Natural Gas Ambient Air Monitoring Initiative (NGAAMI) Report
Appendix A: Data Tables and Statistical Output

Appendix A- Data Tables and Statistical Output

Table A-1.

Lab Qualifiers	Description
A	Indicates tentatively identified compounds that are suspected to be aldol condensation products.
D	Indicates an identified compound in an analysis that has been diluted. This flag alerts the data user to any differences between the concentrations reported in the two analyses.
H	Sample result is estimated and biased high.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of a compound but the result is less than the sample quantitation limit, but greater than zero. The flag is also used to indicate a report result having an associated qc problem.
L	Sample result is estimated and biased low
NT	The analysis indicates the present of an analyte for which there is presumptive evidence to make a tentative identification where the identification is based on a mass spectral library search.
T	The analysis indicates the present of an analyte for which there is presumptive evidence to make a tentative identification
U	Indicates that the compound was analyzed for, but not detected. The sample quantitation limit corrected for dilution and percent moisture is reported.

Referenced from the Electronic Data Deliverable Valid Values Reference Manual, US EPA Region 2 2/15/2013

Table A-2.

Resultsg8r dataset Compound Names	cas_number	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Ethyl Benzene	**100-41-4**	18	0.62	18	0.62
Styrene	**100-42-5**	20	0.68	38	1.3
Benzaldehyde	**100-52-7**	16	0.55	54	1.85
2-Ethylhexanol	**104-76-7**	9	0.31	63	2.16
1,4-Diethylbenzene	**105-05-5**	4	0.14	67	2.29
1,4-Dichlorobenzene	**106-46-7**	2	0.07	69	2.36
Butane	**106-97-8**	69	2.36	138	4.72
1,2-Dichloroethane	**107-06-2**	10	0.34	148	5.07
2-Methylpentane	**107-83-5**	10	0.34	158	5.41
Methyl Isobutyl Ketone	**108-10-1**	12	0.41	170	5.82
1,3-Dibromobenzene	**108-36-1**	2	0.07	172	5.89
m,p-Xylene	**108-38-3**	44	1.51	216	7.39
Toluene	**108-88-3**	280	9.59	496	16.98
Pentane	**109-66-0**	96	3.29	592	20.27
Hexane	**110-54-3**	26	0.89	618	21.16
Cyclohexane	**110-82-7**	1	0.03	619	21.19
Heptaldehyde	**111-71-7**	1	0.03	620	21.23
Dodecane	**112-40-3**	4	0.14	624	21.36
Undecane	**1120-21-4**	4	0.14	628	21.5
Dimethyl Ether	**115-10-6**	2	0.07	630	21.57
1,2,4-Trichlorobenzene	**120-82-1**	6	0.21	636	21.77
Butyl Acetate	**123-86-4**	2	0.07	638	21.84
Octanal	**124-13-0**	10	0.34	648	22.18
Nonanal	**124-19-6**	13	0.45	661	22.63
Tetrachloroethylene	**127-18-4**	2	0.07	663	22.7
3-Carene	**13466-78-9**	1	0.03	664	22.73
Ethyl Acetate	**141-78-6**	58	1.99	722	24.72
Heptane	**142-82-5**	2	0.07	724	24.79
3-Methyl-1-Pentanal	**15877-57-3**	1	0.03	725	24.82
Cyclopentane	**287-92-3**	2	0.07	727	24.89
Carbon Tetrachloride	**56-23-5**	16	0.55	743	25.44
1,2-Dibromobenzene	**583-53-9**	6	0.21	749	25.64
Methoxyacetone	**5878-19-3**	3	0.1	752	25.74

3-Methyl Hexane	**589-34-4**	2	0.07	754	25.81
Limonene	**5989-27-5**	2	0.07	756	25.88
1,3,5,7-Cyclooctatetraene	**629-20-9**	1	0.03	757	25.92
Tridecane	**629-50-5**	3	0.1	760	26.02
Ethanol	**64-17-5**	268	9.17	1028	35.19
Hexananl	**66-25-1**	26	0.89	1054	36.08
Isopropanol	**67-63-0**	20	0.68	1074	36.77
Acetone	**67-64-1**	81	2.77	1155	39.54
Chloroform	**67-66-3**	8	0.27	1163	39.82
1-Butanol	**71-36-3**	8	0.27	1171	40.09
Benzene	**71-43-2**	240	8.22	1411	48.31
1,1,1-Trichloroethane	**71-55-6**	2	0.07	1413	48.37
Methyl Bromide	**74-83-9**	2	0.07	1415	48.44
Chloromethane	**74-87-3**	278	9.52	1693	57.96
Propane	**74-98-6**	30	1.03	1723	58.99
Methylene Chloride	**75-09-2**	232	7.94	1955	66.93
Carbon Disulfide	**75-15-0**	34	1.16	1989	68.09
1,1-Dichloroethane	**75-34-3**	2	0.07	1991	68.16
Trichlorofluoromethane	**75-69-4**	280	9.59	2271	77.75
Dichlorodifluoromethane	**75-71-8**	278	9.52	2549	87.26
Freon 113	**76-13-1**	8	0.27	2557	87.54
Freon 114	**76-14-2**	2	0.07	2559	87.61
2-Methylbutane	**78-78-4**	46	1.57	2605	89.18
Isopentadiene	**78-79-5**	1	0.03	2606	89.22
Methyl Ethyl Ketone	**78-93-3**	216	7.39	2822	96.61
1,1,2-Trichloroethane	**79-00-5**	2	0.07	2824	96.68
Trichloroethylene	**79-01-6**	2	0.07	2826	96.75
1,1,2,2-Tetrachloroethane	**79-34-5**	2	0.07	2828	96.82
Naphthalene	**91-20-3**	42	1.44	2870	98.25
o-Xylene	**95-47-6**	26	0.89	2896	99.14
1,2,4-Trimethylbenzene	**95-63-6**	6	0.21	2902	99.35
Unknown	**NA**	19	0.65	2921	100

Table A-3.

Pressureg8r dataset Compound Name	cas_number	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Ethyl Benzene	**100-41-4**	18	0.66	18	0.66
Styrene	**100-42-5**	20	0.74	38	1.4
Benzaldehyde	**100-52-7**	16	0.59	54	1.99
2-Ethylhexanol	**104-76-7**	8	0.29	62	2.28
1,4-Diethylbenzene	**105-05-5**	4	0.15	66	2.43
1,4-Dichlorobenzene	**106-46-7**	2	0.07	68	2.51
Butane	**106-97-8**	65	2.39	133	4.9
1,2-Dichloroethane	**107-06-2**	10	0.37	143	5.27
2-Methylpentane	**107-83-5**	9	0.33	152	5.6
Methyl Isobutyl Ketone	**108-10-1**	12	0.44	164	6.04
1,3-Dibromobenzene	**108-36-1**	2	0.07	166	6.12
m,p-Xylene	**108-38-3**	44	1.62	210	7.74
Toluene	**108-88-3**	254	9.36	464	17.1
Pentane	**109-66-0**	94	3.46	558	20.56
Hexane	**110-54-3**	25	0.92	583	21.48
Cyclohexane	**110-82-7**	1	0.04	584	21.52
Heptaldehyde	**111-71-7**	1	0.04	585	21.55
Dodecane	**112-40-3**	4	0.15	589	21.7
Undecane	**1120-21-4**	4	0.15	593	21.85
Dimethyl Ether	**115-10-6**	2	0.07	595	21.92
1,2,4-Trichlorobenzene	**120-82-1**	6	0.22	601	22.14
Butyl Acetate	**123-86-4**	2	0.07	603	22.22
Octanal	**124-13-0**	8	0.29	611	22.51
Nonanal	**124-19-6**	13	0.48	624	22.99
Tetrachloroethylene	**127-18-4**	2	0.07	626	23.07
3-Carene	**13466-78-9**	1	0.04	627	23.1
Ethyl Acetate	**141-78-6**	56	2.06	683	25.17
Heptane	**142-82-5**	2	0.07	685	25.24
3-Methyl-1-Pentanal	**15877-57-3**	1	0.04	686	25.28
Cyclopentane	**287-92-3**	2	0.07	688	25.35
Carbon Tetrachloride	**56-23-5**	16	0.59	704	25.94
1,2-Dibromobenzene	**583-53-9**	3	0.11	707	26.05
Methoxyacetone	**5878-19-3**	3	0.11	710	26.16

3-Methyl Hexane	**589-34-4**	2	0.07	712	26.23
Limonene	**5989-27-5**	2	0.07	714	26.31
1,3,5,7-Cyclooctatetraene	**629-20-9**	1	0.04	715	26.34
Tridecane	**629-50-5**	3	0.11	718	26.46
Ethanol	**64-17-5**	246	9.06	964	35.52
Hexananl	**66-25-1**	26	0.96	990	36.48
Isopropanol	**67-63-0**	18	0.66	1008	37.14
Acetone	**67-64-1**	72	2.65	1080	39.79
Chloroform	**67-66-3**	8	0.29	1088	40.09
1-Butanol	**71-36-3**	8	0.29	1096	40.38
Benzene	**71-43-2**	222	8.18	1318	48.56
1,1,1-Trichloroethane	**71-55-6**	2	0.07	1320	48.64
Methyl Bromide	**74-83-9**	2	0.07	1322	48.71
Chloromethane	**74-87-3**	252	9.29	1574	58
Propane	**74-98-6**	30	1.11	1604	59.1
Methylene Chloride	**75-09-2**	212	7.81	1816	66.91
Carbon Disulfide	**75-15-0**	32	1.18	1848	68.09
1,1-Dichloroethane	**75-34-3**	2	0.07	1850	68.17
Trichlorofluoromethane	**75-69-4**	254	9.36	2104	77.52
Dichlorodifluoromethane	**75-71-8**	252	9.29	2356	86.81
Freon 113	**76-13-1**	8	0.29	2364	87.1
Freon 114	**76-14-2**	2	0.07	2366	87.18
2-Methylbutane	**78-78-4**	45	1.66	2411	88.84
Isopentadiene	**78-79-5**	1	0.04	2412	88.87
Methyl Ethyl Ketone	**78-93-3**	206	7.59	2618	96.46
1,1,2-Trichloroethane	**79-00-5**	2	0.07	2620	96.54
Trichloroethylene	**79-01-6**	2	0.07	2622	96.61
1,1,2,2-Tetrachloroethane	**79-34-5**	2	0.07	2624	96.68
Naphthalene	**91-20-3**	40	1.47	2664	98.16
o-Xylene	**95-47-6**	26	0.96	2690	99.12
1,2,4-Trimethylbenzene	**95-63-6**	6	0.22	2696	99.34
Unknown	**NA**	18	0.66	2714	100

Table A-4.

NoTICs Dataset Compound Name	cas_number	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Ethyl Benzene	100-41-4	18	0.83	18	0.83
Styrene	100-42-5	20	0.93	38	1.76
1,4-Dichlorobenzene	106-46-7	2	0.09	40	1.85
1,2-Dichloroethane	107-06-2	10	0.46	50	2.31
Methyl Isobutyl Ketone	108-10-1	12	0.56	62	2.87
m,p-Xylene	108-38-3	44	2.04	106	4.9
Toluene	108-88-3	254	11.75	360	16.65
1,2,4-Trichlorobenzene	120-82-1	6	0.28	366	16.93
Tetrachloroethylene	127-18-4	2	0.09	368	17.02
Carbon Tetrachloride	56-23-5	16	0.74	384	17.76
Ethanol	64-17-5	246	11.38	630	29.14
Chloroform	67-66-3	8	0.37	638	29.51
Benzene	71-43-2	222	10.27	860	39.78
1,1,1-Trichloroethane	71-55-6	2	0.09	862	39.87
Methyl Bromide	74-83-9	2	0.09	864	39.96
Chloromethane	74-87-3	252	11.66	1116	51.62
Methylene Chloride	75-09-2	212	9.81	1328	61.42
Carbon Disulfide	75-15-0	32	1.48	1360	62.9
1,1-Dichloroethane	75-34-3	2	0.09	1362	63
Trichlorofluoromethane	75-69-4	254	11.75	1616	74.75
Dichlorodifluoromethane	75-71-8	252	11.66	1868	86.4
Freon 113	76-13-1	8	0.37	1876	86.77
Freon 114	76-14-2	2	0.09	1878	86.86
Methyl Ethyl Ketone	78-93-3	206	9.53	2084	96.39
1,1,2-Trichloroethane	79-00-5	2	0.09	2086	96.48
Trichloroethylene	79-01-6	2	0.09	2088	96.58
1,1,2,2-Tetrachloroethane	79-34-5	2	0.09	2090	96.67
Naphthalene	91-20-3	40	1.85	2130	98.52
o-Xylene	95-47-6	26	1.2	2156	99.72
1,2,4-Trimethylbenzene	95-63-6	6	0.28	2162	100

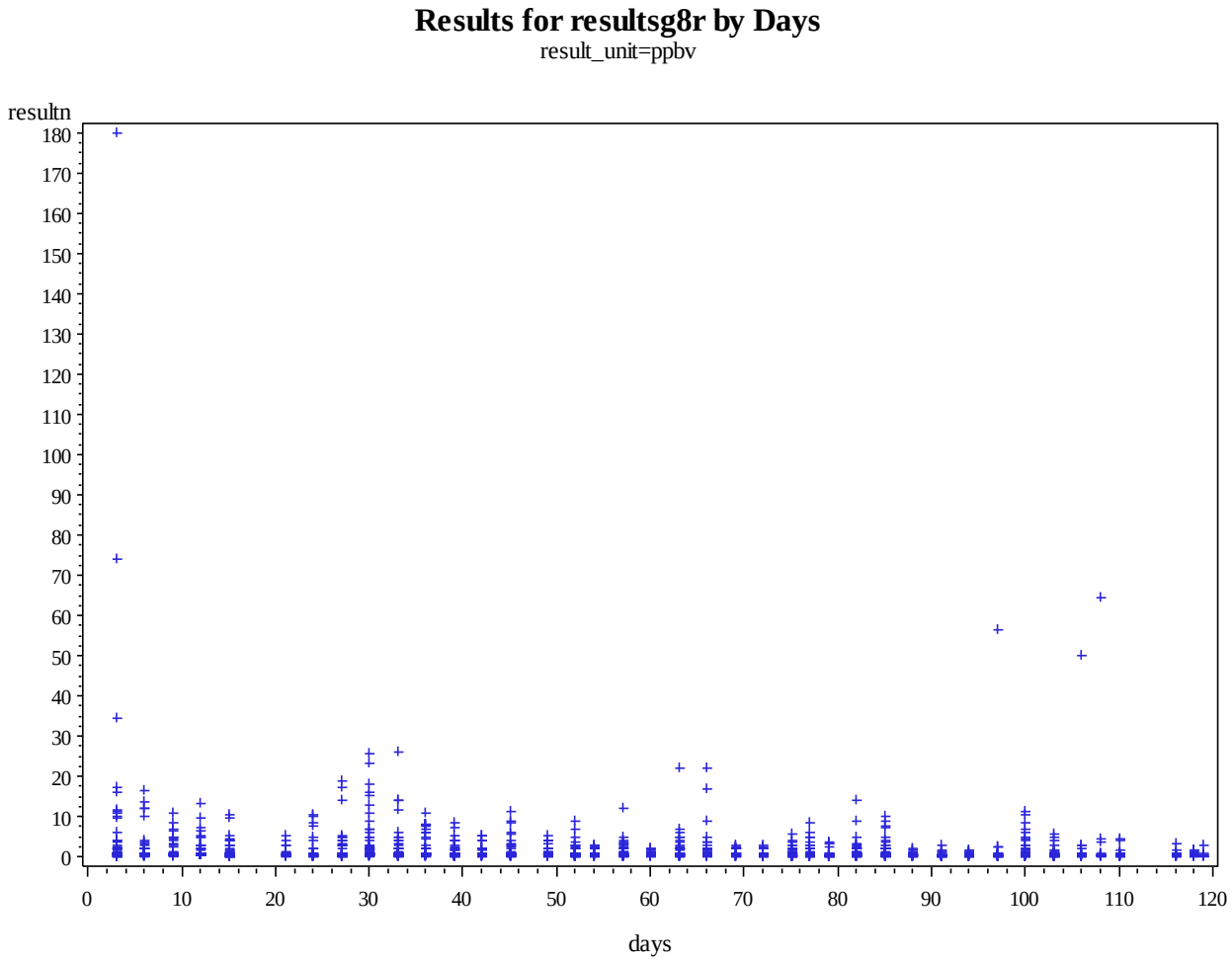
Table A-5.

NoQual Dataset Compound Name	cas_number	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Ethyl Benzene	**100-41-4**	6	0.6	6	0.6
Styrene	**100-42-5**	6	0.6	12	1.19
1,4-Dichlorobenzene	**106-46-7**	2	0.2	14	1.39
1,2-Dichloroethane	**107-06-2**	6	0.6	20	1.99
Methyl Isobutyl Ketone	**108-10-1**	4	0.4	24	2.39
m,p-Xylene	**108-38-3**	8	0.8	32	3.18
Toluene	**108-88-3**	198	19.68	230	22.86
Ethanol	**64-17-5**	156	15.51	386	38.37
Chloroform	**67-66-3**	2	0.2	388	38.57
Benzene	**71-43-2**	42	4.17	430	42.74
Chloromethane	**74-87-3**	246	24.45	676	67.2
Methylene Chloride	**75-09-2**	14	1.39	690	68.59
Carbon Disulfide	**75-15-0**	4	0.4	694	68.99
Trichlorofluoromethane	**75-69-4**	2	0.2	696	69.18
Dichlorodifluoromethane	**75-71-8**	250	24.85	946	94.04
Methyl Ethyl Ketone	**78-93-3**	50	4.97	996	99.01
Trichloroethylene	**79-01-6**	2	0.2	998	99.2
o-Xylene	**95-47-6**	6	0.6	1004	99.8
1,2,4-Trimethylbenzene	**95-63-6**	2	0.2	1006	100

Table A-6.

"Flo" Dataset Compound Name	cas_number	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Ethyl Benzene	**100-41-4**	4	0.82	4	0.82
Styrene	**100-42-5**	2	0.41	6	1.23
1-3, Butadiene	**106-99-0**	2	0.41	8	1.64
Methyl Isobutyl Ketone	**108-10-1**	2	0.41	10	2.05
m,p-Xylene	**108-38-3**	8	1.64	18	3.69
Toluene	**108-88-3**	60	12.3	78	15.98
Carbon Tetrachloride	**56-23-5**	2	0.41	80	16.39
Ethanol	**64-17-5**	58	11.89	138	28.28
Chloroform	**67-66-3**	2	0.41	140	28.69
Benzene	**71-43-2**	52	10.66	192	39.34
Chloromethane	**74-87-3**	60	12.3	252	51.64
Methylene Chloride	**75-09-2**	48	9.84	300	61.48
Carbon Disulfide	**75-15-0**	6	1.23	306	62.7
Trichlorofluoromethane	**75-69-4**	60	12.3	366	75
Dichlorodifluoromethane	**75-71-8**	60	12.3	426	87.3
Freon 113	**76-13-1**	2	0.41	428	87.7
1,2 Dichloropropane	**78-87-5**	2	0.41	430	88.11
Methyl Ethyl Ketone	**78-93-3**	42	8.61	472	96.72
Trichloroethylene	**79-01-6**	2	0.41	474	97.13
Naphthalene	**91-20-3**	10	2.05	484	99.18
o-Xylene	**95-47-6**	2	0.41	486	99.59
1,2,4-Trimethylbenzene	**95-63-6**	2	0.41	488	100

Table A-7.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70
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20
30
40
50
60
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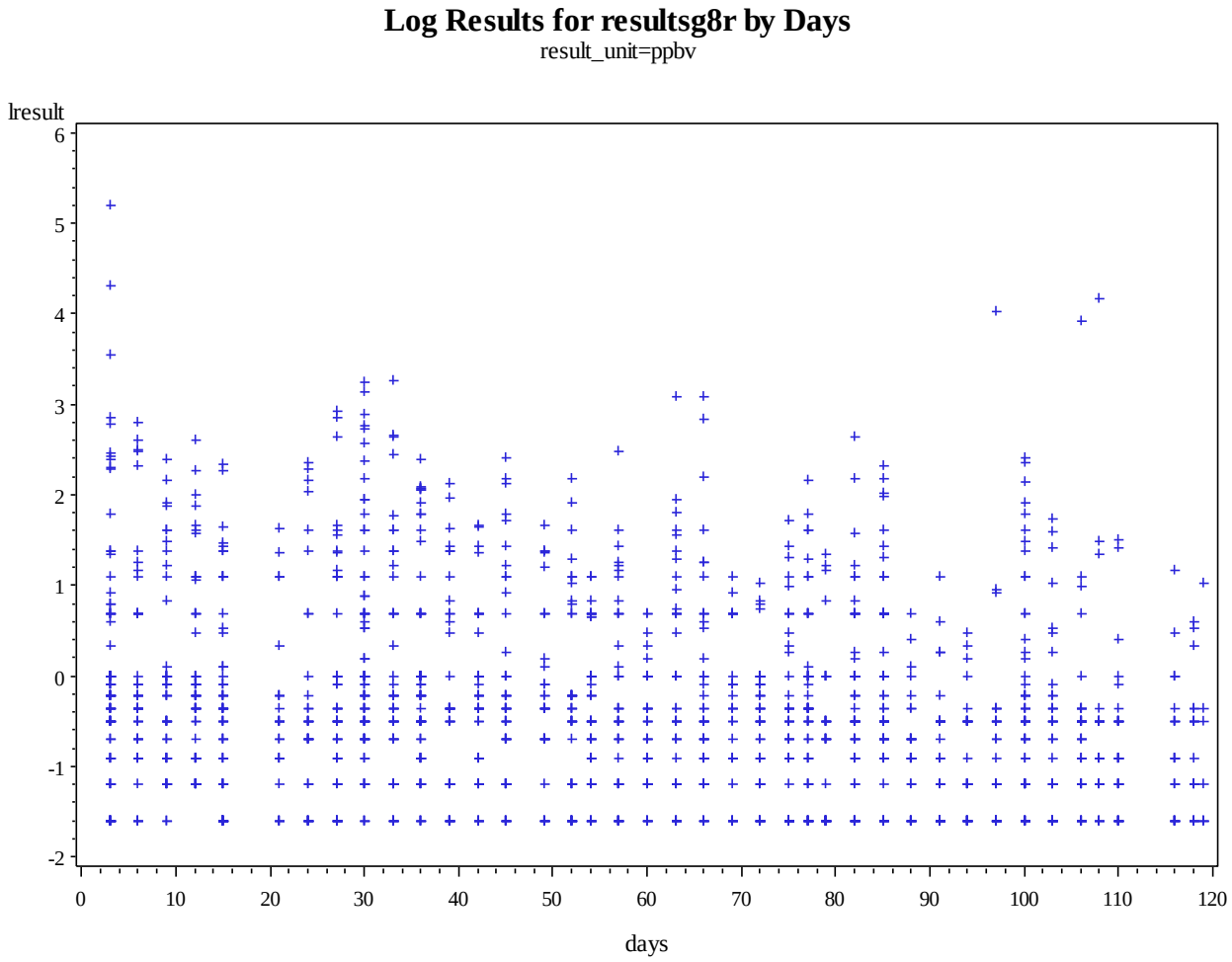
80
90
100
110
120
days

Table A-8.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110
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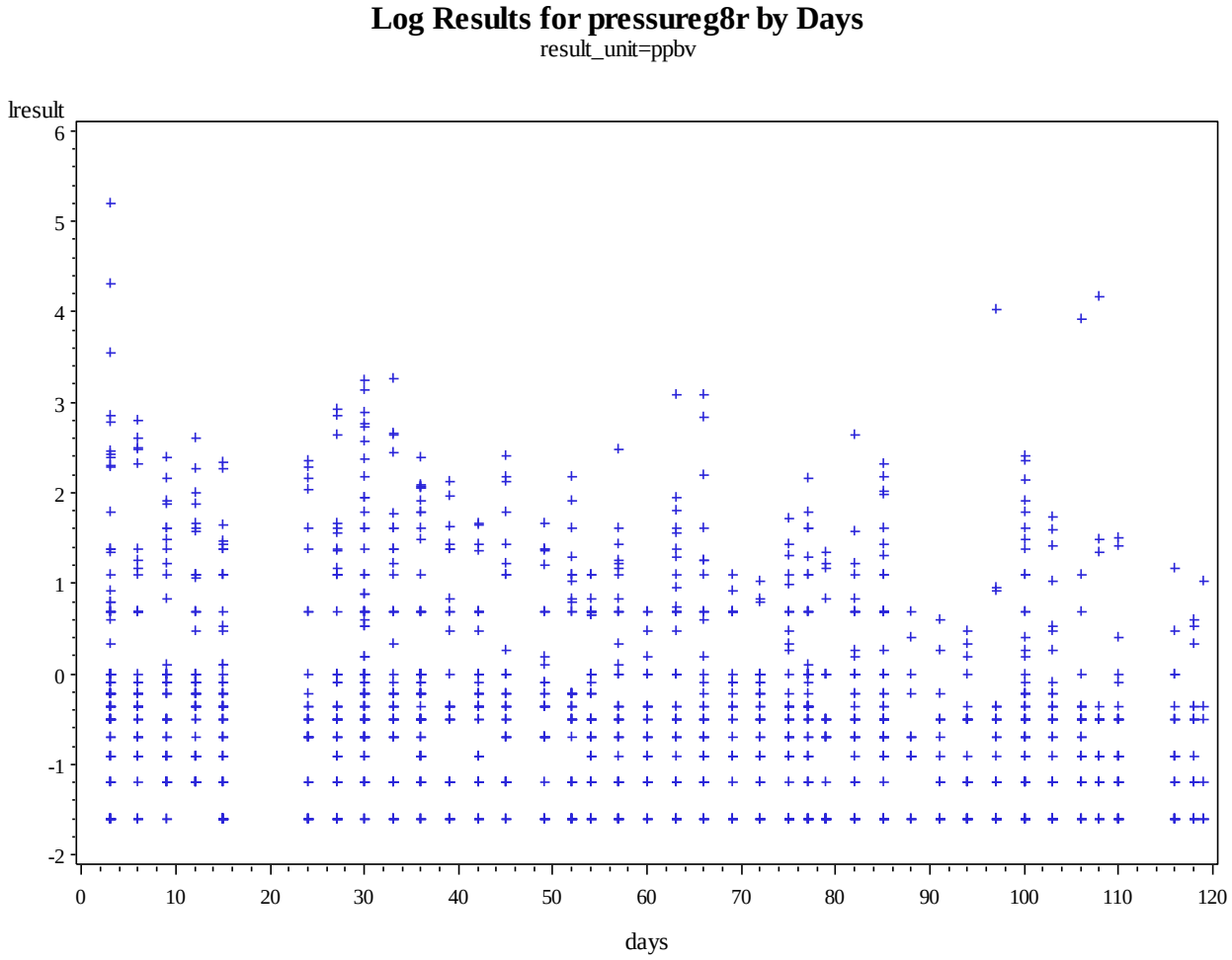
days

Table A-9.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30
40
50
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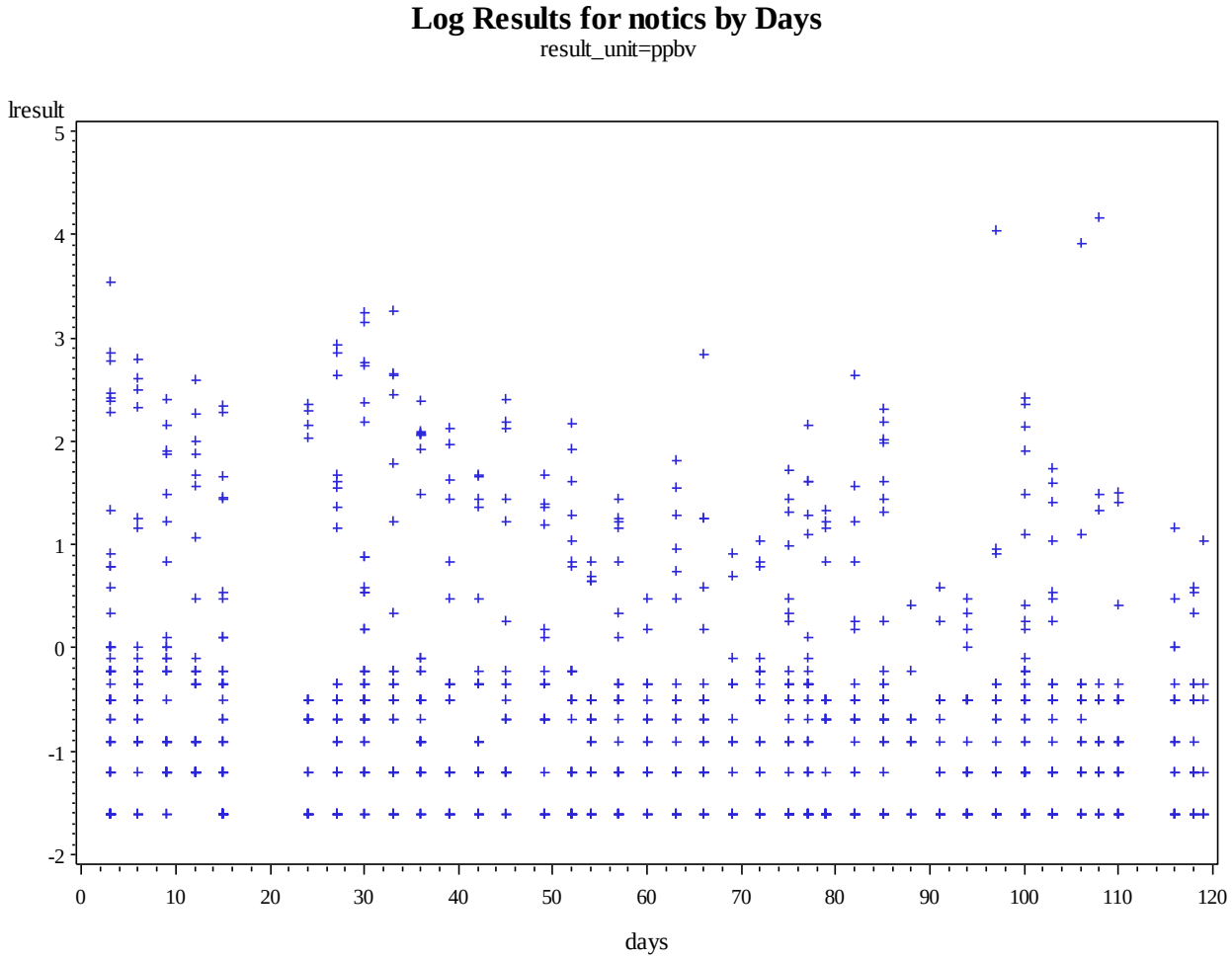
70
80
90
100
110
120
days

Table A-10.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3
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-2
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40
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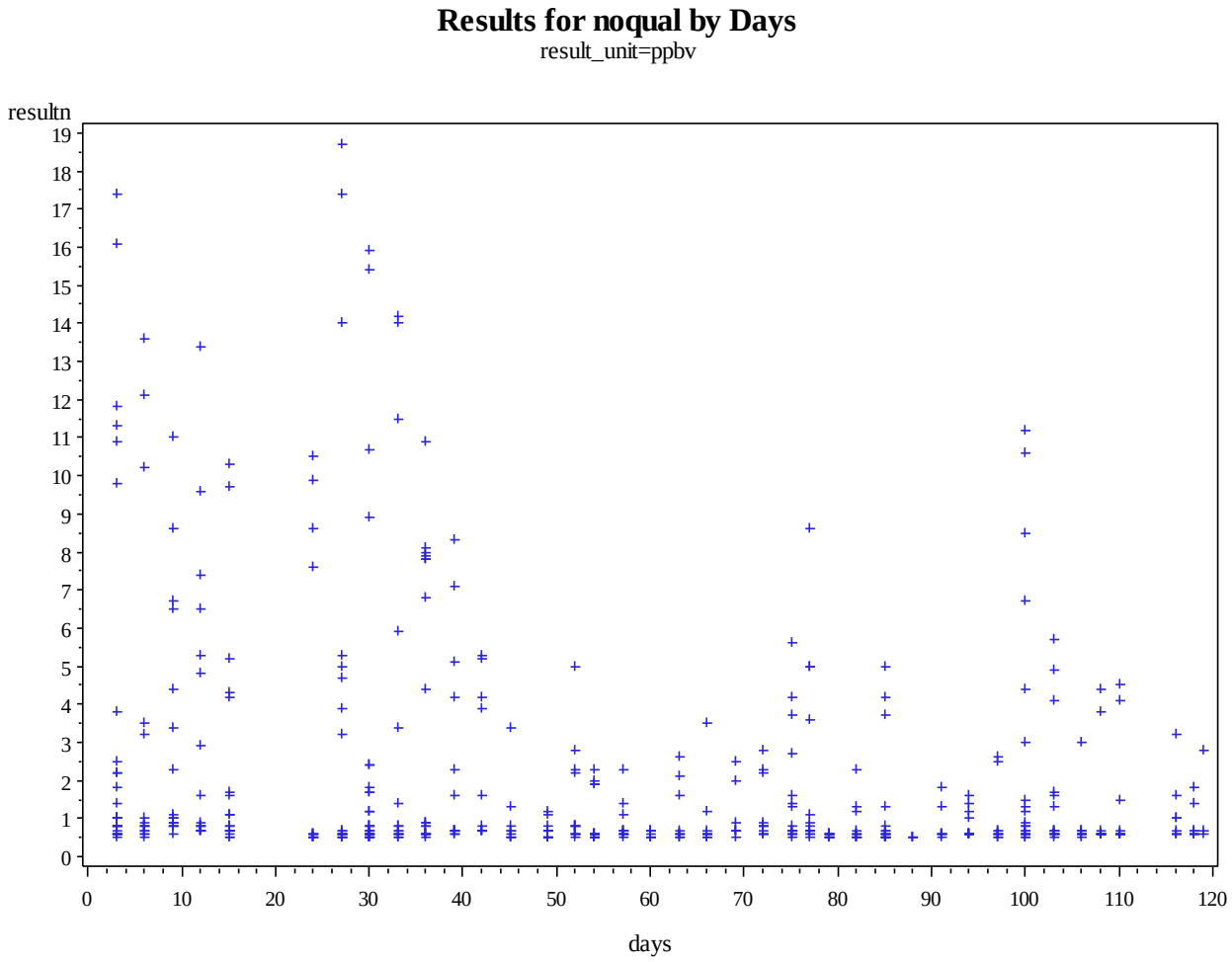
60
70
80
90
100
110
120
days

Table A-11.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6
5
4
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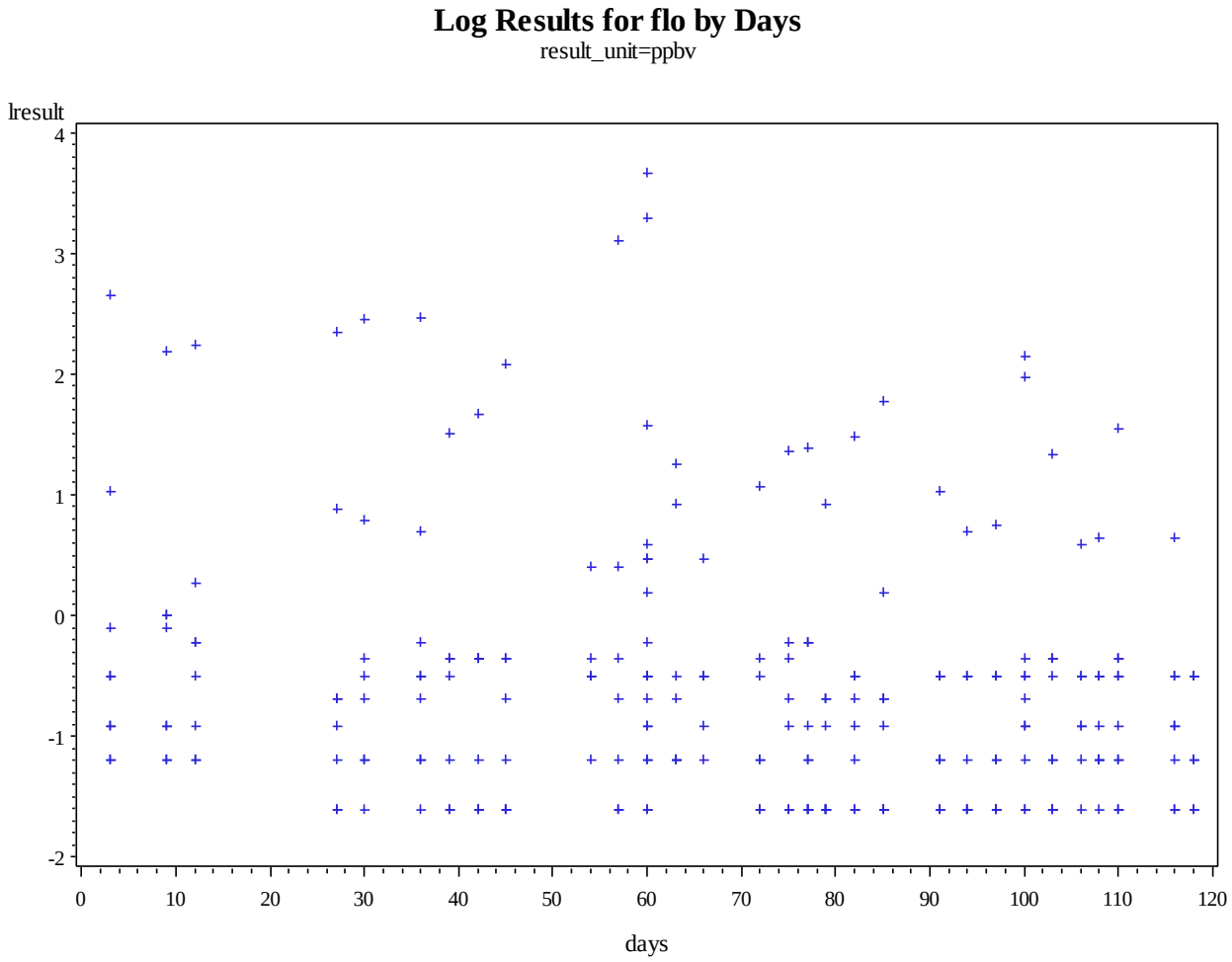
20
30
40
50
60
70
80
90
100
110
120
days

Table A-12.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3
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-2
0
10
20
30
40
50
60
70
80
90
100
110
120
days

Table A-13. ANOVA Table of Location 2 and collocated Location 2.

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	0.0045224	0.0045224	0.00	0.9540
Error	546	740.4167338	1.3560746		
Corrected Total	547	740.4212563			

Summary Table A-14. Analysis of Variance describing Toluene as the only compound which rejects null hypothesis of no difference between contamination source and background site.

cas_number = 108-88-3

The ANOVA Procedure

Dependent Variable: lresult

result_unit=ppbv

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	6.4128966	6.4128966	4.93	0.0278
Error	155	201.5009454	1.3000061		
Corrected Total	156	207.9138420			

R-Square	Coeff Var	Root MSE	lresult Mean
0.030844	441.4323	1.140178	0.258291

Source	DF	Anova SS	Mean Square	F Value	Pr > F
IDSite	1	6.41289662	6.41289662	4.93	0.0278

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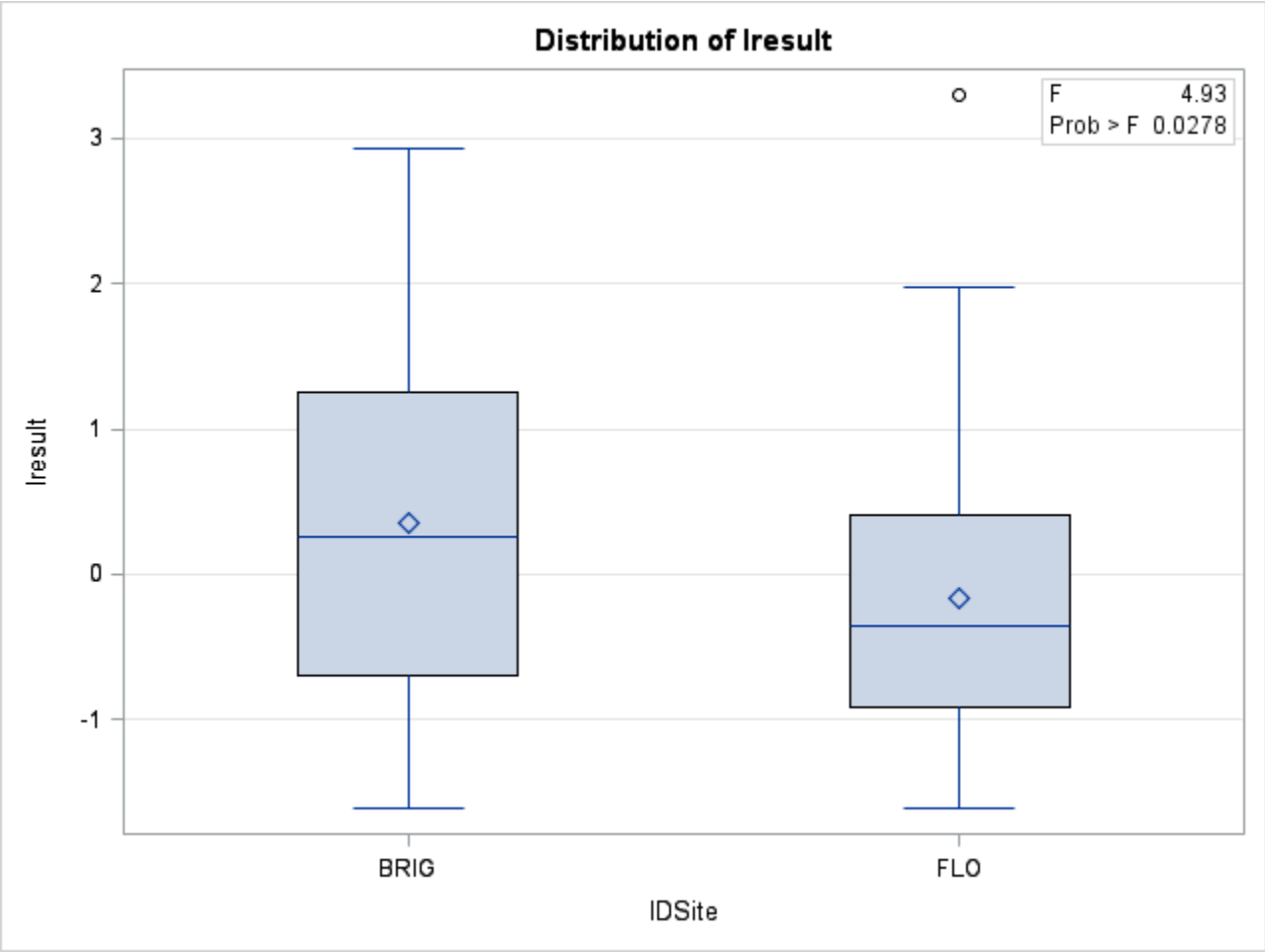

Figure A-1. Box plot of Toluene at the Brigich site and background site (FLO).

Table A-15. EPA Long Term Non-Cancer Threshold in ug/m3 result units:

Compound	cas_number	EPA_Long_Term_NonCancer__SAT_	resultug	per_noncanc
Styrene	100-42-5	1000	15.6000	0.015600
m,p-Xylene	108-38-3	100	8.2250	0.082250
Toluene	108-88-3	5000	12.9778	0.002596
o-Xylene	95-47-6	100	3.1000	0.031000

Table A-16. EPA Long Term Non-Cancer Threshold in ppbv result units

Compound	cas_number	Long_Term_NonCancer__ppbv	resultppbv	per_noncanc_ppbv
Ethylbenzene	100-41-4	230.3	0.86667	0.003763
Styrene	100-42-5	234.8	3.63333	0.015474
1,4-Dichlorobenzene	106-46-7	133.0612245	1.80000	0.013528
1,2-Dichloroethane	107-06-2	593	0.86667	0.001461
m,p-Xylene	108-38-3	23	1.90000	0.082609
Toluene	108-88-3	1326.8	3.41212	0.002572
Chloroform	67-66-3	20.1	0.60000	0.029851
Benzene	71-43-2	9.4	0.58095	0.061803
Chloromethane	74-87-3	43.6	0.69593	0.015962
Methylene chloride	75-09-2	287.9	0.90000	0.003126
Carbon disulfide	75-15-0	224.8	0.95000	0.004226
o-Xylene	95-47-6	23	0.73333	0.031884

Table A-17. EPA Long Term Cancer Threshold in ug/m3 result units:

Compound	cas_number	EPA_Long_Term_Cancer__SAT_	resultug	per_canc
Ethylbenzene	100-41-4	40	3.73333	0.09333
Benzene	71-43-2	13	1.85714	0.14286
Trichloroethylene	79-01-6	50	6.50000	0.13000

Table A-18. EPA Long Term Cancer Threshold in ppbv result units:

Compound	cas_number	Long_Term_Cancer_ppbv	resultppbv	per_canc_ppbv
Ethylbenzene	100-41-4	9.2	0.86667	0.09420
1,4-Dichlorobenzene	106-46-7	0.38255102	1.80000	4.70525
1,2-Dichloroethane	107-06-2	0.9	0.86667	0.96296
Benzene	71-43-2	4.1	0.58095	0.14170
Methylene chloride	75-09-2	60.5	0.90000	0.01488

Table A-19. ATSDR CREG Threshold in ppbv result units

Compound	cas_number	ATSDR_CREG	resultppbv	per_CREG_ppbv
1,2-Dichloroethane	107-06-2	0.01	0.86667	86.6667
Chloroform	67-66-3	0.009	0.60000	66.6667
Benzene	71-43-2	0.04	0.58095	14.5238
Methylene chloride	75-09-2	0.6	0.90000	1.5000