PM-2A Tank Remediation

CAP88 Output

Am-241 Only (for concentration ratio)

Group #2 Distances

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S R E P O R T

Non-Radon Individual Assessment
Mar 13, 2003 08:35 pm

Facility: TAN/PM-2A tanks
Address: INEEL
City: Idaho Falls
State: ID Zip: 83401

Source Category: Point source
Source Type: Stack
Emission Year: 1993

Comments: Calc. for ratioing conc. to dose

Effective Dose Equivalent (mrem/year)
3.45E-06

At This Location: 17035 Meters Northeast
Dataset Name: TAN/PM2A tanks
Dataset Date: Mar 13, 2003 08:35 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 17035 Meters Northeast
Lifetime Fatal Cancer Risk: 1.76E-11

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	7.75E-07
BREAST	8.21E-08
R MAR	4.87E-06
LUNGS	4.84E-07
THYROID	7.89E-08
ENDOST	6.01E-05
RMNDR	2.66E-06
EFFEC	3.45E-06

RADIONUCLIDE EMISSIONS DURING THE YEAR 1993

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AM-241	W	1.00	1.7E-06	1.7E-06

SITE INFORMATION

Temperature:	21 degrees C
Precipitation:	25 cm/y
Mixing Height:	1000 m

SOURCE INFORMATION

Source Number: 1

Stack Height (m): 1.
Diameter (m): 0.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.700	0.399	0.442
Fraction From Assessment Area:	0.300	0.601	0.558
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

17035	18607	18834	18860	18890	19860	19891	20457	21314	21349
22159	23521	24430	24545	25171	26794	27275	27715	28919	31060

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

W E A T H E R D A T A

Non-Radon Individual Assessment
Mar 13, 2003 08:35 pm

Facility: TAN/PM-2A tanks
Address: INEEL
City: Idaho Falls
State: ID Zip: 83401

Source Category: Point source
Source Type: Stack
Emission Year: 1993

Comments: Calc. for ratioing conc. to dose

Dataset Name: TAN/PM2A tanks
Dataset Date: Mar 13, 2003 08:35 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

HARMONIC AVERAGE WIND SPEEDS (WIND TOWARDS)

	Pasquill Stability Class							
Dir	A	B	C	D	E	F	G	Wind Freq
N	2.239	3.020	4.363	7.078	0.000	0.000	0.000	0.058
NNW	2.216	2.845	3.412	7.011	0.000	0.000	0.000	0.046
NW	2.166	3.036	3.031	5.099	0.000	0.000	0.000	0.047
WNW	2.125	2.768	3.305	3.626	0.000	0.000	0.000	0.049
W	2.135	2.671	3.117	3.318	0.000	0.000	0.000	0.068
WSW	1.993	2.828	2.932	3.218	0.000	0.000	0.000	0.092
SW	2.011	2.741	3.000	3.397	0.000	0.000	0.000	0.117
SSW	1.782	2.383	2.935	3.744	0.000	0.000	0.000	0.052
S	1.469	3.177	3.967	4.781	0.000	0.000	0.000	0.011
SSE	1.613	2.678	3.739	7.333	0.000	0.000	0.000	0.039
SE	1.714	2.124	4.257	6.484	0.000	0.000	0.000	0.009
ESE	1.363	2.618	4.860	6.220	0.000	0.000	0.000	0.006
E	1.373	2.613	4.382	6.944	0.000	0.000	0.000	0.008
ENE	1.852	3.339	4.583	7.522	0.000	0.000	0.000	0.034
NE	2.142	3.554	4.572	8.645	0.000	0.000	0.000	0.225
NNE	2.216	3.259	4.486	7.396	0.000	0.000	0.000	0.138

ARITHMETIC AVERAGE WIND SPEEDS (WIND TOWARDS)

	Pasquill Stability Class						
Dir	A	B	C	D	E	F	G
N	2.457	3.339	4.542	7.376	0.000	0.000	0.000
NNW	2.448	3.223	3.932	7.370	0.000	0.000	0.000
NW	2.427	3.240	3.801	5.871	0.000	0.000	0.000
WNW	2.410	3.247	3.846	4.167	0.000	0.000	0.000
W	2.414	3.016	3.603	4.562	0.000	0.000	0.000
WSW	2.348	3.040	3.316	3.601	0.000	0.000	0.000
SW	2.357	2.965	3.325	3.860	0.000	0.000	0.000
SSW	2.230	2.829	3.298	4.363	0.000	0.000	0.000
S	1.993	3.404	4.612	5.921	0.000	0.000	0.000
SSE	2.113	3.502	4.167	8.278	0.000	0.000	0.000
SE	2.186	3.029	4.437	7.184	0.000	0.000	0.000
ESE	1.887	3.481	5.069	6.435	0.000	0.000	0.000
E	1.898	3.399	4.547	7.499	0.000	0.000	0.000
ENE	2.272	3.828	4.799	8.073	0.000	0.000	0.000
NE	2.417	3.825	4.816	9.207	0.000	0.000	0.000
NNE	2.448	3.624	4.661	7.647	0.000	0.000	0.000

FREQUENCIES OF STABILITY CLASSES (WIND TOWARDS)

	Pasquill Stability Class						
Dir	A	B	C	D	E	F	G
N	0.4791	0.2690	0.1584	0.0935	0.0000	0.0000	0.0000
NNW	0.7092	0.1760	0.0856	0.0293	0.0000	0.0000	0.0000
NW	0.7353	0.1467	0.0827	0.0353	0.0000	0.0000	0.0000
WNW	0.6983	0.2050	0.0855	0.0111	0.0000	0.0000	0.0000
W	0.5598	0.2455	0.1522	0.0424	0.0000	0.0000	0.0000
WSW	0.3298	0.2789	0.2754	0.1159	0.0000	0.0000	0.0000
SW	0.1675	0.1922	0.3340	0.3062	0.0000	0.0000	0.0000
SSW	0.1703	0.1509	0.3081	0.3707	0.0000	0.0000	0.0000
S	0.3042	0.1279	0.2840	0.2840	0.0000	0.0000	0.0000
SSE	0.1578	0.0944	0.1833	0.5646	0.0000	0.0000	0.0000
SE	0.3377	0.1450	0.1439	0.3734	0.0000	0.0000	0.0000
ESE	0.4048	0.1920	0.2111	0.1920	0.0000	0.0000	0.0000
E	0.3384	0.1546	0.2674	0.2395	0.0000	0.0000	0.0000
ENE	0.1764	0.1079	0.2745	0.4412	0.0000	0.0000	0.0000
NE	0.0576	0.0913	0.2095	0.6417	0.0000	0.0000	0.0000
NNE	0.1755	0.2633	0.3511	0.2101	0.0000	0.0000	0.0000
AL	0.2875	0.1830	0.2321	0.2975	0.0000	0.0000	0.0000

ADDITIONAL WEATHER INFORMATION

Average Air Temperature:	21.0 degrees C
	294.16 K
Precipitation:	25.0 cm/y
Lid Height:	1000 meters
Surface Roughness Length:	0.010 meters
Height Of Wind Measurements:	10.0 meters
Average Wind Speed:	4.501 m/s

Vertical Temperature Gradients:

STABILITY E	0.073 k/m
STABILITY F	0.109 k/m
STABILITY G	0.146 k/m

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K E Q U I V A L E N T S U M M A R I E S

Non-Radon Individual Assessment
Mar 13, 2003 08:35 pm

Facility: TAN/PM-2A tanks
Address: INEEL
City: Idaho Falls
State: ID Zip: 83401

Source Category: Point source
Source Type: Stack
Emission Year: 1993

Comments: Calc. for ratioing conc. to dose

Dataset Name: TAN/PM2A tanks
Dataset Date: Mar 13, 2003 08:35 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	7.75E-07
BREAST	8.21E-08
R MAR	4.87E-06
LUNGS	4.84E-07
THYROID	7.89E-08
ENDOST	6.01E-05
RMNDR	2.66E-06
EFFEC	3.45E-06

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	2.36E-07
INHALATION	3.21E-06
AIR IMMERSION	6.71E-14
GROUND SURFACE	3.81E-09
INTERNAL	3.45E-06
EXTERNAL	3.81E-09
TOTAL	3.45E-06

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
AM-241	3.45E-06
TOTAL	3.45E-06

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk
LEUKEMIA	4.11E-12
BONE	2.64E-12
THYROID	1.01E-14
BREAST	8.37E-14
LUNG	1.37E-12
STOMACH	5.28E-14
BOWEL	3.04E-14
LIVER	9.22E-12
PANCREAS	3.81E-14
URINARY	2.09E-14
OTHER	4.65E-14
TOTAL	1.76E-11

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk
INGESTION	1.13E-12
INHALATION	1.64E-11
AIR IMMERSION	1.40E-18
GROUND SURFACE	7.92E-14
INTERNAL	1.75E-11
EXTERNAL	7.92E-14
TOTAL	1.76E-11

NUCLIDE RISK SUMMARY

Nuclide	Selected Individual Total Lifetime Fatal Cancer Risk
AM-241	1.76E-11
TOTAL	1.76E-11

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	17035	18607	18834	18860	18890	19860	19891
N	8.7E-07	7.8E-07	7.6E-07	7.6E-07	7.6E-07	7.2E-07	7.2E-07
NNW	7.2E-07	6.6E-07	6.5E-07	6.5E-07	6.4E-07	6.1E-07	6.1E-07
NW	7.8E-07	7.1E-07	6.9E-07	6.9E-07	6.9E-07	6.6E-07	6.6E-07
WNW	8.1E-07	7.4E-07	7.2E-07	7.2E-07	7.2E-07	6.9E-07	6.8E-07
W	1.1E-06	1.0E-06	1.0E-06	1.0E-06	1.0E-06	9.6E-07	9.5E-07
WSW	1.7E-06	1.5E-06	1.5E-06	1.5E-06	1.5E-06	1.4E-06	1.4E-06
SW	2.7E-06	2.4E-06	2.3E-06	2.3E-06	2.3E-06	2.2E-06	2.1E-06
SSW	1.3E-06	1.1E-06	1.1E-06	1.1E-06	1.1E-06	1.0E-06	1.0E-06
S	2.6E-07	2.3E-07	2.3E-07	2.3E-07	2.2E-07	2.1E-07	2.1E-07
SSE	7.5E-07	6.6E-07	6.4E-07	6.4E-07	6.4E-07	6.0E-07	6.0E-07
SE	2.1E-07	1.9E-07	1.8E-07	1.8E-07	1.8E-07	1.7E-07	1.7E-07
ESE	1.4E-07	1.3E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07	1.2E-07
E	1.7E-07	1.6E-07	1.5E-07	1.5E-07	1.5E-07	1.4E-07	1.4E-07
ENE	5.7E-07	5.1E-07	4.9E-07	4.9E-07	4.9E-07	4.6E-07	4.6E-07
NE	3.5E-06	3.0E-06	2.9E-06	2.9E-06	2.9E-06	2.7E-06	2.7E-06
NNE	1.9E-06	1.7E-06	1.6E-06	1.6E-06	1.6E-06	1.5E-06	1.5E-06

	Distance (m)						
Direction	20457	21314	21349	22159	23521	24430	24545
N	7.0E-07	6.7E-07	6.7E-07	6.4E-07	6.0E-07	5.8E-07	5.8E-07
NNW	5.9E-07	5.7E-07	5.7E-07	5.5E-07	5.2E-07	5.0E-07	4.9E-07
NW	6.4E-07	6.1E-07	6.1E-07	5.9E-07	5.5E-07	5.3E-07	5.3E-07
WNW	6.7E-07	6.4E-07	6.4E-07	6.1E-07	5.8E-07	5.6E-07	5.5E-07
W	9.3E-07	8.9E-07	8.8E-07	8.5E-07	8.0E-07	7.7E-07	7.6E-07
WSW	1.3E-06	1.3E-06	1.3E-06	1.2E-06	1.1E-06	1.1E-06	1.1E-06
SW	2.1E-06	2.0E-06	2.0E-06	1.9E-06	1.7E-06	1.6E-06	1.6E-06
SSW	9.8E-07	9.3E-07	9.3E-07	8.8E-07	8.2E-07	7.8E-07	7.7E-07
S	2.1E-07	2.0E-07	2.0E-07	1.9E-07	1.8E-07	1.7E-07	1.7E-07
SSE	5.8E-07	5.5E-07	5.4E-07	5.2E-07	4.8E-07	4.6E-07	4.5E-07
SE	1.7E-07	1.6E-07	1.6E-07	1.5E-07	1.4E-07	1.4E-07	1.4E-07
ESE	1.1E-07	1.1E-07	1.1E-07	1.1E-07	1.0E-07	9.7E-08	9.7E-08
E	1.4E-07	1.3E-07	1.3E-07	1.3E-07	1.2E-07	1.2E-07	1.2E-07
ENE	4.4E-07	4.2E-07	4.2E-07	4.0E-07	3.7E-07	3.6E-07	3.5E-07
NE	2.6E-06	2.5E-06	2.5E-06	2.3E-06	2.1E-06	2.0E-06	2.0E-06
NNE	1.5E-06	1.4E-06	1.4E-06	1.3E-06	1.2E-06	1.2E-06	1.2E-06

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)					
Direction	25171	26794	27275	27715	28919	31060
N	5.6E-07	5.3E-07	5.2E-07	5.1E-07	4.9E-07	4.5E-07
NNW	4.8E-07	4.5E-07	4.4E-07	4.4E-07	4.2E-07	3.9E-07
NW	5.2E-07	4.8E-07	4.7E-07	4.7E-07	4.5E-07	4.2E-07
WNW	5.4E-07	5.1E-07	5.0E-07	4.9E-07	4.7E-07	4.4E-07
W	7.4E-07	6.9E-07	6.8E-07	6.7E-07	6.4E-07	5.9E-07
WSW	1.1E-06	9.9E-07	9.7E-07	9.5E-07	9.1E-07	8.3E-07
SW	1.6E-06	1.5E-06	1.4E-06	1.4E-06	1.3E-06	1.2E-06
SSW	7.5E-07	6.9E-07	6.7E-07	6.6E-07	6.2E-07	5.7E-07
S	1.6E-07	1.5E-07	1.5E-07	1.5E-07	1.4E-07	1.3E-07
SSE	4.4E-07	4.1E-07	4.0E-07	3.9E-07	3.7E-07	3.4E-07
SE	1.3E-07	1.3E-07	1.2E-07	1.2E-07	1.2E-07	1.1E-07
ESE	9.5E-08	9.0E-08	8.9E-08	8.8E-08	8.4E-08	8.0E-08
E	1.1E-07	1.1E-07	1.1E-07	1.0E-07	1.0E-07	9.5E-08
ENE	3.4E-07	3.2E-07	3.1E-07	3.1E-07	2.9E-07	2.7E-07
NE	2.0E-06	1.8E-06	1.8E-06	1.7E-06	1.6E-06	1.5E-06
NNE	1.1E-06	1.1E-06	1.0E-06	1.0E-06	9.7E-07	9.0E-07

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	17035	18607	18834	18860	18890	19860	19891
N	4.4E-12	4.0E-12	3.9E-12	3.9E-12	3.9E-12	3.7E-12	3.7E-12
NNW	3.7E-12	3.4E-12	3.3E-12	3.3E-12	3.3E-12	3.1E-12	3.1E-12
NW	4.0E-12	3.6E-12	3.5E-12	3.5E-12	3.5E-12	3.3E-12	3.3E-12
WNW	4.1E-12	3.8E-12	3.7E-12	3.7E-12	3.7E-12	3.5E-12	3.5E-12
W	5.9E-12	5.3E-12	5.2E-12	5.1E-12	5.1E-12	4.9E-12	4.9E-12
WSW	8.8E-12	7.9E-12	7.6E-12	7.6E-12	7.6E-12	7.1E-12	7.1E-12
SW	1.4E-11	1.2E-11	1.2E-11	1.2E-11	1.2E-11	1.1E-11	1.1E-11
SSW	6.6E-12	5.8E-12	5.6E-12	5.6E-12	5.6E-12	5.2E-12	5.2E-12
S	1.3E-12	1.2E-12	1.1E-12	1.1E-12	1.1E-12	1.1E-12	1.1E-12
SSE	3.8E-12	3.4E-12	3.3E-12	3.3E-12	3.3E-12	3.0E-12	3.0E-12
SE	1.0E-12	9.4E-13	9.2E-13	9.2E-13	9.2E-13	8.7E-13	8.7E-13
ESE	6.9E-13	6.4E-13	6.2E-13	6.2E-13	6.2E-13	5.9E-13	5.9E-13
E	8.7E-13	7.9E-13	7.7E-13	7.6E-13	7.6E-13	7.3E-13	7.2E-13
ENE	2.9E-12	2.6E-12	2.5E-12	2.5E-12	2.5E-12	2.3E-12	2.3E-12
NE	1.8E-11	1.5E-11	1.5E-11	1.5E-11	1.5E-11	1.4E-11	1.4E-11
NNE	9.6E-12	8.6E-12	8.2E-12	8.2E-12	8.2E-12	7.7E-12	7.7E-12

	Distance (m)						
Direction	20457	21314	21349	22159	23521	24430	24545
N	3.6E-12	3.4E-12	3.4E-12	3.3E-12	3.1E-12	3.0E-12	2.9E-12
NNW	3.0E-12	2.9E-12	2.9E-12	2.8E-12	2.6E-12	2.5E-12	2.5E-12
NW	3.2E-12	3.1E-12	3.1E-12	3.0E-12	2.8E-12	2.7E-12	2.7E-12
WNW	3.4E-12	3.3E-12	3.2E-12	3.1E-12	2.9E-12	2.8E-12	2.8E-12
W	4.7E-12	4.5E-12	4.5E-12	4.3E-12	4.1E-12	3.9E-12	3.9E-12
WSW	6.9E-12	6.6E-12	6.6E-12	6.3E-12	5.9E-12	5.6E-12	5.6E-12
SW	1.1E-11	1.0E-11	1.0E-11	9.5E-12	8.8E-12	8.4E-12	8.3E-12
SSW	5.0E-12	4.7E-12	4.7E-12	4.5E-12	4.2E-12	4.0E-12	3.9E-12
S	1.0E-12	1.0E-12	9.9E-13	9.5E-13	8.9E-13	8.6E-13	8.5E-13
SSE	2.9E-12	2.8E-12	2.8E-12	2.6E-12	2.4E-12	2.3E-12	2.3E-12
SE	8.4E-13	8.1E-13	8.1E-13	7.7E-13	7.3E-13	7.0E-13	6.9E-13
ESE	5.8E-13	5.5E-13	5.5E-13	5.3E-13	5.1E-13	4.9E-13	4.9E-13
E	7.0E-13	6.8E-13	6.8E-13	6.5E-13	6.2E-13	5.9E-13	5.9E-13
ENE	2.3E-12	2.1E-12	2.1E-12	2.0E-12	1.9E-12	1.8E-12	1.8E-12
NE	1.3E-11	1.3E-11	1.3E-11	1.2E-11	1.1E-11	1.0E-11	1.0E-11
NNE	7.4E-12	7.1E-12	7.1E-12	6.8E-12	6.3E-12	6.0E-12	6.0E-12

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

	Distance (m)					
Direction	25171	26794	27275	27715	28919	31060
N	2.9E-12	2.7E-12	2.6E-12	2.6E-12	2.5E-12	2.3E-12
NNW	2.5E-12	2.3E-12	2.3E-12	2.2E-12	2.1E-12	2.0E-12
NW	2.6E-12	2.5E-12	2.4E-12	2.4E-12	2.3E-12	2.1E-12
WNW	2.7E-12	2.6E-12	2.5E-12	2.5E-12	2.4E-12	2.2E-12
W	3.8E-12	3.5E-12	3.5E-12	3.4E-12	3.3E-12	3.0E-12
WSW	5.4E-12	5.0E-12	4.9E-12	4.8E-12	4.6E-12	4.3E-12
SW	8.0E-12	7.4E-12	7.2E-12	7.1E-12	6.7E-12	6.1E-12
SSW	3.8E-12	3.5E-12	3.4E-12	3.4E-12	3.2E-12	2.9E-12
S	8.3E-13	7.8E-13	7.6E-13	7.5E-13	7.2E-13	6.7E-13
SSE	2.2E-12	2.1E-12	2.0E-12	2.0E-12	1.9E-12	1.7E-12
SE	6.8E-13	6.3E-13	6.2E-13	6.1E-13	5.9E-13	5.5E-13
ESE	4.8E-13	4.5E-13	4.4E-13	4.4E-13	4.2E-13	4.0E-13
E	5.8E-13	5.4E-13	5.4E-13	5.3E-13	5.1E-13	4.8E-13
ENE	1.7E-12	1.6E-12	1.6E-12	1.6E-12	1.5E-12	1.4E-12
NE	1.0E-11	9.2E-12	8.9E-12	8.7E-12	8.2E-12	7.5E-12
NNE	5.8E-12	5.4E-12	5.3E-12	5.2E-12	5.0E-12	4.6E-12

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

C O N C E N T R A T I O N T A B L E S

Non-Radon Individual Assessment
Mar 13, 2003 08:35 pm

Facility: TAN/PM-2A tanks
Address: INEEL
City: Idaho Falls
State: ID Zip: 83401

Source Category: Point source
Source Type: Stack
Emission Year: 1993

Comments: Calc. for ratioing conc. to dose

Dataset Name: TAN/PM2A tanks
Dataset Date: Mar 13, 2003 08:35 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
N	17035	AM-241	1.8E-10	3.2E-17	3.8E-17	7.0E-17
N	18607	AM-241	1.6E-10	2.9E-17	3.5E-17	6.4E-17
N	18834	AM-241	1.5E-10	2.8E-17	3.4E-17	6.2E-17
N	18860	AM-241	1.5E-10	2.8E-17	3.4E-17	6.2E-17
N	18890	AM-241	1.5E-10	2.8E-17	3.4E-17	6.2E-17
N	19860	AM-241	1.5E-10	2.6E-17	3.3E-17	5.9E-17
N	19891	AM-241	1.5E-10	2.6E-17	3.3E-17	5.9E-17
N	20457	AM-241	1.4E-10	2.5E-17	3.2E-17	5.7E-17
N	21314	AM-241	1.3E-10	2.4E-17	3.0E-17	5.5E-17
N	21349	AM-241	1.3E-10	2.4E-17	3.0E-17	5.5E-17
N	22159	AM-241	1.3E-10	2.3E-17	2.9E-17	5.2E-17
N	23521	AM-241	1.2E-10	2.2E-17	2.7E-17	4.9E-17
N	24430	AM-241	1.2E-10	2.1E-17	2.6E-17	4.7E-17
N	24545	AM-241	1.2E-10	2.1E-17	2.6E-17	4.7E-17
N	25171	AM-241	1.1E-10	2.0E-17	2.6E-17	4.6E-17
N	26794	AM-241	1.0E-10	1.9E-17	2.4E-17	4.3E-17
N	27275	AM-241	1.0E-10	1.8E-17	2.3E-17	4.2E-17
N	27715	AM-241	1.0E-10	1.8E-17	2.3E-17	4.1E-17
N	28919	AM-241	9.6E-11	1.7E-17	2.2E-17	3.9E-17
N	31060	AM-241	8.9E-11	1.6E-17	2.0E-17	3.6E-17
NNW	17035	AM-241	1.5E-10	2.6E-17	3.5E-17	6.1E-17
NNW	18607	AM-241	1.3E-10	2.4E-17	3.2E-17	5.6E-17
NNW	18834	AM-241	1.3E-10	2.3E-17	3.1E-17	5.5E-17
NNW	18860	AM-241	1.3E-10	2.3E-17	3.1E-17	5.5E-17
NNW	18890	AM-241	1.3E-10	2.3E-17	3.1E-17	5.4E-17
NNW	19860	AM-241	1.2E-10	2.2E-17	3.0E-17	5.2E-17
NNW	19891	AM-241	1.2E-10	2.2E-17	3.0E-17	5.2E-17
NNW	20457	AM-241	1.2E-10	2.1E-17	2.9E-17	5.0E-17
NNW	21314	AM-241	1.1E-10	2.0E-17	2.8E-17	4.8E-17
NNW	21349	AM-241	1.1E-10	2.0E-17	2.8E-17	4.8E-17
NNW	22159	AM-241	1.1E-10	2.0E-17	2.6E-17	4.6E-17
NNW	23521	AM-241	1.0E-10	1.8E-17	2.5E-17	4.3E-17
NNW	24430	AM-241	9.8E-11	1.8E-17	2.4E-17	4.2E-17
NNW	24545	AM-241	9.8E-11	1.8E-17	2.4E-17	4.1E-17
NNW	25171	AM-241	9.5E-11	1.7E-17	2.3E-17	4.0E-17
NNW	26794	AM-241	8.9E-11	1.6E-17	2.2E-17	3.8E-17
NNW	27275	AM-241	8.7E-11	1.6E-17	2.1E-17	3.7E-17
NNW	27715	AM-241	8.6E-11	1.5E-17	2.1E-17	3.6E-17
NNW	28919	AM-241	8.2E-11	1.5E-17	2.0E-17	3.5E-17
NNW	31060	AM-241	7.6E-11	1.4E-17	1.9E-17	3.2E-17
NW	17035	AM-241	1.6E-10	2.8E-17	3.7E-17	6.5E-17
NW	18607	AM-241	1.4E-10	2.6E-17	3.4E-17	5.9E-17
NW	18834	AM-241	1.4E-10	2.5E-17	3.3E-17	5.8E-17
NW	18860	AM-241	1.4E-10	2.5E-17	3.3E-17	5.8E-17
NW	18890	AM-241	1.4E-10	2.5E-17	3.3E-17	5.8E-17
NW	19860	AM-241	1.3E-10	2.4E-17	3.1E-17	5.5E-17
NW	19891	AM-241	1.3E-10	2.4E-17	3.1E-17	5.5E-17

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NW	20457	AM-241	1.3E-10	2.3E-17	3.0E-17	5.3E-17
NW	21314	AM-241	1.2E-10	2.2E-17	2.9E-17	5.1E-17
NW	21349	AM-241	1.2E-10	2.2E-17	2.9E-17	5.1E-17
NW	22159	AM-241	1.2E-10	2.1E-17	2.8E-17	4.9E-17
NW	23521	AM-241	1.1E-10	2.0E-17	2.6E-17	4.6E-17
NW	24430	AM-241	1.1E-10	1.9E-17	2.5E-17	4.4E-17
NW	24545	AM-241	1.0E-10	1.9E-17	2.5E-17	4.4E-17
NW	25171	AM-241	1.0E-10	1.8E-17	2.5E-17	4.3E-17
NW	26794	AM-241	9.6E-11	1.7E-17	2.3E-17	4.0E-17
NW	27275	AM-241	9.4E-11	1.7E-17	2.3E-17	3.9E-17
NW	27715	AM-241	9.2E-11	1.7E-17	2.2E-17	3.9E-17
NW	28919	AM-241	8.8E-11	1.6E-17	2.1E-17	3.7E-17
NW	31060	AM-241	8.1E-11	1.5E-17	2.0E-17	3.4E-17
WNW	17035	AM-241	1.6E-10	2.9E-17	3.9E-17	6.9E-17
WNW	18607	AM-241	1.5E-10	2.7E-17	3.6E-17	6.3E-17
WNW	18834	AM-241	1.5E-10	2.6E-17	3.6E-17	6.2E-17
WNW	18860	AM-241	1.5E-10	2.6E-17	3.6E-17	6.2E-17
WNW	18890	AM-241	1.5E-10	2.6E-17	3.5E-17	6.2E-17
WNW	19860	AM-241	1.4E-10	2.5E-17	3.4E-17	5.8E-17
WNW	19891	AM-241	1.4E-10	2.5E-17	3.4E-17	5.8E-17
WNW	20457	AM-241	1.3E-10	2.4E-17	3.3E-17	5.7E-17
WNW	21314	AM-241	1.3E-10	2.3E-17	3.1E-17	5.4E-17
WNW	21349	AM-241	1.3E-10	2.3E-17	3.1E-17	5.4E-17
WNW	22159	AM-241	1.2E-10	2.2E-17	3.0E-17	5.2E-17
WNW	23521	AM-241	1.2E-10	2.1E-17	2.8E-17	4.9E-17
WNW	24430	AM-241	1.1E-10	2.0E-17	2.7E-17	4.7E-17
WNW	24545	AM-241	1.1E-10	2.0E-17	2.7E-17	4.7E-17
WNW	25171	AM-241	1.1E-10	1.9E-17	2.6E-17	4.6E-17
WNW	26794	AM-241	1.0E-10	1.8E-17	2.5E-17	4.3E-17
WNW	27275	AM-241	9.8E-11	1.8E-17	2.4E-17	4.2E-17
WNW	27715	AM-241	9.7E-11	1.7E-17	2.4E-17	4.1E-17
WNW	28919	AM-241	9.2E-11	1.7E-17	2.3E-17	3.9E-17
WNW	31060	AM-241	8.6E-11	1.5E-17	2.1E-17	3.7E-17
W	17035	AM-241	2.4E-10	4.2E-17	5.2E-17	9.5E-17
W	18607	AM-241	2.1E-10	3.8E-17	4.8E-17	8.6E-17
W	18834	AM-241	2.1E-10	3.7E-17	4.7E-17	8.4E-17
W	18860	AM-241	2.1E-10	3.7E-17	4.7E-17	8.4E-17
W	18890	AM-241	2.1E-10	3.7E-17	4.7E-17	8.4E-17
W	19860	AM-241	1.9E-10	3.5E-17	4.5E-17	8.0E-17
W	19891	AM-241	1.9E-10	3.5E-17	4.4E-17	7.9E-17
W	20457	AM-241	1.9E-10	3.4E-17	4.3E-17	7.7E-17
W	21314	AM-241	1.8E-10	3.2E-17	4.1E-17	7.4E-17
W	21349	AM-241	1.8E-10	3.2E-17	4.1E-17	7.4E-17
W	22159	AM-241	1.7E-10	3.1E-17	4.0E-17	7.1E-17
W	23521	AM-241	1.6E-10	2.9E-17	3.7E-17	6.6E-17
W	24430	AM-241	1.5E-10	2.8E-17	3.6E-17	6.4E-17
W	24545	AM-241	1.5E-10	2.8E-17	3.6E-17	6.3E-17

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
W	25171	AM-241	1.5E-10	2.7E-17	3.5E-17	6.2E-17
W	26794	AM-241	1.4E-10	2.5E-17	3.3E-17	5.8E-17
W	27275	AM-241	1.4E-10	2.5E-17	3.2E-17	5.7E-17
W	27715	AM-241	1.3E-10	2.4E-17	3.1E-17	5.6E-17
W	28919	AM-241	1.3E-10	2.3E-17	3.0E-17	5.3E-17
W	31060	AM-241	1.2E-10	2.1E-17	2.8E-17	4.9E-17
WSW	17035	AM-241	3.6E-10	6.5E-17	6.7E-17	1.3E-16
WSW	18607	AM-241	3.2E-10	5.8E-17	6.1E-17	1.2E-16
WSW	18834	AM-241	3.1E-10	5.5E-17	6.0E-17	1.2E-16
WSW	18860	AM-241	3.1E-10	5.5E-17	6.0E-17	1.2E-16
WSW	18890	AM-241	3.1E-10	5.5E-17	6.0E-17	1.2E-16
WSW	19860	AM-241	2.9E-10	5.2E-17	5.7E-17	1.1E-16
WSW	19891	AM-241	2.9E-10	5.2E-17	5.7E-17	1.1E-16
WSW	20457	AM-241	2.8E-10	5.0E-17	5.5E-17	1.1E-16
WSW	21314	AM-241	2.7E-10	4.8E-17	5.3E-17	1.0E-16
WSW	21349	AM-241	2.6E-10	4.8E-17	5.3E-17	1.0E-16
WSW	22159	AM-241	2.5E-10	4.6E-17	5.1E-17	9.6E-17
WSW	23521	AM-241	2.4E-10	4.2E-17	4.8E-17	9.0E-17
WSW	24430	AM-241	2.3E-10	4.1E-17	4.6E-17	8.6E-17
WSW	24545	AM-241	2.2E-10	4.0E-17	4.6E-17	8.6E-17
WSW	25171	AM-241	2.2E-10	3.9E-17	4.4E-17	8.4E-17
WSW	26794	AM-241	2.0E-10	3.6E-17	4.2E-17	7.8E-17
WSW	27275	AM-241	2.0E-10	3.6E-17	4.1E-17	7.6E-17
WSW	27715	AM-241	1.9E-10	3.5E-17	4.0E-17	7.5E-17
WSW	28919	AM-241	1.8E-10	3.3E-17	3.8E-17	7.2E-17
WSW	31060	AM-241	1.7E-10	3.1E-17	3.6E-17	6.6E-17
SW	17035	AM-241	5.8E-10	1.0E-16	7.6E-17	1.8E-16
SW	18607	AM-241	5.1E-10	9.2E-17	6.9E-17	1.6E-16
SW	18834	AM-241	4.9E-10	8.8E-17	6.8E-17	1.6E-16
SW	18860	AM-241	4.9E-10	8.7E-17	6.8E-17	1.6E-16
SW	18890	AM-241	4.9E-10	8.7E-17	6.8E-17	1.6E-16
SW	19860	AM-241	4.5E-10	8.2E-17	6.4E-17	1.5E-16
SW	19891	AM-241	4.5E-10	8.1E-17	6.4E-17	1.5E-16
SW	20457	AM-241	4.4E-10	7.8E-17	6.2E-17	1.4E-16
SW	21314	AM-241	4.1E-10	7.4E-17	6.0E-17	1.3E-16
SW	21349	AM-241	4.1E-10	7.4E-17	6.0E-17	1.3E-16
SW	22159	AM-241	3.9E-10	7.0E-17	5.7E-17	1.3E-16
SW	23521	AM-241	3.6E-10	6.5E-17	5.4E-17	1.2E-16
SW	24430	AM-241	3.4E-10	6.2E-17	5.2E-17	1.1E-16
SW	24545	AM-241	3.4E-10	6.1E-17	5.2E-17	1.1E-16
SW	25171	AM-241	3.3E-10	5.9E-17	5.0E-17	1.1E-16
SW	26794	AM-241	3.0E-10	5.5E-17	4.7E-17	1.0E-16
SW	27275	AM-241	3.0E-10	5.3E-17	4.6E-17	9.9E-17
SW	27715	AM-241	2.9E-10	5.2E-17	4.5E-17	9.8E-17
SW	28919	AM-241	2.7E-10	4.9E-17	4.3E-17	9.3E-17
SW	31060	AM-241	2.5E-10	4.5E-17	4.0E-17	8.5E-17
SSW	17035	AM-241	2.7E-10	4.9E-17	3.4E-17	8.3E-17

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SSW	18607	AM-241	2.4E-10	4.3E-17	3.1E-17	7.4E-17
SSW	18834	AM-241	2.3E-10	4.1E-17	3.1E-17	7.2E-17
SSW	18860	AM-241	2.3E-10	4.1E-17	3.1E-17	7.2E-17
SSW	18890	AM-241	2.3E-10	4.1E-17	3.1E-17	7.1E-17
SSW	19860	AM-241	2.1E-10	3.8E-17	2.9E-17	6.7E-17
SSW	19891	AM-241	2.1E-10	3.8E-17	2.9E-17	6.7E-17
SSW	20457	AM-241	2.0E-10	3.7E-17	2.8E-17	6.5E-17
SSW	21314	AM-241	1.9E-10	3.5E-17	2.7E-17	6.2E-17
SSW	21349	AM-241	1.9E-10	3.5E-17	2.7E-17	6.1E-17
SSW	22159	AM-241	1.8E-10	3.3E-17	2.6E-17	5.9E-17
SSW	23521	AM-241	1.7E-10	3.0E-17	2.4E-17	5.5E-17
SSW	24430	AM-241	1.6E-10	2.9E-17	2.3E-17	5.2E-17
SSW	24545	AM-241	1.6E-10	2.9E-17	2.3E-17	5.2E-17
SSW	25171	AM-241	1.5E-10	2.8E-17	2.3E-17	5.0E-17
SSW	26794	AM-241	1.4E-10	2.5E-17	2.1E-17	4.7E-17
SSW	27275	AM-241	1.4E-10	2.5E-17	2.1E-17	4.6E-17
SSW	27715	AM-241	1.3E-10	2.4E-17	2.0E-17	4.5E-17
SSW	28919	AM-241	1.3E-10	2.3E-17	2.0E-17	4.2E-17
SSW	31060	AM-241	1.2E-10	2.1E-17	1.8E-17	3.9E-17
S	17035	AM-241	5.0E-11	8.9E-18	7.9E-18	1.7E-17
S	18607	AM-241	4.4E-11	7.9E-18	7.2E-18	1.5E-17
S	18834	AM-241	4.3E-11	7.7E-18	7.1E-18	1.5E-17
S	18860	AM-241	4.2E-11	7.6E-18	7.1E-18	1.5E-17
S	18890	AM-241	4.2E-11	7.6E-18	7.1E-18	1.5E-17
S	19860	AM-241	4.0E-11	7.2E-18	6.7E-18	1.4E-17
S	19891	AM-241	4.0E-11	7.1E-18	6.7E-18	1.4E-17
S	20457	AM-241	3.8E-11	6.9E-18	6.5E-18	1.3E-17
S	21314	AM-241	3.6E-11	6.5E-18	6.2E-18	1.3E-17
S	21349	AM-241	3.6E-11	6.5E-18	6.2E-18	1.3E-17
S	22159	AM-241	3.5E-11	6.2E-18	6.0E-18	1.2E-17
S	23521	AM-241	3.2E-11	5.8E-18	5.6E-18	1.1E-17
S	24430	AM-241	3.1E-11	5.5E-18	5.4E-18	1.1E-17
S	24545	AM-241	3.0E-11	5.5E-18	5.4E-18	1.1E-17
S	25171	AM-241	2.9E-11	5.3E-18	5.2E-18	1.1E-17
S	26794	AM-241	2.7E-11	4.9E-18	4.9E-18	9.8E-18
S	27275	AM-241	2.7E-11	4.8E-18	4.8E-18	9.6E-18
S	27715	AM-241	2.6E-11	4.7E-18	4.7E-18	9.4E-18
S	28919	AM-241	2.5E-11	4.4E-18	4.5E-18	9.0E-18
S	31060	AM-241	2.3E-11	4.1E-18	4.2E-18	8.2E-18
SSE	17035	AM-241	1.5E-10	2.8E-17	1.9E-17	4.6E-17
SSE	18607	AM-241	1.4E-10	2.4E-17	1.7E-17	4.1E-17
SSE	18834	AM-241	1.3E-10	2.4E-17	1.7E-17	4.0E-17
SSE	18860	AM-241	1.3E-10	2.4E-17	1.7E-17	4.0E-17
SSE	18890	AM-241	1.3E-10	2.4E-17	1.7E-17	4.0E-17
SSE	19860	AM-241	1.2E-10	2.2E-17	1.6E-17	3.8E-17
SSE	19891	AM-241	1.2E-10	2.2E-17	1.6E-17	3.8E-17
SSE	20457	AM-241	1.2E-10	2.1E-17	1.5E-17	3.7E-17

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SSE	21314	AM-241	1.1E-10	2.0E-17	1.5E-17	3.5E-17
SSE	21349	AM-241	1.1E-10	2.0E-17	1.5E-17	3.5E-17
SSE	22159	AM-241	1.1E-10	1.9E-17	1.4E-17	3.3E-17
SSE	23521	AM-241	9.7E-11	1.7E-17	1.3E-17	3.1E-17
SSE	24430	AM-241	9.2E-11	1.7E-17	1.3E-17	2.9E-17
SSE	24545	AM-241	9.2E-11	1.6E-17	1.3E-17	2.9E-17
SSE	25171	AM-241	8.9E-11	1.6E-17	1.2E-17	2.8E-17
SSE	26794	AM-241	8.1E-11	1.5E-17	1.2E-17	2.6E-17
SSE	27275	AM-241	7.9E-11	1.4E-17	1.1E-17	2.6E-17
SSE	27715	AM-241	7.8E-11	1.4E-17	1.1E-17	2.5E-17
SSE	28919	AM-241	7.3E-11	1.3E-17	1.1E-17	2.4E-17
SSE	31060	AM-241	6.7E-11	1.2E-17	9.9E-18	2.2E-17
SE	17035	AM-241	3.8E-11	6.9E-18	6.1E-18	1.3E-17
SE	18607	AM-241	3.4E-11	6.2E-18	5.5E-18	1.2E-17
SE	18834	AM-241	3.3E-11	6.0E-18	5.5E-18	1.1E-17
SE	18860	AM-241	3.3E-11	6.0E-18	5.5E-18	1.1E-17
SE	18890	AM-241	3.3E-11	6.0E-18	5.5E-18	1.1E-17
SE	19860	AM-241	3.1E-11	5.6E-18	5.2E-18	1.1E-17
SE	19891	AM-241	3.1E-11	5.6E-18	5.2E-18	1.1E-17
SE	20457	AM-241	3.0E-11	5.4E-18	5.0E-18	1.0E-17
SE	21314	AM-241	2.9E-11	5.1E-18	4.8E-18	1.0E-17
SE	21349	AM-241	2.8E-11	5.1E-18	4.8E-18	9.9E-18
SE	22159	AM-241	2.7E-11	4.9E-18	4.6E-18	9.5E-18
SE	23521	AM-241	2.5E-11	4.5E-18	4.3E-18	8.9E-18
SE	24430	AM-241	2.4E-11	4.3E-18	4.2E-18	8.5E-18
SE	24545	AM-241	2.4E-11	4.3E-18	4.2E-18	8.4E-18
SE	25171	AM-241	2.3E-11	4.2E-18	4.0E-18	8.2E-18
SE	26794	AM-241	2.1E-11	3.8E-18	3.8E-18	7.6E-18
SE	27275	AM-241	2.1E-11	3.8E-18	3.7E-18	7.5E-18
SE	27715	AM-241	2.0E-11	3.7E-18	3.7E-18	7.3E-18
SE	28919	AM-241	1.9E-11	3.5E-18	3.5E-18	7.0E-18
SE	31060	AM-241	1.8E-11	3.2E-18	3.2E-18	6.4E-18
ESE	17035	AM-241	2.4E-11	4.3E-18	4.7E-18	8.9E-18
ESE	18607	AM-241	2.1E-11	3.8E-18	4.3E-18	8.1E-18
ESE	18834	AM-241	2.1E-11	3.7E-18	4.2E-18	7.9E-18
ESE	18860	AM-241	2.1E-11	3.7E-18	4.2E-18	7.9E-18
ESE	18890	AM-241	2.1E-11	3.7E-18	4.2E-18	7.9E-18
ESE	19860	AM-241	1.9E-11	3.5E-18	4.0E-18	7.5E-18
ESE	19891	AM-241	1.9E-11	3.5E-18	4.0E-18	7.5E-18
ESE	20457	AM-241	1.9E-11	3.4E-18	3.9E-18	7.2E-18
ESE	21314	AM-241	1.8E-11	3.2E-18	3.7E-18	6.9E-18
ESE	21349	AM-241	1.8E-11	3.2E-18	3.7E-18	6.9E-18
ESE	22159	AM-241	1.7E-11	3.1E-18	3.6E-18	6.6E-18
ESE	23521	AM-241	1.6E-11	2.9E-18	3.3E-18	6.2E-18
ESE	24430	AM-241	1.5E-11	2.7E-18	3.2E-18	5.9E-18
ESE	24545	AM-241	1.5E-11	2.7E-18	3.2E-18	5.9E-18
ESE	25171	AM-241	1.5E-11	2.6E-18	3.1E-18	5.7E-18

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
ESE	26794	AM-241	1.4E-11	2.5E-18	2.9E-18	5.4E-18
ESE	27275	AM-241	1.3E-11	2.4E-18	2.8E-18	5.3E-18
ESE	27715	AM-241	1.3E-11	2.4E-18	2.8E-18	5.2E-18
ESE	28919	AM-241	1.3E-11	2.3E-18	2.7E-18	4.9E-18
ESE	31060	AM-241	1.1E-11	2.1E-18	2.5E-18	4.5E-18
E	17035	AM-241	3.1E-11	5.5E-18	5.8E-18	1.1E-17
E	18607	AM-241	2.8E-11	5.0E-18	5.3E-18	1.0E-17
E	18834	AM-241	2.7E-11	4.8E-18	5.2E-18	1.0E-17
E	18860	AM-241	2.7E-11	4.8E-18	5.2E-18	1.0E-17
E	18890	AM-241	2.7E-11	4.8E-18	5.2E-18	1.0E-17
E	19860	AM-241	2.5E-11	4.5E-18	4.9E-18	9.4E-18
E	19891	AM-241	2.5E-11	4.5E-18	4.9E-18	9.4E-18
E	20457	AM-241	2.4E-11	4.3E-18	4.8E-18	9.1E-18
E	21314	AM-241	2.3E-11	4.1E-18	4.6E-18	8.7E-18
E	21349	AM-241	2.3E-11	4.1E-18	4.6E-18	8.7E-18
E	22159	AM-241	2.2E-11	3.9E-18	4.4E-18	8.3E-18
E	23521	AM-241	2.0E-11	3.7E-18	4.1E-18	7.8E-18
E	24430	AM-241	2.0E-11	3.5E-18	3.9E-18	7.5E-18
E	24545	AM-241	1.9E-11	3.5E-18	3.9E-18	7.4E-18
E	25171	AM-241	1.9E-11	3.4E-18	3.8E-18	7.2E-18
E	26794	AM-241	1.7E-11	3.1E-18	3.6E-18	6.7E-18
E	27275	AM-241	1.7E-11	3.1E-18	3.5E-18	6.6E-18
E	27715	AM-241	1.7E-11	3.0E-18	3.5E-18	6.5E-18
E	28919	AM-241	1.6E-11	2.9E-18	3.3E-18	6.2E-18
E	31060	AM-241	1.5E-11	2.6E-18	3.1E-18	5.7E-18
ENE	17035	AM-241	1.2E-10	2.1E-17	1.6E-17	3.7E-17
ENE	18607	AM-241	1.0E-10	1.9E-17	1.4E-17	3.3E-17
ENE	18834	AM-241	9.9E-11	1.8E-17	1.4E-17	3.2E-17
ENE	18860	AM-241	9.9E-11	1.8E-17	1.4E-17	3.2E-17
ENE	18890	AM-241	9.9E-11	1.8E-17	1.4E-17	3.2E-17
ENE	19860	AM-241	9.3E-11	1.7E-17	1.3E-17	3.0E-17
ENE	19891	AM-241	9.2E-11	1.7E-17	1.3E-17	3.0E-17
ENE	20457	AM-241	8.9E-11	1.6E-17	1.3E-17	2.9E-17
ENE	21314	AM-241	8.4E-11	1.5E-17	1.2E-17	2.8E-17
ENE	21349	AM-241	8.4E-11	1.5E-17	1.2E-17	2.7E-17
ENE	22159	AM-241	8.0E-11	1.4E-17	1.2E-17	2.6E-17
ENE	23521	AM-241	7.4E-11	1.3E-17	1.1E-17	2.4E-17
ENE	24430	AM-241	7.0E-11	1.3E-17	1.1E-17	2.3E-17
ENE	24545	AM-241	7.0E-11	1.3E-17	1.1E-17	2.3E-17
ENE	25171	AM-241	6.8E-11	1.2E-17	1.0E-17	2.3E-17
ENE	26794	AM-241	6.2E-11	1.1E-17	9.7E-18	2.1E-17
ENE	27275	AM-241	6.1E-11	1.1E-17	9.6E-18	2.1E-17
ENE	27715	AM-241	6.0E-11	1.1E-17	9.4E-18	2.0E-17
NE	28919	AM-241	5.6E-11	1.0E-17	9.0E-18	1.9E-17
NE	31060	AM-241	5.1E-11	9.3E-18	8.3E-18	1.8E-17
NE	17035	AM-241	7.4E-10	1.3E-16	7.2E-17	2.1E-16
NE	18607	AM-241	6.5E-10	1.2E-16	6.6E-17	1.8E-16

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NE	18834	AM-241	6.2E-10	1.1E-16	6.5E-17	1.8E-16
NE	18860	AM-241	6.2E-10	1.1E-16	6.5E-17	1.8E-16
NE	18890	AM-241	6.2E-10	1.1E-16	6.5E-17	1.8E-16
NE	19860	AM-241	5.8E-10	1.0E-16	6.2E-17	1.7E-16
NE	19891	AM-241	5.8E-10	1.0E-16	6.2E-17	1.7E-16
NE	20457	AM-241	5.6E-10	1.0E-16	6.0E-17	1.6E-16
NE	21314	AM-241	5.2E-10	9.4E-17	5.8E-17	1.5E-16
NE	21349	AM-241	5.2E-10	9.4E-17	5.7E-17	1.5E-16
NE	22159	AM-241	5.0E-10	8.9E-17	5.5E-17	1.4E-16
NE	23521	AM-241	4.6E-10	8.2E-17	5.2E-17	1.3E-16
NE	24430	AM-241	4.3E-10	7.8E-17	5.0E-17	1.3E-16
NE	24545	AM-241	4.3E-10	7.7E-17	5.0E-17	1.3E-16
NE	25171	AM-241	4.1E-10	7.4E-17	4.8E-17	1.2E-16
NE	26794	AM-241	3.8E-10	6.8E-17	4.5E-17	1.1E-16
NE	27275	AM-241	3.7E-10	6.6E-17	4.5E-17	1.1E-16
NE	27715	AM-241	3.6E-10	6.5E-17	4.4E-17	1.1E-16
NE	28919	AM-241	3.4E-10	6.1E-17	4.2E-17	1.0E-16
NE	31060	AM-241	3.1E-10	5.5E-17	3.9E-17	9.4E-17
NNE	17035	AM-241	3.9E-10	7.1E-17	6.9E-17	1.4E-16
NNE	18607	AM-241	3.5E-10	6.3E-17	6.3E-17	1.3E-16
NNE	18834	AM-241	3.3E-10	6.0E-17	6.2E-17	1.2E-16
NNE	18860	AM-241	3.3E-10	6.0E-17	6.2E-17	1.2E-16
NNE	18890	AM-241	3.3E-10	6.0E-17	6.2E-17	1.2E-16
NNE	19860	AM-241	3.1E-10	5.6E-17	5.9E-17	1.1E-16
NNE	19891	AM-241	3.1E-10	5.6E-17	5.9E-17	1.1E-16
NNE	20457	AM-241	3.0E-10	5.4E-17	5.7E-17	1.1E-16
NNE	21314	AM-241	2.9E-10	5.2E-17	5.5E-17	1.1E-16
NNE	21349	AM-241	2.9E-10	5.2E-17	5.5E-17	1.1E-16
NNE	22159	AM-241	2.7E-10	4.9E-17	5.2E-17	1.0E-16
NNE	23521	AM-241	2.6E-10	4.6E-17	4.9E-17	9.5E-17
NNE	24430	AM-241	2.4E-10	4.4E-17	4.7E-17	9.1E-17
NNE	24545	AM-241	2.4E-10	4.4E-17	4.7E-17	9.1E-17
NNE	25171	AM-241	2.4E-10	4.2E-17	4.6E-17	8.8E-17
NNE	26794	AM-241	2.2E-10	3.9E-17	4.3E-17	8.2E-17
NNE	27275	AM-241	2.1E-10	3.8E-17	4.2E-17	8.1E-17
NNE	27715	AM-241	2.1E-10	3.8E-17	4.2E-17	7.9E-17
NNE	28919	AM-241	2.0E-10	3.6E-17	4.0E-17	7.6E-17
NNE	31060	AM-241	1.8E-10	3.3E-17	3.7E-17	7.0E-17

PM-2A Tank Remediation

CAP88 Output

Am-241 Only (for concentration ratio)

Group #3 Distances

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S R E P O R T

Non-Radon Individual Assessment
Mar 13, 2003 08:19 pm

Facility: TAN/PM-2A tanks
Address: INEEL
City: Idaho Falls
State: ID Zip: 83401

Source Category: Point source
Source Type: Stack
Emission Year: 1993

Comments: Calc. for ratioing conc. to dose

Effective Dose Equivalent (mrem/year)
1.35E-06

At This Location: 32802 Meters Northeast
Dataset Name: TAN/PM2A tanks
Dataset Date: Mar 13, 2003 08:19 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 32802 Meters Northeast
Lifetime Fatal Cancer Risk: 6.88E-12

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	3.03E-07
BREAST	3.23E-08
R MAR	1.90E-06
LUNGS	1.88E-07
THYROID	3.10E-08
ENDOST	2.34E-05
RMNDR	1.04E-06
EFFEC	1.35E-06

RADIONUCLIDE EMISSIONS DURING THE YEAR 1993

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AM-241	W	1.00	1.7E-06	1.7E-06

SITE INFORMATION

Temperature:	21 degrees C
Precipitation:	25 cm/y
Mixing Height:	1000 m

SOURCE INFORMATION

Source Number: 1

Stack Height (m): 1.
Diameter (m): 0.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.700	0.399	0.442
Fraction From Assessment Area:	0.300	0.601	0.558
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

32802	34577	35279	35683	36721	36809	37729	39079	39220	39559
43584	45196	45275	45654	45677	46668	47969	50024	54611	58610

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

W E A T H E R D A T A

Non-Radon Individual Assessment
Mar 13, 2003 08:19 pm

Facility: TAN/PM-2A tanks
Address: INEEL
City: Idaho Falls
State: ID Zip: 83401

Source Category: Point source
Source Type: Stack
Emission Year: 1993

Comments: Calc. for raticing conc. to dose

Dataset Name: TAN/PM2A tanks
Dataset Date: Mar 13, 2003 08:19 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

HARMONIC AVERAGE WIND SPEEDS (WIND TOWARDS)

	Pasquill Stability Class							
Dir	A	B	C	D	E	F	G	Wind Freq
N	2.239	3.020	4.363	7.078	0.000	0.000	0.000	0.058
NNW	2.216	2.845	3.412	7.011	0.000	0.000	0.000	0.046
NW	2.166	3.036	3.031	5.099	0.000	0.000	0.000	0.047
WNW	2.125	2.768	3.305	3.626	0.000	0.000	0.000	0.049
W	2.135	2.671	3.117	3.318	0.000	0.000	0.000	0.068
WSW	1.993	2.828	2.932	3.218	0.000	0.000	0.000	0.092
SW	2.011	2.741	3.000	3.397	0.000	0.000	0.000	0.117
SSW	1.782	2.383	2.935	3.744	0.000	0.000	0.000	0.052
S	1.469	3.177	3.967	4.781	0.000	0.000	0.000	0.011
SSE	1.613	2.678	3.739	7.333	0.000	0.000	0.000	0.039
SE	1.714	2.124	4.257	6.484	0.000	0.000	0.000	0.009
ESE	1.363	2.618	4.860	6.220	0.000	0.000	0.000	0.006
E	1.373	2.613	4.382	6.944	0.000	0.000	0.000	0.008
ENE	1.852	3.339	4.583	7.522	0.000	0.000	0.000	0.034
NE	2.142	3.554	4.572	8.645	0.000	0.000	0.000	0.225
NNE	2.216	3.259	4.486	7.396	0.000	0.000	0.000	0.138

ARITHMETIC AVERAGE WIND SPEEDS (WIND TOWARDS)

	Pasquill Stability Class						
Dir	A	B	C	D	E	F	G
N	2.457	3.339	4.542	7.376	0.000	0.000	0.000
NNW	2.448	3.223	3.932	7.370	0.000	0.000	0.000
NW	2.427	3.240	3.801	5.871	0.000	0.000	0.000
WNW	2.410	3.247	3.846	4.167	0.000	0.000	0.000
W	2.414	3.016	3.603	4.562	0.000	0.000	0.000
WSW	2.348	3.040	3.316	3.601	0.000	0.000	0.000
SW	2.357	2.965	3.325	3.860	0.000	0.000	0.000
SSW	2.230	2.829	3.298	4.363	0.000	0.000	0.000
S	1.993	3.404	4.612	5.921	0.000	0.000	0.000
SSE	2.113	3.502	4.167	8.278	0.000	0.000	0.000
SE	2.186	3.029	4.437	7.184	0.000	0.000	0.000
ESE	1.887	3.481	5.069	6.435	0.000	0.000	0.000
E	1.898	3.399	4.547	7.499	0.000	0.000	0.000
ENE	2.272	3.828	4.799	8.073	0.000	0.000	0.000
NE	2.417	3.825	4.816	9.207	0.000	0.000	0.000
NE	2.448	3.624	4.661	7.647	0.000	0.000	0.000

FREQUENCIES OF STABILITY CLASSES (WIND TOWARDS)

	Pasquill Stability Class						
Dir	A	B	C	D	E	F	G
N	0.4791	0.2690	0.1584	0.0935	0.0000	0.0000	0.0000
NNW	0.7092	0.1760	0.0856	0.0293	0.0000	0.0000	0.0000
NW	0.7353	0.1467	0.0827	0.0353	0.0000	0.0000	0.0000
WNW	0.6983	0.2050	0.0855	0.0111	0.0000	0.0000	0.0000
W	0.5598	0.2455	0.1522	0.0424	0.0000	0.0000	0.0000
WSW	0.3298	0.2789	0.2754	0.1159	0.0000	0.0000	0.0000
SW	0.1675	0.1922	0.3340	0.3062	0.0000	0.0000	0.0000
SSW	0.1703	0.1509	0.3081	0.3707	0.0000	0.0000	0.0000
S	0.3042	0.1279	0.2840	0.2840	0.0000	0.0000	0.0000
SSE	0.1578	0.0944	0.1833	0.5646	0.0000	0.0000	0.0000
SE	0.3377	0.1450	0.1439	0.3734	0.0000	0.0000	0.0000
ESE	0.4048	0.1920	0.2111	0.1920	0.0000	0.0000	0.0000
E	0.3384	0.1546	0.2674	0.2395	0.0000	0.0000	0.0000
ENE	0.1764	0.1079	0.2745	0.4412	0.0000	0.0000	0.0000
NE	0.0576	0.0913	0.2095	0.6417	0.0000	0.0000	0.0000
NNE	0.1755	0.2633	0.3511	0.2101	0.0000	0.0000	0.0000
TOTAL	0.2875	0.1830	0.2321	0.2975	0.0000	0.0000	0.0000

ADDITIONAL WEATHER INFORMATION

Average Air Temperature: 21.0 degrees C
294.16 K
Precipitation: 25.0 cm/y
Lid Height: 1000 meters
Surface Roughness Length: 0.010 meters
Height Of Wind Measurements: 10.0 meters
Average Wind Speed: 4.501 m/s

Vertical Temperature Gradients:
STABILITY E 0.073 k/m
STABILITY F 0.109 k/m
STABILITY G 0.146 k/m

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K E Q U I V A L E N T S U M M A R I E S

Non-Radon Individual Assessment
Mar 13, 2003 08:19 pm

Facility: TAN/PM-2A tanks
Address: INEEL
City: Idaho Falls
State: ID Zip: 83401

Source Category: Point source
Source Type: Stack
Emission Year: 1993

Comments: Calc. for ratioing conc. to dose

Dataset Name: TAN/PM2A tanks
Dataset Date: Mar 13, 2003 08:19 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	3.03E-07
BREAST	3.23E-08
R MAR	1.90E-06
LUNGS	1.88E-07
THYROID	3.10E-08
ENDOST	2.34E-05
RMNDR	1.04E-06
EFFEC	1.35E-06

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	1.03E-07
INHALATION	1.24E-06
AIR IMMERSION	2.60E-14
GROUND SURFACE	1.64E-09
INTERNAL	1.35E-06
EXTERNAL	1.64E-09
TOTAL	1.35E-06

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
AM-241	1.35E-06
TOTAL	1.35E-06

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk
LEUKEMIA	1.60E-12
BONE	1.03E-12
THYROID	4.01E-15
BREAST	3.38E-14
LUNG	5.31E-13
STOMACH	2.09E-14
BOWEL	1.22E-14
LIVER	3.60E-12
PANCREAS	1.50E-14
URINARY	8.30E-15
OTHER	1.83E-14
TOTAL	6.88E-12

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk
INGESTION	4.94E-13
INHALATION	6.35E-12
AIR IMMERSION	5.40E-19
GROUND SURFACE	3.41E-14
INTERNAL	6.84E-12
EXTERNAL	3.41E-14
TOTAL	6.88E-12

NUCLIDE RISK SUMMARY

Nuclide	Selected Individual Total Lifetime Fatal Cancer Risk
AM-241	6.88E-12
TOTAL	6.88E-12

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	32802	34577	35279	35683	36721	36809	37729
N	4.1E-07	3.9E-07	3.8E-07	3.8E-07	3.7E-07	3.6E-07	3.6E-07
NNW	3.6E-07	3.4E-07	3.3E-07	3.3E-07	3.2E-07	3.2E-07	3.1E-07
NW	3.8E-07	3.6E-07	3.5E-07	3.5E-07	3.4E-07	3.4E-07	3.3E-07
WNW	4.0E-07	3.8E-07	3.7E-07	3.7E-07	3.6E-07	3.6E-07	3.5E-07
W	5.5E-07	5.2E-07	5.1E-07	5.0E-07	4.9E-07	4.8E-07	4.7E-07
WSW	7.7E-07	7.3E-07	7.1E-07	7.0E-07	6.8E-07	6.8E-07	6.6E-07
SW	1.1E-06	1.0E-06	1.0E-06	9.9E-07	9.6E-07	9.5E-07	9.2E-07
SSW	5.2E-07	4.9E-07	4.7E-07	4.7E-07	4.5E-07	4.5E-07	4.3E-07
S	1.1E-07	1.1E-07	1.0E-07	1.0E-07	9.9E-08	9.9E-08	9.6E-08
SSE	3.0E-07	2.8E-07	2.8E-07	2.7E-07	2.6E-07	2.6E-07	2.5E-07
SE	9.1E-08	8.6E-08	8.4E-08	8.3E-08	8.0E-08	8.0E-08	7.8E-08
ESE	6.4E-08	6.0E-08	5.9E-08	5.9E-08	5.7E-08	5.7E-08	5.6E-08
E	7.8E-08	7.4E-08	7.2E-08	7.1E-08	6.9E-08	6.9E-08	6.8E-08
ENE	2.4E-07	2.2E-07	2.2E-07	2.1E-07	2.1E-07	2.1E-07	2.0E-07
NE	1.3E-06	1.3E-06	1.2E-06	1.2E-06	1.2E-06	1.1E-06	1.1E-06
NNE	8.3E-07	7.8E-07	7.6E-07	7.5E-07	7.3E-07	7.3E-07	7.1E-07

	Distance (m)						
Direction	39079	39220	39559	43584	45196	45275	45654
N	3.4E-07	3.4E-07	3.4E-07	3.0E-07	2.9E-07	2.9E-07	2.9E-07
NNW	3.0E-07	3.0E-07	2.9E-07	2.7E-07	2.6E-07	2.5E-07	2.5E-07
NW	3.2E-07	3.2E-07	3.1E-07	2.8E-07	2.7E-07	2.7E-07	2.7E-07
WNW	3.3E-07	3.3E-07	3.3E-07	3.0E-07	2.9E-07	2.9E-07	2.8E-07
W	4.5E-07	4.5E-07	4.5E-07	4.0E-07	3.9E-07	3.9E-07	3.8E-07
WSW	6.3E-07	6.3E-07	6.2E-07	5.6E-07	5.3E-07	5.3E-07	5.3E-07
SW	8.8E-07	8.8E-07	8.7E-07	7.7E-07	7.3E-07	7.3E-07	7.2E-07
SSW	4.1E-07	4.1E-07	4.1E-07	3.6E-07	3.4E-07	3.4E-07	3.4E-07
S	9.2E-08	9.2E-08	9.1E-08	8.2E-08	7.9E-08	7.9E-08	7.8E-08
SSE	2.4E-07	2.4E-07	2.4E-07	2.1E-07	2.0E-07	2.0E-07	2.0E-07
SE	7.5E-08	7.5E-08	7.4E-08	6.7E-08	6.5E-08	6.4E-08	6.4E-08
ESE	5.4E-08	5.4E-08	5.3E-08	4.9E-08	4.7E-08	4.7E-08	4.7E-08
E	6.5E-08	6.5E-08	6.4E-08	5.9E-08	5.7E-08	5.7E-08	5.6E-08
ENE	1.9E-07	1.9E-07	1.9E-07	1.7E-07	1.6E-07	1.6E-07	1.6E-07
NE	1.1E-06	1.1E-06	1.0E-06	9.1E-07	8.7E-07	8.7E-07	8.6E-07
NNE	6.8E-07	6.7E-07	6.7E-07	6.0E-07	5.7E-07	5.7E-07	5.7E-07

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)					
Direction	45677	46668	47969	50024	54611	58610
N	2.9E-07	2.8E-07	2.7E-07	2.6E-07	2.4E-07	2.2E-07
NNW	2.5E-07	2.5E-07	2.4E-07	2.3E-07	2.1E-07	1.9E-07
NW	2.7E-07	2.6E-07	2.5E-07	2.4E-07	2.2E-07	2.1E-07
WNW	2.8E-07	2.8E-07	2.7E-07	2.6E-07	2.3E-07	2.2E-07
W	3.8E-07	3.7E-07	3.6E-07	3.5E-07	3.2E-07	2.9E-07
WSW	5.3E-07	5.1E-07	5.0E-07	4.7E-07	4.3E-07	3.9E-07
SW	7.2E-07	7.0E-07	6.8E-07	6.4E-07	5.7E-07	5.2E-07
SSW	3.4E-07	3.3E-07	3.2E-07	3.0E-07	2.7E-07	2.5E-07
S	7.8E-08	7.6E-08	7.4E-08	7.1E-08	6.5E-08	6.0E-08
SSE	2.0E-07	1.9E-07	1.9E-07	1.8E-07	1.6E-07	1.5E-07
SE	6.4E-08	6.3E-08	6.1E-08	5.8E-08	5.3E-08	5.0E-08
ESE	4.7E-08	4.6E-08	4.5E-08	4.3E-08	4.0E-08	3.8E-08
E	5.6E-08	5.5E-08	5.4E-08	5.2E-08	4.8E-08	4.5E-08
ENE	1.6E-07	1.6E-07	1.5E-07	1.4E-07	1.3E-07	1.2E-07
NE	8.6E-07	8.3E-07	8.0E-07	7.6E-07	6.7E-07	6.1E-07
NNE	5.7E-07	5.5E-07	5.3E-07	5.1E-07	4.6E-07	4.2E-07

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	32802	34577	35279	35683	36721	36809	37729
N	2.1E-12	2.0E-12	1.9E-12	1.9E-12	1.9E-12	1.9E-12	1.8E-12
NNW	1.8E-12	1.7E-12	1.7E-12	1.7E-12	1.6E-12	1.6E-12	1.6E-12
NW	1.9E-12	1.8E-12	1.8E-12	1.8E-12	1.7E-12	1.7E-12	1.7E-12
WNW	2.0E-12	1.9E-12	1.9E-12	1.9E-12	1.8E-12	1.8E-12	1.8E-12
W	2.8E-12	2.6E-12	2.6E-12	2.6E-12	2.5E-12	2.5E-12	2.4E-12
WSW	3.9E-12	3.7E-12	3.6E-12	3.6E-12	3.5E-12	3.4E-12	3.3E-12
SW	5.6E-12	5.3E-12	5.1E-12	5.1E-12	4.9E-12	4.9E-12	4.7E-12
SSW	2.6E-12	2.5E-12	2.4E-12	2.4E-12	2.3E-12	2.3E-12	2.2E-12
S	5.7E-13	5.4E-13	5.2E-13	5.2E-13	5.0E-13	5.0E-13	4.9E-13
SSE	1.5E-12	1.4E-12	1.4E-12	1.4E-12	1.3E-12	1.3E-12	1.3E-12
SE	4.6E-13	4.3E-13	4.2E-13	4.2E-13	4.1E-13	4.0E-13	3.9E-13
ESE	3.2E-13	3.0E-13	3.0E-13	3.0E-13	2.9E-13	2.9E-13	2.8E-13
E	3.9E-13	3.7E-13	3.6E-13	3.6E-13	3.5E-13	3.5E-13	3.4E-13
ENE	1.2E-12	1.1E-12	1.1E-12	1.1E-12	1.1E-12	1.1E-12	1.0E-12
NE	6.9E-12	6.4E-12	6.2E-12	6.1E-12	5.9E-12	5.9E-12	5.7E-12
NNE	4.2E-12	4.0E-12	3.9E-12	3.8E-12	3.7E-12	3.7E-12	3.6E-12

	Distance (m)						
Direction	39079	39220	39559	43584	45196	45275	45654
N	1.7E-12	1.7E-12	1.7E-12	1.5E-12	1.5E-12	1.5E-12	1.5E-12
NNW	1.5E-12	1.5E-12	1.5E-12	1.4E-12	1.3E-12	1.3E-12	1.3E-12
NW	1.6E-12	1.6E-12	1.6E-12	1.4E-12	1.4E-12	1.4E-12	1.4E-12
WNW	1.7E-12	1.7E-12	1.7E-12	1.5E-12	1.5E-12	1.5E-12	1.4E-12
W	2.3E-12	2.3E-12	2.3E-12	2.1E-12	2.0E-12	2.0E-12	2.0E-12
WSW	3.2E-12	3.2E-12	3.2E-12	2.8E-12	2.7E-12	2.7E-12	2.7E-12
SW	4.5E-12	4.5E-12	4.4E-12	3.9E-12	3.7E-12	3.7E-12	3.7E-12
SSW	2.1E-12	2.1E-12	2.1E-12	1.8E-12	1.7E-12	1.7E-12	1.7E-12
S	4.7E-13	4.7E-13	4.6E-13	4.2E-13	4.0E-13	4.0E-13	4.0E-13
SSE	1.2E-12	1.2E-12	1.2E-12	1.1E-12	1.0E-12	1.0E-12	1.0E-12
SE	3.8E-13	3.8E-13	3.7E-13	3.4E-13	3.3E-13	3.3E-13	3.2E-13
ESE	2.7E-13	2.7E-13	2.7E-13	2.5E-13	2.4E-13	2.4E-13	2.4E-13
E	3.3E-13	3.3E-13	3.3E-13	3.0E-13	2.9E-13	2.9E-13	2.8E-13
ENE	9.8E-13	9.7E-13	9.6E-13	8.6E-13	8.2E-13	8.2E-13	8.1E-13
NE	5.4E-12	5.4E-12	5.3E-12	4.7E-12	4.4E-12	4.4E-12	4.4E-12
NNE	3.5E-12	3.4E-12	3.4E-12	3.0E-12	2.9E-12	2.9E-12	2.9E-12

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

	Distance (m)					
Direction	45677	46668	47969	50024	54611	58610
N	1.5E-12	1.4E-12	1.4E-12	1.3E-12	1.2E-12	1.1E-12
NNW	1.3E-12	1.3E-12	1.2E-12	1.2E-12	1.1E-12	9.9E-13
NW	1.4E-12	1.3E-12	1.3E-12	1.2E-12	1.1E-12	1.0E-12
WNW	1.4E-12	1.4E-12	1.4E-12	1.3E-12	1.2E-12	1.1E-12
W	2.0E-12	1.9E-12	1.9E-12	1.8E-12	1.6E-12	1.5E-12
WSW	2.7E-12	2.6E-12	2.5E-12	2.4E-12	2.2E-12	2.0E-12
SW	3.7E-12	3.6E-12	3.4E-12	3.3E-12	2.9E-12	2.7E-12
SSW	1.7E-12	1.7E-12	1.6E-12	1.5E-12	1.4E-12	1.2E-12
S	4.0E-13	3.9E-13	3.7E-13	3.6E-13	3.3E-13	3.0E-13
SSE	1.0E-12	9.9E-13	9.5E-13	9.0E-13	8.1E-13	7.4E-13
SE	3.2E-13	3.2E-13	3.1E-13	2.9E-13	2.7E-13	2.5E-13
ESE	2.4E-13	2.3E-13	2.3E-13	2.2E-13	2.0E-13	1.9E-13
E	2.8E-13	2.8E-13	2.7E-13	2.6E-13	2.4E-13	2.2E-13
ENE	8.1E-13	7.9E-13	7.6E-13	7.3E-13	6.5E-13	6.0E-13
NE	4.4E-12	4.2E-12	4.1E-12	3.9E-12	3.4E-12	3.1E-12
NNE	2.9E-12	2.8E-12	2.7E-12	2.6E-12	2.3E-12	2.2E-12

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

C O N C E N T R A T I O N T A B L E S

Non-Radon Individual Assessment
Mar 13, 2003 08:19 pm

Facility: TAN/PM-2A tanks
Address: INEEL
City: Idaho Falls
State: ID Zip: 83401

Source Category: Point source
Source Type: Stack
Emission Year: 1993

Comments: Calc. for ratioing conc. to dose

Dataset Name: TAN/PM2A tanks
Dataset Date: Mar 13, 2003 08:19 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
N	32802	AM-241	8.4E-11	1.5E-17	1.9E-17	3.4E-17
N	34577	AM-241	7.9E-11	1.4E-17	1.8E-17	3.2E-17
N	35279	AM-241	7.7E-11	1.4E-17	1.8E-17	3.2E-17
N	35683	AM-241	7.6E-11	1.4E-17	1.8E-17	3.1E-17
N	36721	AM-241	7.4E-11	1.3E-17	1.7E-17	3.0E-17
N	36809	AM-241	7.4E-11	1.3E-17	1.7E-17	3.0E-17
N	37729	AM-241	7.2E-11	1.3E-17	1.7E-17	3.0E-17
N	39079	AM-241	6.9E-11	1.2E-17	1.6E-17	2.8E-17
N	39220	AM-241	6.9E-11	1.2E-17	1.6E-17	2.8E-17
N	39559	AM-241	6.8E-11	1.2E-17	1.6E-17	2.8E-17
N	43584	AM-241	6.1E-11	1.1E-17	1.4E-17	2.5E-17
N	45196	AM-241	5.9E-11	1.1E-17	1.4E-17	2.4E-17
N	45275	AM-241	5.8E-11	1.1E-17	1.4E-17	2.4E-17
N	45654	AM-241	5.8E-11	1.0E-17	1.4E-17	2.4E-17
N	45677	AM-241	5.8E-11	1.0E-17	1.4E-17	2.4E-17
N	46668	AM-241	5.6E-11	1.0E-17	1.3E-17	2.3E-17
N	47969	AM-241	5.5E-11	9.8E-18	1.3E-17	2.3E-17
N	50024	AM-241	5.2E-11	9.4E-18	1.2E-17	2.2E-17
N	54611	AM-241	4.7E-11	8.5E-18	1.1E-17	2.0E-17
N	58610	AM-241	4.4E-11	7.8E-18	1.0E-17	1.8E-17
NNW	32802	AM-241	7.2E-11	1.3E-17	1.8E-17	3.0E-17
NNW	34577	AM-241	6.8E-11	1.2E-17	1.7E-17	2.9E-17
NNW	35279	AM-241	6.6E-11	1.2E-17	1.6E-17	2.8E-17
NNW	35683	AM-241	6.5E-11	1.2E-17	1.6E-17	2.8E-17
NNW	36721	AM-241	6.3E-11	1.1E-17	1.6E-17	2.7E-17
NNW	36809	AM-241	6.3E-11	1.1E-17	1.6E-17	2.7E-17
NNW	37729	AM-241	6.2E-11	1.1E-17	1.5E-17	2.6E-17
NNW	39079	AM-241	5.9E-11	1.1E-17	1.5E-17	2.5E-17
NNW	39220	AM-241	5.9E-11	1.1E-17	1.4E-17	2.5E-17
NNW	39559	AM-241	5.9E-11	1.1E-17	1.4E-17	2.5E-17
NNW	43584	AM-241	5.3E-11	9.5E-18	1.3E-17	2.2E-17
NNW	45196	AM-241	5.1E-11	9.1E-18	1.2E-17	2.2E-17
NNW	45275	AM-241	5.1E-11	9.1E-18	1.2E-17	2.2E-17
NNW	45654	AM-241	5.0E-11	9.0E-18	1.2E-17	2.1E-17
NNW	45677	AM-241	5.0E-11	9.0E-18	1.2E-17	2.1E-17
NNW	46668	AM-241	4.9E-11	8.8E-18	1.2E-17	2.1E-17
NNW	47969	AM-241	4.7E-11	8.5E-18	1.2E-17	2.0E-17
NNW	50024	AM-241	4.5E-11	8.1E-18	1.1E-17	1.9E-17
NNW	54611	AM-241	4.1E-11	7.4E-18	1.0E-17	1.8E-17
NNW	58610	AM-241	3.8E-11	6.8E-18	9.4E-18	1.6E-17
NW	32802	AM-241	7.7E-11	1.4E-17	1.9E-17	3.2E-17
NW	34577	AM-241	7.2E-11	1.3E-17	1.8E-17	3.1E-17
NW	35279	AM-241	7.1E-11	1.3E-17	1.7E-17	3.0E-17
NW	35683	AM-241	7.0E-11	1.3E-17	1.7E-17	3.0E-17
NW	36721	AM-241	6.8E-11	1.2E-17	1.6E-17	2.9E-17
NW	36809	AM-241	6.8E-11	1.2E-17	1.6E-17	2.9E-17
NW	37729	AM-241	6.6E-11	1.2E-17	1.6E-17	2.8E-17

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NW	39079	AM-241	6.3E-11	1.1E-17	1.5E-17	2.7E-17
NW	39220	AM-241	6.3E-11	1.1E-17	1.5E-17	2.7E-17
NW	39559	AM-241	6.3E-11	1.1E-17	1.5E-17	2.6E-17
NW	43584	AM-241	5.6E-11	1.0E-17	1.4E-17	2.4E-17
NW	45196	AM-241	5.4E-11	9.7E-18	1.3E-17	2.3E-17
NW	45275	AM-241	5.4E-11	9.7E-18	1.3E-17	2.3E-17
NW	45654	AM-241	5.3E-11	9.6E-18	1.3E-17	2.3E-17
NW	45677	AM-241	5.3E-11	9.6E-18	1.3E-17	2.3E-17
NW	46668	AM-241	5.2E-11	9.4E-18	1.3E-17	2.2E-17
NW	47969	AM-241	5.1E-11	9.1E-18	1.2E-17	2.1E-17
NW	50024	AM-241	4.8E-11	8.7E-18	1.2E-17	2.0E-17
NW	54611	AM-241	4.4E-11	7.9E-18	1.1E-17	1.9E-17
NW	58610	AM-241	4.0E-11	7.3E-18	9.9E-18	1.7E-17
WNW	32802	AM-241	8.1E-11	1.5E-17	2.0E-17	3.4E-17
WNW	34577	AM-241	7.6E-11	1.4E-17	1.9E-17	3.3E-17
WNW	35279	AM-241	7.5E-11	1.3E-17	1.8E-17	3.2E-17
WNW	35683	AM-241	7.4E-11	1.3E-17	1.8E-17	3.1E-17
WNW	36721	AM-241	7.2E-11	1.3E-17	1.8E-17	3.1E-17
WNW	36809	AM-241	7.1E-11	1.3E-17	1.8E-17	3.0E-17
WNW	37729	AM-241	6.9E-11	1.3E-17	1.7E-17	3.0E-17
WNW	39079	AM-241	6.7E-11	1.2E-17	1.7E-17	2.9E-17
WNW	39220	AM-241	6.7E-11	1.2E-17	1.6E-17	2.8E-17
WNW	39559	AM-241	6.6E-11	1.2E-17	1.6E-17	2.8E-17
WNW	43584	AM-241	5.9E-11	1.1E-17	1.5E-17	2.5E-17
WNW	45196	AM-241	5.7E-11	1.0E-17	1.4E-17	2.4E-17
WNW	45275	AM-241	5.7E-11	1.0E-17	1.4E-17	2.4E-17
WNW	45654	AM-241	5.6E-11	1.0E-17	1.4E-17	2.4E-17
WNW	45677	AM-241	5.6E-11	1.0E-17	1.4E-17	2.4E-17
WNW	46668	AM-241	5.5E-11	9.9E-18	1.4E-17	2.4E-17
WNW	47969	AM-241	5.3E-11	9.6E-18	1.3E-17	2.3E-17
WNW	50024	AM-241	5.1E-11	9.2E-18	1.3E-17	2.2E-17
WNW	54611	AM-241	4.6E-11	8.3E-18	1.1E-17	2.0E-17
WNW	58610	AM-241	4.3E-11	7.7E-18	1.1E-17	1.8E-17
W	32802	AM-241	1.1E-10	2.0E-17	2.6E-17	4.6E-17
W	34577	AM-241	1.1E-10	1.9E-17	2.5E-17	4.4E-17
W	35279	AM-241	1.0E-10	1.9E-17	2.4E-17	4.3E-17
W	35683	AM-241	1.0E-10	1.8E-17	2.4E-17	4.2E-17
W	36721	AM-241	9.9E-11	1.8E-17	2.3E-17	4.1E-17
W	36809	AM-241	9.8E-11	1.8E-17	2.3E-17	4.1E-17
W	37729	AM-241	9.6E-11	1.7E-17	2.3E-17	4.0E-17
W	39079	AM-241	9.2E-11	1.7E-17	2.2E-17	3.8E-17
W	39220	AM-241	9.2E-11	1.7E-17	2.2E-17	3.8E-17
W	39559	AM-241	9.1E-11	1.6E-17	2.2E-17	3.8E-17
W	43584	AM-241	8.2E-11	1.5E-17	1.9E-17	3.4E-17
W	45196	AM-241	7.8E-11	1.4E-17	1.9E-17	3.3E-17
W	45275	AM-241	7.8E-11	1.4E-17	1.9E-17	3.3E-17
W	45654	AM-241	7.7E-11	1.4E-17	1.8E-17	3.2E-17

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
W	45677	AM-241	7.7E-11	1.4E-17	1.8E-17	3.2E-17
W	46668	AM-241	7.6E-11	1.4E-17	1.8E-17	3.2E-17
W	47969	AM-241	7.3E-11	1.3E-17	1.8E-17	3.1E-17
W	50024	AM-241	7.0E-11	1.3E-17	1.7E-17	2.9E-17
W	54611	AM-241	6.3E-11	1.1E-17	1.5E-17	2.7E-17
W	58610	AM-241	5.8E-11	1.0E-17	1.4E-17	2.5E-17
WSW	32802	AM-241	1.6E-10	2.9E-17	3.4E-17	6.2E-17
WSW	34577	AM-241	1.5E-10	2.7E-17	3.2E-17	5.9E-17
WSW	35279	AM-241	1.5E-10	2.6E-17	3.1E-17	5.7E-17
WSW	35683	AM-241	1.4E-10	2.6E-17	3.1E-17	5.7E-17
WSW	36721	AM-241	1.4E-10	2.5E-17	3.0E-17	5.5E-17
WSW	36809	AM-241	1.4E-10	2.5E-17	3.0E-17	5.5E-17
WSW	37729	AM-241	1.4E-10	2.4E-17	2.9E-17	5.3E-17
WSW	39079	AM-241	1.3E-10	2.3E-17	2.8E-17	5.1E-17
WSW	39220	AM-241	1.3E-10	2.3E-17	2.8E-17	5.1E-17
WSW	39559	AM-241	1.3E-10	2.3E-17	2.8E-17	5.1E-17
WSW	43584	AM-241	1.1E-10	2.0E-17	2.5E-17	4.5E-17
WSW	45196	AM-241	1.1E-10	2.0E-17	2.4E-17	4.3E-17
WSW	45275	AM-241	1.1E-10	2.0E-17	2.4E-17	4.3E-17
WSW	45654	AM-241	1.1E-10	1.9E-17	2.4E-17	4.3E-17
WSW	45677	AM-241	1.1E-10	1.9E-17	2.4E-17	4.3E-17
WSW	46668	AM-241	1.0E-10	1.9E-17	2.3E-17	4.2E-17
WSW	47969	AM-241	1.0E-10	1.8E-17	2.2E-17	4.1E-17
WSW	50024	AM-241	9.7E-11	1.7E-17	2.1E-17	3.9E-17
WSW	54611	AM-241	8.7E-11	1.6E-17	1.9E-17	3.5E-17
WSW	58610	AM-241	8.0E-11	1.4E-17	1.8E-17	3.2E-17
SW	32802	AM-241	2.3E-10	4.2E-17	3.8E-17	8.0E-17
SW	34577	AM-241	2.2E-10	3.9E-17	3.6E-17	7.5E-17
SW	35279	AM-241	2.1E-10	3.8E-17	3.5E-17	7.3E-17
SW	35683	AM-241	2.1E-10	3.7E-17	3.5E-17	7.2E-17
SW	36721	AM-241	2.0E-10	3.6E-17	3.4E-17	7.0E-17
SW	36809	AM-241	2.0E-10	3.6E-17	3.4E-17	7.0E-17
SW	37729	AM-241	1.9E-10	3.5E-17	3.3E-17	6.7E-17
SW	39079	AM-241	1.8E-10	3.3E-17	3.2E-17	6.5E-17
SW	39220	AM-241	1.8E-10	3.3E-17	3.1E-17	6.4E-17
SW	39559	AM-241	1.8E-10	3.3E-17	3.1E-17	6.4E-17
SW	43584	AM-241	1.6E-10	2.9E-17	2.8E-17	5.7E-17
SW	45196	AM-241	1.5E-10	2.7E-17	2.7E-17	5.4E-17
SW	45275	AM-241	1.5E-10	2.7E-17	2.7E-17	5.4E-17
SW	45654	AM-241	1.5E-10	2.7E-17	2.7E-17	5.4E-17
SW	45677	AM-241	1.5E-10	2.7E-17	2.7E-17	5.4E-17
SW	46668	AM-241	1.5E-10	2.6E-17	2.6E-17	5.2E-17
SW	47969	AM-241	1.4E-10	2.5E-17	2.5E-17	5.1E-17
SW	50024	AM-241	1.3E-10	2.4E-17	2.4E-17	4.8E-17
SW	54611	AM-241	1.2E-10	2.1E-17	2.2E-17	4.3E-17
SW	58610	AM-241	1.1E-10	1.9E-17	2.0E-17	4.0E-17
SSW	32802	AM-241	1.1E-10	1.9E-17	1.7E-17	3.6E-17

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SSW	34577	AM-241	1.0E-10	1.8E-17	1.6E-17	3.4E-17
SSW	35279	AM-241	9.8E-11	1.8E-17	1.6E-17	3.3E-17
SSW	35683	AM-241	9.6E-11	1.7E-17	1.6E-17	3.3E-17
SSW	36721	AM-241	9.3E-11	1.7E-17	1.5E-17	3.2E-17
SSW	36809	AM-241	9.2E-11	1.7E-17	1.5E-17	3.2E-17
SSW	37729	AM-241	8.9E-11	1.6E-17	1.5E-17	3.1E-17
SSW	39079	AM-241	8.5E-11	1.5E-17	1.4E-17	3.0E-17
SSW	39220	AM-241	8.5E-11	1.5E-17	1.4E-17	2.9E-17
SSW	39559	AM-241	8.4E-11	1.5E-17	1.4E-17	2.9E-17
SSW	43584	AM-241	7.4E-11	1.3E-17	1.3E-17	2.6E-17
SSW	45196	AM-241	7.0E-11	1.3E-17	1.2E-17	2.5E-17
SSW	45275	AM-241	7.0E-11	1.3E-17	1.2E-17	2.5E-17
SSW	45654	AM-241	6.9E-11	1.2E-17	1.2E-17	2.4E-17
SSW	45677	AM-241	6.9E-11	1.2E-17	1.2E-17	2.4E-17
SSW	46668	AM-241	6.7E-11	1.2E-17	1.2E-17	2.4E-17
SSW	47969	AM-241	6.5E-11	1.2E-17	1.1E-17	2.3E-17
SSW	50024	AM-241	6.1E-11	1.1E-17	1.1E-17	2.2E-17
SSW	54611	AM-241	5.4E-11	9.8E-18	9.9E-18	2.0E-17
SSW	58610	AM-241	4.9E-11	8.9E-18	9.1E-18	1.8E-17
S	32802	AM-241	2.1E-11	3.8E-18	3.9E-18	7.7E-18
S	34577	AM-241	2.0E-11	3.6E-18	3.7E-18	7.3E-18
S	35279	AM-241	1.9E-11	3.5E-18	3.6E-18	7.1E-18
S	35683	AM-241	1.9E-11	3.4E-18	3.6E-18	7.0E-18
S	36721	AM-241	1.8E-11	3.3E-18	3.5E-18	6.8E-18
S	36809	AM-241	1.8E-11	3.3E-18	3.5E-18	6.8E-18
S	37729	AM-241	1.8E-11	3.2E-18	3.4E-18	6.6E-18
S	39079	AM-241	1.7E-11	3.0E-18	3.3E-18	6.3E-18
S	39220	AM-241	1.7E-11	3.0E-18	3.3E-18	6.3E-18
S	39559	AM-241	1.7E-11	3.0E-18	3.2E-18	6.2E-18
S	43584	AM-241	1.5E-11	2.7E-18	2.9E-18	5.6E-18
S	45196	AM-241	1.4E-11	2.5E-18	2.8E-18	5.3E-18
S	45275	AM-241	1.4E-11	2.5E-18	2.8E-18	5.3E-18
S	45654	AM-241	1.4E-11	2.5E-18	2.8E-18	5.3E-18
S	45677	AM-241	1.4E-11	2.5E-18	2.8E-18	5.3E-18
S	46668	AM-241	1.4E-11	2.4E-18	2.7E-18	5.1E-18
S	47969	AM-241	1.3E-11	2.3E-18	2.6E-18	5.0E-18
S	50024	AM-241	1.2E-11	2.2E-18	2.5E-18	4.7E-18
S	54611	AM-241	1.1E-11	2.0E-18	2.3E-18	4.2E-18
S	58610	AM-241	1.0E-11	1.8E-18	2.1E-18	3.9E-18
SSE	32802	AM-241	6.2E-11	1.1E-17	9.4E-18	2.1E-17
SSE	34577	AM-241	5.8E-11	1.0E-17	8.9E-18	1.9E-17
SSE	35279	AM-241	5.6E-11	1.0E-17	8.7E-18	1.9E-17
SSE	35683	AM-241	5.5E-11	1.0E-17	8.6E-18	1.9E-17
SSE	36721	AM-241	5.3E-11	9.6E-18	8.3E-18	1.8E-17
SSE	36809	AM-241	5.3E-11	9.5E-18	8.3E-18	1.8E-17
SSE	37729	AM-241	5.1E-11	9.2E-18	8.1E-18	1.7E-17
SSE	39079	AM-241	4.9E-11	8.8E-18	7.8E-18	1.7E-17

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SSE	39220	AM-241	4.9E-11	8.8E-18	7.8E-18	1.7E-17
SSE	39559	AM-241	4.8E-11	8.7E-18	7.7E-18	1.6E-17
SSE	43584	AM-241	4.2E-11	7.6E-18	6.9E-18	1.5E-17
SSE	45196	AM-241	4.0E-11	7.2E-18	6.7E-18	1.4E-17
SSE	45275	AM-241	4.0E-11	7.2E-18	6.6E-18	1.4E-17
SSE	45654	AM-241	4.0E-11	7.1E-18	6.6E-18	1.4E-17
SSE	45677	AM-241	4.0E-11	7.1E-18	6.6E-18	1.4E-17
SSE	46668	AM-241	3.9E-11	6.9E-18	6.4E-18	1.3E-17
SSE	47969	AM-241	3.7E-11	6.7E-18	6.2E-18	1.3E-17
SSE	50024	AM-241	3.5E-11	6.3E-18	6.0E-18	1.2E-17
SSE	54611	AM-241	3.1E-11	5.6E-18	5.4E-18	1.1E-17
SSE	58610	AM-241	2.8E-11	5.1E-18	5.0E-18	1.0E-17
SE	32802	AM-241	1.7E-11	3.0E-18	3.1E-18	6.0E-18
SE	34577	AM-241	1.5E-11	2.8E-18	2.9E-18	5.7E-18
SE	35279	AM-241	1.5E-11	2.7E-18	2.8E-18	5.5E-18
SE	35683	AM-241	1.5E-11	2.7E-18	2.8E-18	5.5E-18
SE	36721	AM-241	1.4E-11	2.6E-18	2.7E-18	5.3E-18
SE	36809	AM-241	1.4E-11	2.6E-18	2.7E-18	5.3E-18
SE	37729	AM-241	1.4E-11	2.5E-18	2.6E-18	5.1E-18
SE	39079	AM-241	1.3E-11	2.4E-18	2.5E-18	4.9E-18
SE	39220	AM-241	1.3E-11	2.4E-18	2.5E-18	4.9E-18
SE	39559	AM-241	1.3E-11	2.4E-18	2.5E-18	4.9E-18
SE	43584	AM-241	1.2E-11	2.1E-18	2.3E-18	4.3E-18
SE	45196	AM-241	1.1E-11	2.0E-18	2.2E-18	4.2E-18
SE	45275	AM-241	1.1E-11	2.0E-18	2.2E-18	4.1E-18
SE	45654	AM-241	1.1E-11	2.0E-18	2.1E-18	4.1E-18
SE	45677	AM-241	1.1E-11	2.0E-18	2.1E-18	4.1E-18
SE	46668	AM-241	1.1E-11	1.9E-18	2.1E-18	4.0E-18
SE	47969	AM-241	1.0E-11	1.8E-18	2.0E-18	3.9E-18
SE	50024	AM-241	9.7E-12	1.7E-18	1.9E-18	3.7E-18
SE	54611	AM-241	8.7E-12	1.6E-18	1.8E-18	3.3E-18
SE	58610	AM-241	7.9E-12	1.4E-18	1.6E-18	3.1E-18
ESE	32802	AM-241	1.1E-11	1.9E-18	2.3E-18	4.3E-18
ESE	34577	AM-241	1.0E-11	1.8E-18	2.2E-18	4.0E-18
ESE	35279	AM-241	9.9E-12	1.8E-18	2.2E-18	3.9E-18
ESE	35683	AM-241	9.8E-12	1.8E-18	2.1E-18	3.9E-18
ESE	36721	AM-241	9.4E-12	1.7E-18	2.1E-18	3.8E-18
ESE	36809	AM-241	9.4E-12	1.7E-18	2.1E-18	3.8E-18
ESE	37729	AM-241	9.1E-12	1.6E-18	2.0E-18	3.7E-18
ESE	39079	AM-241	8.8E-12	1.6E-18	1.9E-18	3.5E-18
ESE	39220	AM-241	8.7E-12	1.6E-18	1.9E-18	3.5E-18
ESE	39559	AM-241	8.6E-12	1.6E-18	1.9E-18	3.5E-18
ESE	43584	AM-241	7.7E-12	1.4E-18	1.7E-18	3.1E-18
ESE	45196	AM-241	7.4E-12	1.3E-18	1.6E-18	3.0E-18
SE	45275	AM-241	7.4E-12	1.3E-18	1.6E-18	3.0E-18
ESE	45654	AM-241	7.3E-12	1.3E-18	1.6E-18	2.9E-18
ESE	45677	AM-241	7.3E-12	1.3E-18	1.6E-18	2.9E-18

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
ESE	46668	AM-241	7.1E-12	1.3E-18	1.6E-18	2.9E-18
ESE	47969	AM-241	6.9E-12	1.2E-18	1.5E-18	2.8E-18
ESE	50024	AM-241	6.5E-12	1.2E-18	1.5E-18	2.6E-18
ESE	54611	AM-241	5.9E-12	1.1E-18	1.3E-18	2.4E-18
ESE	58610	AM-241	5.4E-12	9.7E-19	1.2E-18	2.2E-18
E	32802	AM-241	1.4E-11	2.5E-18	2.9E-18	5.4E-18
E	34577	AM-241	1.3E-11	2.3E-18	2.7E-18	5.0E-18
E	35279	AM-241	1.3E-11	2.3E-18	2.7E-18	4.9E-18
E	35683	AM-241	1.2E-11	2.2E-18	2.6E-18	4.9E-18
E	36721	AM-241	1.2E-11	2.2E-18	2.6E-18	4.7E-18
E	36809	AM-241	1.2E-11	2.2E-18	2.5E-18	4.7E-18
E	37729	AM-241	1.2E-11	2.1E-18	2.5E-18	4.6E-18
E	39079	AM-241	1.1E-11	2.0E-18	2.4E-18	4.4E-18
E	39220	AM-241	1.1E-11	2.0E-18	2.4E-18	4.4E-18
E	39559	AM-241	1.1E-11	2.0E-18	2.4E-18	4.3E-18
E	43584	AM-241	9.8E-12	1.8E-18	2.1E-18	3.9E-18
E	45196	AM-241	9.4E-12	1.7E-18	2.0E-18	3.7E-18
E	45275	AM-241	9.3E-12	1.7E-18	2.0E-18	3.7E-18
E	45654	AM-241	9.2E-12	1.7E-18	2.0E-18	3.7E-18
E	45677	AM-241	9.2E-12	1.7E-18	2.0E-18	3.7E-18
E	46668	AM-241	9.0E-12	1.6E-18	2.0E-18	3.6E-18
E	47969	AM-241	8.7E-12	1.6E-18	1.9E-18	3.5E-18
E	50024	AM-241	8.3E-12	1.5E-18	1.8E-18	3.3E-18
E	54611	AM-241	7.4E-12	1.3E-18	1.6E-18	3.0E-18
E	58610	AM-241	6.8E-12	1.2E-18	1.5E-18	2.7E-18
ENE	32802	AM-241	4.8E-11	8.6E-18	7.9E-18	1.7E-17
ENE	34577	AM-241	4.5E-11	8.0E-18	7.5E-18	1.6E-17
ENE	35279	AM-241	4.4E-11	7.8E-18	7.3E-18	1.5E-17
ENE	35683	AM-241	4.3E-11	7.7E-18	7.2E-18	1.5E-17
ENE	36721	AM-241	4.1E-11	7.4E-18	7.0E-18	1.4E-17
ENE	36809	AM-241	4.1E-11	7.4E-18	7.0E-18	1.4E-17
ENE	37729	AM-241	4.0E-11	7.2E-18	6.8E-18	1.4E-17
ENE	39079	AM-241	3.8E-11	6.9E-18	6.6E-18	1.3E-17
ENE	39220	AM-241	3.8E-11	6.8E-18	6.5E-18	1.3E-17
ENE	39559	AM-241	3.8E-11	6.8E-18	6.5E-18	1.3E-17
ENE	43584	AM-241	3.3E-11	6.0E-18	5.8E-18	1.2E-17
ENE	45196	AM-241	3.2E-11	5.7E-18	5.6E-18	1.1E-17
ENE	45275	AM-241	3.1E-11	5.7E-18	5.6E-18	1.1E-17
ENE	45654	AM-241	3.1E-11	5.6E-18	5.6E-18	1.1E-17
ENE	45677	AM-241	3.1E-11	5.6E-18	5.6E-18	1.1E-17
ENE	46668	AM-241	3.0E-11	5.4E-18	5.4E-18	1.1E-17
ENE	47969	AM-241	2.9E-11	5.3E-18	5.3E-18	1.1E-17
ENE	50024	AM-241	2.8E-11	5.0E-18	5.0E-18	1.0E-17
ENE	54611	AM-241	2.5E-11	4.4E-18	4.6E-18	9.0E-18
ENE	58610	AM-241	2.2E-11	4.0E-18	4.2E-18	8.3E-18
NE	32802	AM-241	2.9E-10	5.1E-17	3.7E-17	8.8E-17
NE	34577	AM-241	2.6E-10	4.8E-17	3.5E-17	8.3E-17

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NE	35279	AM-241	2.6E-10	4.6E-17	3.4E-17	8.1E-17
NE	35683	AM-241	2.5E-10	4.6E-17	3.4E-17	7.9E-17
NE	36721	AM-241	2.4E-10	4.4E-17	3.3E-17	7.7E-17
NE	36809	AM-241	2.4E-10	4.4E-17	3.3E-17	7.6E-17
NE	37729	AM-241	2.3E-10	4.2E-17	3.2E-17	7.4E-17
NE	39079	AM-241	2.2E-10	4.0E-17	3.1E-17	7.1E-17
NE	39220	AM-241	2.2E-10	4.0E-17	3.1E-17	7.1E-17
NE	39559	AM-241	2.2E-10	3.9E-17	3.0E-17	7.0E-17
NE	43584	AM-241	1.9E-10	3.4E-17	2.7E-17	6.2E-17
NE	45196	AM-241	1.8E-10	3.3E-17	2.6E-17	5.9E-17
NE	45275	AM-241	1.8E-10	3.3E-17	2.6E-17	5.9E-17
NE	45654	AM-241	1.8E-10	3.2E-17	2.6E-17	5.8E-17
NE	45677	AM-241	1.8E-10	3.2E-17	2.6E-17	5.8E-17
NE	46668	AM-241	1.7E-10	3.1E-17	2.6E-17	5.7E-17
NE	47969	AM-241	1.7E-10	3.0E-17	2.5E-17	5.5E-17
NE	50024	AM-241	1.6E-10	2.8E-17	2.4E-17	5.2E-17
NE	54611	AM-241	1.4E-10	2.5E-17	2.2E-17	4.7E-17
NE	58610	AM-241	1.3E-10	2.3E-17	2.0E-17	4.3E-17
NNE	32802	AM-241	1.7E-10	3.1E-17	3.5E-17	6.6E-17
NNE	34577	AM-241	1.6E-10	2.9E-17	3.3E-17	6.2E-17
NNE	35279	AM-241	1.6E-10	2.8E-17	3.2E-17	6.1E-17
NNE	35683	AM-241	1.6E-10	2.8E-17	3.2E-17	6.0E-17
NNE	36721	AM-241	1.5E-10	2.7E-17	3.1E-17	5.8E-17
NNE	36809	AM-241	1.5E-10	2.7E-17	3.1E-17	5.8E-17
NNE	37729	AM-241	1.5E-10	2.6E-17	3.0E-17	5.6E-17
NNE	39079	AM-241	1.4E-10	2.5E-17	2.9E-17	5.4E-17
NNE	39220	AM-241	1.4E-10	2.5E-17	2.9E-17	5.4E-17
NNE	39559	AM-241	1.4E-10	2.5E-17	2.9E-17	5.3E-17
NNE	43584	AM-241	1.2E-10	2.2E-17	2.6E-17	4.8E-17
NNE	45196	AM-241	1.2E-10	2.1E-17	2.5E-17	4.6E-17
NNE	45275	AM-241	1.2E-10	2.1E-17	2.5E-17	4.6E-17
NNE	45654	AM-241	1.2E-10	2.1E-17	2.5E-17	4.6E-17
NNE	45677	AM-241	1.2E-10	2.1E-17	2.5E-17	4.6E-17
NNE	46668	AM-241	1.1E-10	2.0E-17	2.4E-17	4.4E-17
NNE	47969	AM-241	1.1E-10	2.0E-17	2.3E-17	4.3E-17
NNE	50024	AM-241	1.0E-10	1.9E-17	2.2E-17	4.1E-17
NNE	54611	AM-241	9.4E-11	1.7E-17	2.0E-17	3.7E-17
NNE	58610	AM-241	8.6E-11	1.6E-17	1.9E-17	3.4E-17

PM-2A Tank Remediation

SCREEN3 Output

03/16/03
19:44:22

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

PM-2A tank remediation - Hazardous material concentrations

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =        POINT
   EMISSION RATE (G/S)      =      .320000E-07
   STACK HEIGHT (M)         =       1.0000
   STK INSIDE DIAM (M)      =        .2500
   STK EXIT VELOCITY (M/S)=         9.9000
   STK GAS EXIT TEMP (K)    =     293.0000
   AMBIENT AIR TEMP (K)     =     293.0000
   RECEPTOR HEIGHT (M)      =       1.0000
   URBAN/RURAL OPTION       =        RURAL
   BUILDING HEIGHT (M)      =        .0000
   MIN HORIZ BLDG DIM (M) =          .0000
   MAX HORIZ BLDG DIM (M) =          .0000

THE NON-REGULATORY BUT CONSERVATIVE BRODE 2 MIXING HEIGHT OPTION WAS SELECTED.
A NON-REGULATORY ANEMOMETER HEIGHT (HANE) OF  19.9 METERS WAS ENTERED.


BUOY. FLUX =      .000 M**4/S**3;  MOM. FLUX =    1.531 M**4/S**2.

  * STABILITY CLASS  4 ONLY ***
 ** ANEMOMETER HEIGHT WIND SPEED OF   4.00 M/S ONLY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC            UHANE   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)    HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
   800.   .2201E-05    4     4.0    3.6    30.0    3.06   55.58   26.79    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
  -----------      -----------   -------   -------
 MPLE TERRAIN       .2201E-05      800.        0.


**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
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03/17/03
12:26:5

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 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

PM-2A tank remediation - Haz. Mat. conc. extra 1

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =        POINT
   EMISSION RATE (G/S)      =      .320000E-07
   STACK HEIGHT (M)         =       1.0000
   STK INSIDE DIAM (M)      =        .2500
   STK EXIT VELOCITY (M/S)=          9.9000
   STK GAS EXIT TEMP (K)    =     293.0000
   AMBIENT AIR TEMP (K)     =     293.0000
   RECEPTOR HEIGHT (M)      =       1.0000
   URBAN/RURAL OPTION       =        RURAL
   BUILDING HEIGHT (M)      =        .0000
   MIN HORIZ BLDG DIM (M) =          .0000
   MAX HORIZ BLDG DIM (M) =          .0000

THE NON-REGULATORY BUT CONSERVATIVE BRODE 2 MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =    1.531 M**4/S**2.

*** STABILITY CLASS  4 ONLY ***
*** ANEMOMETER HEIGHT WIND SPEED OF   7.00 M/S ONLY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB   (M/S)  (M/S)    (M)    HT (M)   Y (M)   Z (M)  DWASH
 -------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
   800.   .1136E-05    4     7.0    7.0    30.0    2.02    55.57   26.78    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
 --------------    -----------   -------   -------
SIMPLE TERRAIN      .1136E-05      800.        0.


**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

03/17/03
12:30:24

** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

PM-2A tank remediation - Haz Mat. conc. extra 2

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.320000E-07
STACK HEIGHT (M)	=	1.0000
STK INSIDE DIAM (M)	=	.2500
STK EXIT VELOCITY (M/S)	=	17.8000
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	1.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

THE NON-REGULATORY BUT CONSERVATIVE BRODE 2 MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .000 M**4/S**3; MOM. FLUX = 4.951 M**4/S**2.

* STABILITY CLASS 4 ONLY ***
* ANEMOMETER HEIGHT WIND SPEED OF 4.00 M/S ONLY ***

****
*** SCREEN DISCRETE DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
800.	.1981E-05	4	4.0	4.0	30.0	4.34	55.58	26.80	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
MPLE TERRAIN	.1981E-05	800.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

TSF-03 Burn Pit

CAP88 Output

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S R E P O R T

Non-Radon Individual Assessment
Mar 30, 2003 10:29 pm

Facility: TAN/TSF-03 burn pit
Address: INEEL
City: Idaho Falls
State: ID Zip: 83402

Source Category: extended-plane
Source Type: Area
Emission Year: 1995

Comments: Second batch of nuclides for burn pit calcs.

Effective Dose Equivalent (mrem/year)
9.74E-08

At This Location: 13483 Meters Northeast
Dataset Name: TSF burn pit
Dataset Date: Mar 30, 2003 10:29 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 13483 Meters Northeast
Lifetime Fatal Cancer Risk: 1.09E-12

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	1.27E-09
BREAST	1.30E-09
R MAR	5.07E-08
LUNGS	5.89E-07
THYROID	1.26E-09
ENDOST	6.27E-07
RMNDR	4.12E-09
EFFEC	9.74E-08

RADIONUCLIDE EMISSIONS DURING THE YEAR 1995

Nuclide	Class	Size	Source #1 Ci/y	TOTAL Ci/y
AG-110M	Y	1.00	1.6E-10	1.6E-10
RA-226	W	1.00	4.7E-08	4.7E-08
RU-103	Y	1.00	4.7E-10	4.7E-10
RU-106	Y	1.00	1.6E-09	1.6E-09
RH-106	Y	1.00	1.6E-09	1.6E-09
SR-90	D	1.00	1.6E-09	1.6E-09
Y-90	Y	1.00	1.6E-09	1.6E-09
TH-228	Y	1.00	1.6E-08	1.6E-08
TH-230	Y	1.00	1.6E-08	1.6E-08
TH-232	Y	1.00	1.6E-08	1.6E-08
U-234	Y	1.00	1.6E-08	1.6E-08
U-235	Y	1.00	1.4E-09	1.4E-09
U-238	Y	1.00	1.6E-08	1.6E-08
ZN-65	Y	1.00	6.3E-10	6.3E-10
ZR-95	W	1.00	6.3E-10	6.3E-10

SITE INFORMATION

Temperature:	21 degrees C
Precipitation:	25 cm/y
Mixing Height:	1000 m

SOURCE INFORMATION

Source Number: 1

Source Height (m): 0.
Area (sq m): 155.

Plume Rise Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.700	0.399	0.442
Fraction From Assessment Area:	0.300	0.601	0.558
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

13483 13612 13664 13959 14258 14374 15241 15441 15784 15844
16323 17329

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K E Q U I V A L E N T S U M M A R I E S

Non-Radon Individual Assessment
Mar 30, 2003 10:29 pm

Facility: TAN/TSF-03 burn pit
Address: INEEL
City: Idaho Falls
State: ID Zip: 83402

Source Category: extended-plane
Source Type: Area
Emission Year: 1995

Comments: Second batch of nuclides for burn pit calcs.

Dataset Name: TSF burn pit
Dataset Date: Mar 30, 2003 10:29 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	1.27E-09
BREAST	1.30E-09
R MAR	5.07E-08
LUNGS	5.89E-07
THYROID	1.26E-09
ENDOST	6.27E-07
RMNDR	4.12E-09
EFFEC	9.74E-08

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	5.50E-09
INHALATION	9.18E-08
AIR IMMERSION	6.58E-15
GROUND SURFACE	7.59E-11
INTERNAL	9.73E-08
EXTERNAL	7.59E-11
TOTAL	9.74E-08

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
AG-110M	1.33E-12
RA-226	5.13E-09
RU-103	1.60E-13
RU-106	5.82E-12
RH-106	1.23E-12
SR-90	3.63E-11
Y-90	8.00E-14
TH-228	2.04E-08
TH-230	2.03E-08
TH-232	2.91E-08
U-234	1.13E-08
U-235	9.71E-10
U-238	1.01E-08
ZN-65	3.88E-12
ZR-95	4.51E-13
TOTAL	9.74E-08

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk
LEUKEMIA	4.56E-14
BONE	2.93E-14
THYROID	2.40E-16
BREAST	2.14E-15
LUNG	9.97E-13
STOMACH	1.63E-15
BOWEL	1.55E-15
LIVER	2.89E-15
PANCREAS	1.18E-15
URINARY	5.53E-15
OTHER	1.44E-15
TOTAL	1.09E-12

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk
INGESTION	2.72E-14
INHALATION	1.06E-12
AIR IMMERSION	1.57E-19
GROUND SURFACE	1.76E-15
INTERNAL	1.09E-12
EXTERNAL	1.76E-15
TOTAL	1.09E-12

NUCLIDE RISK SUMMARY

Nuclide	Selected Individual Total Lifetime Fatal Cancer Risk
AG-110M	3.38E-17
RA-226	6.31E-14
RU-103	4.08E-18
RU-106	2.58E-16
RH-106	2.94E-17
SR-90	6.11E-16
Y-90	2.70E-18
TH-228	4.08E-13
TH-230	1.66E-13
TH-232	1.64E-13
U-234	1.44E-13
U-235	1.27E-14
U-238	1.29E-13
ZN-65	1.02E-16
ZR-95	1.05E-17
TOTAL	1.09E-12

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	13483	13612	13664	13959	14258	14374	15241
N	2.3E-08	2.2E-08	2.2E-08	2.2E-08	2.1E-08	2.1E-08	2.0E-08
NNW	1.9E-08	1.8E-08	1.8E-08	1.8E-08	1.8E-08	1.7E-08	1.6E-08
NW	2.0E-08	2.0E-08	2.0E-08	1.9E-08	1.9E-08	1.9E-08	1.8E-08
WNW	2.1E-08	2.1E-08	2.1E-08	2.0E-08	2.0E-08	1.9E-08	1.8E-08
W	3.0E-08	3.0E-08	3.0E-08	2.9E-08	2.8E-08	2.8E-08	2.6E-08
WSW	4.7E-08	4.6E-08	4.6E-08	4.5E-08	4.4E-08	4.3E-08	4.0E-08
SW	7.6E-08	7.5E-08	7.5E-08	7.3E-08	7.1E-08	7.0E-08	6.4E-08
SSW	3.6E-08	3.6E-08	3.5E-08	3.4E-08	3.3E-08	3.3E-08	3.0E-08
S	7.1E-09	7.0E-09	7.0E-09	6.8E-09	6.6E-09	6.6E-09	6.1E-09
SSE	2.1E-08	2.0E-08	2.0E-08	2.0E-08	1.9E-08	1.9E-08	1.8E-08
SE	5.6E-09	5.6E-09	5.5E-09	5.4E-09	5.3E-09	5.2E-09	4.9E-09
ESE	3.7E-09	3.7E-09	3.7E-09	3.6E-09	3.5E-09	3.5E-09	3.3E-09
E	4.6E-09	4.6E-09	4.6E-09	4.5E-09	4.4E-09	4.3E-09	4.1E-09
ENE	1.6E-08	1.6E-08	1.6E-08	1.5E-08	1.5E-08	1.5E-08	1.3E-08
NE	9.7E-08	9.6E-08	9.5E-08	9.3E-08	9.0E-08	8.9E-08	8.1E-08
NNE	5.1E-08	5.1E-08	5.0E-08	4.9E-08	4.8E-08	4.7E-08	4.4E-08

	Distance (m)				
Direction	15441	15784	15844	16323	17329
N	1.9E-08	1.9E-08	1.9E-08	1.8E-08	1.7E-08
NNW	1.6E-08	1.6E-08	1.6E-08	1.5E-08	1.4E-08
NW	1.7E-08	1.7E-08	1.7E-08	1.6E-08	1.5E-08
WNW	1.8E-08	1.8E-08	1.8E-08	1.7E-08	1.6E-08
W	2.6E-08	2.5E-08	2.5E-08	2.4E-08	2.3E-08
WSW	3.9E-08	3.8E-08	3.8E-08	3.7E-08	3.4E-08
SW	6.3E-08	6.1E-08	6.1E-08	5.8E-08	5.3E-08
SSW	3.0E-08	2.9E-08	2.9E-08	2.8E-08	2.5E-08
S	6.0E-09	5.9E-09	5.9E-09	5.7E-09	5.3E-09
SSE	1.7E-08	1.7E-08	1.7E-08	1.6E-08	1.5E-08
SE	4.8E-09	4.7E-09	4.7E-09	4.5E-09	4.3E-09
ESE	3.2E-09	3.2E-09	3.2E-09	3.1E-09	2.9E-09
E	4.0E-09	3.9E-09	3.9E-09	3.8E-09	3.6E-09
ENE	1.3E-08	1.3E-08	1.3E-08	1.2E-08	1.1E-08
NE	8.0E-08	7.7E-08	7.7E-08	7.4E-08	6.7E-08
NNE	4.3E-08	4.2E-08	4.2E-08	4.0E-08	3.7E-08

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

	Distance (m)						
Direction	13483	13612	13664	13959	14258	14374	15241
N	2.5E-13	2.4E-13	2.4E-13	2.4E-13	2.3E-13	2.3E-13	2.1E-13
NNW	2.0E-13	2.0E-13	2.0E-13	1.9E-13	1.9E-13	1.9E-13	1.8E-13
NW	2.2E-13	2.2E-13	2.2E-13	2.1E-13	2.1E-13	2.0E-13	1.9E-13
WNW	2.3E-13	2.2E-13	2.2E-13	2.2E-13	2.1E-13	2.1E-13	2.0E-13
W	3.3E-13	3.2E-13	3.2E-13	3.2E-13	3.1E-13	3.1E-13	2.9E-13
WSW	5.2E-13	5.1E-13	5.1E-13	4.9E-13	4.8E-13	4.8E-13	4.4E-13
SW	8.5E-13	8.4E-13	8.3E-13	8.1E-13	7.8E-13	7.8E-13	7.1E-13
SSW	4.0E-13	3.9E-13	3.9E-13	3.8E-13	3.7E-13	3.6E-13	3.3E-13
S	7.5E-14	7.4E-14	7.4E-14	7.2E-14	7.0E-14	6.9E-14	6.4E-14
SSE	2.3E-13	2.2E-13	2.2E-13	2.2E-13	2.1E-13	2.1E-13	1.9E-13
SE	5.8E-14	5.8E-14	5.7E-14	5.6E-14	5.4E-14	5.4E-14	5.0E-14
ESE	3.7E-14	3.6E-14	3.6E-14	3.5E-14	3.5E-14	3.4E-14	3.2E-14
E	4.7E-14	4.7E-14	4.6E-14	4.5E-14	4.4E-14	4.4E-14	4.1E-14
ENE	1.7E-13	1.7E-13	1.7E-13	1.7E-13	1.6E-13	1.6E-13	1.5E-13
NE	1.1E-12	1.1E-12	1.1E-12	1.0E-12	1.0E-12	9.9E-13	9.1E-13
NNE	5.7E-13	5.6E-13	5.6E-13	5.4E-13	5.3E-13	5.2E-13	4.8E-13

	Distance (m)				
Direction	15441	15784	15844	16323	17329
N	2.1E-13	2.1E-13	2.1E-13	2.0E-13	1.9E-13
NNW	1.7E-13	1.7E-13	1.7E-13	1.6E-13	1.5E-13
NW	1.9E-13	1.8E-13	1.8E-13	1.8E-13	1.7E-13
WNW	2.0E-13	1.9E-13	1.9E-13	1.8E-13	1.7E-13
W	2.8E-13	2.7E-13	2.7E-13	2.6E-13	2.5E-13
WSW	4.3E-13	4.2E-13	4.2E-13	4.0E-13	3.7E-13
SW	7.0E-13	6.8E-13	6.7E-13	6.5E-13	5.9E-13
SSW	3.3E-13	3.2E-13	3.2E-13	3.0E-13	2.8E-13
S	6.3E-14	6.1E-14	6.1E-14	5.9E-14	5.4E-14
SSE	1.9E-13	1.8E-13	1.8E-13	1.7E-13	1.6E-13
SE	4.9E-14	4.8E-14	4.8E-14	4.6E-14	4.3E-14
ESE	3.2E-14	3.1E-14	3.1E-14	3.0E-14	2.8E-14
E	4.0E-14	3.9E-14	3.9E-14	3.8E-14	3.5E-14
ENE	1.4E-13	1.4E-13	1.4E-13	1.3E-13	1.2E-13
NE	8.9E-13	8.6E-13	8.6E-13	8.2E-13	7.5E-13
NNE	4.7E-13	4.6E-13	4.6E-13	4.4E-13	4.1E-13

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K C O N V E R S I O N F A C T O R S

Non-Radon Individual Assessment
Mar 30, 2003 10:29 pm

Facility: TAN/TSF-03 burn pit
Address: INEEL
City: Idaho Falls
State: ID Zip: 83402

Source Category: extended-plane
Source Type: Area
Emission Year: 1995

Comments: Second batch of nuclides for burn pit calcs.

Dataset Name: TSF burn pit
Dataset Date: Mar 30, 2003 10:29 pm
Wind File: C:\PROGRA~1\CAP88PC2\WNDFILES\TAN.WND

DOSE AND RISK FACTOR UNITS

The units for each type of dose rate conversion factor are shown below, by pathway:

Pathway	Units
Ingestion	millirem/picoCurie
Inhalation	millirem/picoCurie
Immersion	millirem-cubic cm/microCurie-year
Surface	millirem-square cm/microCurie-year

Risks for internal exposures (inhalation and ingestion) are the lifetime risk of premature death in a birth cohort of 100,000 people for a 1 picoCurie/year intake rate, where the average lifetime is 70.7565 years.

This is simplified to lifetime risk per 100,000 picoCuries.

The units for each type of risk conversion factor are shown below, by pathway:

Pathway	Units
Ingestion	lifetime risk/100,000 picoCuries
Inhalation	lifetime risk/100,000 picoCuries
Immersion	lifetime risk-cubic cm/100,000 picoCurie-years
Surface	lifetime risk-square cm/100,000 picoCurie-years

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*   NUCLIDE  AG-110M   *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	1.100E-05	9.072E-06	1.661E+10	3.134E+06
BREAST	2.865E-06	2.646E-05	1.498E+10	2.827E+06
R MAR	3.490E-06	2.511E-05	1.273E+10	2.401E+06
LUNGS	3.074E-06	4.401E-04	1.254E+10	2.368E+06
THYROID	8.332E-07	2.380E-05	1.572E+10	2.967E+06
ENDOST	1.690E-06	1.921E-05	1.380E+10	2.608E+06
RMNDR	2.217E-05	5.596E-05	1.269E+10	2.392E+06
EFFEC	1.070E-05	8.014E-05	1.413E+10	2.665E+06

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.105E-06	7.882E-06	4.031E+03	7.606E-01
BONE	2.990E-08	3.366E-07	2.443E+02	4.617E-02
THYROID	3.789E-08	1.070E-06	7.153E+02	1.350E-01
BREAST	1.122E-06	1.019E-05	5.869E+03	1.107E+00
LUNG	1.524E-06	3.398E-04	6.218E+03	1.174E+00
STOMACH	1.807E-06	1.244E-05	3.777E+03	7.121E-01
BOWEL	4.339E-06	3.081E-06	1.894E+03	3.570E-01
LIVER	1.113E-05	2.305E-05	4.125E+03	7.783E-01
PANCREAS	1.477E-06	1.190E-05	2.489E+03	4.688E-01
URINARY	7.027E-07	2.851E-06	1.555E+03	2.934E-01
OTHER	1.806E-06	1.456E-05	3.044E+03	5.734E-01

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* NUCLIDE RA-226 *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.338E-04	6.095E-04	3.885E+07	8.621E+03
BREAST	3.331E-04	6.094E-04	4.255E+07	9.546E+03
R MAR	2.133E-03	2.554E-03	2.712E+07	5.957E+03
LUNGS	3.328E-04	6.081E-02	2.816E+07	6.216E+03
THYROID	3.324E-04	6.087E-04	3.774E+07	8.362E+03
ENDOST	2.490E-02	2.797E-02	4.144E+07	9.176E+03
RMNDR	4.164E-04	6.895E-04	2.776E+07	6.127E+03
EFFEC	1.311E-03	8.911E-03	3.343E+07	7.412E+03

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	2.192E-04	2.661E-04	8.590E+00	1.887E-03
BONE	1.305E-04	1.465E-04	7.334E-01	1.624E-04
THYROID	5.738E-06	1.071E-05	1.717E+00	3.803E-04
BREAST	4.824E-05	9.059E-05	1.666E+01	3.739E-03
LUNG	6.129E-05	1.901E-02	1.396E+01	3.082E-03
STOMACH	4.021E-05	7.489E-05	8.264E+00	1.828E-03
BOWEL	3.246E-05	4.404E-05	4.081E+00	9.019E-04
LIVER	4.180E-05	5.576E-05	9.041E+00	1.998E-03
PANCREAS	3.010E-05	5.655E-05	5.312E+00	1.167E-03
URINARY	1.540E-05	3.821E-05	3.324E+00	7.335E-04
OTHER	3.681E-05	6.917E-05	6.498E+00	1.428E-03

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*   NUCLIDE  RU-103    *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	2.098E-06	1.150E-06	2.830E+09	5.846E+05
BREAST	4.776E-07	1.192E-06	2.631E+09	5.439E+05
R MAR	6.202E-07	1.206E-06	2.157E+09	4.440E+05
LUNGS	2.813E-07	5.895E-05	2.109E+09	4.366E+05
THYROID	2.679E-07	9.895E-07	2.620E+09	5.402E+05
ENDOST	3.037E-07	8.642E-07	2.472E+09	5.106E+05
RMNDR	7.660E-06	4.676E-06	2.105E+09	4.336E+05
EFFEC	3.020E-06	9.143E-06	2.398E+09	4.950E+05

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.964E-07	3.819E-07	6.832E+02	1.406E-01
BONE	5.375E-09	1.529E-08	4.374E+01	9.037E-03
THYROID	1.219E-08	4.500E-08	1.192E+02	2.457E-02
BREAST	1.871E-07	4.669E-07	1.030E+03	2.130E-01
LUNG	1.395E-07	4.877E-05	1.046E+03	2.165E-01
STOMACH	3.584E-07	6.186E-07	6.303E+02	1.299E-01
BOWEL	2.263E-06	1.134E-06	3.124E+02	6.447E-02
LIVER	1.476E-07	6.607E-07	6.888E+02	1.427E-01
PANCREAS	1.144E-07	5.334E-07	4.136E+02	8.535E-02
URINARY	6.411E-08	1.257E-07	2.572E+02	5.292E-02
OTHER	1.399E-07	6.524E-07	5.059E+02	1.044E-01

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*   NUCLIDE  RU-106    *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	6.226E-06	4.995E-06	0.000E+00	0.000E+00
BREAST	5.597E-06	6.873E-06	0.000E+00	0.000E+00
R MAR	5.635E-06	6.734E-06	0.000E+00	0.000E+00
LUNGS	5.468E-06	3.843E-03	0.000E+00	0.000E+00
THYROID	5.530E-06	6.653E-06	0.000E+00	0.000E+00
ENDOST	5.407E-06	6.097E-06	0.000E+00	0.000E+00
RMNDR	7.632E-05	4.352E-05	0.000E+00	0.000E+00
EFFEC	2.695E-05	4.777E-04	0.000E+00	0.000E+00

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.763E-06	2.095E-06	0.000E+00	0.000E+00
BONE	9.436E-08	1.058E-07	0.000E+00	0.000E+00
THYROID	2.477E-07	2.962E-07	0.000E+00	0.000E+00
BREAST	2.141E-06	2.605E-06	0.000E+00	0.000E+00
LUNG	2.652E-06	2.862E-03	0.000E+00	0.000E+00
STOMACH	2.939E-06	2.886E-06	0.000E+00	0.000E+00
BOWEL	2.321E-05	1.238E-05	0.000E+00	0.000E+00
LIVER	1.908E-06	2.981E-06	0.000E+00	0.000E+00
PANCREAS	1.326E-06	2.202E-06	0.000E+00	0.000E+00
URINARY	6.929E-07	7.714E-07	0.000E+00	0.000E+00
OTHER	1.621E-06	2.693E-06	0.000E+00	0.000E+00

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*   NUCLIDE  RH-106    *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	1.437E-11	1.888E-12	1.232E+09	2.457E+05
BREAST	2.493E-11	1.520E-11	1.128E+09	2.253E+05
R MAR	1.853E-11	1.427E-11	9.398E+08	1.876E+05
LUNGS	3.212E-11	2.316E-08	9.213E+08	1.839E+05
THYROID	2.811E-12	1.403E-11	1.151E+09	2.294E+05
ENDOST	1.066E-11	1.133E-11	1.054E+09	2.105E+05
RMNDR	1.466E-08	3.541E-11	9.250E+08	1.846E+05
EFFEC	4.411E-09	2.795E-09	1.044E+09	2.084E+05

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	5.870E-12	4.519E-12	2.972E+02	5.942E-02
BONE	1.887E-13	2.005E-13	1.866E+01	3.726E-03
THYROID	1.279E-13	6.383E-13	5.234E+01	1.043E-02
BREAST	9.764E-12	5.954E-12	4.420E+02	8.826E-02
LUNG	1.592E-11	7.857E-09	4.552E+02	9.117E-02
STOMACH	2.346E-08	1.628E-11	2.765E+02	5.509E-02
BOWEL	2.472E-11	4.730E-13	1.375E+02	2.744E-02
LIVER	1.252E-11	9.406E-12	3.020E+02	6.019E-02
PANCREAS	7.355E-11	7.386E-12	1.818E+02	3.620E-02
URINARY	7.269E-12	1.483E-12	1.133E+02	2.256E-02
OTHER	8.996E-11	9.034E-12	2.224E+02	4.428E-02

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*   NUCLIDE  SR-90     *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	5.329E-06	9.433E-06	0.000E+00	0.000E+00
BREAST	5.329E-06	9.433E-06	0.000E+00	0.000E+00
R MAR	6.501E-04	1.144E-03	0.000E+00	0.000E+00
LUNGS	5.329E-06	1.352E-05	0.000E+00	0.000E+00
THYROID	5.329E-06	9.433E-06	0.000E+00	0.000E+00
ENDOST	1.438E-03	2.531E-03	0.000E+00	0.000E+00
RMNDR	2.118E-05	1.094E-05	0.000E+00	0.000E+00
EFFEC	1.304E-04	2.222E-04	0.000E+00	0.000E+00

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.819E-04	3.202E-04	0.000E+00	0.000E+00
BONE	2.042E-05	3.595E-05	0.000E+00	0.000E+00
THYROID	2.352E-07	4.164E-07	0.000E+00	0.000E+00
BREAST	1.996E-06	3.533E-06	0.000E+00	0.000E+00
LUNG	2.533E-06	7.232E-06	0.000E+00	0.000E+00
STOMACH	1.117E-06	1.520E-06	0.000E+00	0.000E+00
BOWEL	5.940E-06	1.621E-06	0.000E+00	0.000E+00
LIVER	1.919E-06	3.607E-06	0.000E+00	0.000E+00
PANCREAS	1.246E-06	2.206E-06	0.000E+00	0.000E+00
URINARY	6.392E-07	1.132E-06	0.000E+00	0.000E+00
OTHER	1.524E-06	2.699E-06	0.000E+00	0.000E+00

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*   NUCLIDE  Y-90      *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	5.706E-11	2.133E-09	0.000E+00	0.000E+00
BREAST	5.082E-11	2.131E-09	0.000E+00	0.000E+00
R MAR	1.367E-09	5.750E-08	0.000E+00	0.000E+00
LUNGS	5.062E-11	4.176E-05	0.000E+00	0.000E+00
THYROID	5.062E-11	2.130E-09	0.000E+00	0.000E+00
ENDOST	1.348E-09	5.671E-08	0.000E+00	0.000E+00
RMNDR	3.581E-05	1.464E-05	0.000E+00	0.000E+00
EFFEC	1.074E-05	9.413E-06	0.000E+00	0.000E+00

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	4.330E-10	1.821E-08	0.000E+00	0.000E+00
BONE	2.385E-11	1.004E-09	0.000E+00	0.000E+00
THYROID	2.302E-12	9.689E-11	0.000E+00	0.000E+00
BREAST	1.991E-11	8.346E-10	0.000E+00	0.000E+00
LUNG	2.509E-11	2.818E-05	0.000E+00	0.000E+00
STOMACH	1.282E-06	5.240E-07	0.000E+00	0.000E+00
BOWEL	1.106E-05	4.517E-06	0.000E+00	0.000E+00
LIVER	4.663E-10	1.962E-08	0.000E+00	0.000E+00
PANCREAS	1.240E-11	5.210E-10	0.000E+00	0.000E+00
URINARY	6.351E-12	2.673E-10	0.000E+00	0.000E+00
OTHER	1.517E-11	6.373E-10	0.000E+00	0.000E+00

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* NUCLIDE TH-228 *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	8.568E-06	8.192E-04	1.128E+07	2.975E+03
BREAST	7.872E-06	8.178E-04	1.373E+07	5.698E+03
R MAR	2.971E-04	2.890E-02	6.512E+06	1.506E+03
LUNGS	7.801E-06	1.997E+00	7.807E+06	1.846E+03
THYROID	7.787E-06	8.121E-04	1.103E+07	2.590E+03
ENDOST	3.635E-03	3.533E-01	1.262E+07	2.997E+03
RMNDR	1.327E-04	2.424E-03	7.592E+06	1.763E+03
EFFEC	1.890E-04	2.548E-01	9.586E+06	2.697E+03

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	3.629E-05	3.434E-03	2.063E+00	4.770E-04
BONE	2.465E-05	2.322E-03	2.233E-01	5.304E-05
THYROID	1.407E-07	1.457E-05	5.015E-01	1.178E-04
BREAST	1.237E-06	1.245E-04	5.377E+00	2.232E-03
LUNG	1.532E-06	5.057E-01	3.870E+00	9.153E-04
STOMACH	1.669E-06	1.275E-04	2.237E+00	5.221E-04
BOWEL	1.728E-05	1.904E-04	1.089E+00	2.529E-04
LIVER	4.668E-06	4.821E-04	2.490E+00	5.733E-04
PANCREAS	7.646E-07	8.105E-05	1.358E+00	3.204E-04
URINARY	4.803E-07	6.668E-05	9.145E-01	2.108E-04
OTHER	9.353E-07	9.913E-05	1.660E+00	3.919E-04

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* NUCLIDE TH-230 *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	2.588E-06	6.465E-04	2.224E+06	8.621E+02
BREAST	2.581E-06	6.467E-04	3.374E+06	3.045E+03
R MAR	1.026E-03	2.462E-01	1.017E+06	2.583E+02
LUNGS	2.581E-06	1.079E+00	1.413E+06	3.848E+02
THYROID	2.581E-06	6.465E-04	2.072E+06	5.476E+02
ENDOST	1.278E-02	3.064E+00	2.409E+06	6.586E+02
RMNDR	5.692E-05	1.638E-03	1.357E+06	3.414E+02
EFFEC	5.249E-04	2.518E-01	1.895E+06	8.880E+02

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	9.235E-05	2.069E-02	3.223E-01	8.180E-05
BONE	6.144E-05	1.361E-02	4.263E-02	1.166E-05
THYROID	4.447E-08	1.011E-05	9.424E-02	2.491E-05
BREAST	3.719E-07	8.045E-05	1.322E+00	1.193E-03
LUNG	4.734E-07	1.729E-01	7.007E-01	1.908E-04
STOMACH	8.458E-07	6.670E-05	3.934E-01	1.004E-04
BOWEL	6.624E-06	3.688E-05	1.877E-01	4.710E-05
LIVER	2.813E-06	6.084E-04	4.449E-01	1.093E-04
PANCREAS	2.323E-07	5.022E-05	2.272E-01	6.163E-05
URINARY	1.191E-07	2.576E-05	1.667E-01	4.081E-05
OTHER	2.840E-07	6.142E-05	2.778E-01	7.538E-05

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* NUCLIDE TH-232 *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	2.296E-06	1.149E-03	1.032E+06	5.846E+02
BREAST	2.291E-06	1.168E-03	2.002E+06	2.716E+03
R MAR	9.333E-04	2.493E-01	3.922E+05	1.132E+02
LUNGS	2.290E-06	1.987E+00	5.957E+05	1.957E+02
THYROID	2.288E-06	1.164E-03	8.917E+05	2.734E+02
ENDOST	1.165E-02	3.107E+00	1.043E+06	3.404E+02
RMNDR	4.870E-05	2.496E-03	5.654E+05	1.583E+02
EFFEC	4.775E-04	3.629E-01	9.045E+05	6.565E+02

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	8.349E-05	2.097E-02	1.242E-01	3.586E-05
BONE	5.563E-05	1.378E-02	1.847E-02	6.025E-06
THYROID	3.942E-08	1.653E-05	4.056E-02	1.244E-05
BREAST	3.299E-07	1.256E-04	7.841E-01	1.064E-03
LUNG	4.198E-07	1.692E-01	2.953E-01	9.704E-05
STOMACH	7.290E-07	1.076E-04	1.624E-01	4.655E-05
BOWEL	5.631E-06	6.024E-05	7.650E-02	2.122E-05
LIVER	2.446E-06	7.368E-04	1.842E-01	4.838E-05
PANCREAS	2.059E-07	8.099E-05	9.141E-02	3.014E-05
URINARY	1.042E-07	4.077E-05	7.056E-02	1.852E-05
OTHER	2.519E-07	9.907E-05	1.118E-01	3.686E-05

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* NUCLIDE U-234 *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.851E-05	9.854E-06	8.140E+05	7.067E+02
BREAST	3.851E-05	9.987E-06	2.046E+06	3.585E+03
R MAR	1.031E-03	2.576E-04	2.760E+05	9.139E+01
LUNGS	3.851E-05	1.099E+00	4.107E+05	1.735E+02
THYROID	3.851E-05	9.852E-06	6.068E+05	2.305E+02
ENDOST	1.625E-02	4.059E-03	7.104E+05	2.949E+02
RMNDR	1.396E-03	3.763E-04	3.777E+05	1.251E+02
EFFEC	1.051E-03	1.321E-01	7.456E+05	7.996E+02

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.006E-04	2.329E-05	8.742E-02	2.895E-05
BONE	8.532E-05	1.952E-05	1.257E-02	5.219E-06
THYROID	6.663E-07	1.543E-07	2.760E-02	1.048E-05
BREAST	5.605E-06	1.274E-06	8.014E-01	1.404E-03
LUNG	7.126E-06	1.761E-01	2.036E-01	8.603E-05
STOMACH	5.173E-06	1.344E-06	1.096E-01	3.621E-05
BOWEL	7.559E-06	4.292E-06	5.172E-02	1.577E-05
LIVER	5.015E-06	1.123E-06	1.212E-01	3.269E-05
PANCREAS	3.500E-06	7.735E-07	6.471E-02	2.715E-05
URINARY	3.044E-04	6.699E-05	4.689E-02	1.258E-05
OTHER	4.280E-06	9.461E-07	7.915E-02	3.321E-05

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* NUCLIDE U-235 *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.811E-05	1.177E-05	8.732E+08	1.939E+05
BREAST	3.779E-05	2.002E-05	9.546E+08	2.198E+05
R MAR	1.013E-03	2.656E-04	6.068E+08	1.336E+05
LUNGS	3.767E-05	1.017E+00	6.327E+08	1.391E+05
THYROID	3.754E-05	1.549E-05	8.510E+08	1.876E+05
ENDOST	1.572E-02	3.938E-03	9.361E+08	2.068E+05
RMNDR	1.299E-03	4.131E-04	6.231E+08	1.372E+05
EFFEC	1.004E-03	1.223E-01	7.508E+08	1.672E+05

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.074E-04	2.827E-05	1.920E+02	4.231E-02
BONE	8.775E-05	2.024E-05	1.656E+01	3.661E-03
THYROID	6.655E-07	3.760E-07	3.869E+01	8.533E-03
BREAST	5.647E-06	4.338E-06	3.730E+02	8.609E-02
LUNG	7.138E-06	1.635E-01	3.129E+02	6.897E-02
STOMACH	5.160E-06	7.298E-06	1.852E+02	4.090E-02
BOWEL	9.027E-06	2.076E-05	9.162E+01	2.018E-02
LIVER	4.107E-06	5.644E-06	2.022E+02	4.462E-02
PANCREAS	3.535E-06	4.078E-06	1.185E+02	2.625E-02
URINARY	2.829E-04	6.281E-05	7.427E+01	1.639E-02
OTHER	4.323E-06	4.988E-06	1.450E+02	3.210E-02

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* NUCLIDE U-238 *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.464E-05	9.642E-06	5.365E+05	5.550E+02
BREAST	3.467E-05	1.122E-05	1.550E+06	2.967E+03
R MAR	1.087E-03	2.875E-04	1.413E+05	5.550E+01
LUNGS	3.464E-05	9.773E-01	2.505E+05	1.214E+02
THYROID	3.461E-05	1.045E-05	3.774E+05	1.572E+02
ENDOST	1.408E-02	3.540E-03	4.514E+05	2.094E+02
RMNDR	1.248E-03	3.947E-04	2.247E+05	8.303E+01
EFFEC	9.465E-04	1.175E-01	5.060E+05	6.410E+02

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.364E-04	3.538E-05	4.477E-02	1.758E-05
BONE	7.601E-05	1.771E-05	7.989E-03	3.706E-06
THYROID	6.076E-07	1.892E-07	1.717E-02	7.153E-06
BREAST	5.123E-06	1.657E-06	6.072E-01	1.162E-03
LUNG	6.509E-06	1.577E-01	1.242E-01	6.017E-05
STOMACH	4.656E-06	3.089E-06	6.460E-02	2.346E-05
BOWEL	7.207E-06	2.055E-05	2.964E-02	9.812E-06
LIVER	3.860E-06	1.884E-06	7.238E-02	1.985E-05
PANCREAS	3.197E-06	1.139E-06	3.638E-02	1.846E-05
URINARY	2.760E-04	6.084E-05	2.748E-02	7.335E-06
OTHER	3.909E-06	1.393E-06	4.450E-02	2.258E-05

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* NUCLIDE ZN-65 *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	1.184E-05	7.017E-06	3.530E+09	6.401E+05
BREAST	1.438E-05	1.274E-05	3.167E+09	5.772E+05
R MAR	1.662E-05	1.356E-05	2.708E+09	4.884E+05
LUNGS	1.157E-05	7.819E-05	2.679E+09	4.847E+05
THYROID	1.702E-05	1.408E-05	3.367E+09	6.105E+05
ENDOST	1.009E-05	9.063E-06	2.893E+09	5.254E+05
RMNDR	1.501E-05	1.719E-05	2.718E+09	4.914E+05
EFFEC	1.382E-05	2.052E-05	3.007E+09	5.449E+05

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	5.231E-06	4.258E-06	8.578E+02	1.547E-01
BONE	1.773E-07	1.589E-07	5.121E+01	9.299E-03
THYROID	7.683E-07	6.339E-07	1.531E+02	2.777E-02
BREAST	5.568E-06	4.911E-06	1.241E+03	2.261E-01
LUNG	5.671E-06	5.885E-05	1.328E+03	2.403E-01
STOMACH	4.448E-06	4.733E-06	8.060E+02	1.456E-01
BOWEL	1.899E-06	1.177E-06	4.069E+02	7.350E-02
LIVER	4.691E-06	5.583E-06	8.846E+02	1.595E-01
PANCREAS	2.851E-06	3.568E-06	5.340E+02	9.684E-02
URINARY	1.929E-06	1.513E-06	3.338E+02	6.035E-02
OTHER	3.488E-06	4.364E-06	6.531E+02	1.184E-01

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*   NUCLIDE  ZR-95     *
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DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.013E-06	2.916E-06	4.477E+09	8.732E+05
BREAST	3.829E-07	2.986E-06	4.033E+09	7.881E+05
R MAR	7.572E-07	1.000E-05	3.411E+09	6.697E+05
LUNGS	8.151E-08	6.356E-05	3.356E+09	6.586E+05
THYROID	2.800E-08	2.548E-06	4.218E+09	8.288E+05
ENDOST	1.575E-06	6.896E-05	3.737E+09	7.326E+05
RMNDR	9.298E-06	7.475E-06	3.388E+09	6.645E+05
EFFEC	3.749E-06	1.439E-05	3.791E+09	7.421E+05

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	2.398E-07	3.163E-06	1.080E+03	2.121E-01
BONE	2.786E-08	1.218E-06	6.614E+01	1.297E-02
THYROID	1.273E-09	1.158E-07	1.919E+02	3.770E-02
BREAST	1.499E-07	1.167E-06	1.580E+03	3.087E-01
LUNG	4.040E-08	5.054E-05	1.664E+03	3.265E-01
STOMACH	4.287E-07	1.177E-06	1.009E+03	1.985E-01
BOWEL	2.739E-06	1.590E-06	5.033E+02	9.860E-02
LIVER	9.979E-08	1.338E-06	1.100E+03	2.153E-01
PANCREAS	9.342E-08	1.024E-06	6.616E+02	1.294E-01
URINARY	5.192E-08	3.377E-07	4.136E+02	8.124E-02
OTHER	1.143E-07	1.252E-06	8.092E+02	1.583E-01

TSF-03 Burn Pit

SCREEN3 Output

03/30/03
23:10:04

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 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

Air modeling for the remediation of the TSF-03 burn pit

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE                    =        AREA
   EMISSION RATE (G/(S-M**2))     =     .319000E-09
   SOURCE HEIGHT (M)              =      1.0000
   LENGTH OF LARGER SIDE (M)      =     19.5000
   LENGTH OF SMALLER SIDE (M)     =      7.9000
   RECEPTOR HEIGHT (M)            =      1.0000
   URBAN/RURAL OPTION             =       RURAL
THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

*** STABILITY CLASS  4 ONLY ***
*** ANEMOMETER HEIGHT WIND SPEED OF   4.50 M/S ONLY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME  MAX DIR
   (M)   (UG/M**3)   STAB   (M/S)  (M/S)    (M)    HT (M)   (DEG)
-------  ----------  ----  -----  -----  ------  ------  -------
   800.   .2327E-05    4     4.5    4.5  1440.0    1.00      0.

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
--------------     -----------   -------   -------
SIMPLE TERRAIN       .2327E-05     800.        0.


**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
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03/30/03
23:00:55

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 *** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Air modeling for the remediation of the TSF-03 burn pit

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE                =        AREA
   EMISSION RATE (G/(S-M**2)) =     .319000E-09
   SOURCE HEIGHT (M)          =      1.0000
   LENGTH OF LARGER SIDE (M)  =     19.5000
   LENGTH OF SMALLER SIDE (M) =      7.9000
   RECEPTOR HEIGHT (M)        =      1.0000
   URBAN/RURAL OPTION         =       RURAL
THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   ANGLE RELATIVE TO LONG AXIS =      90.0000


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

*** STABILITY CLASS  4 ONLY ***
*** ANEMOMETER HEIGHT WIND SPEED OF   4.50 M/S ONLY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

  * TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME  MAX DIR
   (M)   (UG/M**3)   STAB   (M/S)  (M/S)    (M)    HT (M)   (DEG)
-------  ----------  ----  -----  -----  ------  ------  -------
   800.   .2319E-05    4     4.5    4.5  1440.0    1.00     90.

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
--------------     -----------   -------   -------
SIMPLE TERRAIN       .2319E-05     800.        0.


****************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
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