AVIAN CONSUMPTION AND USE OF CONTAMINATED WATER SOURCES: TOXICOLOGICAL ASSESSMENTS OF EXPOSURE, EFFECTS AND SUSCEPTIBILITY

Final Report – Part I - APPENDICES

Report No. RWO55-T04-47-A

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A Note on Organization

These Appendices are organized in the same order as they are referenced or as they appear as tables and figures in the Interim Report. Tables and figures are numbered using the same table and figure numbers as appear in the Report with the suffix ".APP". Raw data are presented and, in some instances, summary statistics as well.

Study A: MDL Determination

Method detection limits (MDL) were calculated for Cu, Al, Zn, Mg, Fe, Mn, Ca, Cd, Co, Na, Ni, Cr, Se, V, and As in 3% nitric acid (v:v), and Cu, Zn, Mg, Fe, and Mn in mallard liver and pig blood acid digest matrices. A minimum of seven samples per sample matrix were analyzed in duplicate for all reported analytes. The MDL procedure was not iterated for any sample matrix analyzed by atomic absorption methods. MDLs for Al, Cr, and Ca in nitric acid samples were generated from analyses of multiple iterations of laboratory standards in water on a Leeman Labs ICP-AES. ICP data were generated by the Texas Tech University Geosciences Department.

Liver and blood samples for MDL determinations were digested and diluted in the same manner as samples analyzed in Study A. Digestion matrices were filtered with filter paper prior to being analyzed by flame AAS. All liver and blood matrix levels of analytes, except Mn, were greater than 10 times the MDL of analytes in reagent water. For scenarios where the level of sample analyte exceeds 10 times the MDL of analyte in reagent, MDL values are usually not reported for such matrices because MDLs determined under such circumstances may not reflect method variance at lower analyte concentrations. However, because liver and blood contain substantial constitutive levels of all metals analyzed, we report estimated MDLs for liver and blood matrices for demonstration purposes. MDLs for Mn in liver and blood matrices are representative of the true MDL.

Study A, MDL APP: Table 1. Method detection limits for multiple elements in water, liver, or pig blood matrices. N=8 for all MDLs except when noted otherwise. MDL values were calculated using standard deviations documented in Study A, MDL APP: Table 2 as follows: MDL = SD * $t_{(n-1, 0.99)}$, where t is the student's t value for degrees of freedom (n-1) at the 99% confidence interval. NA is not analyzed in the specific matrix.

	Method Detection Limit		
Element	Water (mg/L)	Liver Matrix (µg/g)	Blood Matrix (µg/g)
Cu	0.003[a]	0.881[a]	0.179[a]
Al	0.1[c]	NA	NA
Zn	0.001[a]	0.636[a]	0.104[a]
Mg	0.0003[a]	5.44[a]	2.055[a]
Fe	0.017[a]	3.685[a]	4.176[a]
Mn	0.006[a]	0.738[a]	0.235[a]
Ca	0.1[c]	NA	NA
Cd	0.001[a]	NA	NA
Co	0.009[a]	NA	NA
Na	0.001[a]	NA	NA
Ni	0.01[a]	NA	NA
Cr	0.02[c]	NA	NA
Se	0.003[bd]	NA	NA
V	0.002[bd]	NA	NA
As	0.001[b]	NA	NA

[a] Flame-AAS; [b] Furnace-AAS; [c] ICP-AES; [d] N=7

Study A, MDL APP: Table 2. Mean ± SD analyte concentrations for multiple elements in water, liver, or pig blood matrices. N=8 for all concentrations except when noted otherwise. NA is not analyzed in the specific matrix.

	Mean ± SD Analyte concentrations of Samples Used in MDL Determination		
Element	Water (mg/L)	Liver Matrix (ug/g)	Blood Matrix (ug/g)
Cu	0.012 ± 0.001	16.22 ± 0.294	1.388 ± 0.060
Al	NA	NA	NA
Zn	0.005 ± 0.0002	51.66 ± 0.212	14.36 ± 0.035
Mg	0.004 ± 0.0001	176.3 ± 1.814	50.2 ± 0.685
Fe	0.098 ± 0.006	424.4 ± 1.229	281.3 ± 1.393
Mn	0.013 ± 0.002	3.326 ± 0.246	2.404 ± 0.078
Ca	NA	NA	NA
Cd	0.004 ± 0.0004	NA	NA
Co	0.027 ± 0.003	NA	NA
Na	0.006 ± 0.0003	NA	NA
Ni	0.046 ± 0.004	NA	NA
Cr	NA	NA	NA
Se	0.007 ± 0.001*	NA	NA
V	0.009 ± 0.0006*	NA	NA
As	0.009 ± 0.0003	NA	NA

* N=7

Figure A.1-Table A.3-Table A.4 APP

		Water Reservoir Wts (g)						
Time Start	Time Period (min)	Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
SAMW Mallards								
B-26	**male**	**1.018 kg**						
900	0-20	674.2	557.3	54.4	62.5	58.5	177.2	start dosing
920	21-40	833.1	738.1	51.2	43.8	41.0	124.2	
940	41-60	850	651.4	163.8	34.8	32.6	98.6	
1000	60-120	912.4	761.3	131.9	19.2	18.0	28.4	dead at 1038
1100	121-180	734.5	733.4	1.1	0	0	0	
B-28	**Male**	**0.878 kg**						
908	0-20	965.8	939.4	7.7	18.7	20.3	61.5	start dosing
928	21-40	889.3	878.1	4.8	6.4	6.9	21.0	
948	41-60	1007.5	999.1	8.4	0	0	0	
1008	60-120	1030.2	1011.3	6.5	12.4	13.4	13.4	
1108	121-180	939.4	919.2	13	7.2	7.8	7.8	
1208	181-240	919.2	915.6	3.6	0	0	0	
1308	241-300	915.6	901.1	10.9	3.7	4.0	4.0	
1408	301-420	901.1	898.6	2.5	0	0	0	
1608	421-death	898.6	841.6	41.1	15.9	18.1	4.5	dead at 2009

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

		Water Reservoir Wts (g)						
Time Start	Time Period (min)	Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
SAMW Mallards								
G-10	**Female**	**0.982 kg**	**0.870 kg**					
930	0-20	733	695.6	21.9	15.5	15.0	45.6	start dosing
950	21-40	737.8	729	4.6	4.2	4.1	12.3	
1010	41-60	880.7	873.5	4.7	2.5	2.4	7.3	
1030	60-120	760.5	741.1	19	0.4	0.4	0.4	
1130	121-180	695.6	688.9	3.9	2.8	2.7	2.7	
1230	181-240	688.9	676.7	6.1	6.1	5.9	5.9	
1330	241-300	676.7	675.6	1.1	0	0.0	0.0	
1430	301-420	675.6	673.4	2.2	0	0.0	0.0	
1630	421-540	673.4	670.4	3	0	0.0	0.0	
1830	540-630	670.4	668.6	1.8	0	0.0	0.0	
2000								water taken away at 2000
930	(day 2) 0-60	663.2	652	2.9	8.3	9.1	9.1	water provided at 930
1030	61-120	652	648.1	2.4	1.5	1.6	0.8	
1230	121-death	648.1	647.6	0.5	0	0.0	0.0	
1630	stop							euthanize at ~1900

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

		Water Reservoir Wts (g)						
Time Start	Time Period (min)	Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
SAMW Mallards								
B-30	**male**	**0.969 kg**						
934	0-20	786.4	761.2	10.7	14.5	14.2	43.2	start dosing
954	21-40	883.3	835.7	11.9	35.7	35.1	106.3	
1014	41-60	762.9	712.4	18	32.5	31.9	96.8	
1034	60-120	956	787.1	91.9	77	75.7	75.7	
1134	121-180	761.2	577.6	80.7	102.9	101.1	101.1	
1234	181-240	577.6	321.8	243.6	12.2	12.0	12.0	
1334	241-300	632.4	627.1	5.4	0	0	0	Euthanize at 1346
G-12	**Female**	**0.889 kg**						
938	0-20	841.5	793.3	24.9	23.3	25.0	75.6	Start dosing
958	21-40	877.6	850	16.9	10.7	11.5	34.7	
1018	41-60	998.7	976.5	13	9.2	9.9	29.9	
1038	60-120	1011	922.5	69.6	18.9	20.2	20.2	
1138	121-180	793.3	777	11.4	4.9	5.2	14.2	Died at 1200

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

		Water Reservoir Wts (g)						
Time Start	Time Period (min)	Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
SAMW Mallards								
B-32	**male**	**0.930 kg**	0.863 kg					
930	0-20	987.4	970.6	7.9	8.9	9.1	27.6	start dosing
950	21-40	845	840.6	4.1	0.3	0.3	0.9	
1010	41-60	872.8	865.1	7.7	0	0	0	
1030	60-120	740.4	736.5	2.3	1.6	1.6	1.6	
1130	121-180	970.6	964.7	3.7	2.2	2.2	2.2	
1230	181-300	964.7	957.8	4.5	2.4	2.5	1.2	
1430	301-240	957.8	957.8	0	0	0	0	
1630	241-450	957.8	926.7	21.5	9.6	9.8	2.8	
2000	stop							water taken away at 2000
930	0-150	925.7	914.1	11.6	0	0	0	Water provided at 930
1200	stop							Euthanize at 1230

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

Time Start	Time Period (min)	Water Reservoir Wts (g) Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
SAMW Mallards								
G-14	**female**	**0.907 kg**						
934	0-20	721	657.7	33.6	29.7	31.2	94.5	start dosing
954	21-40	835.1	808.9	9.3	16.9	17.8	53.8	
1014	41-60	712	695.6	7.6	8.8	9.2	28.0	
1034	60-120	925.4	897.1	7	21.3	22.4	22.4	
1134	121-180	657.7	639	9.1	9.6	10.1	10.1	
1234	181-300	639	605.1	27	6.9	7.2	3.6	
1434	301-death	605.1	442.5	152.5	10.1	10.6	9.9	Euthanize at 1530
B-34	**Male**	**0.847 kg**						
938	0-20	776.5	748.4	10.4	17.7	19.9	60.3	Start dosing
958	21-40	849.1	828.6	7.9	12.6	14.2	42.9	
1018	41-60	976.1	950.5	6.2	19.4	21.8	66.1	
1038	60-120	922.1	879.2	25.1	17.8	20.0	20.0	Died at 1137

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

		Water Reservoir Wts (g)						
Time Start	Time Period (min)	Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
SAMW Mallards								
G-7	**female**	**0.853 kg**						
904	0-20	807.8	642.6	122.4	42.8	47.8	144.8	start dosing
924	21-40	901.8	883.6	13.2	5	5.6	16.9	
944	41-60	783.2	764.4	12.1	6.7	7.5	22.7	
1004	60-120	1008.5	956.6	34.4	17.5	19.5	19.5	
1104	121-180	642.6	611.1	18.9	12.6	14.1	14.1	
1204	181-240	611.1	575.4	21.7	14	15.6	15.6	
1304	241-300	575.4	518.9	44.8	11.7	13.1	13.1	
1404	301-420	518.9	410.8	93.2	14.9	16.6	8.3	
1604	stop	593.7	421.9	163.2	8.6	9.6	6.7	Euthanize at 1730

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

		Water Reservoir Wts (g)						
Time Start	Time Period (min)	Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
Control Mallards								
B-27	**male**	**0.939 kg**						
906	0-20	980.2	922.8	23	34.4	36.6	111.0	start dosing
926	21-40	903.5	869	17.1	17.4	18.5	56.2	
946	41-60	892.9	872.2	7.1	13.6	14.5	43.9	
1006	60-120	1016.9	948	53.7	15.2	16.2	16.2	
1106	121-180	922.8	854.3	41.7	26.8	28.5	28.5	
1206	181-240	854.3	820.9	18.7	14.7	15.6	15.6	
1306	241-300	820.9	719.6	60.7	40.6	43.2	43.2	
1406	301-420	719.6	666.5	13.1	40	42.6	21.3	
1606	421-death	950.3	856.3	49.8	44.2	47.1	8.9	Euthanize at 2122
G-6	**Female**	**0.907 kg**						
902	0-20	1034.1	627.3	348.4	58.4	64.4	195.1	start dosing
922	21-40	928.2	899.3	10.2	18.7	20.6	62.5	
942	41-60	870.4	829.1	20.2	21.1	23.3	70.5	
1002	60-120	963.6	859.2	36.2	68.2	75.2	75.2	
1102	121-180	982	847.1	68.4	66.5	73.3	73.3	
1202	181-240	842.1	644.3	102.5	95.3	105.1	105.1	
1302	241-300	644.3	500.9	73.9	69.5	76.6	76.6	
1402	301-420	916.1	652.5	170.1	93.5	103.1	51.5	
1602	421-death	987.7	518.6	300.1	169	186.3	64.9	Euthanize at 1854

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

Time Start	Time Period (min)	Water Reservoir Wts (g) Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
Control Mallards								
G-8	**female**	**0.877 kg**						
910	0-20	1009.3	890.7	44.2	74.4	84.8	257.1	start dosing
930	21-40	946.2	711.4	154.9	79.9	91.1	276.1	
950	41-60	929.9	710.8	190.6	28.5	32.5	98.5	
1010	60-120	908.7	126.3	696.6	85.8	97.8	97.8	
1110	121-180	890.7	80.4	691.8	118.5	135.1	135.1	
1210	181-240	934.9	722.7	121.3	90.9	103.6	103.6	
1310	241-300	722.7	80.8	576.7	65.2	74.3	74.3	
1410	301-420	930.5	277.6	618.8	34.1	38.9	19.4	
1610	421-487	944.9	84	551.9	309	352.3	320.3	
1716	487-death	950.8	280	460.3	210.5	240.0	48.0	Euthanize at 2217
B-29	**male**	**1.063 kg**						
932	0-20	979	823.3	94.6	61.1	57.5	174.2	Start dosing
952	21-40	898.9	861	16.3	21.6	20.3	61.6	
1012	41-60	828.8	768.4	37.7	22.7	21.4	64.7	
1032	60-120	859	800.7	11.4	46.9	44.1	44.1	
1132	121-180	823.3	794	17.2	12.1	11.4	11.4	
1232	181-240	794	754.8	5.7	33.5	31.5	31.5	
1332	241-death	754.8	740.1	7.1	7.6	7.2	11.0	Euthanize at 1409

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

		Water Reservoir Wts (g)						
Time Start	Time Period (min)	Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
Control Mallards								
G-11	**female**	**0.840 kg**						
936	0-20	856	791.4	22.3	42.3	50.4	152.6	start dosing
956	21-40	868.7	770.7	79.7	18.3	21.8	66.0	
1016	41-60	872	791.3	60.5	20.2	24.0	72.9	
1036	60-120	947.6	766.3	109.9	71.4	85.0	85.0	
1136	121-180	791.4	573.5	106.9	111	132.1	132.1	
1236	181-240	938.2	858.7	44.5	35	41.7	41.7	
1336	241-300	858.7	795.9	28.2	34.6	41.2	41.2	
1436	301-death	795.9	na	na	na			Euthanize at 1503; spilled some-void
G-15	**Female**	**0.852 kg**						
940	0-20	778.2	698.2	40.9	39.1	45.9	139.1	start dosing
1000	21-40	853	813.8	11.4	27.8	32.6	98.9	
1020	41-60	882.9	783.9	78	21	24.6	74.7	
1040	60-120	918.4	850.2	35.7	32.5	38.2	38.1	
1140	121-180	698.2	659.9	13.7	24.6	28.9	28.9	
1240	181-300	659.9	537.8	92.8	29.3	34.4	17.2	
1440	301-death	537.8	476.1	47.2	14.5	17.0	68.1	Euthanize at 1455

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

		Water Reservoir Wts (g)						
Time Start	Time Period (min)	Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
Control Mallards								
G-33	**male**	**0.979 kg**						
936	0-20	960.3	818.2	86.7	55.4	56.6	171.5	start dosing
956	21-40	770.3	716.8	21.3	32.2	32.9	99.7	
1016	41-60	791	742.6	30.1	18.3	18.7	56.6	
1036	60-120	944.2	834.7	75.8	33.7	34.4	34.4	
1136	121-180	818.2	725.4	51.5	41.3	42.2	42.2	
1236	181-300	725.4	525.2	128.2	72	73.5	36.8	
1436	301-death	949.8	947.6	1.7	0.5	0.5	0.2	Euthanize at 1649

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

		Water Reservoir Wts (g)						
Time Start	Time Period (min)	Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
Control Mallards								
G-13	**female**	**0.985 kg**	**0.983 kg**					
932	0-20	1034.6	724.3	242.5	67.8	68.8	208.6	start dosing
952	21-40	860	753.5	60.2	46.3	47.0	142.4	
1012	41-60	767.8	650.2	62.2	55.4	56.2	170.4	
1032	60-120	964.4	463.8	440.7	59.9	60.8	60.8	
1132	121-180	724.3	278.9	399.1	46.3	47.0	47.0	
1232	181-300	1011.7	394.6	555	62.1	63.0	31.5	
1432	301-420	939.8	620.9	256.5	62.4	63.4	31.7	
1632	421-631	924.8	702.6	183.6	38.6	39.2	11.2	
2002	stop						na	Water removed
932	(day 2) 0-150	701.4	286.3	259.3	155.8	158.5	63.4	Water provided at 932
1202	end						na	Euthanize at 1207

Continued

Figure A.1-Table A.3-Table A.4 APP. Continued

		Water Reservoir Wts (g)						
Time Start	Time Period (min)	Start	Finish	Waste	g drunk	mL/kg	mL/kg/hr	comments
Control Mallards								
B-31	**male**	**1.083 kg**	**1.047 kg**					
940	0-20	952	803.6	88.2	60.2	55.6	168.4	start dosing
1000	21-40	939.8	853.3	60.6	25.9	23.9	72.5	
1020	41-60	950.6	883.1	34.5	33	30.5	92.3	
1040	60-120	902	651	157.2	93.8	86.6	86.6	
1140	121-180	803.6	660.7	67.5	75.4	69.6	69.6	
1240	181-240	920	713.8	140.2	66	60.9	60.9	
1340	241-300	713.8	591.2	82	40.6	37.5	37.5	
1440	301-420	991.2	834.4	105.1	51.7	47.7	23.9	
1640	420-540	834.4	695.2	97.1	42.1	38.9	19.4	
1840	541-620	695.2	594.1	60	41.1	38.0	28.5	
2000	stop							Water removed
930	(day 2) 0-60	924.7	308.9	485.5	130.3	124.4	124.4	Water provided at 930
1030	61-180	1030.5	80.1	884.8	65.6	62.6	31.3	
1230	180-420	1019.2	577.3	322.2	119.7	114.3	28.6	
1630		end						Euthanize at 1926

Table A.5. APP

Treatment

Bird ID	**b-26**	**g-7**	**b-28**	**g-10**	**b-30**	**g-12**	**b-32**	**g-14**	**b-34**	**avg**
Start dosing	900	904	908	930	934	938	930	934	938	
Death	1038	1730	2009	1900 (next day)	1346	1200	1230 (next day)	1530	1137	
Time to Death (min)	98	506	661	2010	252	142	1620	356	119	304.9
Reason for Death	mortality	mortality	mortality	euthanized (survivor)	mortality	mortality	euthanized (survivor)	mortality	mortality	(w/out Survivors)

Controls

Bird ID	**g-6**	**b-27**	**g-8**	**b-29**	**g-11**	**b-31**	**g-13**	**b-33**	**g-15**
Start dosing	902	906	910	932	936	940	932	936	940
Death	1854	2122	2217	1409	1503	1926	1207	1649	1455
Time to Death (min)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reason for Death	euthanized	euthanized	euthanized	euthanized	euthanized	euthanized	euthanized	euthanized	euthanized

Table A.6. APP

	Body weights (g)											
Treatment	**b-26**	**g-7**	**b-28**	**g-10**	**b-30**	**g-12**	**b-32**	**g-14**	**b-34**	**avg**	**st. err.**	**sd**
hydrated	1080	912	936	982	1035	956	980	967	896	971.56	19.27	57.82
24 hr dehydrated-prior to dosing	1018	853	878	870	969	889	930	907	847	906.78	18.91	56.73
death	NC	777	813	835	929	NC	863	836	817	838.57	15.93	47.79
b.w. change from hydrated to death		-135	-123	-147	-106		-117	-131	-79	-119.71	7.42	22.25
% b.w. change from hydrated to death		-14.803	-13.141	-14.969	-10.242		-11.939	-13.547	-8.817	-12.49	0.77	2.31
b.w. change from initiation of dosing to death		-76	-65	-35	-40		-67	-71	-30	-54.86	6.37	19.11
% b.w. change from initiation of dosing to death		-8.910	-7.403	-4.023	-4.128		-7.204	-7.828	-3.542	-6.15	0.73	2.18
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-62	-59	-58	-112	-66	-67	-50	-60	-49	-64.78	6.25	18.75
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-5.741	-6.469	-6.197	-11.405	-6.377	-7.008	-5.102	-6.205	-5.469	-6.66	0.62	1.87
Controls	**g-6**	**b-27**	**g-8**	**b-29**	**g-11**	**b-31**	**g-13**	**b-33**	**g-15**	**avg**	**st. err.**	**sd**
hydrated	965	999	955	1129	898	1083	1058	1037	905	1003.22	26.58	79.73
24 hr dehydrated-prior to dosing	907	939	877	1063	840	1047	985	979	852	943.22	27.09	81.27
death	914	938	885	1090	840	1038	983	986	872	949.56	27.28	81.84
b.w. change from hydrated to death	-51	-61	-70	-39	-58	-45	-75	-51	-33	-53.67	4.60	13.81
% b.w. change from hydrated to death	-5.285	-6.106	-7.330	-3.454	-6.459	-4.155	-7.089	-4.918	-3.646	-5.38	0.48	1.45
b.w. change from initiation of dosing to death	7	-1	8	27	0	-9	-2	7	20	6.33	3.76	11.27
% b.w. change from initiation of dosing to death	0.772	-0.106	0.912	2.540	0.000	-0.860	-0.203	0.715	2.347	0.68	0.38	1.15
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-58	-60	-78	-66	-58	-36	-73	-58	-53	-60.00	4.02	12.07
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-6.010	-6.006	-8.168	-5.846	-6.459	-3.324	-6.900	-5.593	-5.856	-6.02	0.43	1.28

Table A.7. APP

ID	Dilution	TSP	Albumin	Globulin	A/G Ratio	Calcium	P	Glucose	ALP	CK	AST
B-29	1x	4.635	2.31	2.3	0.99	12.26	4.95	169.3	90.7	863.6	32
B-29	5x	1.04	0.56	0.5	1.17	2.61	1.17	38.6	18.7	196.6	8
	x5	5.2	2.8	2.5	1.17	13.05	5.85	193	93.5	983	40
	% of 1x dil	112.19%	121.21%	108.70%	118.18%	106.44%	118.18%	114.00%	103.09%	113.83%	125.00%
G-11	1x	3.956	2.08	1.9	1.11	11.87	6.9	243.9	51.1	663.3	24
G-11	5x	0.917	0.49	0.4	1.15	2.71	1.74	58.8	11.7	162	8
	x5	4.585	2.45	2	1.15	13.55	8.7	294	58.5	810	40
	% of 1x dil	115.90%	117.79%	105.26%	103.60%	114.15%	126.09%	120.54%	114.48%	122.12%	166.67%
G-15	1x	4.4	2.34	2.1	1.14	12.15	9.52	219.4	187.2	3006.3	64
G-15	4x	1.143	0.61	0.5	1.14	3.09	2.3	57	46.5	830.1	19
	x4	4.572	2.44	2	1.14	12.36	9.2	228	186	3320.4	76
	% of 1x dil	103.91%	104.27%	95.24%	100.00%	101.73%	96.64%	103.92%	99.36%	110.45%	118.75%
B-31	1x	4.206	2.35	1.9	1.27	12.25	6.24	195.4	70.8	279.1	33
B-31	4x	1.027	0.59	0.4	1.35	2.93	1.55	48.4	18.3	68.3	10
	x4	4.108	2.36	1.6	1.35	11.72	6.2	193.6	73.2	273.2	40
	% of 1x dil	97.67%	100.43%	84.21%	106.30%	95.67%	99.36%	99.08%	103.39%	97.89%	121.21%
G-13	1x	4.44	2.35	2.1	1.12	12.76	5.33	195.5	237.3	380.1	36
G-13	4x	1.014	0.52	0.5	1.05	2.97	1.34	46.9	46.6	90	11
	x4	4.056	2.08	2	1.05	11.88	5.36	187.6	186.4	360	44
	% of 1x dil	91.35%	88.51%	95.24%	93.75%	93.10%	100.56%	95.96%	78.55%	94.71%	122.22%

Continued

Table A.7. APP Continued.

ID	Dilution	TSP	Albumin	Globulin	A/G Ratio	Calcium	Phosphorus	Glucose	ALP	CK	AST
G-8	1x	3.707	1.91	1.8	1.06	12.51	10.76	296.4	181.7	931.4	25
G-8	4x	0.848	0.48	0.4	1.3	3.01	2.73	76.2	48.7	246.9	7
	x4	3.392	1.92	1.6	1.3	12.04	10.92	304.8	194.8	987.6	28
	% of 1x dil	91.50%	100.52%	88.89%	122.64%	96.24%	101.49%	102.83%	107.21%	106.03%	112.00%
B-27	1x	4.536	2.2	2.3	0.94	12.56	10.48	399.7	37	929.4	34
B-27	4x	1.159	0.61	0.5	1.11	3.2	2.65	106.1	10.7	255.5	8
	x4	4.636	2.44	2	1.11	12.8	10.6	424.4	42.8	1022	32
	% of 1x dil	102.20%	110.91%	86.96%	118.09%	101.91%	101.15%	106.18%	115.68%	109.96%	94.12%
B-33	1x	4.014	2.23	1.8	1.25	11.18	6.08	233	37.6	1586.5	42
B-33	4x	1.021	0.56	0.5	1.21	2.64	1.49	58.9	9.9	433.2	13
	x4	4.084	2.24	2	1.21	10.56	5.96	235.6	39.6	1732.8	52
	% of 1x dil	101.74%	100.45%	111.11%	96.80%	94.45%	98.03%	101.12%	105.32%	109.22%	123.81%

ID	Dilution	Uric Acid	Cholesterol	Sodium	K	Na/K Ratio	Chloride
B-29	1x	3.51	330.1	157.5	4.36	36.1	106
B-29	5x	0.68	72.9	36	0.95	37.9	22.4
	x5	3.4	364.5	180	4.75	37.9	112
	% of 1x dil	96.87%	110.42%	114.29%	108.94%	104.99%	105.66%

Continued

Table A.7. APP Continued

ID	Dilution	Uric Acid	Cholesterol	Sodium	K	Na/K Ratio	Chloride
G-11	1x	6.45	262.2	141.2	8.02	17.6	99.7
G-11	5x	1.44	61.9	34.8	1.81	19.2	22.8
	x5	7.2	309.5	174	9.05	19.2	114
	% of 1x dil	111.63%	118.04%	123.23%	112.84%	109.09%	114.34%
G-15	1x	6.49	299.5	151.6	5.19	29.2	102.7
G-15	4x	1.58	77.4	40.1	1.3	30.8	25.5
	x4	6.32	309.6	160.4	5.2	30.8	102
	% of 1x dil	97.38%	103.37%	105.80%	100.19%	105.48%	99.32%
B-31	1x	4.13	360.5	160.2	4.11	39	105.3
B-31	4x	0.93	88.6	38.8	0.95	40.8	23.9
	x4	3.72	354.4	155.2	3.8	40.8	95.6
	% of 1x dil	90.07%	98.31%	96.88%	92.46%	104.62%	90.79%
G-13	1x	4.59	286.7	160.2	4.55	35.2	107.4
G-13	4x	1.02	66.1	38.7	1.04	37.2	24.4
	x4	4.08	264.4	154.8	4.16	37.2	97.6
	% of 1x dil	88.89%	92.22%	96.63%	91.43%	105.68%	90.88%
G-8	1x	6.15	237.6	149.5	11.45	13.1	103.6
G-8	4x	1.49	59.1	38.9	2.78	14	25.3
	x4	5.96	236.4	155.6	11.12	14	101.2
	% of 1x dil	96.91%	99.49%	104.08%	97.12%	106.87%	97.68%

Continued

Table A.7. APP Continued.

ID	Dilution	Uric Acid	Cholesterol	Sodium	K	Na/K Ratio	Chloride
B-27	1x	6.97	312	143.7	15.57	9.2	101.9
B-27	4x	1.76	79.7	38.4	3.81	10.1	25.5
	x4	7.04	318.8	153.6	15.24	10.1	102
	% of 1x dil	101.00%	102.18%	106.89%	97.88%	109.78%	100.10%
B-33	1x	5.09	377.6	153.4	5.27	29.1	104.2
B-33	4x	1.15	94	39.5	1.3	30.4	25.1
	x4	4.6	376	158	5.2	30.4	100.4
	% of 1x dil	90.37%	99.58%	103.00%	98.67%	104.47%	96.35%

Table A.8. APP

ID	Correction Factor	TSP	Albumin	Globulin	A/G ratio	Calcium	Phosphorus	Glucose	ALP	CK	AST
SAMW Mortalities											
G-14	5	2.35	1.35	1	1.35	10.85	20.6	53.5	302.5	4032	340
B-30	10	4.35	2.5	2	1.35	10.3	13	20	133	12112	520
B-34	4	4.656	2.56	2	1.22	11.32	9.24	15.2	139.2	3593.6	320
SAMW Survivors											
B-32	1	2.937	1.65	1.3	1.28	11.81	7.58	211.9	69.8	275.7	26
G-10	4	3.056	1.48	1.6	3.76	12.68	9.6	269.2	145.2	1528	120
Controls											
B-29	5	5.2	2.8	2.5	1.17	13.05	5.85	193	93.5	983	40
G-11	5	4.585	2.45	2	1.15	13.55	8.7	294	58.5	810	40
G-15	4	4.572	2.44	2	1.14	12.36	9.2	228	186	3320.4	76
B-31	4	4.108	2.36	1.6	1.35	11.72	6.2	193.6	73.2	273.2	40
G-13	4	4.056	2.08	2	1.05	11.88	5.36	187.6	186.4	360	44
G-8	4	3.392	1.92	1.6	1.3	12.04	10.92	304.8	194.8	987.6	28
B-27	4	4.636	2.44	2	1.11	12.8	10.6	424.4	42.8	1022	32
B-33	4	4.084	2.24	2	1.21	10.56	5.96	235.6	39.6	1732.8	52

Continued

Table A.8. APP Continued.

ID	Correction Factor	Uric Acid	Cholesterol	Sodium	Potassium	Na/K ratio	Chloride
SAMW Mortalities							
G-14	5	100.9	192.5	161.5	9.3	17.4	89
B-30	10	82.6	408	117	15	7.8	98
B-34	4	55.72	510.8	126	5.8	21.7	87.2
SAMW Survivors							
B-32	1	15.8	264.3	173.5	3.51	49.4	113.3
G-10	4	38.12	258	158.4	5.52	114.8	100.4
Controls							
B-29	5	3.4	364.5	180	4.75	37.9	112
G-11	5	7.2	309.5	174	9.05	19.2	114
G-15	4	6.32	309.6	160.4	5.2	30.8	102
B-31	4	3.72	354.4	155.2	3.8	40.8	95.6
G-13	4	4.08	264.4	154.8	4.16	37.2	97.6
G-8	4	5.96	236.4	155.6	11.12	14	101.2
B-27	4	7.04	318.8	153.6	15.24	10.1	102
B-33	4	4.6	376	158	5.2	30.4	100.4

Table A.9, Table A.10. APP

B-31 (056-30750) Control

Slide 1 – Pancreas, lung, spleen, liver (mild portal infiltrate of mononuclear cells including lymphocytes and macrophages) and kidney -wnl
Slide 2 – Duodenum, jejunum, ileum-wnl
Slide 3 – Esophagus, testis, salt gland, pancreas – wnl
Slide 4 – Tongue, esophagus, trachea (mild mucosal heterophilic infiltrate), ventriculus – wnl
Slide 5 – Heart–wnl
Slide 6 – Brain – wnl
Slide 7 - Proventriculus -wnl

B-26 (056-30751) AMW

Slide 1. Lungs, liver (mild portal mononuclear infiltrate), kidney wnl. Spleen lymphoid necrosis noted within follicles (often observed in cases of severe stress)
Slide 2. Esophagus –wnl. Small intestine, some sections of jejunum exhibit increased mucus and coagulated protein (special stains negative for copper and calcium)on the surface.
Slide 3. Trachea (minimal mucosal heterophilic infiltrate), tongue –wnl.
Slide 4. Pancreas, testis – wnl. Proventriculus-congestion, increased mucus, (special stains negative for copper and calcium)
Slide 5. Heart - wnl
Slide 6. Brain – wnl
Slide 7. Erosion of kaolin layer and hemorrhage. Severe erosion of mucosa of proventriculus. There is a basophilic zone, midway through the eroded mucosal folds at the junction of proventriculus and ventriculus, suggestive of mineral

B-30 (056-30752) AMW

Slide 1. Liver , lungs, kidney-wnl. Spleen –minimal lymphoid necrosis
Slide 2. Small intestine –congestion (some sections show extensive autolysis). Esophagus, mineralization at the ostia of mucus glands. Mucous glands are ecstatic and filled with mucus. Vesicles containing mucous and serous fluid present in the keratinized layer.
Slide 3 Pancreas, testis, salt gland-wnl
Slide 4 Ventriculus-mild infiltrate of heterophils in foci of the superficial lamina propria of the mucosa. Kaolin layer is unremarkable. Tongue, esophagus, trachea (mild mucosal heterophilic infiltrate)-wnl
Slide 5. Heart-wnl
Slide 6 Brain –wnl.
Slide 7 Proventriculus, mucosa is denuded and cover with amorphous eosinophilic slightly granular debris, consistent with fibrin . Marked

Table A.9, Table A.10. APP Continued

congestion. Ventriculus is as above except there is erosion of kaolin at junction with proventriculus

B-32 (056-30753) AMW (survivor)

Slide 1 Lungs, spleen, kidney, liver (mild portal mononuclear infiltrate) -wnl.
Slide 2. Duodenum, jejunum, ileum-wnl
Slide 3. Salt glands, testis, pancreas-wnl
Slide 4. Tongue, esophagus, trachea-wnl. Ventriculus, ventriculitis, focally extensive degeneration of kaolin with accumulation of degenerate heterophils in the degenerative kaolin (IMAGE-2)
Slide 5. Heart-wnl
Slide 6. Brain –wnl
Slide 7. Proventriculus, marked congestion, Villi are lined by flattened attenuated epithelium suggestive of repair and regeneration (IMAGE-3). In other areas the lining is columnar (normal) but the crypts appear to be hyperplastic. Ventriculus, erosion of kaolin and hemorrhage.

B28 (056-30754) AMW

Slide 1 Spleen, mild lymphoid necrosis. Pancreas, liver (mild portal mononuclear infiltrates), and lungs –wnl
Slide 2. Small intestine (small necrotic areas at tips of villi in some sections. These are areas of coagulative necrosis in the lamina propria and overlying epithelium appears viable) and pancreas –wnl
Slide 3. Salt gland, testis -wnl
Slide 4. Trachea, mucosal congestion, hemorrhage and sloughing. Numerous heterophils in mucus in the lumen. Ventriculus- extensive ulceration and erosion of kaolin layer with hemorrhage and heterophilic ventriculitis (IMAGE-4).
Slide 5. Heart – wnl
Slide 6. Brain – wnl
Slide 7. Proventriculus, mucosal epithelium is denuded, there is marked submucosa congestion and hemorrhage. Necrotic cells are present the crypts. (This might represent the earliest damage to the mucosa of proventriculus). The lesion extends to the junction of ventriculus and proventriculus (IMAGE-5).

B33 (056-30755) Control

Slide 1. Kidney, liver (minimal portal mononuclear infiltrates), spleen, lungs-wnl .
Slide 2. Pancreas, duodenum, jejunum, ileum –wnl
Slide 3. Testis, salt gland, proventriculus (IMAGE -6), tongue –wnl
Slide 4. Ventriculus (IMAGE -7), trachea, esophagus-wnl
Slide5. Heart –wnl
Slide6. Brain- wnl

Table A.9, Table A.10. APP Continued

B34 (056-30756) AMW

Slide 1. Kidney, liver (mild portal mononuclear infiltrates), lungs – wnl. Spleen minimal necrosis in follicles,

Slide 2. Pancreas, jejunum (congestion), duodenum, ileum-wnl. Proventriculus – abundant mucous (special stains negative for copper and calcium) on surface and congestion

Slide 3. Testis and salt gland –wnl

Slide 4. Trachea (mild mucosal heterophilic infiltrate), esophagus, tongue –wnl. Ventriculus- minimal heterophilic infiltrates into the submucosa and kaolin layer at the junction with glandular epithelium. Separation of the kaolin layer from the epithelium in this area (artifact cannot be ruled out).

Slide 5. Heart-wnl

Slide 6. Brain –wnl

Slide 7. Proventriculus, mucosa is denuded and surface covered by amorphous exudate. Also the connective tissue fibers of mucosal scaffold are hyperbasophilic (special stains negative for copper and calcium)

B29 (056-30757) Control

Slide 1. Lung, kidney, liver (mild portal mononuclear infiltrates) - wnl. Spleen some necrosis.

Slide 2. Pancreas, duodenum, jejunum, ileum-wnl

Slide 3. Testis (immature), salt glands-wnl

Slide 4. Ventriculits, minimal heterophilic infiltrate into superficial submucosa. trachea (moderate mucosal heterophilic infiltrates), tongue, esophagus-wnl

Slide 5. Heart-wnl

Slide 6. Brain – wnl

Slide 7. Proventriculus - wnl

G-7 (056-30758) (AMW)

Slide 1. Liver (portal infiltrate), lungs, kidney-wnl

Slide 2. Pancreas, duodenum, jejunum, ileum-wnl

Slide 3. Salt gland-wnl

Slide 4. Tongue, trachea –wnl. Ventriculus – mild heterophilic infiltration in lamina propria.

Slide 5. Heart- wnl

Slide 6. Brain-wnl

Slide 7. Proventriculus, mucosa is denuded and there is abundant congestion, hemorrhage and mild heterophilic infiltrate in the submucosa. Ventriculus, kaolin layer is separating from the glandular layer at junction of ventriculus and proventriculus. Abundant hemorrhage and moderate heterophilic inflammation (IMAGE – 8).

Table A.9, Table A.10. APP Continued

G 10 (056-30759) AMW survivor

Slide 1. Lungs one granuloma present, most likely incidental finding. Liver, vacuolar change and mild portal mononuclear infiltrate. Kidney-wnl
Slide 2. Eosphagus, heterophilic inflammation in mucous glands. Bluish discoloration at ostia of some glands. Vesicles filled with serous or mucous fluid in keratinized layer. Duodenum, pancreas, ileum, jejunum –wnl
Slide 3. Spleen, salt gland, proventriculus –wnl
Slide 4. Trachea (mild heterophilic infiltrate), tongue-wnl. Esophagus, same as in slide 2. Ventriculus multifocal erosion and loss of kaolin layer with subjacent necrosis and heterophilic inflammation.
Slide 5. Heart-wnl
Slide 6. Brain-wnl
Slide 7. Proventriculus, mucosal lining is attenuated multifocally (lining epithelial cells are flattened indicating some cell loss and attempt at reepithelization of the surface. Ventriculus, heterophilic inflammation and extensinsive hemorrhage in submucosa. The kaolin layer has separated from glandular layer at junction of proventriculus and ventriculus.

B27 (056-30760) Control

Slide 1. Lungs, liver (mild portal mononuclear infiltrate), kidney-wnl
Slide 2. Proventriculus, pancreas, duodenum, jejunum, ileum-wnl.
Slide 3. Spleen, testis, salt gland-wnl.
Slide 4. Trachea, heterophilic infiltrate in the submucosa (marked). Tongue and ventriculus –wnl.
Slide 5. Heart-wnl
Slide6. Brain-wnl

G8 (056-30761) (control)

Slide 1. Liver (mild portal mononuclear infiltrate), lungs, kidney-wnl
Slide 2. Pancreas, duodenum jejunum, ileum-wnl.
Slide 3. Spleen, minimal lymphoid necrosis. Proventriculus, salt gland-wnl.
Slide 4. Tongue, small pustule composed of degenerate heterophils noted in deep squamous mucosa and numerous heterophils in dermis and some translocating through the squamous mucosa. Trachea (moderate mucosal heterophilic infiltrate), ventriculus –wnl.
Slide 5. Heart-wnl
Slide 6. Brain-wnl

G-15 (056-30762) control

Slide 1. Liver (mild portal mononuclear infiltrate), kidney, lungs–wnl

Table A.9, Table A.10. APP Continued

Slide 2. Proventricilus, pancreas, duodenum, jejunum, ileum
Slide 3. Spleen, salt gland-wnl
Slide 4. Tongue, ventriculus –wnl
Slide 5. Heart-wnl
Slide 6. Brain-wnl

G-14 (056-30763) AMW

Slide 1. Liver, kidney, lungs –wnl
Slide 2. Pancreas, duodenum(congestion), jejunum, ileum –wnl.
Slide 3. Esophagus, minimal heterophilic infiltrate in and around mucous glands. Trachea (mild mucosal heterophilic infiltrate) and salt glands –wnl. Spleen, mild lymphoid necrosis
Slide 4. Tongue-wnl. Ventriculus –erosion and loss of kaolin layer with extensive hemorrhage and heterophilic inflammation in the mucosa.
Slide 5. Heart-wnl
Slide 6. Brain-wnl.
Slide 7. Proventriculus, Area of ulceration and intense heterophilic inflammation at junction of proventriculus and esophagus (in the squamous mucosa)(IMAGE-9). The mucosa of proventriculus is denuded and covered by amorphous debris and scaffolding of submucosa is basophilic (mineralized).

G-12 (056-30764) AMW

Slide 1. Liver, lungs, kidney-wnl
Slide 2. Pancreas, duodenum, jejunum, ileum, marked congestion and loss of mucosal epithelium (autolysis).
Slide 3. Esophagus, mineralization and necrosis with heterophilic infiltration at multiple foci in the mucosa (IMAGE-10). These foci are centered mucous glands. Salt gland and spleen – wnl.
Slide 4. Ventriculus, trachea and tongue –wnl.
Slide 5. Heart-wnl
Slide 6. Brain –wnl
Slide 7. Proventriculus. Multifocally the superficial submucosa is basophilic, clear line of demarcation between affected and non-affected deeper submucosa.

G-11 (056-30765) Control

Slide 1. Liver (mild portal mononuclear infiltrate), lungs, kidney –wnl
Slide 2. Pancreas, duodenum, jejunum, ileum –wnl
Slide 3. Salt gland and spleen -wnl
Slide 4. Trachea (moderate mucosal heterophilic infiltrate), tongue, esophagus (IMAGE-11), ventriculus-wnl

Table A.9, Table A.10. APP Continued

Slide 5. Heart-wnl
Slide 6. Brain –wnl.
Slide 7. Proventriculus – wnl.

G-13 (056-30766) Control
Slide 1. Liver (mild portal mononuclear infiltrates), lungs and kidney –wnl
Slide 2. Pancreas, duodenum jejunum, ileum-wnl
Slide 3. Salt glands, proventriculus, esophagus, spleen –wnl
Slide 4. Trachea, (mild heterophilic infiltration into mucosa) ventriculus, tongue-wnl.
Slide 5. Heart-wnl

G-6 (056-30767) Control
Slide 1. Liver (portal infiltrates), lungs and kidney-wnl
Slide 2. Pancreas, duodenum, jejunum, ileum –wnl.
Slide 3. Salt glands, spleen –wnl
Slide 4. Tongue, ventriculus, trachea (mild portal heterophilic infiltrate) –wnl.
Slide 5. Heart-wnl
Slide 6. Brain –wnl.
Slide 7. Proventriculus, wnl.

Table A.9, Table A.10. APP Continued

Animal #	Esophagus	Proventriculus	Ventriculus	Spleen
B-31 056-30750	-	-	-	--
B-26 056-30751	-	+	+	+
B-30 056-30752	+	+	+	+
B-32 056-30753*	-	+	+	-
B-28 056-30754	Not examined	+	+	+
B33 056-30755	-	-	-	-
B34 056-30756	-	+	+	+
B29 056-30757	-	-	+	+
G7 056-30758	Not examined	+	+	Not examined
G10 056-30759*	+	+	+	-
B27 056-30760	Not examined	-	-	-
G8 056-30761	Not examined	-	-	+
G15 056-30762	Not examined	-	-	-
G-14 056-30763	+	+	+	+
G12 056-30764	+	+	-	-
G11 056-30765	-	-	-	-
G13 056-30766	-	-	-	-
G6 056-30767	-	-	-	-

* indicates a treated survivor

Table A.9, Table A.10. APP Continued

Changes in the ventriculus

Animal #	Erosion or ulceration of kaolin	Heterophilic inflammation	Congestion and hemorrhage
B-26 056-30751	+	-	+
B-30 056-30752	+	+	+
B-32 056-30753*	+	+	+
B-28 056-30754	+	+	+
B34 056-30756	+/-	+	-
B29 056-30757	-	+	-
G7 056-30758	+	+	+
G10 056-30759*	+	+	+
G-14 056-30763	+	+	+
G12 056-30764	-	-	-

Table A.11. APP

Liver Metals (ug/g)

	Bird ID	Cu	Zn	Mg	Fe	Mn
c	b-33 liver	86.5	61.0	289.3	1411.2	6.0
c	b-29 liver	143.4	72.6	291.4	787.0	4.5
c	g-8 liver	50.4	59.3	321.5	1915.4	5.1
c	g-6 liver	153.0	58.6	332.0	1282.5	5.6
c	b-27 liver	144.4	59.7	318.3	976.6	5.0
c	g-13 liver	99.0	46.3	298.7	1354.2	4.3
c	b-31 liver	524.4	53.0	267.6	1245.8	4.8
c	g-11 liver	88.2	52.7	301.7	2672.2	6.9
c	g-15 liver	116.1	69.9	281.0	856.2	5.7
	avg	**156.2**	**59.2**	**300.1**	**1389.0**	**5.3**
	st dev	**142.1**	**8.2**	**20.7**	**588.8**	**0.8**
t	b-28 liver	189.7	80.6	282.6	1068.9	16.1
t	b-26 liver	221.2	57.5	354.6	1764.9	14.4
t	g-14 liver	242.9	39.2	294.8	1418.6	14.2
t	b-32 liver	406.6	75.6	289.6	848.9	9.4
t	g-7 liver	98.5	52.8	227.8	557.6	16.2
t	b-30 liver	390.6	63.2	297.7	1740.5	10.1
t	g-10 liver	247.3	63.8	242.8	648.7	9.8
t	b-34 liver	249.4	66.9	306.2	952.7	17.7
t	g-12 liver	81.1	43.3	258.2	350.9	13.7
	avg	**236.4**	**60.3**	**283.8**	**1039.1**	**13.5**
	st dev	**111.0**	**13.7**	**37.6**	**508.1**	**3.1**

Table A.11. APP Continued

Kidney Metals (ug/g)

	Bird ID	Cu	Zn	Mg	Fe	Mn
c	b-33	8.3	22.1	248.8	160.7	3.9
c	b-29	8.5	26.5	274.7	161.9	4.3
c	g-8	5.8	20.2	276.8	124.4	3.7
c	g-6	8.7	22.7	263.9	158.7	6.0
c	b-27	8.1	21.6	259.0	164.4	4.2
c	g-13	5.2	20.5	200.6	152.0	2.1
c	b-31	7.6	19.7	273.4	148.6	3.6
c	g-11	6.3	21.8	206.8	164.7	2.6
c	g-15	9.4	21.2	228.6	94.5	4.9
	avg	**7.5**	**21.8**	**248.1**	**147.8**	**3.9**
	st dev	**1.4**	**2.0**	**29.3**	**23.6**	**1.2**
t	b-28	28.2	32.1	304.5	121.5	11.9
t	b-26	41.8	29.5	337.5	245.4	16.0
t	g-14	50.1	26.6	304.8	244.8	12.8
t	b-32	11.9	21.7	246.9	182.7	4.7
t	g-7	50.5	21.4	288.6	152.2	13.0
t	b-30	59.5	37.4	322.3	208.7	22.6
t	g-10	29.8	28.4	293.6	164.4	11.3
t	b-34	35.4	29.9	188.2	232.3	12.3
t	g-12	36.0	23.8	339.7	205.4	14.5
	avg	**38.1**	**27.9**	**291.8**	**195.3**	**13.2**
	st dev	**14.3**	**5.2**	**48.0**	**43.3**	**4.7**

Table A.11. APP Continued

Blood (ug/g)

	Bird ID	Cu	Zn	Mg	Fe	Mn
c	b-33	1.7	2.9	85.4	416.0	BQL *
c	b-29	1.8	4.0	74.1	429.2	BQL
c	g-8	1.5	4.1	84.6	418.8	BQL
c	g-6	4.1	10.1	105.8	432.0	BQL
c	b-27	1.7	4.0	102.0	425.9	BQL
c	g-13	1.8	4.1	129.1	391.2	BQL
c	b-31	1.5	3.8	86.7	465.5	BQL
c	g-11	1.6	4.7	129.9	412.7	BQL
c	g-15	2.2	12.9	95.2	423.4	BQL
	avg	**2.0**	**5.6**	**99.2**	**423.9**	**NQ ****
	st dev	**0.8**	**3.4**	**19.7**	**19.7**	
t	b-28	24.8	8.0	120.5	538.8	BQL
t	b-26	64.9	19.8	133.9	653.5	BQL
t	g-14	28.8	8.5	138.8	625.2	BQL
t	b-32	1.8	7.0	132.2	600.2	BQL
t	g-7	43.1	10.9	161.0	559.1	BQL
t	b-30	71.4	22.3	162.1	672.6	BQL
t	g-10	5.0	6.7	113.6	525.4	BQL
t	b-34	45.2	12.9	127.7	647.3	BQL
t	g-12	43.3	19.5	160.3	729.7	BQL
	avg	**36.5**	**12.8**	**138.9**	**616.9**	**NQ**
	st dev	**23.9**	**6.1**	**18.2**	**67.3**	

* BQL – Below quantifiable level ** NQ – Not quantifiable

Table A.11. APP Continued

Bile Metals (ug/g)						
		Cu	**Zn**	**Mg**	**Fe**	**Mn**
c	b-33	73.9	BQL	202.1	11.1	BQL
c	b-29	52.6	2.2	264.0	6.4	BQL
c	g-8	24.0	BQL	157.6	3.7	BQL
c	g-6	30.0	BQL	156.1	4.9	BQL
c	b-27	17.5	BQL	210.0	4.5	BQL
c	g-13	37.7	1.1	177.8	28.1	BQL
c	b-31	30.3	BQL	201.0	4.5	BQL
c	g-11	44.0	BQL	215.8	5.7	3.9
c	g-15	44.3	BQL	140.7	4.2	BQL
	avg	**39.4**	**NQ**	**191.7**	**8.1**	**NQ**
	st dev	**17.0**		**38.0**	**7.8**	
t	b-28	116.7	1.8	206.8	11.9	59.1
t	b-26	40.0	BQL	139.3	5.8	2.0
t	g-14	55.4	BQL	239.6	8.1	37.3
t	b-32	62.6	BQL	137.9	8.8	8.0
t	g-7	129.8	BQL	285.9	14.5	134.2
t	b-30	61.0	2.2	282.3	10.8	7.9
t	g-10	174.3	BQL	263.5	12.7	88.1
t	b-34	51.4	BQL	120.8	6.4	2.0
t	g-12	39.8	BQL	149.3	3.5	2.0
	avg	**81.2**	**NQ**	**202.8**	**9.2**	**37.9**
	st dev	**47.5**		**67.2**	**3.6**	**47.3**

Table B.2. APP

	Body weights (g)										
Treatment	**Y-4**	**R-30**	**R-31**	**Y-1**	**R-27**	**Y-3**	**R-34**	**Y-8**	**R-32**	**avg**	**sd**
hydrated	1099.1	840	983	1144	842	1265	989	1004	959	1013.9	137.7
24 hr dehydrated-prior to dosing	1036	787	917	1057	794	1194	931	965	928	956.6	128.0
death	930	704	790	889	716	983	826	890	817	838.3	93.9
b.w. change from hydrated to death	-169	-136	-193	-255	-126	-282	-163	-114	-142	-175.6	58.2
% b.w. change from hydrated to death	-15.4	-16.2	-19.6	-22.3	-15.0	-22.3	-16.5	-11.4	-14.8	**-17.0**	**3.7**
b.w. change from initiation of dosing to death	-106	-83	-127	-168	-78	-211	-105	-75	-111	-118.2	45.1
% b.w. change from initiation of dosing to death	-10.2	-10.5	-13.8	-15.9	-9.8	-17.7	-11.3	-7.8	-12.0	**-12.1**	**3.1**
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-63	-53	-66	-87	-48	-71	-58	-39	-31	-57.3	17.0
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-5.7	-6.3	-6.7	-7.6	-5.7	-5.6	-5.9	-3.9	-3.2	**-5.6**	**1.3**
Controls	**R-29**	**Y-5**	**Y-6**	**R-26**	**Y-2**	**R-28**	**R-33**	**Y-7**	**Y-9**	**avg**	**sd**
hydrated	906	1011	1029	829	1049	1171	940	1156	995	1009.6	110.6
24 hr dehydrated-prior to dosing	847	958	973	758	962	1088	920	1126	1000	959.1	112.3
death	825	929	933	732	921	1069	887	1096	958	927.8	111.7
b.w. change from hydrated to death	-81	-82	-96	-97	-128	-102	-53	-60	-37	-81.8	28.0
% b.w. change from hydrated to death	-8.9	-8.1	-9.3	-11.7	-12.2	-8.7	-5.6	-5.2	-3.7	**-8.2**	**2.9**
b.w. change from initiation of dosing to death	-22	-29	-40	-26	-41	-19	-33	-30	-42	-31.3	8.4
% b.w. change from initiation of dosing to death	-2.6	-3.0	-4.1	-3.4	-4.3	-1.7	-3.6	-2.7	-4.2	**-3.3**	**0.9**
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-59	-53	-56	-71	-87	-83	-20	-30	5	-50.4	30.3
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-6.5	-5.2	-5.4	-8.6	-8.3	-7.1	-2.1	-2.6	0.5	**-5.0**	**3.1**

Table B.3. APP

ID	TSP	Albumin	Globulin	A/G ratio	Calcium	Phosphorus	Glucose	ALP	CK	AST	Uric Acid
NAMW											
y-4	3.054	1.75	1.3	1.3	11.23	6.68	241	101.5	481.8	39	9.34
r-30	3.427	1.88	1.5	1.2	11.83	6.88	197.1	144.4	9724	229	6.89
y-1	2.853	1.61	1.2	1.3	12.2	5.56	394.7	30.7	540.6	89	30.96
r-27	3.29	1.83	1.5	1.3	12.12	7.4	294.8	151.4	466.2	65	14.79
y-3	4.125	2.4	1.7	1.4	14.46	9.02	403.7	83.7	884.3	176	41
r-32	4.084	2.17	1.9	1.1	13.71	7.41	239	108.1	431.1	43	15.12
y-8	3.463	1.93	1.5	1.3	12.76	6.51	220.3	148.8	161.4	25	8.89
Controls											
r-29	4.055	2.27	1.8	1.3	12.83	4.35	185.3	79.5	149.6	12	5.55
y-5	3.633	2.12	1.5	1.4	11.56	5.18	176.6	45.2	463.4	72	5.64
y-6	3.633	2.12	1.5	1.4	11.56	5.18	176.6	45.2	463.4	72	5.64
r-26	4.376	2.33	2	1.1	12.6	6.04	199.8	102	767.7	155	5.61
y-2	4.389	2.6	1.8	1.5	12.9	4.98	166.6	71	530.5	71	4.55
r-28	4.056	2.12	1.9	1.1	14.07	7.13	172.4	44.9	498	80	9.83
y-7	4.781	2.05	2.7	0.8	12.88	5.95	160.6	45.9	298.7	39	3.74
r-33	4.425	2.3	2.1	1.1	14.86	6.57	173.3	66.7	1006.7	107	2.74
y-9	3.846	2.3	1.5	1.5	11.93	6.11	201.6	89.1	990.3	134	2.74

Continued

Table B.3. APP Continued.

ID	Cholesterol	Sodium	Potassium	Chloride
NAMW				
y-4	250.1	169.1	3.81	116.1
r-30	251.3	170.6	5.7	116.9
y-1	311.8	169	5.93	132.6
r-27	287.7	171.8	5.58	127.1
y-3	556.7	168.1	5.85	126.2
r-32	311.2	166.8	4.67	113
y-8	302.8	169.1	5.04	117
Controls				
r-29	279.7	157.5	3.55	107.9
y-5	334.5	163.9	3.91	110.9
y-6	334.5	163.9	3.91	110.9
r-26	300.4	158.2	4.38	105.7
y-2	411.6	156.9	4.43	103.1
r-28	247.9	162.7	4.28	107
y-7	272.1	156.4	4.52	106.4
r-33	282.1	158.1	4.75	104.1
y-9	373.6	160.4	4.24	107.6

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
BL-15		Body mass (kg)									
SAMW	male	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb		
		1.145	1.125	1.059	1.045	1.025	1.057	1.145	1.089		
9-Feb	919			126.7	78.4	14.9	33.4	27.8		start-AMW	
9-Feb	934	0.92	0.92	92.6	78.7	3.2	10.7	8.9	40.0	AMW	36.7
9-Feb	1014	1.92	1	1026.7	751.8	120.2	154.7	135.1	135.1	clean	135.1
9-Feb	1114	2.92	1	751.8	486.8	105.5	159.5	139.3	139.3	clean	139.3
9-Feb	1214	4.92	2	948.9	462.5	355.0	131.4	114.8	57.4	clean	114.8
9-Feb	1414	6.92	2	914.4	624.7	269.2	20.5	17.9	9.0	clean	17.9
9-Feb	1614	8.92	2	624.7	422.4	121.0	81.3	71.0	35.5	clean	71.0
9-Feb	1814	23.92	15	1007.9	80.0	767.5	160.4	140.1		clean	140.1
10-Feb	914			1074.8	79.8	707.4	287.6	255.6			
10-Feb	1814	47.92	24	1035.7	795.5	162.0	78.2	69.5			325.2
11-Feb	914			795.5	103.2	519.3	173.0	163.4			
11-Feb	1510			994.3	599.2	303.4	91.7	86.6			
11-Feb	1824	71.92	24	982.8	97.2	690.9	194.7	183.9			433.8
12-Feb	914			1021.2	387.8	509.7	123.7	118.4			
12-Feb	1852	95.92	24	1005.4	94.2	810.2	101.0	96.7			215.0
13-Feb	914			985.6	383.0	424.7	177.9	173.6			
13-Feb	1717	119.92	24	1043.2	79.8	697.5	265.9	259.4			433.0
14-Feb	914			924.4	223.7	423.6	277.1	262.2			
14-Feb	1725	143.92	24	1053.5	79.9	678.1	295.5	279.6			541.7
15-Feb	914			1004.3	238.8	344.6	420.9	367.6			
15-Feb	1705	167.92	24	1009.9	79.8	650.3	279.8	244.4			612.0

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
BL-15 (cont.)		Body mass (kg)									
SAMW	male	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb		
		1.145	1.125	1.059	1.045	1.025	1.057	1.145	1.089		
16-Feb	914			1035.6	881.5	106.3	47.8	43.9			
16-Feb	1022			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
BL-14		Body weight (kg)									
SAMW	male	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb		
		1.212	1.281	1.27	1.283	1.254	1.243	1.263	1.213		
9-Feb	921	0.92	0.92	126.4	79.0	19.5	27.9	21.9	23.9	start-AMW	21.9
9-Feb	1016	1.92	1	904.8	760.0	40.9	103.9	85.7	85.7	clean	85.7
9-Feb	1116	2.92	1	760.0	700.6	38.2	21.2	17.5	17.5	clean	17.5
9-Feb	1216	4.92	2	700.6	699.1	1.3	0.2	0.2	0.1	clean	0.2
9-Feb	1416	6.92	2	699.1	569.6	89.9	39.6	32.7	16.3	clean	32.7
9-Feb	1616	8.92	2	569.6	476.6	57.1	35.9	29.6	14.8	clean	29.6
9-Feb	1816	23.92	15	905.2	79.7	682.6	142.9	117.9		clean	117.9
10-Feb	916			939.2	79.6	498.4	361.2	282.0			
10-Feb	1817	47.92	24	918.2	79.3	684.7	154.2	120.4			402.3
11-Feb	916			947.3	267.0	324.0	356.3	280.6			
11-Feb	1827			918.2	225.8	426.1	266.3	209.7			
12-Feb	916	71.92	24	913.5	329.9	390.1	193.5	150.8			490.2
12-Feb	1854			937.3	217.1	483.3	236.9	184.6			
13-Feb	916	95.92	24	906.7	191.7	403.2	311.8	248.6			335.5
13-Feb	1719			899.0	79.3	638.3	181.4	144.7			
14-Feb	916	119.92	24	930.8	309.3	359.5	262.0	210.8			393.3
14-Feb	1727			883.2	79.4	615.3	188.5	151.6			
15-Feb	916	143.92	24	986.9	370.8	352.6	263.5	208.6			362.4
15-Feb	1707			963.5	79.9	573.8	309.8	245.3			
16-Feb	916	167.92	24	906.1	454.3	291.4	160.4	132.2			453.9
16-Feb	1330			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
RE-15		Body weight (kg)									
SAMW	female	9-Feb	10-Feb	11-Feb	12-Feb						
		1.09	1.169	1.16	1.058						
9-Feb	925	0.92	0.92	127.1	79.7	22.1	25.3	22.1	24.1	start-AMW	22.1
9-Feb	1020	1.92	1	954.6	890.1	31.7	32.8	30.1	30.1	clean	30.1
9-Feb	1120	2.92	1	890.1	831.3	24.6	34.2	31.4	31.4	clean	31.4
9-Feb	1220	4.92	2	831.3	748.6	17.9	64.8	59.4	29.7	clean	59.4
9-Feb	1420	6.92	2	748.6	661.6	18.9	68.1	62.5	31.2	clean	62.5
9-Feb	1620	8.92	2	661.6	557.1	32.4	72.1	66.1	33.1	clean	66.1
9-Feb	1820	23.92	15	924.0	870.6	20.6	32.8	30.1		clean	30.1
10-Feb	920			870.6	129.6	260.6	480.4	410.9			
10-Feb	1820	47.92	24	904.1	78.9	568.6	256.6	219.5			630.5
11-Feb	920			896.7	317.7	219.4	359.6	310.0			
11-Feb	1828	71.92	24	935.2	78.7	489.0	367.5	316.8			626.8
12-Feb	920			885.5	586.1	192.3	107.1	101.2			
12-Feb	1100			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
BL-12		Body weight (kg)									
SAMW	male	9-Feb	10-Feb	11-Feb	12-Feb						
		1.139	1.175	1.187	1.142						
9-Feb	929			127.9	79.8	24.9	23.2	19.4		start-AMW	
9-Feb	938	0.92	0.92	100.5	79.5	6.5	14.5	12.1	34.4	AMW	31.5
9-Feb	1024	1.92	1	1006.8	883.7	46.3	76.8	67.4	67.4	clean	67.4
9-Feb	1124	2.92	1	883.7	750.5	46.2	87.0	76.4	76.4	clean	76.4
9-Feb	1224	4.92	2	750.5	688.2	12.9	49.4	43.4	21.7	clean	43.4
9-Feb	1424	6.92	2	688.2	659.1	7.8	21.3	18.7	9.4	clean	18.7
9-Feb	1624	8.92	2	659.1	657.6	1.2	0.3	0.3	0.1	clean	0.3
9-Feb	1824	23.92	15	657.6	285.8	182.2	189.6	166.5		clean	166.5
10-Feb	924			1009.1	556.8	66.3	386.0	328.5			
10-Feb	1822	47.92	24	1040.5	665.4	17.8	357.3	304.1			632.6
11-Feb	924			1008.3	365.8	276.5	366.0	308.3			
11-Feb	1833	71.92	24	993.4	867.3	4.0	122.1	102.9			411.2
12-Feb	924			867.3	588.0	123.6	155.7	136.3			
12-Feb	1345			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g)			g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
				Start (g)	Finish (g)	Spilled (g)					
BL-5		Body weight (kg)									
control	male	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb		
		1.053	1.046	1.032	1.013	1.003	1.046	1.173	1.03		
9-Feb	1015	1	1	912.1	649.5	140.1	122.5	116.3	116.3	clean	116.3
9-Feb	1115	2	1	1004.7	728.7	161.2	114.8	109.0	109.0		109.0
9-Feb	1215	4	2	728.7	604.6	39.0	85.1	80.8	40.4		80.8
9-Feb	1415	6	2	604.6	325.0	130.1	149.5	142.0	71.0		142.0
9-Feb	1615	8	2	962.2	728.2	176.5	57.5	54.6	27.3		54.6
9-Feb	1815	24	15	728.2	136.2	275.9	316.1	300.2			300.2
10-Feb	915			962.8	356.1	386.2	220.5	210.8			
10-Feb	1825	48	24	1008.6	201.8	561.4	245.4	234.6			445.4
11-Feb	915			1018.8	272.5	548.6	197.7	191.6			
11-Feb	1835	72	24	949.4	516.8	219.5	213.1	206.5			398.1
12-Feb	915			1032.1	589.1	302.1	140.9	139.1			
12-Feb	1856	96	24	992.8	461.3	374.7	156.8	154.8			293.9
13-Feb	915			951.1	537.0	311.3	102.8	102.5			
13-Feb	1726	120	24	1016.1	567.1	267.8	181.2	180.7			283.2
14-Feb	915			1028.9	190.9	552.1	285.9	273.3			
14-Feb	1731	144	24	965.7	340.6	411.9	213.2	203.8			477.2
15-Feb	915			1000.5	554.5	175.4	270.6	230.7			
15-Feb	1710	168	24	1008.9	255.4	404.0	349.5	298.0			528.6
16-Feb	915			1016.5	803.8	153.2	59.5	57.8			
16-Feb	1150			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
RE-7		Body weight (kg)									
control	female	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb		
		1.053	1.046	1.032	1.013	1.003	1.046	1.173	1.03		
9-Feb	1019	1	1	1020.5	734.7	199.4	86.4	82.1	82.1	clean	82.1
9-Feb	1119	2	1	937.4	755.0	132.8	49.6	47.1	47.1		47.1
9-Feb	1219	4	2	755.0	600.4	97.6	57.0	54.1	27.1		54.1
9-Feb	1419	6	2	899.3	771.1	80.3	47.9	45.5	22.7		45.5
9-Feb	1619	8	2	771.1	702.1	25.1	43.9	41.7	20.8		41.7
9-Feb	1819	24	15	702.1	546.1	32.3	123.7	117.5	117.5		117.5
10-Feb	919			955.6	475.1	296.4	184.1	176.0			
10-Feb	1831	48	24	932.1	726.4	37.3	168.4	161.0			337.0
11-Feb	919			726.4	533.2	19.4	173.8	168.4			
11-Feb	1837	72	24	993.2	745.3	118.3	129.6	125.6			294.0
12-Feb	919			1012.5	779.8	73.2	159.5	127.9			
12-Feb	1859	96	24	779.8	565.2	67.9	146.7	157.5			285.4
13-Feb	919	120	24	1012.5	631.3	103.7	277.5	146.3			146.3
14-Feb	919	144	24	1051.0	252.8	477.8	320.4	265.3			265.3
15-Feb	919	168	24	984.6	291.9	356.4	336.3	273.1			273.1
16-Feb	919			890.7	755.6	77.2	57.9	326.5			
16-Feb	1600			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
BL-10		Body weight (kg)									
control	male	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb		
		0.984	1.052	1.035	1.035	1.034	1.032	1.08	1.009		
9-Feb	1023	1	1	966.8	663.6	193.3	109.9	111.7	111.7	clean	111.7
9-Feb	1123	2	1	866.1	588.4	198.1	79.6	80.9	75.6		80.9
9-Feb	1223	4	2	867.9	615.3	127.5	125.1	127.1	63.6		127.1
9-Feb	1423	6	2	615.3	411.0	109.5	94.8	96.3	48.2		96.3
9-Feb	1623	8	2	850.6	632.0	127.2	91.4	92.9	46.4		92.9
9-Feb	1823	24	15	632.0	175.2	252.0	204.8	208.1			208.1
10-Feb	923			923.5	79.9	610.0	233.6	222.1			
10-Feb	1834	48	24	884.3	207.2	350.4	326.7	310.6			532.6
11-Feb	923			927.5	168.5	415.1	343.9	332.3			
11-Feb	1839	72	24	924.5	487.0	163.4	274.1	264.8			597.1
12-Feb	923			872.9	825.8	36.2	10.9	10.5			
12-Feb	1901	96	24	825.8	494.3	171.0	160.5	155.1			165.6
13-Feb	923			984.0	273.0	378.4	332.6	321.7			
13-Feb	1730	120	24	848.2	330.0	246.9	271.3	262.4			584.0
14-Feb	923			855.9	427.6	132.4	295.9	286.7			
14-Feb	1735	144	24	943.9	369.9	246.5	327.5	317.3			604.1
15-Feb	923			955.0	513.4	185.4	256.2	237.2			
15-Feb	1713	168	24	909.7	328.3	257.0	324.4	300.4			537.6
16-Feb	923			951.0	724.7	118.4	107.9	106.9			
16-Feb	1446			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
RE-10		Body weight (kg)									
control	female	9-Feb	10-Feb	11-Feb	12-Feb						
		0.881	0.95	0.981	0.902						
9-Feb	1025	1	1	973.5	724.3	168.9	80.3	91.1	91.1	clean	91.1
9-Feb	1125	2	1	1010.2	312.1	607.4	90.7	103.0	103.0		103.0
9-Feb	1225	4	2	991.4	644.8	210.3	136.3	154.7	77.4		154.7
9-Feb	1425	6	2	644.8	579.1	36.4	29.3	33.3	16.6		33.3
9-Feb	1625	8	2	961.4	858.3	41.1	62.0	70.4	35.2		70.4
9-Feb	1825	24	15	858.3	563.2	177.9	117.2	133.0			133.0
10-Feb	925			1016.3	770.2	59.1	187.0	196.8			
10-Feb	1836	48	24	770.2	707.0	18.5	44.7	47.1			243.9
11-Feb	925			1069.7	931.4	11.7	126.6	129.1			
11-Feb	1841	72	24	931.4	874.5	21.0	35.9	36.6			165.6
12-Feb	925			874.5	784.2	19.1	71.2	78.9			
12-Feb	1208			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
BL-13		Body weight (kg)									
control	male	9-Feb	10-Feb	11-Feb	12-Feb						
		1.047	1.056	1.097	1.058						
9-Feb	1027	1	1	989.6	576.5	301.0	112.1	107.1	107.1	clean	107.1
9-Feb	1127	2	1	934.7	429.2	429.4	76.1	72.7	72.7		72.7
9-Feb	1227	4	2	891.2	698.2	127.0	66.0	63.0	31.5		63.0
9-Feb	1427	6	2	698.2	193.0	402.4	102.8	98.2	49.1		98.2
9-Feb	1627	8	2	854.9	840.2	7.7	7.0	6.7	3.3		6.7
9-Feb	1827	24	15	840.2	294.0	329.0	217.2	207.4			207.4
10-Feb	927			892.1	79.1	646.1	166.9	158.0			
10-Feb	1838	48	24	894.5	594.9	159.8	139.8	132.4			290.4
11-Feb	927			926.5	622.6	105.4	198.5	180.9			
11-Feb	1843	72	24	865.0	723.9	41.3	99.8	91.0			271.9
12-Feb	927			723.9	236.5	376.8	110.6	104.5			
12-Feb	1455			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g)			g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
				Start (g)	Finish (g)	Spilled (g)					
RE-6		Body weight (kg)									
SAMW	female	9-Feb	9-Feb (time of death)								
mortality		0.828	0.82								
9-Feb	915			126.8	79.0	16.8	31.0	35.7		start-AMW ~ 45 mL	
9-Feb	931	0.92	0.92	93.7	78.9	5.7	9.1	10.5	50.3	~15 mL AMW	46.1
9-Feb	1010			972.7	na	na	na	na		clean-never freely drank	

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g)			g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
				Start (g)	Finish (g)	Spilled (g)					
BL-7		Body weight (kg)									
SAMW	male	9-Feb	10-Feb								
		1.105	1.034								
9-Feb	917			127.7	79.7	31.6	16.4	14.1		start-AMW	
9-Feb	948	0.92	0.92	115.6	95.1	18.3	2.2	1.9	17.8	AMW	16.0
9-Feb	1012	1.92	1	1017.6	940.9	18.7	58.0	52.5	52.5	clean	52.5
9-Feb	1112	2.92	1	940.9	896.0	25.6	19.3	17.5	17.5	clean	17.5
9-Feb	1212	4.92	2	896.0	873.3	7.6	15.1	13.7	6.8	clean	13.7
9-Feb	1412	6.92	2	873.3	844.4	6.0	22.9	20.7	10.4	clean	20.7
9-Feb	1612	8.92	2	844.4	838.9	4.0	1.5	1.4	0.7	clean	1.4
9-Feb	1812	23.92	15	838.9	823.7	6.6	8.6	7.8		clean	7.8
10-Feb	912			823.7	803.4	14.7	5.6	5.4		clean	
10-Feb	1635			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
RE-9		Body weight (kg)									
SAMW	female	9-Feb	10-Feb (found dead @ 815)								
mortality		0.823	0.775								
9-Feb	923	0.92	0.92	126.4	83.8	15.8	26.8	31.0	33.8	start-AMW	31.0
9-Feb	1018	1.92	1	957.3	789.2	83.3	84.8	103.0	125.2	clean	103.0
9-Feb	1118	2.92	1	789.2	662.0	68.6	58.6	71.2	86.5	clean	71.2
9-Feb	1218	4.92	2	662.0	598.7	21.9	41.4	50.3	30.6	clean	50.3
9-Feb	1418	6.92	2	598.7	552.8	22.0	23.9	29.0	17.6	clean	29.0
9-Feb	1618	8.92	2	552.8	494.9	23.0	34.9	42.4	25.8	clean	42.4
9-Feb	1818	23.92	15	928.9	844.5	53.6	30.8	37.4		clean	37.4
10-Feb	918			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
RE-16		Body weight (kg)									
SAMW	female	9-Feb	10-Feb								
		0.978	0.987								
9-Feb	927	0.92	0.92	127.8	99.3	13.4	15.1	14.7	16.0	start-AMW	14.7
9-Feb	1022	1.92	1	902.5	881.5	13.8	7.2	6.5	22.8	clean	6.5
9-Feb	1122	2.92	1	881.5	879.5	1.5	0.5	0.5	0.5	clean	0.5
9-Feb	1222	4.92	2	879.5	816.5	5.2	57.8	52.3	29.6	clean	52.3
9-Feb	1422	6.92	2	816.5	763.8	5.6	47.1	42.6	24.1	clean	42.6
9-Feb	1622	8.92	2	763.8	677.2	33.0	53.6	48.5	27.4	clean	48.5
9-Feb	1822	23.92	15	677.2	654.1	3.5	19.6	17.7		clean	17.7
10-Feb	922			654.1	554.3	27.5	72.3	65.4		clean	
10-Feb	1355			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g)			g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
				Start (g)	Finish (g)	Spilled (g)					
BL-16		Body weight (kg)									
control	male	9-Feb	10-Feb								
		1.137	1.114								
9-Feb	1017	1	1	1017.4	875.0	54.2	88.2	77.6	77.6	clean	77.6
9-Feb	1117	2	1	1018.9	781.0	115.4	122.5	107.7	117.0	clean	107.7
9-Feb	1217	4	2	781.0	501.7	101.0	178.3	156.8	78.4	clean	156.8
9-Feb	1417	6	2	996.7	720.7	105.1	170.9	150.3	75.2	clean	150.3
9-Feb	1617	8	2	720.7	553.1	66.7	100.9	88.7	44.4	clean	88.7
9-Feb	1817	24	15	969.0	388.6	342.5	237.9	209.2		clean	209.2
10-Feb	917			1061.9	289.2	398.6	374.1	335.8		clean	
10-Feb	1828			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g)			g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
				Start (g)	Finish (g)	Spilled (g)					
RE-1		Body weight (kg)									
control	female	9-Feb	10-Feb								
		1.006	1.012								
9-Feb	1021	1	1	1011.7	705.7	210.0	96.0	95.4	95.4	clean	95.4
9-Feb	1121	2	1	859.9	694.0	119.0	46.9	46.6	46.6	clean	46.6
9-Feb	1221	4	2	694.0	565.0	93.1	35.9	35.7	17.8	clean	35.7
9-Feb	1421	6	2	565.0	458.9	65.4	40.7	40.5	20.2	clean	40.5
9-Feb	1621	8	2	884.8	733.3	113.3	38.2	38.0	19.0	clean	38.0
9-Feb	1821	24	15	733.3	183.5	402.7	147.1	146.2		clean	146.2
10-Feb	921			945.3	760.4	134.7	50.2	49.6		clean	
10-Feb	1230			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g)			g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
				Start (g)	Finish (g)	Spilled (g)					
RE-12		Body weight (kg)									
control	female	9-Feb	10-Feb								
		0.978	1.01								
9-Feb	1029	1	1	1049.9	572.8	367.5	109.6	112.1	112.1	clean	112.1
9-Feb	1129	2	1	984.1	872.0	71.6	40.5	41.4	41.4	clean	41.4
9-Feb	1229	4	2	872.0	805.5	31.9	34.6	35.4	17.7	clean	35.4
9-Feb	1429	6	2	805.5	619.4	91.2	94.9	97.0	48.5	clean	97.0
9-Feb	1629	8	2	619.4	519.2	86.1	14.1	14.4	7.2	clean	14.4
9-Feb	1829	24	15	939.3	749.2	41.7	148.4	151.7		clean	151.7
10-Feb	929			979.8	796.2	93.9	89.7	88.8		clean	
10-Feb	1615			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
GR-16		Body weight (kg)									
SAMW	male	18-Mar	19-Mar								
		0.981	0.976								
18-Mar	900	0.92	0.92	117.9	80.0	11.5	26.4	25.6	28.0	start-AMW	25.6
18-Mar	955	1.92	1	964.4	892.8	16.2	55.4	56.5	56.5	clean	56.5
18-Mar	1055	2.92	1	978.1	932.1	17.1	28.9	29.5	29.5	clean	29.5
18-Mar	1155	4.92	2	892.8	814.2	48.8	29.8	30.4	15.2	clean	30.4
18-Mar	1355	6.92	2	932.1	843.3	56.7	32.1	32.7	16.4	clean	32.7
18-Mar	1555	8.92	2	814.2	751.4	33.1	29.7	30.3	15.1	clean	30.3
18-Mar	1755	24	15	843.3	96.0	582.7	164.6	167.8		clean	167.8
19-Mar	900			856.9	480.0	262.7	114.2	117.0		clean	
19-Mar	1115			stop						clean	

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
YE-76		Body weight (kg)									
SAMW	female	18-Mar	19-Mar	20-Mar	21-Mar						
		0.916	1.07	1.148	1.003						
18-Mar	902	0.92	0.92	116.3	81.4	15.3	19.6	20.4	22.2	start-AMW	20.4
18-Mar	957	1.92	1	1023.3	925.0	32.7	65.6	71.6	71.6	clean	71.6
18-Mar	1057	2.92	1	997.9	884.7	54.5	58.7	64.1	64.1	clean	64.1
18-Mar	1157	4.92	2	925.0	846.9	16.3	61.8	67.5	33.7	clean	67.5
18-Mar	1357	6.92	2	884.7	607.6	156.6	120.5	131.6	65.8	clean	131.6
18-Mar	1557	8.92	2	846.9	758.7	14.8	73.4	80.1	40.1	clean	80.1
18-Mar	1757	24	15	953.3	79.2	337.1	537.0	586.2		clean	586.2
19-Mar	902			942.3	79.2	600.4	262.7	245.5		clean	
19-Mar	1243			1062.3	79.5	805.2	177.6	166.0		clean	
19-Mar	1710	48	24	1013.5	605.0	140.5	268.0	250.5			662.0
20-Mar	902			966.2	163.1	336.4	466.7	406.5			
20-Mar	1515	72	24	1062.4	128.9	550.3	383.2	333.8			740.3
21-Mar	902			1064.3	525.7	374.4	164.2	143.0			
21-Mar	1335			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
YE-80		Body weight (kg)									
SAMW	female	18-Mar	19-Mar								
		1.049	1.09								
18-Mar	904			121.5	80.3	16.0	25.2	22.9		start-AMW	
18-Mar	929	0.92	0.92	97.1	80.7	9.1	7.3	6.6	32.2	amw	29.5
18-Mar	959	1.92	1	1015.5	493.0	363.7	158.8	151.4	151.4	clean	151.4
18-Mar	1059	2.92	1	940.5	668.4	196.3	75.8	72.3	72.3	clean	72.3
18-Mar	1159	4.92	2	964.7	717.1	180.0	67.6	64.4	32.2	clean	64.4
18-Mar	1359	6.92	2	978.9	862.2	85.0	31.7	30.2	15.1	clean	30.2
18-Mar	1559	8.92	2	951.3	811.4	93.2	46.7	44.5	22.3	clean	44.5
18-Mar	1759	24	15	862.2	79.3	593.5	189.4	180.6		clean	180.6
19-Mar	904			986.4	586.0	210.1	190.3	174.6		clean	
19-Mar	1400			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
GR-18		Body weight (kg)									
SAMW	male	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar		
		1.06	1.002	0.965	1.004	1.048	1.086	1.096	1.047		
18-Mar	906	0.92	0.92	118.9	78.5	5.0	35.4	31.8	34.7	start-AMW	31.8
18-Mar	1001	1.92	1	973.1	701.8	179.1	92.2	87.0	87.0	clean	87.0
18-Mar	1101	2.92	1	984.6	823.3	134.4	26.9	25.4	25.4	clean	25.4
18-Mar	1201	4.92	2	991.4	861.8	99.2	30.4	28.7	14.3	clean	28.7
18-Mar	1401	6.92	2	823.3	738.7	56.9	27.7	26.1	13.1	clean	26.1
18-Mar	1601	8.92	2	861.8	774.6	42.4	44.8	42.3	21.1	clean	42.3
18-Mar	1801	24	15	979.5	387.4	347.0	245.1	231.2			231.2
19-Mar	906	48	24	1001.6	825.3	51.5	124.8	124.6			124.6
20-Mar	906	72	24	963.7	396.3	223.7	343.7	356.2			356.2
21-Mar	906	86	24	1059.8	239.1	433.3	387.4	385.9			385.9
22-Mar	906	120	24	1029.0	83.1	472.7	473.2	451.5			451.5
23-Mar	906			991.0	151.5	455.5	384.0	353.6			
23-Mar	1715	144	24	1073.7	753.8	54.0	265.9	244.8			598.4
24-Mar	906			1045.4	342.0	303.4	400.0	365.0			
24-Mar	1750	168	24	998.3	412.8	336.7	248.8	227.0			592.0
25-Mar	906			803.3	791.3	4.8	7.2	6.9			
25-Mar	953			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
YE-83		Body weight (kg)									
SAMW	female	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar		
		0.801	0.762	0.712	0.728	0.815	0.857	0.883	0.807		
18-Mar	908	0.92	0.92	109.4	80.4	6.6	22.4	26.6	29.1	start-AMW	26.6
18-Mar	1003	1.92	1	1060.9	1021.2	8.0	31.7	39.6	39.6	clean	39.6
18-Mar	1103	2.92	1	914.0	877.2	8.3	28.5	35.6	35.6	clean	35.6
18-Mar	1203	4.92	2	1021.2	1005.9	14.4	0.9	1.1	0.6	clean	1.1
18-Mar	1403	6.92	2	877.2	862.7	8.0	6.5	8.1	4.1	clean	8.1
18-Mar	1603	8.92	2	1005.9	978.0	7.1	20.8	26.0	13.0	clean	26.0
18-Mar	1803	24	15	995.9	79.9	510.4	405.6	506.4		clean	506.4
19-Mar	908	48	24	978.0	127.4	594.2	256.4	336.5		clean	336.5
20-Mar	908	72	24	1050.7	873.5	17.5	159.7	224.3		clean	224.3
21-Mar	908	96	24	873.5	79.4	351.3	442.8	608.2			608.2
22-Mar	908			1058.2	122.9	455.7	479.6	588.5			
22-Mar	1753	120	24	991.0	224.5	389.7	376.8	462.3			1050.8
23-Mar	908	144	24	1044.6	217.6	136.6	690.4	805.6			805.6
24-Mar	908			1004.7	533.7	168.4	302.6	342.7			
24-Mar	1752	168	24	992.6	469.9	264.3	258.4	292.6			635.3
25-Mar	908			1005.8	869.8	68.8	67.2	83.3			
25-Mar	1250			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g)			g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
				Start (g)	Finish (g)	Spilled (g)					
GR-21		Body weight (kg)									
SAMW	male	18-Mar	19-Mar	20-Mar	21-Mar						
		1.055	1.028	1.008	0.989						
18-Mar	910			120.6	86.8	16.4	17.4	15.7		start-AMW	
18-Mar	932	0.92	0.92	96.3	78.6	0.4	17.3	15.6	34.2	amw	31.3
18-Mar	1005	1.92	1	872.9	347.9	262.1	262.9	249.2	249.2	clean	249.2
18-Mar	1105	2.92	1	955.4	663.9	71.7	219.8	208.3	104.2	clean	208.3
18-Mar	1205	4.92	2	901.8	760.7	23.7	117.4	111.3	55.6	clean	111.3
18-Mar	1405	6.92	2	1006.8	1000.4	3.7	2.7	2.6	1.3	clean	2.6
18-Mar	1605	8.92	2	892.4	888.0	2.6	1.8	1.7		clean	1.7
18-Mar	1805	24	15	1000.4	516.1	92.6	391.7	371.3		clean	371.3
19-Mar	910	48	24	888.0	77.7	414.2	396.1	385.3		clean	385.3
20-Mar	910	72	24	984.5	77.7	503.7	403.1	399.9			399.9
21-Mar	910			947.7	724.8	138.6	84.3	85.2			
21-Mar	1022			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
YE-88		Body weight (kg)									
SAMW	female	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar		
		0.934	0.962	1.047	1.085	1.093	1.11	1.092	1.039		
18-Mar	912			115.6	79.0	18.0	18.6	19.0		start-AMW	
18-Mar	935	0.92	0.92	96.6	78.9	8.3	9.4	9.6	31.1	amw	28.6
18-Mar	1007	1.92	1	922.5	609.3	214.9	98.3	105.2	105.2	clean	105.2
18-Mar	1107	2.92	1	996.2	788.4	146.4	61.4	65.7	65.7	clean	65.7
18-Mar	1207	4.92	2	908.0	789.6	91.0	27.4	29.3	14.7	clean	29.3
18-Mar	1407	6.92	2	969.3	798.9	141.8	28.6	30.6	15.3	clean	30.6
18-Mar	1607	8.92	2	789.6	598.2	138.6	52.8	56.5	28.3	clean	56.5
18-Mar	1807	24	15	997.2	79.2	671.2	246.8	264.2		clean	264.2
19-Mar	912	48	24	971.2	77.8	339.1	554.3	576.2			576.2
20-Mar	912			960.8	78.8	550.7	331.3	316.4			
20-Mar	1536	72	24	942.9	78.0	450.5	414.4	508.5			824.9
21-Mar	912	96	24	945.4	78.4	435.5	431.5	397.7			397.7
22-Mar	912			924.7	85.6	565.4	273.7	250.4			
22-Mar	1757	120	24	979.3	81.3	450.8	447.2	409.1			659.6
23-Mar	912			941.4	283.3	351.9	306.2	275.9			
23-Mar	1720	144	24	929.8	78.2	627.7	223.9	201.7			477.6
24-Mar	912			949.5	79.2	531.1	339.2	310.6			
24-Mar	1700	168	24	951.7	811.0	77.2	63.5	58.2			368.8
25-Mar	912			811.0	540.0	117.5	153.5	140.6			
25-Mar	1630			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g)			g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
				Start (g)	Finish (g)	Spilled (g)					
GR-17		Body weight (kg)									
control	male	18-Mar	19-Mar								
		1.008	1.029								
18-Mar	1000	1	1	1026.5	536.4	382.3	107.8	106.9	106.9	start-clean	106.9
18-Mar	1100	2	1	1048.5	741.3	247.9	59.3	58.8	58.8	clean	58.8
18-Mar	1200	4	2	946.7	539.4	305.4	101.9	101.1	50.5	clean	101.1
18-Mar	1400	6	2	969.7	635.1	234.5	100.1	99.3	49.7	clean	99.3
18-Mar	1600	8	2	906.7	832.0	35.6	39.1	38.8	19.4	clean	38.8
18-Mar	1800	24	15	1006.5	621.4	232.0	153.1	151.9		clean	151.9
19-Mar	1000			1018.1	538.1	395.7	84.3	81.9		clean	
19-Mar	1245			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
YE-78		Body weight (kg)									
control	female	18-Mar	19-Mar	20-Mar	21-Mar						
		1.039	1.208	1.298	1.075						
18-Mar	1002	1	1	994.9	620.3	291.2	83.4	80.3	80.3	start-clean	80.3
18-Mar	1102	2	1	942.1	595.9	236.7	109.5	105.4	105.4	amw	105.4
18-Mar	1202	4	2	923.5	719.5	128.4	75.6	72.8	36.4	clean	72.8
18-Mar	1402	6	2	849.4	301.7	423.4	124.3	119.6	59.8	clean	119.6
18-Mar	1602	8	2	906.9	605.1	198.1	103.7	99.8	49.9	clean	99.8
18-Mar	1802	24	15	902.2	79.9	439.0	383.3	368.9		clean	368.9
19-Mar	910			534.7	429.8	28.7	76.2	63.1		clean	
19-Mar	1002	48	24	985.1	78.5	546.4	360.2	298.2		clean	361.3
20-Mar	1002	72	24	1024.7	78.8	490.2	455.7	351.1		clean	80.6
21-Mar	1002			1037.9	79.0	631.1	327.8	304.9			
21-Mar	1510			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g)			g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
				Start (g)	Finish (g)	Spilled (g)					
YE-82		Body weight (kg)									
control	female	18-Mar	19-Mar								
		0.882	0.907								
18-Mar	1004	1	1	1002.1	732.1	115.7	154.3	174.9	174.9	start-clean	174.9
18-Mar	1104	2	1	994.9	919.9	2.7	72.3	82.0	82.0	amw	82.0
18-Mar	1204	4	2	980.9	303.7	476.1	201.1	228.0	114.0	clean	228.0
18-Mar	1404	6	2	919.9	682.6	30.8	206.5	234.1	117.1	clean	234.1
18-Mar	1604	8	2	890.4	706.4	43.0	141.0	159.9	79.9	clean	159.9
18-Mar	1804	24	15	1026.6	249.6	266.6	510.4	578.7		clean	578.7
19-Mar	1004			940.3	200.0	498.2	242.1	266.9		clean	
19-Mar	1535			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g)			g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
				Start (g)	Finish (g)	Spilled (g)					
GR-19		Body weight (kg)									
control	male	18-Mar	19-Mar								
		0.882	0.907								
18-Mar	1006	1	1	1004.5	537.4	327.8	139.3	102.6	102.6	start-clean	102.6
18-Mar	1106	2	1	930.0	459.9	377.3	92.8	68.3	68.3	clean	68.3
18-Mar	1206	4	2	938.0	344.2	440.5	153.3	112.9	56.4	clean	112.9
18-Mar	1406	6	2	896.9	271.4	466.1	159.4	117.4	58.7	clean	117.4
18-Mar	1606	8	2	936.3	711.7	147.1	77.5	57.1	28.5	clean	57.1
18-Mar	1806	24	15	857.4	77.7	618.7	161.0	118.6		clean	118.6
19-Mar	916			552.9	398.3	89.2	65.4	48.7		clean	
19-Mar	1006			940.5	79.8	603.5	257.2	191.5		clean	
19-Mar	1718	48	24	1021.0	79.7	680.2	261.1	194.4		clean	434.6
20-Mar	1006			1022.6	80.0	645.7	296.9	224.6			
20-Mar	1530	72	24	1035.5	79.6	593.5	362.4	274.1			498.7
21-Mar	1006			1066.1	164.9	577.5	323.7	242.7			
21-Mar	1900	96	24	1059.2	692.9	190.5	175.8	131.8			374.4
22-Mar	1006	120	24	1031.2	545.3	106.9	379.0	284.3			284.3
23-Mar	1006			1057.1	549.0	235.4	272.7	199.2			
23-Mar	1725	144	24	1038.7	763.7	39.9	235.1	171.7			370.9
24-Mar	1006			1008.2	617.3	143.8	247.1	176.1			
24-Mar	1755	168	24	1040.1	889.6	27.0	123.5	88.0			264.1
25-Mar	1006			889.6	82.3	779.8	27.5	20.5			
25-Mar	1115			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
YE-81		Body weight (kg)									
control	female	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar		
		0.911	0.936	0.906	0.917	0.974	1.007	1.077	0.955		
18-Mar	1008	1	1	942.6	386.4	409.8	146.4	160.7	160.7	start-clean	160.7
18-Mar	1108	2	1	1051.6	538.3	411.9	101.4	111.3	111.3	clean	111.3
18-Mar	1208	4	2	876.4	180.8	518.0	177.6	195.0	97.5	clean	195.0
18-Mar	1408	6	2	920.4	77.9	718.7	123.8	135.9	67.9	clean	135.9
18-Mar	1608	8	2	896.0	83.2	526.2	286.6	314.6	157.3	clean	314.6
18-Mar	1808	24	15	1010.8	610.9	129.7	270.2	296.6		clean	296.6
19-Mar	1008			961.9	80.2	657.2	224.5	239.9		clean	
19-Mar	1400			930.6	80.1	752.2	98.3	105.0		clean	
19-Mar	1713	48	24	951.4	79.3	676.7	195.4	208.8		clean	553.6
20-Mar	1008			962.4	79.5	703.6	179.3	197.9			
20-Mar	1520	72	24	995.7	79.4	780.6	135.7	149.8			347.7
21-Mar	1008	96	24	968.1	363.0	256.3	348.8	380.4			380.4
22-Mar	1008	120	24	970.8	343.5	299.1	328.2	337.0			337.0
23-Mar	1008			936.6	268.1	438.8	229.7	228.1			
23-Mar	1727	144	24	921.9	502.9	165.2	253.8	252.0			480.1
24-Mar	1008			912.0	302.6	325.8	283.6	263.3			
24-Mar	1757	168	24	928.7	607.0	131.0	190.7	177.1			440.4
25-Mar	1008			911.2	371.5	448.7	91.0	95.3			
25-Mar	1410			stop							

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Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
GR-22		Body weight (kg)									
control	male	18-Mar	19-Mar	20-Mar	21-Mar						
		1.176	1.168	1.148	1.148						
18-Mar	1010	1	1	952.3	885.3	15.6	51.4	43.7	43.7	start-clean	43.7
18-Mar	1110	2	1	991.4	904.7	36.8	49.9	42.4	42.4	clean	42.4
18-Mar	1210	4	2	885.3	740.6	67.8	76.9	65.4	32.7	clean	65.4
18-Mar	1410	6	2	904.7	707.1	113.9	83.7	71.2	35.6	clean	71.2
18-Mar	1610	8	2	970.5	928.3	18.6	23.6	20.1	10.0	clean	20.1
18-Mar	1810	24	15	973.4	562.2	185.3	225.9	192.1		clean	192.1
19-Mar	1010	48	24	928.3	597.0	107.0	224.3	192.0		clean	192.0
20-Mar	1010	72	24	983.6	459.9	263.4	260.3	226.7			226.7
21-Mar	1010			1042.1	997.5	13.8	30.8	26.8			
21-Mar	1152			stop							

Continued

Figure C.1, C.2, C.3 and Table C.1, C.2, C.3. APP Continued

Date	Time	Cumulative Time (hrs)	Time Period (hrs)	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	mL/kg	mL/kg/hr	Comments	Dose per time period (mL/kg)
YE-85		Body weight (kg)									
control	female	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar		
		0.934	0.962	1.047	1.085	1.093	1.11	1.092	1.039		
18-Mar	1012	1	1	958.3	654.0	103.8	200.5	214.7	214.7	start-clean	214.7
18-Mar	1112	2	1	910.0	712.0	77.1	120.9	129.4	129.4	clean	129.4
18-Mar	1212	4	2	927.8	696.9	122.1	108.8	116.5	58.2	clean	116.5
18-Mar	1412	6	2	887.7	666.9	92.0	128.8	137.9	69.0	clean	137.9
18-Mar	1612	8	2	928.1	723.8	46.2	158.1	169.3	84.6	clean	169.3
18-Mar	1812	24	15	943.6	430.8	135.9	376.9	403.5		clean	403.5
19-Mar	1012	48	24	918.3	344.7	209.4	364.2	378.6		clean	378.6
20-Mar	1012	72	24	1007.6	306.2	149.4	552.0	527.2		clean	527.2
21-Mar	1012			1018.3	79.2	604.2	334.9	308.7		clean	
21-Mar	1645	96	24	981.4	702.1	11.3	268.0	247.0			555.7
22-Mar	1012	120	24	1023.8	262.7	180.4	580.7	531.3			531.3
23-Mar	1012			982.5	324.2	307.3	351.0	316.2			
23-Mar	1730	144	24	957.7	672.4	28.7	256.6	231.2			547.4
24-Mar	1012			1021.7	409.6	222.2	389.9	357.1			
24-Mar	1800	168	24	991.4	725.7	61.9	203.8	186.6			543.7
25-Mar	1012			964.9	747.3	33.7	183.9	177.0			
25-Mar	1825			stop							

Table C.4. APP

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
BL-7		Body mass (kg)						
SAMW	male	9-Feb	10-Feb					
		1.105	1.034					
9-Feb	1301	744.8	na	na	na			start food measurements
9-Feb	1445	744.8	744.8	0	0	0.0		
9-Feb	1703	744.8	743.3	0	1.5	1.4		
10-Feb	915	743.3	742.7	0.2	0.4	0.4	1.8	food taken away at 915; necropsied on 2/10/2006 in afternoon
BL-16		Body mass (kg)						
control	male	9-Feb	10-Feb					
		1.137	1.114					
9-Feb	1713	522.4	na	na	na			start food measurements
10-Feb	918	522.4	520.9	0	1.5	1.3		
10-Feb	1230	519.6	519.2	0	0.4	0.4	1.7	stop food measurements; euthanized in evening on 2/10/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
BL-15	Body mass (kg)							
SAMW	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb
male	1.145	1.125	1.059	1.045	1.025	1.057	1.145	1.089
9-Feb	1304	751	na	na	na			start food consumption measurements
9-Feb	1446	751	751	0	0	0.0		
9-Feb	1704	751	751	0	0	0.0		
9-Feb	1859	751	751	0	0	0.0		
10-Feb	925	149	149	0	0	0.0	0.0	
10-Feb	1530	149	149	0	0	0.0		
11-Feb	941	149	149	0	0	0.0	0.0	
11-Feb	1650	149	149	0	0	0.0		
12-Feb	941	149	149	0	0	0.0	0.0	
12-Feb	1900	149	149	0	0	0.0		
13-Feb	941	149	149	0	0	0.0	0.0	
13-Feb	1450	149	149	0	0	0.0		
13-Feb	1733	149	146.9	0.8	1.3	1.3		
14-Feb	941	146.9	139.1	0.8	7	6.6	7.9	
14-Feb	1623	189.4	177.6	0.7	11.1	10.5		
15-Feb	941	177.6	155	1.2	21.4	18.7	29.2	
15-Feb	1640	155	121	0.4	33.6	29.3		
15-Feb	1957	172.5	157.1	0.4	15	13.1	42.4	stop food consumption measurements ; euthanized on 2/16/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
BL-5	Body mass (kg)							
control	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb
male	1.053	1.046	1.032	1.013	1.003	1.046	1.173	1.03
		note: did not start giving this bird food until 2/13 because paired-dosed bird did not eat until then						
13-Feb	1735	1.3	na	na	na	na		start food measurements
14-Feb	942	1.3	0	0	1.3	1.2	1.2	
15-Feb	1626	7	0	0	7	6.0		
15-Feb	942	11.1	0	0	11.1	9.5	15.4	
15-Feb	1645	21.4	0	0	21.4	18.2		
15-Feb	1959	33.6	0	0	33.6	28.6	46.9	stop food measurements ; euthanized on 2/16/2006
RE-7	extra							
control	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb
female	1.019	1.057	1.12	1.061	1.083	1.074	1.145	1.032
9-Feb	1730	1.7	na	na	na	start food consumption measurements; received the avg. of the remaining dosed birds throughout the 7 day study		
10-Feb	1035	1.7	0	0	1.7	1.6	1.6	
11-Feb	1035	9.3	0	0	9.3	8.3	8.3	
12-Feb	1035	46	0	0.2	45.8	43.2	43.2	
12-Feb	1910	18.6	0	0	18.6	17.5		
13-Feb	1035	18.9	0	0	18.9	17.5	35.0	
13-Feb	1500	2.3	0	0	2.3	2.1		
13-Feb	1747	13	0	0	13	12.0		
14-Feb	1035	0.8	0	0	0.8	0.7	14.9	
14-Feb	1633	13.4	0	0	13.4	12.5		
15-Feb	1035	16	0	0	16	14.0	26.5	
15-Feb	1655	24.2	0	0	24.2	21.1		
15-Feb	2000	25.6	0	0	25.6	22.4	43.5	stop food measurements ; euthanized on 2/16/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
BL-14	Body mass (kg))							
SAMW	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb
male	1.212	1.281	1.27	1.283	1.254	1.243	1.263	1.213
9-Feb	1306	672.2	na	na	na			start food consumption measurements
9-Feb	1446	672.2	672.2	0	0	0.0		
9-Feb	1705	672.2	669	0	3.2	2.6		
10-Feb	1012	669	626.2	8.9	33.9	26.5	29.1	
10-Feb	1543	138	106.9	0	31.1	24.3		
11-Feb	1011	124.7	74	1.1	49.6	39.1	63.3	
11-Feb	1654	171.1	144.5	2.1	24.5	19.3		
12-Feb	1011	144.5	107.3	0	37.2	29.0	48.3	
12-Feb	1906	159.2	121.5	0	37.7	29.4		
13-Feb	1011	184.1	176.7	2.9	4.5	3.6	33.0	
13-Feb	1452	176.7	150.3	0.4	26	20.7		
13-Feb	1737	150.3	150	0	0.3	0.2		
14-Feb	1011	150	129.4	0.9	19.7	15.8	36.8	
14-Feb	1628	184.7	163.8	0	20.9	16.8		
15-Feb	1011	163.8	136.7	0	27.1	21.5	38.3	
15-Feb	1651	185.1	167.6	0	17.5	13.9		
15-Feb	2001	167.6	161.5	0	6.1	4.8	18.7	stop food consumption measurements ; euthanized on 2/16/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
BL-10	Body mass (kg))							
control	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb
male	0.984	1.052	1.035	1.035	1.034	1.032	1.08	1.009
note: did not start giving this bird food until 17:16 because paired-dosed bird did not eat until then								
9-Feb	1716	520.8	na	na	na			start food consumption measurements
10-Feb	1015	520.8	517.6	0	3.2	3.0	3.0	
10-Feb	1546	33.9	4.3	0	29.6	28.1		
11-Feb	1015	31.1	0	0	31.1	30.0	58.2	
11-Feb	1658	49.6	19	0.3	30.3	29.3		
12-Feb	1015	24.5	0	0.4	24.1	23.3	52.6	
12-Feb	1907	37.2	4.7	0.3	32.2	31.1		
13-Feb	1015	37.7	11.3	0.4	26	25.1	56.3	
13-Feb	1453	4.5	3.6	0	0.9	0.9		
13-Feb	1740	26	20.4	0	5.6	5.4		
14-Feb	1015	20.7	0	0	20.7	20.1	26.3	
14-Feb	1630	19.7	0	0	19.7	19.1		
15-Feb	1015	20.9	0	0	20.9	19.4	38.4	
15-Feb	1654	27.1	7.9	0	19.2	17.8		
15-Feb	2002	25.4	6.4	0	19	17.6	35.4	stop food consumption measurements ; euthanized on 2/16/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
RE-9	Body mass (kg)							
SAMW	9-Feb	10-Feb						
female	0.823	0.775						
9-Feb	1307	695.7	na		na		na	na
9-Feb	1447	695.7	695.7	0	na	0		
9-Feb	1706	695.7	695.7	0	na	0		
10-Feb	1017	695.7	695.7	0	na	0	0	stop food consumption measurements ; found dead @ 8:15 on 2/10/2006
RE-1	Body mass (kg)							
control	9-Feb	10-Feb						
female	1.006	1.012						

note: never received food because RE-9 never ate and eventually died in the middle of the night

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
RE-15	Body mass (kg)							
SAMW	9-Feb	10-Feb	11-Feb	12-Feb				
female	1.09	1.169	1.16	1.056				
9-Feb	1308	672.8	na	na	na			start food consumption measurements
9-Feb	1448	672.8	672.8	0	0	0.0		
9-Feb	1708	672.8	670.2	1.4	1.2	1.1		
10-Feb	1020	670.2	650.8	2	17.4	14.9	16.0	
10-Feb	1550	650.8	629.8	4.2	16.8	14.4		
11-Feb	1020	629.8	529.5	12.2	88.1	75.9	90.3	
11-Feb	1701	681.7	642.3	2.3	37.1	32.0		
11-Feb	1846	642.3	623	2.6	16.7	14.4	46.4	stop food consumption measurements ; euthanized on 2/12/2006
RE-10	Body mass (kg)							
control	10-Feb	11-Feb	12-Feb	10-Feb				
female	0.95	0.981	0.902	0.95				
note: did not start giving this bird food until 17:19 because paired-dosed bird did not eat until then								
9-Feb	1719	528	na	na	na	na		start food consumption measurements
10-Feb	1023	528	526.8	0	1.2	1.3	1.3	
10-Feb	1555	17.4	0	1.5	15.9	16.7		
11-Feb	1024	16.8	0	0.7	16.1	16.4	33.1	
11-Feb	1704	88.1	35.6	0	52.5	53.5		
11-Feb	1848	37.1	15.3	2.8	19	19.4	72.9	stop food measurements ; euthanized on 2/12/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
RE-15	Body mass (kg)							
SAMW	9-Feb	10-Feb	11-Feb	12-Feb				
female	1.09	1.169	1.16	1.056				
9-Feb	1308	672.8	na	na	na			start food consumption measurements
9-Feb	1448	672.8	672.8	0	0	0.0		
9-Feb	1708	672.8	670.2	1.4	1.2	1.1		
10-Feb	1020	670.2	650.8	2	17.4	14.9	16.0	
10-Feb	1550	650.8	629.8	4.2	16.8	14.4		
11-Feb	1020	629.8	529.5	12.2	88.1	75.9	90.3	
11-Feb	1701	681.7	642.3	2.3	37.1	32.0		
11-Feb	1846	642.3	623	2.6	16.7	14.4	46.4	stop food consumption measurements ; euthanized on 2/12/2006
RE-10	Body mass (kg)							
control	10-Feb	11-Feb	12-Feb	10-Feb				
female	0.95	0.981	0.902	0.95				
note: did not start giving this bird food until 17:19 because paired-dosed bird did not eat until then								
9-Feb	1719	528	na	na	na	na		start food consumption measurements
10-Feb	1023	528	526.8	0	1.2	1.3	1.3	
10-Feb	1555	17.4	0	1.5	15.9	16.7		
11-Feb	1024	16.8	0	0.7	16.1	16.4	33.1	
11-Feb	1704	88.1	35.6	0	52.5	53.5		
11-Feb	1848	37.1	15.3	2.8	19	19.4	72.9	stop food measurements ; euthanized on 2/12/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
BL-12	Body mass (kg)							
SAMW	9-Feb	10-Feb	11-Feb	12-Feb				
male	1.139	1.175	1.187	1.142				
9-Feb	1310	693.4	na	na	na	na		start food measurements
9-Feb	1711	693.4	693.4	0	0	0.0		
9-Feb	1724	693.4	693.4	0	0	0.0		
10-Feb	1028	693.4	689.3	0.2	3.9	3.3	3.3	
10-Feb	1600	689.3	681.1	0.5	7.7	6.6		
11-Feb	1028	689.3	642.1	0.9	46.3	39.0	45.6	
11-Feb	1709	687.4	657.7	2.2	27.5	23.2		
11-Feb	1851	588.7	588.6	0	0.1	0.1	23.3	stop food measurements ; euthanized on 2/12/2006
BL-13	Body mass (kg)							
control	9-Feb	10-Feb	11-Feb	12-Feb				
male	1.047	1.056	1.097	1.058				
note: did not start giving this bird food until 2/10/2006 because paired-dosed bird did not eat until then								
10-Feb	1030	4.1	na	na	na	na	0	start food consumption measurements
10-Feb	1601	4.1	0	0	4.1	3.9		
11-Feb	1030	7.7	0	0	7.7	7.0	10.9	
11-Feb	1712	46.3	9.9	0	36.4	33.2		
11-Feb	1853	27.5	15.6	0	11.9	10.8	44.0	stop food measurements ; euthanized on 2/12/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
YE-76	Body mass (kg)							
SAMW	18-Mar	19-Mar	20-Mar	21-Mar				
female	0.916	1.07	1.148	1.003				
18-Mar	1207	82.5	na	na	na	na		start food consumption measurements
18-Mar	1316	82.5	82.5	0	0	0.0		
18-Mar	1640	82.5	62.5	19	1	1.1		
18-Mar	1822	86.3	83.9	1.3	1.1	1.2		
19-Mar	940	83.9	43.4	13.5	27	25.2	27.5	
19-Mar	1722	85.2	0.2	40.6	44.4	41.5		
20-Mar	940	50.7	0	1.5	49.2	42.9	84.4	
20-Mar	1540	71.9	0	3.8	68.1	59.3		
20-Mar	1838	45.9	0	0.8	45.1	39.3	98.6	stop food measurements ; euthanized on 3/21/2006
YE-78	Body mass (kg)							
control	18-Mar	19-Mar	20-Mar	21-Mar				
female	1.039	1.208	1.298	1.075				
18-Mar	1641	1	na	na	na	na		start food measurements
18-Mar	1823	1	0	0	1	1.0		
19-Mar	942	1.1	0	0	1.1	0.9	1.9	
19-Mar	1725	27	0	1.1	25.9	21.4		
20-Mar	942	44.4	0	0.7	43.7	33.7	55.1	
20-Mar	1543	49.2	0	2.8	46.4	35.7		
20-Mar	1840	68.1	0	0.6	67.5	52.0		
20-Mar	1915	45.1	45.1	0	0	0.0	87.8	stop food measurements ; euthanized on 3/21/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
GR-16	Body mass (kg)							
SAMW	18-Mar	19-Mar						
male	0.981	0.976						
18-Mar	1209	88.8	na	na	na	na		start food measurements
18-Mar	1317	88.8	88.8	0	0	0.0		
18-Mar	1643	88.8	88.8	0	0	0.0		
18-Mar	1825	88.8	87.4	0	1.4	1.4	1.4	stop food measurements ; euthanized on 3/19/2006
GR-17	Body mass (kg)							
control	18-Mar	19-Mar						
male	1.008	1.029						
	note: this bird did not receive food until 1826 b/c its paired bird did not eat until then							
18-Mar	1826	1.4	na	na	na	na		start food measurements
19-Mar	941	1.4	0	0.2	1.2	1.2	1.2	stop food measurements ; euthanized on 3/19/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
YE-80	Body mass (kg)							
SAMW	18-Mar	19-Mar						
female	1.049	1.09						
18-Mar	1211	78.8	na	na	na	na		start food measurements
18-Mar	1318	78.8	78.8	0	0	0.0		
18-Mar	1645	78.8	78.4	0.1	0.3	0.3		
18-Mar	1828	78.4	69.9	0	8.5	8.1	8.4	stop food measurements euthanized on 3/19/2006
YE-82	Body mass (kg)							
control	18-Mar	19-Mar						
female	0.882	0.907						
note: this bird did not receive food until 1646 b/c its paired bird did not eat until then								
18-Mar	1646	0.3	na	na	na	na		start food measurements
18-Mar	1829	0.3	0	0	0.3	0.3		
19-Mar	941	8.5	0	1.8	6.7	7.4	7.7	stop food measurements ; euthanized on 3/19/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
GR-19	Body mass (kg)							
control	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar
male	1.358	1.343	1.322	1.334	1.333	1.369	1.403	1.342
note: this bird did not receive food until 3/21/2006 @ 945 b/c its paired dosed bird did not eat until that time								
21-Mar	945	3.2	na	na	na	na		start food measurements
21-Mar	1649	3.2	0	1.2	2	1.5		
22-Mar	945	7.8	0	0.9	6.9	5.2	6.7	
22-Mar	1800	16.1	0	4.2	11.9	8.9		
23-Mar	945	29.7	0	0.9	28.8	21.0	30.0	
23-Mar	1741	45.7	0	2.5	43.2	31.6		
24-Mar	945	41.5	0	0.7	40.8	29.1	60.6	
24-Mar	1713	71.3	22.6	0	48.7	34.7		
24-Mar	1821	55.5	45.9	0	9.6	6.8	41.6	stop food consumption measurements; euthanized on 3/25/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
GR-19	Body mass (kg)							
control	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar
male	1.06	1.002	0.965	1.004	1.048	1.086	1.096	1.047
18-Mar	1213	81.3	na	na	na	na		start food measurements
18-Mar	1320	81.3	81.3	0	0	0.0		
18-Mar	1648	81.3	81.3	0	0	0.0		
18-Mar	1832	81.3	81.3	0	0	0.0		
19-Mar	944	81.3	81.3	0	0	0.0	0	
19-Mar	1727	81.3	81.3	0	0	0.0		
20-Mar	944	81.3	81.3	0	0	0.0	0.0	
20-Mar	1546	81.3	81.3	0	0	0.0		
21-Mar	944	81.3	77.4	0.7	3.2	3.2	3.2	
21-Mar	1647	77.4	68.2	1.4	7.8	7.8		
22-Mar	944	68.2	49.3	2.8	16.1	15.4	23.1	
22-Mar	1758	81.3	50.7	0.9	29.7	28.3		
23-Mar	944	96	48.2	2.1	45.7	42.1	70.4	
23-Mar	1739	89.4	46.2	1.7	41.5	38.2		
24-Mar	944	74.4	0	3.1	71.3	65.1	103.3	
24-Mar	1710	73.1	39.4	0.8	32.9	30.0		
24-Mar	1820	39.4	33.3	0.3	5.8	5.3	35.3	stop food measurements; euthanized on 3/25/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
YE-83	Body mass (kg)							
SAMW	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar
female	0.801	0.762	0.712	0.728	0.815	0.857	0.883	0.807
18-Mar	1215	70.5	na	na	na	na		start food measurements
18-Mar	1322	70.5	70.5	0	0	0.0		
18-Mar	1648	70.5	70.5	0	0	0.0		
18-Mar	1833	70.5	70.5	0	0	0.0		
19-Mar	948	70.5	62.4	4.6	3.5	4.6	4.6	
19-Mar	1733	87	86.7	0.3	0	0.0		
20-Mar	948	86.7	86.7	0	0	0.0	0.0	
20-Mar	1548	86.7	86.7	0	0	0.0		
21-Mar	948	86.7	86.7	0	0	0.0	0.0	
21-Mar	1653	86.7	78.2	4.2	4.3	5.9		
22-Mar	948	78.2	27.8	5.9	44.5	54.6	60.5	
22-Mar	1803	95.4	56	5.7	33.7	41.3		
23-Mar	948	93.6	14.7	5.3	73.6	85.9	127.2	
23-Mar	1746	89.3	28.3	7.2	53.8	62.8		
24-Mar	948	52.6	0	3.2	49.4	55.9	118.7	
24-Mar	1718	75.6	7.1	3.1	65.4	74.1		
24-Mar	1823	7.1	0	0.4	6.7	7.6	81.7	stop food measurements; euthanized on 3/25/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
YE-81	Body mass (kg)							
control	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar
female	0.911	0.936	0.906	0.917	0.974	1.007	1.077	0.955
note: did not receive food until 950 on 3/19/2006 b/c paired dosed bird did not eat until then; (paired dosed bird stopped eating- from 17:33 on 3/19 to 9:48 on 3/21)								
19-Mar	1215	3.5	na	na	na	na		start food measurements
19-Mar	1322	3.5	0	1.4	2.1	2.2		
19-Mar	1734	0	0	0	0	0.0		
20-Mar	948	0	0	0	0	0.0	2.2	
20-Mar	1549	0	0	0	0	0.0		
21-Mar	948	0	0	0	0	0.0	0.0	
21-Mar	1648	0	0	0	0	0.0		
21-Mar	1833	0	0	0	0	0.0		
22-Mar	948	4.3	0	0	4.3	4.4	4.4	
22-Mar	1733	44.5	0	9.7	34.8	35.7		
23-Mar	948	33.7	0	0.6	33.1	32.9	68.6	
23-Mar	1548	73.6	0	9.9	63.7	63.3		
24-Mar	948	63.7	0	2.2	61.5	57.1	120.4	
24-Mar	1653	49.4	0	5.6	43.8	40.7		
24-Mar	948	65.4	15.3	3.3	46.8	43.5	84.1	stop food n measurements; euthanized on 3/25/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
YE-88	Body mass (kg)							
SAMW	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar
female	0.934	0.962	1.047	1.085	1.093	1.11	1.092	1.039
18-Mar	1217	76.2	na	na	na	na		start food measurements
18-Mar	1323	76.2	75.8	0.2	0.2	0.2		
18-Mar	1650	75.8	70.1	1.1	4.6	4.9		
18-Mar	1836	70.1	68.7	0.4	1	1.1		
19-Mar	954	68.7	68.7	0	0	0.0	6.2	
19-Mar	1739	68.7	62	2.1	4.6	4.8		
20-Mar	954	62	8.2	13.5	40.3	38.5	43.3	
20-Mar	1552	67.2	4.0	8.6	54.6	52.1		
21-Mar	954	49	0.1	6.8	42.1	38.8	91.0	
21-Mar	1658	74.6	0	2.9	71.7	66.1		
22-Mar	954	91.6	0	0.9	90.7	83.0	149.1	
22-Mar	1810	92.3	10	1.5	80.8	73.9		
23-Mar	954	81.1	0	1.1	80	72.1	146.0	
23-Mar	1754	97.2	5	3	89.2	80.4		
24-Mar	954	32.3	0	0.7	31.6	28.9	109.3	
24-Mar	1724	66.1	0	2	64.1	58.7		
24-Mar	1826	11	0	0.2	10.8	9.9	68.6	stop food measurements; euthanized on 3/25/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
YE-85	Body mass (kg)							
control	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar
female	0.868	0.909	1.071	1.132	1.092	1.081	1.101	1.015
18-Mar	1327	0.2	na	na	na	na		start food measurements
18-Mar	1651	0.2	0	0	0.2	0.2		
18-Mar	1838	4.6	0	0.1	4.5	5.2		
19-Mar	956	1	0	0	1	1.1	6.5	
19-Mar	1740	0	0	0	4.6	5.1		
20-Mar	956	4.6	0	0	40.3	37.6	38.1	
20-Mar	1556	40.3	0	5.3	35	32.7		
21-Mar	956	54.6	0	2.9	51.7	45.7	78.4	
21-Mar	1700	42.1	0	1.5	40.6	35.9		
22-Mar	956	71.7	0	5.2	66.5	60.9	96.8	
22-Mar	1813	90.7	0	3.5	87.2	79.9		
23-Mar	956	80.8	0	0.9	79.9	73.9	153.8	
23-Mar	1756	80	0	2	78	72.2		
24-Mar	956	89.2	19.1	3.2	66.9	60.8	132.9	
24-Mar	1727	53.9	0	1.7	52.2	47.4		
24-Mar	1828	64.1	46.8	1.6	15.7	14.3	61.7	stop food measurements; euthanized on 3/25/2006

Continued

Table C.4. APP Continued

Date	Time	Start Mass (g)	Stop Mass (g)	Spilled food (g)	Food Intake (g)	g food/kg body mass	g/kg/day	Comments
GR-21	Body mass (kg)							
SAMW	18-Mar	19-Mar	20-Mar	21-Mar				
male	1.055	1.028	1.008	0.989				
18-Mar	1219	72.8	na	na	na	na		start food consumption measurements
18-Mar	1325	72.8	72.8	0	0	0.0		
18-Mar	1653	72.8	72.8	0	0	0.0		
18-Mar	1840	72.8	72.8	0	0	0.0		
19-Mar	956	72.8	72.8	0	0	0.0	0.0	
19-Mar	1742	72.8	72.8	0	0	0.0		
20-Mar	956	72.8	72.8	0	0	0.0	0.0	
20-Mar	1600	72.8	72.8	0	0	0.0		
20-Mar	1845	72.8	72.8	0	0	0.0	0	stop food consumption measurements; euthanized on 3/21/2006
GR-22	Body mass (kg)							
control	18-Mar	19-Mar	20-Mar	21-Mar				
male	1.176	1.168	1.148	1.148				
			note: this bird was never given food b/c its paired dosed bird never ate					

Table C.5. APP

Day 1 Birds	Body Weights						
Treatment	**RE-16**	**BL-7**	**RE-9**	**GR-16**	**YE-80**	**avg**	**sd**
hydrated	1080	1181	894	1030	1193	1075.6	122.4
24 hr dehydrated-prior to dosing	978	1105	823	981	1049	987.2	105.8
death	987	1034	na	976	1090	1021.8	52.0
b.w. change from hydrated to death	-93	-147	na	-54	-103	-99.3	38.2
% b.w. change from hydrated to death	-8.6	-12.4	na	-5.2	-8.6	-8.7	2.9
b.w. change from initiation of dosing to death	9	-71	na	-5	41	-6.5	47.1
% b.w. change from initiation of dosing to death	0.9	-6.4	na	-0.5	3.9	-0.5	4.3
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-102	-76	-71	-49	-144	-88.4	36.3
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-9.4	-6.4	-7.9	-4.8	-12.1	-8.1	2.8
Controls	**RE-12**	**RE-1**	**BL-16**	**GR-17**	**YE-82**	**avg**	**sd**
hydrated	1048	1062	1233	1069	1050	1092.4	79.1
24 hr dehydrated-prior to dosing	978	1006	1137	1008	882	1002.2	91.2
death	1010	1012	1114	1029	907	1014.4	73.6
b.w. change from hydrated to death	-38	-50	-119	-40	-143	-78	49.3
% b.w. change from hydrated to death	-3.6	-4.7	-9.7	-3.7	-13.6	-7.1	4.4
b.w. change from initiation of dosing to death	32	6	-23	21	25	12.2	21.9
% b.w. change from initiation of dosing to death	3.3	0.6	-2.0	2.1	2.8	1.4	2.1
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-70	-56	-96	-61	-168	-90.2	46.1
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-6.7	-5.3	-7.8	-5.7	-16.0	-8.3	4.4

Continued

Table C.5. APP Continued

Day 3 Birds	Body Weights					
Treatment	**RE-15**	**BL-12**	**YE-76**	**GR-21**	**avg**	**sd**
hydrated	1185	1227	1079	1138	1157.3	63.6
24 hr dehydrated-prior to dosing	1090	1139	916	1055	1050.0	95.7
death	1056	1142	1003	989	1047.5	69.3
b.w. change from hydrated to death	-129	-85	-76	-149	-109.8	34.9
% b.w. change from hydrated to death	-10.9	-6.9	-7.0	-13.1	-9.5	3.0
b.w. change from initiation of dosing to death	-34	3	87	-66	-2.5	66.0
% b.w. change from initiation of dosing to death	-3.1	0.3	9.5	-6.3	0.1	6.8
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-95	-88	-163	-83	-107.25	37.5
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-8.0	-7.2	-15.1	-7.3	-9.4	3.8
Controls	**RE-10**	**BL-13**	**YE-78**	**GR-22**	**avg**	**sd**
hydrated	984	1122	1106	1226	1109.5	99.1
24 hr dehydrated-prior to dosing	881	1047	1039	1176	1035.8	120.8
death	902	1058	1075	1148	1045.8	103.5
b.w. change from hydrated to death	-82	-64	-31	-78	-63.8	23.2
% b.w. change from hydrated to death	-8.3	-5.7	-2.8	-6.4	-5.8	2.3
b.w. change from initiation of dosing to death	21	11	36	-28	10	27.3
% b.w. change from initiation of dosing to death	2.4	1.1	3.5	-2.4	1.1	2.5
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-103	-75	-67	-50	-73.75	22.1
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-10.5	-6.7	-6.1	-4.1	-6.8	2.7

Continued

Table C.5. APP Continued

Day 7 Birds	Body Weights						
Treatment	**BL-15**	**BL-14**	**GR-18**	**YE-83**	**YE-88**	**avg**	**sd**
hydrated	1242	1315	1117	860	1057	1118.2	176.4
24 hr dehydrated-prior to dosing	1145	1212	1060	801	934	1030.4	165.0
death	1089	1213	1047	807	1039	1039	147.2
b.w. change from hydrated to death	-153	-102	-70	-53	-18	-79.2	51.2
% b.w. change from hydrated to death	-12.3	-7.8	-6.3	-6.2	-1.7	-6.8	3.8
b.w. change from initiation of dosing to death	-56	1	-13	6	105	8.6	59.2
% b.w. change from initiation of dosing to death	-4.9	0.1	-1.2	0.7	11.2	1.2	6.0
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-97	-103	-57	-59	-123	-87.8	28.9
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-7.8	-7.8	-5.1	-6.9	-11.6	-7.8	2.4
Controls	**BL-5**	**BL-10**	**GR-19**	**YE-81**	**YE-85**	**avg**	**sd**
hydrated	1127	1053	1424	1049	996	1129.8	170.9
24 hr dehydrated-prior to dosing	1053	984	1358	911	868	1034.8	194.0
death	1030	1009	1342	955	1015	1070.2	154.6
b.w. change from hydrated to death	-97	-44	-82	-94	19	-59.6	48.7
% b.w. change from hydrated to death	-8.6	-4.2	-5.8	-9.0	1.9	-5.1	4.4
b.w. change from initiation of dosing to death	-23	25	-16	44	147	35.4	68.4
% b.w. change from initiation of dosing to death	-2.2	2.5	-1.2	4.8	16.9	4.2	7.7
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-74	-69	-66	-138	-128	-95	35.0
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-6.6	-6.6	-4.6	-13.2	-12.9	-8.8	4.0

Table C.6. APP

ID	Sex	TSP	Albumin	Globulin	A/G ratio	Calcium	Phosphorus	Glucose	ALP	CK	AST
Day 1 SAMW											
RE-16	F	3.641	1.63	2.0	0.8	21.77	7.39	208.6	884.8	460.8	48
BL-7	M	2.084	1.02	1.1	1.0	11.11	4.27	225.8	39.1	327.6	17
GR-16	M	2.408	1.20	1.2	1.0	10.33	4.55	188.9	40.3	982.6	108
YE-80	F	2.630	1.26	1.4	0.9	14.40	5.14	720.2	3876.2	667.1	65
Day 1 Control											
RE-1	F	5.099	2.29	2.8	0.8	30.65	6.51	196.7	134.5	267.8	24
RE-12	F	4.464	2.26	2.2	1.0	18.03	5.53	190.7	159.6	288.9	24
BL-16	M	4.258	2.62	1.6	1.6	11.96	4.78	219.9	56.5	302.3	29
GR-17	M	3.709	2.03	1.7	1.2	11.69	3.93	242.7	47.3	322.4	38
YE-82	F	3.990	1.77	2.2	0.8	14.22	5.80	179.3	4285.4	1097.9	54

Continued

Table C.6. APP Continued

ID	Sex	Uric Acid	Cholesterol	Na	K	Cl
Day 1 SAMW						
RE-16	F	4.44	93.3	161.2	6.14	113.1
BL-7	M	11.33	136.8	143.4	5.42	101.2
GR-16	M	3.59	189.6	149.6	4.01	100.9
YE-80	F	15.99	246.9	117.2	19.80	92.4
Day 1 Control						
RE-1	F	2.8	180.1	167.7	3.92	115.5
RE-12	F	1.87	413.0	158.5	4.83	113.0
BL-16	M	3.21	290.2	156.3	4.36	109.2
GR-17	M	2.01	285.3	152.2	4.43	106.7
YE-82	F	2.8	180.1	167.7	3.92	115.5

Continued

Table C.6. APP Continued

ID	Sex	TSP	Albumin	Globulin	A/G ratio	Calcium	Phosphorus	Glucose	ALP	CK	AST
Day 3 SAMW											
RE-15	F	3.574	1.55	2.0	0.8	22.39	5.52	183.5	1362.3	517.6	33.0
BL-12	M	2.703	1.39	1.3	1.1	11.17	4.50	276.0	52.4	484.4	76
GR-21	M	2.142	1.05	1.1	1.0	10.76	3.67	169.3	29.1	356.8	40
YE-76	F	4.257	1.81	2.4	0.7	18.72	5.98	189.1	589.7	388.7	24
Day 3 Control											
RE-10	F	5.473	2.34	3.1	0.7	18.76	7.43	162.8	573.1	270.4	17
BL-13	M	3.783	2.00	1.8	1.1	11.72	3.83	209.8	87.1	165.3	13
GR-22	M	4.032	2.46	1.6	1.6	11.87	5.06	173.5	47.6	419.7	45
YE-78	F	4.305	1.70	2.6	0.7	24.04	8.70	192.5	211.6	347.5	34

Continued

Table C.6. APP Continued

ID	Sex	Uric Acid	Cholesterol	Na	K	Cl
Day 3 SAMW						
RE-15	F	2.55	70.7	153.5	4.31	108.9
BL-12	M	2.47	173.4	156.3	6.63	116.9
GR-21	M	7.0	183.7	149.8	4.2	96.6
YE-76	F	3.7	315.6	154.0	4.2	108.4
Day 3 Control						
RE-10	F	2.03	544.2	161.4	3.95	112.2
BL-13	M	2.6	291.4	157.1	3.57	111.2
GR-22	M	2.80	385.5	159.9	4.36	106.5
YE-78	F	3.23	126.9	160.7	5.90	112.6

Continued

Table C.6. APP Continued

ID	Sex	TSP	Albumin	Globulin	A/G ratio	Calcium	Phosphorus	Glucose	ALP	CK	AST
Day 7 SAMW											
BL-15	M	2.872	1.49	1.4	1.1	11.73	3.95	204.6	96.2	153.2	19.0
BL-14	M	3.421	1.97	1.5	1.4	11.52	4.21	215.0	47.9	390.5	39
GR-18	M	3.075	1.44	1.6	0.9	11.53	4.98	229.4	56.6	191.2	20
YE-83	F	3.511	1.53	2.0	0.8	16.77	9.65	167.4	570.1	350.1	36
YE-88	F	4.426	1.96	2.5	0.8	25.73	8.61	191.3	468.2	336.8	56
Day 7 Control											
RE-7	F	5.242	2.32	2.9	0.8	25.92	9.26	161.8	201.0	435.1	49
BL-5	M	3.328	1.95	1.4	1.4	10.81	4.23	204.0	145.7	482.4	36
BL-10	M	3.694	2.18	1.5	1.4	11.12	5.43	216.2	48.1	399.2	44
GR-19	M	3.666	2.08	1.6	1.3	11.39	3.85	190.0	79.2	505.2	65
YE-81	F	5.223	2.13	3.1	0.7	29.4	9.56	186.7	990.8	431.7	21
YE-85	F	4.853	2.14	2.7	0.8	35.52	16.33	298.1	108.8	218.7	139

Continued

Table C.6. APP Continued

ID	Sex	Uric Acid	Cholesterol	Na	K	Cl
Day 7 SAMW						
BL-15	M	1.69	192.1	160.1	3.70	112.2
BL-14	M	1.23	259.2	158.1	4.01	112.7
GR-18	M	2.9	245.3	163.4	4.2	112.5
YE-83	F	3.2	278.6	152.0	6.4	109.4
YE-88	F	4.11	65.4	152.6	8.03	109.4
Day 7 Control						
RE-7	F	4.1	135.0	163.4	5.8	114.0
BL-5	M	3.3	206.3	161.4	4.57	113.1
BL-10	M	3.05	246.7	160.5	4.22	112.0
GR-19	M	2.38	339.9	156.5	3.77	106.0
YE-81	F	4.29	154.2	154.7	6.16	110.6
YE-85	F	7.09	95.4	138.7	18.37	104.3

Table C.7. APP

056-64590 (BL-5) Control, day 7

Slide 1. Liver, mild diffuse lipidosis and chronic portal hepatitis, moderate. Kidney, spleen, lung, Vas (abundant sperm), within normal limits (wnl)
Slide 2. Duodenum, jejunum, ileum, pancreas, wnl.
Slide 3. Gal bladder, brain, testis, esophagus, proventriculus, wnl
Slide 4. Esophagus, trachea, ventriculus, wnl.
Slide 5. Heart, wnl.

056-64591 (BL-7) AMW, day 1, 16.34ml/kg

Slide 1. Liver, mild portal chronic hepatitis. Kidney, spleen, lung wnl.
Slide 2. Pancreas, duodenum, jejunum , ileum winl.
Slide 3. Proventriculus, surface epithelium is attenuated, flattened to low cuboidal Vacuolated and crypts are hyperplastic with frequently visible mitotic figures (regeneration). Testis and heart, wnl.
Slide 4. Trachea, esophagus, gal bladder and brain, wnl
Slide 5. Ventriculitis, acute, sever, ulcerative (loss of kaolin layer), hemorrhagic with heterophilic infiltration

056-64592 (BL-10) Control, day 7

Slide 1. Liver, minimal periportal lipidosis, mild chronic portal hepatitis, lungs, spleen, kidney, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, wnl.
Slide 3. Proventriculus, testis, pancreas, wnl.
Slide 4. Ventriculus, wnl.
Slide 5. Trachea, esophagus and heart, wnl.
Slide 6. Brain, wnl.

056-64593 (BL-12), AMW, day 3, 32.14ml/kg

Slide 1. Liver, mild portal hepatitis, kidney, liver, lung, and spleen, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, wnl.
Slide 3. Proventriculus, gallbladder and testis, wnl.
Slide 4. Brain, heart, wnl.
Slide 5. Ventriculus, wnl
Slide 6. Esophagus, trachea, wnl.

Table C.7. APP Continued

056-64594 (BL-13), control, day 3

Slide 1. Liver, mild, chronic portal hepatitis, kidney, lung, and spleen, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, wnl.
Slide 3. Proventriculus, testis, esophagus, trachea, wnl.
Slide 4. Heart, brain, wnl.
Slide 5. Ventriculus, gal bladder, wnl.

056-64595 (BL-14), AMW, day 7, 22.35ml/kg

Slide 1. Liver, mild diffuse vacuolar change, mild chronic portal hepatitis. Kidney, spleen, lungs, wnl.
Slide 2. Duodenum, pancreas, jejunum, ileum, wnl.
Slide 3. Heart, brain, wnl.
Slide 4. Testis, trachea, esophagus, Proventriculus - wnl.
Slide 5. Gal Bladder, ventriculus, wnl.

056-64596 (BL-15), AMW, day 7, 37.39ml/kg

Slide 1. Liver, moderate diffuse, vacuolar change and mild chronic portal hepatitis. Spleen, kidney and lungs, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum and large intestine, wnl.
Slide 3. Trachea, testis, esophagus, proventriculus, and gallbladder wnl.
Slide 4. Brain and heart, wnl.
Slide 5. Ventriculitis, ulcerative, heterophilic with loss of kaolin layer. There is loss of Glandular epithelium with replacement by fibrous tissue.

056-64597 (BL-16), Control, day 1

Slide 1. Liver, minimal chronic portal hepatitis, lungs, spleen and kidney, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum wnl.
Slide 3. Testis, proventriculus, gallbladder, wnl.
Slide 4. Heart and brain, wnl.
Slide 5. Ventriculus, wnl.
Slide 6. Trachea and esophagus, wnl.

Table C.7. APP Continued

056-64598 (GR-16), AMW, day 1, 26.91ml/kg

Slide 1. Liver, minimal chronic portal hepatitis. Kidney, vas , lungs, spleen, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, large intestine, wnl.
Slide 3. Esophagus, trachea, proventriculus, testis, gallbladder, wnl.
Slide 4. Brain, heart, wnl.
Slide 5. Ventriculitis, hemorrhagic, heterophilic with degeneration of kaolin layer.

056-64599 (GR-17) control, day 1

Slide 1. Liver, minimal vacuolar change, diffuse and minimal chronic portal hepatitis. Lung, kidney and spleen, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, wnl.
Slide 3. Trachea, gallbladder, testis, proventriculus, wnl.
Slide 4. Brain, heart, wnl.
Slide 5. Ventriculus, wnl.

056-64600 (GR-18) AMW, day 7, 33.4 ml/kg

Slide 1. Liver, minimal chronic portal hepatitis, kidney, spleen, lungs, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, large intestine, wnl.
Slide 3. Esophagus, proventriculus, trachea, wnl. Testis, seminiferous tubule necrosis, severe diffuse, subacute (approximately 4 days old) with intertstial infiltrates of macrophages, fibroblasts and heterophils.
Slide 4. Heart, brain, wnl.
Slide 5. Liver, ventriculus, gallbladder, wnl.

056-64601 (GR-19) Control, day 7

Slide 1. Liver, minimal diffuse fatty change, minimal chronic portal hepatitis. Kidney, vas, spleen, lungs, wnl.
Slide 2. Pancreas, jejunum, ileum, duodenum, large intestine, wnl.
Slide 3. Testis, glabladder, proventriculus, wnl.
Slide 4. Brain, heart, wnl.
Slide 5. Trachea, esophagus, wnl.
Slide 6. Ventriculus, wnl.

Table C.7. APP Continued

056-64602 (GR-21) AMW, day 3, 32.89 ml/kg

Slide 1. Kidney, lung, liver, and spleen, wnl.
Slide 2. Pancreas, duodenum jejunum, large intestine, wnl.
Slide 3. Proventriculus, minimal vacuolation in the surface epithelium. Testis, gallbladder, esophagus, wnl. Trachea, extensive artifact.
Slide 4. Brain, heart, wnl.
Slide 5. Ventriculus, ventriculitis, hemorrhagic and heterophilic, with degeneration and ulceration of kaolin with attenuation of glandular layer in the deepest part of the ulcer.

056-64603 (GR-22) Control, day 3

Slide 1. Liver, minimal chronic portal hepatitis. Spleen, kidney, lungs, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, large intestine.
Slide 3. Trachea, esophagus, proventriculus, testis, wnl.
Slide 4. Brain and heart, wnl.
Slide 5. Gallbladder and ventriculus, wnl.

056-64604 (RE-1), control day 1.

Slide 1. Liver, fatty change, periportal to midzonal, moderate with minimal chronic portal hepatitis. Spleen, lung, kidney, wnl.
Slide 2. Pancreas, duodenum, jejunum, large intestine, wnl.
Slide 3. Trachea, esophagus, proventriculus, gallbladder, wnl.
Slide 4. Brain and heart, wnl.
Slide 5. Ventriculus wnl.
Slide 6. Ovary, wnl.

056-64605 (RE-6), AMW, day 0, 48.43ml/kg

Slide 1. Liver, fatty change, mild periportal to midzonal with minimal chronic portal hepatitis. Lung, spleen, kidney, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, large intestine, wnl.
Slide 3. Ovary and gallbladder wnl. Esophagus, isolated ectatic mucous gland with basophilic discoloration at ostia. Trachea, minimal submucosal mixed inflammation.
Slide 4. Brain and heart, wnl
Slide 5. Proventriculus, mucosal lining is extensively sloughed and surface covered by basophilic to amphophilic material. Some basophilic discoloration of connective tissue subjacent to the denuded mucosa. Ventriculus, wnl.

Table C.7. APP Continued

056-64606 (RE-7), control, day 0

Slide 1. Liver, fatty change, periportal to midzonal, mild. Minimal chronic portal hepatitis. Kidney, lungs, spleen, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, large intestine, wnl.
Slide 3. Trachea, esophagus, ovary, wnl.
Slide 4. Brain, heart, wnl.
Slide 5. Proventriculus, ventriculus, wnl.

056-64607 (RE-9), AMW, day 0, 31.62 ml/kg

Slide 1. Liver, chronic portal hepatitis, minimal. Kidney, lung, spleen, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, wnl.
Slide 3. Esophagus, numerous dilated and ectatic submucosal mucous glands with presence of degenerate cells in the lumina. The ostia contain basophilic substance. Trachea, mucosa in attenuated in extensive areas (single layer of flattened cells. Marked heterophilic infiltrate in the lumen and submucosa. Galbladder, wnl.
Slide 4. Brain, heart, wnl.
Slide 5. Proventriculus, erosion to ulceration of surface epithelium. Many crypts are attenuated, dilated and filled with necrotic debris. Ventriculus, extensive ulceration of kaolin layer with subjacent hemorrhage and necrosis of glandular epithelium. Minimal inflammation (peracute condition).

056-64608 (RE-10), control, day 3.

Slide 1. Liver, vacuolar change, mild diffuse. Kidney, spleen, lungs, wnl.
Slide 2. Ovary, esophagus, trachea, wnl.
Slide 3. Heart and brain, wnl.
Slide 4. Proventriculus and ventriculus, wnl.
Slide 5. Pancreas, duodenum, jejunum, ileum, wnl.

056-64609 (RE-12) control, day 1.

Slide 1. Liver, minimal diffuse, vacuolar change and minimal chronic portal hepatitis. Lungs, spleen, kidney, wnl.
Slide 2. Pancreas, duodenum, jejunum, large intestine, wnl.
Slide 3. Ovary, trachea , esophagus, gallbladder, wnl.
Slide 4. Heart wnl.
Slide 5. Ventriculus and proventriculus, wnl.

Table C.7. APP Continued

056-64610 (RE-15), AMW, day 3, 22.53 ml/kg

Slide 1. Liver, minimal diffuse, fatty change. Kidney, lung, spleen, wnl.
Slide 2. Pancreas, duodenum, jejunum, large intestine, wnl.
Slide 3. Ovary, gallbladder, esophagus, wnl. Trachea, moderate heterophilic and mixed submucosal inflammation.
Slide 4. Brain and heart, wnl.
Slide 5. Proventriculus, ventriculus, wnl.

056-64611 (RE -16) AMW, day 1, 14.99ml/kg

Slide 1. Minimal chronic portal hepatitis and mild diffuse fatty change. Lungs, spleen and kidney, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, wnl.
Slide 3. Esophagus, trachea, ovary, wnl.
Slide 4. Bain and heart, wnl.
Slide 5. Ventriculus, hemorrhage and heterophilic inflammation proventriculus, wnl.

056-64612 (YE-76) AMW day 3, 20.83ml/kg

Slide 1. Liver, minimal chronic portal hepatitis. Lungs, spleen, kidney, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, wnl.
Slide 3. Trachea, esophagus, gallbladder, adrenal, ovary, wnl.
Slide 4. Brain and heart, wnl.
Slide 5. Erosion and degeneration of kaolin layer with heterophilic inflammation. Proventriculus, wnl.

056-64613 (YE – 78) control, day 3

Slide 1. Liver, minimal diffuse, fatty change. Lung, spleen, kidney, wnl.
Slide 2. Ovary, adrenal, gallbladder, esophagus, wnl. Trachea, mild mucosal heterophilic and mixed inflammation.
Slide 3. Pancreas, duodenum, jejunum, ileum, large intestine, wnl.
Slide 4. Brain and heart, wnl.
Slide 5. Proventriculus, ventriculus, wnl.

Table C.7. APP Continued

056-64614 (YE -80) AMW, day 1, 27.64 ml/kg

Slide 1. Liver, mild, diffuse, fatty change. Lung, kidney, spleen, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, large intestine, wnl.
Slide 3. Galbladder, ovary, esophagus and trachea, wnl.
Slide 4. Brain and heart, wnl.
Slide 5. ProventriculusAttenuation, vacuolation and erosion of surface epithelium. attenuation and necrosis of crypt epithelium with heterophilic inflammation in the lamina propria. Ventriculus, degeneration, erosion and ulceration of kaolin layer with heterophilic inflammation and hemorrhage.

056-64615 (YE-81) control, day 7

Slide 1. Liver, diffuse, mild fatty change, minimal chronic portal hepatitis. Kidney, spleen, lung, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, wnl.
Slide 3. Esophagus, ovary, gallbladder, wnl. Trachea, mild submucosal heterophilicand mixed inflammation.
Slide 4. Heart and brain, wnl.
Slide 5. Proventriculus, ventriculus, wnl.

056-64616 (YE-82) control, day 1.

Slide 1. Liver, mild diffuse fatty change and regional marked, periportal and midzonal fatty change. Lung, spleen, kidney, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, wnl.
Slide 3. Ovary, trachea, esophagus, gallbladder wnl. Proventriculus, mucosal lining not in section.
Slide 4. Heart and brain, wnl.
Slide 5. Ventriculus, wnl.

056-64617 (YE-83) AMW, day 7, 27.96ml/kg

Slide 1. Liver, lipid change, diffuse, severe. Chronic portal hepatitis, minimal. Spleen, kidney and lung, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, large intestine, wnl.
Slide 3. Galbladder, proventriculus, ovary, esophagus, wnl. Trachea, submcusal mixed and heterophilic inflammation.
Slide 4. Heart and brain, wnl.
Slide 5. Ventriculus, wnl.

Table C.7. APP Continued

056-64618 (YE-85) control, day 7

Slide 1. Liver, diffuse, severe fatty change and minimal portal hepatitis chronic. Spleen, kidney, and lung, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, large intestine, wnl.
Slide 3. Esophagus, proventriculus, ovary, gallbladder, wnl. Trachea, minimal submucosal heterophilic and mixed inflammation.
Slide 4. Heart, brain, wnl.
Slide 5. Proventriculus, wnl.

056-64619 (YE-88), AMW, day 7, 29.98 ml/kg

Slide 1. Liver, diffuse, moderate fatty change. Minimal chronic portal hepatitis. Two coalescing granulomas in the parenchyma (most likely incidental). Spleen, kidney and lung, wnl.
Slide 2. Pancreas, duodenum, jejunum, ileum, large intestine, wnl.
Slide 3. Esophagus, gallbladder, proventriculus, ovary, within normal limits. Trachea, moderate submucosal mixed and heterophilic inflammation.
Slide 4. Heart, brain, wnl.
Slide 5. Ventriculus, wnl.

Table C.7. APP Continued

First Cohort

Animal #	Day euthanized	Treatment	Esophagus	Proventriculus	Ventriculus
RE-6	0	AMW 48.43 ml/kg	+	+	
RE-9	0	AMW 31.62ml/kg	+ (+trach)	+	+
RE-1	1	Control			
RE-16	1	AMW 14.99 ml/kg			+
RE-12	1	Control			
BL-7	1	AMW 16.34 ml/kg		+	+
BL-16	1	Control			
RE-15	3	AMW 22.53 ml/kg			
RE-10	3	Control			
BL-12	3	AMW 32.14 ml/kg			
BL-13	3	Control			
BL-15	7	AMW 37.39 ml/kg			
BL-5	7	Control			
BL-14	7	AMW 22.35 ml/kg			
BL-10	7	Control			
RE-7	7	Control			

Second Cohort

GR-16	1	AMW 26.91 ml/kg			+
GR-17	1	Control			
YE-80	1	AMW 27.64ml/kg		+	+
YE-82	1	Control			
GR-21	3	AMW 32.89 ml/kg		+/-(Minimal vacoulation)	+
GR-22	3	Control			
YE-76	3	AMW 20.83 ml/kg			+
YE-78	3	Control			
GR-18 (TESTIS)	7	AMW 33.4 ml/kg			
GR-19	7	Control			
YE-83	7	AMW 27.96 ml/kg			
YE-81	7	Control			
YE-88	7	AMW 29.98ml/kg			
YE-85	7	Control			

Table D.2. APP

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-101		Body weight (g)						
C-A	female	14-Aug	15-Aug	16-Aug				
		845	841	835				
14-Aug	1034	911.3	873.5	6.7	31.1	36.8	36.8	start dosing
14-Aug	1134	931.2	79.5	715	136.7	161.8		
14-Aug	1412	873.5	79.2	549	245.3	290.3		
15-Aug	945	891.4	879.8	5.9	5.7	6.8		
15-Aug	1034	879.8	78.6	540.9	260.3	309.5		
16-Aug	820	936.7	597.1	256	83.6	100.1		
16-Aug	1034	857.5	463.9	315.2	78.4	93.9		
16-Aug	1418	stop						euthanized
					48 hr total	905.3		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-101		Body weight (g)						
C-B	male	14-Aug	15-Aug	16-Aug				
		1166	1167	1152				
14-Aug	1036	931.4	807.1	55.1	69.2	59.3	59.3	start dosing
14-Aug	1136	918.8	79.3	482.1	357.4	306.5		
15-Aug	815	807.1	742.2	11.8	53.1	45.5		
15-Aug	1036	742.7	79.6	441.1	222	190.2		
16-Aug	822	925.3	605	130.7	189.6	164.6		
16-Aug	1036	605	470	56.6	78.4	68.1		
16-Aug	1514	stop						euthanized
					48 hr total	766.2		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-105		Body weight (g)						
C-C	male	14-Aug	15-Aug	16-Aug				
		1060	1050	1026				
14-Aug	1052	794.1	761.1	5.5	27.5	25.9	25.9	start dosing
14-Aug	1152	748.2	338	249.8	160.4	151.3		
15-Aug	1052	761.1	79.9	505.4	175.8	167.4		
16-Aug	1052	744	79.9	605.4	58.7	57.2		
16-Aug	1615	stop						euthanized
16-Aug	1036	605	470	56.6	78.4	68.1		
16-Aug	1514	stop						euthanized
					48 hr total	344.7		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-107		Body weight (g)						
C-D	male	14-Aug	15-Aug	16-Aug				
		1030	1021	1017				
14-Aug	1056	919.3	889.8	1.5	28	27.2	27.2	start dosing
14-Aug	1156	875.3	249.8	221.4	404.1	392.3		
15-Aug	1056	889.8	526.1	62.2	301.5	295.3		
16-Aug	1056	526.1	476.4	2.5	47.2	46.4		
16-Aug	1514	stop						euthanized
					48 hr total	714.8		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-111		Body weight (g)						
C-E	male	22-Aug	23-Aug	24-Aug				
		1098	1094	1070				
22-Aug	1014	845.3	803	9.5	32.8	29.9	29.9	start dosing
22-Aug	1114	894.7	396.1	207.7	290.9	264.9		
23-Aug	1014	906.1	394.5	316.8	194.8	178.1		
24-Aug	1014	394.5	353.5	13	28	26.2		
24-Aug	1524	stop						euthanzied @ 1524
					48 hr total	472.9		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-109		Body weight (g)						
C-F	female	14-Aug	15-Aug	16-Aug				
		757	763	750				
22-Aug	1006	722.1	453.3	175.2	93.6	123.6	123.6	start dosing
22-Aug	1106	798.2	164.3	423.8	210.1	277.5		
22-Aug	1742	714.1	81.6	458.8	173.7	229.5		
23-Aug	830	802.5	555.8	225.5	21.2	27.8		
23-Aug	1006	797.5	149.6	365.5	282.4	370.1		
24-Aug	1006	783.2	319	348.9	115.3	153.7		
24-Aug	1440	stop						euthanized
					48 hr total	1028.6		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-113		Body weight (g)						
C-G	female	22-Aug	23-Aug	24-Aug				
		1030	1038	1000				
22-Aug	1020	900.7	668.7	159.5	72.5	70.4	70.4	start dosing
22-Aug	1120	944.4	424.2	202.1	318.1	308.8		
23-Aug	1020	846.8	415.4	255	176.4	169.9		
24-Aug	1020	415.4	325.3	25.4	64.7	64.7		
24-Aug	1615	stop						euthanzied @ 1615
					48 hr total	549.2		

Continued

Table D.2. APP Continued

Date	Time	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-109		Body weight (g)						
C-H	male	14-Aug	15-Aug	16-Aug				
		988	988	971				
22-Aug	1004	894.4	830.3	6.7	57.4	58.1	58.1	start dosing
22-Aug	1104	873.6	413.3	135.6	324.7	328.6		
23-Aug	1004	877.5	227.6	311.7	338.2	342.3		
24-Aug	1004	510	177	229.8	103.2	106.3		
	1525	stop						euthanized
					48 hr total	729.0		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-104		Body weight (g)						
100x-A	male	14-Aug	15-Aug	16-Aug				
		993	975	957				
14-Aug	1046	836.3	771.5	18.7	46.1	46.4	46.4	start dosing
14-Aug	1146	809.7	616.8	57.7	135.2	136.2		
15-Aug	1046	616.8	312.9	181.2	122.7	125.8		
16-Aug	1046	312.9	260	44.3	8.6	9.0		
16-Aug	1140	stop						euthanized
					48 hr total	308.4		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-105		Body weight (g)						
100x-B	female	14-Aug	15-Aug	16-Aug				
		1032	1027	1000				
14-Aug	1050	804.4	797.8	4.2	2.4	2.3	2.3	start dosing
14-Aug	1150	880.9	802.2	10	68.7	66.6		
15-Aug	1050	797.8	749.1	11	37.7	36.7		
16-Aug	1050	749.1	749.1	0	0	0.0		
16-Aug	1419	stop						euthanized
					48 hr total	105.6		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-106		Body weight (g)						
100x-C	female	14-Aug	15-Aug	16-Aug				
		958	945	927				
14-Aug	1058	916.8	860.5	41.4	14.9	15.6	15.6	start dosing
14-Aug	1158	888	710.6	82.8	94.6	98.7		
15-Aug	1058	860.5	632.6	106.6	121.3	128.4		
16-Aug	1058	632.6	530.2	86.1	16.3	17.6		
16-Aug	1325	stop						euthanized
					48 hr total	242.7		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-107		Body weight (g)						
100x-D	male	14-Aug	15-Aug	16-Aug				
		1244	1236	1226				
14-Aug	1100	878.5	848.7	4.5	25.3	20.3	20.3	start dosing
14-Aug	1200	908.3	665	90.7	152.6	122.7		
15-Aug	1100	848.7	654.4	72.2	122.1	98.8		
16-Aug	1100	654.4	624.7	14.7	15	12.2		
16-Aug	1330	stop						euthanized
					48 hr total	241.8		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-112		Body weight (g)						
100x-E	male	22-Aug	23-Aug	24-Aug				
		968	944	918				
22-Aug	1016	899.8	826.2	22.1	51.5	53.2	53.2	start dosing
22-Aug	1116	936.6	882	17.1	37.5	38.7		
23-Aug	1016	882	831.1	15.5	35.4	37.5		
24-Aug	1016	831.1	824.3	3.8	3	3.3		
24-Aug	1339	stop						euthanzied @ 1339
					48 hr total	129.4		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-114		Body weight (g)						
100x-F	female	22-Aug	23-Aug	24-Aug				
		1002	989	974				
22-Aug	1024	930.6	877.8	19.5	33.3	33.2	33.2	start dosing
22-Aug	1124	821.2	644.3	35.7	141.2	140.9		
23-Aug	1024	644.3	227.3	256.4	160.6	162.4		
24-Aug	1024	227.3	136.1	17.7	73.5	75.5		
24-Aug	1345	stop						euthanzied @ 1345
					48 hr total	336.5		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-115		Body weight (g)						
100x-G	female	22-Aug	23-Aug	24-Aug				
		789	777	755				
22-Aug	1030	875.3	822.6	24.6	28.1	35.6	35.6	start dosing
22-Aug	1130	920.9	78.9	775.9	66.1	83.8		
22-Aug	1744	822.6	523.4	197.7	101.5	128.6		
23-Aug	1030	825.8	277.3	410.7	137.8	177.3		
24-Aug	1030	277.3	246.6	11.8	18.9	25.0		
24-Aug	1204	stop						euthanzied @ 1204
					48 hr total	425.4		

Continued

Table D.2. APP Continued

Date	Time	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-113		Body weight (g)						
100x-H	male	22-Aug	23-Aug	24-Aug				
		1086	1078	1056				
22-Aug	1022	907.2	810.6	45.8	50.8	46.8	46.8	start dosing
22-Aug	1122	727	418.6	130.7	177.7	163.6		
23-Aug	1022	877.4	468.6	244.2	164.6	152.7		
24-Aug	1022	468.6	414.5	17.8	36.3	34.4		
24-Aug	1427	stop						euthanzied @ 1427
					48 hr total	363.1		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-100		Body weight (g)						
10x-A	male	14-Aug						
		1030						
14-Aug	1030	879.4	864.9	3.7	10.8	10.5	10.5	start dosing
14-Aug	1130	904.7	728.5	5.3	170.9	165.9		
14-Aug	1416	stop						euthanized @ 14:16; immobile; head droop
					total	176.4		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-100		Body weight (g)						
10x-B	female	14-Aug	15-Aug					
		959	870					
14-Aug	1032	902.9	862	10.8	30.1	31.4	31.4	start dosing
14-Aug	1132	912.7	750.4	12.5	149.8	156.2	6.8	
15-Aug	1032	862	796.2	26.8	39	44.8	1.867816	
16-Aug	1032	796.2	796.2	0	0			
16-Aug	1035	stop						euthanized
					48 hr total	232.4		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-103		Body weight (g)						
10x-C	female	14-Aug	15-Aug	16-Aug				
		976	941	904				
14-Aug	1042	829.7	791.9	16.2	21.6	22.1	22.1	start dosing
14-Aug	1142	861.6	800.9	33.6	27.1	27.8		
15-Aug	1042	791.9	545	221.4	25.5	27.1		
16-Aug	1042	545	545	0	0	0		euthanized
					48 hr total	77.0		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-103		Body weight (g)						
10x-D	male	14-Aug	15-Aug	16-Aug				
		1039	987	938				
14-Aug	1044	704.3	654.9	15.5	33.9	32.6	32.6	start dosing
14-Aug	1144	799	455.5	167.8	175.7	169.1		
15-Aug	1044	654.9	403.1	175	76.8	77.8		
16-Aug	1044	403.1	395	5.1	3	3.2		
16-Aug	1139	stop						euthanized
					48 hr total	279.5		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-111		Body weight (g)						
10x-E	female	22-Aug	23-Aug	24-Aug				
		911	823	809				
22-Aug	1012	812.9	744.1	13.1	55.7	61.1	61.1	start dosing
22-Aug	1112	793	664.9	15.9	112.2	123.2		
23-Aug	1012	664.9	648.1	11.8	5	6.1		very lethargic and weak; mucus in esophagus and trachea
24-Aug	1012	648.1	648.1	0	0	0		euthanzied at 10:23
24-Aug	10:23	stop						
					48 hr total	190.4		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-114		Body weight (g)						
10x-F	male	22-Aug	23-Aug	24-Aug				
		1036	937	883				
22-Aug	1028	821.1	744.7	8	68.4	66.0	66.0	start dosing
22-Aug	1128	857.5	564.4	150	143.1	138.1		
23-Aug	1028	876	719.2	135.6	21.2	22.6		
24-Aug	1028	719.2	703	14.5	1.7	1.9		
24-Aug	1103	stop						euthanized @ 1103
					48 hr total	226.8		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-108		Body weight (g)						
10x-G	male	22-Aug						
		1125						
22-Aug	1002	782.9	686.4	16.6	79.9	71.0	71.0	start dosing
22-Aug	1102	700.6	549.3	30.5	120.8	107.4		
22-Aug	1530	stop						euthanized @ 1530; unable to hold head up; immobile and wing droop
					total	178.4		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-112		Body weight (g)						
10x-H	female	22-Aug	23-Aug	24-Aug				
		1065	982	935				
22-Aug	1018	866.7	801.7	19.7	45.3	42.5	42.5	start dosing
22-Aug	1118	901.5	785.3	19.4	96.8	90.9		
23-Aug	1018	785.3	737	22.1	26.2	26.7		
24-Aug	1018	737	727.3	2.2	7.5	8.0		
24-Aug	1202	stop						euthanzied @ 1202
					total	160.1		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-102		Body weight (g)						
1x-A	male	14-Aug						
		952						
14-Aug	1038	575.5	562.6	8.9	4	4.2	4.2	start dosing
14-Aug	1138	481.6	256.5	168.1	57	59.9		
14-Aug	1708	stop					euthanized @ 1708; *in extremis*	
					total	64.1		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-102		Body weight (g)						
1x-B	female	14-Aug						
		975						
14-Aug	1040	615.9	607.6	5.8	2.5	2.6	2.6	start dosing
14-Aug	1140	782.4	739.6	7	35.8	36.7		
14-Aug	1845	stop						euthanized @ 1845; head droop, immobile, rapid breathing
					total	39.3		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-104		Body weight (g)						
1x-C	female	14-Aug						
		812						
14-Aug	1048	674.7	610.4	15.9	48.4	59.6	59.6	start dosing
14-Aug	1148	728.3	713	8.3	7	8.6		
14-Aug	1211	stop						euthanized @ 1211; in extremis, immobile, and sitting
					total	68.2		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-106		Body weight (g)						
1x-D	male	14-Aug						
		919						
14-Aug	1054	640	609.6	10.7	19.7	21.4	21.4	start dosing
14-Aug	1154	730.1	619.6	37.7	72.8	79.2		
14-Aug	1312	stop					euthanized @ 1312; *in extremis;* immobile	
					total	100.7		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-110		Body weight (g)						
1x-E	female	22-Aug						
		892						
22-Aug	1008	497.7	457.2	14	26.5	29.7	29.7	start dosing
22-Aug	1108	606.3	562.4	25.9	18	20.2		
22-Aug	1344	stop					euthanized @ 1344; head and wing-droop, increased breathing rate	
					total	49.9		

Continued

Table D.2. APP Continued

Date	Time	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-110		Body weight (g)						
1x-F	male	22-Aug						
		990						
22-Aug	1010	689.4	642.2	13.9	33.3	33.6	33.6	start dosing
22-Aug	1110	691.2	452.6	177.2	61.4	62.0		
22-Aug	1230	stop						euthanized @ 1230; wings drooping; dazed look
					total	95.7		

Continued

Table D.2. APP Continued

Date	Time	Water Reservoir Wts (g) Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
M-115		Body weight (g)						
1x-G	male	22-Aug						
		1119						
22-Aug	1026	689	653.2	11.2	24.6	22.0	22.0	start dosing
22-Aug	1126	578.7	80	468.2	30.5	27.3		
22-Aug	1450	653.2	192.9	451.9	8.4	7.5		
22-Aug	1501	stop						euthanzied @ 1501; mostly immobile; ataxic; trance-like
					total	56.7		

Continued

Table D.2. APP Continued

		Water Reservoir Wts (g)						
Date	Time	Start (g)	Finish (g)	Spilled (g)	g drunk	g/kg	g/kg/hr	Comments
F-108		Body weight (g)						
1x-H	female	22-Aug						
		943						
22-Aug	1000	669.4	601.7	12.9	54.8	58.1	58.1	start dosing
22-Aug	1100	703.9	618.6	66.5	18.8	19.9		
22-Aug	1325	stop					euthanized @ 1325; wing-droop, trance-like, very lethargic	
					total	78.0		

Continued

Table D.2. APP Continued

Bird ID	Dose Time Start	Time of Death	Time to Death (min)
1X-A	1038	1708	390
1X-B	1040	1845	485
1X-C	1048	1211	83
1X-D	1054	1312	138
1X-H	1000	1325	205
1X-E	1008	1344	216
1X-F	1010	1230	140
1X-G	1026	1501	275
		avg	241.5
		SD	136.6
10X-G	1002	1530	328
10X-A	1030	1416	226
		avg	277.0
		SD	72.1

Table D.3. APP

	Body Weights									
SAMW	**1x-G**	**1x-E**	**1x-F**	**1x-H**	**1x-A**	**1x-B**	**1x-C**	**1x-D**	**avg**	**sd**
hydrated	1185	960	1065	1005	1020	1068	850	1037	1023.8	96.0
24 hr dehydrated-prior to dosing	1119	892	990	943	952	975	812	960	955.4	87.1
death	1057	817	952	893	877	918	782	919	901.9	84.0
b.w. change from hydrated to death	-128	-143	-113	-112	-143	-150	-68	-118	-121.9	26.2
% b.w. change from hydrated to death	-10.8	-14.9	-10.6	-11.1	-14.0	-14.0	-8.0	-11.4	-11.9	2.3
b.w. change from initiation of dosing to death	-62	-75	-38	-50	-75	-57	-30	-41	-53.5	16.8
% b.w. change from initiation of dosing to death	-5.5	-8.4	-3.8	-5.3	-7.9	-5.8	-3.7	-4.3	-5.6	1.8
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-66	-68	-75	-62	-68	-93	-38	-77	-68.4	15.6
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-5.6	-7.1	-7.0	-6.2	-6.7	-8.7	-4.5	-7.4	-6.6	1.3
1/10 SAMW	**10x-F**	**10x-E**	**10x-H**	**10x-G**	**10x-A**	**10x-B**	**10x-C**	**10x-D**	**avg**	**sd**
hydrated	1095	976	1122	1196	1082	1022	1040	1102	1079.4	67.3
24 hr dehydrated-prior to dosing	1036	911	1065	1125	1030	959	976	1039	1017.6	66.8
death	883	809	935	1069	990	832	904	938	920.0	84.0
b.w. change from hydrated to death	-212	-167	-187	-127	-92	-190	-136	-164	-159.4	39.1
% b.w. change from hydrated to death	-19.4	-17.1	-16.7	-10.6	-8.5	-18.6	-13.1	-14.9	-14.9	3.9
b.w. change from initiation of dosing to death	-153	-102	-130	-56	-40	-127	-72	-101	-97.6	39.1
% b.w. change from initiation of dosing to death	-14.8	-11.2	-12.2	-5.0	-3.9	-13.2	-7.4	-9.7	-9.7	3.9
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-59	-65	-57	-71	-52	-63	-64	-63	-61.8	5.7
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-5.4	-6.7	-5.1	-5.9	-4.8	-6.2	-6.2	-5.7	-5.7	0.6

Continued

Table D.3. APP Continued

	Body Weights									
1/100 SAMW	**100x-G**	**100x-F**	**100x-E**	**100x-H**	**100x-A**	**100x-B**	**100x-C**	**100x-D**	**avg**	**st.dev.**
hydrated	865	1060	1024	1151	1046	1095	1027	1360	1078.5	140.1
24 hr dehydrated-prior to dosing	789	1002	968	1086	993	1032	958	1244	1009.0	128.0
death	755	974	918	1056	957	1000	927	1226	976.6	133.3
b.w. change from hydrated to death	-110	-86	-106	-95	-89	-95	-100	-134	-101.9	15.3
% b.w. change from hydrated to death	-12.7	-8.1	-10.4	-8.3	-8.5	-8.7	-9.7	-9.9	-9.5	1.5
b.w. change from initiation of dosing to death	-34	-28	-50	-30	-36	-32	-31	-18	-32.4	8.9
% b.w. change from initiation of dosing to death	-4.3	-2.8	-5.2	-2.8	-3.6	-3.1	-3.2	-1.4	-3.3	1.1
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-76	-58	-56	-65	-53	-63	-69	-116	-69.5	20.2
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-8.8	-5.5	-5.5	-5.6	-5.1	-5.8	-6.7	-8.5	-6.4	1.5
Controls	**C-E**	**C-G**	**C-H**	**C-F**	**C-A**	**C-B**	**C-C**	**C-D**	**avg**	**st.dev.**
hydrated	1166	1112	1065	795	903	1242	1129	1091	1062.9	145.2
24 hr dehydrated-prior to dosing	1098	1030	988	757	845	1166	1060	1030	996.8	134.0
death	1070	1000	971	750	835	1152	1026	1017	977.6	128.5
b.w. change from hydrated to death	-96	-112	-94	-45	-68	-90	-103	-74	-85.3	21.7
% b.w. change from hydrated to death	-8.2	-10.1	-8.8	-5.7	-7.5	-7.2	-9.1	-6.8	-7.9	1.4
b.w. change from initiation of dosing to death	-28	-30	-17	-7	-10	-14	-34	-13	-19.1	10.1
% b.w. change from initiation of dosing to death	-2.6	-2.9	-1.7	-0.9	-1.2	-1.2	-3.2	-1.3	-1.9	0.9
hydrated condition to initiation of dosing (-24 hr to 0 hr)	-68	-82	-77	-38	-58	-76	-69	-61	-66.1	14.0
% b.w. hydrated condition to initiation of dosing (-24 hr to 0 hr)	-5.8	-7.4	-7.2	-4.8	-6.4	-6.1	-6.1	-5.6	-6.2	0.8

Table D.4. APP

ID	Dilution	Sex	TSP	Albumin	Globulin	A/G Ratio	Calcium	P	Glucose	ALP	CK
SAMW											
1x-F	2x	m	3.672	1.84	1.8	2	13.04	5.24	187	175	1200.4
1x-H	2x	f	4.868	2.14	2.8	1.56	42.56	11.44	74	171	695.4
1x-E	2x	f	3.366	1.24	2.2	1.16	14.16	13.58	279.4	258	1428.2
1x-G	2x	m	2.668	1.3	1.4	1.9	13.52	12.3	213.2	346.8	1473.2
1x-C	2x	f	4.69	2.26	2.4	1.86	18.12	2.8	209.8	443.8	644.8
1x-B	Not submitted; not enough serum for analysis										
1x-D	2x	m	5.05	2.46	2.6	1.9	14.98	4.64	57.8	207	716.6
1x-A	1x	m	4.489	2.36	2.1	1.11	11.44	7.21	332.1	163.5	1250.6
1/10 SAMW											
10x-G	2x	m	3.802	1.6	2.2	1.46	13.1	10.26	235	190.4	912.2
10x-E	1x	f	4.337	1.86	2.5	0.75	15.02	9.39	419.8	72.2	1956.2
10x-F	2x	m	5.832	2.74	3	1.78	18.5	14.4	641.6	121	3399.4
10x-H	1x	f	3.345	1.63	1.7	0.95	11.79	5.92	361.7	97.6	265.5
10x-A	1x	m	3.898	2.05	1.8	1.11	13.2	5.39	311.9	99.5	1409.2
10x-C	1x	f	4.675	2.01	2.7	0.75	17.24	6.46	220.7	317.9	418.2
10x-B	1x	f	3.861	2.06	1.8	1.14	13.44	7.45	225.6	68.8	1035.4
10x-D	1x	m	3.393	1.71	1.7	1.02	12.01	7.3	284.5	274.5	846.8

Continued

Table D.4. APP Continued

ID	Dilution	Sex	TSP	Albumin	Globulin	A/G Ratio	Calcium	P	Glucose	ALP	CK
1/100 SAMW											
100x-G	1x	f	3.904	1.77	2.1	0.83	12.48	3.77	204.4	302.6	281.6
100x-F	1x	f	4.326	2.27	2.1	1.1	12.9	3.64	200.2	113.7	671.3
100x-E	2x	m	4.458	2.3	2.2	2.14	11.96	4.38	176.4	62.8	346.6
100x-H	1x	m	3.306	1.7	1.6	1.06	12.04	5.63	184.1	117.3	882.7
100x-C	1x	f	4.167	2.22	1.9	1.14	12.49	3.76	197.9	164.7	383
100x-A	1x	m	3.955	1.9	2.1	0.92	12.53	4.59	190.3	81.1	264.6
100x-D	1x	m	3.583	1.83	1.8	1.04	11.96	4.49	207.2	165.3	258
100x-B	1x	f	3.835	2.23	1.6	1.39	11.85	3.94	201.3	52.1	656.1
Control											
c-F	1x	f	5.409	2.51	2.9	0.87	15.17	4.98	272.3	30.5	404.9
c-H	1x	m	3.724	1.99	1.7	1.15	11.99	3.67	216.1	160.9	174.8
c-E	1x	m	3.997	1.94	2.1	0.94	12.85	8.44	303.9	192.7	185.7
c-G	1x	f	4.13	1.95	2.2	0.89	13.95	7.8	301.8	101.4	381.4
c-C	1x	m	4.113	2.34	1.8	1.32	13.03	6.94	183.8	131.4	501.8
c-B	1x	m	4.032	2.18	1.9	1.18	12.44	5.08	210.1	96.3	154.4
c-A	1x	f	4.631	1.93	2.7	0.71	12.99	5.17	193.3	104.2	487.2
c-D	1x	f	4.465	2.51	2	1.28	12.71	4.94	206.2	41.5	952

Continued

Table D.4. APP Continued

ID	Dilution	Sex	AST	Uric Acid	Cholesterol	Na	K	Na/K Ratio	Cl	Hemoglobin	Necropsy PCV
SAMW											
1x-F	2x	m	258	42.26	417.8	164.2	7.48	44	119.2	4	62
1x-H	2x	f	214	84.98	276.2	158.4	6.66	47.6	109.2	0	67
1x-E	2x	f	356	77.84	304	166.6	4.76	70	108.4	30	63
1x-G	2x	m	264	83.14	238.4	170.2	9.28	36.6	118.4	38	64
1x-C	2x	f	80	16.88	266.4	167.4	4.26	78.6	115.8	14	64
1x-B	Not submitted; not enough serum for analysis										76
1x-D	2x	m	204	41.9	413.6	169.2	7.64	44.2	116.8	6	68
1x-A	1x	m	163	34.25	551.5	164.7	6.43	25.6	99.9	35	68
1/10 SAMW											
10x-G	2x	m	224	50.26	352.8	153.4	7.06	43.4	105.6	4	67
10x-E	1x	f	107	20.05	274.5	131.9	9.17	14.4	92.9	273	51
10x-F	2x	m	306	53.54	394	174	10.72	32.4	129.8	772	52
10x-H	1x	f	31	11.87	293.2	152.4	4.66	32.7	105.2	48	60
10x-A	1x	m	223	36.91	351.5	155.7	4.31	36.1	94	22	72
10x-C	1x	f	42	4.72	413.2	172.3	3.38	51	118	12	45
10x-B	1x	f	148	24.3	273.4	147.1	4.42	33.3	94.3	38	67
10x-D	1x	m	86	17.1	321.4	148.6	6.64	22.4	102.7	152	53

Continued

Table D.4. APP Continued

ID	Dilution	Sex	AST	Uric Acid	Cholesterol	Na	K	Na/K Ratio	Cl	Hemoglobin	Necropsy PCV
1/100 SAMW											
100x-G	1x	f	10	3.89	236	165.3	3.93	42.1	116.8	18	39
100x-F	1x	f	56	2.51	296.8	161.9	3.69	43.9	110.3	27	49
100x-E	2x	m	16	7.44	363.6	149.6	3.28	91.2	112	2	52
100x-H	1x	m	27	2.61	261.1	166	4	41.5	111.4	7	51
100x-C	1x	f	42	3.17	340.2	163	3.28	49.7	114	9	46
100x-A	1x	m	35	4.4	309.9	153.3	3.72	41.2	100.1	5	50
100x-D	1x	m	31	2.31	286	155.8	4.52	34.5	106.7	25	47
100x-B	1x	f	57	3.02	381.8	161.6	3.41	47.4	110.7	13	44
Controls											
c-F	1x	f	38	8.25	786.2	153.7	4.02	38.2	104.5	9	45
c-H	1x	m	13	2.18	336.1	158.3	3.15	50.3	108.3	11	44
c-E	1x	m	44	4.84	299.4	153	9.12	16.8	110	15	43
c-G	1x	f	81	7.62	376.4	155	8.04	19.3	109	16	45
c-C	1x	m	55	4.7	407.6	166.6	5.05	33	109.9	23	46
c-B	1x	m	10	2.66	342.4	155.3	3.14	49.5	106	10	45
c-A	1x	f	67	4.13	288.6	155.7	3.86	40.3	107.7	19	45
c-D	1x	f	53	3.66	438	160.1	4.95	32.3	110.1	18	46

Table D.5. APP

Dose Group	Individual	Total WBCs	Differential (%)					Red Blood Cells ($x10^6$/uL)
			Heterophils	Lymphocytes	Monocytes	Eosinophils	Basophils	
control	C-F	21400	50	43	0	3	4	3.59
control	C-H	24600	53	45	2	0	0	2.71
control	C-E	28900	34	65	1	0	0	2.43
control	C-G	34000	31	68	1	0	0	3.30
Average		27225	42	55	1.0	0.8	1.0	3.01
SD		5463	11	13	0.8	1.5	2.0	0.53
SAMW	1X-F	4700	83	17	0	0	0	1.96
SAMW	1X-H	13800	91	9	0	0	0	3.03
SAMW	1X-E	42000	99	1	0	0	0	1.59
SAMW	1X-G	22800	85	11	4	0	0	4.56
Average		20825	90	10	1.0	0.0	0.0	2.79
SD		15934	7	7	2.0	0.0	0.0	1.33
1/10 SAMW	10X-G	10800	88	9	3	0	0	0.79
1/10 SAMW	10X-E	32650	85	14	0	0	1	2.39
1/10 SAMW	10X-F	56900	81	18	1	0	0	2.65
1/10 SAMW	10X-H	32600	88	8	3	1	0	3.38
Average		33238	86	12	1.8	0.3	0.3	2.30
SD		18834	3	5	1.5	0.5	0.5	1.09
1/100 SAMW	100X-E	14800	41	55	1	0	3	4.74
1/100 SAMW	100X-F	21600	46	47	0	4	3	3.47
1/100 SAMW	100X-H	14700	38	56	1	4	1	3.91
1/100 SAMW	100X-G	11700	42	51	0	1	6	3.48
Average		15700	42	52	0.5	2.3	3.3	3.90
SD		4188	3	4	0.6	2.1	2.1	0.60

Continued

Table D.5. APP Continued

		Absolute (per uL)							
Dose Group	Individual	Heterophils	Lymphocytes	Monocytes	Eosinophils	Basophils	PCV	MCV	Comments
control	C-F	10700	9202	0	642	856	48	133.7	
control	C-H	13038	11070	492	0	0	46	169.7	small lymphocytes
control	C-E	9826	18785	289	0	0	42	172.8	small lymphocytes
control	C-G	10540	23120	340	0	0	43	130.3	some small lymphocytes
Average		11026	15544	280	161	214	45	151.6	
SD		1394	6535	206	321	428	3	22.7	
SAMW	1X-F	3901	799	0	0	0	62		hemolyzed; hct from necropsy
SAMW	1X-H	12558	1242	0	0	0	67		hemolyzed; hct from necropsy
SAMW	1X-E	41580	420	0	0	0	63		hemolyzed; hct from necropsy
SAMW	1X-G	19380	2508	912	0	0	71		
Average		19355	1242	228	0	0	66		
SD		16114	908	456	0	0	4		
1/10 SAMW	10X-G	9504	972	324	0	0			hemolyzed
1/10 SAMW	10X-E	27753	4571	0	0	327	48	200.8	polychromasia 1+
1/10 SAMW	10X-F	46089	10242	569	0	0	53	200	polychromasia few; anisocytosis few
1/10 SAMW	10X-H	28688	2608	978	326	0	51	150.9	
Average		28009	4598	468	82	82	51	183.9	
SD		14943	4040	412	163	164	3	28.6	

Continued

Table D.5. APP Continued

		Absolute (per uL)							
Dose Group	Individual	Heterophils	Lymphocytes	Monocytes	Eosinophils	Basophils	PCV	MCV	Comments
1/100 SAMW	100X-E	6068	8140	148	0	444	46	97	
1/100 SAMW	100X-F	9936	10152	0	864	648	50	144.1	
1/100 SAMW	100X-H	5586	8232	147	588	147	46	117.6	
1/100 SAMW	100X-G	4914	5967	0	117	702	41	117.8	
Average		6626	8123	74	392	485	46	119.1	
SD		2257	1710	85	404	251	4	19.3	

Photographs of Animal Caging and Pathology

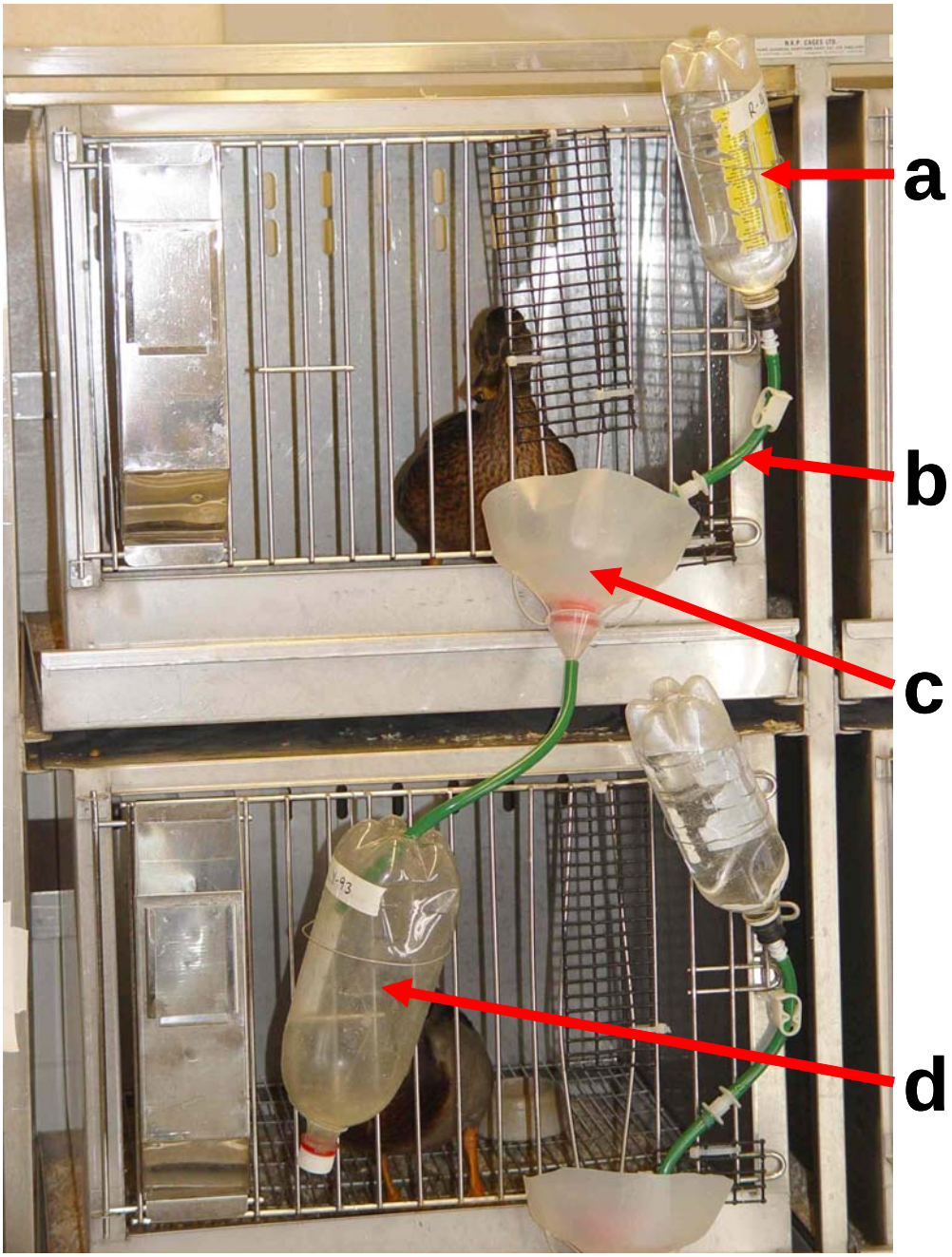

Figure 1. A) Water is supplied from a gravity fed reservoir attached to the upper portion of the cage front door. B) Tube clamps and quick release fittings allow for rapid change-out when monitoring short-interval drinking rates. C) Each cage is provided with a sipper-type watering cup that sits at the bottom of a water spillage collector. Birds have free access to all the water they care to drink or spill. Several sets of fresh and waste water reservoirs are available for each cage allowing for multiple data collection times in short study periods. D) Waste collection occurs in a bottom reservoir where spilled water is collected. Overall, Water consumption = (Water used from upper reservoir) – (Spillage collected in bottom reservoir).

Figure 2. Water provision and waste collection system – view from above. Ducks press the yellow bar in the sipper cup, which releases drinking water into the cup. Some ducks play with the sipper cups, resulting in increased waste water. Waste collection system allows quantification of waste spillage, avoiding incorrect interpretation of drinking rates.

Figure 3. Mallard ducks are maintained in stainless steel rabbit cages modified for collection of water consumption and spillage data. Consistent lighting for each cage is maintained using fluorescent lamps mounted vertically adjacent to the cage rack

Note: The following photographs of pathological lesions are presented from the mouth through the gastrointestinal tract to the small intestine, following the order encountered anatomically. Though the photos are attributed to specific studies, the pathologies are demonstrated as representative lesions often found across multiple studies. Refer to the report text of each study to determine the specific lesions from that study.

Figure 4. Oral lesions on lateral portion of tongue and inner lower mandible from a mallard treated with 1/10 SAMW in study D.

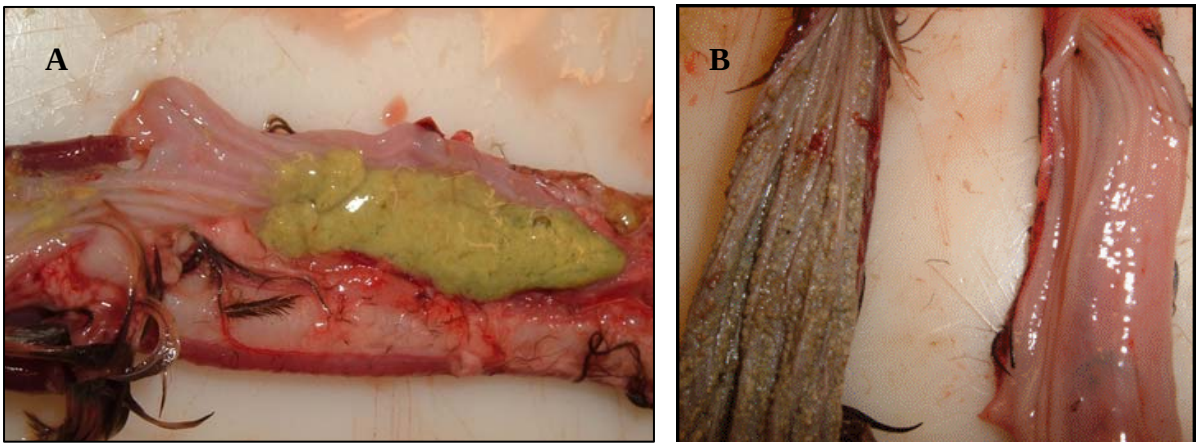

Figure 5. A) Proximal esophagus from a neutralized AMW-treated mallard containing neutralized AMW precipitate and mucus. B) Left: A discolored proximal esophagus with mucus from a SAMW-treated mallard from study A. Right: An esophagus from a control mallard.

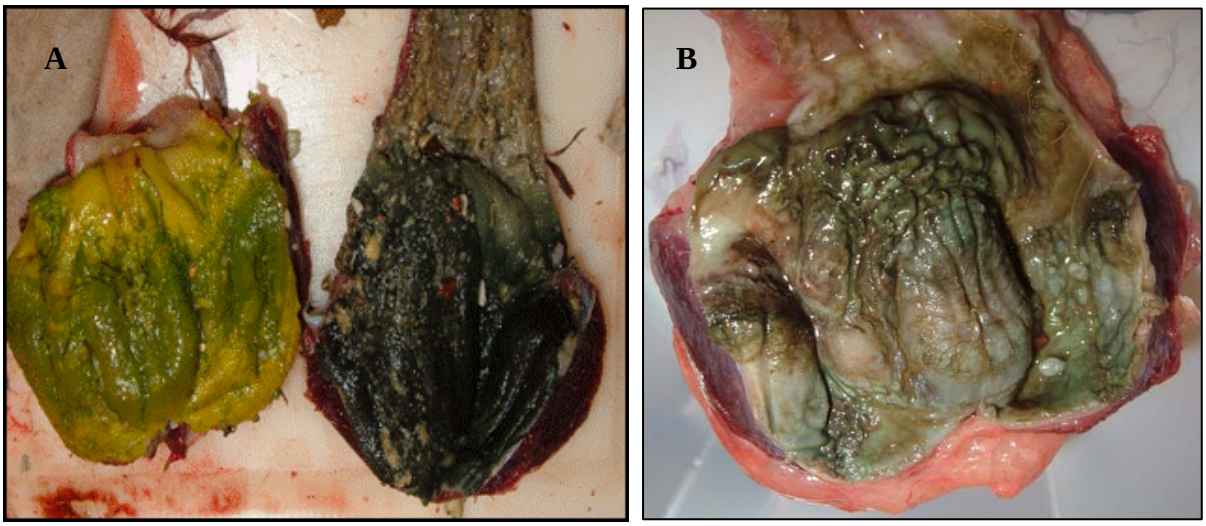

Figure 6. A) Kaolin layer of ventriculus from a control mallard (left) and a mallard treated with SAMW in Study A (right). B) Ventriculus of a neutralized AMW-treated mallard, Study B.

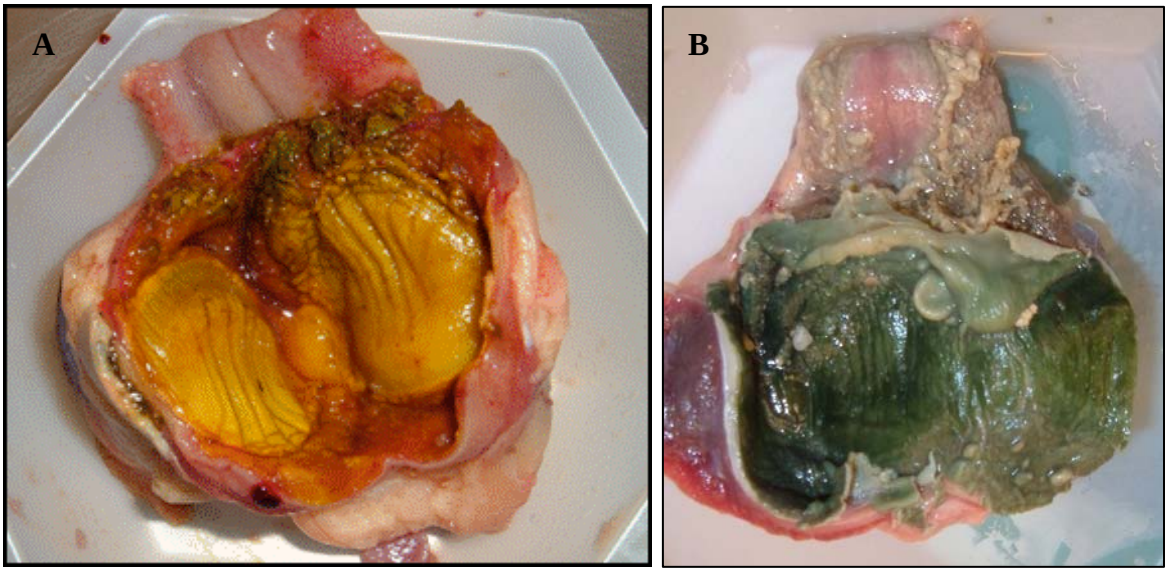

Figure 7. A) Ventriculus of a mallard one day after one hour of access to SAMW in Study C. B) Proventriculus and kaolin of ventriculus from a mallard treated with SAMW in Study D.

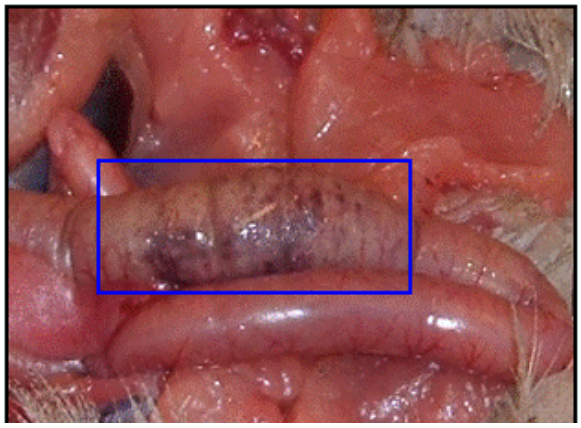

Figure 8. Petechial hemorrhage on the serosal surface of the proximal duodenum from a mallard treated with SAMW in Study A.

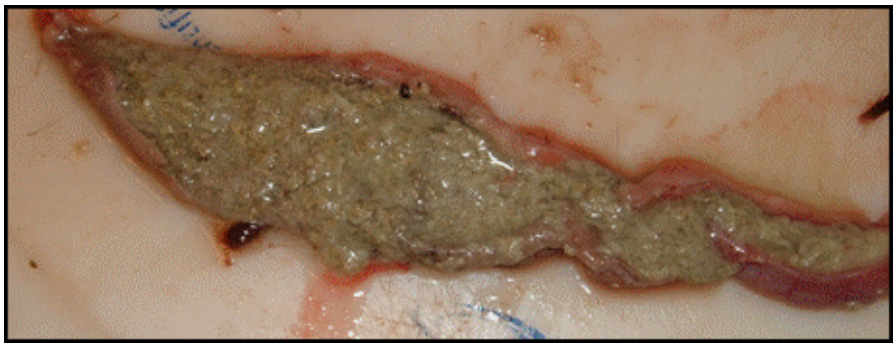

Figure 9. Ulcerations and flocculent material in the proximal duodenum of the same Study A bird as Figure 8.

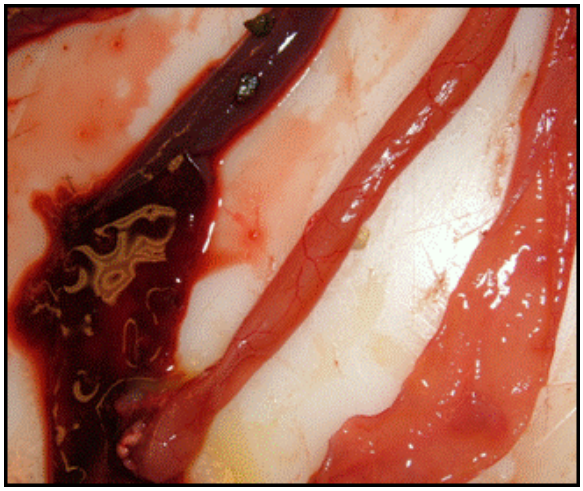

Figure 10. Duodenal loop from a SAMW-treated mallard (left) and a control mallard (right) from Study A.