	0.457150657
-1.966113	3.8655998	0.457150657	0.457150657

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - lognormal data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
-1.966113	3.8655998	0.457150657	0.457150657
-1.966113	3.8655998	0.457150657	0.457150657
-1.966113	3.8655998	0.457150657	0.457150657
-1.966113	3.8655998	0.457150657	0.457150657
-1.966113	3.8655998	0.457150657	0.457150657
-1.980502	3.9223866	0.442761919	0.442761919
-1.99021	3.9609375	0.433053105	0.433053105
-2.040221	4.162501	0.383042685	0.383042685
-2.040221	4.162501	0.383042685	0.383042685
-2.040221	4.162501	0.383042685	0.383042685
-2.040221	4.162501	0.383042685	0.383042685
-2.040221	4.162501	0.383042685	0.383042685
-2.040221	4.162501	0.383042685	0.383042685
-2.040221	4.162501	0.383042685	0.383042685
-2.040221	4.162501	0.383042685	0.383042685
-2.040221	4.162501	0.383042685	0.383042685
-2.055725	4.2260053	0.367538498	0.367538498
-2.095571	4.3914175	0.32769259	0.32769259
-2.111965	4.460395	0.31129878	0.31129878
-2.111965	4.460395	0.31129878	0.31129878
-2.120264	4.4955175	0.302999977	0.302999977
-2.120264	4.4955175	0.302999977	0.302999977
-2.120264	4.4955175	0.302999977	0.302999977
-2.120264	4.4955175	0.302999977	0.302999977
-2.120264	4.4955175	0.302999977	0.302999977
-2.120264	4.4955175	0.302999977	0.302999977
-2.120264	4.4955175	0.302999977	0.302999977
-2.162823	4.677804	0.260440363	0.260440363
-2.180367	4.7540023	0.242896053	0.242896053
-2.189256	4.7928436	0.234007105	0.234007105
-2.207275	4.8720625	0.2159886	0.2159886
-2.207275	4.8720625	0.2159886	0.2159886
-2.207275	4.8720625	0.2159886	0.2159886
-2.207275	4.8720625	0.2159886	0.2159886
-2.207275	4.8720625	0.2159886	0.2159886
-2.207275	4.8720625	0.2159886	0.2159886
-2.207275	4.8720625	0.2159886	0.2159886
-2.207275	4.8720625	0.2159886	0.2159886
-2.258568	5.1011303	0.164695306	0.164695306
-2.263364	5.1228183	0.159899133	0.159899133
-2.277892	5.1887942	0.145371033	0.145371033
-2.282782	5.2110958	0.140481047	0.140481047
-2.282782	5.2110958	0.140481047	0.140481047
-2.287696	5.2335552	0.135567033	0.135567033
-2.292635	5.2561742	0.130628751	0.130628751
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - lognormal data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.302585	5.3018981	0.12067842	0.12067842
-2.307598	5.3250068	0.115665878	0.115665878
-2.343407	5.4915568	0.079856426	0.079856426
-2.343407	5.4915568	0.079856426	0.079856426
-2.343407	5.4915568	0.079856426	0.079856426
-2.353878	5.5407435	0.069385126	0.069385126
-2.359155	5.5656144	0.064108069	0.064108069
-2.380547	5.6670023	0.042716879	0.042716879
-2.396896	5.7451093	0.026367741	0.026367741
-2.402405	5.7715518	0.020858085	0.020858085
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.407946	5.7982021	0.015317905	0.015317905
-2.419119	5.8521363	0.004144604	0.004144604
-2.441847	5.9626176	-0.01858365	0.018583647
-2.465104	6.0767378	-0.04184051	0.041840509
-2.465104	6.0767378	-0.04184051	0.041840509
-2.501036	6.2551812	-0.07777252	0.077772519
-2.513306	6.3167077	-0.09004261	0.090042611
-2.525729	6.3793052	-0.10246513	0.102465131
-2.525729	6.3793052	-0.10246513	0.102465131
-2.525729	6.3793052	-0.10246513	0.102465131
-2.525729	6.3793052	-0.10246513	0.102465131
-2.525729	6.3793052	-0.10246513	0.102465131
-2.525729	6.3793052	-0.10246513	0.102465131

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - lognormal data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
-2.525729	6.3793052	-0.10246513	0.102465131
-2.525729	6.3793052	-0.10246513	0.102465131
-2.525729	6.3793052	-0.10246513	0.102465131
-2.525729	6.3793052	-0.10246513	0.102465131
-2.551046	6.507838	-0.12778294	0.127782939
-2.56395	6.5738389	-0.14068634	0.140686344
-2.577022	6.6410421	-0.15375843	0.153758426
-2.583623	6.6751059	-0.16035911	0.16035911
-2.60369	6.7792026	-0.18042667	0.180426673
-2.61047	6.814553	-0.18720636	0.18720636
-2.617296	6.8502375	-0.19403232	0.194032325
-2.65926	7.0716639	-0.23599652	0.235996524
-2.65926	7.0716639	-0.23599652	0.235996524
-2.65926	7.0716639	-0.23599652	0.235996524
-2.65926	7.0716639	-0.23599652	0.235996524
-2.65926	7.0716639	-0.23599652	0.235996524
-2.65926	7.0716639	-0.23599652	0.235996524
-2.65926	7.0716639	-0.23599652	0.235996524
-2.65926	7.0716639	-0.23599652	0.235996524
-2.733368	7.4713007	-0.3101045	0.310104496
-2.733368	7.4713007	-0.3101045	0.310104496
-2.733368	7.4713007	-0.3101045	0.310104496
-2.733368	7.4713007	-0.3101045	0.310104496
-2.733368	7.4713007	-0.3101045	0.310104496
-2.733368	7.4713007	-0.3101045	0.310104496
-2.748872	7.5562983	-0.32560868	0.325608682
-2.748872	7.5562983	-0.32560868	0.325608682
-2.764621	7.6431268	-0.34135704	0.341357039
-2.780621	7.7318526	-0.35735738	0.357357381
-2.788718	7.7769487	-0.36545459	0.365454591
-2.796881	7.8225456	-0.3736179	0.373617902
-2.813411	7.9152799	-0.3901472	0.390147204
-2.813411	7.9152799	-0.3901472	0.390147204
-2.813411	7.9152799	-0.3901472	0.390147204
-2.813411	7.9152799	-0.3901472	0.390147204
-2.813411	7.9152799	-0.3901472	0.390147204
-2.813411	7.9152799	-0.3901472	0.390147204
-2.820939	7.9576967	-0.39767547	0.39767547
-2.830218	8.010133	-0.40695432	0.406954322
-2.830218	8.010133	-0.40695432	0.406954322
-2.838729	8.0583796	-0.41546501	0.415465012
-2.864704	8.2065291	-0.4414405	0.441440498
-2.873515	8.2570864	-0.45025113	0.450251128
-2.900422	8.4124483	-0.47715858	0.477158581
-2.900422	8.4124483	-0.47715858	0.477158581
-2.900422	8.4124483	-0.47715858	0.477158581
-2.97593	8.8561573	-0.55266613	0.552666133
-2.986079	8.9166679	-0.5628155	0.562815503

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - lognormal data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
-2.995732	8.9744119	-0.57246876	0.57246876
-2.995732	8.9744119	-0.57246876	0.57246876
-2.995732	8.9744119	-0.57246876	0.57246876
-2.995732	8.9744119	-0.57246876	0.57246876
-2.995732	8.9744119	-0.57246876	0.57246876
-2.995732	8.9744119	-0.57246876	0.57246876
-2.995732	8.9744119	-0.57246876	0.57246876
-2.995732	8.9744119	-0.57246876	0.57246876
-3.026191	9.1578349	-0.60292797	0.602927968
-3.057608	9.3489647	-0.63434416	0.634344164
-3.101093	9.6167765	-0.67782928	0.677829276
-3.101093	9.6167765	-0.67782928	0.677829276
-3.123566	9.7566623	-0.70030213	0.700302132
-3.158251	9.9745507	-0.73498769	0.73498769
-3.170086	10.049443	-0.74682215	0.746822148
-3.218876	10.361162	-0.79561231	0.795612312
-3.218876	10.361162	-0.79561231	0.795612312
-3.218876	10.361162	-0.79561231	0.795612312
-3.218876	10.361162	-0.79561231	0.795612312
-3.218876	10.361162	-0.79561231	0.795612312
-3.218876	10.361162	-0.79561231	0.795612312
-3.473768	12.067065	-1.05050456	1.050504561
-3.506558	12.295948	-1.08329438	1.083294384
-3.506558	12.295948	-1.08329438	1.083294384
-3.506558	12.295948	-1.08329438	1.083294384
-3.649659	13.320009	-1.22639523	1.226395228
-3.688879	13.607832	-1.26561594	1.265615941
-3.688879	13.607832	-1.26561594	1.265615941
-3.688879	13.607832	-1.26561594	1.265615941
-3.709082	13.75729	-1.28581865	1.285818648
-3.729701	13.910673	-1.30643794	1.306437935
-3.750755	14.068162	-1.32749134	1.327491345
-3.772261	14.229954	-1.34899755	1.34899755
-3.863233	14.924568	-1.43996933	1.439969328
-3.88733	15.111338	-1.46406688	1.46406688
-3.912023	15.303924	-1.48875949	1.488759492
-3.912023	15.303924	-1.48875949	1.488759492
-3.912023	15.303924	-1.48875949	1.488759492
-3.912023	15.303924	-1.48875949	1.488759492
-3.912023	15.303924	-1.48875949	1.488759492
-3.912023	15.303924	-1.48875949	1.488759492
-3.912023	15.303924	-1.48875949	1.488759492
-3.912023	15.303924	-1.48875949	1.488759492
-4.017384	16.13937	-1.59412001	1.594120008
-4.074542	16.601892	-1.65127842	1.651278422
-4.135167	17.099602	-1.71190304	1.711903044
-4.199705	17.637523	-1.77644156	1.776441565
-4.60517	21.207592	-2.18190667	2.181906673

Table 45. Selenium Near Upgradient Background Data Set, Geary's Test Analysis (continued)

Selenium - lognormal data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.60517	21.207592	-2.18190667	2.181906673
-4.710531	22.189099	-2.28726719	2.287267188
-5.298317	28.072167	-2.87505385	2.875053853
-5.298317	28.072167	-2.87505385	2.875053853
-5.298317	28.072167	-2.87505385	2.875053853
-5.298317	28.072167	-2.87505385	2.875053853
-5.298317	28.072167	-2.87505385	2.875053853
-5.298317	28.072167	-2.87505385	2.875053853
-5.298317	28.072167	-2.87505385	2.875053853
-5.298317	28.072167	-2.87505385	2.875053853

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis

Selenium	Normal (xi-avg)^3
0.005	-0.001803618
0.005	-0.001803618
0.005	-0.001803618
0.005	-0.001803618
0.005	-0.001803618
0.005	-0.001803618
0.005	-0.001803618
0.005	-0.001803618
0.009	-0.001631592
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.01	-0.001590366
0.015	-0.001394623
0.016	-0.001357509
0.017	-0.00132106
0.018	-0.001285269
0.02	-0.001215638
0.02	-0.001215638
0.02	-0.001215638
0.02	-0.001215638
0.02	-0.001215638
0.02	-0.001215638
0.02	-0.001215638
0.02	-0.001215638
0.0205	-0.001198633
0.021	-0.001181787
0.023	-0.00111598
0.0235	-0.001099919

Normal	
standard deviation =	0.0931432
mean =	0.127
count =	365
sum of (xi-avg)^3 =	0.512824
1/n =	0.0027397
standard deviation cubed =	0.0008081
((n-1)/n)^(3/2) =	0.9958932
coef. of skewness =	1.7
acceptable range -1 to 1	**Fail**

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Normal (xi-avg)^3
0.024	-0.001084013
0.0245	-0.001068261
0.025	-0.001052663
0.025	-0.001052663
0.025	-0.001052663
0.026	-0.001021923
0.03	-0.000904946
0.03	-0.000904946
0.03	-0.000904946
0.031	-0.000877168
0.04	-0.000652289
0.04	-0.000652289
0.04	-0.000652289
0.04	-0.000652289
0.04	-0.000652289
0.04	-0.000652289
0.042	-0.000608194
0.0425	-0.00059749
0.044	-0.000566132
0.045	-0.000545849
0.045	-0.000545849
0.047	-0.000506747
0.0485	-0.000478679
0.05	-0.000451668
0.05	-0.000451668
0.05	-0.000451668
0.05	-0.000451668
0.05	-0.000451668
0.05	-0.000451668
0.05	-0.000451668
0.05	-0.000451668
0.050485	-0.000443156
0.051	-0.000434236
0.055	-0.000368995
0.055	-0.000368995
0.055	-0.000368995
0.0565	-0.000346325
0.057	-0.00033898
0.0585	-0.00031757
0.059	-0.000310639
0.059	-0.000310639
0.05955	-0.000303132
0.06	-0.000297081
0.06	-0.000297081
0.06	-0.000297081
0.06	-0.000297081
0.06	-0.000297081
0.06	-0.000297081
0.061	-0.000283924
0.0615	-0.000277493
0.062	-0.00027116
0.063	-0.000258785
0.064	-0.000246793
0.064	-0.000246793
0.065	-0.000235176
0.065	-0.000235176
0.065	-0.000235176
0.065	-0.000235176

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Normal (xi-avg)^3
0.065	-0.000235176
0.065	-0.000235176
0.07	-0.00018253
0.07	-0.00018253
0.07	-0.00018253
0.07	-0.00018253
0.07	-0.00018253
0.07	-0.00018253
0.07	-0.00018253
0.07	-0.00018253
0.073	-0.000155075
0.0735	-0.000150785
0.074	-0.000146576
0.0755	-0.000134418
0.076	-0.00013052
0.077	-0.000122952
0.078	-0.000115683
0.08	-0.000102014
0.08	-0.000102014
0.08	-0.000102014
0.08	-0.000102014
0.08	-0.000102014
0.08	-0.000102014
0.08	-0.000102014
0.08	-0.000102014
0.08	-0.000102014
0.08	-0.000102014
0.081	-9.56038E-05
0.082	-8.94675E-05
0.085	-7.26447E-05
0.085	-7.26447E-05
0.087	-6.26913E-05
0.089	-5.36914E-05
0.09	-4.95339E-05
0.09	-4.95339E-05
0.09	-4.95339E-05
0.09	-4.95339E-05
0.09	-4.95339E-05
0.09	-4.95339E-05
0.09	-4.95339E-05
0.09	-4.95339E-05
0.09	-4.95339E-05
0.09	-4.95339E-05
0.09	-4.95339E-05
0.0905	-4.75382E-05
0.091	-4.55968E-05
0.0925	-4.00912E-05
0.0945	-3.34656E-05
0.095	-3.19319E-05
0.096	-2.90066E-05
0.096	-2.90066E-05
0.096	-2.90066E-05
0.0995	-2.01803E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Normal (xi-avg)^3
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.1	-1.90887E-05
0.101	-1.70251E-05
0.1015	-1.60516E-05
0.102	-1.51159E-05
0.102	-1.51159E-05
0.1025	-1.42173E-05
0.104	-1.17365E-05
0.1045	-1.09788E-05
0.11	-4.67882E-06
0.11	-4.67882E-06
0.11	-4.67882E-06
0.11	-4.67882E-06
0.11	-4.67882E-06
0.11	-4.67882E-06
0.11	-4.67882E-06
0.11	-4.67882E-06
0.112	-3.19307E-06
0.113	-2.58573E-06
0.115	-1.6121E-06
0.12	-3.04208E-07
0.12	-3.04208E-07
0.12	-3.04208E-07
0.12	-3.04208E-07
0.12	-3.04208E-07
0.12	-3.04208E-07
0.12	-3.04208E-07
0.121	-1.87688E-07
0.121	-1.87688E-07
0.123	-5.17069E-08
0.128	2.07031E-09
0.13	3.51108E-08
0.13	3.51108E-08
0.13	3.51108E-08
0.13	3.51108E-08
0.13	3.51108E-08
0.13	3.51108E-08
0.13	3.51108E-08
0.13	3.51108E-08
0.13	3.51108E-08
0.1366667	9.82458E-07
0.138	1.43316E-06
0.14	2.33914E-06
0.14	2.33914E-06
0.14	2.33914E-06
0.14	2.33914E-06

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Normal (xi-avg)^3
0.14	2.33914E-06
0.14	2.33914E-06
0.14	2.33914E-06
0.144	5.15487E-06
0.145	6.10292E-06
0.145	6.10292E-06
0.1475	8.96588E-06
0.1495	1.18127E-05
0.15	1.26079E-05
0.15	1.26079E-05
0.15	1.26079E-05
0.15	1.26079E-05
0.15	1.26079E-05
0.15	1.26079E-05
0.15	1.26079E-05
0.15	1.26079E-05
0.15	1.26079E-05
0.155	2.2604E-05
0.16	3.68413E-05
0.16	3.68413E-05
0.16	3.68413E-05
0.16	3.68413E-05
0.16	3.68413E-05
0.16	3.68413E-05
0.162	4.38918E-05
0.163	4.77315E-05
0.164	5.17888E-05
0.165	5.60698E-05
0.167	6.53267E-05
0.167	6.53267E-05
0.17	8.10395E-05
0.17	8.10395E-05
0.17	8.10395E-05
0.17	8.10395E-05
0.17	8.10395E-05
0.17	8.10395E-05
0.17	8.10395E-05
0.17	8.10395E-05
0.171	8.67884E-05
0.173	9.9089E-05
0.175	0.0001125
0.176	0.000119637
0.179	0.000142847
0.18	0.000151202
0.18	0.000151202
0.18	0.000151202
0.18	0.000151202
0.18	0.000151202
0.182	0.000168879
0.182	0.000168879
0.1866	0.000214648
0.19	0.00025333
0.19	0.00025333
0.19	0.00025333
0.191	0.000265532
0.194	0.000304475
0.194	0.000304475
0.196	0.000332446

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Normal (xi-avg)^3
0.197	0.000347051
0.199	0.000377534
0.2	0.000393422
0.2	0.000393422
0.2	0.000393422
0.2	0.000393422
0.2	0.000393422
0.2	0.000393422
0.2	0.000393422
0.2	0.000393422
0.2	0.000393422
0.2	0.000393422
0.201	0.00040975
0.207	0.000517289
0.2075	0.000527015
0.209	0.000556924
0.21	0.000577479
0.21	0.000577479
0.21	0.000577479
0.21	0.000577479
0.21	0.000577479
0.214	0.000664756
0.215	0.000687869
0.215	0.000687869
0.217	0.000735691
0.218	0.000760411
0.22	0.000811501
0.22	0.000811501
0.22	0.000811501
0.22	0.000811501
0.221	0.000837882
0.222	0.000864829
0.223	0.000892348
0.225	0.000949124
0.225	0.000949124
0.225	0.000949124
0.23	0.001101487
0.23	0.001101487
0.23	0.001101487
0.23	0.001101487
0.23	0.001101487
0.23	0.001101487
0.23	0.001101487
0.232	0.001166728
0.2325	0.001183432
0.233	0.001200293
0.233	0.001200293
0.235	0.001269342
0.236	0.001304838
0.236	0.001304838
0.237	0.00134099
0.239	0.001415284
0.24	0.001453438
0.24	0.001453438
0.24	0.001453438
0.24	0.001453438
0.242	0.001531792
0.242	0.001531792

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Normal (xi-avg)^3
0.243	0.001572004
0.244	0.001612913
0.248	0.001783646
0.25	0.001873354
0.252	0.001966021
0.2535	0.002037492
0.2565	0.002185588
0.264	0.002586841
0.269	0.002879926
0.27	0.00294108
0.276	0.003326266
0.281	0.00367183
0.288	0.004194665
0.292	0.004514583
0.294	0.004680469
0.294	0.004680469
0.294	0.004680469
0.295	0.004764914
0.299	0.005112851
0.3	0.005202404
0.3	0.005202404
0.31	0.006156108
0.322	0.007446235
0.326	0.007913257
0.36	0.012694099
0.406	0.021781808
0.7	0.188403041
0.755	0.247998088

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	**Lognormal (xi-avg)^3**
-5.298317	-23.7650073
-5.298317	-23.7650073
-5.298317	-23.7650073
-5.298317	-23.7650073
-5.298317	-23.7650073
-5.298317	-23.7650073
-5.298317	-23.7650073
-5.298317	-23.7650073
-4.710531	-11.96604688
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.60517	-10.3874396
-4.199705	-5.605995933
-4.135167	-5.016923655
-4.074542	-4.502574602
-4.017384	-4.051007414
-3.912023	-3.299693723
-3.912023	-3.299693723
-3.912023	-3.299693723
-3.912023	-3.299693723
-3.912023	-3.299693723
-3.912023	-3.299693723
-3.912023	-3.299693723
-3.912023	-3.299693723
-3.88733	-3.138215392
-3.863233	-2.9857932
-3.772261	-2.454898173
-3.750755	-2.339349413

Lognormal

standard deviation = 0.9981534

mean = -2.423

count = 365

sum of (xi-avg)^3 = -391.1539

1/n = 0.0027397

standard deviation cubed = 0.9944705

((n-1)/n)^(3/2) = 0.9958932

coef. of skewness = -1.1

acceptable range -1 to 1 **Fail**

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Lognormal (xi-avg)^3
-3.729701	-2.229802243
-3.709082	-2.125882027
-3.688879	-2.027242997
-3.688879	-2.027242997
-3.688879	-2.027242997
-3.649659	-1.844553923
-3.506558	-1.271274908
-3.506558	-1.271274908
-3.506558	-1.271274908
-3.473768	-1.159294639
-3.218876	-0.503621758
-3.218876	-0.503621758
-3.218876	-0.503621758
-3.218876	-0.503621758
-3.218876	-0.503621758
-3.218876	-0.503621758
-3.170086	-0.416535064
-3.158251	-0.397045425
-3.123566	-0.343444326
-3.101093	-0.311430374
-3.101093	-0.311430374
-3.057608	-0.255255346
-3.026191	-0.219177662
-2.995732	-0.187609738
-2.995732	-0.187609738
-2.995732	-0.187609738
-2.995732	-0.187609738
-2.995732	-0.187609738
-2.995732	-0.187609738
-2.995732	-0.187609738
-2.995732	-0.187609738
-2.986079	-0.178278165
-2.97593	-0.168806263
-2.900422	-0.108639614
-2.900422	-0.108639614
-2.900422	-0.108639614
-2.873515	-0.091277645
-2.864704	-0.086023383
-2.838729	-0.071713904
-2.830218	-0.067396446
-2.830218	-0.067396446
-2.820939	-0.062890697
-2.813411	-0.059386194
-2.813411	-0.059386194
-2.813411	-0.059386194
-2.813411	-0.059386194
-2.813411	-0.059386194
-2.813411	-0.059386194
-2.796881	-0.052153449
-2.788718	-0.04880904
-2.780621	-0.045636073
-2.764621	-0.039776502
-2.748872	-0.034521363

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Lognormal (xi-avg)^3
-2.748872	-0.034521363
-2.733368	-0.029821136
-2.733368	-0.029821136
-2.733368	-0.029821136
-2.733368	-0.029821136
-2.733368	-0.029821136
-2.733368	-0.029821136
-2.65926	-0.013143675
-2.65926	-0.013143675
-2.65926	-0.013143675
-2.65926	-0.013143675
-2.65926	-0.013143675
-2.65926	-0.013143675
-2.65926	-0.013143675
-2.65926	-0.013143675
-2.617296	-0.007305034
-2.61047	-0.006560875
-2.60369	-0.005873571
-2.583623	-0.004123642
-2.577022	-0.003635103
-2.56395	-0.002784555
-2.551046	-0.002086501
-2.525729	-0.001075792
-2.525729	-0.001075792
-2.525729	-0.001075792
-2.525729	-0.001075792
-2.525729	-0.001075792
-2.525729	-0.001075792
-2.525729	-0.001075792
-2.525729	-0.001075792
-2.525729	-0.001075792
-2.525729	-0.001075792
-2.513306	-0.000730036
-2.501036	-0.000470412
-2.465104	-7.32472E-05
-2.465104	-7.32472E-05
-2.441847	-6.4179E-06
-2.419119	7.11949E-08
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.407946	3.59417E-06
-2.402405	9.07451E-06
-2.396896	1.83324E-05

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Lognormal (xi-avg)^3
-2.380547	7.79468E-05
-2.359155	0.000263474
-2.353878	0.000334041
-2.343407	0.000509248
-2.343407	0.000509248
-2.343407	0.000509248
-2.307598	0.001547447
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.302585	0.001757474
-2.292635	0.002229032
-2.287696	0.002491508
-2.282782	0.002772383
-2.282782	0.002772383
-2.277892	0.003072088
-2.263364	0.004088258
-2.258568	0.004467285
-2.207275	0.0100761
-2.207275	0.0100761
-2.207275	0.0100761
-2.207275	0.0100761
-2.207275	0.0100761
-2.207275	0.0100761
-2.207275	0.0100761
-2.207275	0.0100761
-2.189256	0.012814071
-2.180367	0.014330501
-2.162823	0.017665457
-2.120264	0.027818121
-2.120264	0.027818121
-2.120264	0.027818121
-2.120264	0.027818121
-2.120264	0.027818121
-2.120264	0.027818121
-2.120264	0.027818121
-2.111965	0.030167009
-2.111965	0.030167009
-2.095571	0.035188428
-2.055725	0.049648772

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Lognormal (xi-avg)^3
-2.040221	0.056200673
-2.040221	0.056200673
-2.040221	0.056200673
-2.040221	0.056200673
-2.040221	0.056200673
-2.040221	0.056200673
-2.040221	0.056200673
-2.040221	0.056200673
-2.040221	0.056200673
-1.99021	0.081212611
-1.980502	0.086798213
-1.966113	0.095538418
-1.966113	0.095538418
-1.966113	0.095538418
-1.966113	0.095538418
-1.966113	0.095538418
-1.966113	0.095538418
-1.966113	0.095538418
-1.937942	0.114311174
-1.931022	0.119271296
-1.931022	0.119271296
-1.913927	0.132133874
-1.900459	0.142895406
-1.89712	0.145650741
-1.89712	0.145650741
-1.89712	0.145650741
-1.89712	0.145650741
-1.89712	0.145650741
-1.89712	0.145650741
-1.89712	0.145650741
-1.89712	0.145650741
-1.89712	0.145650741
-1.86433	0.174614407
-1.832581	0.206092088
-1.832581	0.206092088
-1.832581	0.206092088
-1.832581	0.206092088
-1.832581	0.206092088
-1.832581	0.206092088
-1.820159	0.219370314
-1.814005	0.226154197
-1.807889	0.233033754
-1.80181	0.24000835
-1.789761	0.254240109
-1.789761	0.254240109
-1.771957	0.276284537
-1.771957	0.276284537
-1.771957	0.276284537
-1.771957	0.276284537
-1.771957	0.276284537
-1.771957	0.276284537
-1.771957	0.276284537
-1.771957	0.276284537

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Lognormal (xi-avg)^3
-1.766092	0.283815911
-1.754464	0.299149623
-1.742969	0.314840302
-1.737271	0.322817885
-1.720369	0.347271852
-1.714798	0.355594763
-1.714798	0.355594763
-1.714798	0.355594763
-1.714798	0.355594763
-1.714798	0.355594763
-1.703749	0.372494114
-1.703749	0.372494114
-1.678788	0.412620945
-1.660731	0.443378617
-1.660731	0.443378617
-1.660731	0.443378617
-1.655482	0.452598599
-1.639897	0.480722897
-1.639897	0.480722897
-1.629641	0.499853298
-1.624552	0.509530948
-1.61445	0.529108166
-1.609438	0.539006549
-1.609438	0.539006549
-1.609438	0.539006549
-1.609438	0.539006549
-1.609438	0.539006549
-1.609438	0.539006549
-1.609438	0.539006549
-1.609438	0.539006549
-1.609438	0.539006549
-1.609438	0.539006549
-1.609438	0.539006549
-1.60445	0.548977334
-1.575036	0.610290092
-1.572624	0.61551232
-1.565421	0.631280908
-1.560648	0.64187753
-1.560648	0.64187753
-1.560648	0.64187753
-1.560648	0.64187753
-1.560648	0.64187753
-1.541779	0.684926027
-1.537117	0.695850959
-1.537117	0.695850959
-1.527858	0.717892474
-1.52326	0.729008012
-1.514128	0.751426058
-1.514128	0.751426058
-1.514128	0.751426058
-1.514128	0.751426058
-1.509593	0.762727544
-1.505078	0.774089996
-1.500584	0.785512913

Table 46. Selenium Near Upgradient Background Data Set, Coefficient of Skewness Analysis (continued)

Selenium	Lognormal (xi-avg)^3
-1.491655	0.808538153
-1.491655	0.808538153
-1.491655	0.808538153
-1.469676	0.867125
-1.469676	0.867125
-1.469676	0.867125
-1.469676	0.867125
-1.469676	0.867125
-1.469676	0.867125
-1.469676	0.867125
-1.461018	0.890959185
-1.458865	0.896952663
-1.456717	0.902959997
-1.456717	0.902959997
-1.44817	0.927126759
-1.443923	0.939291801
-1.443923	0.939291801
-1.439695	0.951510684
-1.431292	0.976108198
-1.427116	0.988485949
-1.427116	0.988485949
-1.427116	0.988485949
-1.427116	0.988485949
-1.418818	1.013397269
-1.418818	1.013397269
-1.414694	1.02592998
-1.410587	1.038513493
-1.394327	1.089347218
-1.386294	1.115058137
-1.378326	1.140960798
-1.372391	1.160511725
-1.360627	1.199926588
-1.331806	1.300230335
-1.313044	1.368442919
-1.309333	1.38220967
-1.287354	1.465651565
-1.269401	1.536252608
-1.244795	1.636643811
-1.231001	1.694787088
-1.224176	1.72406316
-1.224176	1.72406316
-1.224176	1.72406316
-1.22078	1.738751332
-1.207312	1.797831924
-1.203973	1.812682714
-1.203973	1.812682714
-1.171183	1.962893733
-1.133204	2.146987452
-1.120858	2.209219054
-1.021651	2.753491044
-0.901402	3.524725498
-0.356675	8.825962312
-0.281038	9.830958163

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis

Selenium - raw data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (normal)	Mi^2
0.005	1	0.00273224	-2.778324	-0.013891622	7.7190866
0.005	2	0.00546448	-2.544948	-0.01272474	6.4767607
0.005	3	0.00819672	-2.400047	-0.012000237	5.7602274
0.005	4	0.01092896	-2.292836	-0.011464181	5.2570976
0.005	5	0.0136612	-2.206871	-0.011034354	4.8702783
0.005	6	0.01639344	-2.134675	-0.010673375	4.5568374
0.005	7	0.01912568	-2.072147	-0.010360736	4.2937942
0.005	8	0.02185792	-2.016805	-0.010084023	4.0675004
0.009	9	0.02459016	-1.967019	-0.017703169	3.8691628
0.01	10	0.0273224	-1.92169	-0.019216895	3.6928907
0.01	11	0.03005464	-1.879989	-0.018799892	3.5343594
0.01	12	0.03278689	-1.841327	-0.018413266	3.3904836
0.01	13	0.03551913	-1.805229	-0.018052287	3.2588508
0.01	14	0.03825137	-1.77135	-0.017713501	3.1376811
0.01	15	0.04098361	-1.739381	-0.017393813	3.0254474
0.01	16	0.04371585	-1.709104	-0.017091043	2.9210373
0.01	17	0.04644809	-1.680314	-0.016803142	2.8234558
0.01	18	0.04918033	-1.652852	-0.01652852	2.7319198
0.01	19	0.05191257	-1.626586	-0.016265858	2.6457814
0.01	20	0.05464481	-1.601393	-0.016013928	2.5644589
0.01	21	0.05737705	-1.577182	-0.01577182	2.4875032
0.01	22	0.06010929	-1.553858	-0.015538581	2.4144749
0.01	23	0.06284153	-1.531348	-0.015313481	2.3450269
0.01	24	0.06557377	-1.509593	-0.015095929	2.2788709
0.01	25	0.06830601	-1.488529	-0.014885291	2.2157187
0.01	26	0.07103825	-1.468102	-0.014681018	2.1553229
0.01	27	0.07377049	-1.44827	-0.014482703	2.0974868
0.01	28	0.07650273	-1.428998	-0.014289981	2.0420355
0.01	29	0.07923497	-1.410235	-0.014102352	1.9887633
0.01	30	0.08196721	-1.391959	-0.013919589	1.9375496
0.01	31	0.08469945	-1.374137	-0.013741374	1.8882535
0.015	32	0.08743169	-1.356743	-0.020351149	1.8407523
0.016	33	0.09016393	-1.339745	-0.021435917	1.7949162
0.017	34	0.09289617	-1.323128	-0.022493182	1.7506686
0.018	35	0.09562842	-1.306871	-0.02352368	1.7079121
0.02	36	0.09836066	-1.29095	-0.025819008	1.666553
0.02	37	0.1010929	-1.275348	-0.025506961	1.6265126
0.02	38	0.10382514	-1.260055	-0.025201098	1.5877383
0.02	39	0.10655738	-1.245048	-0.024900964	1.5501451
0.02	40	0.10928962	-1.230314	-0.024606288	1.5136735
0.02	41	0.11202186	-1.215847	-0.024316932	1.478283
0.02	42	0.1147541	-1.201627	-0.024032533	1.4439067
0.02	43	0.11748634	-1.187645	-0.023752909	1.4105018
0.0205	44	0.12021858	-1.173894	-0.024064825	1.3780269
0.021	45	0.12295082	-1.160361	-0.024367573	1.3464368
0.023	46	0.12568306	-1.147037	-0.02638184	1.3156928
0.0235	47	0.1284153	-1.133915	-0.026646998	1.2857628
0.024	48	0.13114754	-1.120984	-0.026903617	1.2566052
0.0245	49	0.13387978	-1.108237	-0.027151818	1.2281903
0.025	50	0.13661202	-1.095668	-0.027391707	1.200489
0.025	51	0.13934426	-1.08327	-0.02708174	1.173473
0.025	52	0.1420765	-1.071037	-0.026775922	1.14712
0.026	53	0.14480874	-1.058961	-0.027532988	1.1213985
0.03	54	0.14754098	-1.047038	-0.031411128	1.0962877
0.03	55	0.15027322	-1.035262	-0.031057857	1.0717672
0.03	56	0.15300546	-1.023627	-0.030708816	1.0478126
0.031	57	0.1557377	-1.012131	-0.031376067	1.0244095

Selenium - normal
982.92282 = (sum of Mi*Xi)^2
364 = count -1
0.0086757 = standard deviation ^2
354.90912 = sum of Mi^2

0.88 = W statistic

FAIL

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - raw data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (normal)	Mi^2
0.04	58	0.15846995	-1.000767	-0.040030682	1.0015347
0.04	59	0.16120219	-0.98953	-0.039581209	0.9791701
0.04	60	0.16393443	-0.978416	-0.039136648	0.9572983
0.04	61	0.16666667	-0.96742	-0.038696817	0.9359023
0.04	62	0.16939891	-0.956543	-0.038261715	0.9149742
0.04	63	0.17213115	-0.945777	-0.037831069	0.8944936
0.042	64	0.17486339	-0.93512	-0.039275028	0.8744489
0.0425	65	0.17759563	-0.924567	-0.03929411	0.8548247
0.044	66	0.18032787	-0.914117	-0.040221157	0.8356103
0.045	67	0.18306011	-0.903765	-0.04066942	0.816791
0.045	68	0.18579235	-0.893508	-0.040207863	0.7983567
0.047	69	0.18852459	-0.883347	-0.041517296	0.7803014
0.0485	70	0.19125683	-0.873274	-0.042353793	0.7626076
0.05	71	0.19398907	-0.86329	-0.043164505	0.7452698
0.05	72	0.19672131	-0.85339	-0.042669512	0.7282749
0.05	73	0.19945355	-0.843575	-0.042178726	0.711618
0.05	74	0.20218579	-0.833838	-0.041691919	0.6952865
0.05	75	0.20491803	-0.824182	-0.041209091	0.6792757
0.05	76	0.20765027	-0.8146	-0.040730015	0.6635736
0.05	77	0.21038251	-0.805094	-0.04025469	0.648176
0.05	78	0.21311475	-0.79566	-0.039783004	0.6330749
0.050485	79	0.21584699	-0.786297	-0.039696195	0.6182627
0.051	80	0.21857923	-0.777	-0.039626975	0.6037282
0.055	81	0.22131148	-0.76777	-0.042227373	0.5894714
0.055	82	0.22404372	-0.758607	-0.041723399	0.575485
0.055	83	0.22677596	-0.749505	-0.041222802	0.5617585
0.0565	84	0.2295082	-0.740467	-0.041836407	0.5482919
0.057	85	0.23224044	-0.731488	-0.041694839	0.5350753
0.0585	86	0.23497268	-0.722569	-0.042270259	0.5221053
0.059	87	0.23770492	-0.713704	-0.042108558	0.5093739
0.059	88	0.24043716	-0.704897	-0.041588926	0.4968798
0.05955	89	0.2431694	-0.696143	-0.041455325	0.4846153
0.06	90	0.24590164	-0.687444	-0.041246631	0.472579
0.06	91	0.24863388	-0.678795	-0.040727673	0.460762
0.06	92	0.25136612	-0.670198	-0.040211853	0.4491648
0.06	93	0.25409836	-0.661648	-0.039698898	0.4377785
0.06	94	0.2568306	-0.653147	-0.039188808	0.4266007
0.06	95	0.25956284	-0.644693	-0.038681583	0.4156291
0.061	96	0.26229508	-0.636285	-0.038813371	0.4048583
0.0615	97	0.26502732	-0.627922	-0.038617201	0.394286
0.062	98	0.26775956	-0.619602	-0.038415346	0.3839071
0.063	99	0.2704918	-0.611326	-0.038513535	0.3737194
0.064	100	0.27322404	-0.60309	-0.038597791	0.3637181
0.064	101	0.27595628	-0.594896	-0.03807334	0.3539012
0.065	102	0.27868852	-0.586742	-0.038138251	0.3442665
0.065	103	0.28142077	-0.578625	-0.03761063	0.334807
0.065	104	0.28415301	-0.570549	-0.03708567	0.3255259
0.065	105	0.28688525	-0.562507	-0.036562926	0.3164136
0.065	106	0.28961749	-0.554503	-0.036042695	0.3074736
0.065	107	0.29234973	-0.546534	-0.035524681	0.2986989
0.07	108	0.29508197	-0.538598	-0.037701875	0.290088
0.07	109	0.29781421	-0.530697	-0.037148789	0.2816393
0.07	110	0.30054645	-0.52283	-0.03659809	0.2733511
0.07	111	0.30327869	-0.514995	-0.036049619	0.2652194
0.07	112	0.30601093	-0.507189	-0.035503217	0.2572405
0.07	113	0.30874317	-0.499416	-0.034959123	0.2494164
0.07	114	0.31147541	-0.491673	-0.034417099	0.2417422
0.07	115	0.31420765	-0.483958	-0.033877063	0.2342154
0.073	116	0.31693989	-0.476273	-0.034767916	0.2268358
0.0735	117	0.31967213	-0.468616	-0.034443277	0.219601
0.074	118	0.32240437	-0.460986	-0.034113	0.2125085
0.0755	119	0.32513661	-0.453383	-0.034230425	0.2055562
0.076	120	0.32786885	-0.445806	-0.033881247	0.1987429
0.077	121	0.33060109	-0.438254	-0.033745532	0.1920663
0.078	122	0.33333333	-0.430728	-0.033596752	0.1855263

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - raw data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (normal)	Mi^2
0.08	123	0.33606557	-0.423224	-0.033857941	0.1791188
0.08	124	0.33879781	-0.415746	-0.033259676	0.1728447
0.08	125	0.34153005	-0.40829	-0.032663229	0.166701
0.08	126	0.3442623	-0.400858	-0.032068601	0.1606867
0.08	127	0.34699454	-0.393447	-0.031475793	0.1548009
0.08	128	0.34972678	-0.386058	-0.030884621	0.1490406
0.08	129	0.35245902	-0.378691	-0.030295269	0.1434068
0.08	130	0.35519126	-0.371342	-0.029707371	0.137895
0.08	131	0.3579235	-0.364015	-0.029121202	0.1325069
0.08	132	0.36065574	-0.356706	-0.028536488	0.1272392
0.081	133	0.36338798	-0.349418	-0.028302828	0.1220927
0.082	134	0.36612022	-0.342147	-0.028056083	0.1170648
0.085	135	0.36885246	-0.334894	-0.028466002	0.1121541
0.085	136	0.3715847	-0.327659	-0.027851024	0.1073605
0.087	137	0.37431694	-0.320441	-0.027878378	0.1026825
0.089	138	0.37704918	-0.31324	-0.027878378	0.0981194
0.09	139	0.37978142	-0.306055	-0.027544968	0.0936698
0.09	140	0.38251366	-0.298886	-0.02689975	0.0893329
0.09	141	0.3852459	-0.291732	-0.026255861	0.0851074
0.09	142	0.38797814	-0.284592	-0.025613303	0.0809928
0.09	143	0.39071038	-0.277469	-0.024972178	0.0769888
0.09	144	0.39344262	-0.270358	-0.024332178	0.0730932
0.09	145	0.39617486	-0.26326	-0.023693406	0.0693059
0.09	146	0.3989071	-0.256177	-0.023055964	0.0656268
0.09	147	0.40163934	-0.249106	-0.022419545	0.0620538
0.09	148	0.40437158	-0.242048	-0.021784354	0.0585874
0.09	149	0.40710383	-0.235002	-0.021150186	0.055226
0.09	150	0.40983607	-0.227967	-0.020517041	0.051969
0.09	151	0.41256831	-0.220944	-0.019884919	0.0488161
0.0905	152	0.41530055	-0.213931	-0.019360787	0.0457666
0.091	153	0.41803279	-0.206928	-0.018830469	0.0428193
0.0925	154	0.42076503	-0.199936	-0.018494126	0.0399746
0.0945	155	0.42349727	-0.192955	-0.018234246	0.0372316
0.095	156	0.42622951	-0.185983	-0.017668344	0.0345895
0.096	157	0.42896175	-0.179018	-0.017185739	0.0320475
0.096	158	0.43169399	-0.172063	-0.016518024	0.0296056
0.096	159	0.43442623	-0.165116	-0.015851183	0.0272635
0.0995	160	0.43715847	-0.158177	-0.015738616	0.02502
0.1	161	0.43989071	-0.151247	-0.01512467	0.0228756
0.1	162	0.44262295	-0.144322	-0.014432203	0.0208288
0.1	163	0.44535519	-0.137405	-0.013740532	0.0188802
0.1	164	0.44808743	-0.130494	-0.01304943	0.0170288
0.1	165	0.45081967	-0.123591	-0.012359124	0.0152748
0.1	166	0.45355191	-0.116693	-0.011669272	0.0136172
0.1	167	0.45628415	-0.109799	-0.010979875	0.0120558
0.1	168	0.45901639	-0.102912	-0.01029116	0.0105908
0.1	169	0.46174863	-0.096029	-0.0096029	0.0092216
0.1	170	0.46448087	-0.089151	-0.008915094	0.0079479
0.1	171	0.46721311	-0.082277	-0.008227744	0.0067696
0.1	172	0.46994536	-0.075407	-0.007540734	0.0056863
0.1	173	0.4726776	-0.068541	-0.006854066	0.0046978
0.1	174	0.47540984	-0.061677	-0.006167738	0.0038041
0.1	175	0.47814208	-0.054818	-0.005481752	0.003005
0.1	176	0.48087432	-0.04796	-0.004795993	0.0023002
0.1	177	0.48360656	-0.041103	-0.004110348	0.0016895
0.101	178	0.4863388	-0.03425	-0.003459294	0.0011731
0.1015	179	0.48907104	-0.027399	-0.002780951	0.0007507
0.102	180	0.49180328	-0.020548	-0.002095871	0.0004222
0.102	181	0.49453552	-0.013698	-0.001397209	0.0001876
0.1025	182	0.49726776	-0.006848	-0.000701971	4.69E-05
0.104	183	0.5	0	0	0
0.1045	184	0.50273224	0.0068485	0.000715668	4.69E-05
0.11	185	0.50546448	0.0136981	0.001506794	0.0001876
0.11	186	0.50819672	0.0205478	0.002260253	0.0004222
0.11	187	0.51092896	0.0273985	0.003013838	0.0007507

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - raw data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (normal)	Mi^2
0.11	188	0.5136612	0.0342504	0.003767548	0.0011731
0.11	189	0.51639344	0.0411035	0.004521382	0.0016895
0.11	190	0.51912568	0.0479599	0.005275592	0.0023002
0.11	191	0.52185792	0.0548175	0.006029927	0.003005
0.11	192	0.52459016	0.0616774	0.006784512	0.0038041
0.112	193	0.5273224	0.0685407	0.007676554	0.0046978
0.113	194	0.53005464	0.0754073	0.00852103	0.0056863
0.115	195	0.53278689	0.0822774	0.009461905	0.0067696
0.12	196	0.53551913	0.0891509	0.010698113	0.0079479
0.12	197	0.53825137	0.096029	0.01152348	0.0092216
0.12	198	0.54098361	0.1029116	0.012349392	0.0105908
0.12	199	0.54371585	0.1097987	0.01317585	0.0120558
0.12	200	0.54644809	0.1166927	0.014003126	0.0136172
0.12	201	0.54918033	0.1235912	0.014830948	0.0152748
0.12	202	0.55191257	0.1304943	0.015659316	0.0170288
0.121	203	0.55464481	0.1374053	0.016626044	0.0188802
0.121	204	0.55737705	0.144322	0.017462966	0.0208288
0.123	205	0.56010929	0.1512467	0.018603344	0.0228756
0.128	206	0.56284153	0.158177	0.020246662	0.02502
0.13	207	0.56557377	0.1651165	0.021465144	0.0272635
0.13	208	0.56830601	0.1720628	0.022368158	0.0296056
0.13	209	0.57103825	0.1790181	0.023272355	0.0320475
0.13	210	0.57377049	0.1859826	0.024177734	0.0345895
0.13	211	0.57650273	0.192955	0.025084148	0.0372316
0.13	212	0.57923497	0.1999365	0.025991744	0.0399746
0.13	213	0.58196721	0.2069282	0.02690067	0.0428193
0.13	214	0.58469945	0.2139313	0.027811075	0.0457666
0.13	215	0.58743169	0.2209435	0.028722661	0.0488161
0.1366667	216	0.59016393	0.2279671	0.031155507	0.051969
0.138	217	0.59289617	0.2350021	0.032430285	0.055226
0.14	218	0.59562842	0.2420484	0.033886772	0.0585874
0.14	219	0.59836066	0.2491061	0.034874847	0.0620538
0.14	220	0.6010929	0.2561774	0.035864832	0.0656268
0.14	221	0.60382514	0.2632601	0.036856409	0.0693059
0.14	222	0.60655738	0.2703575	0.037850054	0.0730932
0.14	223	0.60928962	0.2774686	0.03884561	0.0769888
0.14	224	0.61202186	0.2845923	0.039842917	0.0809928
0.144	225	0.6147541	0.2917318	0.042009378	0.0851074
0.145	226	0.61748634	0.2988861	0.043338486	0.0893329
0.145	227	0.62021858	0.3060552	0.044378004	0.0936698
0.1475	228	0.62295082	0.3132402	0.046202931	0.0981194
0.1495	229	0.62568306	0.3204411	0.047905949	0.1026825
0.15	230	0.6284153	0.3276591	0.049148866	0.1073605
0.15	231	0.63114754	0.3348941	0.050234121	0.1121541
0.15	232	0.63387978	0.3421474	0.051322104	0.1170648
0.15	233	0.63661202	0.3494176	0.052412645	0.1220927
0.15	234	0.63934426	0.3567061	0.053505914	0.1272392
0.15	235	0.6420765	0.364015	0.054602253	0.1325069
0.15	236	0.64480874	0.3713421	0.055701321	0.137895
0.15	237	0.64754098	0.3786909	0.056803628	0.1434068
0.15	238	0.65027322	0.3860578	0.057908665	0.1490406
0.155	239	0.65300546	0.3934474	0.060984348	0.1548009
0.16	240	0.6557377	0.4008575	0.064137203	0.1606867
0.16	241	0.65846995	0.4082904	0.065326458	0.166701
0.16	242	0.66120219	0.4157459	0.066519351	0.1728447
0.16	243	0.66393443	0.4232243	0.067715882	0.1791188
0.16	244	0.66666667	0.4307276	0.068916415	0.1855263
0.16	245	0.66939891	0.4382537	0.070120586	0.1920663
0.162	246	0.67213115	0.4458059	0.072220553	0.1987429
0.163	247	0.67486339	0.4533831	0.073901447	0.2055562
0.164	248	0.67759563	0.4609865	0.075601783	0.2125085
0.165	249	0.68032787	0.468616	0.077321641	0.219601
0.167	250	0.68306011	0.4762728	0.07953756	0.2268358
0.167	251	0.68579235	0.483958	0.080820994	0.2342154
0.17	252	0.68852459	0.4916728	0.083584382	0.2417422

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - raw data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (normal)	Mi^2
0.17	253	0.69125683	0.499416	0.084900728	0.2494164
0.17	254	0.69398907	0.5071888	0.086222099	0.2572405
0.17	255	0.69672131	0.5149946	0.087549074	0.2652194
0.17	256	0.69945355	0.5228299	0.088881075	0.2733511
0.17	257	0.70218579	0.530697	0.090218487	0.2816393
0.17	258	0.70491803	0.5385982	0.091561697	0.290088
0.17	259	0.70765027	0.5465336	0.092910705	0.2986989
0.171	260	0.71038251	0.554503	0.094820014	0.3074736
0.173	261	0.71311475	0.5625066	0.097313634	0.3164136
0.175	262	0.71584699	0.5705488	0.099846034	0.3255259
0.176	263	0.71857923	0.5786251	0.101838014	0.334807
0.179	264	0.72131148	0.5867423	0.105026875	0.3442665
0.18	265	0.72404372	0.5948959	0.107081269	0.3539012
0.18	266	0.72677596	0.6030905	0.108556287	0.3637181
0.18	267	0.7295082	0.611326	0.110038673	0.3737194
0.18	268	0.73224044	0.6196024	0.111528425	0.3839071
0.18	269	0.73497268	0.627922	0.113025953	0.394286
0.182	270	0.73770492	0.6362848	0.115803828	0.4048583
0.182	271	0.74043716	0.644693	0.117334134	0.4156291
0.1866	272	0.7431694	0.6531468	0.121877193	0.4266007
0.19	273	0.74590164	0.6616483	0.125713177	0.4377785
0.19	274	0.74863388	0.6701976	0.127337535	0.4491648
0.19	275	0.75136612	0.6787945	0.128970964	0.460762
0.191	276	0.75409836	0.6874438	0.131301774	0.472579
0.194	277	0.7568306	0.6961432	0.135051773	0.4846153
0.194	278	0.75956284	0.704897	0.136750027	0.4968798
0.196	279	0.76229508	0.7137044	0.139886056	0.5093739
0.197	280	0.76502732	0.7225685	0.142346	0.5221053
0.199	281	0.76775956	0.7314884	0.145566191	0.5350753
0.2	282	0.7704918	0.7404674	0.148093477	0.5482919
0.2	283	0.77322404	0.7495055	0.149901098	0.5617585
0.2	284	0.77595628	0.7586073	0.151721451	0.575485
0.2	285	0.77868852	0.7677704	0.153554083	0.5894714
0.2	286	0.78142077	0.7769995	0.155399903	0.6037282
0.2	287	0.78415301	0.7862968	0.157259365	0.6182627
0.2	288	0.78688525	0.7956601	0.159132014	0.6330749
0.2	289	0.78961749	0.8050938	0.161018761	0.648176
0.2	290	0.79234973	0.8146003	0.16292006	0.6635736
0.2	291	0.79508197	0.8241818	0.164836365	0.6792757
0.201	292	0.79781421	0.8338384	0.167601515	0.6952865
0.207	293	0.80054645	0.8435745	0.174619927	0.711618
0.2075	294	0.80327869	0.8533902	0.177078476	0.7282749
0.209	295	0.80601093	0.8632901	0.18042763	0.7452698
0.21	296	0.80874317	0.8732741	0.183387556	0.7626076
0.21	297	0.81147541	0.8833467	0.185502813	0.7803014
0.21	298	0.81420765	0.8935081	0.187636692	0.7983567
0.21	299	0.81693989	0.9037649	0.189790626	0.816791
0.21	300	0.81967213	0.9141172	0.191964614	0.8356103
0.214	301	0.82240437	0.9245673	0.197857403	0.8548247
0.215	302	0.82513661	0.9351197	0.201050739	0.8744489
0.215	303	0.82786885	0.9457767	0.203341995	0.8944936
0.217	304	0.83060109	0.9565429	0.207569801	0.9149742
0.218	305	0.83333333	0.9674204	0.210897651	0.9359023
0.22	306	0.83606557	0.9784162	0.215251566	0.9572983
0.22	307	0.83879781	0.9895302	0.217696652	0.9791701
0.22	308	0.84153005	1.000767	0.220168749	1.0015347
0.22	309	0.8442623	1.0121312	0.222668859	1.0244095
0.221	310	0.84699454	1.0236272	0.226221609	1.0478126
0.222	311	0.84972678	1.0352619	0.229828142	1.0717672
0.223	312	0.85245902	1.0470376	0.233489382	1.0962877
0.225	313	0.85519126	1.0589611	0.238266239	1.1213985
0.225	314	0.8579235	1.0710369	0.240983297	1.14712
0.225	315	0.86065574	1.0832696	0.243735656	1.173473
0.23	316	0.86338798	1.0956683	0.252003701	1.200489
0.23	317	0.86612022	1.1082375	0.254894621	1.2281903

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - raw data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (normal)	Mi^2
0.23	318	0.86885246	1.1209841	0.257826332	1.2566052
0.23	319	0.8715847	1.1339148	0.260800402	1.2857628
0.23	320	0.87431694	1.1470365	0.263818401	1.3156928
0.23	321	0.87704918	1.1603606	0.266882944	1.3464368
0.23	322	0.87978142	1.1738939	0.269995599	1.3780269
0.232	323	0.88251366	1.1876455	0.275533748	1.4105018
0.2325	324	0.8852459	1.2016267	0.279378202	1.4439067
0.233	325	0.88797814	1.2158466	0.283292263	1.478283
0.233	326	0.89071038	1.2303144	0.286663258	1.5136735
0.235	327	0.89344262	1.2450482	0.292586333	1.5501451
0.236	328	0.89617486	1.2600549	0.297372953	1.5877383
0.236	329	0.8989071	1.275348	0.300982138	1.6265126
0.237	330	0.90163934	1.2909504	0.30595525	1.666553
0.239	331	0.90437158	1.3068711	0.312342199	1.7079121
0.24	332	0.90710383	1.3231283	0.317550803	1.7506686
0.24	333	0.90983607	1.3397448	0.321538755	1.7949162
0.24	334	0.91256831	1.3567433	0.325618385	1.8407523
0.24	335	0.91530055	1.3741374	0.329792965	1.8882535
0.242	336	0.91803279	1.3919589	0.336854055	1.9375496
0.242	337	0.92076503	1.4102352	0.341276918	1.9887633
0.243	338	0.92349727	1.4289981	0.347246532	2.0420355
0.244	339	0.92622951	1.4482703	0.353377945	2.0974868
0.248	340	0.92896175	1.4681018	0.364089246	2.1553229
0.25	341	0.93169399	1.4885291	0.372132263	2.2157187
0.252	342	0.93442623	1.5095929	0.380417423	2.2788709
0.2535	343	0.93715847	1.5313481	0.388196734	2.3450269
0.2565	344	0.93989071	1.5538581	0.398564591	2.4144749
0.264	345	0.94262295	1.577182	0.41637606	2.4875032
0.269	346	0.94535519	1.6013928	0.430774662	2.5644589
0.27	347	0.94808743	1.6265858	0.439178166	2.6457814
0.276	348	0.95081967	1.652852	0.456187154	2.7319198
0.281	349	0.95355191	1.6803142	0.47216829	2.8234558
0.288	350	0.95628415	1.7091043	0.492222025	2.9210373
0.292	351	0.95901639	1.7393813	0.507899349	3.0254474
0.294	352	0.96174863	1.7713501	0.520776921	3.1376811
0.294	353	0.96448087	1.8052287	0.530737252	3.2588508
0.294	354	0.96721311	1.8413266	0.541350018	3.3904836
0.295	355	0.96994536	1.8799892	0.554596818	3.5343594
0.299	356	0.9726776	1.9216895	0.574585174	3.6928907
0.3	357	0.97540984	1.9670188	0.590105628	3.8691628
0.3	358	0.97814208	2.0168045	0.60504135	4.0675004
0.31	359	0.98087432	2.0721473	0.642365649	4.2937942
0.322	360	0.98360656	2.134675	0.687365355	4.5568374
0.326	361	0.9863388	2.2068707	0.719439849	4.8702783
0.36	362	0.98907104	2.2928361	0.825421012	5.2570976
0.406	363	0.99180328	2.4000474	0.974419236	5.7602274
0.7	364	0.99453552	2.5449481	1.781463652	6.4767607
0.755	365	0.99726776	2.7783244	2.097634933	7.7190866

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - lognormal data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (lognormal	Mi^2
-5.298317	1	0.00273224	-2.778324	14.7204445	7.7190866
-5.298317	2	0.00546448	-2.544948	13.48394258	6.4767607
-5.298317	3	0.00819672	-2.400047	12.71621271	5.7602274
-5.298317	4	0.01092896	-2.292836	12.14817356	5.2570976
-5.298317	5	0.0136612	-2.206871	11.69270138	4.8702783
-5.298317	6	0.01639344	-2.134675	11.3101857	4.5568374
-5.298317	7	0.01912568	-2.072147	10.97889378	4.2937942
-5.298317	8	0.02185792	-2.016805	10.68567031	4.0675004
-4.710531	9	0.02459016	-1.967019	9.265702265	3.8691628
-4.60517	10	0.0273224	-1.92169	8.849707401	3.6928907
-4.60517	11	0.03005464	-1.879989	8.657670275	3.5343594
-4.60517	12	0.03278689	-1.841327	8.479622331	3.3904836
-4.60517	13	0.03551913	-1.805229	8.313385612	3.2588508
-4.60517	14	0.03825137	-1.77135	8.157368536	3.1376811
-4.60517	15	0.04098361	-1.739381	8.010147054	3.0254474
-4.60517	16	0.04371585	-1.709104	7.870715954	2.9210373
-4.60517	17	0.04644809	-1.680314	7.738132852	2.8234558
-4.60517	18	0.04918033	-1.652852	7.611664782	2.7319198
-4.60517	19	0.05191257	-1.626586	7.490704428	2.6457814
-4.60517	20	0.05464481	-1.601393	7.374686361	2.5644589
-4.60517	21	0.05737705	-1.577182	7.263191742	2.4875032
-4.60517	22	0.06010929	-1.553858	7.155780791	2.4144749
-4.60517	23	0.06284153	-1.531348	7.052118438	2.3450269
-4.60517	24	0.06557377	-1.509593	6.951932439	2.2788709
-4.60517	25	0.06830601	-1.488529	6.854929607	2.2157187
-4.60517	26	0.07103825	-1.468102	6.76085864	2.1553229
-4.60517	27	0.07377049	-1.44827	6.66953106	2.0974868
-4.60517	28	0.07650273	-1.428998	6.580779333	2.0420355
-4.60517	29	0.07923497	-1.410235	6.494373097	1.9887633
-4.60517	30	0.08196721	-1.391959	6.410207643	1.9375496
-4.60517	31	0.08469945	-1.374137	6.328136379	1.8882535
-4.199705	32	0.08743169	-1.356743	5.697921596	1.8407523
-4.135167	33	0.09016393	-1.339745	5.540067945	1.7949162
-4.074542	34	0.09289617	-1.323128	5.391141926	1.7506686
-4.017384	35	0.09562842	-1.306871	5.250202529	1.7079121
-3.912023	36	0.09836066	-1.29095	5.05022775	1.666553
-3.912023	37	0.1010929	-1.275348	4.989190874	1.6265126
-3.912023	38	0.10382514	-1.260055	4.929363706	1.5877383
-3.912023	39	0.10655738	-1.245048	4.870657297	1.5501451
-3.912023	40	0.10928962	-1.230314	4.813018277	1.5136735
-3.912023	41	0.11202186	-1.215847	4.756419962	1.478283
-3.912023	42	0.1147541	-1.201627	4.700791192	1.4439067
-3.912023	43	0.11748634	-1.187645	4.646096387	1.4105018
-3.88733	44	0.12021858	-1.173894	4.563313461	1.3780269
-3.863233	45	0.12295082	-1.160361	4.482743276	1.3464368
-3.772261	46	0.12568306	-1.147037	4.326921232	1.3156928
-3.750755	47	0.1284153	-1.133915	4.253036419	1.2857628
-3.729701	48	0.13114754	-1.120984	4.180935844	1.2566052
-3.709082	49	0.13387978	-1.108237	4.110543883	1.2281903
-3.688879	50	0.13661202	-1.095668	4.041788159	1.200489
-3.688879	51	0.13934426	-1.08327	3.9960509	1.173473
-3.688879	52	0.1420765	-1.071037	3.95092593	1.14712
-3.649659	53	0.14480874	-1.058961	3.864846493	1.1213985
-3.506558	54	0.14754098	-1.047038	3.671497914	1.0962877
-3.506558	55	0.15027322	-1.035262	3.630205801	1.0717672
-3.506558	56	0.15300546	-1.023627	3.589408014	1.0478126
-3.473768	57	0.1557377	-1.012131	3.515908976	1.0244095

Selenium - lognormal
116081.62 = (sum of Mi*Xi)^2
364 = count -1
0.9963102 = standard deviation ^2
354.90912 = sum of Mi^2

0.90 = W statistic

FAIL

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - lognormal data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (lognormal	Mi^2
-3.218876	58	0.15846995	-1.000767	3.22134484	1.0015347
-3.218876	59	0.16120219	-0.98953	3.185174953	0.9791701
-3.218876	60	0.16393443	-0.978416	3.149400286	0.9572983
-3.218876	61	0.16666667	-0.96742	3.1140062	0.9359023
-3.218876	62	0.16939891	-0.956543	3.078992696	0.9149742
-3.218876	63	0.17213115	-0.945777	3.044337817	0.8944936
-3.170086	64	0.17486339	-0.93512	2.9644096	0.8744489
-3.158251	65	0.17759563	-0.924567	2.920015796	0.8548247
-3.123566	66	0.18032787	-0.914117	2.855305108	0.8356103
-3.101093	67	0.18306011	-0.903765	2.802658768	0.816791
-3.101093	68	0.18579235	-0.893508	2.770851398	0.7983567
-3.057608	69	0.18852459	-0.883347	2.700927741	0.7803014
-3.026191	70	0.19125683	-0.873274	2.642694567	0.7626076
-2.995732	71	0.19398907	-0.86329	2.586186006	0.7452698
-2.995732	72	0.19672131	-0.85339	2.556528706	0.7282749
-2.995732	73	0.19945355	-0.843575	2.527123432	0.711618
-2.995732	74	0.20218579	-0.833838	2.497956561	0.6952865
-2.995732	75	0.20491803	-0.824182	2.469028092	0.6792757
-2.995732	76	0.20765027	-0.8146	2.440324404	0.6635736
-2.995732	77	0.21038251	-0.805094	2.411845495	0.648176
-2.995732	78	0.21311475	-0.79566	2.383584554	0.6330749
-2.986079	79	0.21584699	-0.786297	2.347944445	0.6182627
-2.97593	80	0.21857923	-0.777	2.312295888	0.6037282
-2.900422	81	0.22131148	-0.76777	2.226858278	0.5894714
-2.900422	82	0.22404372	-0.758607	2.200281249	0.575485
-2.900422	83	0.22677596	-0.749505	2.173882279	0.5617585
-2.873515	84	0.2295082	-0.740467	2.127743872	0.5482919
-2.864704	85	0.23224044	-0.731488	2.09549775	0.5350753
-2.838729	86	0.23497268	-0.722569	2.051175896	0.5221053
-2.830218	87	0.23770492	-0.713704	2.019938828	0.5093739
-2.830218	88	0.24043716	-0.704897	1.995012195	0.4968798
-2.820939	89	0.2431694	-0.696143	1.96377738	0.4846153
-2.813411	90	0.24590164	-0.687444	1.934061878	0.472579
-2.813411	91	0.24863388	-0.678795	1.90972786	0.460762
-2.813411	92	0.25136612	-0.670198	1.885540972	0.4491648
-2.813411	93	0.25409836	-0.661648	1.86148842	0.4377785
-2.813411	94	0.2568306	-0.653147	1.837570204	0.4266007
-2.813411	95	0.25956284	-0.644693	1.813786324	0.4156291
-2.796881	96	0.26229508	-0.636285	1.77961304	0.4048583
-2.788718	97	0.26502732	-0.627922	1.751097347	0.394286
-2.780621	98	0.26775956	-0.619602	1.72287927	0.3839071
-2.764621	99	0.2704918	-0.611326	1.69008431	0.3737194
-2.748872	100	0.27322404	-0.60309	1.657818664	0.3637181
-2.748872	101	0.27595628	-0.594896	1.6352929	0.3539012
-2.733368	102	0.27868852	-0.586742	1.603782679	0.3442665
-2.733368	103	0.28142077	-0.578625	1.581595274	0.334807
-2.733368	104	0.28415301	-0.570549	1.559519739	0.3255259
-2.733368	105	0.28688525	-0.562507	1.537537428	0.3164136
-2.733368	106	0.28961749	-0.554503	1.515660771	0.3074736
-2.733368	107	0.29234973	-0.546534	1.493877338	0.2986989
-2.65926	108	0.29508197	-0.538598	1.432272709	0.290088
-2.65926	109	0.29781421	-0.530697	1.41126127	0.2816393
-2.65926	110	0.30054645	-0.52283	1.390340528	0.2733511
-2.65926	111	0.30327869	-0.514995	1.369504436	0.2652194
-2.65926	112	0.30601093	-0.507189	1.348746948	0.2572405
-2.65926	113	0.30874317	-0.499416	1.328077134	0.2494164
-2.65926	114	0.31147541	-0.491673	1.307485923	0.2417422
-2.65926	115	0.31420765	-0.483958	1.286970294	0.2342154
-2.617296	116	0.31693989	-0.476273	1.246546861	0.2268358
-2.61047	117	0.31967213	-0.468616	1.223307971	0.219601
-2.60369	118	0.32240437	-0.460986	1.200265986	0.2125085
-2.583623	119	0.32513661	-0.453383	1.171370857	0.2055562
-2.577022	120	0.32786885	-0.445806	1.148851536	0.1987429
-2.56395	121	0.33060109	-0.438254	1.12366042	0.1920663
-2.551046	122	0.33333333	-0.430728	1.098806105	0.1855263

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - lognormal data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (lognormal	Mi^2
-2.525729	123	0.33606557	-0.423224	1.068949648	0.1791188
-2.525729	124	0.33879781	-0.415746	1.05006144	0.1728447
-2.525729	125	0.34153005	-0.40829	1.031230661	0.166701
-2.525729	126	0.3442623	-0.400858	1.012457311	0.1606867
-2.525729	127	0.34699454	-0.393447	0.993741388	0.1548009
-2.525729	128	0.34972678	-0.386058	0.975077152	0.1490406
-2.525729	129	0.35245902	-0.378691	0.956470343	0.1434068
-2.525729	130	0.35519126	-0.371342	0.937909478	0.137895
-2.525729	131	0.3579235	-0.364015	0.919403169	0.1325069
-2.525729	132	0.36065574	-0.356706	0.900942804	0.1272392
-2.513306	133	0.36338798	-0.349418	0.878193476	0.1220927
-2.501036	134	0.36612022	-0.342147	0.855722874	0.1170648
-2.465104	135	0.36885246	-0.334894	0.825548889	0.1121541
-2.465104	136	0.3715847	-0.327659	0.807713787	0.1073605
-2.441847	137	0.37431694	-0.320441	0.782468267	0.1026825
-2.419119	138	0.37704918	-0.31324	0.757765308	0.0981194
-2.407946	139	0.37978142	-0.306055	0.736964272	0.0936698
-2.407946	140	0.38251366	-0.298886	0.719701489	0.0893329
-2.407946	141	0.3852459	-0.291732	0.702474293	0.0851074
-2.407946	142	0.38797814	-0.284592	0.685282685	0.0809928
-2.407946	143	0.39071038	-0.277469	0.668129402	0.0769888
-2.407946	144	0.39344262	-0.270358	0.651006232	0.0730932
-2.407946	145	0.39617486	-0.26326	0.633915912	0.0693059
-2.407946	146	0.3989071	-0.256177	0.61686118	0.0656268
-2.407946	147	0.40163934	-0.249106	0.599833822	0.0620538
-2.407946	148	0.40437158	-0.242048	0.582839316	0.0585874
-2.407946	149	0.40710383	-0.235002	0.565872184	0.055226
-2.407946	150	0.40983607	-0.227967	0.548932427	0.051969
-2.407946	151	0.41256831	-0.220944	0.532020046	0.0488161
-2.402405	152	0.41530055	-0.213931	0.513949822	0.0457666
-2.396896	153	0.41803279	-0.206928	0.495985411	0.0428193
-2.380547	154	0.42076503	-0.199936	0.475958148	0.0399746
-2.359155	155	0.42349727	-0.192955	0.455210804	0.0372316
-2.353878	156	0.42622951	-0.185983	0.437780356	0.0345895
-2.343407	157	0.42896175	-0.179018	0.419512322	0.0320475
-2.343407	158	0.43169399	-0.172063	0.40321308	0.0296056
-2.343407	159	0.43442623	-0.165116	0.386935151	0.0272635
-2.307598	160	0.43715847	-0.158177	0.365008974	0.02502
-2.302585	161	0.43989071	-0.151247	0.348258386	0.0228756
-2.302585	162	0.44262295	-0.144322	0.332313755	0.0208288
-2.302585	163	0.44535519	-0.137405	0.316387448	0.0188802
-2.302585	164	0.44808743	-0.130494	0.300474229	0.0170288
-2.302585	165	0.45081967	-0.123591	0.284579335	0.0152748
-2.302585	166	0.45355191	-0.116693	0.268694912	0.0136172
-2.302585	167	0.45628415	-0.109799	0.25282096	0.0120558
-2.302585	168	0.45901639	-0.102912	0.236962714	0.0105908
-2.302585	169	0.46174863	-0.096029	0.221114939	0.0092216
-2.302585	170	0.46448087	-0.089151	0.205277636	0.0079479
-2.302585	171	0.46721311	-0.082277	0.189450803	0.0067696
-2.302585	172	0.46994536	-0.075407	0.173631823	0.0056863
-2.302585	173	0.4726776	-0.068541	0.157820696	0.0046978
-2.302585	174	0.47540984	-0.061677	0.142017423	0.0038041
-2.302585	175	0.47814208	-0.054818	0.126222003	0.003005
-2.302585	176	0.48087432	-0.04796	0.110431818	0.0023002
-2.302585	177	0.48360656	-0.041103	0.094644252	0.0016895
-2.292635	178	0.4863388	-0.03425	0.078523735	0.0011731
-2.287696	179	0.48907104	-0.027399	0.062679516	0.0007507
-2.282782	180	0.49180328	-0.020548	0.046906064	0.0004222
-2.282782	181	0.49453552	-0.013698	0.031269844	0.0001876
-2.277892	182	0.49726776	-0.006848	0.015600136	4.69E-05
-2.263364	183	0.5	0	0	0
-2.258568	184	0.50273224	0.0068485	-0.015467793	4.69E-05
-2.207275	185	0.50546448	0.0136981	-0.030235532	0.0001876
-2.207275	186	0.50819672	0.0205478	-0.045354553	0.0004222
-2.207275	187	0.51092896	0.0273985	-0.060476083	0.0007507

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - lognormal data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (lognormal	Mi^2
-2.207275	188	0.5136612	0.0342504	-0.075600123	0.0011731
-2.207275	189	0.51639344	0.0411035	-0.090726672	0.0016895
-2.207275	190	0.51912568	0.0479599	-0.105860749	0.0023002
-2.207275	191	0.52185792	0.0548175	-0.120997335	0.003005
-2.207275	192	0.52459016	0.0616774	-0.136138941	0.0038041
-2.189256	193	0.5273224	0.0685407	-0.150053074	0.0046978
-2.180367	194	0.53005464	0.0754073	-0.164415716	0.0056863
-2.162823	195	0.53278689	0.0822774	-0.177951548	0.0067696
-2.120264	196	0.53551913	0.0891509	-0.189023497	0.0079479
-2.120264	197	0.53825137	0.096029	-0.203606783	0.0092216
-2.120264	198	0.54098361	0.1029116	-0.218199711	0.0105908
-2.120264	199	0.54371585	0.1097987	-0.232802281	0.0120558
-2.120264	200	0.54644809	0.1166927	-0.247419314	0.0136172
-2.120264	201	0.54918033	0.1235912	-0.262045989	0.0152748
-2.120264	202	0.55191257	0.1304943	-0.276682306	0.0170288
-2.111965	203	0.55464481	0.1374053	-0.290195196	0.0188802
-2.111965	204	0.55737705	0.144322	-0.304803037	0.0208288
-2.095571	205	0.56010929	0.1512467	-0.316948177	0.0228756
-2.055725	206	0.56284153	0.158177	-0.325168508	0.02502
-2.040221	207	0.56557377	0.1651165	-0.336874101	0.0272635
-2.040221	208	0.56830601	0.1720628	-0.351046017	0.0296056
-2.040221	209	0.57103825	0.1790181	-0.365236489	0.0320475
-2.040221	210	0.57377049	0.1859826	-0.379445516	0.0345895
-2.040221	211	0.57650273	0.192955	-0.39367078	0.0372316
-2.040221	212	0.57923497	0.1999365	-0.407914599	0.0399746
-2.040221	213	0.58196721	0.2069282	-0.422179294	0.0428193
-2.040221	214	0.58469945	0.2139313	-0.436467183	0.0457666
-2.040221	215	0.58743169	0.2209435	-0.450773628	0.0488161
-1.99021	216	0.59016393	0.2279671	-0.453702536	0.051969
-1.980502	217	0.59289617	0.2350021	-0.465421959	0.055226
-1.966113	218	0.59562842	0.2420484	-0.475894417	0.0585874
-1.966113	219	0.59836066	0.2491061	-0.48977061	0.0620538
-1.966113	220	0.6010929	0.2561774	-0.503673626	0.0656268
-1.966113	221	0.60382514	0.2632601	-0.517598994	0.0693059
-1.966113	222	0.60655738	0.2703575	-0.531553419	0.0730932
-1.966113	223	0.60928962	0.2774686	-0.545534667	0.0769888
-1.966113	224	0.61202186	0.2845923	-0.559540503	0.0809928
-1.937942	225	0.6147541	0.2917318	-0.565359291	0.0851074
-1.931022	226	0.61748634	0.2988861	-0.57715551	0.0893329
-1.931022	227	0.62021858	0.3060552	-0.590999181	0.0936698
-1.913927	228	0.62295082	0.3132402	-0.599518922	0.0981194
-1.900459	229	0.62568306	0.3204411	-0.608985196	0.1026825
-1.89712	230	0.6284153	0.3276591	-0.621608643	0.1073605
-1.89712	231	0.63114754	0.3348941	-0.635334364	0.1121541
-1.89712	232	0.63387978	0.3421474	-0.649094593	0.1170648
-1.89712	233	0.63661202	0.3494176	-0.662887174	0.1220927
-1.89712	234	0.63934426	0.3567061	-0.676714263	0.1272392
-1.89712	235	0.6420765	0.364015	-0.690580174	0.1325069
-1.89712	236	0.64480874	0.3713421	-0.704480594	0.137895
-1.89712	237	0.64754098	0.3786909	-0.718421992	0.1434068
-1.89712	238	0.65027322	0.3860578	-0.732397899	0.1490406
-1.86433	239	0.65300546	0.3934474	-0.73351587	0.1548009
-1.832581	240	0.6557377	0.4008575	-0.734604054	0.1606867
-1.832581	241	0.65846995	0.4082904	-0.748225348	0.166701
-1.832581	242	0.66120219	0.4157459	-0.761888311	0.1728447
-1.832581	243	0.66393443	0.4232243	-0.775592942	0.1791188
-1.832581	244	0.66666667	0.4307276	-0.789343408	0.1855263
-1.832581	245	0.66939891	0.4382537	-0.803135542	0.1920663
-1.820159	246	0.67213115	0.4458059	-0.811437562	0.1987429
-1.814005	247	0.67486339	0.4533831	-0.822439262	0.2055562
-1.807889	248	0.67759563	0.4609865	-0.833412326	0.2125085
-1.80181	249	0.68032787	0.468616	-0.844356918	0.219601
-1.789761	250	0.68306011	0.4762728	-0.852414735	0.2268358
-1.789761	251	0.68579235	0.483958	-0.866169464	0.2342154
-1.771957	252	0.68852459	0.4916728	-0.871223045	0.2417422

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - lognormal data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (lognormal	Mi^2
-1.771957	253	0.69125683	0.499416	-0.88494368	0.2494164
-1.771957	254	0.69398907	0.5071888	-0.898716692	0.2572405
-1.771957	255	0.69672131	0.5149946	-0.912548123	0.2652194
-1.771957	256	0.69945355	0.5228299	-0.926431931	0.2733511
-1.771957	257	0.70218579	0.530697	-0.940372144	0.2816393
-1.771957	258	0.70491803	0.5385982	-0.954372792	0.290088
-1.771957	259	0.70765027	0.5465336	-0.968433874	0.2986989
-1.766092	260	0.71038251	0.554503	-0.979303165	0.3074736
-1.754464	261	0.71311475	0.5625066	-0.986897326	0.3164136
-1.742969	262	0.71584699	0.5705488	-0.994448982	0.3255259
-1.737271	263	0.71857923	0.5786251	-1.00522873	0.334807
-1.720369	264	0.72131148	0.5867423	-1.009413571	0.3442665
-1.714798	265	0.72404372	0.5948959	-1.020126618	0.3539012
-1.714798	266	0.72677596	0.6030905	-1.034178614	0.3637181
-1.714798	267	0.7295082	0.611326	-1.048300793	0.3737194
-1.714798	268	0.73224044	0.6196024	-1.062493154	0.3839071
-1.714798	269	0.73497268	0.627922	-1.076759596	0.394286
-1.703749	270	0.73770492	0.6362848	-1.084069276	0.4048583
-1.703749	271	0.74043716	0.644693	-1.098394869	0.4156291
-1.678788	272	0.7431694	0.6531468	-1.096495002	0.4266007
-1.660731	273	0.74590164	0.6616483	-1.098819981	0.4377785
-1.660731	274	0.74863388	0.6701976	-1.113017987	0.4491648
-1.660731	275	0.75136612	0.6787945	-1.127295291	0.460762
-1.655482	276	0.75409836	0.6874438	-1.138050807	0.472579
-1.639897	277	0.7568306	0.6961432	-1.141603165	0.4846153
-1.639897	278	0.75956284	0.704897	-1.155958638	0.4968798
-1.629641	279	0.76229508	0.7137044	-1.163081626	0.5093739
-1.624552	280	0.76502732	0.7225685	-1.173849825	0.5221053
-1.61445	281	0.76775956	0.7314884	-1.180951778	0.5350753
-1.609438	282	0.7704918	0.7404674	-1.191736283	0.5482919
-1.609438	283	0.77322404	0.7495055	-1.206282549	0.5617585
-1.609438	284	0.77595628	0.7586073	-1.22093128	0.575485
-1.609438	285	0.77868852	0.7677704	-1.235678816	0.5894714
-1.609438	286	0.78142077	0.7769995	-1.250532475	0.6037282
-1.609438	287	0.78415301	0.7862968	-1.265495918	0.6182627
-1.609438	288	0.78688525	0.7956601	-1.280565484	0.6330749
-1.609438	289	0.78961749	0.8050938	-1.295748493	0.648176
-1.609438	290	0.79234973	0.8146003	-1.311048604	0.6635736
-1.609438	291	0.79508197	0.8241818	-1.326469476	0.6792757
-1.60445	292	0.79781421	0.8338384	-1.337852306	0.6952865
-1.575036	293	0.80054645	0.8435745	-1.328660657	0.711618
-1.572624	294	0.80327869	0.8533902	-1.342061933	0.7282749
-1.565421	295	0.80601093	0.8632901	-1.351412471	0.7452698
-1.560648	296	0.80874317	0.8732741	-1.362873219	0.7626076
-1.560648	297	0.81147541	0.8833467	-1.378593084	0.7803014
-1.560648	298	0.81420765	0.8935081	-1.39445134	0.7983567
-1.560648	299	0.81693989	0.9037649	-1.410458633	0.816791
-1.560648	300	0.81967213	0.9141172	-1.426614963	0.8356103
-1.541779	301	0.82240437	0.9245673	-1.425478695	0.8548247
-1.537117	302	0.82513661	0.9351197	-1.437388646	0.8744489
-1.537117	303	0.82786885	0.9457767	-1.45376971	0.8944936
-1.527858	304	0.83060109	0.9565429	-1.461461594	0.9149742
-1.52326	305	0.83333333	0.9674204	-1.473633037	0.9359023
-1.514128	306	0.83606557	0.9784162	-1.481447118	0.9572983
-1.514128	307	0.83879781	0.9895302	-1.498275172	0.9791701
-1.514128	308	0.84153005	1.000767	-1.515289133	1.0015347
-1.514128	309	0.8442623	1.0121312	-1.532495887	1.0244095
-1.509593	310	0.84699454	1.0236272	-1.545260011	1.0478126
-1.505078	311	0.84972678	1.0352619	-1.558149808	1.0717672
-1.500584	312	0.85245902	1.0470376	-1.571167333	1.0962877
-1.491655	313	0.85519126	1.0589611	-1.579604431	1.1213985
-1.491655	314	0.8579235	1.0710369	-1.597617381	1.14712
-1.491655	315	0.86065574	1.0832696	-1.615864353	1.173473
-1.469676	316	0.86338798	1.0956683	-1.610277323	1.200489
-1.469676	317	0.86612022	1.1082375	-1.628749999	1.2281903

Table 47. Selenium Near Upgradient Background Data, Shapiro-Francia Test of Normality Analysis (continued)

Selenium - lognormal data					
Selenium	Count	i/(n+1)	Mi	Mi * Xi (lognormal	Mi^2
-1.469676	318	0.86885246	1.1209841	-1.647483324	1.2566052
-1.469676	319	0.8715847	1.1339148	-1.666487324	1.2857628
-1.469676	320	0.87431694	1.1470365	-1.685772022	1.3156928
-1.469676	321	0.87704918	1.1603606	-1.705354128	1.3464368
-1.469676	322	0.87978142	1.1738939	-1.725243666	1.3780269
-1.461018	323	0.88251366	1.1876455	-1.735171294	1.4105018
-1.458865	324	0.8852459	1.2016267	-1.753011162	1.4439067
-1.456717	325	0.88797814	1.2158466	-1.771144233	1.478283
-1.456717	326	0.89071038	1.2303144	-1.792219702	1.5136735
-1.44817	327	0.89344262	1.2450482	-1.803041195	1.5501451
-1.443923	328	0.89617486	1.2600549	-1.81942283	1.5877383
-1.443923	329	0.8989071	1.275348	-1.841504973	1.6265126
-1.439695	330	0.90163934	1.2909504	-1.858575046	1.666553
-1.431292	331	0.90437158	1.3068711	-1.870513832	1.7079121
-1.427116	332	0.90710383	1.3231283	-1.888258101	1.7506686
-1.427116	333	0.90983607	1.3397448	-1.911971735	1.7949162
-1.427116	334	0.91256831	1.3567433	-1.936230509	1.8407523
-1.427116	335	0.91530055	1.3741374	-1.961053894	1.8882535
-1.418818	336	0.91803279	1.3919589	-1.974935725	1.9375496
-1.418818	337	0.92076503	1.4102352	-2.000866455	1.9887633
-1.414694	338	0.92349727	1.4289981	-2.021594768	2.0420355
-1.410587	339	0.92622951	1.4482703	-2.042911291	2.0974868
-1.394327	340	0.92896175	1.4681018	-2.047013293	2.1553229
-1.386294	341	0.93169399	1.4885291	-2.06353943	2.2157187
-1.378326	342	0.93442623	1.5095929	-2.080711499	2.2788709
-1.372391	343	0.93715847	1.5313481	-2.101608996	2.3450269
-1.360627	344	0.93989071	1.5538581	-2.114220625	2.4144749
-1.331806	345	0.94262295	1.577182	-2.100500791	2.4875032
-1.313044	346	0.94535519	1.6013928	-2.102699041	2.5644589
-1.309333	347	0.94808743	1.6265858	-2.129742985	2.6457814
-1.287354	348	0.95081967	1.652852	-2.127806325	2.7319198
-1.269401	349	0.95355191	1.6803142	-2.132991868	2.8234558
-1.244795	350	0.95628415	1.7091043	-2.127484086	2.9210373
-1.231001	351	0.95901639	1.7393813	-2.141180989	3.0254474
-1.224176	352	0.96174863	1.7713501	-2.16844338	3.1376811
-1.224176	353	0.96448087	1.8052287	-2.209916827	3.2588508
-1.224176	354	0.96721311	1.8413266	-2.254106925	3.3904836
-1.22078	355	0.96994536	1.8799892	-2.295053086	3.5343594
-1.207312	356	0.9726776	1.9216895	-2.320078283	3.6928907
-1.203973	357	0.97540984	1.9670188	-2.368237094	3.8691628
-1.203973	358	0.97814208	2.0168045	-2.428177771	4.0675004
-1.171183	359	0.98087432	2.0721473	-2.426863599	4.2937942
-1.133204	360	0.98360656	2.134675	-2.419021696	4.5568374
-1.120858	361	0.9863388	2.2068707	-2.473588458	4.8702783
-1.021651	362	0.98907104	2.2928361	-2.342478906	5.2570976
-0.901402	363	0.99180328	2.4000474	-2.163407794	5.7602274
-0.356675	364	0.99453552	2.5449481	-0.907719212	6.4767607
-0.281038	365	0.99726776	2.7783244	-0.78081343	7.7190866

Table 48. Selenium Near Upgradient Background Data Set, Filliben's Statistic Analysis

Selenium	Ln(Selenium)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
0.005	-5.298317367	1	0.00190	-2.8948	-0.014474	8.3799394	15.33763532
0.005	-5.298317367	2	0.00460	-2.6042	-0.013021	6.7817241	13.79774229
0.005	-5.298317367	3	0.00734	-2.4401	-0.0122	5.9540067	12.92833591
0.005	-5.298317367	4	0.01008	-2.3234	-0.011617	5.3981651	12.31008495
0.005	-5.298317367	5	0.01282	-2.2317	-0.011159	4.9806469	11.82444714
0.005	-5.298317367	6	0.01555	-2.1557	-0.010779	4.6471318	11.42169254
0.005	-5.298317367	7	0.01829	-2.0904	-0.010452	4.3698516	11.0757033
0.005	-5.298317367	8	0.02103	-2.0330	-0.010165	4.1330256	10.77139662
0.009	-4.710530702	9	0.02376	-1.9816	-0.017834	3.9265863	9.334206667
0.01	-4.605170186	10	0.02650	-1.9349	-0.019349	3.7438554	8.910564531
0.01	-4.605170186	11	0.02924	-1.8921	-0.018921	3.5800908	8.713501352
0.01	-4.605170186	12	0.03197	-1.8525	-0.018525	3.4318732	8.531223146
0.01	-4.605170186	13	0.03471	-1.8157	-0.018157	3.2965906	8.361384423
0.01	-4.605170186	14	0.03745	-1.7811	-0.017811	3.1722843	8.202226063
0.01	-4.605170186	15	0.04019	-1.7485	-0.017485	3.0573601	8.052282135
0.01	-4.605170186	16	0.04292	-1.7177	-0.017177	2.9505991	7.910442718
0.01	-4.605170186	17	0.04566	-1.6885	-0.016885	2.8509543	7.775723543
0.01	-4.605170186	18	0.04840	-1.6606	-0.016606	2.7575954	7.647349761
0.01	-4.605170186	19	0.05113	-1.6340	-0.01634	2.6698163	7.524651231
0.01	-4.605170186	20	0.05387	-1.6084	-0.016084	2.5870398	7.407083464
0.01	-4.605170186	21	0.05661	-1.5839	-0.015839	2.5087494	7.294143854
0.01	-4.605170186	22	0.05934	-1.5603	-0.015603	2.4345276	7.185434506
0.01	-4.605170186	23	0.06208	-1.5375	-0.015375	2.3639926	7.080578466
0.01	-4.605170186	24	0.06482	-1.5155	-0.015155	2.2968371	6.979282547
0.01	-4.605170186	25	0.06756	-1.4942	-0.014942	2.2327688	6.881253562
0.01	-4.605170186	26	0.07029	-1.4736	-0.014736	2.1715363	6.78624021
0.01	-4.605170186	27	0.07303	-1.4536	-0.014536	2.1129262	6.694033071
0.01	-4.605170186	28	0.07577	-1.4341	-0.014341	2.0567481	6.604443668
0.01	-4.605170186	29	0.07850	-1.4152	-0.014152	2.0028197	6.517283524
0.01	-4.605170186	30	0.08124	-1.3968	-0.013968	1.9509795	6.432385104
0.01	-4.605170186	31	0.08398	-1.3788	-0.013788	1.9010979	6.349622757
0.015	-4.199705078	32	0.08671	-1.3613	-0.020419	1.8530506	5.716924153
0.016	-4.135166557	33	0.08945	-1.3441	-0.021506	1.8067122	5.558242552
0.017	-4.074541935	34	0.09219	-1.3274	-0.022566	1.7619866	5.408540536
0.018	-4.017383521	35	0.09493	-1.3110	-0.023598	1.7187693	5.266863807
0.02	-3.912023005	36	0.09766	-1.2950	-0.0259	1.6769895	5.066016216

Normal

31.613 =sum X(i)*M(i)
360.147 =sum M(i)^2
0.09 = standard deviation
18.9775 = square root of sum Mi^2

0.937 = Fillibens's Statistic

Lognormal

343.168 =sum X(i)*M(i)
360.147 =sum M(i)^2
1.00 = standard deviation
18.9775 = square root of sum Mi^2

0.950 = Fillibens's Statistic

.987+ is acceptable value

Normal - Fail
Lognormal - Fail

Table 48. Selenium Near Upgradient Background Data Set, Filliben's Statistic Analysis (continued)

Selenium	Ln(Selenium)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
0.02	-3.912023005	37	0.10040	-1.2793	-0.025586	1.6365498	5.00456128
0.02	-3.912023005	38	0.10314	-1.2639	-0.025278	1.5973909	4.944324946
0.02	-3.912023005	39	0.10587	-1.2488	-0.024976	1.5594444	4.88524495
0.02	-3.912023005	40	0.10861	-1.2340	-0.024679	1.5226385	4.827250134
0.02	-3.912023005	41	0.11135	-1.2194	-0.024388	1.4869209	4.770296022
0.02	-3.912023005	42	0.11408	-1.2051	-0.024102	1.4522409	4.71433814
0.02	-3.912023005	43	0.11682	-1.1910	-0.023821	1.4185442	4.659323119
0.0205	-3.887330393	44	0.11956	-1.1772	-0.024133	1.3857943	4.576156188
0.021	-3.863232841	45	0.12230	-1.1636	-0.024435	1.3539401	4.495216519
0.023	-3.772261063	46	0.12503	-1.1502	-0.026454	1.3229427	4.338826287
0.0235	-3.750754858	47	0.12777	-1.1370	-0.026719	1.2927644	4.264600698
0.024	-3.729701449	48	0.13051	-1.1240	-0.026976	1.2633738	4.1921808
0.0245	-3.709082161	49	0.13324	-1.1112	-0.027224	1.2347405	4.121490535
0.025	-3.688879454	50	0.13598	-1.0986	-0.027464	1.2068301	4.052448724
0.025	-3.688879454	51	0.13872	-1.0861	-0.027153	1.179614	4.006493388
0.025	-3.688879454	52	0.14145	-1.0738	-0.026845	1.1530648	3.961150342
0.026	-3.649658741	53	0.14419	-1.0617	-0.027604	1.1271557	3.874754739
0.03	-3.506557897	54	0.14693	-1.0497	-0.031491	1.1018656	3.680826312
0.03	-3.506557897	55	0.14967	-1.0379	-0.031136	1.0771739	3.63935082
0.03	-3.506557897	56	0.15240	-1.0262	-0.030786	1.053056	3.598377627
0.031	-3.473768074	57	0.15514	-1.0146	-0.031454	1.0294879	3.524613051
0.04	-3.218875825	58	0.15788	-1.0032	-0.040129	1.0064603	3.229256545
0.04	-3.218875825	59	0.16061	-0.9919	-0.039678	0.9839458	3.192932962
0.04	-3.218875825	60	0.16335	-0.9808	-0.039231	0.9619312	3.157011917
0.04	-3.218875825	61	0.16609	-0.9697	-0.03879	0.9403994	3.121478773
0.04	-3.218875825	62	0.16882	-0.9588	-0.038353	0.919338	3.08632621
0.04	-3.218875825	63	0.17156	-0.9480	-0.037921	0.8987307	3.051539591
0.042	-3.170085661	64	0.17430	-0.9373	-0.039367	0.8785573	2.971365262
0.0425	-3.158251203	65	0.17704	-0.9267	-0.039386	0.8588152	2.926823414
0.044	-3.123565645	66	0.17977	-0.9162	-0.040314	0.8394848	2.861917225
0.045	-3.101092789	67	0.18251	-0.9058	-0.040763	0.8205517	2.809103445
0.045	-3.101092789	68	0.18525	-0.8956	-0.0403	0.8020136	2.777190309
0.047	-3.057607677	69	0.18798	-0.8854	-0.041612	0.7838485	2.707059577
0.0485	-3.026191481	70	0.19072	-0.8752	-0.042449	0.7660545	2.648660189
0.05	-2.995732274	71	0.19346	-0.8652	-0.043261	0.7486183	2.591989409
0.05	-2.995732274	72	0.19619	-0.8553	-0.042765	0.7315267	2.562229937
0.05	-2.995732274	73	0.19893	-0.8454	-0.042272	0.7147786	2.532729302
0.05	-2.995732274	74	0.20167	-0.8357	-0.041784	0.6983574	2.50346707
0.05	-2.995732274	75	0.20441	-0.8260	-0.041299	0.6822586	2.47444324
0.05	-2.995732274	76	0.20714	-0.8164	-0.040819	0.6664718	2.445647596
0.05	-2.995732274	77	0.20988	-0.8068	-0.040342	0.6509908	2.417076732
0.05	-2.995732274	78	0.21262	-0.7974	-0.039869	0.6358097	2.388727241
0.050485	-2.986079017	79	0.21535	-0.7880	-0.039781	0.6209187	2.352982296
0.051	-2.975929646	80	0.21809	-0.7787	-0.039712	0.6063104	2.317235419
0.055	-2.900422094	81	0.22083	-0.7694	-0.042317	0.5919809	2.231593342
0.055	-2.900422094	82	0.22356	-0.7602	-0.041812	0.5779196	2.20493058
0.055	-2.900422094	83	0.22630	-0.7511	-0.04131	0.5641264	2.178459068
0.0565	-2.873514641	84	0.22904	-0.7420	-0.041924	0.5505908	2.132199798
0.057	-2.864704011	85	0.23178	-0.7330	-0.041782	0.5373096	2.099868364
0.0585	-2.838728525	86	0.23451	-0.7241	-0.042358	0.5242729	2.055429425
0.059	-2.830217835	87	0.23725	-0.7152	-0.042196	0.5114808	2.024112036
0.059	-2.830217835	88	0.23999	-0.7063	-0.041675	0.4989271	1.999117834

Table 48. Selenium Near Upgradient Background Data Set, Filliben's Statistic Analysis (continued)

Selenium	Ln(Selenium)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
0.05955	-2.820938983	89	0.24272	-0.6976	-0.04154	0.4866038	1.967802211
0.06	-2,813410717	90	0.24546	-0.6888	-0.041331	0.4745098	1.9380088
0.06	-2.813410717	91	0.24820	-0.6802	-0.04081	0.4626376	1.913610812
0.06	-2.813410717	92	0.25093	-0.6716	-0.040293	0.450983	1.889353557
0.06	-2.813410717	93	0.25367	-0.6630	-0.039779	0.4395449	1.865240234
0.06	-2.813410717	94	0.25641	-0.6545	-0.039268	0.4283162	1.841261247
0.06	-2.813410717	95	0.25914	-0.6460	-0.038759	0.4172945	1.817416596
0.061	-2.796881415	96	0.26188	-0.6376	-0.038891	0.4064745	1.783161569
0.0615	-2.788718104	97	0.26462	-0.6292	-0.038694	0.3958552	1.754578452
0.062	-2.780620894	98	0.26736	-0.6208	-0.038491	0.3854287	1.726290204
0.063	-2.764620553	99	0.27009	-0.6125	-0.038589	0.3751943	1.6934159
0.064	-2.748872196	100	0.27283	-0.6043	-0.038674	0.3651498	1.661078149
0.064	-2.748872196	101	0.27557	-0.5961	-0.038148	0.3552903	1.638499259
0.065	-2.733368009	102	0.27830	-0.5879	-0.038213	0.3456126	1.606915018
0.065	-2.733368009	103	0.28104	-0.5798	-0.037684	0.3361134	1.584677894
0.065	-2.733368009	104	0.28378	-0.5717	-0.037158	0.3267894	1.562543316
0.065	-2.733368009	105	0.28651	-0.5636	-0.036634	0.3176401	1.540514393
0.065	-2.733368009	106	0.28925	-0.5556	-0.036112	0.3086599	1.518581802
0.065	-2.733368009	107	0.29199	-0.5476	-0.035593	0.2998483	1.49674865
0.07	-2.659260037	108	0.29473	-0.5396	-0.037774	0.2912011	1.4350178
0.07	-2.659260037	109	0.29746	-0.5317	-0.03722	0.2827167	1.41395799
0.07	-2.659260037	110	0.30020	-0.5238	-0.036668	0.2743934	1.392988876
0.07	-2.659260037	111	0.30294	-0.5160	-0.036118	0.2662274	1.372104412
0.07	-2.659260037	112	0.30567	-0.5082	-0.035571	0.258217	1.351304599
0.07	-2.659260037	113	0.30841	-0.5004	-0.035025	0.2503609	1.330589437
0.07	-2.659260037	114	0.31115	-0.4926	-0.034482	0.2426542	1.309949855
0.07	-2.659260037	115	0.31388	-0.4849	-0.033941	0.2350976	1.2893919
0.073	-2.617295838	116	0.31662	-0.4772	-0.034833	0.2276878	1.24888562
0.0735	-2.610469873	117	0.31936	-0.4695	-0.034508	0.2204232	1.225596115
0.074	-2.603690186	118	0.32210	-0.4618	-0.034177	0.2133017	1.202503786
0.0755	-2.583622623	119	0.32483	-0.4542	-0.034294	0.2063219	1.173550288
0.076	-2.577021939	120	0.32757	-0.4466	-0.033944	0.1994825	1.150987313
0.077	-2.563949857	121	0.33031	-0.4391	-0.033808	0.1927794	1.125744555
0.078	-2.551046452	122	0.33304	-0.4315	-0.033659	0.1862124	1.100836248
0.08	-2.525728644	123	0.33578	-0.4240	-0.033921	0.1797815	1.070925186
0.08	-2.525728644	124	0.33852	-0.4165	-0.033321	0.1734824	1.051996778
0.08	-2.525728644	125	0.34125	-0.4090	-0.032723	0.1673152	1.033128671
0.08	-2.525728644	126	0.34399	-0.4016	-0.032128	0.1612779	1.014317991
0.08	-2.525728644	127	0.34673	-0.3942	-0.031533	0.1553686	0.995561869
0.08	-2.525728644	128	0.34947	-0.3868	-0.030941	0.1495862	0.976860304
0.08	-2.525728644	129	0.35220	-0.3794	-0.03035	0.1439299	0.958213296
0.08	-2.525728644	130	0.35494	-0.3720	-0.029761	0.1383978	0.939617973
0.08	-2.525728644	131	0.35768	-0.3647	-0.029174	0.1329883	0.921071465
0.08	-2.525728644	132	0.36041	-0.3574	-0.028588	0.127702	0.902579514
0.081	-2.513306124	133	0.36315	-0.3501	-0.028354	0.1225356	0.879784991
0.082	-2.501036032	134	0.36589	-0.3428	-0.028107	0.1174884	0.857269656
0.085	-2.465104022	135	0.36862	-0.3355	-0.028517	0.1125595	0.827039819
0.085	-2.465104022	136	0.37136	-0.3283	-0.027901	0.1077482	0.809171086
0.087	-2.44184716	137	0.37410	-0.3210	-0.027929	0.1030523	0.783875729
0.089	-2.419118909	138	0.37684	-0.3138	-0.027928	0.0984723	0.759126667
0.09	-2.407945609	139	0.37957	-0.3066	-0.027594	0.0940062	0.738286493
0.09	-2.407945609	140	0.38231	-0.2994	-0.026948	0.0896533	0.720990859

Table 48. Selenium Near Upgradient Background Data Set, Filliben's Statistic Analysis (continued)

Selenium	Ln(Selenium)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
0.09	-2.407945609	141	0.38505	-0.2923	-0.026303	0.0854122	0.703730813
0.09	-2.407945609	142	0.38778	-0.2851	-0.025659	0.0812829	0.686509093
0.09	-2.407945609	143	0.39052	-0.2780	-0.025017	0.0772635	0.669320222
0.09	-2.407945609	144	0.39326	-0.2708	-0.024375	0.0733535	0.652164202
0.09	-2.407945609	145	0.39599	-0.2637	-0.023736	0.0695527	0.635043769
0.09	-2.407945609	146	0.39873	-0.2566	-0.023097	0.06586	0.617956186
0.09	-2.407945609	147	0.40147	-0.2495	-0.022459	0.0622744	0.600898717
0.09	-2.407945609	148	0.40421	-0.2425	-0.021823	0.0587951	0.58387136
0.09	-2.407945609	149	0.40694	-0.2354	-0.021188	0.0554217	0.566874115
0.09	-2.407945609	150	0.40968	-0.2284	-0.020553	0.0521527	0.549901508
0.09	-2.407945609	151	0.41242	-0.2213	-0.01992	0.0489885	0.532959014
0.0905	-2.402405428	152	0.41515	-0.2143	-0.019395	0.0459283	0.514856586
0.091	-2.396895772	153	0.41789	-0.2073	-0.018864	0.0429709	0.496862846
0.0925	-2.380546634	154	0.42063	-0.2003	-0.018527	0.0401157	0.476797122
0.0945	-2.359155444	155	0.42336	-0.1933	-0.018266	0.0373629	0.456012737
0.095	-2.353878387	156	0.42610	-0.1863	-0.017699	0.034711	0.438548382
0.096	-2.343407088	157	0.42884	-0.1793	-0.017216	0.0321599	0.420247626
0.096	-2.343407088	158	0.43158	-0.1724	-0.016547	0.0297097	0.403921743
0.096	-2.343407088	159	0.43431	-0.1654	-0.015879	0.0273589	0.387611844
0.0995	-2.307597635	160	0.43705	-0.1585	-0.015766	0.0251078	0.365649093
0.1	-2.302585093	161	0.43979	-0.1515	-0.015151	0.0229554	0.3488657
0.1	-2.302585093	162	0.44252	-0.1446	-0.014458	0.0209021	0.33289751
0.1	-2.302585093	163	0.44526	-0.1376	-0.013765	0.0189462	0.31693979
0.1	-2.302585093	164	0.44800	-0.1307	-0.013072	0.0170885	0.301000394
0.1	-2.302585093	165	0.45073	-0.1238	-0.012381	0.0153282	0.285076705
0.1	-2.302585093	166	0.45347	-0.1169	-0.01169	0.0136647	0.269163487
0.1	-2.302585093	167	0.45621	-0.1100	-0.010999	0.012098	0.253263357
0.1	-2.302585093	168	0.45895	-0.1031	-0.010309	0.0106278	0.237376317
0.1	-2.302585093	169	0.46168	-0.0962	-0.00962	0.0092539	0.221502364
0.1	-2.302585093	170	0.46442	-0.0893	-0.008931	0.0079757	0.205636265
0.1	-2.302585093	171	0.46716	-0.0824	-0.008242	0.0067932	0.189780637
0.1	-2.302585093	172	0.46989	-0.0755	-0.007554	0.005706	0.173932863
0.1	-2.302585093	173	0.47263	-0.0687	-0.006866	0.0047142	0.158095559
0.1	-2.302585093	174	0.47537	-0.0618	-0.006178	0.0038173	0.14226349
0.1	-2.302585093	175	0.47810	-0.0549	-0.005491	0.0030154	0.126441893
0.1	-2.302585093	176	0.48084	-0.0480	-0.004804	0.0023081	0.110622913
0.1	-2.302585093	177	0.48358	-0.0412	-0.004118	0.0016954	0.094809169
0.101	-2.292634762	178	0.48632	-0.0343	-0.003465	0.0011771	0.078659269
0.1015	-2.287696481	179	0.48905	-0.0274	-0.002786	0.0007533	0.06278875
0.102	-2.282782466	180	0.49179	-0.0206	-0.002099	0.0004237	0.046986516
0.102	-2.282782466	181	0.49453	-0.0137	-0.0014	0.0001883	0.031324344
0.1025	-2.27789248	182	0.49726	-0.0069	-0.000703	4.707E-05	0.015628622
0.104	-2.26336438	183	0.50000	0.0000	0	0	0
0.1045	-2.258568208	184	0.50274	0.0069	0.000717	4.707E-05	-0.015496038
0.11	-2.207274913	185	0.50547	0.0137	0.0015094	0.0001883	-0.030288229
0.11	-2.207274913	186	0.50821	0.0206	0.0022641	0.0004237	-0.045432344
0.11	-2.207274913	187	0.51095	0.0274	0.0030191	0.0007533	-0.060581477
0.11	-2.207274913	188	0.51368	0.0343	0.0037741	0.0011771	-0.075730611
0.11	-2.207274913	189	0.51642	0.0412	0.0045293	0.0016954	-0.090884763
0.11	-2.207274913	190	0.51916	0.0480	0.0052847	0.0023081	-0.106043934
0.11	-2.207274913	191	0.52190	0.0549	0.0060404	0.0030154	-0.121208123
0.11	-2.207274913	192	0.52463	0.0618	0.0067963	0.0038173	-0.136374822

Table 48. Selenium Near Upgradient Background Data Set, Filliben's Statistic Analysis (continued)

Selenium	Ln(Selenium)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
0.112	-2.189256408	193	0.52737	0.0687	0.0076899	0.0047142	-0.150314408
0.113	-2.18036746	194	0.53011	0.0755	0.0085358	0.005706	-0.164700777
0.115	-2.162823151	195	0.53284	0.0824	0.0094784	0.0067932	-0.178261363
0.12	-2.120263536	196	0.53558	0.0893	0.0107168	0.0079757	-0.18935373
0.12	-2.120263536	197	0.53832	0.0962	0.0115437	0.0092539	-0.203963531
0.12	-2.120263536	198	0.54105	0.1031	0.0123709	0.0106278	-0.218580564
0.12	-2.120263536	199	0.54379	0.1100	0.0131989	0.012098	-0.233209649
0.12	-2.120263536	200	0.54653	0.1169	0.0140275	0.0136647	-0.247850787
0.12	-2.120263536	201	0.54927	0.1238	0.0148569	0.0153282	-0.262503977
0.12	-2.120263536	202	0.55200	0.1307	0.0156867	0.0170885	-0.277166808
0.121	-2.111964733	203	0.55474	0.1376	0.0166551	0.0189462	-0.290701812
0.121	-2.111964733	204	0.55748	0.1446	0.0174936	0.0209021	-0.305338466
0.123	-2.095570924	205	0.56021	0.1515	0.0186358	0.0229554	-0.317500891
0.128	-2.055725015	206	0.56295	0.1585	0.0202822	0.0251078	-0.325738757
0.13	-2.040220829	207	0.56569	0.1654	0.0215027	0.0273589	-0.337463244
0.13	-2.040220829	208	0.56842	0.1724	0.0224075	0.0297097	-0.351662994
0.13	-2.040220829	209	0.57116	0.1793	0.0233131	0.0321599	-0.36587666
0.13	-2.040220829	210	0.57390	0.1863	0.0242202	0.034711	-0.380111202
0.13	-2.040220829	211	0.57664	0.1933	0.0251283	0.0373629	-0.394364299
0.13	-2.040220829	212	0.57937	0.2003	0.0260376	0.0401157	-0.408633633
0.13	-2.040220829	213	0.58211	0.2073	0.0269483	0.0429709	-0.422926161
0.13	-2.040220829	214	0.58485	0.2143	0.0278601	0.0459283	-0.437237245
0.13	-2.040220829	215	0.58758	0.2213	0.0287734	0.0489885	-0.451569204
0.13666667	-1.990210408	216	0.59032	0.2284	0.0312105	0.0521527	-0.454503499
0.138	-1.980501594	217	0.59306	0.2354	0.0324877	0.0554217	-0.466246033
0.14	-1.966112856	218	0.59579	0.2425	0.0339468	0.0587951	-0.476737092
0.14	-1.966112856	219	0.59853	0.2495	0.0349368	0.0622744	-0.490640107
0.14	-1.966112856	220	0.60127	0.2566	0.0359285	0.06586	-0.50456771
0.14	-1.966112856	221	0.60401	0.2637	0.036922	0.0695527	-0.518519901
0.14	-1.966112856	222	0.60674	0.2708	0.0379174	0.0733535	-0.532498914
0.14	-1.966112856	223	0.60948	0.2780	0.0389148	0.0772635	-0.546506984
0.14	-1.966112856	224	0.61222	0.2851	0.0399142	0.0812829	-0.560541878
0.144	-1.937941979	225	0.61495	0.2923	0.0420845	0.0854122	-0.566370553
0.145	-1.931021537	226	0.61769	0.2994	0.0434161	0.0896533	-0.578189504
0.145	-1.931021537	227	0.62043	0.3066	0.0444576	0.0940062	-0.592059519
0.1475	-1.913927103	228	0.62316	0.3138	0.0462859	0.0984723	-0.600595984
0.1495	-1.900458886	229	0.62590	0.3210	0.0479921	0.1030523	-0.610080605
0.15	-1.897119985	230	0.62864	0.3283	0.0492375	0.1077482	-0.622730167
0.15	-1.897119985	231	0.63138	0.3355	0.0503248	0.1125595	-0.636481769
0.15	-1.897119985	232	0.63411	0.3428	0.0514149	0.1174884	-0.650267879
0.15	-1.897119985	233	0.63685	0.3501	0.0525076	0.1225356	-0.664088498
0.15	-1.897119985	234	0.63959	0.3574	0.0536031	0.127702	-0.677943625
0.15	-1.897119985	235	0.64232	0.3647	0.0547013	0.1329883	-0.691833261
0.15	-1.897119985	236	0.64506	0.3720	0.0558028	0.1383978	-0.705763875
0.15	-1.897119985	237	0.64780	0.3794	0.0569071	0.1439299	-0.719731155
0.15	-1.897119985	238	0.65053	0.3868	0.0580146	0.1495862	-0.733737256
0.155	-1.864330162	239	0.65327	0.3942	0.0610961	0.1553686	-0.734859632
0.16	-1.832581464	240	0.65601	0.4016	0.0642551	0.1612779	-0.735954099
0.16	-1.832581464	241	0.65875	0.4090	0.0654467	0.1673152	-0.749602478
0.16	-1.832581464	242	0.66148	0.4165	0.066642	0.1734824	-0.763292525
0.16	-1.832581464	243	0.66422	0.4240	0.067841	0.1797815	-0.777026324
0.16	-1.832581464	244	0.66696	0.4315	0.0690437	0.1862124	-0.790801791

Table 48. Selenium Near Upgradient Background Data Set, Filliben's Statistic Analysis (continued)

Selenium	Ln(Selenium)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
0.16	-1.832581464	245	0.66969	0.4391	0.0702506	0.1927794	-0.804625176
0.162	-1.820158944	246	0.67243	0.4466	0.0723548	0.1994825	-0.812946068
0.163	-1.814005078	247	0.67517	0.4542	0.0740389	0.2063219	-0.823969477
0.164	-1.807888851	248	0.67790	0.4618	0.0757427	0.2133017	-0.834966157
0.165	-1.801809805	249	0.68064	0.4695	0.0774663	0.2204232	-0.845936251
0.167	-1.789761467	250	0.68338	0.4772	0.0796868	0.2276878	-0.854014027
0.167	-1.789761467	251	0.68612	0.4849	0.0809731	0.2350976	-0.867799277
0.17	-1.771956842	252	0.68885	0.4926	0.0837419	0.2426542	-0.872864848
0.17	-1.771956842	253	0.69159	0.5004	0.0850613	0.2503609	-0.886617714
0.17	-1.771956842	254	0.69433	0.5082	0.0863856	0.258217	-0.900420943
0.17	-1.771956842	255	0.69706	0.5160	0.0877153	0.2662274	-0.914280577
0.17	-1.771956842	256	0.69980	0.5238	0.0890504	0.2743934	-0.928196617
0.17	-1.771956842	257	0.70254	0.5317	0.0903909	0.2827167	-0.942169062
0.17	-1.771956842	258	0.70527	0.5396	0.0917372	0.2912011	-0.956201941
0.17	-1.771956842	259	0.70801	0.5476	0.0930893	0.2998483	-0.970295255
0.171	-1.766091722	260	0.71075	0.5556	0.0950028	0.3086599	-0.98119051
0.173	-1.754463684	261	0.71349	0.5636	0.0975021	0.3176401	-0.988808148
0.175	-1.742969305	262	0.71622	0.5717	0.1000396	0.3267894	-0.996377008
0.176	-1.737271284	263	0.71896	0.5798	0.1020365	0.3361134	-1.007187978
0.179	-1.720369473	264	0.72170	0.5879	0.105232	0.3456126	-1.011385051
0.18	-1.714798428	265	0.72443	0.5961	0.1072912	0.3552903	-1.022126805
0.18	-1.714798428	266	0.72717	0.6043	0.1087697	0.3651498	-1.036211943
0.18	-1.714798428	267	0.72991	0.6125	0.1102556	0.3751943	-1.050367263
0.18	-1.714798428	268	0.73264	0.6208	0.1117492	0.3854287	-1.064596664
0.18	-1.714798428	269	0.73538	0.6292	0.1132506	0.3958552	-1.078900147
0.182	-1.703748592	270	0.73812	0.6376	0.1160347	0.4064745	-1.086230899
0.182	-1.703748592	271	0.74086	0.6460	0.117569	0.4172945	-1.100593293
0.1866	-1.678787991	272	0.74359	0.6545	0.122122	0.4283162	-1.098697481
0.19	-1.660731207	273	0.74633	0.6630	0.1259666	0.4395449	-1.101034643
0.19	-1.660731207	274	0.74907	0.6716	0.127595	0.450983	-1.115268522
0.19	-1.660731207	275	0.75180	0.6802	0.1292332	0.4626376	-1.129587363
0.191	-1.655481851	276	0.75454	0.6888	0.1315697	0.4745098	-1.140373276
0.194	-1.63989712	277	0.75728	0.6976	0.1353286	0.4866038	-1.14394292
0.194	-1.63989712	278	0.76001	0.7063	0.1370315	0.4989271	-1.158337545
0.196	-1.62964062	279	0.76275	0.7152	0.1401751	0.5114808	-1.165484561
0.197	-1.62455155	280	0.76549	0.7241	0.1426412	0.5242729	-1.176284041
0.199	-1.614450454	281	0.76822	0.7330	0.1458698	0.5373096	-1.183414908
0.2	-1.609437912	282	0.77096	0.7420	0.1484036	0.5505908	-1.194232019
0.2	-1.609437912	283	0.77370	0.7511	0.1502167	0.5641264	-1.208822199
0.2	-1.609437912	284	0.77644	0.7602	0.152042	0.5779196	-1.223511184
0.2	-1.609437912	285	0.77917	0.7694	0.1538806	0.5919809	-1.238306292
0.2	-1.609437912	286	0.78191	0.7787	0.1557319	0.6063104	-1.253203865
0.2	-1.609437912	287	0.78465	0.7880	0.1575968	0.6209187	-1.268211221
0.2	-1.609437912	288	0.78738	0.7974	0.1594753	0.6358097	-1.28332836
0.2	-1.609437912	289	0.79012	0.8068	0.161368	0.6509908	-1.298558941
0.2	-1.609437912	290	0.79286	0.8164	0.1632754	0.6664718	-1.313908455
0.2	-1.609437912	291	0.79559	0.8260	0.1651979	0.6822586	-1.329378729
0.201	-1.604450371	292	0.79833	0.8357	0.1679712	0.6983574	-1.340803617
0.207	-1.575036486	293	0.80107	0.8454	0.1750073	0.7147786	-1.331607999
0.2075	-1.572623939	294	0.80381	0.8553	0.1774734	0.7315267	-1.345054821
0.209	-1.565421027	295	0.80654	0.8652	0.1808325	0.7486183	-1.354445041
0.21	-1.560647748	296	0.80928	0.8752	0.1838015	0.7660545	-1.365949771

Table 48. Selenium Near Upgradient Background Data Set, Filliben's Statistic Analysis (continued)

Selenium	Ln(Selenium)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
0.21	-1.560647748	297	0.81202	0.8854	0.185924	0.7838485	-1.381722863
0.21	-1.560647748	298	0.81475	0.8956	0.188066	0.8020136	-1.397641443
0.21	-1.560647748	299	0.81749	0.9058	0.190227	0.8205517	-1.413701964
0.21	-1.560647748	300	0.82023	0.9162	0.1924092	0.8394848	-1.429918619
0.214	-1.541779264	301	0.82296	0.9267	0.1983187	0.8588152	-1.428802004
0.215	-1.537117251	302	0.82570	0.9373	0.2015225	0.8785573	-1.440761321
0.215	-1.537117251	303	0.82844	0.9480	0.203823	0.8987307	-1.45720879
0.217	-1.527857925	304	0.83118	0.9588	0.2080642	0.919338	-1.464942488
0.218	-1.523260216	305	0.83391	0.9697	0.2114037	0.9403994	-1.477169263
0.22	-1.514127733	306	0.83665	0.9808	0.2157718	0.9619312	-1.485027555
0.22	-1.514127733	307	0.83939	0.9919	0.2182269	0.9839458	-1.501924463
0.22	-1.514127733	308	0.84212	1.0032	0.2207095	1.0064603	-1.519010722
0.22	-1.514127733	309	0.84486	1.0146	0.2232201	1.0294879	-1.536289773
0.221	-1.509592577	310	0.84760	1.0262	0.2267869	1.053056	-1.549121479
0.222	-1.505077897	311	0.85033	1.0379	0.2304071	1.0771739	-1.562075015
0.223	-1.500583508	312	0.85307	1.0497	0.2340826	1.1018656	-1.575159293
0.225	-1.491654877	313	0.85581	1.0617	0.2388771	1.1271557	-1.583654038
0.225	-1.491654877	314	0.85855	1.0738	0.2416069	1.1530648	-1.601751778
0.225	-1.491654877	315	0.86128	1.0861	0.2443726	1.179614	-1.620086933
0.23	-1.46967597	316	0.86402	1.0986	0.2526684	1.2068301	-1.614524569
0.23	-1.46967597	317	0.86676	1.1112	0.2555734	1.2347405	-1.633087469
0.23	-1.46967597	318	0.86949	1.1240	0.2585198	1.2633738	-1.651914361
0.23	-1.46967597	319	0.87223	1.1370	0.2615095	1.2927644	-1.67101861
0.23	-1.46967597	320	0.87497	1.1502	0.2645443	1.3229427	-1.690410241
0.23	-1.46967597	321	0.87770	1.1636	0.2676255	1.3539401	-1.71009928
0.23	-1.46967597	322	0.88044	1.1772	0.2707555	1.3857943	-1.730099092
0.232	-1.461017907	323	0.88318	1.1910	0.2763182	1.4185442	-1.740111064
0.2325	-1.458865054	324	0.88592	1.2051	0.2801833	1.4522409	-1.758063068
0.233	-1.456716825	325	0.88865	1.2194	0.2841187	1.4869209	-1.776311251
0.233	-1.456716825	326	0.89139	1.2340	0.2875109	1.5226385	-1.797519207
0.235	-1.448169765	327	0.89413	1.2488	0.2934626	1.5594444	-1.808441316
0.236	-1.443923474	328	0.89686	1.2639	0.2982755	1.5973909	-1.824945007
0.236	-1.443923474	329	0.89960	1.2793	0.3019094	1.6365498	-1.847178173
0.237	-1.439695138	330	0.90234	1.2950	0.3069118	1.6769895	-1.864385487
0.239	-1.431291727	331	0.90507	1.3110	0.3133334	1.7187693	-1.876449822
0.24	-1.427116356	332	0.90781	1.3274	0.3185756	1.7619866	-1.894351999
0.24	-1.427116356	333	0.91055	1.3441	0.3225936	1.8067122	-1.918244101
0.24	-1.427116356	334	0.91329	1.3613	0.3267043	1.8530506	-1.942687834
0.24	-1.427116356	335	0.91602	1.3788	0.3309127	1.9010979	-1.967712402
0.242	-1.418817553	336	0.91876	1.3968	0.3380195	1.9509795	-1.981768431
0.242	-1.418817553	337	0.92150	1.4152	0.3424809	2.0028197	-2.007924982
0.243	-1.414693836	338	0.92423	1.4341	0.3484952	2.0567481	-2.028864378
0.244	-1.410587054	339	0.92697	1.4536	0.3546762	2.1129262	-2.050416381
0.248	-1.394326533	340	0.92971	1.4736	0.3654561	2.1715363	-2.054698176
0.25	-1.386294361	341	0.93244	1.4942	0.3735613	2.2327688	-2.07146373
0.252	-1.378326191	342	0.93518	1.5155	0.3819141	2.2968371	-2.088897379
0.2535	-1.372391456	343	0.93792	1.5375	0.3897634	2.3639926	-2.110090398
0.2565	-1.360626614	344	0.94066	1.5603	0.4002163	2.4345276	-2.122982003
0.264	-1.331806176	345	0.94339	1.5839	0.4181504	2.5087494	-2.109452081
0.269	-1.313043899	346	0.94613	1.6084	0.4326671	2.5870398	-2.111936229
0.27	-1.30933332	347	0.94887	1.6340	0.4411685	2.6698163	-2.139394676
0.276	-1.287354413	348	0.95160	1.6606	0.4583258	2.7575954	-2.137781899

Table 48. Selenium Near Upgradient Background Data Set, Filliben's Statistic Analysis (continued)

Selenium	Ln(Selenium)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
0.281	-1.26940061	349	0.95434	1.6885	0.474462	2.8509543	-2.143353624
0.288	-1.244794799	350	0.95708	1.7177	0.4947065	2.9505991	-2.138222379
0.292	-1.231001477	351	0.95981	1.7485	0.510571	3.0573601	-2.152444057
0.294	-1.224175512	352	0.96255	1.7811	0.5236407	3.1722843	-2.180367692
0.294	-1.224175512	353	0.96529	1.8157	0.5338016	3.2965906	-2.222676175
0.294	-1.224175512	354	0.96803	1.8525	0.5446443	3.4318732	-2.26782378
0.295	-1.220779923	355	0.97076	1.8921	0.5581733	3.5800908	-2.30985329
0.299	-1.207311706	356	0.97350	1.9349	0.5785364	3.7438554	-2.336032856
0.3	-1.203972804	357	0.97624	1.9816	0.5944685	3.9265863	-2.385746254
0.3	-1.203972804	358	0.97897	2.0330	0.6098953	4.1330256	-2.447657944
0.31	-1.171182982	359	0.98171	2.0904	0.6480299	4.3698516	-2.44826316
0.322	-1.133203733	360	0.98445	2.1557	0.6941421	4.6471318	-2.44287077
0.326	-1.120857898	361	0.98718	2.2317	0.727546	4.9806469	-2.501459245
0.36	-1.021651248	362	0.98992	2.3234	0.8364223	5.3981651	-2.373699569
0.406	-0.901402119	363	0.99266	2.4401	0.9906738	5.9540067	-2.19949629
0.7	-0.356674944	364	0.99540	2.6042	1.8229221	6.7817241	-0.928843747
0.755	-0.28103753	365	0.99810	2.8948	2.1855834	8.3799394	-0.813550953

Figure 2. Selenium Near Upgradient Background Data Set, Histogram (normal)

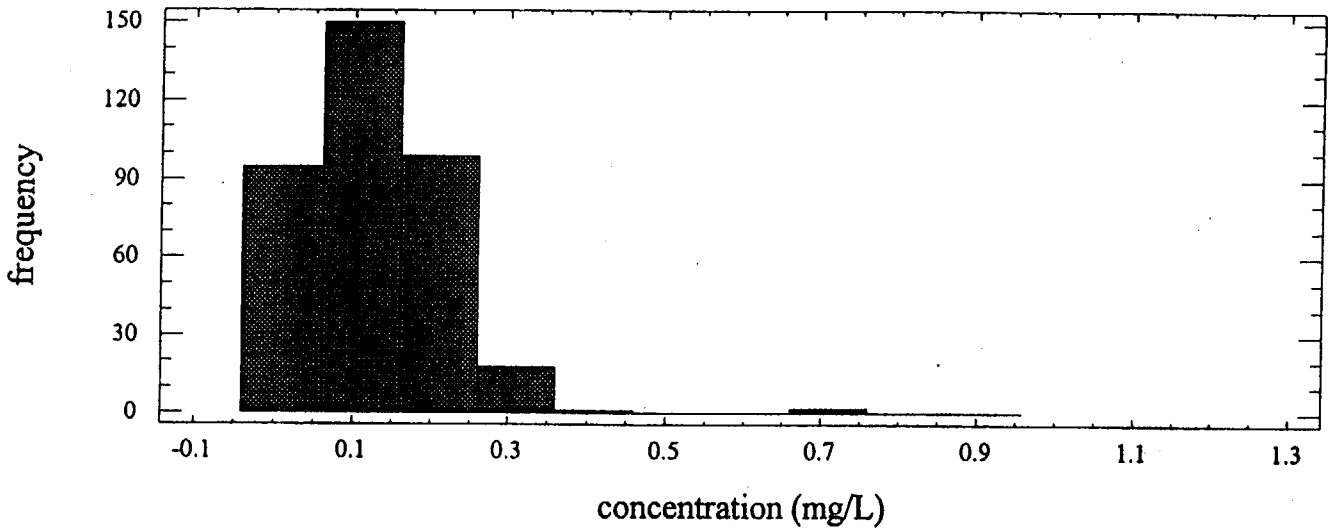

Figure 3. Selenium Near Upgradient Background Data Set, Histogram (lognormal)

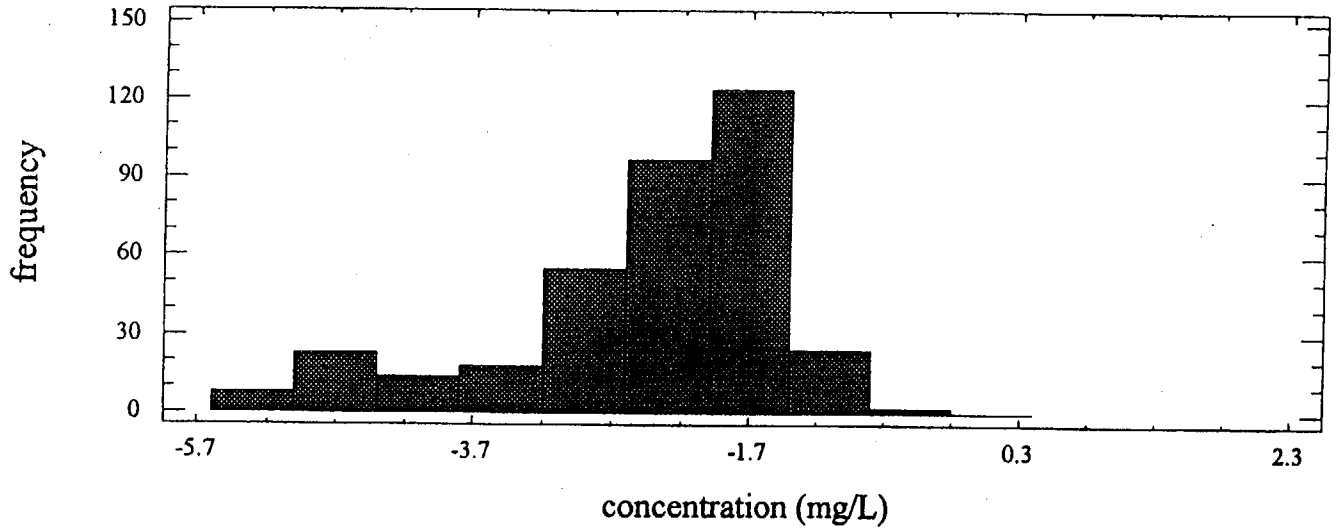

Figure 4. Selenium Near Upgradient Data Set, Probability Plot (normal)

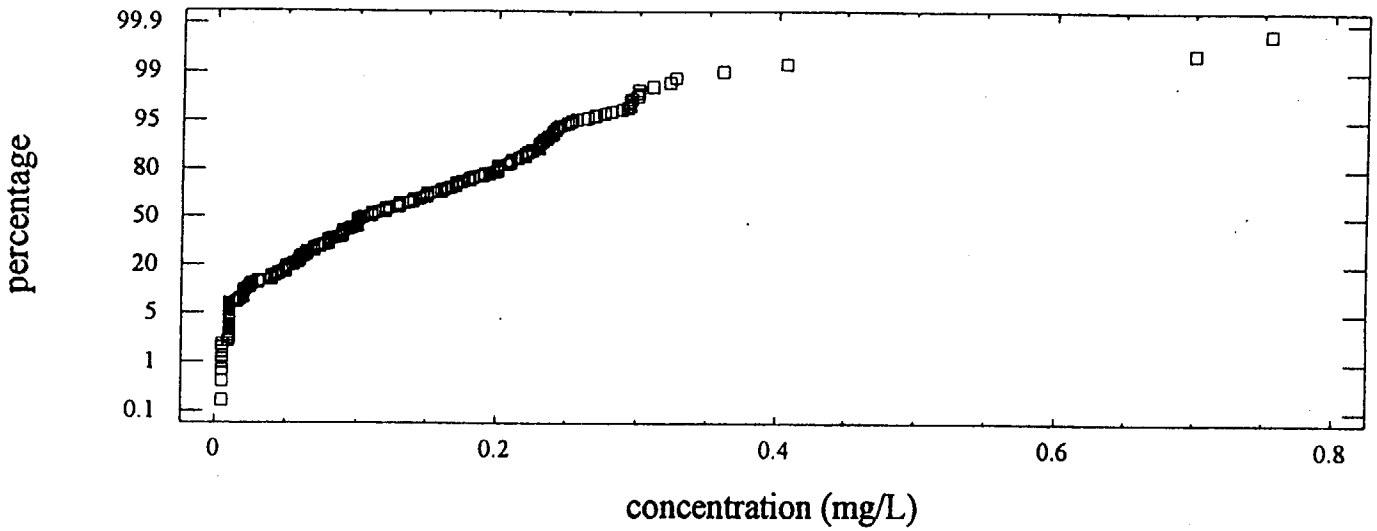

Figure 5. Selenium Near Upgradient Data Set, Probability Plot (lognormal)

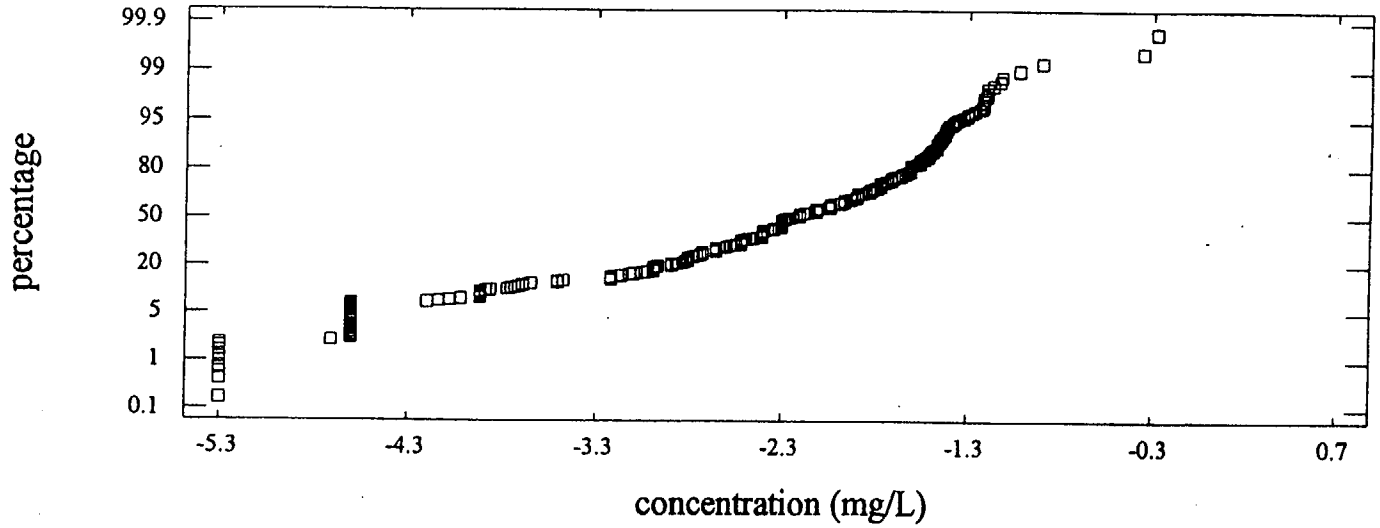

Table 49. Seleniun Near Upgradient Background Data Set, Distribution Summary

Parameter	Distribution Type (tested)	Coefficient of Variation	Studentized Range Test	Geary's Test	Coefficient of Skewness (-1 to 1)	Shapiro-Francia Test	Filliben's Statistic	Histogram	Probability Plot	Number of Samples	Distribution Type (determined)
Selenium	Normal	Pass	Fail	Fail	Fail	Fail	Fail	Nonparametric	Nonparametric	365	Nonparametric
Selenium	Lognormal	Pass	NA	Fail	Fail	Fail	Fail	Nonparametric	Nonparametric	365	

NA - not applicable

Table 50. Selenium Near Upgradient Background Data Set, T_a Statisitic Analysis

Parameter	Distribution	Maximum Observation	Mean	Standard Deviation	T_a Statistic	N	Upper 5% Critical Value	Pass or Fail T_a Statistic
Selenium	Lognormal	-0.28104	-2.42326	0.998153	2.146	365	3.34+	Pass

N - number of samples

Table 51. Selenium Near Upgradient Background Data Set, 95th Percentile Calculation

Parameter	Distribution	95th Percentile (mg/L)	Sample #
Selenium	Nonparametric	0.27	365

SD = standard deviation

Table 52. Selenium Near Upgradient Background Data Set, Summary Table

Parameter	Distribution	95th Percentile (mg/L)	Range (normal)	Sample #
Selenium	Nonparametric	0.27	0.009 to 0.755	365

SD = standard deviation

ND = non-detect, concentration reported as the minimum detecatable activity (MDA)

Table 53. Selenium Far Upgradient Background Data Set (data not corrected for non-detects or duplicates)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value
0914	10-Jan-83	Selenium	Homestake	Less Than	0.01
0914	14-Mar-94	Selenium	Energy Laboratories	None	0.031
0914	12-May-94	Selenium	Energy Laboratories	None	0.052
0914	24-Jan-96	Selenium	Energy Laboratories	Less Than	0.01
0914	22-May-97	Selenium	Energy Laboratories	None	0.007
0914	12-May-98	Selenium	Energy Laboratories	Less Than	0.005
0916	21-Feb-94	Selenium	Energy Laboratories	None	0.008
0916	26-Apr-94	Selenium	Energy Laboratories	None	0.009
0916	29-Jan-96	Selenium	Energy Laboratories	Less Than	0.01
0916	28-May-97	Selenium	Energy Laboratories	None	0.008
0916	12-May-98	Selenium	Energy Laboratories	None	0.007
0920	03-Nov-81	Selenium	Homestake	None	0.79
0920	30-Aug-82	Selenium	Homestake	None	0.32
0920	05-Jan-83	Selenium	Homestake	None	0.37
0920	31-Aug-83	Selenium	Homestake	None	0.48
0920	14-Dec-89	Selenium	Homestake	None	0.51
0920	09-May-90	Selenium	Homestake	None	0.58
0920	21-May-91	Selenium	Homestake	None	0.73
0920	06-May-92	Selenium	Homestake	None	0.76
0920	06-May-93	Selenium	Homestake	None	0.57
0920	28-Feb-94	Selenium	Energy Laboratories	None	0.407
0920	29-Apr-94	Selenium	Energy Laboratories	None	0.367
0920	29-Apr-94	Selenium	Energy Laboratories	None	0.326
0920	11-May-94	Selenium	Energy Laboratories	None	0.516
0920	10-May-95	Selenium	Energy Laboratories	None	0.492
0920	24-Jan-96	Selenium	Energy Laboratories	None	0.394
0920	20-May-96	Selenium	Energy Laboratories	None	0.507
0920	23-May-97	Selenium	Energy Laboratories	None	0.495
0920	12-May-98	Selenium	Energy Laboratories	None	0.424
0921	28-Feb-94	Selenium	Energy Laboratories	None	0.415
0921	16-May-94	Selenium	Energy Laboratories	None	0.547
0921	24-Jan-96	Selenium	Energy Laboratories	None	0.534
0921	23-May-97	Selenium	Energy Laboratories	None	0.605
0921	12-May-98	Selenium	Energy Laboratories	None	0.522
0922	03-Nov-81	Selenium	Homestake	Less Than	0.01
0922	04-Mar-94	Selenium	Energy Laboratories	Less Than	0.005
0922	16-May-94	Selenium	Energy Laboratories	None	0.019
0922	24-Jan-96	Selenium	Energy Laboratories	None	0.011
0922	23-May-97	Selenium	Energy Laboratories	None	0.006
0922	12-May-98	Selenium	Energy Laboratories	Quality Control Less Than	0.005
0922	12-May-98	Selenium	Energy Laboratories	Less Than	0.005
0950	28-Feb-94	Selenium	Energy Laboratories	None	0.276
0950	11-May-94	Selenium	Energy Laboratories	None	0.288
0950	25-Jan-96	Selenium	Energy Laboratories	None	0.336

Table 54. Selenium Far Upgradient Background Data Set for Well 914
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
10-Jan-83	Selenium	0.005
14-Mar-94	Selenium	0.031
12-May-94	Selenium	0.052
24-Jan-96	Selenium	0.005
22-May-97	Selenium	0.007
12-May-98	Selenium	0.0025

Table 55. Selenium Far Upgradient Background Data Set for Well 916
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Feb-94	Selenium	0.008
26-Apr-94	Selenium	0.009
29-Jan-96	Selenium	0.005
28-May-97	Selenium	0.008
12-May-98	Selenium	0.007

Table 56. Selenium Far Upgradient Background Data Set for Well 920
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Nov-81	Selenium	0.79
30-Aug-82	Selenium	0.32
05-Jan-83	Selenium	0.37
31-Aug-83	Selenium	0.48
14-Dec-89	Selenium	0.51
09-May-90	Selenium	0.58
21-May-91	Selenium	0.73
06-May-92	Selenium	0.76
06-May-93	Selenium	0.57
28-Feb-94	Selenium	0.407
29-Apr-94	Selenium	0.3465
11-May-94	Selenium	0.516
10-May-95	Selenium	0.492
24-Jan-96	Selenium	0.394
20-May-96	Selenium	0.507
23-May-97	Selenium	0.495
12-May-98	Selenium	0.424

Table 57. Selenium Far Upgradient Background Data Set for Well 921
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
28-Feb-94	Selenium	0.415
16-May-94	Selenium	0.547
24-Jan-96	Selenium	0.534
23-May-97	Selenium	0.605
12-May-98	Selenium	0.522

Table 58. Selenium Far Upgradient Background Data Set for Well 922
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Nov-81	Selenium	0.005
04-Mar-94	Selenium	0.0025
16-May-94	Selenium	0.019
24-Jan-96	Selenium	0.011
23-May-97	Selenium	0.006
12-May-98	Selenium	0.0025

Table 59. Selenium Far Upgradient Background Data Set for Well 950
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
28-Feb-94	Selenium	0.276
11-May-94	Selenium	0.288
25-Jan-96	Selenium	0.336

Table 60. Selenium Far Upgradient Background Groundwater Data Set Used in Statistical Analysis (all concentrations in mg/L)

Well ID					
914	916	920	921	922	950
0.005	0.009	0.79	0.415	0.005	0.276
0.031	0.008	0.76	0.547	0.0025	0.288
0.052	0.008	0.73	0.534	0.019	0.336
0.005	0.007	0.58	0.605	0.011	
0.007	0.005	0.57	0.522	0.006	
0.0025		0.516		0.0025	
		0.51			
		0.507			
		0.495			
		0.492			
		0.48			
		0.424			
		0.407			
		0.394			
		0.37			
		0.3465			
		0.32			

Table 61. Selenium Far Upgradient Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
Selenium	0.79	0.76	1.0	**PASS**

Table 62. Selenium Far Upgradient Background Data Set, Coefficient of Variation Analysis

Parameter	Mean	Standard Deviation	Coefficient of Variation	Results
Selenium, normal	0.2952381	0.2598118	0.88	**Pass**
Selenium, lognormal	-2.436615	2.1405601	-0.88	**Pass**

Table 63. Selenium Far Upgradient Background Data Set, Studentized Range Test Analysis

Parameter	Range		Standard Deviation	Critical Values		W/S	Results
	Maximum	Minimum		Maximum	Minimum		
Selenium, normal	0.79	0.0025[a]	0.26	5.26	3.75	3.03	**FAIL**

w = range of values

s = standard deviation

[a]Concentration is 0.5 of detection limit.

Table 64. Selenium Far Upgradient Background Data Set, Geary's Test Analysis

Selenium - raw data			
Xi	Xi^2	Xi-Mean	abs(Xi-mean)
0.79	0.6241	0.4947619	0.494761905
0.76	0.5776	0.4647619	0.464761905
0.73	0.5329	0.4347619	0.434761905
0.605	0.366025	0.3097619	0.309761905
0.58	0.3364	0.2847619	0.284761905
0.57	0.3249	0.2747619	0.274761905
0.547	0.299209	0.2517619	0.251761905
0.534	0.285156	0.2387619	0.238761905
0.522	0.272484	0.2267619	0.226761905
0.516	0.266256	0.2207619	0.220761905
0.51	0.2601	0.2147619	0.214761905
0.507	0.257049	0.2117619	0.211761905
0.495	0.245025	0.1997619	0.199761905
0.492	0.242064	0.1967619	0.196761905
0.48	0.2304	0.1847619	0.184761905
0.424	0.179776	0.1287619	0.128761905
0.415	0.172225	0.1197619	0.119761905
0.407	0.165649	0.1117619	0.111761905
0.394	0.155236	0.0987619	0.098761905
0.37	0.1369	0.0747619	0.074761905
0.3465	0.1200623	0.0512619	0.051261905
0.336	0.112896	0.0407619	0.040761905
0.32	0.1024	0.0247619	0.024761905
0.288	0.082944	-0.007238	0.007238095
0.276	0.076176	-0.019238	0.019238095
0.052	0.002704	-0.243238	0.243238095
0.031	0.000961	-0.264238	0.264238095
0.019	0.000361	-0.276238	0.276238095
0.011	0.000121	-0.284238	0.284238095
0.009	0.000081	-0.286238	0.286238095
0.008	0.000064	-0.287238	0.287238095
0.008	0.000064	-0.287238	0.287238095
0.007	0.000049	-0.288238	0.288238095
0.007	0.000049	-0.288238	0.288238095
0.006	0.000036	-0.289238	0.289238095
0.005	0.000025	-0.290238	0.290238095
0.005	0.000025	-0.290238	0.290238095
0.005	0.000025	-0.290238	0.290238095
0.005	0.000025	-0.290238	0.290238095
0.0025	6.25E-06	-0.292738	0.292738095
0.0025	6.25E-06	-0.292738	0.292738095
0.0025	6.25E-06	-0.292738	0.292738095

0.2952381 =mean
12.4 = sum of Xi
6.428541 = sum of Xi^2
42 = count

2.7675886 = SSS
9.7200476 = SAD

0.9015566 = alpha

3.2 = Z

Critical value = 1.645

abs(Z)>critical value,
thus failed test.

Table 64. Selenium Far Upgradient Background Data Set, Geary's Test Analysis

(continued)

Selenium - lognormal data			
Xi	**Xi^2**	**Xi-Mean**	**abs(Xi-mean)**
-0.235722	0.055565	2.2008929	2.200892851
-0.274437	0.0753156	2.1621783	2.162178338
-0.314711	0.0990429	2.1219044	2.121904439
-0.502527	0.2525332	1.9340884	1.934088363
-0.544727	0.2967277	1.891888	1.891888009
-0.562119	0.3159777	1.8744963	1.874496266
-0.603306	0.3639787	1.8333087	1.833308707
-0.627359	0.3935799	1.8092557	1.809255744
-0.650088	0.422614	1.7865275	1.786527493
-0.661649	0.4377788	1.7749667	1.774966671
-0.673345	0.4533929	1.7632706	1.763270631
-0.679244	0.4613728	1.7573709	1.757370909
-0.703198	0.4944867	1.7334177	1.733417668
-0.709277	0.5030732	1.7273386	1.727338622
-0.733969	0.5387107	1.702646	1.702646009
-0.858022	0.7362015	1.5785934	1.57859336
-0.879477	0.7734794	1.5571384	1.557138425
-0.898942	0.8080969	1.5376731	1.537673091
-0.931404	0.8675141	1.5052108	1.505210814
-0.994252	0.9885376	1.4423629	1.442362911
-1.059872	1.1233296	1.3767427	1.376742724
-1.090644	1.1895046	1.3459711	1.345971065
-1.139434	1.2983105	1.2971809	1.297180901
-1.244795	1.5495141	1.1918204	1.191820385
-1.287354	1.6572814	1.1492608	1.149260771
-2.956512	8.7409606	-0.519896	0.519896376
-3.473768	12.067065	-1.037153	1.03715289
-3.963316	15.707876	-1.526701	1.526701116
-4.50986	20.338837	-2.073245	2.073244822
-4.710531	22.189099	-2.273916	2.273915518
-4.828314	23.312614	-2.391699	2.391698553
-4.828314	23.312614	-2.391699	2.391698553
-4.961845	24.619907	-2.52523	2.525229946
-4.961845	24.619907	-2.52523	2.525229946
-5.115996	26.173413	-2.679381	2.679380626
-5.298317	28.072167	-2.861702	2.861702182
-5.298317	28.072167	-2.861702	2.861702182
-5.298317	28.072167	-2.861702	2.861702182
-5.298317	28.072167	-2.861702	2.861702182
-5.991465	35.897647	-3.554849	3.554849363
-5.991465	35.897647	-3.554849	3.554849363
-5.991465	35.897647	-3.554849	3.554849363

-2.436615 =mean
-102.3378 = sum of Xi
437.21982 = sum of Xi^2
42 = count

187.86189 = SSS
84.11101 = SAD

0.9469103 = alpha

4.5 = Z

Critical value = 1.645

abs(Z)>critical value, thus failed test.

Table 65. Selenium Far Upgradient Background Data Set, Coefficient of Skewness Analysis

Selenium	Normal (xi-avg)^3
0.0025	-0.025086364
0.0025	-0.025086364
0.0025	-0.025086364
0.005	-0.024449121
0.005	-0.024449121
0.005	-0.024449121
0.005	-0.024449121
0.006	-0.024197276
0.007	-0.023947167
0.007	-0.023947167
0.008	-0.023698787
0.008	-0.023698787
0.009	-0.02345213
0.011	-0.022963964
0.019	-0.021079034
0.031	-0.018449572
0.052	-0.014391126
0.276	-7.1201E-06
0.288	-3.79204E-07
0.32	1.51828E-05
0.336	6.77272E-05
0.3465	0.000134705
0.37	0.00041787
0.394	0.000963315
0.407	0.001395987
0.415	0.001717735
0.424	0.002134824
0.48	0.00630721
0.492	0.007617686
0.495	0.007971463
0.507	0.009496061
0.51	0.009905394
0.516	0.010759012
0.522	0.011660315
0.534	0.013611159
0.547	0.015957691
0.57	0.020742904
0.58	0.023091156
0.605	0.02972241
0.73	0.082177788
0.76	0.100390258
0.79	0.121112441

Normal	
standard deviation =	0.2598118
mean =	0.295
count =	42
sum of (xi-avg)^3 =	0.0844822
1/n =	0.0238095
standard deviation cubed =	0.0175379
((n-1)/n)^(3/2) =	0.9644992
coef. of skewness =	0.1
acceptable range -1 to 1	**Pass**

Table 65. Selenium Far Upgradient Background Data Set, Coefficient of Skewness Analysis

(continued)

Selenium	Lognormal (xi-avg)^3
-5.99146455	-44.92246786
-5.99146455	-44.92246786
-5.99146455	-44.92246786
-5.29831737	-23.43545038
-5.29831737	-23.43545038
-5.29831737	-23.43545038
-5.29831737	-23.43545038
-5.11599581	-19.2354893
-4.96184513	-16.10285167
-4.96184513	-16.10285167
-4.82831374	-13.68104661
-4.82831374	-13.68104661
-4.7105307	-11.75771628
-4.50986001	-8.911519633
-3.9633163	-3.558459841
-3.47376807	-1.115650967
-2.95651156	-0.140523957
-1.28735441	1.517943993
-1.2447948	1.692904379
-1.13943428	2.18273814
-1.09064412	2.438412474
-1.05987246	2.609506419
-0.99425227	3.000707328
-0.93140437	3.410295325
-0.89894209	3.635733507
-0.87947676	3.775562515
-0.85802182	3.93378677
-0.73396918	4.935976623
-0.70927656	5.153858023
-0.70319752	5.208463874
-0.67924428	5.427380858
-0.67334455	5.482225833
-0.66164851	5.592044355
-0.65008769	5.702024932
-0.62735944	5.922429236
-0.60330648	6.16178873
-0.56211892	6.586485482
-0.54472718	6.771521685
-0.50252682	7.234840078
-0.31471074	9.553829009
-0.27443685	10.10821653
-0.23572233	10.66096945

Lognormal	
standard deviation =	2.1405601
mean =	-2.437
count =	42
sum of (xi-avg)^3 =	-204.0967
1/n =	0.0238095
standard deviation cubed =	9.8080406
((n-1)/n)^(3/2) =	0.9644992
coef. of skewness =	-0.5
acceptable range -1 to 1	Pass

Table 66. Selenium Far Upgradient Background Data Set, Shapiro-Wilk Test of Normality Analysis

Selenium - raw data				
X(i)	X(n-i+1)	X(n-i+1)-X(i)	An-i+1	Bi
0.0025	0.79	0.7875	0.3917	0.30846375
0.0025	0.76	0.7575	0.2701	0.20460075
0.0025	0.73	0.7275	0.2345	0.17059875
0.005	0.605	0.6	0.2085	0.1251
0.005	0.58	0.575	0.1874	0.107755
0.005	0.57	0.565	0.1694	0.095711
0.005	0.547	0.542	0.1535	0.083197
0.006	0.534	0.528	0.1392	0.0734976
0.007	0.522	0.515	0.1259	0.0648385
0.007	0.516	0.509	0.1136	0.0578224
0.008	0.51	0.502	0.102	0.051204
0.008	0.507	0.499	0.0909	0.0453591
0.009	0.495	0.486	0.0804	0.0390744
0.011	0.492	0.481	0.0701	0.0337181
0.019	0.48	0.461	0.0602	0.0277522
0.031	0.424	0.393	0.0506	0.0198858
0.052	0.415	0.363	0.0411	0.0149193
0.276	0.407	0.131	0.0318	0.0041658
0.288	0.394	0.106	0.0227	0.0024062
0.32	0.37	0.05	0.0136	0.00068
0.336	0.3465	0.0105	0.0045	0.00004725
0.3465	0.336	-0.0105		
0.37	0.32	-0.05		
0.394	0.288	-0.106		
0.407	0.276	-0.131		
0.415	0.052	-0.363		
0.424	0.031	-0.393		
0.48	0.019	-0.461		
0.492	0.011	-0.481		
0.495	0.009	-0.486		
0.507	0.008			
0.51	0.008			
0.516	0.007			
0.522	0.007			
0.534	0.006			
0.547	0.005			
0.57	0.005			
0.58	0.005			
0.605	0.005			
0.73	0.0025			
0.76	0.0025			
0.79	0.0025			

1.5307969 =sum of B
0.259811781 = standard deviation
41 = count - 1

0.8467079 = W statistic
.942 is acceptable low value
Fails Shapiro-Wilk test

Table 66. Selenium Far Upgradient Background Data Set, Shapiro-Wilk (continued) Test of Normality Analysis

Selenium - log data				
X(i)	X(n-i+1)	X(n-i+1)-X(i)	An-i+1	Bi
-5.991465	-0.235722334	5.755742214	0.3917	2.254524225
-5.991465	-0.274436846	5.717027701	0.2701	1.544169182
-5.991465	-0.314710745	5.676753802	0.2345	1.331198767
-5.298317	-0.502526821	4.795790546	0.2085	0.999922329
-5.298317	-0.544727175	4.753590191	0.1874	0.890822802
-5.298317	-0.562118918	4.736198448	0.1694	0.802312017
-5.298317	-0.603306477	4.69501089	0.1535	0.720684172
-5.115996	-0.62735944	4.48863637	0.1392	0.624818183
-4.961845	-0.650087691	4.311757439	0.1259	0.542850262
-4.961845	-0.661648514	4.300196616	0.1136	0.488502336
-4.828314	-0.673344553	4.154969184	0.102	0.423806857
-4.828314	-0.679244275	4.149069462	0.0909	0.377150414
-4.710531	-0.703197516	4.007333185	0.0804	0.322189588
-4.50986	-0.709276562	3.800583444	0.0701	0.266420899
-3.963316	-0.733969175	3.229347125	0.0602	0.194406697
-3.473768	-0.858021824	2.615746251	0.0506	0.13235676
-2.956512	-0.879476759	2.077034802	0.0411	0.08536613
-1.287354	-0.898942094	0.38841232	0.0318	0.012351512
-1.244795	-0.93140437	0.313390429	0.0227	0.007113963
-1.139434	-0.994252273	0.14518201	0.0136	0.001974475
-1.090644	-1.05987246	0.030771659	0.0045	0.000138472
-1.059872	-1.090644119	-0.030771659		
-0.994252	-1.139434283	-0.14518201		
-0.931404	-1.244794799	-0.313390429		
-0.898942	-1.287354413	-0.38841232		
-0.879477	-2.95651156	-2.077034802		
-0.858022	-3.473768074	-2.615746251		
-0.733969	-3.9633163	-3.229347125		
-0.709277	-4.509860006	-3.800583444		
-0.703198	-4.710530702	-4.007333185		
-0.679244	-4.828313737			
-0.673345	-4.828313737			
-0.661649	-4.96184513			
-0.650088	-4.96184513			
-0.627359	-5.11599581			
-0.603306	-5.298317367			
-0.562119	-5.298317367			
-0.544727	-5.298317367			
-0.502527	-5.298317367			
-0.314711	-5.991464547			
-0.274437	-5.991464547			
-0.235722	-5.991464547			

12.02308004 =sum of B
2.140560062 = standard deviation
41 = count - 1

0.769471934 = W statistic
.942 is acceptable low value
Fails Shapiro-Wilk test

Table 67. Selenium Far Upgradient Background Data, Filliben's Statistic Analysis

Selenium	Ln(Selenium)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
0.0025	-5.991464547	1	0.01637	-2.1353	-0.005338	4.559517	12.79358962
0.0025	-5.991464547	2	0.03971	-1.7540	-0.004385	3.076553	10.50909205
0.0025	-5.991464547	3	0.06332	-1.5275	-0.003819	2.3332451	9.151940237
0.005	-5.298317367	4	0.08692	-1.3599	-0.0068	1.8494619	7.205442664
0.005	-5.298317367	5	0.11053	-1.2237	-0.006119	1.4975087	6.483696109
0.005	-5.298317367	6	0.13413	-1.1071	-0.005535	1.2256013	5.865601761
0.005	-5.298317367	7	0.15774	-1.0038	-0.005019	1.007624	5.318476165
0.006	-5.11599581	8	0.18134	-0.9103	-0.005462	0.8285874	4.656926109
0.007	-4.96184513	9	0.20495	-0.8241	-0.005769	0.6791183	4.088988734
0.007	-4.96184513	10	0.22855	-0.7436	-0.005205	0.5529892	3.689788935
0.008	-4.828313737	11	0.25215	-0.6677	-0.005342	0.445858	3.223990613
0.008	-4.828313737	12	0.27576	-0.5955	-0.004764	0.3546076	2.875209565
0.009	-4.710530702	13	0.29936	-0.5262	-0.004736	0.2769218	2.478839691
0.011	-4.509860006	14	0.32297	-0.4594	-0.005054	0.2110645	2.071909088
0.019	-3.9633163	15	0.34657	-0.3946	-0.007497	0.1557039	1.56389834
0.031	-3.473768074	16	0.37018	-0.3314	-0.010273	0.109818	1.151165183
0.052	-2.95651156	17	0.39378	-0.2695	-0.014013	0.0726194	0.79672035
0.276	-1.287354413	18	0.41738	-0.2086	-0.057571	0.0435095	0.268528226
0.288	-1.244794799	19	0.44099	-0.1485	-0.042757	0.0220408	0.184803938
0.32	-1.139434283	20	0.46459	-0.0889	-0.028438	0.0078975	0.101259091
0.336	-1.090644119	21	0.48820	-0.0296	-0.009942	0.0008755	0.032270127
0.3465	-1.05987246	22	0.51180	0.0296	0.0102523	0.0008755	-0.031359651
0.37	-0.994252273	23	0.53541	0.0889	0.0328811	0.0078975	-0.088357076
0.394	-0.93140437	24	0.55901	0.1485	0.0584938	0.0220408	-0.138277567
0.407	-0.898942094	25	0.58262	0.2086	0.0848958	0.0435095	-0.187509611
0.415	-0.879476759	26	0.60622	0.2695	0.1118341	0.0726194	-0.237001282
0.424	-0.858021824	27	0.62982	0.3314	0.1405085	0.109818	-0.284338168
0.48	-0.733969175	28	0.65343	0.3946	0.1894048	0.1557039	-0.289619371
0.492	-0.709276562	29	0.67703	0.4594	0.2260335	0.2110645	-0.32585414
0.495	-0.703197516	30	0.70064	0.5262	0.2604856	0.2769218	-0.370046185
0.507	-0.679244275	31	0.72424	0.5955	0.3019131	0.3546076	-0.404482754
0.51	-0.673344553	32	0.74785	0.6677	0.3405403	0.445858	-0.449609664
0.516	-0.661648514	33	0.77145	0.7436	0.3837143	0.5529892	-0.49202329
0.522	-0.650087691	34	0.79505	0.8241	0.4301731	0.6791183	-0.535728378
0.534	-0.62735944	35	0.81866	0.9103	0.486083	0.8285874	-0.57106508
0.547	-0.603306477	36	0.84226	1.0038	0.5490812	1.007624	-0.60560191
0.57	-0.562118918	37	0.86587	1.1071	0.6310292	1.2256013	-0.622304307
0.58	-0.544727175	38	0.88947	1.2237	0.7097619	1.4975087	-0.666597567
0.605	-0.502526821	39	0.91308	1.3599	0.8227693	1.8494619	-0.683410967
0.73	-0.314710745	40	0.93668	1.5275	1.1150723	2.3332451	-0.480719515
0.76	-0.274436846	41	0.96029	1.7540	1.333048	3.076553	-0.481365124
0.79	-0.235722334	42	0.98363	2.1353	1.686889	4.559517	-0.503338504

Normal

9.661	=sum X(i)*M(i)
38.622	=sum M(i)^2
0.26	= standard deviation
6.2147	= square root of sum Mi^2
0.934	= Fillibens's Statistic

Lognormal

76.064	=sum X(i)*M(i)
38.622	=sum M(i)^2
2.14	= standard deviation
6.2147	= square root of sum Mi^2
0.893	= Fillibens's Statistic

.973 is acceptable value

Normal - Fail
Lognormal - Fail

Figure 6. Selenium Far Upgradient Background Data Set, Histogram (normal)

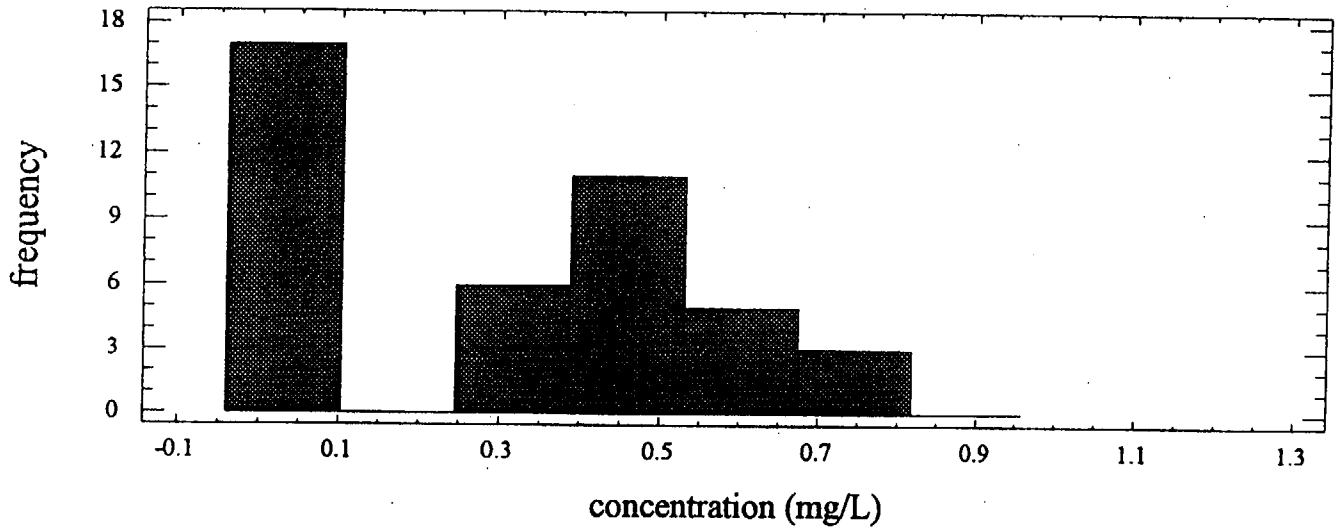

Figure 7. Selenium Far Upgradient Background Data Set, Histogram (lognormal)

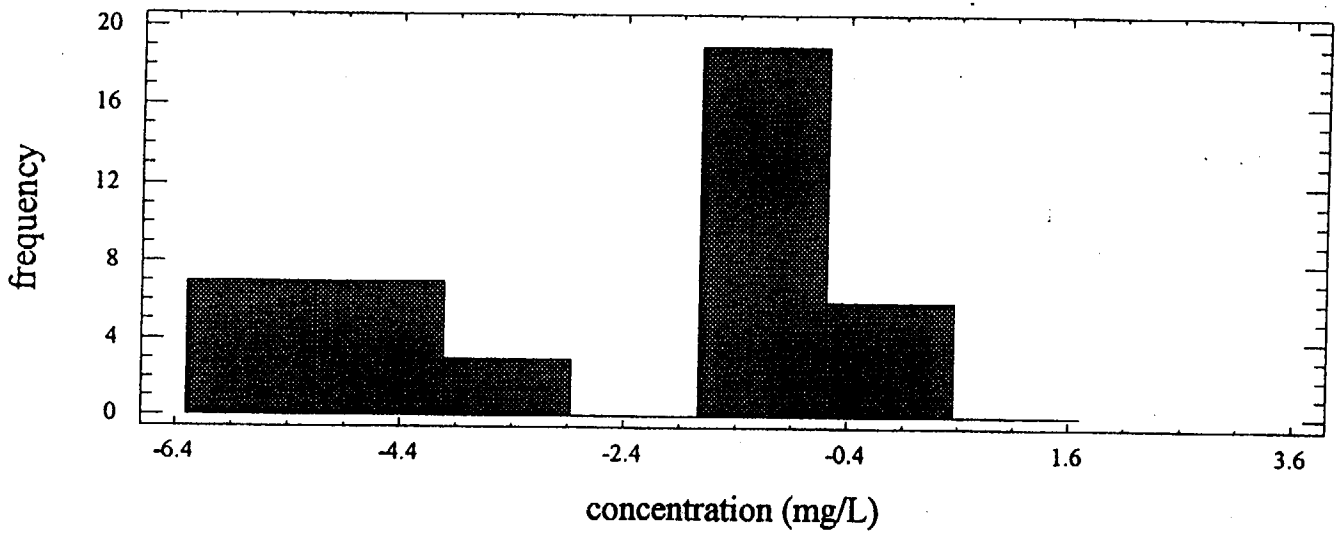

Figure 8. Selenium Far Upgradient Data Set, Probability Plot (normal)

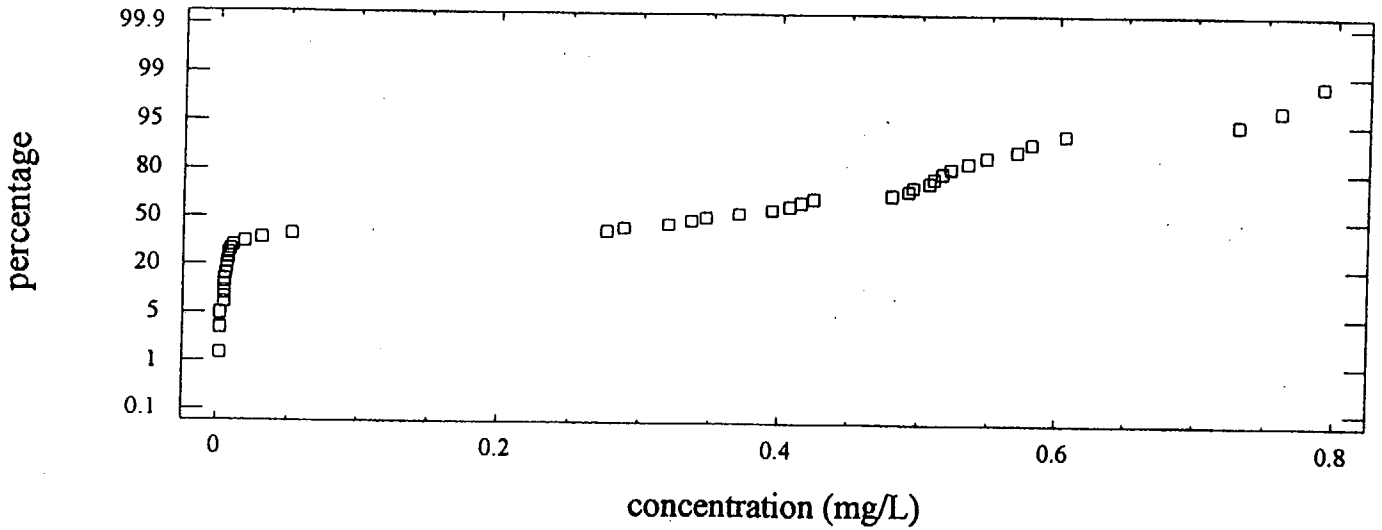

Figure 9. Selenium Far Upgradient Data Set, Probability Plot (lognormal)

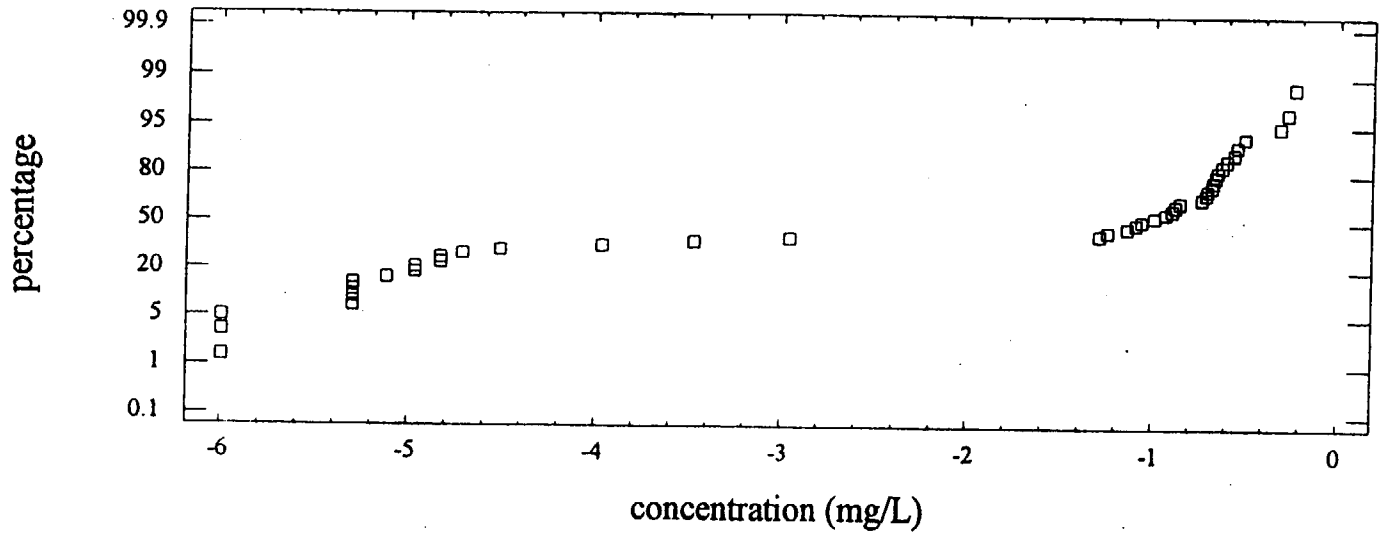

Table 68. Selenium Far Upgradient Background Data Set, Distribution Summary

Parameter	Distribution Type (tested)	Coefficient of Variation	Studentized Range Test	Geary's Test	Coefficient of Skewness (-1 to 1)	Shapiro-Wilk Test	Filliben's Statistic	Histogram	Probability Plot	Number of Samples	Distribution Type (determined)
Selenium	Normal	Pass	Fail	Fail	Pass	Fail	Fail	Nonparametric	Nonparametric	42	Nonparametric
Selenium	Lognormal	Pass	NA	Fail	Pass	Fail	Fail	Nonparametric	Nonparametric	42	

NA - not applicable

Table 69. Selenium Far Upgradient Background Data Set, T_n Statisitic Analysis

Parameter	Distribution	Maximum Observation	Mean	Standard Deviation	T_n Statistic	N	Upper 5% Critical Value	Pass or Fail T_n Statistic
Selenium	Normal	0.79	0.295238095	0.259811781	1.904	42	2.887	Pass

ND - concentration was non-detect
N - number of samples

Table 70. Selenium Far Upgradient Background Data Set, 95th Percentile Calculation

Parameter	Distribution	95th Percentile (pCi/g)	Sample #
Selenium	Nonparmetric	0.72	42

SD = standard deviation

Table 71. Selenium Far Upgradient Background Data Set, Summary Table

Parameter	Distribution	Mean	SD	95th Percentile (pCi/g)	Range (normal)	Sample #
Selenium	Nonparmetric	0.295238095	0.259811781	0.72	<0.005 to 0.79	42

SD = standard deviation
ND = non-detect, concentration reported as the minimum detecatable activity (MDA)

Table 72. Selenium Upgradient Background Data, Comparison Statistics Results

Comparison of Medians

Median of sample 1: 0.34125
Median of sample 2: 0.104

Mann-Whitney (Wilcoxon) W test to compare medians

Null hypothesis: median1 = median2
Alt. hypothesis: median1 NE median2

Average rank of sample 1: 243.119
Average rank of sample 2: 199.499

W = 6022.0
P-value = 0.0228734

The StatAdvisor

This option runs a Mann-Whitney W test option to compare the medians of the two samples. This test is constructed by combining the two samples, sorting the data from smallest to largest, and comparing the average ranks of the two samples in the combined data. Since the P-value is less than 0.05, there is a statistically significant difference between the medians at the 95.0% confidence level.