Appendix F Summary of Biological Data



Milk and Meat Samples are Collected from Local Bovine Herds

Table F-1
1999 Radioactivity Concentrations (μCi/mL) in Milk

Location	Н-3	K-40	Sr-90	I-129	Cs-137
BFMCOBO (WNW Farm)					
1st Quarter	-1.19±0.92E-07	1.59±0.19E-06	1.73±0.92E-09	1.73±2.57E-10	1.29±1.55E-09
2nd Quarter	-1.16 ± 0.74 E-07	$1.49 \pm 0.18 E\text{-}06$	$6.21\pm1.72E-10$	$0.94\pm2.18E-10$	$0.62\pm1.67E-09$
3rd Quarter	-1.17±0.77E-07	$1.44\pm0.17E-06$	$1.70\pm0.78E-09$	4.93±4.72E-10	0.77±1.45E-09
4th Quarter	2.83±6.89E-08	1.44±0.18E-06	1.27±0.55E-09	0.64±1.76E-10	0.80±1.67E-09
BFMCTLN (Control)					
1st Quarter	-3.24±1.04E-07	1.18±0.14E-06	3.64±1.18E-09	1.43±2.52E-10	1.12±1.15E-09
2nd Quarter	-5.82±7.66E-08	$1.80\pm0.22E-06$	5.89±0.75E-10	4.20±2.98E-10	-0.08±1.53E-09
3rd Quarter	-8.84±7.86E-08	$1.48\pm0.16E-06$	$1.70\pm0.80E-09$	$0.79\pm2.31E-10$	$0.00\pm2.04E-09$
4th Quarter	8.48±7.11E-08	1.46±0.17E-06	8.51±5.53E-10	1.89±2.07E-10	1.45±1.58E-09
BFMCTLS (Control)					
1st Quarter	-8.93±9.32E-08	1.36±0.16E-06	3.38±0.85E-09	0.11±1.58E-10	0.88±1.46E-09
2nd Quarter	-1.17±0.75E-07	1.64±0.19E-06	$3.82\pm1.24E-10$	-1.98±2.87E-10	$0.58\pm1.42E-09$
3rd Quarter	-1.16±0.76E-07	1.44±0.16E-06	-0.14±6.53E-10	-1.20±4.43E-10	-0.06±1.83E-09
4th Quarter	2.83±6.90E-08	1.43±0.17E-06	9.84±4.66E-10	0.34±2.94E-10	-0.57±1.50E-09
BFMREED					
(NNW Farm)					
1st Quarter	-1.49±0.97E-07	1.18±0.15E-06	7.63±9.91E-10	1.90±2.80E-10	0.87±1.61E-09
2nd Quarter	-1.46±0.82E-07	1.44±0.19E-06	4.29±2.98E-10	2.32±2.33E-10	2.37±2.95E-09
3rd Quarter	-1.48±0.77E-07	$1.37 \pm 0.17 E-06$	9.49±7.66E-10	-1.92±3.88E-10	-0.86±2.47E-09
4th Quarter	0.00±6.84E-08	1.43±0.17E-06	1.38±0.52E-09	1.20±0.69E-10	1.59±1.49E-09
BFMSCHT (S Farm)					
Annual	-2.36±0.75E-07	1.36±0.17E-06	1.86±0.82E-09	1.43±2.88E-10	1.05±1.57E-09
BFMWIDR (SE Farm)					
Annual	-2.36±0.75E-07	1.49±0.18E-06	1.48±0.67E-09	0.19±2.82E-10	1.75±1.69E-09

Table F-2
1999 Radioactivity Concentrations (μCi/g Dry) in Meat

1999 Radioactivity Concentrations in Beef

Location	% Moisture	H-3 (μCi/mL)	K-40	Sr-90	Cs-137
Beef Flesh Background (BFBCTRL 06/99)	75.3	-1.76±0.77E-07	1.36±0.17E-05	-0.22±2.15E-09	-0.12±1.63E-08
Beef Flesh Background (BFBCTRL 09/99)	73.0	-2.98±7.74E-08	8.83±1.15E-06	2.92±1.50E-09	2.50±1.65E-08
Beef Flesh Near-Site (BFBNEAR 06/99)	76.5	-1.17±0.79E-07	1.44±0.16E-05	-1.98±2.26E-09	2.10±2.55E-08
Beef Flesh Near-Site (BFBNEAR 09/99)	73.0	-2.98±7.72E-08	1.09±0.13E-05	2.18±1.71E-09	-0.04±1.79E-08

1999 Radioactivity Concentrations in Venison

Location	% Moisture	H-3 (μCi/mL)	K-40	Sr-90	Cs-137
Deer Flesh Background (BFDCTRL 10/99)	65.0	5.80±7.63E-08	7.11±0.98E-06	3.72±0.24E-08	5.86±2.47E-08
Deer Flesh Background (BFDCTRL 11/99)	69.2	2.88±7.47E-08	7.79±1.09E-06	1.73±0.26E-08	1.07±0.34E-07
Deer Flesh Background (BFDCTRL 12/99)	72.3	0.00±7.43E-08	6.63±1.04E-06	6.70±1.50E-09	8.86±2.91E-08
Deer Flesh Near-Site (BFDNEAR 10/99)	72.4	5.79±7.62E-08	9.60±1.26E-06	-0.50±2.00E-09	1.39±0.43E-07
Deer Flesh Near-Site (BFDNEAR 11/99)	50.5	0.00±7.44E-08	6.42±1.10E-06	5.00±9.00E-10	0.00±3.94E-08
Deer Flesh Near-Site (BFDNEAR 11/99)	71.4	1.15±0.78E-07	8.71±1.17E-06	0.30±1.50E-09	3.68±2.12E-08

Table F-3
1999 Radioactivity Concentrations (μCi/g Dry) in Food Crops

Location	% Moisture	H-3 (μCi/mL)	K-40	Co-60	Sr-90	Cs-137
CORN						
Background (BFVCTRC)	74.8	1.21±0.81E-07	1.15±0.15E-05	-0.08±1.53E-08	-0.09±2.54E-09	0.00±2.17E-08
Near-Site (BFVNEAC)	80.6	0.00±7.75E-08	1.41±0.14E-05	1.03±1.47E-08	1.41±0.23E-08	3.58±3.94E-08
BEANS						
Background (BFVCTRB)	91.6	1.51±0.82E-07	3.05±0.34E-05	3.40±3.90E-08	1.71±0.15E-07	3.86±2.87E-08
Near-Site (BFVNEAB)	89.5	2.95±7.65E-08	2.77±0.29E-05	1.23±3.48E-08	8.28±0.70E-08	-0.11±2.81E-08
APPLES						
Background (BFVCTRA)	83.7	-6.01±6.97E-08	5.94±0.99E-06	1.00±2.07E-08	9.94±2.54E-09	-0.20±2.18E-08
Near-Site (BFVNEAAF)	83.8	-2.98±7.03E-08	8.08±1.15E-06	0.06±2.22E-08	1.03±0.30E-08	0.22±1.93E-08
НАУ						
Background (BFHCTLS)	NA	NA	2.24±0.28E-05	2.14±4.06E-08	6.11±0.56E-08	1.25±3.53E-08
Near-Site (BFHNEAR)	NA	NA	9.53±1.85E-06	1.98±4.87E-08	1.39±0.06E-07	2.31±4.76E-08

Table F-4 1999 Radioactivity Concentrations (µCi/g Dry) in Fish Flesh from Cattaraugus Creek

Cattaraugus Creek above the Springville Dam (BFFCATC)

1st Half 1999

Species	% Moisture	Sr-90	Cs-137
White Sucker	80.9	-0.68±1.62E-08	3.75±5.09E-08
Hog-nosed Sucker	81.5	-0.28±1.90E-08	8.05±8.85E-08
Hog-nosed Sucker	80.2	1.56±1.60E-08	$0.75\pm4.34E-08$
Hog-nosed Sucker	81.2	$1.81\pm2.08E-08$	4.70±3.63E-08
Hog-nosed Sucker	79.5	-0.96±2.57E-08	-0.39±1.13E-07
Hog-nosed Sucker	80.7	$0.94 \pm 1.18E-08$	8.20±7.22E-08
Hog-nosed Sucker	80.6	$1.02\pm1.17E-08$	$0.00\pm1.10E-07$
Hog-nosed Sucker	83.0	$2.51\pm1.32E-08$	$0.87 \pm 2.03 E-07$
Brown Trout	78.1	$1.80\pm2.41E-08$	-6.49±7.82E-08
Hog-nosed Sucker	80.5	5.71±9.36E-09	2.50±4.61E-08
Average % Moisture	80.6		
Median		<1.76E-08	8.01E-08
Maximum		2.51E-08	8.20E-08
Minimum		<9.36E-09	<4.34E-08

2nd Half 1999

Species	% Moisture	Sr-90	Cs-137
Hog-nosed Sucker	81.0	5.02±9.35E-08	0.65±5.06E-08
Hog-nosed Sucker	80.0	9.58±6.13E-09	8.41±8.20E-08
Hog-nosed Sucker	81.0	4.35±2.24E-08	-0.72±1.40E-07
White Sucker	82.8	$1.00\pm2.87E-08$	1.37±1.23E-07
Hog-nosed Sucker	81.0	$1.12\pm1.78E-08$	4.99±5.40E-08
Hog-nosed Sucker	77.0	$1.33 \pm 1.04 E\text{-}08$	-2.54±5.76E-08
Brown Trout	77.4	1.24±2.06E-08	-0.91±5.70E-08
White Sucker	81.0	$1.81\pm2.51E-08$	6.89±8.19E-08
Hog-nosed Sucker	79.0	2.59±1.35E-08	4.03±4.64E-08
Brown Trout	78.4	0.10±1.14E-07	1.21±7.47E-08
Average % Moisture	79.9		
Median		2.55E-08	<6.62E-08
Maximum		4.35E-08	1.37E-07
Minimum		9.58E-09	<4.64E-08

Table F-4 (continued) 1999 Radioactivity Concentrations (µCi/g Dry) in Fish Flesh from Cattaraugus Creek

Cattaraugus Creek below the Springville Dam (BFFCATD)

Annual 1999

Species	% Moisture	Sr-90	Cs-137
Steelhead Trout	77.9	5.76±4.59E-09	0.00±1.35E-07
Steelhead Trout	78.7	2.05±1.53E-09	4.49±4.83E-08
Steelhead Trout	79.0	1.79±1.22E-09	3.84±2.00E-08
Steelhead Trout	73.2	$3.03\pm2.31E-09$	4.50±2.28E-08
Steelhead Trout	76.7	2.29±1.87E-09	3.46±5.26E-08
Steelhead Trout	71.5	$1.76\pm0.92E-09$	2.85±1.44E-08
Steelhead Trout	76.4	4.98±1.40E-09	$0.00 \pm 1.65 E\text{-}07$
Steelhead Trout	75.2	1.44±0.83E-09	$7.68\pm3.09E-08$
Steelhead Trout	73.7	$3.41\pm1.66E-09$	2.99±3.06E-08
Steelhead Trout	71.7	2.09±0.99E-09	1.74±3.11E-08
Average % Moisture	75.4		
Median		2.19E-09	<4.66E-08
Maximum		5.76E-09	7.68E-08
Minimum		1.44E-09	2.85E-08

Table F-4 (concluded) 1999 Radioactivity Concentrations (µCi/g Dry) in Fish Flesh from Cattaraugus Creek

Cattaraugus Creek Background (BFFCTRL)

1st Half 1999

Species	% Moisture	Sr-90	Cs-137
Brown Trout	78.3	1.72±1.24E-08	-0.43±3.93E-08
Brown Trout	74.5	1.24±0.22E-07	-2.29±5.61E-08
Brown Trout	74.7	2.08±1.70E-08	-3.03±5.37E-08
White Sucker	78.8	$0.18\pm1.02E-08$	$0.00\pm8.74\text{E-}08$
White Sucker	78.3	-0.30 ± 2.72 E -08	-3.52±5.03E-08
Hog-nosed Sucker	81.0	$2.04\pm0.86E-08$	-3.20±5.88E-08
White Sucker	78.5	$0.28\pm1.19E-08$	3.74±5.87E-08
Hog-nosed Sucker	83.1	$0.81\pm1.18E-08$	-1.26±4.92E-08
Brown Trout	74.9	$0.59 \pm 1.60 E-08$	-0.75±5.02E-08
Brown Trout	77.5	0.77±1.49E-08	4.11±4.99E-08
Average % Moisture	78.0		
Median		1.66E-08	<5.20E-08
Maximum		1.24E-07	<8.74E-08
Minimum		<1.02E-08	<3.93E-08

2nd Half 1999

Species	% Moisture	Sr-90	Cs-137
White Sucker	80.0	4.91±6.89E-09	6.89±6.06E-08
White Sucker	81.0	$0.27 \pm 1.35 E-08$	0.53±4.97E-08
White Sucker	81.4	1.07±2.29E-08	-0.01±5.57E-08
White Sucker	80.4	$1.73\pm0.94E-08$	$0.73\pm5.36E-08$
Hog-nosed Sucker	79.0	$1.16\pm0.61E-08$	-1.40±5.11E-08
Brown Trout	78.0	$0.81\pm2.08E-08$	-0.74±5.57E-08
Brown Trout	76.0	-0.02±1.55E-08	-4.97±8.45E-08
Brown Trout	78.0	$0.77 \pm 1.42 E-08$	-2.57±7.36E-08
Brown Trout	78.0	2.08±1.34E-08	$0.71\pm1.63E-07$
Hog-nosed Sucker	82.0	0.70±1.03E-08	-0.27±4.13E-08
Average % Moisture	79.4		
Median		<1.48E-08	5.57E-08
Maximum		2.08E-08	6.89E-08
Minimum		<6.89E-09	<4.13E-08