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February 13, 2003

Mr. John D. Kinneman  
Chief, Nuclear Material Safety Branch 2  
Division of Nuclear Material Safety  
U.S. Nuclear Regulatory Commission, Region I  
475 Allendale Road  
King of Prussia, PA 19406-1415

Q-5

030-20934

RE: License No. 37-23341-01 Quarterly Report- 4th Quarter 2002, Amended

Dear Mr. Kinneman:

In accordance with condition No. 16 of the referenced license, enclosed is the quarterly report for the fourth quarter 2002.

This is an amended version of what was provided earlier this week. The volumes discharged in January and February have been corrected to reflect a reduction in the total volume discharged of 109,500 gallons. This data was provided in error in all previous quarterly reports for 2002. In addition, results of annual analyses have been provided, and all blanks have been filled-in with the appropriate entries. All entries in the table were double checked for accuracy. The underlying data is available to NRC upon request.

We regret any inconvenience the error in reporting of volume discharged may have caused. If you have any questions or comments, please contact Glenn Roberts at our Royersford facility at (610) 948 9700, or me at (413) 543-6911 extension 25.

Sincerely,

Michael R. Fuller, Manager, HP&E  
UniTech Services Group

cc: Glenn Roberts, Certified Health Physicist  
Dan Neely, Plant Manager/RSO, UniTech Royersford

132741

NMSS/RGNI MATERIALS-002

2002 - ROYERSFORD WASTEWATER DISCHARGE SUMMARY												
MONTH	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC
GALLONS	350000	705000	1285000	855000	670000	455000	320000	280000	845000	1325000	415000	385000
H-3	7.69E-06	7.69E-06	7.69E-06	7.45E-06	7.45E-06	7.45E-06	1.59E-05	1.59E-05	1.59E-05	1.15E-05	1.15E-05	1.15E-05
mCi H-3	10.1873275	20.5201883	37.402045	24.109504	18.8928275	12.8302038	19.25808	16.85082	50.8533675	57.6739375	18.0639125	16.7580875
C-14	3.66E-06	3.66E-06	3.66E-06	3.46E-06	3.46E-06	3.46E-06	2.53E-06	2.53E-06	2.53E-06	3.50E-06	3.50E-06	3.50E-06
mCi C-14	4.848585	9.7664355	17.801234	11.197166	8.774387	5.9587255	3.064336	2.681294	8.09176225	17.5529375	5.4977125	5.1002875
K-40	ND	2.42E-07	ND	ND	2.30E-07	ND	2.10E-07	ND	ND	ND	ND	1.96E-07
Cr-51	ND	8.32E-07	2.75E-07	ND	ND	ND	ND	ND	2.67E-07	ND	ND	ND
Mn-54	1.15E-06	6.91E-07	7.13E-07	3.92E-07	1.30E-07	1.51E-07	1.96E-07	1.22E-07	2.56E-07	5.91E-07	1.01E-07	3.40E-07
Fe-55	9.48E-06	9.48E-06	9.48E-06	4.33E-06	4.33E-06	4.33E-06	2.35E-06	2.35E-06	2.35E-06	5.34E-06	5.34E-06	5.34E-06
Fe-59	ND	ND	ND	ND	3.50E-08	ND	ND	ND	ND	ND	ND	ND
Co-57	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-58	1.34E-06	7.16E-07	3.45E-07	4.87E-07	2.25E-07	1.28E-07	4.82E-08	4.08E-08		3.69E-07	4.91E-07	2.58E-07
Co-60	2.38E-06	1.09E-06	8.85E-07	5.82E-07	3.83E-07	4.36E-07	5.51E-07	2.91E-07	9.90E-07	1.38E-06	4.46E-07	7.04E-07
Ni-63	5.92E-07	5.92E-07	5.92E-07	7.00E-07	7.00E-07	7.00E-07	1.68E-07	1.68E-07	1.68E-07	1.19E-06	1.19E-06	1.19E-06
Zn-65	ND	ND	ND	ND	ND	ND	1.83E-07	ND	8.62E-08	1.10E-07	ND	9.42E-08
Sr-89	*	*	*	*	*	*	*	*	*	*	*	*
Sr-90	7.14E-09	7.14E-09	7.14E-09	2.79E-09	2.79E-09	2.79E-09	4.79E-09	4.79E-09	4.79E-09	4.94E-09	4.94E-09	4.94E-09
Zr-95	ND	ND	3.57E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nb-95	8.45E-08	3.22E-08	3.89E-08	7.73E-08	7.89E-08	3.70E-08	ND	ND	ND	ND	ND	ND
Tc-99	1.05E-07	1.05E-07	1.05E-07	4.17E-08	4.17E-08	4.17E-08	2.05E-07	2.05E-07	2.05E-07	1.25E-07	1.25E-07	1.25E-07
Ag-110m	8.49E-08	ND	ND	ND	ND	ND	ND	ND	2.80E-08	ND	ND	ND
Sn-113	ND	ND	ND	ND	ND	2.14E-08	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
I-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
I-129	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	6.53E-09	6.53E-09	6.53E-09	<MDA	<MDA	<MDA
Cs-134	8.11E-08	6.96E-08	6.31E-08	1.62E-07	5.13E-08	2.75E-08	3.03E-07	1.47E-07	1.18E-07	9.15E-08	5.05E-07	1.85E-07
Cs-137	9.23E-07	6.62E-07	1.33E-06	1.10E-06	7.01E-07	6.86E-07	6.36E-07	3.70E-07	3.00E-07	3.74E-07	1.09E-06	4.38E-07
Eu-152	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Eu-154	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pb-212	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ra-226	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Th-228	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
Th-230	8.09E-10	8.09E-10	8.09E-10	8.09E-10	8.09E-10	8.09E-10	8.09E-10	8.09E-10	8.09E-10	8.09E-10	8.09E-10	8.09E-10
Th-232	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
Th-234	ND	3.79E-07	ND	ND	3.18E-07	3.80E-07	ND	2.73E-07	ND	ND	ND	ND
U-234	1.91E-09	1.91E-09	1.91E-09	1.91E-09	1.91E-09	1.91E-09	1.91E-09	1.91E-09	1.91E-09	1.91E-09	1.91E-09	1.91E-09
U-235	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
U-238	8.48E-10	8.48E-10	8.48E-10	8.48E-10	8.48E-10	8.48E-10	8.48E-10	8.48E-10	8.48E-10	8.48E-10	8.48E-10	8.48E-10
Pu-238	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
Pu-239	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
Np-237	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
Am-241	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
Cm-244	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
CONC.	1.62E-05	1.49E-05	1.39E-05	7.88E-06	7.23E-06	6.95E-06	4.87E-06	3.98E-06	4.78E-06	9.58E-06	9.29E-06	8.88E-06
ACTIVITY	21.4990723	39.767423	67.479112	25.492182	18.333998	11.9616885	5.8933564	4.219103	15.2920138	48.0385132	14.5969089	12.9378949

ANNUAL TOTALS  
7890000 GALLONS

303.4003 mCi H-3

100.33486 mCi C-14

285.51127 mCi AORN

Notes: CONC. is total concentration for all nuclides except H-3 and C-14.

All concentrations are in uCi/ml. All activities are in mCi.

NF - Not found in gamma spectra search

<MDA - Less than minimum detection limit for analytical method.

\*Sr-89/90 analyzed and reported as total Sr unless >50 pCi/L. Conservatively assigned to Sr-90

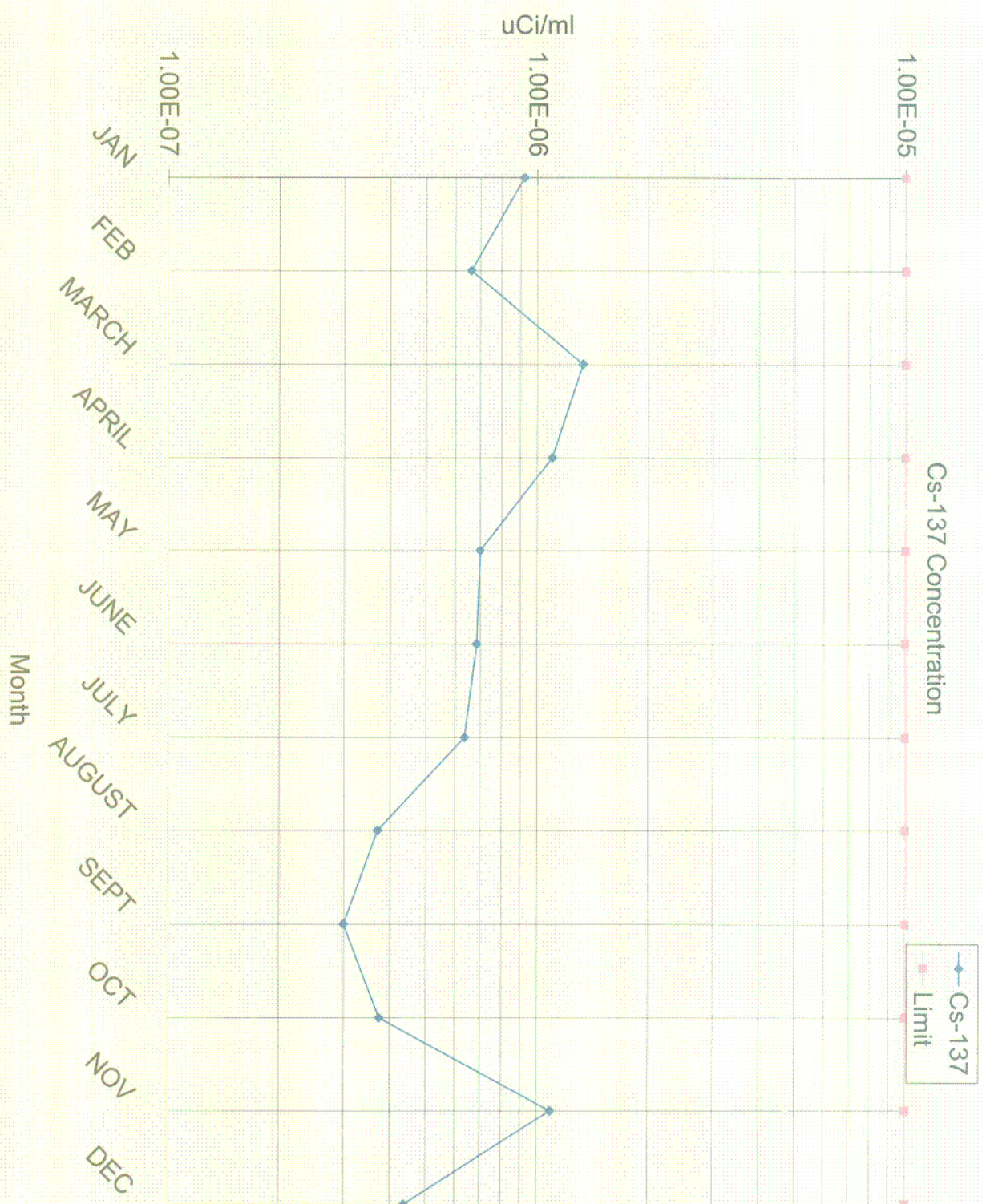
AORN - All other radionuclides (except for H-3 and C-14)

ND - No Data

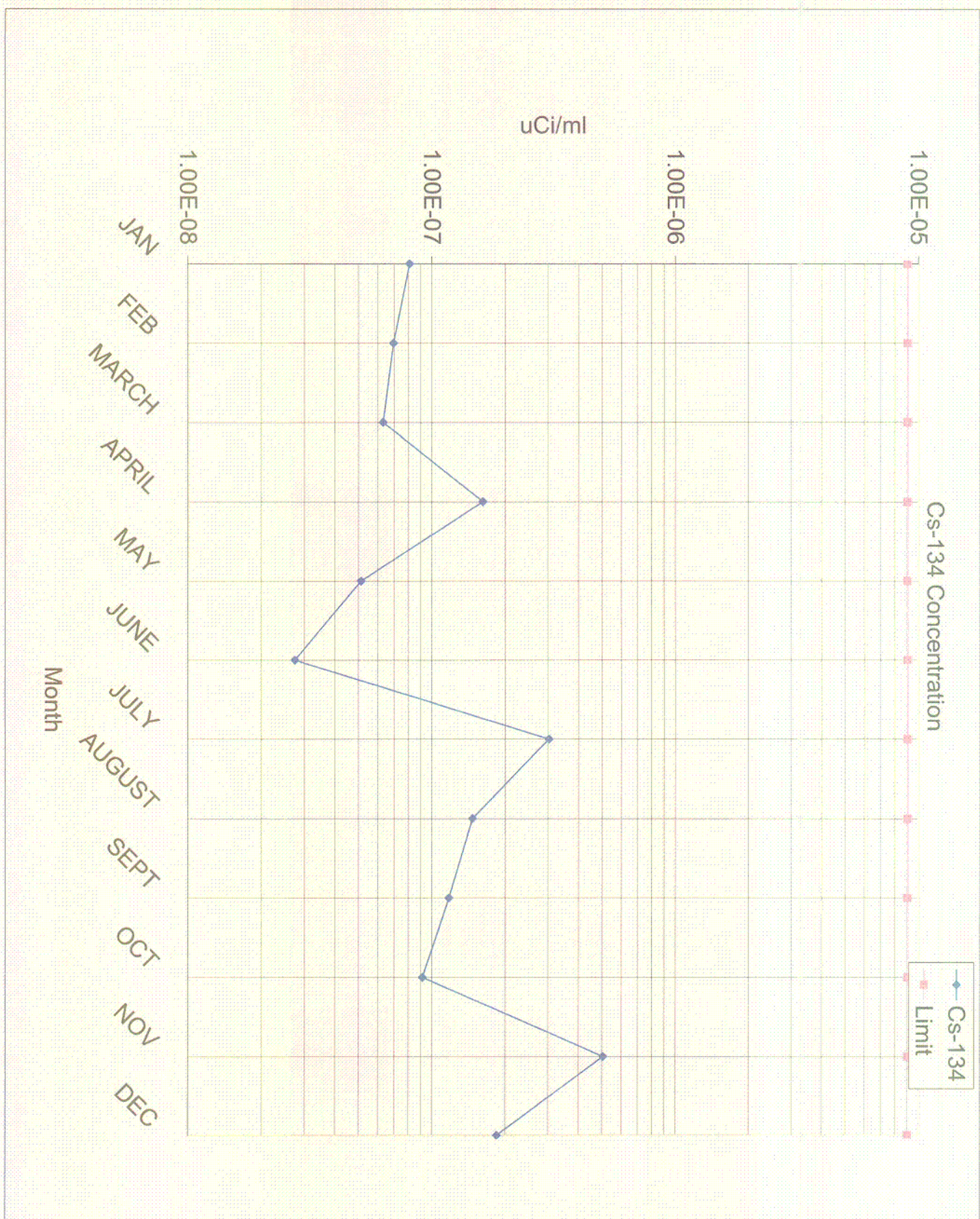
Ni-56 identified in Sept < MDA (2.83E-8)

079 - ROYERSFORD RATIOS OF DISCHARGES TO LIMITS													
	LIMIT	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC
H-3	1.0E-02	0.00077	0.00077	0.00077	0.00075	0.00075	0.00075	0.00159	0.00159	0.00159	0.00115	0.00115	0.00115
C-14	3.0E-04	0.01220	0.01220	0.01220	0.01153	0.01153	0.01153	0.00843	0.00843	0.00843	0.01167	0.01167	0.01167
K-40	4.0E-05		0.00605			0.00574		0.00525					0.00490
Cr-51	5.0E-03		0.00017	0.00006						0.00005			
Mn-54	3.0E-04	0.00383	0.00230	0.00238	0.00131	0.00043	0.00050	0.00065	0.00041	0.00085	0.00197	0.00034	0.00113
Fe-55	1.0E-03	0.00948	0.00948	0.00948	0.00433	0.00433	0.00433	0.00235	0.00235	0.00235	0.00534	0.00534	0.00534
Fe-59	1.0E-04					0.00035							
Co-57	6.0E-04												
Co-58	2.0E-04	0.00670	0.00358	0.00172	0.00244	0.00113	0.00064	0.00024	0.00020		0.00184	0.00245	0.00129
Co-60	3.0E-05	0.07937	0.03640	0.02950	0.01941	0.01276	0.01454	0.01837	0.00968	0.03300	0.04600	0.01486	0.02347
Ni-63	1.0E-03	0.00059	0.00059	0.00059	0.00070	0.00070	0.00070	0.00017	0.00017	0.00017	0.00119	0.00119	0.00119
Zn-65	5.0E-05							0.00366		0.00172	0.00220		0.00188
Sr-89	8.0E-05												
Sr-90	5.0E-06	0.00143	0.00143	0.00143	0.00056	0.00056	0.00056	0.00096	0.00096	0.00096	0.00099	0.00099	0.00099
Zr-95	2.0E-04			0.00018									
Nb-95	3.0E-04	0.00028	0.00011	0.00013	0.00026	0.00026	0.00012						
Tc-99	6.0E-04	0.00018	0.00018	0.00018	0.00007	0.00007	0.00007	0.00034	0.00034	0.00034	0.00021	0.00021	0.00021
Ag-110m	6.0E-05	0.00141								0.00047			
Sn-113	3.0E-05						0.00071						
Sb-125	3.0E-04												
I-125	2.0E-05												
I-129	2.0E-06							0.00327	0.00327	0.00327			
Cs-134	9.0E-06	0.00901	0.00773	0.00701	0.01800	0.00570	0.00305	0.03367	0.01632	0.01306	0.01017	0.05609	0.02052
Cs-137	1.0E-05	0.09226	0.06620	0.13300	0.10980	0.07006	0.06862	0.06361	0.03699	0.02995	0.03741	0.10870	0.04376
Eu-152	1.0E-04												
Eu-154	7.0E-05												
Pb-212	2.0E-06												
Ra-226	6.0E-07												
Th-228	2.0E-06												
Th-230	1.0E-06	0.00081	0.00081	0.00081	0.00081	0.00081	0.00081	0.00081	0.00081	0.00081	0.00081	0.00081	0.00081
Th-232	5.0E-05												
Th-234	5.0E-05		0.00758			0.00636	0.00760		0.00546				
U-234	3.0E-06	0.00064	0.00064	0.00064	0.00064	0.00064	0.00064	0.00064	0.00064	0.00064	0.00064	0.00064	0.00064
U-235	3.0E-06												
U-238	3.0E-06	0.00028	0.00028	0.00028	0.00028	0.00028	0.00028	0.00028	0.00028	0.00028	0.00028	0.00028	0.00028
Pu-238	2.0E-07												
Pu-239	2.0E-07												
Np-237	2.0E-07												
Am-241	2.0E-07												
Cm-244	3.0E-07												
TOTAL	1.00	0.21922	0.15649	0.20035	0.17088	0.12245	0.11545	0.14428	0.08790	0.09794	0.12187	0.20471	0.11923





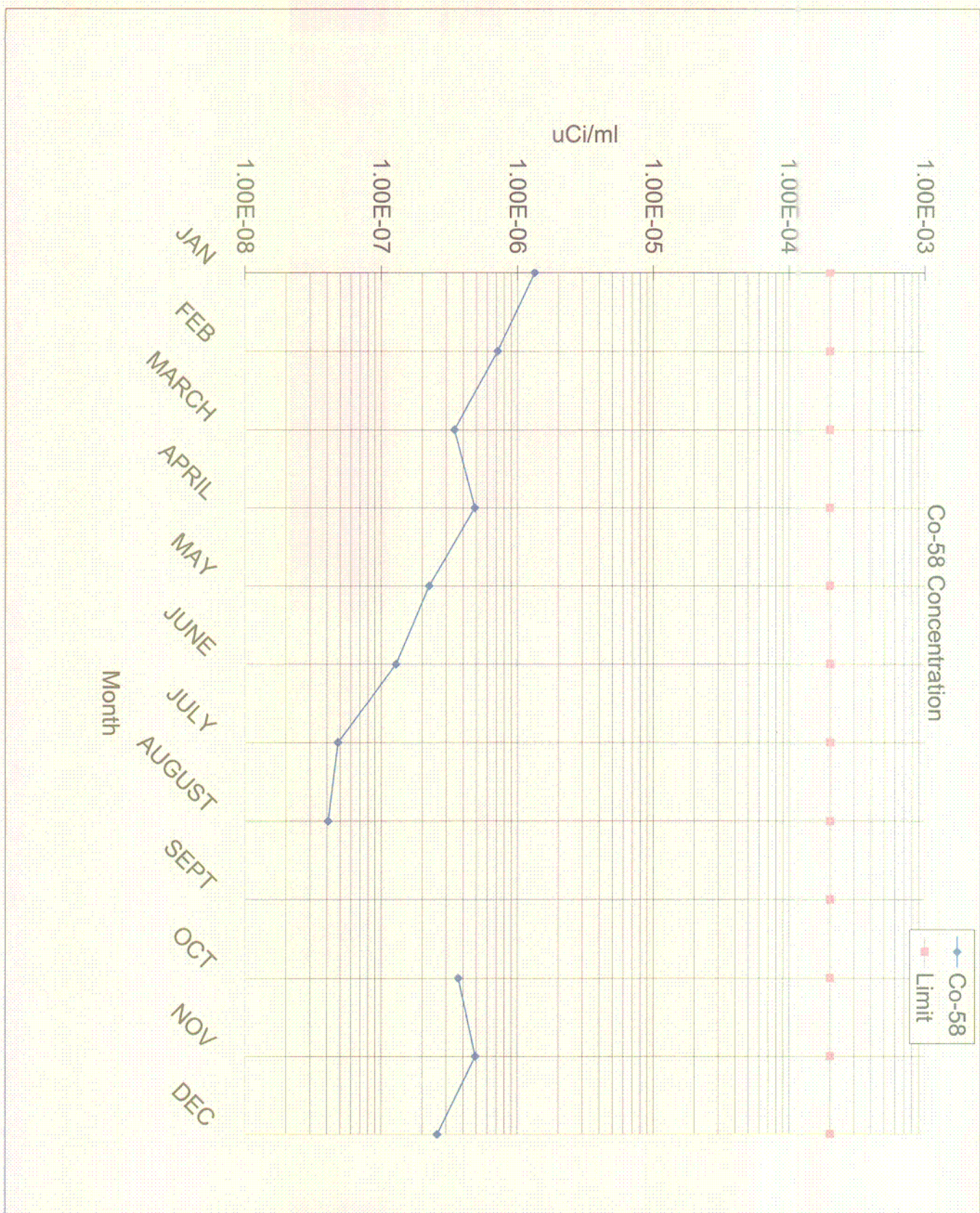






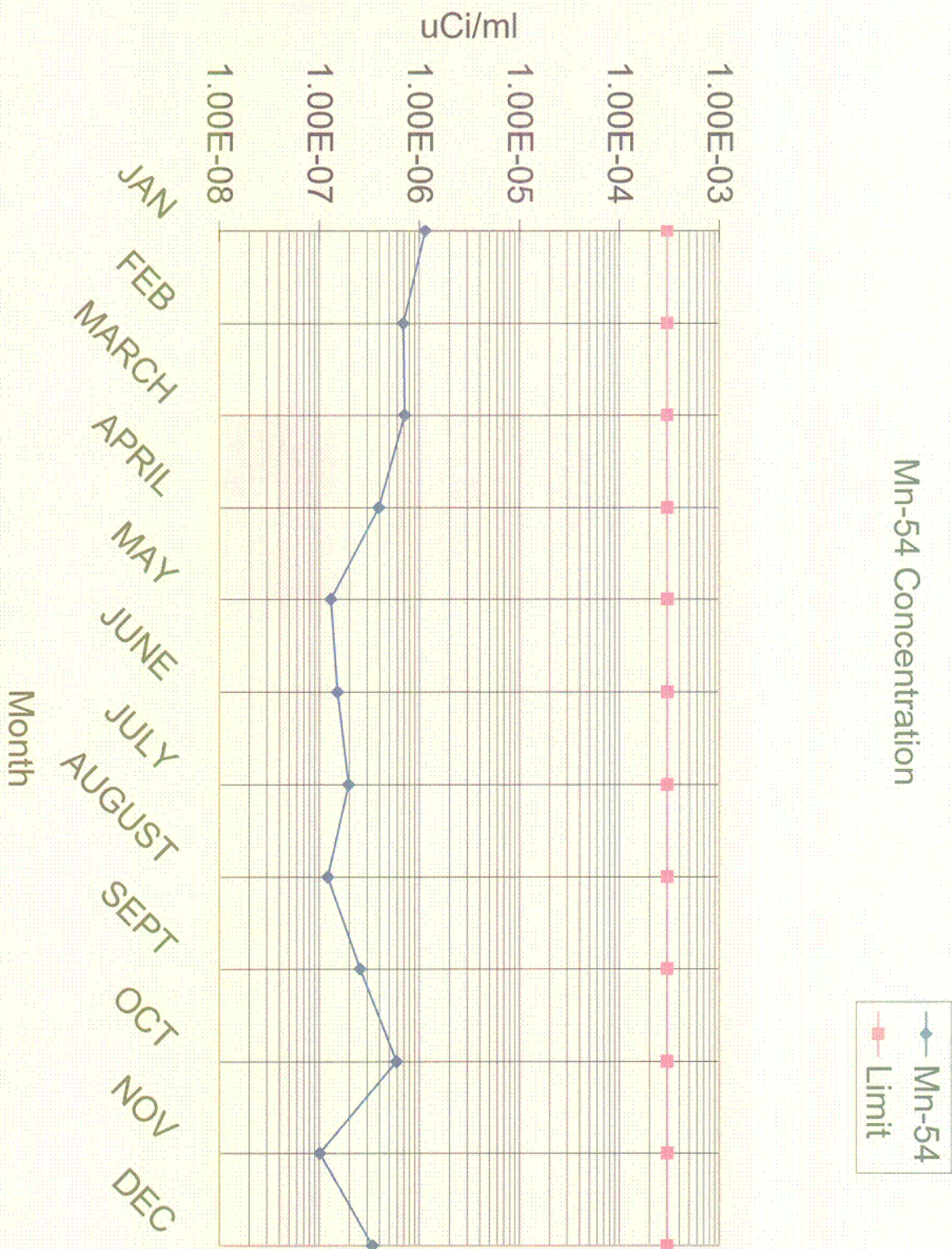








# Mn-54 Concentration





# Zn-65 Concentration

