Ft Greely RME Concentration and Risk (FINAL).xls (Sheet 1 - Verification Survey Data Set - Complete Data Set)

Reference the Final SM-1A Reactor Waste Pipeline Corridor Verification Survey Report (USACE, 2004) for additional information on the station designator, sample location, and analytical data.
Sample interval is in feet below ground surface.

Sample	Station	Sample	Sample	Soil	Total Strontium (pCi/g)				Cesium-137 (pCi/g)			
Number	Designator	Location	Interval	Type	Result	Q[1]	±2σ	MDC	Result	Q	±2σ	MDC
GV01B	1+40	R2	7.5-8	Native	0.14	U	0.28	0.48	0.006	U	0.045	0.087
GV01M	1+40	R2	3.5-4	Windrow	0.75	J	0.31	0.41	0.22		0.11	0.13
GV01S	1+40	R2	0-0.5	Fill	1.06	J	0.42	0.55	0.51		0.14	0.09
GV02B	5+90	R10	6-6.5	Native	0.79	J	0.33	0.44	0.053	U	0.096	0.19
GV02M	5+90	R10	2.5-3	Windrow	0.04	U	0.27	0.47	-0.009	U	0.053	0.11
GV02S	5+90	R10	0-0.5	Windrow	0.13	U	0.29	0.49	0.097	U	0.07	0.15
GV03B	8+30	L18	6.5-7	Native	0.007	U	0.28	0.5	-0.016	U	0.049	0.097
GV03M	8+30	L18	5-5.5	Native	0.16	U	0.27	0.45	0.048	U	0.05	0.11
GV03S	8+30	L18	0-0.5	Native	0.33	U	0.28	0.46	0.005	U	0.041	0.087
GV04B	25+00	R5	4-4.5	Native	0.54	J	0.23	0.31	0.085	U	0.085	0.17
GV04M	25+00	R5	3.5-4	Windrow	0.46	U	0.31	0.49	0.082	U	0.088	0.16
GV04S	25+00	R5	0-0.5	Windrow	0.35	U	0.29	0.46	0.16	U	0.12	0.24
GV05B	31+50	L4	11.5-12	Native	0.13	U	0.28	0.47	-0.002	U	0.057	0.12
GV05M	31+50	L4	5.5-6	Native	0.64	J	0.39	0.59	0.021	U	0.071	0.14
GV05S	31+50	L4	0-0.5	Native	0.3	U	0.3	0.48	0.04	U	0.01	0.19
GV06B	37+60	L2	5.5-6	Native	0.36	U	0.23	0.36	-0.063	U	0.055	0.085
GV06M	37+60	L2	2.5-3	Windrow	0.47	U	0.34	0.54	0.003	U	0.061	0.12
GV06MD	37+60	L2	4-4.5	Windrow	0.31	U	0.29	0.47	0.063	U	0.071	0.15
GV06S	37+60	L2	0-1	Windrow	0.3	U	0.3	0.49	0.057	U	0.067	0.14
GV07B	43+00	L10	5.5-6	Native	-0.27	U	0.29	0.52	-0.0008	U	0.04	0.079
GV07M	43+00	L10	2-2.5	Windrow	0.61	J	0.31	0.44	0.047	U	0.061	0.12
GV07S	43+00	L10	0-0.5	Fill	0.64	J	0.27	0.36	-0.05	U	0.044	0.077
GV08B	44+80	R8	9-9.5	Native	0.42	J	0.27	0.42	0.016	U	0.051	0.097
GV08M	44+80	R8	5-5.5	Native	0.42	J	0.27	0.42	0.012	U	0.055	0.12
GV08S	44+80	R8	0-0.5	Native	1.34	J	0.42	0.48	0.033	U	0.062	0.13
GV09B	47+00	R7	8.5-9	Native	0.27	U	0.26	0.42	-0.038	U	0.051	0.084
GV09M	47+00	R7	4-4.5	Native	0.49	J	0.26	0.38	0.027	U	0.092	0.19
GV09S	47+00	R7	0-0.5	Native	0.22	U	0.27	0.45	-0.013	U	0.052	0.093
GV10B	56+00	R35	11.5-12	Native	0.08	U	0.29	0.51	-0.046	U	0.037	0.062
GV10M	56+00	R35	6-6.5	Native	0.39	U	0.26	0.41	-0.04	U	0.11	0.19
GV10S	56+00	R35	0-0.5	Native	0.42	J	0.24	0.36	0.29		0.1	0.09
GV10SD	56+00	R35	0.5-1	Native	0.45	J	0.26	0.4	0.028	U	0.069	0.14
GV11B	61+30	R10	8.5-9	Native	0.08	U	0.26	0.45	0.0007	U	0.034	0.073
GV11M	61+30	R10	5.5-6	Native	0.32	U	0.24	0.38	-0.008	U	0.034	0.064
GV11S	61+30	R10	0-0.5	Native	0.42	J	0.26	0.4	0.25		0.13	0.09
GV12B	62+30	R10	10-10.5	Native	0.26	U	0.23	0.38	0.009	U	0.04	0.076
GV12M	62+30	R10	6-6.5	Windrow	0.4	J	0.25	0.37	0.08	U	0.059	0.11
GV12S	62+30	R10	0-0.5	Fill	0.42	J	0.26	0.4	0.015	U	0.042	0.089
GV13B	10+00	C	8-9	Native	0.19	U	0.26	0.43	-0.009	U	0.041	0.076
GV13BR	10+00	C	8-9	Native	0.16	U	0.26	0.43	-0.027	U	0.032	0.06
GV13M	10+00	C	7-7.5	Windrow	0.69	J	0.26	0.33	0.003	U	0.038	0.074
GV13S	10+00	C	0-0.5	Fill	0.47	J	0.22	0.3	-0.007	U	0.07	0.14
GV14B	17+00	C	7-7.5	Native	0.13	U	0.19	0.32	0.021	U	0.045	0.091
GV14M	17+00	C	2-2.5	Windrow	0.4	J	0.24	0.38	0.142	J	0.068	0.084
GV14MD	17+00	C	3-3.5	Windrow	0.52	J	0.22	0.29	0.052	U	0.059	0.13
GV14S	17+00	C	0-0.5	Windrow	0.47	J	0.22	0.32	0.097	U	0.084	0.18
GV15B	17+35	C	7-7.5	Native	0.24	U	0.26	0.42	-0.049	U	0.055	0.088
GV15M	17+35	C	5-6	Fill	0.17	U	0.2	0.33	0.043	U	0.048	0.11
GV15S	17+35	C	0-0.5	Fill	0.14	U	0.18	0.31	0.013	U	0.048	0.099
GV16B	26+40	C	14.5-15	Native	-0.05	U	0.2	0.34	0.005	U	0.046	0.091
GV16M	26+40	C	8-8.5	Windrow	0.18	U	0.21	0.35	0.02	U	0.057	0.12
GV16S	26+40	C	0-0.5	Windrow	1.3	J	0.39	0.43	-0.003	U	0.11	0.2
GV17B	30+00	C	13.5-14	Native	0.06	U	0.18	0.31	-0.042	U	0.049	0.088
GV17M	30+00	C	3.5-4	Windrow	0.74	J	0.26	0.32	0.44		0.14	0.12
GV17MD	30+00	C	5.5-6	Windrow	0.68	J	0.25	0.32	0.61		0.2	0.13
GV17S	30+00	C	0-0.5	Fill	0.19	U	0.23	0.38	0.044	U	0.061	0.13
GV18B	34+20	C	3.5-4	Native	0.21	U	0.19	0.31	0.07	U	0.053	0.099
GV18M	34+20	C	0.5-1	Windrow	1.37	J	0.35	0.29	0.32		0.17	0.08
GV18S	34+20	C	0-0.5	Fill	0.32	U	0.22	0.34	0.008	U	0.089	0.17
GV19B	39+86	L2	5.5-6	Native	0.14	U	0.23	0.38	-0.0009	U	0.06	0.11
GV19M	39+86	L2	3.5-4	Native	0.18	U	0.2	0.33	-0.02	U	0.053	0.093
GV19S	39+86	L2	0-0.5	Native	0.03	U	0.2	0.34	0.036	U	0.07	0.14
GV20B	45+00	L5	8.5-9	Native	0.36	J	0.22	0.33	-0.0009	U	0.052	0.1
GV20BD	45+00	L5	9.5-10	Native	0.17	U	0.2	0.33	0.006	U	0.047	0.09
GV20M	45+00	L5	5.75-6.25	Windrow	0.26	U	0.23	0.36	0.148	J	0.09	0.11
GV20S	45+00	L5	0-0.5	Fill	0.12	U	0.21	0.36	0.001	U	0.041	0.077
GV21B	54+00	L5	10-10.5	Native	0.01	U	0.2	0.34	-0.005	U	0.04	0.08
GV21M	54+00	L5	3.5-4	Native	0.21	U	0.24	0.39	0.09	U	0.12	0.22
GV21S	54+00	L5	0-0.5	Windrow	0.25	U	0.22	0.35	0.115	U	0.09	0.12
GV22B	55+00	C	8.5-9	Native	0.15	U	0.22	0.37	-0.016	U	0.036	0.072

GV22M	55+00	C	5-5.5	Native	0.01	U	0.2	0.34	-0.001	U	0.041	0.078
GV22S	55+00	C	0-0.5	Native	0.29	U	0.19	0.29	0.27		0.12	0.1
GV23B	56+00	C	7-7.5	Native	-0.06	U	0.22	0.39	-0.004	U	0.044	0.082
GV23M	56+00	C	5-5.5	Windrow	-0.03	U	0.19	0.33	0.087	U	0.081	0.17
GV23S	56+00	C	0-0.5	Windrow	-0.1	U	0.18	0.32	0.068	U	0.068	0.11
GV23SD	56+00	C	0.5-1	Windrow	0.56	J	0.22	0.29	0.02	U	0.077	0.15
GV24B	62+50	R20	11.5-12	Native	0.14	U	0.17	0.28	-0.02	U	0.037	0.071
GV24M	62+50	R20	6-6.5	Windrow	-0.06	U	0.19	0.33	-0.02	U	0.046	0.082
GV24S	62+50	R20	0-0.5	Fill	0.49	J	0.27	0.41	0.055	U	0.043	0.096
GV25B	62+50	L25	10.5-11	Native	0.26	U	0.24	0.39	0.006	U	0.035	0.074
GV25M	62+50	L25	6-7	Windrow	0.23	U	0.23	0.37	0.34		0.1	0.09
GV25MR	62+50	L25	6-7	Windrow	0.79	J	0.3	0.39	0.1	U	0.12	0.14
GV25S	62+50	L25	0-0.5	Fill	0.22	U	0.22	0.36	0.065	U	0.042	0.098
GV26S	27+51	C	0-0.5	Windrow	1.5	J	0.39	0.33	0.04	U	0.1	0.21

[1] Q = Data Qualifier from Analytical Report (See Attachment E of the Verification Survey Report)

U Result is less than the sample detection limit

J Result is greater than the sample detection limit but less than the stated reporting limit

(the "sample detection limit" is the sample minimum detectable concentration (MDC) based on instrument performance provided above)

(the "stated reporting limit" is 3 pCi/g for Total Strontium and 0.2 pCi/g for Cs-137 and represent results that can be achieved by the laboratory with these analyses)

	Strontium		Cs-137	
Average	**0.34936905 pCi/g**		**Average**	**0.06050119 pCi/g**
Median	**0.280 pCi/g**		**Median**	**0.020 pCi/g**
Standard Deviation	**0.3287786 pCi/g**		**Standard Deviation**	**0.12105916 pCi/g**
Maximum	**1.5 pCi/g**		**Maximum**	**0.61 pCi/g**
Minimum	**-0.27 pCi/g**		**Minimum**	**-0.063 pCi/g**
Range	**1.77 pCi/g**		**Range**	**0.673 pCi/g**
Number	**84**		**Number**	**84**

Ft Greely RME Concentration and Risk (FINAL).xls (Sheet 2 - Verification Survey Data Set - Surface Sample Data Set)

Reference the Final SM-1A Reactor Waste Pipeline Corridor Verification Survey Report (USACE, 2004) for additional information on the station designator, sample location, and analytical data.
Sample interval is in feet below ground surface.

Sample Number	Station Designator	Sample Location	Sample Interval	Soil Type	Total Strontium (pCi/g)				Cesium-137 (pCi/g)			
					Result	Q[1]	±2σ	MDC	Result	Q	±2σ	MDC
GV01S	1+40	R2	0-0.5	Fill	1.06	J	0.42	0.55	0.51		0.14	0.09
GV02S	5+90	R10	0-0.5	Windrow	0.13	U	0.29	0.49	0.097	U	0.07	0.15
GV03S	8+30	L18	0-0.5	Native	0.33	U	0.28	0.46	0.005	U	0.041	0.087
GV04S	25+00	R5	0-0.5	Windrow	0.35	U	0.29	0.46	0.16	U	0.12	0.24
GV05S	31+50	L4	0-0.5	Native	0.3	U	0.3	0.48	0.04	U	0.01	0.19
GV06S	37+60	L2	0-1	Windrow	0.3	U	0.3	0.49	0.057	U	0.067	0.14
GV07S	43+00	L10	0-0.5	Fill	0.64	J	0.27	0.36	-0.05	U	0.044	0.077
GV08S	44+80	R8	0-0.5	Native	1.34	J	0.42	0.48	0.033	U	0.062	0.13
GV09S	47+00	R7	0-0.5	Native	0.22	U	0.27	0.45	-0.013	U	0.052	0.093
GV10S	56+00	R35	0-0.5	Native	0.42	J	0.24	0.36	0.29		0.1	0.09
GV10SD	56+00	R35	0.5-1	Native	0.45	J	0.26	0.4	0.028	U	0.069	0.14
GV11S	61+30	R10	0-0.5	Native	0.42	J	0.26	0.4	0.25		0.13	0.09
GV12S	62+30	R10	0-0.5	Fill	0.42	J	0.26	0.4	0.015	U	0.042	0.089
GV13S	10+00	C	0-0.5	Fill	0.47	J	0.22	0.3	-0.007	U	0.07	0.14
GV14S	17+00	C	0-0.5	Windrow	0.47	J	0.22	0.32	0.097	U	0.084	0.18
GV15S	17+35	C	0-0.5	Fill	0.14	U	0.18	0.31	0.013	U	0.048	0.099
GV16S	26+40	C	0-0.5	Windrow	1.3	J	0.39	0.43	-0.003	U	0.11	0.2
GV17S	30+00	C	0-0.5	Fill	0.19	U	0.23	0.38	0.044	U	0.061	0.13
GV18S	34+20	C	0-0.5	Fill	0.32	U	0.22	0.34	0.008	U	0.089	0.17
GV19S	39+86	L2	0-0.5	Native	0.03	U	0.2	0.34	0.036	U	0.07	0.14
GV20S	45+00	L5	0-0.5	Fill	0.12	U	0.21	0.36	0.001	U	0.041	0.077
GV21S	54+00	L5	0-0.5	Windrow	0.25	U	0.22	0.35	0.115	U	0.09	0.12
GV22S	55+00	C	0-0.5	Native	0.29	U	0.19	0.29	0.27		0.12	0.1
GV23S	56+00	C	0-0.5	Windrow	-0.1	U	0.18	0.32	0.068	U	0.068	0.11
GV23SD	56+00	C	0.5-1	Windrow	0.56	J	0.22	0.29	0.02	U	0.077	0.15
GV24S	62+50	R20	0-0.5	Fill	0.49	J	0.27	0.41	0.055	U	0.043	0.096
GV25S	62+50	L25	0-0.5	Fill	0.22	U	0.22	0.36	0.065	U	0.042	0.098
GV26S	27+51	C	0-0.5	Windrow	1.5	J	0.39	0.33	0.04	U	0.1	0.21

[1] Q = Data Qualifier from Analytical Report (See Attachment E of the Verification Survey Report)
U Result is less than the sample detection limit
J Result is greater than the sample detection limit but less than the stated reporting limit
(the "sample detection limit" is the sample minimum detectable concentration (MDC) based on instrument performance provided above)
(the "stated reporting limit" is 3 pCi/g for Total Strontium and 0.2 pCi/g for Cs-137 and represent results that can be achieved by the laboratory with these analyses)

Strontium		Cs-137	
Average	**0.45107143 pCi/g**	**Average**	**0.08014286 pCi/g**
Median	**0.340 pCi/g**	**Median**	**0.040 pCi/g**
Standard Deviation	**0.39224274**	**Standard Deviation**	**0.11932549 pCi/g**
Maximum	**1.5**	**Maximum**	**0.51 pCi/g**
Minimum	**-0.1**	**Minimum**	**-0.05 pCi/g**
Range	**1.6**	**Range**	**0.56 pCi/g**
Number	**28**	**Number**	**28**

Ft Greely RME Concentration and Risk (FINAL).xls (Sheet 3 - Verification Survey Data Set - Mid-Depth Sample Data Set)

Reference the Final SM-1A Reactor Waste Pipeline Corridor Verification Survey Report (USACE, 2004) for additional information on the station designator, sample location, and analytical data.
Sample interval is in feet below ground surface.

Sample Number	Station Designator	Sample Location	Sample Interval	Soil Type	Total Strontium (pCi/g)				Cesium-137 (pCi/g)			
					Result	Q[1]	±2σ	MDC	Result	Q	±2σ	MDC
GV01M	1+40	R2	3.5-4	Windrow	0.75	J	0.31	0.41	0.22		0.11	0.13
GV02M	5+90	R10	2.5-3	Windrow	0.04	U	0.27	0.47	-0.009	U	0.053	0.11
GV03M	8+30	L18	5-5.5	Native	0.16	U	0.27	0.45	0.048	U	0.05	0.11
GV04M	25+00	R5	3.5-4	Windrow	0.46	U	0.31	0.49	0.082	U	0.088	0.16
GV05M	31+50	L4	5.5-6	Native	0.64	J	0.39	0.59	0.021	U	0.071	0.14
GV06M	37+60	L2	2.5-3	Windrow	0.47	U	0.34	0.54	0.003	U	0.061	0.12
GV06MD	37+60	L2	4-4.5	Windrow	0.31	U	0.29	0.47	0.063	U	0.071	0.15
GV07M	43+00	L10	2-2.5	Windrow	0.61	J	0.31	0.44	0.047	U	0.061	0.12
GV08M	44+80	R8	5-5.5	Native	0.42	J	0.27	0.42	0.012	U	0.055	0.12
GV09M	47+00	R7	4-4.5	Native	0.49	J	0.26	0.38	0.027	U	0.092	0.19
GV10M	56+00	R35	6-6.5	Native	0.39	U	0.26	0.41	-0.04	U	0.11	0.19
GV11M	61+30	R10	5.5-6	Native	0.32	U	0.24	0.38	-0.008	U	0.034	0.064
GV12M	62+30	R10	6-6.5	Windrow	0.4	J	0.25	0.37	0.08	U	0.059	0.11
GV13M	10+00	C	7-7.5	Windrow	0.69	J	0.26	0.33	0.003	U	0.038	0.074
GV14M	17+00	C	2-2.5	Windrow	0.4	J	0.24	0.38	0.142	J	0.068	0.084
GV14MD	17+00	C	3-3.5	Windrow	0.52	J	0.22	0.29	0.052	U	0.059	0.13
GV15M	17+35	C	5-6	Fill	0.17	U	0.2	0.33	0.043	U	0.048	0.11
GV16M	26+40	C	8-8.5	Windrow	0.18	U	0.21	0.35	0.02	U	0.057	0.12
GV17M	30+00	C	3.5-4	Windrow	0.74	J	0.26	0.32	0.44		0.14	0.12
GV17MD	30+00	C	5.5-6	Windrow	0.68	J	0.25	0.32	0.61		0.2	0.13
GV18M	34+20	C	0.5-1	Windrow	1.37	J	0.35	0.29	0.32		0.17	0.08
GV19M	39+86	L2	3.5-4	Native	0.18	U	0.2	0.33	-0.02	U	0.053	0.093
GV20M	45+00	L5	5.75-6.25	Windrow	0.26	U	0.23	0.36	0.148	J	0.09	0.11
GV21M	54+00	L5	3.5-4	Native	0.21	U	0.24	0.39	0.09	U	0.12	0.22
GV22M	55+00	C	5-5.5	Native	0.01	U	0.2	0.34	-0.001	U	0.041	0.078
GV23M	56+00	C	5-5.5	Windrow	-0.03	U	0.19	0.33	0.087	U	0.081	0.17
GV24M	62+50	R20	6-6.5	Windrow	-0.06	U	0.19	0.33	-0.02	U	0.046	0.082
GV25M	62+50	L25	6-7	Windrow	0.23	U	0.23	0.37	0.34		0.1	0.09
GV25MR	62+50	L25	6-7	Windrow	0.79	J	0.3	0.39	0.1	U	0.12	0.14

[1] Q = Data Qualifier from Analytical Report (See Attachment E of the Verification Survey Report)
U Result is less than the sample detection limit
J Result is greater than the sample detection limit but less than the stated reporting limit
(the "sample detection limit" is the sample minimum detectable concentration (MDC) based on instrument performance provided above)
(the "stated reporting limit" is 3 pCi/g for Total Strontium and 0.2 pCi/g for Cs-137 and represent results that can be achieved by the laboratory with these analyses)

Strontium		Cs-137	
Average	**0.40689655 pCi/g**	**Average**	**0.1 pCi/g**
Median	**0.400 pCi/g**	**Median**	**0.048 pCi/g**
Standard Deviation	**0.30531136 pCi/g**	**Standard Deviation**	**0.15121815 pCi/g**
Maximum	**1.37 pCi/g**	**Maximum**	**0.61 pCi/g**
Minimum	**-0.06 pCi/g**	**Minimum**	**-0.04 pCi/g**
Range	**1.43 pCi/g**	**Range**	**0.65 pCi/g**
Number	**29**	**Number**	**29**

Ft Greely RME Concentration and Risk (FINAL).xls (Sheet 4 - Verification Survey Data Set - Bottom Sample Data Set)

Reference the Final SM-1A Reactor Waste Pipeline Corridor Verification Survey Report (USACE, 2004) for additional information on the station designator, sample location, and analytical data.
Sample interval is in feet below ground surface.

Sample Number	Station Designator	Sample Location	Sample Interval	Soil Type	Total Strontium (pCi/g)				Cesium-137 (pCi/g)			
					Result	Q[1]	±2σ	MDC	Result	Q	±2σ	MDC
GV01B	1+40	R2	7.5-8	Native	0.14	U	0.28	0.48	0.006	U	0.045	0.087
GV02B	5+90	R10	6-6.5	Native	0.79	J	0.33	0.44	0.053	U	0.096	0.19
GV03B	8+30	L18	6.5-7	Native	0.007	U	0.28	0.5	-0.016	U	0.049	0.097
GV04B	25+00	R5	4-4.5	Native	0.54	J	0.23	0.31	0.085	U	0.085	0.17
GV05B	31+50	L4	11.5-12	Native	0.13	U	0.28	0.47	-0.002	U	0.057	0.12
GV06B	37+60	L2	5.5-6	Native	0.36	U	0.23	0.36	-0.063	U	0.055	0.085
GV07B	43+00	L10	5.5-6	Native	-0.27	U	0.29	0.52	-0.0008	U	0.04	0.079
GV08B	44+80	R8	9-9.5	Native	0.42	J	0.27	0.42	0.016	U	0.051	0.097
GV09B	47+00	R7	8.5-9	Native	0.27	U	0.26	0.42	-0.038	U	0.051	0.084
GV10B	56+00	R35	11.5-12	Native	0.08	U	0.29	0.51	-0.046	U	0.037	0.062
GV11B	61+30	R10	8.5-9	Native	0.08	U	0.26	0.45	0.0007	U	0.034	0.073
GV12B	62+30	R10	10-10.5	Native	0.26	U	0.23	0.38	0.009	U	0.04	0.076
GV13B	10+00	C	8-9	Native	0.19	U	0.26	0.43	-0.009	U	0.041	0.076
GV13BR	10+00	C	8-9	Native	0.16	U	0.26	0.43	-0.027	U	0.032	0.06
GV14B	17+00	C	7-7.5	Native	0.13	U	0.19	0.32	0.021	U	0.045	0.091
GV15B	17+35	C	7-7.5	Native	0.24	U	0.26	0.42	-0.049	U	0.055	0.088
GV16B	26+40	C	14.5-15	Native	-0.05	U	0.2	0.34	0.005	U	0.046	0.091
GV17B	30+00	C	13.5-14	Native	0.06	U	0.18	0.31	-0.042	U	0.049	0.088
GV18B	34+20	C	3.5-4	Native	0.21	U	0.19	0.31	0.07	U	0.053	0.099
GV19B	39+86	L2	5.5-6	Native	0.14	U	0.23	0.38	-0.0009	U	0.06	0.11
GV20B	45+00	L5	8.5-9	Native	0.36	J	0.22	0.33	-0.0009	U	0.052	0.1
GV20BD	45+00	L5	9.5-10	Native	0.17	U	0.2	0.33	0.006	U	0.047	0.09
GV21B	54+00	L5	10-10.5	Native	0.01	U	0.2	0.34	-0.005	U	0.04	0.08
GV22B	55+00	C	8.5-9	Native	0.15	U	0.22	0.37	-0.016	U	0.036	0.072
GV23B	56+00	C	7-7.5	Native	-0.06	U	0.22	0.39	-0.004	U	0.044	0.082
GV24B	62+50	R20	11.5-12	Native	0.14	U	0.17	0.28	-0.02	U	0.037	0.071
GV25B	62+50	L25	10.5-11	Native	0.26	U	0.24	0.39	0.006	U	0.035	0.074

[1] Q = Data Qualifier from Analytical Report (See Attachment E of the Verification Survey Report)
U Result is less than the sample detection limit
J Result is greater than the sample detection limit but less than the stated reporting limit
(the "sample detection limit" is the sample minimum detectable concentration (MDC) based on instrument performance provided above)
(the "stated reporting limit" is 3 pCi/g for Total Strontium and 0.2 pCi/g for Cs-137 and represent results that can be achieved by the laboratory with these analyses)

Strontium		Cs-137	
Average	**0.18211111 pCi/g**	**Average**	**-0.0022926 pCi/g**
Median	**0.150 pCi/g**	**Median**	**-0.001 pCi/g**
Standard Deviation	**0.20257085 pCi/g**	**Standard Deviation**	**0.03349331 pCi/g**
Maximum	**0.79 pCi/g**	**Maximum**	**0.085 pCi/g**
Minimum	**-0.27 pCi/g**	**Minimum**	**-0.063 pCi/g**
Range	**1.06 pCi/g**	**Range**	**0.148 pCi/g**
Number	**27**	**Number**	**27**

Ft Greely RME Concentration and Risk (FINAL).xls (Sheet 5 - Verification Survey Data Set - Windrow Sample Data Set)

Reference the Final SM-1A Reactor Waste Pipeline Corridor Verification Survey Report (USACE, 2004) for additional information on the station designator, sample location, and analytical data.
Sample interval is in feet below ground surface.

Sample Number	Station Designator	Sample Location	Sample Interval	Soil Type	Total Strontium (pCi/g)				Cesium-137 (pCi/g)			
					Result	Q[1]	±2σ	MDC	Result	Q	±2σ	MDC
GV01M	1+40	R2	3.5-4	Windrow	0.75	J	0.31	0.41	0.22		0.11	0.13
GV02M	5+90	R10	2.5-3	Windrow	0.04	U	0.27	0.47	-0.009	U	0.053	0.11
GV02S	5+90	R10	0-0.5	Windrow	0.13	U	0.29	0.49	0.097	U	0.07	0.15
GV04M	25+00	R5	3.5-4	Windrow	0.46	U	0.31	0.49	0.082	U	0.088	0.16
GV04S	25+00	R5	0-0.5	Windrow	0.35	U	0.29	0.46	0.16	U	0.12	0.24
GV06M	37+60	L2	2.5-3	Windrow	0.47	U	0.34	0.54	0.003	U	0.061	0.12
GV06MD	37+60	L2	4-4.5	Windrow	0.31	U	0.29	0.47	0.063	U	0.071	0.15
GV06S	37+60	L2	0-1	Windrow	0.3	U	0.3	0.49	0.057	U	0.067	0.14
GV07M	43+00	L10	2-2.5	Windrow	0.61	J	0.31	0.44	0.047	U	0.061	0.12
GV12M	62+30	R10	6-6.5	Windrow	0.4	J	0.25	0.37	0.08	U	0.059	0.11
GV13M	10+00	C	7-7.5	Windrow	0.69	J	0.26	0.33	0.003	U	0.038	0.074
GV14M	17+00	C	2-2.5	Windrow	0.4	J	0.24	0.38	0.142	J	0.068	0.084
GV14MD	17+00	C	3-3.5	Windrow	0.52	J	0.22	0.29	0.052	U	0.059	0.13
GV14S	17+00	C	0-0.5	Windrow	0.47	J	0.22	0.32	0.097	U	0.084	0.18
GV16M	26+40	C	8-8.5	Windrow	0.18	U	0.21	0.35	0.02	U	0.057	0.12
GV16S	26+40	C	0-0.5	Windrow	1.3	J	0.39	0.43	-0.003	U	0.11	0.2
GV17M	30+00	C	3.5-4	Windrow	0.74	J	0.26	0.32	0.44		0.14	0.12
GV17MD	30+00	C	5.5-6	Windrow	0.68	J	0.25	0.32	0.61		0.2	0.13
GV18M	34+20	C	0.5-1	Windrow	1.37	J	0.35	0.29	0.32		0.17	0.08
GV20M	45+00	L5	5.75-6.25	Windrow	0.26	U	0.23	0.36	0.148	J	0.09	0.11
GV21S	54+00	L5	0-0.5	Windrow	0.25	U	0.22	0.35	0.115	U	0.09	0.12
GV23M	56+00	C	5-5.5	Windrow	-0.03	U	0.19	0.33	0.087	U	0.081	0.17
GV23S	56+00	C	0-0.5	Windrow	-0.1	U	0.18	0.32	0.068	U	0.068	0.11
GV23SD	56+00	C	0.5-1	Windrow	0.56	J	0.22	0.29	0.02	U	0.077	0.15
GV24M	62+50	R20	6-6.5	Windrow	-0.06	U	0.19	0.33	-0.02	U	0.046	0.082
GV25M	62+50	L25	6-7	Windrow	0.23	U	0.23	0.37	0.34		0.1	0.09
GV25MR	62+50	L25	6-7	Windrow	0.79	J	0.3	0.39	0.1	U	0.12	0.14
GV26S	27+51	C	0-0.5	Windrow	1.5	J	0.39	0.33	0.04	U	0.1	0.21

[1] Q = Data Qualifier from Analytical Report (See Attachment E of the Verification Survey Report)
U Result is less than the sample detection limit
J Result is greater than the sample detection limit but less than the stated reporting limit
(the "sample detection limit" is the sample minimum detectable concentration (MDC) based on instrument performance provided above)
(the "stated reporting limit" is 3 pCi/g for Total Strontium and 0.2 pCi/g for Cs-137 and represent results that can be achieved by the laboratory with these analyses)

Strontium		Cs-137	
Average	**0.48464286 pCi/g**	**Average**	**0.12067857 pCi/g**
Median	**0.430 pCi/g**	**Median**	**0.081 pCi/g**
Standard Deviation	**0.40366361 pCi/g**	**Standard Deviation**	**0.1458556 pCi/g**
Maximum	**1.5 pCi/g**	**Maximum**	**0.61 pCi/g**
Minimum	**-0.1 pCi/g**	**Minimum**	**-0.02 pCi/g**
Range	**1.6 pCi/g**	**Range**	**0.63 pCi/g**
Number	**28**	**Number**	**28**

Ft Greely RME Concentration and Risk (FINAL).xls (Sheet 6 - Verification Survey Data Set - Negative Data Highlighted)

Reference the Final SM-1A Reactor Waste Pipeline Corridor Verification Survey Report (USACE, 2004) for additional information on sample locations and analytical data.
Sample interval is in feet below ground surface.

Data set with negative results highlighted. These values were not included in the ln transformed data analysis presented on Sheets 7 and 8.

Sample	Station	Sample	Sample	Soil	Total Strontium (pCi/g)				Cesium-137 (pCi/g)			
Number	Designator	Location	Interval	Type	Result	Q[1]	±2σ	MDC	Result	Q	±2σ	MDC
GV01B	1+40	R2	7.5-8	Native	0.14	U	0.28	0.48	0.006	U	0.045	0.087
GV01M	1+40	R2	3.5-4	Windrow	0.75	J	0.31	0.41	0.22		0.11	0.13
GV01S	1+40	R2	0-0.5	Fill	1.06	J	0.42	0.55	0.51		0.14	0.09
GV02B	5+90	R10	6-6.5	Native	0.79	J	0.33	0.44	0.053	U	0.096	0.19
GV02M	5+90	R10	2.5-3	Windrow	0.04	U	0.27	0.47	-0.009	U	0.053	0.11
GV02S	5+90	R10	0-0.5	Windrow	0.13	U	0.29	0.49	0.097	U	0.07	0.15
GV03B	8+30	L18	6.5-7	Native	0.007	U	0.28	0.5	-0.016	U	0.049	0.097
GV03M	8+30	L18	5-5.5	Native	0.16	U	0.27	0.45	0.048	U	0.05	0.11
GV03S	8+30	L18	0-0.5	Native	0.33	U	0.28	0.46	0.005	U	0.041	0.087
GV04B	25+00	R5	4-4.5	Native	0.54	J	0.23	0.31	0.085	U	0.085	0.17
GV04M	25+00	R5	3.5-4	Windrow	0.46	U	0.31	0.49	0.082	U	0.088	0.16
GV04S	25+00	R5	0-0.5	Windrow	0.35	U	0.29	0.46	0.16	U	0.12	0.24
GV05B	31+50	L4	11.5-12	Native	0.13	U	0.28	0.47	-0.002	U	0.057	0.12
GV05M	31+50	L4	5.5-6	Native	0.64	J	0.39	0.59	0.021	U	0.071	0.14
GV05S	31+50	L4	0-0.5	Native	0.3	U	0.3	0.48	0.04	U	0.01	0.19
GV06B	37+60	L2	5.5-6	Native	0.36	U	0.23	0.36	-0.063	U	0.055	0.085
GV06M	37+60	L2	2.5-3	Windrow	0.47	U	0.34	0.54	0.003	U	0.061	0.12
GV06MD	37+60	L2	4-4.5	Windrow	0.31	U	0.29	0.47	0.063	U	0.071	0.15
GV06S	37+60	L2	0-1	Windrow	0.3	U	0.3	0.49	0.057	U	0.067	0.14
GV07B	43+00	L10	5.5-6	Native	-0.27	U	0.29	0.52	-0.0008	U	0.04	0.079
GV07M	43+00	L10	2-2.5	Windrow	0.61	J	0.31	0.44	0.047	U	0.061	0.12
GV07S	43+00	L10	0-0.5	Fill	0.64	J	0.27	0.36	-0.05	U	0.044	0.077
GV08B	44+80	R8	9-9.5	Native	0.42	J	0.27	0.42	0.016	U	0.051	0.097
GV08M	44+80	R8	5-5.5	Native	0.42	J	0.27	0.42	0.012	U	0.055	0.12
GV08S	44+80	R8	0-0.5	Native	1.34	J	0.42	0.48	0.033	U	0.062	0.13
GV09B	47+00	R7	8.5-9	Native	0.27	U	0.26	0.42	-0.038	U	0.051	0.084
GV09M	47+00	R7	4-4.5	Native	0.49	J	0.26	0.38	0.027	U	0.092	0.19
GV09S	47+00	R7	0-0.5	Native	0.22	U	0.27	0.45	-0.013	U	0.052	0.093
GV10B	56+00	R35	11.5-12	Native	0.08	U	0.29	0.51	-0.046	U	0.037	0.062
GV10M	56+00	R35	6-6.5	Native	0.39	U	0.26	0.41	-0.04	U	0.11	0.19
GV10S	56+00	R35	0-0.5	Native	0.42	J	0.24	0.36	0.29		0.1	0.09
GV10SD	56+00	R35	0.5-1	Native	0.45	J	0.26	0.4	0.028	U	0.069	0.14
GV11B	61+30	R10	8.5-9	Native	0.08	U	0.26	0.45	0.0007	U	0.034	0.073
GV11M	61+30	R10	5.5-6	Native	0.32	U	0.24	0.38	-0.008	U	0.034	0.064
GV11S	61+30	R10	0-0.5	Native	0.42	J	0.26	0.4	0.25		0.13	0.09
GV12B	62+30	R10	10-10.5	Native	0.26	U	0.23	0.38	0.009	U	0.04	0.076
GV12M	62+30	R10	6-6.5	Windrow	0.4	J	0.25	0.37	0.08	U	0.059	0.11
GV12S	62+30	R10	0-0.5	Fill	0.42	J	0.26	0.4	0.015	U	0.042	0.089
GV13B	10+00	C	8-9	Native	0.19	U	0.26	0.43	-0.009	U	0.041	0.076
GV13BR	10+00	C	8-9	Native	0.16	U	0.26	0.43	-0.027	U	0.032	0.06
GV13M	10+00	C	7-7.5	Windrow	0.69	J	0.26	0.33	0.003	U	0.038	0.074
GV13S	10+00	C	0-0.5	Fill	0.47	J	0.22	0.3	-0.007	U	0.07	0.14
GV14B	17+00	C	7-7.5	Native	0.13	U	0.19	0.32	0.021	U	0.045	0.091
GV14M	17+00	C	2-2.5	Windrow	0.4	J	0.24	0.38	0.142	J	0.068	0.084
GV14MD	17+00	C	3-3.5	Windrow	0.52	J	0.22	0.29	0.052	U	0.059	0.13
GV14S	17+00	C	0-0.5	Windrow	0.47	J	0.22	0.32	0.097	U	0.084	0.18
GV15B	17+35	C	7-7.5	Native	0.24	U	0.26	0.42	-0.049	U	0.055	0.088
GV15M	17+35	C	5-6	Fill	0.17	U	0.2	0.33	0.043	U	0.048	0.11
GV15S	17+35	C	0-0.5	Fill	0.14	U	0.18	0.31	0.013	U	0.048	0.099
GV16B	26+40	C	14.5-15	Native	-0.05	U	0.2	0.34	0.005	U	0.046	0.091
GV16M	26+40	C	8-8.5	Windrow	0.18	U	0.21	0.35	0.02	U	0.057	0.12
GV16S	26+40	C	0-0.5	Windrow	1.3	J	0.39	0.43	-0.003	U	0.11	0.2
GV17B	30+00	C	13.5-14	Native	0.06	U	0.18	0.31	-0.042	U	0.049	0.088
GV17M	30+00	C	3.5-4	Windrow	0.74	J	0.26	0.32	0.44		0.14	0.12
GV17MD	30+00	C	5.5-6	Windrow	0.68	J	0.25	0.32	0.61		0.2	0.13
GV17S	30+00	C	0-0.5	Fill	0.19	U	0.23	0.38	0.044	U	0.061	0.13
GV18B	34+20	C	3.5-4	Native	0.21	U	0.19	0.31	0.07	U	0.053	0.099
GV18M	34+20	C	0.5-1	Windrow	1.37	J	0.35	0.29	0.32		0.17	0.08
GV18S	34+20	C	0-0.5	Fill	0.32	U	0.22	0.34	0.008	U	0.089	0.17
GV19B	39+86	L2	5.5-6	Native	0.14	U	0.23	0.38	-0.0009	U	0.06	0.11
GV19M	39+86	L2	3.5-4	Native	0.18	U	0.2	0.33	-0.02	U	0.053	0.093
GV19S	39+86	L2	0-0.5	Native	0.03	U	0.2	0.34	0.036	U	0.07	0.14
GV20B	45+00	L5	8.5-9	Native	0.36	J	0.22	0.33	-0.0009	U	0.052	0.1
GV20BD	45+00	L5	9.5-10	Native	0.17	U	0.2	0.33	0.006	U	0.047	0.09
GV20M	45+00	L5	5.75-6.25	Windrow	0.26	U	0.23	0.36	0.148	J	0.09	0.11
GV20S	45+00	L5	0-0.5	Fill	0.12	U	0.21	0.36	0.001	U	0.041	0.077
GV21B	54+00	L5	10-10.5	Native	0.01	U	0.2	0.34	-0.005	U	0.04	0.08
GV21M	54+00	L5	3.5-4	Native	0.21	U	0.24	0.39	0.09	U	0.12	0.22
GV21S	54+00	L5	0-0.5	Windrow	0.25	U	0.22	0.35	0.115	U	0.09	0.12

GV22B	55+00	C	8.5-9	Native	0.15	U	0.22	0.37	-0.016	U	0.036	0.072
GV22M	55+00	C	5-5.5	Native	0.01	U	0.2	0.34	-0.001	U	0.041	0.078
GV22S	55+00	C	0-0.5	Native	0.29	U	0.19	0.29	0.27		0.12	0.1
GV23B	56+00	C	7-7.5	Native	-0.06	U	0.22	0.39	-0.004	U	0.044	0.082
GV23M	56+00	C	5-5.5	Windrow	-0.03	U	0.19	0.33	0.087	U	0.081	0.17
GV23S	56+00	C	0-0.5	Windrow	-0.1	U	0.18	0.32	0.068	U	0.068	0.11
GV23SD	56+00	C	0.5-1	Windrow	0.56	J	0.22	0.29	0.02	U	0.077	0.15
GV24B	62+50	R20	11.5-12	Native	0.14	U	0.17	0.28	-0.02	U	0.037	0.071
GV24M	62+50	R20	6-6.5	Windrow	-0.06	U	0.19	0.33	-0.02	U	0.046	0.082
GV24S	62+50	R20	0-0.5	Fill	0.49	J	0.27	0.41	0.055	U	0.043	0.096
GV25B	62+50	L25	10.5-11	Native	0.26	U	0.24	0.39	0.006	U	0.035	0.074
GV25M	62+50	L25	6-7	Windrow	0.23	U	0.23	0.37	0.34		0.1	0.09
GV25MR	62+50	L25	6-7	Windrow	0.79	J	0.3	0.39	0.1	U	0.12	0.14
GV25S	62+50	L25	0-0.5	Fill	0.22	U	0.22	0.36	0.065	U	0.042	0.098
GV26S	27+51	C	0-0.5	Windrow	1.5	J	0.39	0.33	0.04	U	0.1	0.21

[1] Q = Data Qualifier from Analytical Report (See Attachment E of the Verification Survey Report)

U Result is less than the sample detection limit

J Result is greater than the sample detection limit but less than the stated reporting limit

(the “sample detection limit” is the sample minimum detectable concentration (MDC) based on instrument performance provided above)

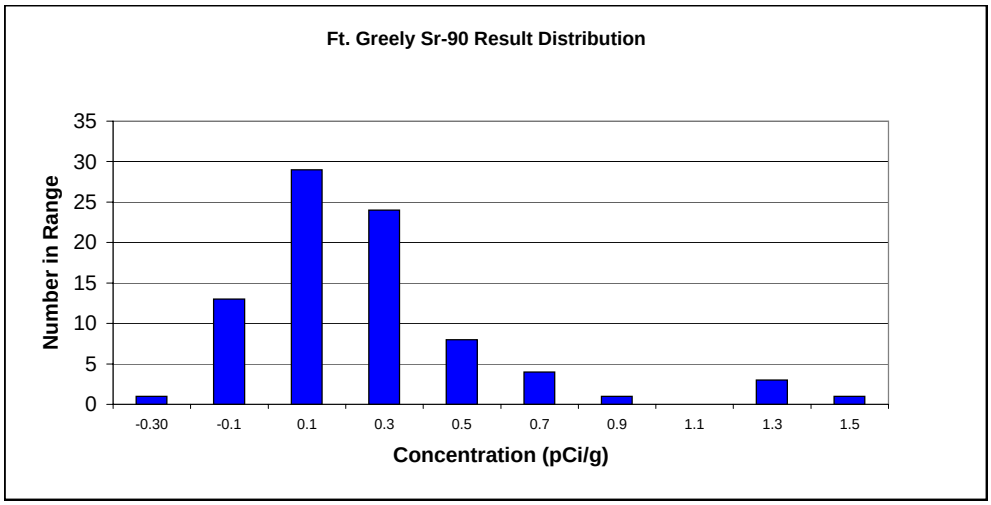
(the "stated reporting limit" is 3 pCi/g for Total Strontium and 0.2 pCi/g for Cs-137 and represent results that can be achieved by the laboratory with these analyses)

Estimated Residual Strontium-90 RME Soil Concentration for Pipeline Corridor and Outfall Areas, Ft. Greely, AK

Sr-90	ln Sr-90	Sr-90 No neg
0.14	-1.97	0.14
0.75	-0.29	0.75
1.06	0.06	1.06
0.79	-0.24	0.79
0.04	-3.22	0.04
0.13	-2.04	0.13
0.007	-4.96	0.007
0.16	-1.83	0.16
0.33	-1.11	0.33
0.54	-0.62	0.54
0.46	-0.78	0.46
0.35	-1.05	0.35
0.13	-2.04	0.13
0.64	-0.45	0.64
0.3	-1.20	0.3
0.36	-1.02	0.36
0.47	-0.76	0.47
0.31	-1.17	0.31
0.3	-1.20	0.3
-0.27	-0.49	0.61
0.61	-0.45	0.64
0.64	-0.87	0.42
0.42	-0.87	0.42
0.42	0.29	1.34
1.34	-1.31	0.27
0.27	-0.71	0.49
0.49	-1.51	0.22
0.22	-2.53	0.08
0.08	-0.94	0.39
0.39	-0.87	0.42
0.42	-0.80	0.45
0.45	-2.53	0.08
0.08	-1.14	0.32
0.32	-0.87	0.42
0.42	-1.35	0.26
0.26	-0.92	0.4
0.4	-0.87	0.42
0.42	-1.66	0.19
0.19	-1.83	0.16
0.16	-0.37	0.69
0.69	-0.76	0.47
0.47	-2.04	0.13
0.13	-0.92	0.4
0.4	-0.65	0.52
0.52	-0.76	0.47
0.47	-1.43	0.24
0.24	-1.77	0.17
0.17	-1.97	0.14
0.14	-1.71	0.18
-0.05	0.26	1.3
0.18	-2.81	0.06
1.3	-0.30	0.74
0.06	-0.39	0.68
0.74	-1.66	0.19
0.68	-1.56	0.21
0.19	0.31	1.37
0.21	-1.14	0.32
1.37	-1.97	0.14
0.32	-1.71	0.18
0.14	-3.51	0.03
0.18	-1.02	0.36
0.03	-1.77	0.17
0.36	-1.35	0.26
0.17	-2.12	0.12
0.26	-4.61	0.01
0.12	-1.56	0.21
0.01	-1.39	0.25
0.21	-1.90	0.15
0.25	-4.61	0.01
0.15	-1.24	0.29
0.01	-0.58	0.56
0.29	-1.97	0.14
-0.06	-0.71	0.49
-0.03	-1.35	0.26
-0.1	-1.47	0.23
0.56	-0.24	0.79
0.14	-1.51	0.22
-0.06	0.41	1.5
0.49	78	Sample Number
0.26	-1.37	Average
0.23	-1.17	Median
0.79	1.04	Standard Deviation
0.22	0.44	Mean of Lognormal
1.5		(Equation 13.7 Gilbert)
84	Sample Number	
0.35	Average	
0.28	Median	
0.33	Standard Deviation	

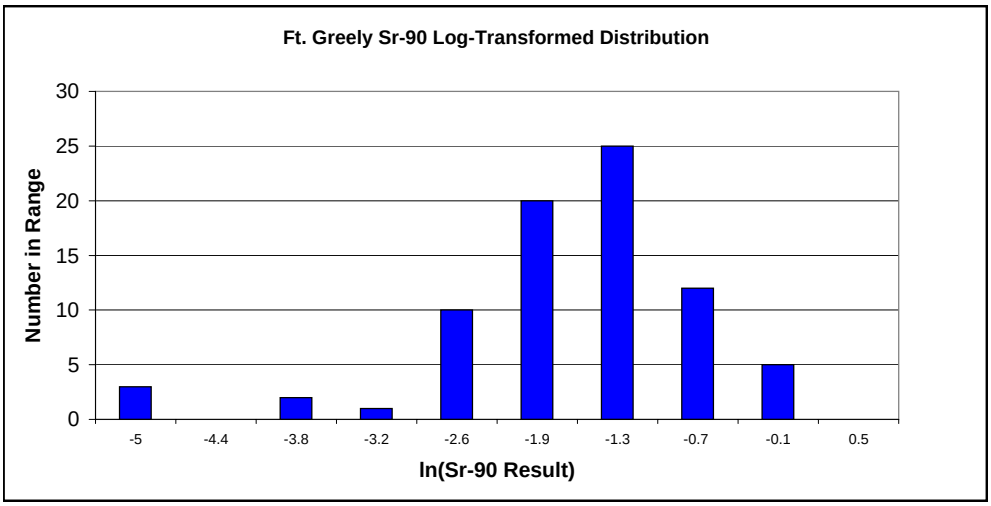
Bin size for frequency plot 1.8 divided by 10 = 0.18 = 0.2 Range = 1.77

-0.30	-0.1	0.1	0.3	0.5	0.7	0.9	1.1	1.3	1.5	
84	83	70	41	17	9	5	4	4	1	
1	13	29	24	8	4	1	0	3	1	84



Bin size for frequency plot 5.4 divided by 10 = 0.54 = 0.6 Range = 5.37

-5	-4.4	-3.8	-3.2	-2.6	-1.9	-1.3	-0.7	-0.1	0.5	
78	75	75	73	72	62	42	17	5	0	
3	0	2	1	10	20	25	12	5	0	78



H Statistic Determination for the 95% UCL of the mean of the transformed data.

		n		
s	51.00	101.00	78.00	Gilbert, Table A12
1.00	2.306	2.205		Interpolated values
1.25	2.580	2.447		
1.04	2.350	2.244	**2.293**	
Slope	1.096	0.968	-0.0021224	
Intercept	1.21	1.237	2.4580824	

95% UCL Calculation using Highlight 5 from EPA Supplemental Guidance to RAGs:
Calculating the Concentration Term, May 1992

Square Root of n-1	8.77	
sH	2.39	
0.5s^2	0.54	
exponent	-0.55	
95% UCL =	**0.58**	pCi/g

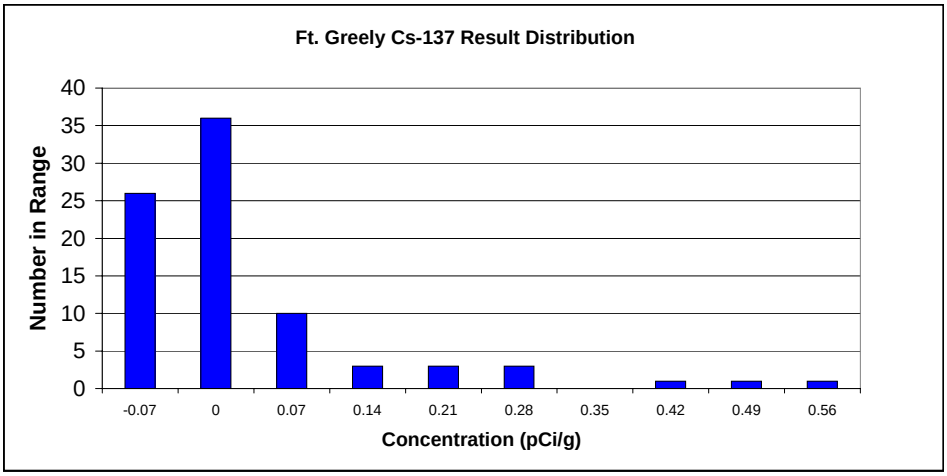
$$UCL = e^{(\bar{x} + 0.5s^2 + sH/\sqrt{n-1})}$$

Ft Greely RME Concentration and Risk (Final).xls (Sheet 8 - Cs Data Set)

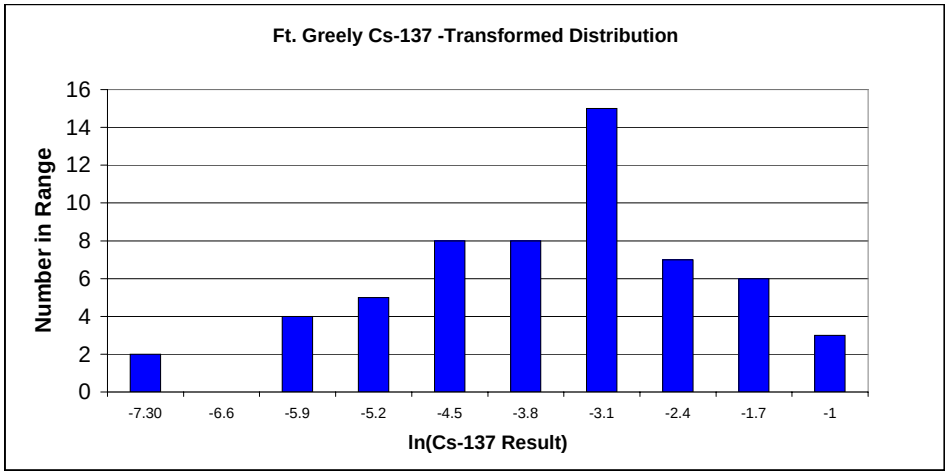
Estimated Residual Cesium-137 RME Soil Concentration for Pipeline Corridor and Outfall Areas, Ft. Greely, AK

Cs-137	ln Cs-137	Cs-137 No Neg.
0.006	-5.12	0.006
0.22	-1.51	0.22
0.51	-0.67	0.51
0.053	-2.94	0.053
-0.009	-2.33	0.097
0.097	-3.04	0.048
-0.016	-5.30	0.005
0.048	-2.47	0.085
0.005	-2.50	0.082
0.085	-1.83	0.16
0.082	-3.86	0.021
0.16	-3.22	0.04
-0.002	-5.81	0.003
0.021	-2.76	0.063
0.04	-2.86	0.057
-0.063	-3.06	0.047
0.003	-4.14	0.016
0.063	-4.42	0.012
0.057	-3.41	0.033
-0.0008	-3.61	0.027
0.047	-1.24	0.29
-0.05	-3.58	0.028
0.016	-7.26	0.0007
0.012	-1.39	0.25
0.033	-4.71	0.009
-0.038	-2.53	0.08
0.027	-4.20	0.015
-0.013	-5.81	0.003
-0.046	-3.86	0.021
-0.04	-1.95	0.142
0.29	-2.96	0.052
0.028	-2.33	0.097
0.0007	-3.15	0.043
-0.008	-4.34	0.013
0.25	-5.30	0.005
0.009	-3.91	0.02
0.08	-0.82	0.44
0.015	-0.49	0.61
-0.009	-3.12	0.044
-0.027	-2.66	0.07
0.003	-1.14	0.32
-0.007	-4.83	0.008
0.021	-3.32	0.036
0.142	-5.12	0.006
0.052	-1.91	0.148
0.097	-6.91	0.001
-0.049	-2.41	0.09
0.043	-2.16	0.115
0.013	-1.31	0.27
0.005	-2.44	0.087
0.02	-2.69	0.068
-0.003	-3.91	0.02
-0.042	-2.90	0.055
0.44	-5.12	0.006
0.61	-1.08	0.34
0.044	-2.30	0.1
0.07	-2.73	0.065
0.32	-3.22	0.04
0.008	58	Sample Number
-0.0009	-3.21	Average
-0.02	-3.00	Median
0.036	1.51	Standard Deviation
-0.0009	0.13	Mean of Lognormal
0.006		(Equation 13.7 Gilbert)
0.148		
0.001		
-0.005		
0.09		
0.115		
-0.016		
-0.001		
0.27		
-0.004		
0.087		
0.068		
0.02		
-0.02		
-0.02		
0.055		
0.006		
0.34		
0.1		
0.065		
0.04		
84	Sample Number	
0.06	Average	
0.02	Median	
0.12	Standard Deviation	

Bin size for frequency plot 0.659 divided by 10 = 0.065 = 0.07						Range = 0.673				
-0.07	0	0.07	0.14	0.21	0.28	0.35	0.42	0.49	0.56	
84	58	22	12	9	6	3	3	2	1	
26	36	10	3	3	3	0	1	1	1	84



Bin size for frequency plot 6.77 divided by 10 = 0.68 = 0.7						Range = 6.77				
-7.30	-6.6	-5.9	-5.2	-4.5	-3.8	-3.1	-2.4	-1.7	-1	
58	56	56	52	47	39	31	16	9	3	
2	0	4	5	8	8	15	7	6	3	58



H Statistic Determination for the 95% UCL of the mean of the transformed data.

	n		
s	51.00	101.00	58.00
1.50	2.881	2.713	
1.75	3.200	2.997	
1.51	2.894	2.724	**2.870**
Slope	1.276	1.136	-0.003388
Intercept	0.967	1.009	3.066548

Gilbert, Table A12
Interpolated values

95% UCL Calculation using Highlight 5 from EPA Supplemental Guidance to RAGs:
Calculating the Concentration Term, May 1992

Square Root of n-1	7.55
sH	4.33
0.5s^2	1.14
exponent	-1.49
95% UCL =	**0.22** pCi/g

$$UCL = e^{(\bar{x} + 0.5s^2 + sH/\sqrt{n-1})}$$

Ft Greely RME Concentration and Risk (Final).xls (Sheet 9 - Exposure Concentration - PRG Comparison)

Comparison with EPA Radionuclide Preliminary Remediation Goals for Superfund
OSWER No. 9355.01-83A: http://www.epa.gov/superfund/resources/radiation/pdf/rad.pdf
EPA PRG Calculator: http://epa-prgs.ornl.gov/radionuclides

Site-specific PRGs for Residential Soil were calculated using these input choices:
Sr-90+D or Cs-137+D, Target Risk of 1E-5, all other parameters default
See ADEC guidance for target risk values: http://www.state.ak.us/dec/dspar/csites/guidance/standard.pdf
http://www.state.ak.us/dec/dspar/csites/guidance/rapm2000.pdf

Sr-90+D					
RME concentration =			0.58	pCi/g	95% UCL of the mean (assumed lognormal)
PRG equal to a Target Risk of 1E-5 is:			2.31	pCi/g	
Ratio of Site RME Concentration to PRG:			0.25		
Estimated Residual Risk from Sr-90:			**2.5E-06**		
Cs-137+D					
RME concentration =			0.22	pCi/g	95% UCL of the mean (lognormal)
PRG equal to a Target Risk of 1E-5 is:			0.60	pCi/g	
Ratio of Site RME Concentration to PRG:			0.38		
Estimated Residual Risk from Cs-137:			**3.8E-06**		
Total Residual Risk from Residential Soil					
Sr-90		Cs-137		Total	
2.5E-06	+	3.8E-06	=	**6.2E-06**	

Sr-90+D					
RME concentration =			1.5	pCi/g	Maximum detection of Sr data set
PRG equal to a Target Risk of 1E-5 is:			2.31	pCi/g	
Ratio of Site RME Concentration to PRG:			0.65		
Estimated Residual Risk from Sr-90:			**6.5E-06**		
Cs-137+D					
RME concentration =			0.22	pCi/g	95% UCL of the mean (lognormal)
PRG equal to a Target Risk of 1E-5 is:			0.60	pCi/g	
Ratio of Site RME Concentration to PRG:			0.38		
Estimated Residual Risk from Cs-137:			**3.8E-06**		
Total Residual Risk from Residential Soil					
Sr-90		Cs-137		Total	
6.5E-06	+	3.8E-06	=	**1.0E-05**	

Ft Greely RME Concentration and Risk (Final).xls (Sheet 10 - Location Concentration - PRG Comparison)

Comparison with EPA Radionuclide Preliminary Remediation Goals for Superfund
OSWER No. 9355.01-83A: http://www.epa.gov/superfund/resources/radiation/pdf/rad.pdf
EPA PRG Calculator: http://epa-prgs.ornl.gov/radionuclides

Site-specific PRGs for Residential Soil were calculated using these input choices:
Sr-90+D or Cs-137+D, Target Risk of 1E-5, all other parameters default
See ADEC guidance for target risk values: http://www.state.ak.us/dec/dspar/csites/guidance/standard.pdf
http://www.state.ak.us/dec/dspar/csites/guidance/rapm2000.pdf

Negative concentrations were highlighted and set equal to 0 for this point by point risk determination.

The Location Total Risk is the sum of the ratios of the radionuclide concentration divided by its PRG multiplied by the Target Risk of 1E-5.

Location	Sr-90	Cs-137	Location Total Risk
GV01B	0.14	0.006	7.1E-07
GV01M	0.75	0.22	6.9E-06
GV01S	1.06	0.51	**1.3E-05**
GV02B	0.79	0.053	4.3E-06
GV02M	0.04	0	1.7E-07
GV02S	0.13	0.097	2.2E-06
GV03B	0.007	0	3.0E-08
GV03M	0.16	0.048	1.5E-06
GV03S	0.33	0.005	1.5E-06
GV04B	0.54	0.085	3.8E-06
GV04M	0.46	0.082	3.4E-06
GV04S	0.35	0.16	4.2E-06
GV05B	0.13	0	5.6E-07
GV05M	0.64	0.021	3.1E-06
GV05S	0.3	0.04	2.0E-06
GV06B	0.36	0	1.6E-06
GV06M	0.47	0.003	2.1E-06
GV06MD	0.31	0.063	2.4E-06
GV06S	0.3	0.057	2.3E-06
GV07B	0	0	0.0E+00
GV07M	0.61	0.047	3.4E-06
GV07S	0.64	0	2.8E-06
GV08B	0.42	0.016	2.1E-06
GV08M	0.42	0.012	2.0E-06
GV08S	1.34	0.033	6.4E-06
GV09B	0.27	0	1.2E-06
GV09M	0.49	0.027	2.6E-06
GV09S	0.22	0	9.5E-07
GV10B	0.08	0	3.5E-07
GV10M	0.39	0	1.7E-06
GV10S	0.42	0.29	6.7E-06
GV10SD	0.45	0.028	2.4E-06
GV11B	0.08	0.0007	3.6E-07
GV11M	0.32	0	1.4E-06
GV11S	0.42	0.25	6.0E-06
GV12B	0.26	0.009	1.3E-06
GV12M	0.4	0.08	3.1E-06
GV12S	0.42	0.015	2.1E-06
GV13B	0.19	0	8.2E-07
GV13BR	0.16	0	6.9E-07
GV13M	0.69	0.003	3.0E-06
GV13S	0.47	0	2.0E-06
GV14B	0.13	0.021	9.1E-07
GV14M	0.4	0.142	4.1E-06
GV14MD	0.52	0.052	3.1E-06
GV14S	0.47	0.097	3.7E-06
GV15B	0.24	0	1.0E-06

Sr-90+D PRG Value	**2.31 pCi/g**
Cs-137+D PRG Value	**0.60 pCi/g**

GV15M	0.17	0.043	1.5E-06
GV15S	0.14	0.013	8.2E-07
GV16B	0	0.005	8.4E-08
GV16M	0.18	0.02	1.1E-06
GV16S	1.3	0	5.6E-06
GV17B	0.06	0	2.6E-07
GV17M	0.74	0.44	**1.1E-05**
GV17MD	0.68	0.61	**1.3E-05**
GV17S	0.19	0.044	1.6E-06
GV18B	0.21	0.07	2.1E-06
GV18M	1.37	0.32	**1.1E-05**
GV18S	0.32	0.008	1.5E-06
GV19B	0.14	0	6.1E-07
GV19M	0.18	0	7.8E-07
GV19S	0.03	0.036	7.3E-07
GV20B	0.36	0	1.6E-06
GV20BD	0.17	0.006	8.4E-07
GV20M	0.26	0.148	3.6E-06
GV20S	0.12	0.001	5.4E-07
GV21B	0.01	0	4.3E-08
GV21M	0.21	0.09	2.4E-06
GV21S	0.25	0.115	3.0E-06
GV22B	0.15	0	6.5E-07
GV22M	0.01	0	4.3E-08
GV22S	0.29	0.27	5.8E-06
GV23B	0	0	0.0E+00
GV23M	0	0.087	1.5E-06
GV23S	0	0.068	1.1E-06
GV23SD	0.56	0.02	2.8E-06
GV24B	0.14	0	6.1E-07
GV24M	0	0	0.0E+00
GV24S	0.49	0.055	3.0E-06
GV25B	0.26	0.006	1.2E-06
GV25M	0.23	0.34	6.7E-06
GV25MR	0.79	0.1	5.1E-06
GV25S	0.22	0.065	2.0E-06
GV26S	1.5	0.04	7.2E-06

Ft Greely RME Concentration and Risk (Final).xls (Sheet 11- W Test Sr Data)

This spreadsheet performs the W-test developed by Shapiro and Wilk for
determining if the data set was drawn from an underlying normal distribution.
(Statistical Methods for Environmental Pollution Monitoring, Richard O. Gilbert, 1987)
50 data points were randomly drawn from the 84 Sr-90 sample results.
Ho = The population has a normal distribution.
Ha= The population does not have a normal distribution.

A	B	C	D	E	F	
i	*Xi*	X1>X2>X3	*ai*	Xn-*i* +1	D*(E-C)	
1	1.06	0.01	0.3751	1.5	0.558899	
2	0.04	0.03	0.2574	1.37	0.344916	
3	0.13	0.04	0.226	1.34	0.2938	
4	0.16	0.08	0.2032	1.3	0.247904	
5	0.33	0.12	0.1847	1.06	0.173618	
6	0.54	0.13	0.1691	0.79	0.111606	
7	0.35	0.13	0.1554	0.74	0.094794	
8	0.64	0.14	0.143	0.69	0.07865	
9	0.3	0.15	0.1317	0.68	0.069801	
10	0.47	0.16	0.1212	0.64	0.058176	
11	0.31	0.16	0.1113	0.64	0.053424	
12	0.3	0.17	0.102	0.54	0.03774	
13	0.64	0.19	0.0932	0.52	0.030756	
14	0.42	0.21	0.0846	0.49	0.023688	
15	0.42	0.21	0.0764	0.49	0.021392	
16	1.34	0.22	0.0685	0.47	0.017125	
17	0.49	0.23	0.0608	0.45	0.013376	
18	0.22	0.24	0.0532	0.42	0.009576	
19	0.39	0.26	0.0459	0.42	0.007344	
20	0.45	0.29	0.0386	0.42	0.005018	
21	0.08	0.3	0.0314	0.42	0.003768	
22	0.32	0.3	0.0244	0.39	0.002196	
23	0.42	0.31	0.0174	0.36	0.00087	
24	0.42	0.32	0.0104	0.35	0.000312	
25	0.19	0.32	0.0035	0.33	0.000035	
26	0.16	0.33		0.32	2.259	sum
27	0.69	0.35		0.32	5.102	square of sum
28	0.13	0.36		0.31		
29	0.52	0.39		0.3		
30	0.24	0.42		0.3		
31	0.17	0.42		0.29		
32	0.14	0.42		0.26		
33	1.3	0.42		0.24		
34	0.74	0.45		0.23		
35	0.68	0.47		0.22		
36	0.21	0.49		0.21		
37	1.37	0.49		0.21		
38	0.32	0.52		0.19		
39	0.03	0.54		0.17		
40	0.36	0.64		0.16		
41	0.26	0.64		0.16		
42	0.12	0.68		0.15		
43	0.21	0.69		0.14		
44	0.15	0.74		0.13		
45	0.01	0.79		0.13		
46	0.29	1.06		0.12		
47	0.49	1.3		0.08		
48	0.23	1.34		0.04		
49	0.79	1.37		0.03		
50	1.5	1.5		0.01		
	21.540	sum x	Table A6			
	463.972	(sum x)²	k = 25		W =	**0.828** Eq. 12.4
	15.445	sum x²			$W_{0.05}$ =	0.947 Table A7
d =	6.166	Eq. 12.3			**The null hypothesis of normal distribution is rejected.**	

Ft Greely RME Concentration and Risk (Final).xls (Sheet 12 - W Test ln Sr Data)

This spreadsheet performs the W-test developed by Shapiro and Wilk for
determining if the data set was drawn from an underlying normal distribution.
(Statistical Methods for Environmental Pollution Monitoring, Richard O. Gilbert, 1987)
50 data points were randomly drawn from the 78 Sr-90 transformed results.
Ho = The population has a lognormal distribution.
Ha= The population does not have a lognormal distribution.

A	B	C	D	E	F	
i	*Xi*	X1<X2<X3	*ai*	Xn-*i* +1	D*(E-C)	
1	0.06	-4.96	0.3751	0.41	2.013278	
2	-3.22	-4.61	0.2574	0.31	1.266403	
3	-4.96	-3.22	0.226	0.06	0.740635	
4	-1.83	-2.81	0.2032	-0.24	0.523786	
5	-1.11	-2.53	0.1847	-0.30	0.410888	
6	-0.62	-2.53	0.1691	-0.37	0.364354	
7	-1.05	-2.12	0.1554	-0.39	0.269557	
8	-2.04	-2.04	0.143	-0.45	0.227933	
9	-0.45	-2.04	0.1317	-0.45	0.209921	
10	-1.20	-1.97	0.1212	-0.62	0.163611	
11	-1.17	-1.97	0.1113	-0.87	0.122276	
12	-1.20	-1.97	0.102	-0.87	0.112058	
13	-0.45	-1.83	0.0932	-0.87	0.089946	
14	-0.87	-1.77	0.0846	-0.92	0.072389	
15	-1.51	-1.77	0.0764	-0.92	0.065373	
16	-2.53	-1.71	0.0685	-0.94	0.052964	
17	-0.94	-1.71	0.0608	-1.02	0.042143	
18	-0.87	-1.56	0.0532	-1.05	0.027176	
19	-2.53	-1.56	0.0459	-1.11	0.020746	
20	-1.14	-1.51	0.0386	-1.14	0.014463	
21	-0.87	-1.51	0.0314	-1.14	0.011765	
22	-1.35	-1.43	0.0244	-1.17	0.006245	
23	-0.92	-1.39	0.0174	-1.20	0.003172	
24	-0.37	-1.35	0.0104	-1.20	0.001488	
25	-2.04	-1.35	0.0035	-1.35	0	
26	-0.92	-1.35		-1.35	6.833	sum
27	-1.43	-1.20		-1.35	46.684	square of sum
28	-1.77	-1.20		-1.39		
29	-1.97	-1.17		-1.43		
30	-1.71	-1.14		-1.51		
31	-2.81	-1.14		-1.51		
32	-0.30	-1.11		-1.56		
33	-0.39	-1.05		-1.56		
34	-1.56	-1.02		-1.71		
35	0.31	-0.94		-1.71		
36	-1.14	-0.92		-1.77		
37	-1.97	-0.92		-1.77		
38	-1.71	-0.87		-1.83		
39	-1.02	-0.87		-1.97		
40	-1.77	-0.87		-1.97		
41	-1.35	-0.62		-1.97		
42	-2.12	-0.45		-2.04		
43	-1.56	-0.45		-2.04		
44	-1.39	-0.39		-2.12		
45	-4.61	-0.37		-2.53		
46	-1.97	-0.30		-2.53		
47	-1.35	-0.24		-2.81		
48	-0.24	0.06		-3.22		
49	-1.51	0.31		-4.61		
50	0.41	0.41		-4.96		
	-70.999	sum x	Table A6			
	5040.811	(sum x)²	k = 25		W =	**0.909** Eq. 12.4
	152.201	sum x²			$W_{0.05}$ =	0.947 Table A7
d =	51.385	Eq. 12.3		**The null hypothesis of lognormal distribution is rejected.**		

Ft Greely RME Concentration and Risk (Final).xls (Sheet 13 - W Test Cs Data)

This spreadsheet performs the W-test developed by Shapiro and Wilk for
determining if the data set was drawn from an underlying normal distribution.
(Statistical Methods for Environmental Pollution Monitoring, Richard O. Gilbert, 1987)
50 data points were randomly drawn from the 84 Cs-137 sample results.
Ho = The population has a normal distribution.
Ha= The population does not have a normal distribution.

A	B	C	D	E	F	
i	*Xi*	X1>X2>X3	*ai*	Xn-*i* +1	D*(E-C)	
1	0.006	-0.063	0.3751	0.61	0.252442	
2	0.51	-0.05	0.2574	0.51	0.144144	
3	0.053	-0.049	0.226	0.44	0.110514	
4	0.097	-0.046	0.2032	0.34	0.078435	
5	0.048	-0.04	0.1847	0.29	0.060951	
6	0.005	-0.038	0.1691	0.27	0.052083	
7	0.082	-0.02	0.1554	0.25	0.041958	
8	0.021	-0.02	0.143	0.148	0.024024	
9	-0.063	-0.004	0.1317	0.142	0.019228	
10	0.063	-0.003	0.1212	0.1	0.012484	
11	0.047	-0.0009	0.1113	0.097	0.010896	
12	-0.05	0.0007	0.102	0.087	0.008803	
13	0.012	0.003	0.0932	0.082	0.007363	
14	0.033	0.005	0.0846	0.07	0.005499	
15	-0.038	0.006	0.0764	0.068	0.004737	
16	0.027	0.006	0.0685	0.063	0.003905	
17	-0.046	0.006	0.0608	0.053	0.002858	
18	-0.04	0.009	0.0532	0.048	0.002075	
19	0.29	0.012	0.0459	0.047	0.001607	
20	0.028	0.015	0.0386	0.044	0.001119	
21	0.0007	0.02	0.0314	0.043	0.000722	
22	0.25	0.02	0.0244	0.04	0.000488	
23	0.009	0.021	0.0174	0.036	0.000261	
24	0.015	0.021	0.0104	0.033	0.000125	
25	0.003	0.027	0.0035	0.028	3.5E-06	
26	0.021	0.028		0.027	0.847	sum
27	0.142	0.033		0.021	0.717	square of sum
28	-0.049	0.036		0.021		
29	0.043	0.04		0.02		
30	0.02	0.043		0.02		
31	-0.003	0.044		0.015		
32	0.44	0.047		0.012		
33	0.61	0.048		0.009		
34	0.044	0.053		0.006		
35	0.07	0.063		0.006		
36	-0.02	0.068		0.006		
37	0.036	0.07		0.005		
38	-0.0009	0.082		0.003		
39	0.006	0.087		0.0007		
40	0.148	0.097		-0.0009		
41	0.27	0.1		-0.003		
42	-0.004	0.142		-0.004		
43	0.087	0.148		-0.02		
44	0.068	0.25		-0.02		
45	0.02	0.27		-0.038		
46	-0.02	0.29		-0.04		
47	0.006	0.34		-0.046		
48	0.34	0.44		-0.049		
49	0.1	0.51		-0.05		
50	0.04	0.61		-0.063		
	3.777	sum x	Table A6			
	14.264	(sum x)²	k = 25		W =	**0.718** Eq. 12.4
	1.284	sum x²			$W_{0.05}$ =	0.947 Table A7
d =	0.999	Eq. 12.3		**The null hypothesis of normal distribution is rejected.**		

Ft Greely RME Concentration and Risk (Final).xls (Sheet 14 - W Test ln Cs Data)

This spreadsheet performs the W-test developed by Shapiro and Wilks for
determining if the data set was drawn from an underlying normal distribution.
(Statistical Methods for Environmental Pollution Monitoring, Richard O. Gilbert, 1987)
50 data points were randomly drawn from the 58 Cs-137 transformed results.
Ho = The population has a lognormal distribution.
Ha= The population does not have a lognormal distribution.

A	B	C	D	E	F	
i	*Xi*	X1>X2>X3	*ai*	Xn-*i* +1	D*(E-C)	
1	-1.51	-7.26	0.3751	-0.49	2.539477	
2	-0.67	-6.91	0.2574	-0.67	1.604737	
3	-2.94	-5.81	0.226	-0.82	1.127325	
4	-2.33	-5.81	0.2032	-1.08	0.961204	
5	-3.04	-5.30	0.1847	-1.14	0.768146	
6	-5.30	-5.12	0.1691	-1.31	0.643707	
7	-2.47	-4.42	0.1554	-1.39	0.471881	
8	-2.50	-4.34	0.143	-1.51	0.404501	
9	-1.83	-4.20	0.1317	-1.83	0.31175	
10	-3.86	-4.14	0.1212	-1.91	0.269624	
11	-5.81	-3.91	0.1113	-1.95	0.218159	
12	-2.76	-3.91	0.102	-2.16	0.178418	
13	-2.86	-3.86	0.0932	-2.30	0.145452	
14	-3.06	-3.86	0.0846	-2.33	0.129454	
15	-4.14	-3.61	0.0764	-2.33	0.097706	
16	-4.42	-3.58	0.0685	-2.41	0.079981	
17	-3.41	-3.41	0.0608	-2.44	0.05894	
18	-3.61	-3.32	0.0532	-2.47	0.045706	
19	-3.58	-3.22	0.0459	-2.50	0.032949	
20	-7.26	-3.15	0.0386	-2.53	0.023964	
21	-1.39	-3.12	0.0314	-2.66	0.014579	
22	-2.53	-3.06	0.0244	-2.69	0.009012	
23	-4.20	-3.04	0.0174	-2.73	0.005275	
24	-5.81	-2.96	0.0104	-2.76	0.001996	
25	-3.86	-2.94	0.0035	-2.82	0.000394	
26	-1.95	-2.86		-2.86	10.144	sum
27	-2.96	-2.76		-2.94	102.908	square of sum
28	-2.33	-2.73		-2.96		
29	-3.15	-2.69		-3.04		
30	-4.34	-2.66		-3.06		
31	-3.91	-2.53		-3.12		
32	-0.82	-2.50		-3.15		
33	-0.49	-2.47		-3.32		
34	-3.12	-2.44		-3.41		
35	-2.66	-2.41		-3.58		
36	-1.14	-2.33		-3.61		
37	-3.32	-2.33		-3.86		
38	-5.12	-2.30		-3.86		
39	-1.91	-2.16		-3.91		
40	-6.91	-1.95		-3.91		
41	-2.41	-1.91		-4.14		
42	-2.16	-1.83		-4.20		
43	-1.31	-1.51		-4.34		
44	-2.44	-1.39		-4.42		
45	-2.69	-1.31		-5.12		
46	-3.91	-1.14		-5.30		
47	-1.08	-1.08		-5.81		
48	-2.30	-0.82		-5.81		
49	-2.73	-0.67		-6.91		
50	-3.22	-0.49		-7.26		

	-153.551	sum x	Table A6			
	23577.892	(sum x)²	k = 25	W =	**0.950**	Eq. 12.4
	579.857	sum x²		$W_{0.05}$ =	0.947	Table A7
d =	108.299	Eq. 12.3		**The null hypothesis of lognormal distribution is not rejected.**		

Ft Greely RME Concentration and Risk (Final).xls (Sheet 15 - Error Ratio Calculations)

Reference the Final SM-1A Reactor Waste Pipeline Corridor Verification Survey Report (USACE, 2004) for additional information on the station designator, sample location, and analytical data
Sample interval is in feet below ground surface.

Collocated Sample and Field Replicate Data Set

Sample Number	Station Designator	Sample Location	Sample Interval	Soil Type	Total Strontium (pCi/g)				Cesium-137 (pCi/g)				Potassium-40 (pCi/g)			
					Result	Q[1]	±2σ	MDC	Result	Q	±2σ	MDC	Result	Q[1]	±2σ	MDC
GV06M	37+60	L2	2.5-3	Windrow	0.47	U	0.34	0.54	0.003	U	0.061	0.12	12.6		2.4	0.7
GV06MD	37+60	L2	4-4.5	Windrow	0.31	U	0.29	0.47	0.063	U	0.071	0.15	12.7		2.7	0.8
GV10S	56+00	R35	0-0.5	Native	0.42	J	0.24	0.36	0.29		0.1	0.09	15.8		2.8	0.9
GV10SD	56+00	R35	0.5-1	Native	0.45	J	0.26	0.4	0.028	U	0.069	0.14	13.8		3	1.1
GV13B	10+00	C	8-9	Native	0.19	U	0.26	0.43	-0.009	U	0.041	0.076	6.9		1.5	0.6
GV13BR	10+00	C	8-9	Native	0.16	U	0.26	0.43	-0.027	U	0.032	0.06	5.3		1.5	0.7
GV14M	17+00	C	2-2.5	Windrow	0.4	J	0.24	0.38	0.142	J	0.068	0.084	10.8		2.5	0.8
GV14MD	17+00	C	3-3.5	Windrow	0.52	J	0.22	0.29	0.052	U	0.059	0.13	13		2.5	0.8
GV17M	30+00	C	3.5-4	Windrow	0.74	J	0.26	0.32	0.44		0.14	0.12	16.7		3.2	1.2
GV17MD	30+00	C	5.5-6	Windrow	0.68	J	0.25	0.32	0.61		0.2	0.13	15.4		3.1	1.3
GV20B	45+00	L5	8.5-9	Native	0.36	J	0.22	0.33	-0.0009	U	0.052	0.1	9.3		2	0.6
GV20BD	45+00	L5	9.5-10	Native	0.17	U	0.2	0.33	0.006	U	0.047	0.09	10.4		2.1	0.8
GV23S	56+00	C	0-0.5	Windrow	-0.1	U	0.18	0.32	0.068	U	0.068	0.11	14.3		2.6	1.1
GV23SD	56+00	C	0.5-1	Windrow	0.56	J	0.22	0.29	0.02	U	0.077	0.15	16.1		3	1.1
GV25M	62+50	L25	6-7	Windrow	0.23	U	0.23	0.37	0.34		0.1	0.09	17		3.4	0.8
GV25MR	62+50	L25	6-7	Windrow	0.79	J	0.3	0.39	0.1	U	0.12	0.14	18.6		3.4	0.39

[1] Q = Data Qualifier from Analytical Report (See Attachment E of the Verification Survey Report)
U Result is less than the sample detection limi
J Result is greater than the sample detection limit but less than the stated reporting lim
(the "sample detection limit" is the sample minimum detectable concentration (MDC) based on instrument performance provided abov
(the "stated reporting limit" is 3 pCi/g for Total Strontium and 0.2 pCi/g for Cs-137 and represent results that can be achieve
by the laboratory with these analyses)

Sample Number	Strontium RPD	Strontium NAD	Strontium DER	Cs-137 RPD	Cs-137 NAD	Cs-137 DER	K-40 RPD	K-40 NAD	K-40 DER
Error Ratio Goals	≤ 40%	≤ 1.96	< 1.0	≤ 40%	≤ 1.96	< 1.0	≤ 40%	≤ 1.96	< 1.0
GV06M / GV06MD	41%	0.72	0.25	182%	1.28	0.45	1%	0.06	0.02
GV10S / GV10SD	7%	0.17	0.06	165%	4.31	1.55	14%	0.97	0.34
GV13B / GV13BR	17%	0.16	0.06	-100%	0.69	0.25	26%	1.51	0.53
GV14M / GV14MD	26%	0.74	0.26	93%	2.00	0.71	18%	1.24	0.44
GV17M / GV17MD	8%	0.33	0.12	32%	1.39	0.50	8%	0.58	0.21
GV20B / GV20BD	72%	1.28	0.45	271%	0.20	0.07	11%	0.76	0.27
GV23S / GV23SD	287%	4.64	1.65	109%	0.93	0.33	12%	0.91	0.32
GV25M / GV25MR	110%	2.96	1.06	109%	3.07	1.09	9%	0.67	0.24

Highlighted cells indicate that the particular error ratio goal was exceede