

70-371

UNC Naval Products

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PO Box 981
Uncasville, Connecticut 06382-0981
203/848-1511 Telecopy 203/848-0022
TWX 710/432-1243

IN REPLY PLEASE REFER TO:
NIS 90-11-22

November 26, 1990

Mr. Charles Haughney
Fuel Cycle Safety Branch
Mail Stop WF1 6H3
Division of Fuel Cycle & Medical
and Commercial Use Safety
U.S. Nuclear Regulatory Commission
Washington DC 20555

- Ref:
- (1) Letter From D. Birks To J. Berger dated 8-21-90
 - (2) Letter From D. Birks To J. Berger dated 9-10-90
 - (3) Letter From D. Birks To C. Haughney dated 9-28-90
 - (4) Letter From D. Birks To C. Haughney dated 10-22-90
 - (5) Letter From D. Birks To C. Haughney dated 11-8-90

Dear Sir:

I have enclosed additional data which has been received from CEP regarding our leach field analysis. Gross alpha information for all soil samples included in the initial survey plan have now been received. The enclosed data package contains all the results received to date.

The referenced letters (1) and (2) provide the appropriate sketches which show sample locations. As before, please contact CEP promptly if you desire any additional split samples. The address is:

Controls for Environmental Pollution
Attention: Jim Mueller
1925 Rosina, P.O. Box 5351
Santa Fe, NM 87502
Phone: (505) 982-9841
Fax: (505) 982-9289

I will continue to send any additional analysis results which we may request from CEP. Please call me at (203) 848-1511, ext. 2559 if you have any questions.

Sincerely,
Donald M. Birks
Donald M. Birks,
Nuclear & Industrial Safety

cc: D. Gallaway, CT DEP
J. Roth, NRC, Region I
J. Berger, ORAU
R. Gregg
D. Luster

9012050311 901126
PDR ADOCK 07000371
C PDC

NF12 1/1

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/5" 140# HAMMER	COMMENTS	G. ALPHA pCi/gm or l	TOTAL U	ISO. U (pCi/gm or l)			OTHER
						U-234	U-235	U-238	
BG-1	0-2	8-14-27-37		1.9 ± 1.2					
	3-5	40-80-RF		2.8 ± 1.3					
	6-8	6-17-26-25		2.6 ± 1.2					
	9-11	75-32-35-38		1.6 ± 1.1					
	13-15	18-23-29-55		2.6 ± 1.2					
BG-2	0-2	6-6-6-6		1.5 ± 1.2					
	3-5	4-7-7-8		2.5 ± 1.2					
	6-8	4-6-7-8		1.4 ± 1.1					
	9-11	3-5-23-33		2.8 ± 1.3					
	12-14	7-8-9-12		1.8 ± 1.1					
	15-17	8-14-16-15		3.4 ± 1.4					
	18-20	8-22-26-20		3.1 ± 1.5					
	21-23	18-21-38-15		< 0.3					
BG-3	0-2	4-6-8-10		< 0.3					
	3-5	4-8-8-8		< 0.3					
	6-8	3-5-8-11		2.3 ± 1.4					
	9-11	1-5-9-14		< 0.3					
	12-14	5-7-11-12		< 0.3					
	15-17	7-9-12-12		< 0.3					
	18-20	4-9-8-7		< 0.3					
	WAT 18'			96 ± 35		86.7 ± 24	3.5 ± 1	92 ± 21	Gross Beta 285 +/- 60 pCi/l
BG-4	0-2	3-14-17-15		1.8 ± 1.3					
	3-5	5-9-10-10		3.8 ± 1.5					
	6-8	3-5-7-9		3.1 ± 1.4					
	9-11	4-7-9-9		1.7 ± 1.2					
	13-15	4-5-8-9		< 0.3					
WAT 21'			174 ± 49		95.2 ± 21	3.8 ± 1	101 ± 19	Gross Beta 334 +/- 63 pCi/l	

LEGEND

BG = BACKGROUND
 G = GREEN (FIELD 2)
 O = ORANGE (FIELD 1)
 W = WELL (DRYWELL SAMPLE)
 RF = REFUSAL(AUGER COULD NOT GET THROUGH ROCK)

LAST UPDATE - 11-26-90

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/6" 140# HAMMER	COMMENTS	G. ALPHA pCi/gm or l	TOTAL U	ISO. U (pCi/gm or l)			OTHER
						U-234	U-235	U-238	
G-16	0-2	4-4-5-5		1.8 ± 0.7					
	2-4	4-7-8-5		1.5 ± 0.7					
	4-6	7-8-8-8		1.6 ± 0.7					
	6-8	4-6-6-7		0.9 ± 0.6					
	8-10	6-7-9-9		1.6 ± 0.7					
	10-12	4-5-5-6		1.2 ± 0.6					
	12-14	4-5-6-6		1.5 ± 0.6					
	14-16	4-7-10-10		1.2 ± 0.6					
	16-18	4-5-7-7		1.2 ± 0.6					
	18-20	11-10-11-12		1.1 ± 0.6					
G-40			REFUSAL AT 4'						
G-28			REFUSAL AT 4'						
G-67	0-2	9-21-12-40		1.2 ± 0.6					
	2-4	52-RF		1.7 ± 0.7					
	4-6	29-30-19-17		1.3 ± 0.6					
	6-8	31-24-49-41		0.8 ± 0.5					
	8-10	14-34-51-96		2.5 ± 0.8					
	10-12	21-19-20-29		1.1 ± 0.6					
	12-14	50-11-10-8		1.0 ± 0.6					
	14-16	2-14-13-10		< 0.5					
	16-18	12-18-19-21		< 0.6					
	18-20	20-24-27-26		0.7 ± 0.6					
G-46	0-2	7-19-10-9		1.0 ± 0.7					
	2-4	16-22-60-RF		1.2 ± 0.8					
	4-6	13-12-11-12		1.2 ± 0.7					
	6-8	13-18-28-11		1.4 ± 0.7					
	8-10	7-9-13-38		2.0 ± 0.8					
	10-12	47-56-25-23		0.8 ± 0.6					
	12-14	17-23-30-29		1.2 ± 0.7					
	14-16	5-26-64-RF		0.9 ± 0.5					
	16-18	13-26-25-19		1.7 ± 0.7					
18-20	5-15-27-28		1.7 ± 0.7						

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/6" 140# HAMMER	COMMENTS	G. ALPHA pCi/gm or l	TOTAL U	ISO. U (pCi/gm or l)			OTHER
						U-234	U-235	U-238	
G-79	0-2	8-24-11-9		1.4 ± 0.6					
	2-4	12-28-40-RF		1.2 ± 0.6					
	4-6	21-60-RF		0.8 ± 0.5					
	6-8	23-15-13-10		1.0 ± 0.5					
	8-10	6-7-12-21		0.6 ± 0.4					
	10-12	20-21-23-16		0.8 ± 0.5					
	12-14	10-18-18-21		0.6 ± 0.5					
	14-16	17-36-35-25		1.2 ± 0.6					
	16-18	23-28-21-37		< 0.5					
	18-20	22-37-22-23		2.5 ± 0.8					
G-73	0-2	21-24-15-10		0.7 ± 0.6					
	2-4	28-26-19-30		0.8 ± 0.6					
	4-6	31-70-RF		0.9 ± 0.6					
	6-8	56-76-RF		2.1 ± 0.8					
	8-10	60-54-78-RF		1.2 ± 0.7					
	10-12	14-17-14-14		1.1 ± 0.6					
	12-14	9-11-12-16		< 0.5					
	14-16	12-10-11-14		0.8 ± 0.5					
	16-18	4-11-8-11		1.0 ± 0.5					
	18-20	9-12-14-11		0.5 ± 0.4					
G-45	0-2	8-20-20-14		2.8 ± 0.8					
	2-4	12-9-9-15		3.0 ± 0.8					
	4-6	15-20-12-10	NO SAMPLE OBTAINED						
	6-8	6-6-9-RF		2.3 ± 0.7					
	8-10	11-20-17-14		2.3 ± 0.7					
	10-12	26-15-29-17		1.3 ± 0.6					
	12-14	38-60-50-44		2.5 ± 0.7					
	14-16	15-20-28-18		1.1 ± 0.7					
	16-18	10-23-30-68		1.6 ± 0.7					
	18-20	12-70-RF		0.9 ± 0.7					

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/6" 140# HAMMER	COMMENTS	G. ALPHA	TOTAL U	ISO. U (pCi/gm or l)			OTHER
				Di/gm or l		U-234	U-235	U-238	
G-44	0-2	8-12-13-15		3 ± 0.8					
	2-4	33-39-27-24		1.5 ± 0.8					
	4-6	14-23-20-25		2.8 ± 0.9					
	6-8	44-19-11-11		0.6 ± 0.4					
	8-10	12-11-8-7		3.3 ± 0.9					
	10-12	12-9-15-21		1.0 ± 0.7					
	12-14	87-17-11-17		1.0 ± 0.7					
	14-16	11-12-14-19		2.7 ± 0.9					
	16-18	23-44-51-40		2.0 ± 0.8					
	18-20	38-42-63-69		2.2 ± 0.8					
G-61	0-2	10-12-20-11		2.7 ± 0.9					
	2-4	8-10-10-11		2.6 ± 0.9					
	4-6	7-8-8-7		1.4 ± 0.7					
	6-8	18-17-11-15		2.0 ± 0.8					
	8-10	12-16-26-27		2.4 ± 0.8					
	10-12	15-14-10-12		4.2 ± 1.0					
	12-14	13-26-31-65		1.7 ± 0.8					
	14-16	40-25-48-RF		4.6 ± 1.0					
	16-18	65-44-51-49		2.2 ± 0.7					
	18-20	46-38-63-53		2.8 ± 0.8					
G-82	0-2	2-5-11-9		1.7 ± 0.7					
	2-4	8-18-17-22		1.1 ± 0.6					
	4-6	19-18-17-15		1.0 ± 0.6					
	6-8	7-14-28-48		2.0 ± 0.7					
	8-10	26-24-30-30		2.1 ± 0.8					
	10-12	10-26-11-9		1.5 ± 0.7					
	12-14	11-13-9-12		3.3 ± 0.8					
	14-16	95-RF	MOVED 3' NW - NO SAMPLE						
	16-18	53-80-RF		2.8 ± 0.8					
	18-20	FF	NO SAMPLE						

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/FT 140# HAMMER	COMMENTS	G. ALPHA pCi/gm or l	TOTAL U	ISO. U (pCi/gm or l)		OTHER
						U-234	U-235	
G-36	0-2	14-24-33-49		3.5 ± 1.0				
	2-4	15-39-53-44		3.8 ± 1.2				
	4-6	RF	NO SAMPLE					
	6-8	13-19-9-15		3.9 ± 1.1				
	8-10	4-19-4-10		1.7 ± 0.9				
	10-12	12-21-63-21		5.5 ± 1.1				
	12-14	44-35-24-34		1.6 ± 0.8				
	14-16	18-21-21-20		2.6 ± 0.9				
	16-18	17-16-14-17		1.5 ± 0.7				
	18-20	12-15-13-14		2.1 ± 0.8				
G-8	0-2	2-3-5-5	300# HAMMER	1.2 ± 0.9				
	2-4	3-12-14-10		0.9 ± 0.5				
	4-6	4-3-4-5		1.4 ± 0.6				
	6-8	3-3-5-5		3.0 ± 0.8				
	8-10	8-8-10-13		2.0 ± 0.6				
	10-12	4-4-5-6		1.6 ± 0.6				
	12-14	4-5-8-8		2.0 ± 0.6				
	14-16	7-6-9-8		0.7 ± 0.4				
	16-18	5-6-6-9		1.0 ± 0.5				
	18-20	3-5-7-6		0.9 ± 0.6				
G-19	0-2	8-4-3-5	300# HAMMER	0.7 ± 0.5				
	2-4	7-11-12-15		< 0.5				
	4-6	11-11-12-13		1.4 ± 0.6				
	6-8	25-17-15-20		0.7 ± 0.5				
	8-10	8-8-20-9		1.9 ± 0.7				
	10-12	RF	NO SAMPLE					
	12-14	10-2-5-7		1.3 ± 0.6				
	14-16	5-5-10-8		1.6 ± 0.7				
	16-18	11-11-11-12		2.1 ± 0.7				
	18-20	11-15-14-13		3.5 ± 0.9				

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/6" 140# HAMMER	COMMENTS	G. ALPHA	Ra-226	ISO. U (pCi/gm or l)			OTHER
				pCi/gm or l	pCi/L	U-234	U-235	U-238	
W-4	SURF			1.5 ± 0.7					
	16-18	10-16-14-27	WELL WAS WET	4.8 ± 1.0					
	18-20	FF	NO SAMPLE - STOPPED						
W-5	SURF			2.2 ± 0.8					
	16-18	7-10-14-22		20.7 ± 1.9					
	18-20	10-20-31-20		6.1 ± 1.1					
	20-22	100-RF	NO SAMPLE - STOPPED						
W-9	SURF			2.4 ± 0.7					
	14-16	5-5-10-11		86.7 ± 3.9					
	16-18	7-8-10-12		3.6 ± 0.9					
	18-20	9-7-13-11		3.2 ± 0.8					
	20-22	10-13-14-17		2.2 ± 0.7					
	22-24	10-10-14-17		3.0 ± 0.8					
	24-26	17-27-32-34		1.5 ± 0.6					
	WAT-24			1537 ± 106					GR BETA 313 ± 22
W-7	SURF			4.0 ± 0.9					
	12-14	6-3-3-4		134.6 ± 4.8		129.9±6.9	3.86±1.04	1.98±0.45	
	14-16	2-2-2-2		9.3 ± 1.4					
	16-18	2-2-10-20		4.8 ± 1.0					
	18-20	15-13-11-13		3.6 ± 0.9					
	20-22	10-13-13-27		7.8 ± 1.3					
	22-24	13-12-12-10		2.1 ± 0.8					
	WAT-24			1620 ± 109					GR BETA 612 ± 29
W-10	SURF			1.8 ± 0.8					
	15-17	3-4-6-11		21.3 ± 1.9					
	17-19	9-9-10-13		32.2 ± 2.4					
	19-21	11-9-14-28		5.4 ± 1.0					
	21-23	23-27-27-34		8.8 ± 1.3					
	23-25	17-26-24-25		3.6 ± 0.9					
	WAT-24			10380±229	2.5 ± 1.0	10080±180	294±28	28± 6	GR BETA 744 ± 32

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/6" 140# HAMMER	COMMENTS	G. ALPHA	Ra-226	ISO. U (pCi/gm or l)			OTHER
				pCi/gm or l	pCi/L	U-234	U-235	U-238	
W-11	SURF			3.3 ± 0.9					
	11-13	2-3-3-6		25.8 ± 2.1					
	13-15	5-7-7-8		2.8 ± 0.8					
	15-17	12-8-7-11		2.0 ± 0.7					
	17-19	11-13-14-28		1.8 ± 0.7					
	19-21	16-20-20-14		9.4 ± 1.3					
	21-23	14-30-18-20		1.6 ± 0.7					
	23-25	17-18-27-34		3.6 ± 0.9					
	WAT-25			3089 ± 149	3.8 ± 2.6	2910 ± 200	164 ± 20	0.97 ± .11	GR BETA 628 ± 30
W-3	SURF			1.5 ± 0.8					
	15-17	4-4-5-10		2.1 ± 0.6					
	17-19	7-9-12-16		3.9 ± 0.8					
	19-21	8-14-20-25		2.5 ± 0.7					
	21-23	23-40-45-58		2.4 ± 0.7					
	23-25	25-28-23-22		5.8 ± 1.0					
	25-27	12-4-12-17		8.9 ± 1.2					
	WAT-27			291 ± 28	2.4 ± 1.0	264 ± 12	5.5 ± 1.7	0.37 ± .15	GR BETA 82 ± 13
W-8	SURF			4.0 ± 1.0					
	14-16	3-3-5-9		236.8 ± 4.4		229.8 ± 3.7	5.77 ± 0.56	0.41 ± 0.15	
	16-18	4-4-8-11		3.4 ± 0.9					
	18-20	7-7-7-9		15.1 ± 1.7					
	20-22	10-15-11-12		27 ± 2.2					
	22-24	10-10-14-15		2.4 ± 0.8					
	24-26	11-11-14-16		2.9 ± 0.6					
	WAT-26			1817 ± 115					GR BETA 499 ± 27
W-12	SURF			1.3 ± 0.7					
	15-17	12-21-21-21		111.6 ± 4.4		110.2 ± 2.8	2.72 ± 0.44	0.81 ± 0.24	
	17-19	29-35-36-39		658 ± 10		638.3 ± 6.1	12.2 ± 0.9	3.18 ± 0.46	
	19-21	10-19-21-24		1.5 ± 0.7					
	21-23	14-19-20-19		1.7 ± 0.7					
	23-25	6-9-18-25		3.0 ± 0.8					
	WAT-25			2307 ± 129	12 ± 3.8	2240 ± 78	66.9 ± 12.6	1.5 ± .33	GR BETA 786 ± 33

UNC 1990 LEACHFIELD SAMPLING DATA

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						U-234	U-235	U-238	
W-6	SURF			0.9 ± 0.7					
	12-14	2-2-2-2		106.6 ± 4.3		103 ± 10.3	3.06 ± 1.	<0.05	
	14-16	2-1-4-?		3.0 ± 0.8					
	16-18	7-6-9-28		4.7 ± 1.0					
	18-20	FF	NO SAMPLE						
	20-22	FF	NO SAMPLE - STOPPED						
W-1	SURF			< 0.7					
	16-18	15-12-4-3	300# HAMMER	6.9 ± 1.3					
	18-20	1-1-1-7		21.4 ± 2.0					
	20-22	6-7-9-12		3.9 ± 0.9					
	22-24	11-16-20-28		3.4 ± 0.9					
	24-26	23-21-22-25		2.2 ± 0.7					
	26-28	13-15-13-13		2.5 ± 0.8					
	28-30	13-20-15-RF	NO WATER SAMPLE	2.5 ± 0.8					
W-2	SURF			1.0 ± 0.6					
	19-21	4-4-7-9	300# HAMMER	6.5 ± 1.1					
	21-23	1-4-7-7		20.3 ± 1.9					
	23-25	8-7-13-14		43.7 ± 2.7					
	25-27	14-12-14-20		6.2 ± 1.1					
	27-29	16-19-18-15		9.1 ± 1.4					
	29-31	FF	NO WATER SAMPLE						
W-1/W-2 WATER SAMPLE (SAMPLE BETWEEN WELLS)				55 ± 11					GR BETA 96 ± 9
O-77	0-2	3-5-3-6		0.7 ± 0.4					
	2-4	15-25-25-21		1.2 ± 0.4					
	4-6	31-RF		1.0 ± 0.4					
	6-8	34-26-50-41		1.1 ± 0.4					
	8-10	53-48-42-33		1.9 ± 0.8					
	10-12	17-18-10-11		0.6 ± 0.4					

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LOC.	DEPTH FEET	BLOWS/6" 140# HAMMER	COMMENTS	G. ALPHA pCi/gm or l	TOTAL U	ISO. U (pCi/gm or l)			OTHER
						U-234	U-235	U-238	
O-78	0-2	3-7-8-8		1.0 ± 0.6					
	2-4	8-20-21-25		1.4 ± 0.7					
	4-6	20-20-23-24		2.3 ± 0.8					
	6-8	28-19-38-RF		1.5 ± 0.8					
	8-10	39-39-15-15		0.9 ± 0.6					
	10-12	7-18-17-18		< 0.4					
	12-14	7-9-15-15		< 0.4					
	14-16	15-24-21-20		< 0.4					
	16-18	21-26-30-29		1.3 ± 0.7					
	18-20	11-10-15-17		0.9 ± 0.6					
	20-22	15-19-16-18		0.8 ± 0.5					
	22-24	14-17-20-11		0.7 ± 0.5					
	24-26	12-14-12-17		0.9 ± 0.6					
		WAT-24		188 ± 41					GR BETA 264 ± 20
O-55	0-2	6-4-5-4		1.1 ± 0.6					
	2-4	8-8-12-15		3.9 ± 0.9					
	4-6	11-19-16-14		2.3 ± 0.8					
	6-8	23-23-19-17		1.6 ± 0.7					
	8-10	16-21-30-24		2.6 ± 0.9					
	10-12	35-50-21-28		1.1 ± 0.7					
O-83	0-2	13-16-15-27		1.3 ± 0.7					
	2-4	16-15-10-9		2.0 ± 0.8					
	4-6	2-2-6-8		6.4 ± 1.2					
	6-8	7-8-8-7		3.5 ± 0.9					
	8-10	6-13-20-41		1.7 ± 0.7					
	10-12	52-36-24-14		< 0.7					
O-48	0-2	8-14-16-13		2.3 ± 0.9					
	2-4	15-24-32-30		1.1 ± 0.7					
	4-6	17-20-38-33		1.9 ± 0.8					
	6-8	52-22-29-31		4.0 ± 1.0					
	8-10	14-27-24-19		2.6 ± 0.8					
	10-12	14-14-24-20		1.7 ± 0.7					

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/6" 140# HAMMER	COMMENTS	G. ALPHA pCi/gm or l	TOTAL U	ISO. U (pCi/gm or l)			OTHER
						U-234	U-235	U-238	
O-50	0-2	85-32-21-14		1.9 ± 0.7					
	2-4	18-20-18-20		2.3 ± 0.8					
	4-6	20-45-20-32		3.5 ± 0.9					
	6-8	22-47-56-59		2.4 ± 0.8					
	8-10	29-42-29-30		3.5 ± 0.9					
	10-12	9-27-20-16		2.1 ± 0.7					
	12-14	14-24-16-36		2.2 ± 0.7					
	14-16	10-10-13-14		1.5 ± 0.8					
	16-18	17-11-10-11		2.4 ± 0.8					
	18-20	16-15-20-15		2.7 ± 0.9					
	20-22	11-12-18-17		2.5 ± 0.9					
	22-24	10-12-15-18		1.3 ± 0.7					
	24-26	15-22-15-21		0.9 ± 0.7					
	26-28	18-24-43-20		1.0 ± 0.7					
		WAT-28			85 ± 19				
O-63	0-2	9-13-13-10		1.5 ± 0.6					
	2-4	5-13-13-13		1.1 ± 0.6					
	4-6	12-26-47-42		1.9 ± 0.8					
	6-8	24-48-RF		2.5 ± 0.9					
	8-10	13-16-56-49		1.6 ± 0.8					
	10-12	15-34-34-30		1.7 ± 0.8					
O-31	0-2	3-3-5-7		2.0 ± 0.7					
	2-4	7-12-21-14		0.9 ± 0.6					
	4-6	21-10-8-6		5.3 ± 1.1					
	6-8	7-15-25-25		5.5 ± 1.2					
	8-10	15-18-12-12		1.0 ± 0.6					
	10-12	12-11-17-16		1.2 ± 0.6					
	12-14	12-11-15-13		2.3 ± 0.8					
	14-16	6-7-6-4		2.3 ± 0.8					
	16-18	4-7-10-12							
	18-20	27-32-30-22		1.3 ± 0.7					
	20-22	14-19-17-14		1.2 ± 0.7					
		WAT-22			81 ± 18				

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/6" 140# HAMMER	COMMENTS	G. ALPHA pCi/gm or l	TOTAL U	ISO. U (pCi/gm or l)			OTHER
						U-234	U-235	U-238	
O-74	0-2	6-9-15-20		1.6 ± 0.7					
	2-4	4-4-22-22		1.0 ± 0.7					
	4-6	6-21-32-56		1.0 ± 0.7					
	6-8	13-33-34-20		1.3 ± 0.7					
	8-10	14-12-16-24		1.5 ± 0.8					
	10-12	13-35-37-30		1.9 ± 0.8					
	12-14	5-12-12-14		0.6 ± 0.6					
	14-16	11-13-9-12		1.5 ± 0.7					
	16-18	10-12-10-16		2.3 ± 0.8					
	18-20	7-10-11-12		1.5 ± 0.7					
	20-22	7-12-16-16		2.4 ± 0.8					
	22-24	12-22-39-57		2.3 ± 0.8					
	24-26	29-39-49-26		2.3 ± 0.8					
		WAT-26			162 ± 25				
O-29	0-2	13-25-65-RF		1.4 ± 0.6					
	2-4	FF	NO SAMPLE						
	4-6	7-17-72-RF		1.9 ± 0.7					
	6-8	18-22-17-20		1.4 ± 0.6					
	8-10	15-17-14-12		2.5 ± 0.7					
	10-12	10-17-42-44		1.4 ± 0.6					
	12-14	12-14-13-17		1.4 ± 0.6					
	14-16	6-8-16-23		1.8 ± 0.7					
	16-18	18-19-11-8		1.3 ± 0.6					
	18-20	15-14-13-23		1.5 ± 0.7					
	20-22	20-18-16-18		1.1 ± 0.6					
22-24	17-14-15-16		1.7 ± 0.8						
	WAT-24			110 ± 21					GR BETA 225 ± 13
O-85	0-2	8-10-11-12		< 0.8					
	2-4	11-11-15-15		1.1 ± 0.8					
	4-6	14-24-21-11		< 0.7					
	6-8	6-11-9-6		10.1 ± 1.4					
	8-10	8-8-6-8		4.3 ± 1.1					
	10-12	17-14-13-14		2.9 ± 1.0					

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/6" 140# HAMMER	COMMENTS	G. ALPHA pCi/gm or l	TOTAL U	ISO. U (pCi/gm or l)			OTHER
						U-234	U-235	U-238	
O-61	0-2	12-52-RF		1.1 ± 0.6					
	2-4	33-69-21-22		0.9 ± 0.5					
	4-6	26-15-21-22		0.9 ± 0.5					
	6-8	9-10-8-5		8.5 ± 1.2					
	8-10	5-8-9-12		9.1 ± 1.2					
	10-12	5-13-28-48		4.7 ± 0.9					
O-38	0-2	2-2-5-16		1.3 ± 0.6					
	2-4	32-22-47-11		2.3 ± 0.7					
	4-6	10-16-32-22		3.5 ± 0.8					
	6-8	17-34-42-78		1.6 ± 0.6					
	8-10	12-18-24-20		1.8 ± 0.6					
	10-12	13-17-19-26		1.4 ± 0.6					
O-65	0-2	6-10-14-18		2.1 ± 0.8					
	2-4	5-5-10-30		1.0 ± 0.7					
	4-6	32-51-48-RF		1.4 ± 0.7					
	6-8	100-RF		2.3 ± 0.8					
	8-10	15-63-33-33		1.3 ± 0.7					
	10-12	34-49-53-43		1.7 ± 0.8					
O-53	0-2	3-4-6-10		1.6 ± 0.7					
	2-4	9-5-7-12		0.7 ± 0.6					
	4-6	6-12-21-34		5.4 ± 1.1					
	6-8	19-20-22-27		2.8 ± 0.9					
	8-10	13-17-24-48		1.8 ± 0.7					
	10-12	32-51-33-44		1.4 ± 0.7					
O-54	0-2	2-20-11-20		0.9 ± 0.6					
	2-4	12-31-16-10		1.5 ± 0.7					
	4-6	10-39-23-67		7.0 ± 1.2					
	6-8	FF	NO SAMPLE						
	8-10	19-16-17-16		1.5 ± 0.6					
	10-12	17-19-20-16		2.1 ± 0.7					

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/6" 140# HAMMER	COMMENTS	G. ALPHA pCi/gm or l	TOTAL U	ISO. U (pCi/gm or l)		OTHER
						U-234	U-235	
0-17	0-2	5-15-14-15		1.1 ± 0.5				
	2-4	11-23-25-27		1.6 ± 0.6				
	4-6	4-7-4-3		1.5 ± 0.6				
	6-8	3-7-5-5		2.0 ± 0.7				
	8-10	6-7-7-6		< 0.8				
	10-12	5-11-12-14		13.8 ± 0.9				
0-19	0-2	4-6-15-9		1.5 ± 0.7				
	2-4	8-14-13-11		1.3 ± 0.6				
	4-6	4-4-5-5		1.9 ± 0.7				
	6-8	7-4-5-10		6.9 ± 1.2				
	8-10	6-24-18-16		9.0 ± 1.3				
	10-12	11-11-18-20		8.1 ± 1.3				
0-28	0-2	4-6-12-RF		1.2 ± 0.6				
	2-4	6-6-16-20		1.6 ± 0.7				
	4-6	13-30-27-32		2.0 ± 0.7				
	6-8	13-23-47-22		1.6 ± 0.6				
	8-10	51-53-38-35		2.5 ± 0.7				
	10-12	14-18-18-27		5.6 ± 1.0				
0-40	0-2	18-26-23-30		1.7 ± 0.6				
	2-4	8-10-10-9		2.5 ± 0.8				
	4-6	12-18-40-71		1.5 ± 0.6				
	6-8	19-21-28-29		1.8 ± 0.7				
	8-10	41-50-56-53		1.8 ± 0.7				
	10-12	23-25-31-37		1.8 ± 0.7				
0-42	0-2	2-2-6-11		2.6 ± 0.9				
	2-4	6-16-11-17		2.0 ± 0.8				
	4-6	20-25-15-15		5.5 ± 1.2				
	6-8	10-25-24-32		1.1 ± 0.6				
	8-10	29-44-59-68	Moved 4' West	1.7 ± 0.8				
	10-12	16-28-56-38		1.5 ± 0.8				

UNC 1990 LEACHFIELD SAMPLING DATA

LOC.	DEPTH FEET	BLOWS/6" 300# HAMMER	COMMENTS	G. ALPHA pCi/gm or l	TOTAL U	ISO. U (pCi/gm or l)			OTHER
						U-234	U-235	U-238	
O-41	0-2	2-3-3-5		1.4 ± 0.6					
	2-4	5-9-15-18		0.6 ± 0.5					
	4-6	4-6-9-11		8.6 ± 1.3					
	6-8	4-15-14-11		2.2 ± 0.7					
	8-10	8-11-24-5		0.9 ± 0.6					
	10-12	5-7-10-14		2.7 ± 0.9					
O-73	0-2	4-19-30-38		1.8 ± 0.7					
	2-4	3-8-7-28		3.5 ± 0.9					
	4-6	8-11-11-13		2.2 ± 0.8					
	6-8	11-17-11-5		4.4 ± 1.0					
	8-10	5-8-6-8		3.1 ± 0.9					
	10-12	10-14-14-26		2.3 ± 0.8					
O-72	0-2	8-27-41-48	THIS IS AN EXTRA SAMPLE LOCATION	2.5 ± 0.8					
	2-4	28-RF		6.1 ± 1.1					
	4-6	14-RF		1.4 ± 0.7					
L-1		Scoop sample from main Distribution point in Field 1.		4.0 ± 0.9					
Pipe-1		Composite soil sample from all pipe sections removed from Field 1.		1149 ± 13					
PIPES									
80S1			S = South end of pipe	502 ± 8					GR BETA 60.6 ± 2.2
80S2				426 ± 8					GR BETA 49 ± 1.8
79C			C = Center of pipe	1004 ± 12					GR BETA 145 ± 4
76C				457 ± 8					GR BETA 67.1 ± 2.5
75S				146 ± 5					GR BETA 28.7 ± 2

UNC 1990 LEACHFIELD SAMPLING DATA

HAZARDOUS WASTE TESTS

FULL METAL SCAN (ug/gram)			
METAL	O-46 4'-6"	W7 18'-20"	G-38 8'-10"
Barium	46.1	50.98	59.01
Magnesium	2384.89	2617.88	3341.22
Tin	3.69	37	4.18
Thallium	1.74	4.27	3.85
Vanadium	22.6	20.97	25.38
Sodium	83.74	167.34	92.18
Molybdenum	6.77	5.42	4.25
Aluminum	5215.86	5089.36	7099.81
Antimony	3.51	2.15	3.64
Beryllium	0.143	< 0.1	< 0.1
Calcium	967.49	1182.99	978.94
Zinc	30.99	35.18	35
Copper	32.32	36.54	34.1
Silver	23.76	3.47	0.94
Lead	17.15	12.78	15.52
Titanium	488.6	468.43	643.47
Cadmium	10.24	8.42	6.97
Cobalt	15.09	15.36	20.78
Nickel	17.07	16.04	20.44
Potassium	2437.49	2594.39	3001.89
Manganese	122.96	308.37	247.94
Iron	12383.65	10047.99	9663.81
Chromium	35.46	28.18	22.49
Nitrates	1	5.3	1.3
Phosphorus	420.7	331.1	1046
Silica	4804.3	4928.8	5288.5